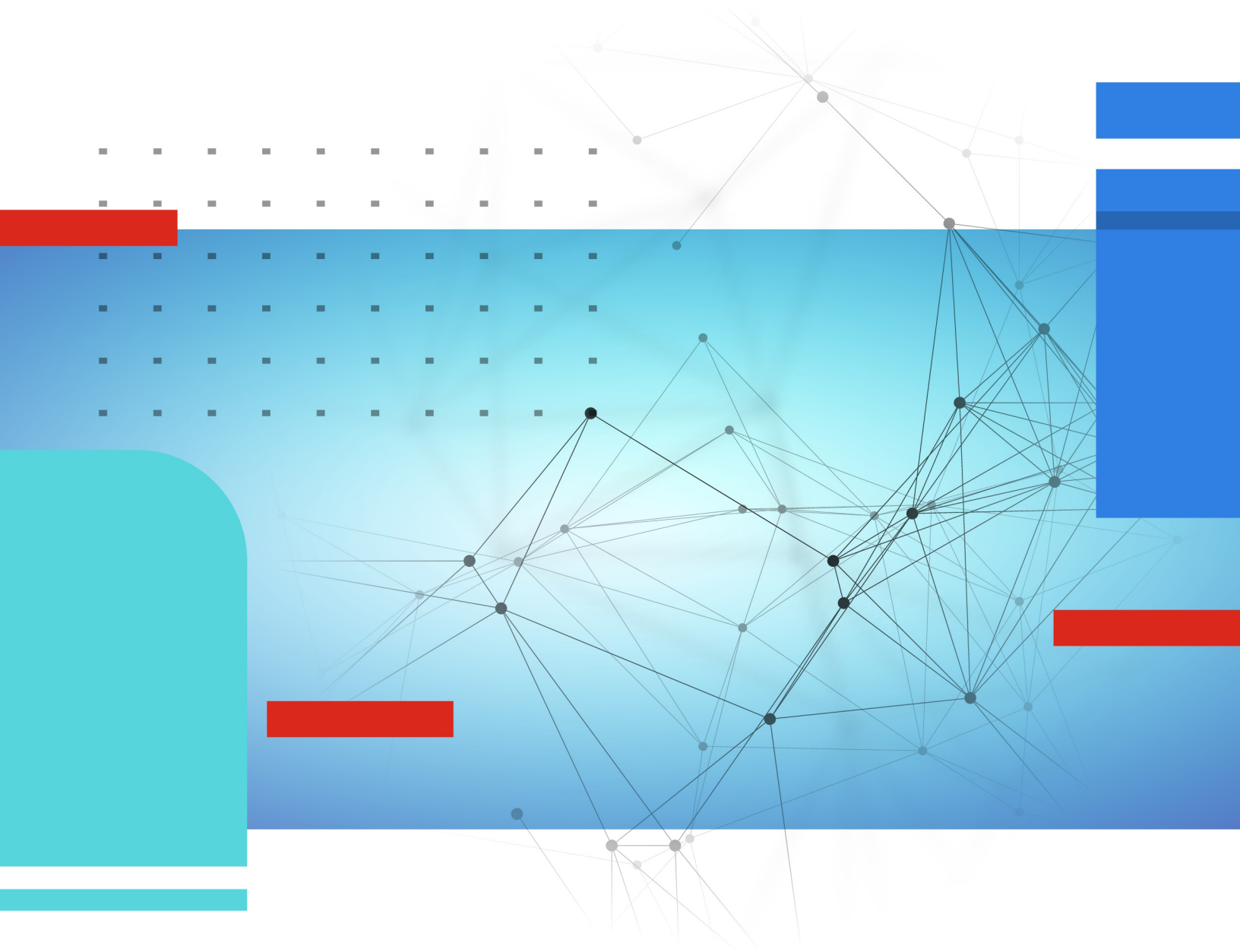
CLI Reference

FortiWeb 8.0.1



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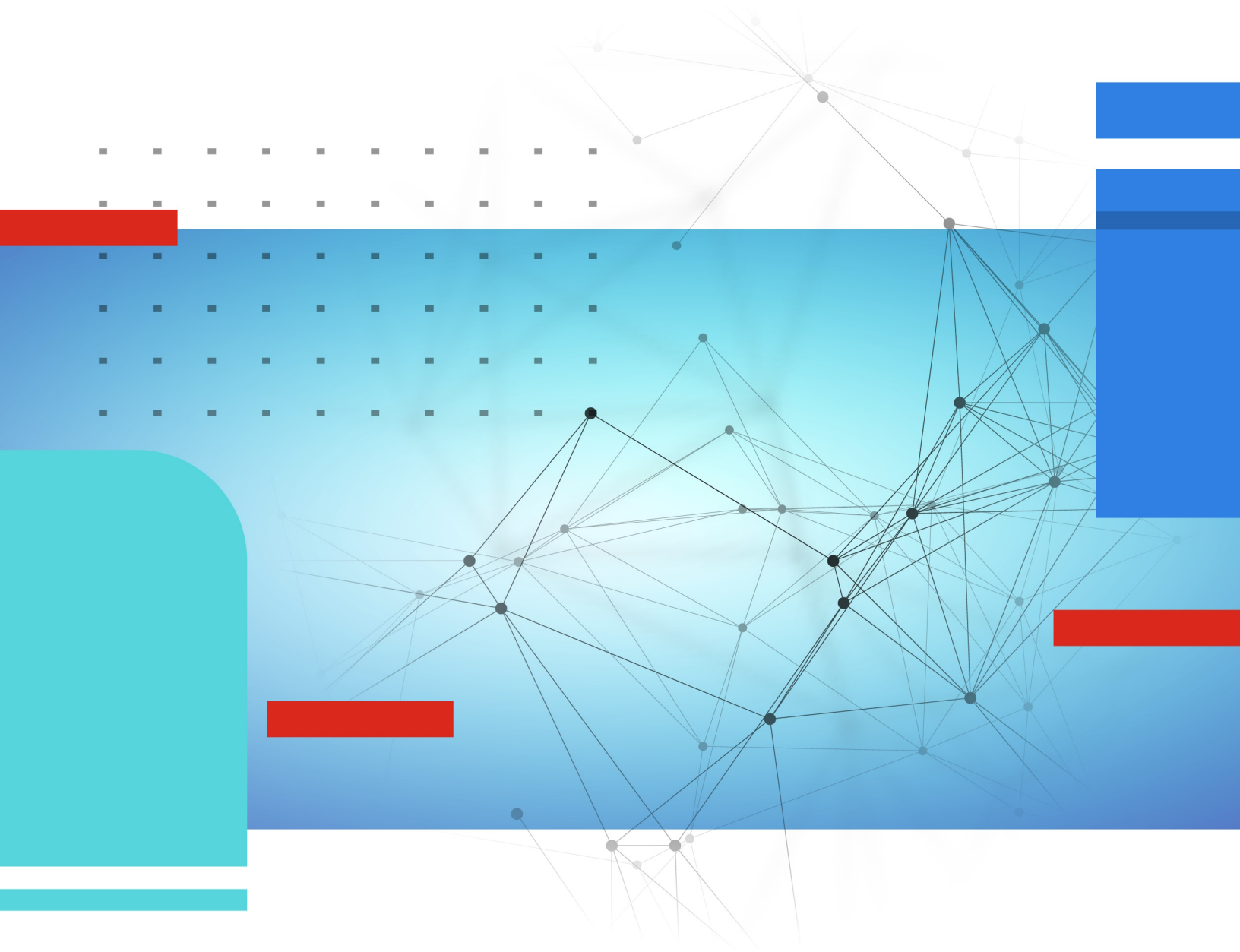


TABLE OF CONTENTS

Introduction

This document describes how to use the command line interface (CLI) of FortiWeb. It assumes that you have already successfully deployed FortiWeb and completed basic setup by following the instructions in the *FortiWeb Administration Guide*: http://docs.fortinet.com/fortiweb/admin-guides.

Scope

At this stage:

- You have administrative access to the web UI and/or CLI.
- The FortiWeb appliance is integrated into your network.
- You have completed firmware updates, if applicable.
- The system time, DNS settings, administrator password, and network interfaces are configured.
- You have set the operation mode.
- You have configured basic logging.
- You have created at least one server policy.
- You have completed at least one phase of auto-learning to jump-start your configuration.

Once that basic installation is complete, you can use this document. This document explains how to use the CLI to:

- Update the FortiWeb appliance.
- Reconfigure features.
- Use advanced features, such as XML protection and reporting.
- Diagnose problems.

This document does **not** cover the web UI or first-time setup. For that information, see the *FortiWeb Administration Guide*: http://docs.fortinet.com/fortiweb/admin-guides.

Conventions

This document uses the conventions described in this section.

IP addresses

To avoid IP conflicts that would occur if you used examples in this document with public IP addresses that belong to a real organization, the IP addresses used in this document are fictional. They belong to the private IP address ranges defined by these RFCs.

RFC 1918: Address Allocation for Private Internets

https://tools.ietf.org/html/rfc1918

RFC 5737: IPv4 Address Blocks Reserved for Documentation

https://tools.ietf.org/html/rfc5737

RFC 3849: IPv6 Address Prefix Reserved for Documentation

https://tools.ietf.org/html/rfc3849

For example, even though a real network's Internet-facing IP address would be routable on the public Internet, in this document's examples, the IP address would be shown as a non-Internet-routable IP such as 192.0.2.108, 198.51.100.155, or 203.0.113.79.

Cautions, notes, & tips

This document uses the following guidance and styles for notes, tips and cautions.

	Warn you about procedures or feature behaviors that could have unexpected or undesirable results including loss of data or damage to equipment.
	Highlight important, possibly unexpected but non-destructive, details about a feature's behavior.
	Present best practices, troubleshooting, performance tips, or alternative methods.

Typographic conventions

Convention	Example
Button, menu, text box, field, or check box label	From **Minimum log level**, select **Notification**.

CLI input	`config system dns`
	`  set primary <address_ipv4>`
	`end`

CLI output	FortiWeb# diagnose hardware logdisk info disk number: 1 disk[0] size: 31.46GB raid level: no raid exists partition number: 1 mount status: read-write
Emphasis	HTTP connections are **not** secure and can be intercepted by a third party.
File content	<HTML><HEAD><TITLE>Firewall Authentication</TITLE></HEAD> <BODY><H4>You must authenticate to use this service.</H4>
Hyperlink	https://support.fortinet.com
Keyboard entry	Enter a name for the remote VPN peer or client, such as `Central_Office_1`.
Navigation	Go to **VPN** > **IPSEC** > **Auto Key (IKE)**.
Publication	For details, see the *FortiWeb Administration Guide*: https://docs.fortinet.com/document/fortiweb.

Command syntax

The CLI requires that you use valid syntax, and conform to expected input constraints. It will reject invalid commands.

For command syntax conventions such as braces, brackets, and command constraints such as `<address_ipv4>`, see Notation on page 40.

Using the CLI

The command line interface (CLI) is an alternative to the web UI.

You can use either interface or both to configure the FortiWeb appliance. In the web UI, you use buttons, icons, and forms. In the CLI, you either type text commands or upload batches of commands from a text file, like a configuration script.

If you are new to FortiWeb, or if you are new to the CLI, this section can help you to become familiar with using it.

Connecting to the CLI

You can access the CLI in two ways:

- **Locally**–Connect your computer, terminal server, or console directly to the FortiWeb appliance's console port.
- **Through the network**–Connect your computer through any network attached to one of the FortiWeb appliance's network ports. To connect using a Secure Shell (SSH) or Telnet client, enable the network interface for Telnet or SSH administrative access. Enable HTTP/HTTPS administrative access to connect using the **CLI Console** widget in the web UI.

Local access is required in some cases, including when you're:

- Installing FortiWeb for the first time and it's not yet configured to connect to your network, unless you reconfigure your computer's network settings for a peer connection, you may only be able to connect to the CLI using a local console connection. For details, see the *FortiWeb Administration Guide*:

  http://docs.fortinet.com/fortiweb/admin-guides
- Restoring the firmware and FortiWeb utilizes a boot interrupt. Network access to the CLI is not available until **after** the boot process completes, and therefore local CLI access is the only viable option.

Before you can access the CLI through the network, you must enable SSH, HTTP/HTTPS, and/or Telnet on the network interface through which you will access the CLI.

Connecting to the CLI using a local console

Local console connections to the CLI are formed by directly connecting your management computer or console to the FortiWeb appliance, using its DB-9 console port.

Requirements

- A computer with an available serial communications (COM) port
- The RJ-45-to-DB-9 or null modem cable included in your FortiWeb package
- Terminal emulation software such as PuTTY (http://www.chiark.greenend.org.uk/~sgtatham/putty/download.html)

The following instructions describe connecting to the CLI using PuTTY; steps may vary with other terminal emulators.

To connect to the CLI using a local console connection

Using the null modem or RJ-45-to-DB-9 cable, connect the FortiWeb appliance's console port to the serial communications (COM) port on your management computer.

On your management computer, start PuTTY.

In the **Category** tree on the left, go to **Connection > Serial** and configure these settings:

Serial line to connect to	COM1 (or, if your computer has multiple serial ports, the name of the connected serial port)
Speed (baud)	9600
Data bits	8
Stop bits	1
Parity	None
Flow control	None

In the **Category** tree on the left, go to **Session** (**not** the sub-node, **Logging**).

From **Connection type**, select **Serial**.

Click **Open**.

Press the Enter key to initiate a connection.

Enter a valid administrator account name (such as `admin`) then press Enter.

Enter the password for that administrator account and press Enter. By default, there is no password for the `admin` account.

The CLI displays the following text, followed by a command line prompt:

```
Welcome!
```

You can now enter CLI commands, and configure access to the CLI through SSH or Telnet. For details, see Enabling access to the CLI through the network (SSH or Telnet or CLI Console widget) on page 34.

Enabling access to the CLI through the network (SSH or Telnet or CLI Console widget)

SSH, Telnet, or **CLI Console** widget (via the web UI) access to the CLI requires connecting your computer to the FortiWeb appliance using one of its RJ-45 network ports. You can either connect directly, using a peer connection between the two, or through any intermediary network.

If you do not want to use an SSH/Telnet client and you have access to the web UI, you can alternatively access the CLI through the network using the **CLI Console** widget in the web UI. For details, see the *FortiWeb Administration Guide*: http://docs.fortinet.com/fortiweb/admin-guides

You must enable SSH and/or Telnet on the network interface associated with that physical network port. If your computer is **not** connected directly or through a switch, you must also configure the FortiWeb appliance with a static route to a router that can forward packets from the FortiWeb appliance to your computer. For details, see router static on page 102.

You can do this using either:

- A local console connection (see the following procedure)
- The web UI (see the *FortiWeb Administration Guide*; http://docs.fortinet.com/fortiweb/admin-guides)

Requirements

- A computer with an available serial communications (COM) port and RJ-45 port
- Terminal emulation software such as PuTTY (http://www.chiark.greenend.org.uk/~sgtatham/putty/download.html)
- The RJ-45-to-DB-9 or null modem cable included in your FortiWeb package
- A crossover Ethernet cable (if connecting directly) or straight-through Ethernet cable (if connecting through a switch or router)
- Prior configuration of the operating mode, network interface, and static route

To enable SSH or Telnet access to the CLI using a local console connection

Using the network cable, connect the FortiWeb appliance's network port either directly to your computer's network port, or to a network through which your computer can reach the FortiWeb appliance.

Note the number of the physical network port.

Using a local console connection, connect and log into the CLI. For details, see Connecting to the CLI using a local console on page 33.

Enter the following commands:

```
config system interface
   edit <interface_name>
      set allowaccess {HTTP HTTPS ping snmp ssh telnet}
end
```

where:

- `<interface_name>` is the name of the network interface associated with the physical network port, such as `port1`
- `{HTTP HTTPS ping snmp ssh telnet}` is the complete, space-delimited list of permitted administrative access protocols, such as `HTTPS ssh telnet`; omit protocols that you do not want to permit

For example, to exclude HTTP, SNMP, and Telnet, and allow only HTTPS, ICMP ECHO (ping), and SSH administrative access on `port1`:

```
config system interface
   edit "port1"
      set allowaccess ping HTTPS ssh
   next
```

```
end
```

Telnet is not a secure access method. SSH should be used to access the CLI from the Internet or any other untrusted network.

To confirm the configuration, enter the command to view the access settings for the interface.

```
show system interface <interface_name>
```

The CLI displays the settings, including the management access settings, for the interface.

If you will be connecting indirectly, through one or more routers or firewalls, configure the appliance with at least one static route so that replies from the CLI can reach your client. See router static on page 102.

To connect to the CLI through the network interface, see Connecting to the CLI using SSH on page 36 or Connecting to the CLI using Telnet on page 37.

Connecting to the CLI using SSH

Once you configure the FortiWeb appliance to accept SSH connections, you can use an SSH client on your management computer to connect to the CLI.

Secure Shell (SSH) provides both secure authentication and secure communications to the CLI. Supported SSH protocol versions, ciphers, and bit strengths vary by whether or not you have enabled FIPS-CC mode or are using a low encryption (LENC) version, but generally include SSH version 2 with AES-128, 3DES, Blowfish, and SHA-1.

Requirements

- A computer with an RJ-45 Ethernet port
- a crossover Ethernet cable
- a FortiWeb network interface configured to accept SSH connections (see Enabling access to the CLI through the network (SSH or Telnet or CLI Console widget) on page 34)
- an SSH client such as PuTTY (http://www.chiark.greenend.org.uk/~sgtatham/putty/download.html)

The following procedure describes connection using PuTTY software; steps may vary with other terminal emulators.

To connect to the CLI using SSH

On your management computer, start PuTTY.

Initially, the **Session** category of settings is displayed.

In **Host Name (or IP Address)**, enter the IP address of a network interface on which you have enabled SSH administrative access.

In **Port**, enter 22.

For **Connection type**, select **SSH**.

Click **Open**.

The SSH client connects to the FortiWeb appliance.

The SSH client may display a warning if this is the first time you are connecting to the FortiWeb appliance and its SSH key is not yet recognized by your SSH client, or if you have previously connected to the FortiWeb appliance but it used a different IP address or SSH key. If your management computer is directly connected to the FortiWeb appliance with no network hosts between them, this is normal.

Click **Yes** to verify the fingerprint and accept the FortiWeb appliance's SSH key. You will not be able to log in until you have accepted the key.

Enter a valid administrator account name (such as `admin`) and press Enter.

Alternatively, you can log in using an SSH key. For details, see system admin on page 225.

Enter the password for this administrator account and press Enter.

If three incorrect login or password attempts occur in a row, you will be disconnected. Wait one minute, then reconnect to attempt the login again.

The FortiWeb appliance displays a command prompt–its host name followed by a #. You can now enter CLI commands.

Connecting to the CLI using Telnet

Once the FortiWeb appliance is configured to accept Telnet connections, you can use a Telnet client on your management computer to connect to the CLI.

Telnet is not a secure access method. SSH should be used to access the CLI from the Internet or any other untrusted network.

Requirements

- A computer with an RJ-45 Ethernet port
- A crossover Ethernet cable
- A FortiWeb network interface configured to accept Telnet connections (see Enabling access to the CLI through the network (SSH or Telnet or CLI Console widget) on page 34)
- Terminal emulation software such as PuTTY (http://www.chiark.greenend.org.uk/~sgtatham/putty/download.html)

The following procedure describes connection using PuTTY software; steps may vary with other terminal emulators.

To connect to the CLI using Telnet

On your management computer, start PuTTY.

In **Host Name (or IP Address)**, type the IP address of a network interface on which you have enabled Telnet administrative access.

In **Port**, enter `23`.

For **Connection type**, select **Telnet**.

Click **Open**.

Type a valid administrator account name (such as `admin`) and press Enter.

Type the password for this administrator account and press Enter.

The FortiWeb appliance displays a command prompt—its host name followed by a #. You can now enter CLI commands.

If three incorrect login or password attempts occur in a row, you will be disconnected. Wait one minute, then reconnect to attempt the login again.

Command syntax

When entering a command, the CLI requires that you use valid syntax and conform to expected input constraints. It will reject invalid commands.

For example, if you do not type the entire object that will receive the action of a command operator such as `config`, the CLI will return an error message such as:

```
Command fail. CLI parsing error
```

This document uses the following conventions to describe valid command syntax.

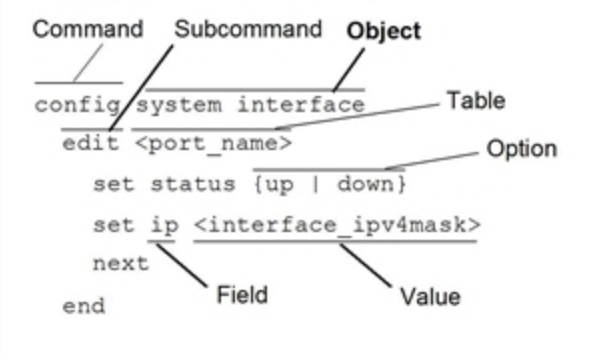
Terminology

Each command line consists of a command word followed by words for the configuration data or other specific item that the command uses or affects, for example:

```
get system admin
```

This document uses the below terms to describe the function of each word in the command line.

Command syntax terminology



- **Command**–A word that begins the command line and indicates an action that FortiWeb should perform on a part of the configuration or host on the network, such as `config` or `execute`. Together with other words, such as fields or values, that you terminate by pressing the Enter key, it forms a command line. Exceptions include multi-line command lines, which can be entered using an escape sequence. For details, see Shortcuts & key commands on page 48.

  Valid command lines must be unambiguous if abbreviated. For details, see Command abbreviation on page 49.

  Optional words or other command line permutations are indicated by syntax notation. For details, see Notation on page 40.

If you do not enter a known command, the CLI will return an error message such as:

```
Unknown action 0
```

- **Subcommand**–A kind of command that is available only when nested within the scope of another command. After entering a command, its applicable subcommands are available to you until you exit the scope of the command, or until you descend an additional level into another subcommand. Indentation is used to indicate levels of nested commands. For details, see Indentation on page 40.

  Not all top-level commands have subcommands. Available subcommands vary by their containing scope. For details, see Subcommands on page 42.
- **Object**–A part of the configuration that contains tables and/or fields. Valid command lines must be specific enough to indicate an individual object.
- **Table**–A set of fields that is one of possibly multiple similar sets that each have a name or number, such as an administrator account, policy, or network interface. These named or numbered sets are sometimes referenced by other parts of the configuration that use them. For details, see Notation on page 40.
- **Field**–The name of a setting, such as `ip` or `hostname`. Fields in some tables must be configured with values. Failure to configure a required field will result in an invalid object configuration error message, and the FortiWeb appliance will discard the invalid table.
- **Value**–A number, letter, IP address, or other type of input that is usually the configuration setting held by a field. Some commands, however, require multiple input values which may not be named but are simply entered in sequential order in the same command line. Valid input types are indicated by constraint notation. For details, see Notation on page 40.
- **Option**–A kind of value that must be one or more words from a fixed set of options. For details, see Notation on page 40.

Indentation

Indentation indicates levels of nested commands, which indicate what other subcommands are available from within the scope.

For example, the `edit` subcommand is available only within a command that affects tables, and the `next` subcommand is available only from within the `edit` subcommand:

```
config system interface
   edit port1
      set status up
   next
end
```

For details about available subcommands, see Subcommands on page 42.

Notation

Brackets, braces, and pipes are used to denote valid permutations of the syntax. Constraint notations, such as `<address_ipv4>`, indicate which data types or string patterns are acceptable value input.

If you do not use the expected data type, the CLI returns an error message such as:

```
object set operator error, -4003 discard the setting
The request URL must start with "/" and without domain name.
```

or:

```
invalid unsigned integer value :-:

value parse error before '-'
Input value is invalid.
```

and may either **reject** or **discard** your settings instead of saving them when you type `end`.

Command syntax notation

Square brackets [ ]	A non-required (optional) word or words. For example:
	`[verbose {1 | 2 | 3}]`
	
	indicates that you may either omit or type both the `verbose` word and its accompanying option, such as:
	`verbose 3`

Curly braces { }	A word or series of words that is constrained to a set of options delimited by either vertical bars or spaces. You must enter at least one of the options, unless the set of options is surrounded by square brackets [ ].
Options delimited by vertical bars |	Mutually exclusive options. For example: `{enable | disable}` indicates that you must enter either `enable` or `disable`, but must not enter both.

Options delimited by spaces	Non-mutually exclusive options. For example:
	`{HTTP HTTPS ping snmp ssh telnet}`
	
	indicates that you may enter all or a subset of those options, in any order, in a space-delimited list, such as:
	`ping HTTPS ssh`
	
	Note: To change the options, you must re-type the entire list. For example, to add `snmp` to the previous example, you would type:
	`ping HTTPS snmp ssh`
	
	If the option adds to or subtracts from the existing list of options, instead of replacing it, or if the list is comma-delimited, the exception will be noted.

Angle brackets < >	A word constrained by data type.

To define acceptable input, the angled brackets contain a descriptive name followed by an underscore (_) and suffix that indicates the valid data type. For example:
`<retries_int>`

indicates that you should enter a number of retries, such as `5`.

Data types include:

- `<xxx_name>`—A name referring to another part of the configuration, such as `policy_A`.
- `<xxx_index>`—An index number referring to another part of the configuration, such as `0` for the first static route.
- `<xxx_pattern>`—A regular expression or word with wild cards that matches possible variations, such as `*@example.com` to match all e-mail addresses ending in `@example.com`.
- `<xxx_fqdn>`—A fully qualified domain name (FQDN), such as `mail.example.com`.
- `<xxx_email>`—An email address, such as `admin@mail.example.com`.
- `<xxx_url>`—A uniform resource locator (URL) and its associated protocol and host name prefix, which together form a uniform resource identifier (URI), such as `http://www.fortinet.com/`.
- `<xxx_ipv4>`—An IPv4 address, such as `192.0.2.99`.
- `<xxx_v4mask>`—A dotted decimal IPv4 netmask, such as `255.255.255.0`.
- `<xxx_ipv4mask>`—A dotted decimal IPv4 address and netmask separated by a space, such as `192.0.2.99 255.255.255.0`.
- `<xxx_ipv4/mask>` — A dotted decimal IPv4 address and CIDR-notation netmask separated by a slash, such as such as `192.0.2.99/24`.
- `<xxx_ipv6>`—A colon(`:`)-delimited hexadecimal IPv6 address, such as `3f2e:6a8b:78a3:0d82:1725:6a2f:0370:6234`.
- `<xxx_v6mask>`—An IPv6 netmask, such as `/96`.
- `<xxx_ipv6mask>`—An IPv6 address and netmask separated by a space.
- `<xxx_str>`—A string of characters that is **not** another data type, such as `P@ssw0rd`. Strings containing spaces or special characters must be surrounded in quotes or use escape sequences. For details, see Special characters on page 49.
- `<xxx_int>`—An integer number that is **not** another data type, such as `15` for the number of minutes.

Subcommands

Once you connect to the CLI, you can enter commands.

Each command line consists of a command word that is usually followed by words for the configuration data or other specific item that the command uses or affects, for example:

```
get system admin
```

Subcommands are available from within the scope of some commands. When you enter a subcommand level, the command prompt changes to indicate the name of the current command scope. For example, after entering:

```
config system admin
```

the command prompt becomes:

```
(admin)#
```

Applicable subcommands are available to you until you exit the scope of the command, or until you descend an additional level into another subcommand.

For example, the `edit` subcommand is available only within a command that affects tables; the `next` subcommand is available only from within the `edit` subcommand:

```
config system interface
   edit port1
      set status up
   next
end
```

Available subcommands vary by command. From a command prompt within `config`, two types of subcommands might become available:

- Commands that affect fields (see Field commands on page 45)
- Commands that affect tables (see Table commands on page 43)

Subcommand scope is indicated in this [[[Undefined variable FortinetVariables.Document title3]]] by indentation. For details, see Indentation on page 40.

Syntax examples for each top-level command in this [[[Undefined variable FortinetVariables.Document title3]]] do not show all available subcommands. However, when nested scope is demonstrated, you should assume that subcommands applicable for that level of scope are available.

Table commands

delete <table_name>	Remove a table from the current object. For example, in `config system admin`, you could delete an administrator account named `newadmin` by typing `delete newadmin` and pressing Enter. This deletes `newadmin` and all its fields, such as `newadmin`'s `first-name` and `email-address`. `delete` is only available within objects containing tables.

edit <table_name>	Create or edit a table in the current object. For example, in `config system admin`: • Edit the settings for the default `admin` administrator account by typing `edit admin`. • Add a new administrator account with the name `newadmin` and edit `newadmin`'s settings by entering `edit newadmin`. `edit` is an interactive subcommand: further subcommands are available from within `edit`. `edit` changes the prompt to reflect the table you are currently editing. `edit` is only available within objects containing tables.
end	Save the changes to the current object and exit the `config` command. This returns you to the top-level command prompt.
get	List the configuration of the current object or table. • In objects, `get` lists the table names (if present), or fields and their values. • In a table, `get` lists the fields and their values. For more information on `get` commands, see get on page 901.
purge	Remove all tables in the current object. For example, in `config user local-user`, you could type `get` to see the list of all local user names, then type `purge` and then `y` to confirm that you want to delete all users. `purge` is only available for objects containing tables. **Caution:** Back up the FortiWeb appliance before performing a purge because it cannot be undone. To restore purged tables, the configuration must be restored from a backup. For details, see backup cli-config on page 856. **Caution:** Do not purge `system interface` or `system admin` tables. This can result in being unable to connect or log in, requiring the FortiWeb appliance to be formatted and restored.
show	Display changes to the default configuration. Changes are listed in the form of configuration commands. For more information on `show` commands, see show on page 907.

Example of table commands

From within the `system admin` object, you might enter:

```
edit admin_1
```

The CLI acknowledges the new table, and changes the command prompt to show that you are now within the `admin_1` table:

```
new entry 'admin_1' added
(admin_1)#
```

Field commands

abort	Exit both the `edit` and/or `config` commands without saving the fields.
end	Save the changes made to the current table or object fields, and exit the `config` command. To exit without saving, use `abort` instead.
get	List the configuration of the current object or table. • In objects, `get` lists the table names (if present), or fields and their values. • In a table, `get` lists the fields and their values.
next	Save the changes you have made in the current table's fields, and exit the `edit` command to the object prompt. To save and exit completely to the root prompt, use `end` instead. `next` is useful when you want to create or edit several tables in the same object, without leaving and re-entering the `config` command each time. `next` is only available from a table prompt; it is not available from an object prompt.
set <field_name> <value>	Set a field's value. For example, in `config system admin`, after entering `edit admin`, you could enter `set password newpass` to change the password of the `admin` administrator to `newpass`. **Note:** When using `set` to change a field containing a space-delimited list, enter the whole new list. For example, `set <field> <new-value>` will replace the list with the `<new-value>` rather than appending `<new-value>` to the list.
show	Display changes to the default configuration. Changes are listed in the form of configuration commands.
unset <field_name>	Reset the table or object's fields to default values. For example, in `config system admin`, after entering `edit admin`, entering `unset password` resets the password of the `admin` administrator account to the default (in this case, no password).

Example of field commands

From within the `admin_1` table, you might enter:

```
set password "my1stExamplePassword"
```

to assign the value `my1stExamplePassword` to the `password` field. You might then enter the `next` command to save the changes and edit the next administrator's table.

Permissions

Depending on the account that you use to log in to the FortiWeb appliance, you may not have complete access to all CLI commands or areas of the web UI.

Access profiles control which commands and areas an administrator account can access. Access profiles assign either:

- **Read** (view access)
- Both **Read** and **Write** (view access, and change and execute access)
- No access

to each area of the FortiWeb software. For details about configuring the access profile for an administrator account to use, see system accprofile on page 222.

Access profile permissions

Admin Users	**System > Admin** ... **except Settings**	Web UI
admingrp	`config system admin` `config system accprofile`	CLI
Auth Users	**User** ...	Web UI
authusergrp	config user ...	CLI
Log & Report	**Log&Report** ...	Web UI
loggrp	`config log ...` `execute formatlogdisk`	CLI
Maintenance	**System > Maintenance except System Time** tab	Web UI

mntgrp	`diagnose system ...`
	`execute backup ...`
	`execute factoryreset`
	`execute reboot`
	`execute restore ...`
	`execute shutdown`
	`diagnose system flash ...`
		CLI

Network Configuration	**Network** ...	Web UI

netgrp	`config router ...`
	`config system interface`
	`config system dns`
	`config system v-zone`
	`diagnose network ...` **`except`** `sniffer ...`
		CLI

System Configuration	**System** ... **except Network**, **Admin**, and **Maintenance** tabs	Web UI

sysgrp	`config system` **except** `accprofile`, `admin`, `dns`, `interface`, and `v-zone`
	`diagnose hardware ...`
	`diagnose network sniffer ...`
	`diagnose system ...` **`except`** `flash ...`
		CLI

	`execute date ...`
	`execute ha ...`
	`execute ping ...`
	`execute ping-option ...`
	`execute traceroute ...`
	`execute time ...`	

Server Policy Configuration	**Policy** > **Server Policy** ... **Server Objects** ... **Application Delivery** ...	Web UI

traroutegrp	`config server-policy ... except custom-application ...`
	`config waf file-compress-rule`
	`config waf HTTP-authen ...`
	`config waf url-rewrite ...`
	`diagnose policy ...`
		CLI

Web Anti-Defacement Management	**Web Anti-Defacement** ...	Web UI
wadgrp	config wad ...	CLI
Web Protection Configuration	**Policy** > **Web Protection** ... **Web Protection** ... **DoS Protection** ...	Web UI
wafgrp	`config system dos-prevention` `config waf` **except**: • `config waf file-compress-rule` • `config waf HTTP-authen ...` • `config waf url-rewrite ...` • `config waf web-custom-robot` • `config waf web-robot` • `config waf x-forwarded-for`	CLI
Machine Learning Configuration	**Web Protection > ML Based Anomaly Detection** **Bot Mitigation > ML Based Bot Detection** **API Protection > ML Based API Protection**	Web UI

`mlgrp`	`config waf api-learning-rule`
	`config waf api-learning-policy`
	`config waf bot-detection-policy`
	`config waf machine-learning-policy`
		CLI

Web Vulnerability Scan Configuration	**Web Vulnerability Scan** ...	Web UI
wvsgrp	config wvs ...	CLI
***** For each `config` command, there is an equivalent `get`/`show` command, unless otherwise noted. `config` access requires write permission. `get`/`show` access requires read permission.		

Unlike other administrator accounts, the administrator account named `admin` exists by default and cannot be deleted. The `admin` administrator account is similar to a root administrator account. This administrator account always has full

permission to view and change all FortiWeb configuration options, including viewing and changing **all** other administrator accounts. Its name and permissions cannot be changed. It is the only administrator account that can reset another administrator's password without being required to enter that administrator's existing password.

Set a strong password for the `admin` administrator account, and change the password regularly. By default, this administrator account has no password. Failure to maintain the password of the `admin` administrator account could compromise the security of your FortiWeb appliance.

For complete access to all commands, you must log in with the `admin` administrator account.

Tips & tricks

Basic features and characteristics of the CLI environment provide support and ease of use for many CLI tasks.

This section includes:

Help

To display brief help during command entry, enter the question mark (`?`) key:

- At the command prompt to display a list of the commands available and a description of each.
- After a command keyword to display a list of the objects available with that command and a description of each.
- After entering a word or part of a word to display a list of valid word completions or subsequent words, and to display a description of each.

Shortcuts & key commands

Action	Keys
List valid word completions or subsequent words. If multiple words could complete your entry, display all possible completions with helpful descriptions of each.	?

Action	Keys
Complete the word with the next available match. Press the key multiple times to cycle through available matches.	Tab
Recall the previous command. Command memory is limited to the current session.	Up arrow, or Ctrl + P
Recall the next command.	Down arrow, or Ctrl + N
Move the cursor left or right within the command line.	Left or Right arrow
Move the cursor to the beginning of the command line.	Ctrl + A
Move the cursor to the end of the command line.	Ctrl + E
Move the cursor backwards one word.	Ctrl + B
Move the cursor forwards one word.	Ctrl + F
Delete the current character.	Ctrl + D
Abort current interactive commands, such as when entering multiple lines. If you are not currently within an interactive command such as `config` or `edit`, this closes the CLI connection.	Ctrl + C
Continue typing a command on the next line for a multi-line command. For each line that you want to continue, terminate it with a backslash (\ ). To complete the command line, terminate it by pressing the spacebar and then the Enter key, without an immediately preceding backslash.	\ then Enter

Command abbreviation

You can abbreviate words in the command line to their smallest number of non-ambiguous characters. For example, the command `get system status` could be abbreviated to:

```
g sy st
```

If you enter an ambiguous command, the CLI returns an error message such as:

```
ambiguous command before 's'
Value conflicts with system settings.
```

Special characters

Special characters <, >, (,), #, ', and " are usually not permitted in CLI. If you use them, the CLI will often return an error message such as:

```
The string contains XSS vulnerability characters

value parse error before '%^@'
Input not as expected.
```

Some may be enclosed in quotes or preceded with a backslash (\ ) character.

Entering special characters

Character	Key
?	Ctrl + V then ?
Tab	Ctrl + V then Tab
Space (to be interpreted as part of a string value, not to end the string)	Enclose the string in quotation marks: `"Security Administrator"` Enclose the string in single quotes: `'Security Administrator'` Precede the space with a backslash: `Security\ Administrator`
' (to be interpreted as part of a string value, not to end the string)	\'
" (to be interpreted as part of a string value, not to end the string)	\"
\	\\

Language support & regular expressions

The CLI currently supports the following languages:

- English
- Japanese
- Simplified Chinese
- Traditional Chinese

Characters such as ñ, é, symbols, and ideographs are sometimes acceptable input. Support varies by the nature of the item being configured. CLI commands, objects, field names, and options must use their exact ASCII characters, but some items with arbitrary names or values may be input using your language of choice.

For example, the host name must not contain special characters, and so the web UI and CLI will not accept most symbols and other non-ASCII encoded characters as input when configuring the host name. This means that languages other than English often are not supported. However, some configuration items, such as names and comments, may be able to use the language of your choice.

To use other languages in those cases, you must use the correct encoding.

FortiWeb stores inputs using Unicode UTF-8 encoding, but it is not normalized from other encodings into UTF-8 before stored. If your input method encodes some characters differently than in UTF-8, your configured items may not display or operate as expected.

Regular expressions are especially impacted. Matching uses the UTF-8 character values. If you enter a regular expression using another encoding, or if an HTTP client sends a request in an encoding other than UTF-8, matches may not be what you expect.

For example, with Shift-JIS, backslashes (\ ) could be inadvertently interpreted as yen symbols (¥) and vice versa. A regular expression intended to match HTTP requests containing money values with a yen symbol therefore may not work it if the symbol is entered using the wrong encoding.

For best results, you should use:

- UTF-8 encoding.
- Only the characters whose numerically encoded values are the same in UTF-8, such as the US-ASCII characters that are also encoded using the same values in ISO 8859-1, Windows code page 1252, Shift-JIS and other encodings.
- Regular expressions that match HTTP requests.
- The same encoding as your HTTP clients.

HTTP clients may send requests in encodings other than UTF-8. Encodings usually vary by the client's operating system or input language. If you cannot predict the client's encoding, you may only be able to match any parts of the request that are in English, because regardless of the encoding, the values for English characters tend to be encoded identically. For example, English words may be legible regardless of interpreting a web page as either ISO 8859-1 or as GB2312, whereas simplified Chinese characters might only be legible if the page is interpreted as GB2312.

To configure your FortiWeb appliance using other encodings, you may need to switch language settings on your management computer, including for your web browser or Telnet or SSH client. For instructions on how to configure your management computer's operating system language, locale, or input method, see its documentation.

If you choose to configure parts of the FortiWeb appliance using non-ASCII characters, verify that all systems interacting with the FortiWeb appliance also support the same encodings. You should also use the same encoding throughout the configuration if possible in order to avoid needing to switch the language settings of your web browser or Telnet or SSH client while you work.

Similarly to input, your web browser or CLI client should usually interpret display output as encoded using UTF-8. If it does not, your configured items may not display correctly in the web UI or CLI. Exceptions include items such as regular expressions that you may have configured using other encodings in order to match the encoding of HTTP requests that the FortiWeb appliance receives.

To enter non-ASCII characters in the CLI:

- **CLI access via the web UI**–Configure your web browser to interpret the page as UTF-8 encoded. The console will then display non-ASCII characters in commands in their character code equivalent.
- **CLI access via a Telnet or SSH client**–Configure the client to send and receive characters using UTF-8 encoding. Depending on the client, you may have to enter non-ASCII characters in commands in their character code equivalent.

Screen paging

When output spans multiple pages, you can configure the CLI to pause after each page. When the display pauses, the last line displays `--More--`. You can then either:

- Press the spacebar to display the next page.
- Enter `Q` to truncate the output and return to the command prompt.

This may be useful when displaying lengthy output, such as the list of possible matching commands for command completion, or a long list of settings. Rather than scrolling through or possibly exceeding the buffer of your terminal emulator, you can simply display one page at a time.

To configure the CLI display to pause after each full screen:

```
config system console
   set output more
end
```

For details, see system console on page 280.

Baud rate

You can change the default baud rate of the local console connection. For details, see system console on page 280.

Editing the configuration file in a text editor

Editing the configuration file with a plain text editor can be time-saving if:

- You have many changes to make
- Are not sure where the setting is in the CLI
- Own several FortiWeb appliances

This is true especially if your plain text editor provides advanced features such as regular expressions for find-and-replace, or batch changes across multiple files. Several free text editors are available with these features, such as Text Wrangler (http://www.barebones.com/products/textwrangler)and Notepad++ (http://notepad-plus-plus.org).

Do **not** use a rich text editor such as Microsoft Word. Rich text editors insert special characters into the file in order to apply formatting, which may corrupt the configuration file.

To edit the configuration on your computer

Use backup cli-config on page 856 or backup full-config on page 857 to download the configuration file to a TFTP server, such as your management computer.

Edit the configuration file using a plain text editor that supports Unix-style line endings.

Do not edit the first line. The first lines of the configuration file (preceded by a # character) contains information about the firmware version and FortiWeb model. If you change the model number, the FortiWeb appliance will reject the configuration file when you attempt to restore it.

Use restore config on page 889 to upload the modified configuration file back to the FortiWeb appliance.

The FortiWeb appliance downloads the configuration file and checks that the model information is correct. If it is, the FortiWeb appliance loads the configuration file and checks each command for errors. If a command is invalid, the FortiWeb appliance ignores the command. If the configuration file is valid, the FortiWeb appliance restarts and loads the new configuration.

Pipeline 'grep' command

FortiWeb supports `'grep'` in `get` and `show` to search for desired information and present the results in a format you want.

The 'grep' command format is as follows:

```
get <xxx> [ [path] <object>] | grep [options] <search string>
```

```
show [ [path] <object>] | grep [options] <search string>
```

For example:

```
login as: admin
admin@10.200.30.101's password:
FortiWeb # get system status
International Version: FortiWeb-1000E 6.0.2,build0047(Interim),181030
Serial-Number: FV-1KE4417900014
Bios version: 00010002
Log hard disk: Available
Hostname: FortiWeb
Operation Mode: Reverse Proxy
FIPS-CC mode: disabled
Current HA mode: standalone
Database Status: Available

FortiWeb # get system status | grep version
Bios version: 00010002

FortiWeb # get system status | grep version -v
International Version: FortiWeb-1000E 6.0.2,build0047(Interim),181030
Serial-Number: FV-1KE4417900014
Log hard disk: Available
Hostname: FortiWeb
Operation Mode: Reverse Proxy
FIPS-CC mode: disabled
Current HA mode: standalone
Database Status: Available

FortiWeb # get system status | grep version -c
1

FortiWeb # get system status | grep version -n
3:Bios version: 00010002

FortiWeb # get system status | grep version
Bios version: 00010002

FortiWeb # get system status | grep version -n
3:Bios version: 00010002

FortiWeb # get system status | grep version -i
International Version: FortiWeb-1000E 6.0.2,build0047(Interim),181030
Bios version: 00010002
```

The following options are supported:

-n	Add 'line_no:' prefix.
-o	Show only the matching part of the line.
-v	Select non-matching lines.
-i	Ignore the case.
-w	Match whole words only.

-x	Match whole lines only.
-F	PATTERN is a literal (not regexp).
-E	PATTERN is an extended regexp.

Administrative domains (ADOMs)

Administrative domains (ADOMs) enable the `admin` administrator to constrain other FortiWeb administrators' access privileges to a subset of policies and protected host names. This can be useful for large enterprises and multi-tenant deployments such as web hosting.

ADOMs are **not** enabled by default. Enabling and configuring administrative domains can only be performed by the `admin` administrator.

Enabling ADOMs alters the structure of and the available functions in the GUI and CLI according to whether you're logging in as the `admin` administrator, and, if you are **not** logging in as the `admin` administrator, the administrator account's assigned access profile.

Differences between administrator accounts when ADOMs are enabled

	`admin` administrator account	Other administrators
Access to `config global`	Yes	No
Can create administrator accounts	Yes	No
Can create & enter all ADOMs	Yes	No

If ADOMs are enabled and you log in as `admin`, a superset of the typical CLI commands appear, allowing unrestricted access and ADOM configuration.

`config global` contains settings used by the FortiWeb itself and settings shared by ADOMs, such as RAID and administrator accounts. It does not include ADOM-specific settings or data, such as logs and reports. When configuring other administrator accounts, an additional option appears allowing you to restrict other administrators to an ADOM.

If ADOMs are enabled and you log in as any other administrator, you enter the ADOM assigned to your account. A subset of the typical menus or CLI commands appear, allowing access only to only logs, reports, policies, servers, and LDAP queries specific to your ADOM. You cannot access global configuration settings or enter other ADOMs.

By default, administrator accounts other than the `admin` account are assigned to the `root` ADOM, which includes all policies and servers. By creating ADOMs that contain a subset of policies and servers, and assigning them to administrator accounts, you can restrict other administrator accounts to a subset of the FortiWeb's total protected servers.

The admin administrator account cannot be restricted to an ADOM. Other administrators are restricted to their ADOM, and cannot configure ADOMs or global settings.

To enable ADOMs

Log in with the admin account.

Other administrators do not have permissions to configure ADOMs.

Back up your configuration. Enabling ADOMs changes the structure of your configuration, and moves non-global settings to the root ADOM. For details about how to back up the configuration, see backup full-config on page 857.

Enter the following commands:

```
config system global
   set adom-admin enable
end
```

FortiWeb terminates your administrative session.

Log in again.

When ADOMs are enabled, and if you log in as admin, the top level of the shell changes: the two top level items are config global and config vdom.

- config global contains settings that only admin or other accounts with the **prof_admin** access profile can change.
- config vdom contains each ADOM and its respective settings.

This menu and CLI structure change is not visible to non-global accounts; ADOM administrators' navigation menus continue to appear similar to when ADOMs are disabled, except that global settings such as network interfaces, HA, and other global settings do not appear.

Continue by defining ADOMs. For details, see Defining ADOMs on page 57.

To disable ADOMs

Delete all ADOM administrator accounts.

Back up your configuration. Disabling ADOMs changes the structure of your configuration, and deletes most ADOM-related settings. It keeps settings from the root ADOM only. For details about how to back up the configuration, see backup full-config on page 857.

Enter the following commands:

```
config system global
   set adom-admin disable
end
```

FortiWeb terminates your administrative session.

Continue by reconfiguring the appliance. For details, see the *FortiWeb Administration Guide*:

http://docs.fortinet.com/fortiweb/admin-guides

See also

- Permissions on page 46
- Defining ADOMs on page 57
- Assigning administrators to an ADOM on page 58
- system admin on page 225
- system accprofile on page 222

Defining ADOMs

Some settings can only be configured by the `admin` account–they are **global**. Global settings apply to the appliance overall regardless of ADOM, such as:

- Operation mode
- Network interfaces
- System time
- Backups
- Administrator accounts
- Access profiles
- FortiGuard connectivity settings
- HA and configuration sync
- SNMP
- RAID
- X.509 certificates
- TCP `SYN` flood anti-DoS setting
- Vulnerability scans
- ping on page 878 and other global operations that exist only in the CLI

Only the `admin` account can configure global settings.

In the current release, some settings, such as user accounts for HTTP authentication, anti-defacement, and logging destinations are read-only for ADOM administrators. Future releases will allow ADOM administrators to configure these settings separately for their ADOM.

Other settings can be configured separately for each ADOM. They essentially define each ADOM. For example, the policies of adom-A are separate from adom-B.

Initially, only the `root` ADOM exists, and it contains settings such as policies that were global before ADOMs were enabled. Typically, you will create additional ADOMs, and few if any administrators will be assigned to the `root` ADOM.

After ADOMs are created, the `admin` account usually assigns other administrator accounts to configure their ADOM-specific settings. However, as the root account, the `admin` administrator does have permission to configure all settings, including those within ADOMs.

To create an ADOM

Log in with the `admin` account.

Enter the following commands:

```
config vdom
   edit <adom_name>
```

where `<adom_name>` is the name of your new ADOM. Alternatively, to configure the default `root` ADOM, type `root`.

The maximum number of ADOMs you can add varies by your FortiWeb model. The number of ADOMs is limited by available physical memory (RAM), and therefore also limits the maximum number of policies and sessions per ADOM. For details, see the *FortiWeb Administration Guide*:

http://docs.fortinet.com/fortiweb/admin-guides

The new ADOM exists, but its settings are not yet configured.

Either:

- Assign another administrator account to configure the ADOM (continue with Assigning administrators to an ADOM on page 58), or
- Configure the ADOM yourself by entering commands such as:

```
config log...
config server-policy...
config system...
config waf...
```

See also

- Assigning administrators to an ADOM on page 58
- Administrative domains (ADOMs) on page 55
- Permissions on page 46
- system admin on page 225
- system accprofile on page 222

Assigning administrators to an ADOM

The `admin` administrator can create other administrators and assign their account to an ADOM, constraining them to that ADOM's configurations and data.

To assign an administrator to an ADOM

If you have not yet created any administrator access profiles, create at least one. For details, see system accprofile on page 222.

In the administrator account's access-profile "<access-profile_name>" on page 226 setting, select the new access profile.

(Administrators assigned to the **prof_admin** access profile will have global access. They cannot be restricted to an ADOM.)

In the administrator account's domains "<adom_name>" on page 227 setting, select the account's assigned ADOM. Currently, in this version of FortiWeb, administrators cannot be assigned to more than one ADOM.

See also

- Permissions on page 46
- system admin on page 225
- system accprofile on page 222
- Defining ADOMs on page 57

config

The `config` commands configure your FortiWeb appliance's feature settings.

Although not usually explicitly shown in each config command's "Syntax" section, for all `config` commands, there are related get on page 901 and show on page 907 commands which display that part of the configuration, either in the form of a list of settings and values, or commands that are required to achieve that configuration from the firmware's default state, respectively. `get` and `show` commands use the same syntax as their related `config` command, unless otherwise mentioned.

log alertMail

Use this command to enable or disable alert emails, and to choose which email policy to use with them. Alert emails notify administrators or other personnel when an alert condition occurs, such as a system failure or network attack.

The email address information and the alert message intervals are configured separately for each email policy. For details about the severity levels of log messages associated with an email policy, see log email-policy on page 68.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `loggrp` area. For details, see Permissions on page 46.

Syntax

```
config log alertMail
   set status {enable | disable}
   set email-policy "<policy_name>"
end
```

Variable	Description	Default
status {enable | disable}	Enable to generate an alert email when the FortiWeb appliance records a log message, if that log message meets or exceeds the severity level configured in log email-policy on page 68.	`disable`
email-policy "<policy_name>"	Enter the name of a previously configured email policy. The maximum length is 63 characters. To display a list of the existing email policies, type: `set email-policy ?`	No default.

Example

This example enables alert email when either a system event or attack log message is logged. The alert email is sent using the recipients configured in `emailpolicy1`.

```
config log alertMail
   set status enable
   set email-policy "emailpolicy1"
end
```

Related topics

- log email-policy on page 68

log attack-log

Use this command to configure recording of attack log messages on the local FortiWeb disk.

You must enable disk log storage and select log severity levels using log disk on page 66 before any attack logs can be stored on disk.

Also use this command to define specific packet payloads to retain when storing attack logs.

Packet payloads can be retained for specific attack types or validation failures detected by the FortiWeb appliance. Packet payloads supplement the log message by providing the actual data that triggered the attack log, which may help you to fine-tune your regular expressions to prevent false positives. You can also examine changes to attack behavior for subsequent forensic analysis. Alternatively, for more extensive packet logging, you can run a packet trace. For details, see network sniffer on page 821.

If the offending HTTP request exceeds 4 kilobytes (KB), the FortiWeb appliance retains only 4 KB' of the part of the payload that triggered the log message.

You can view attack log packet payloads from the **Packet Log** column using the web UI. For details, see the *FortiWeb Administration Guide*:

http://docs.fortinet.com/fortiweb/admin-guides

Packet payloads can contain sensitive information. You can prevent sensitive data from display in the packet payload by applying sensitivity rules that detect and obscure sensitive information. For details, see log sensitive on page 86.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `loggrp` area. For details, see Permissions on page 46.

Syntax

```
config log attack-log
```

```
    set status {enable | disable}
    set HTTP-parse-error-output {enable | disable}
    set packet-log {account-lockout-detection | anti-virus-detection | cookie-security | credential-
        db-detection | csrf-detection | custom-access | custom-protection-rule | fsa-detection |
        hidden-fields-failed | HTTP-protocol-constraints | illegal-file-type | illegal-filesize |
        cors-protection | json-protection | ip-intelligence | padding-oracle | parameter-rule-failed
        | signature-detection | trojan-detection | user-tracking-detection | xml-protection |
        machine-learning | openapi-validation | websocket-security | mobile-api-protection |
        malicious-bots | known-good-bots | syntax-based-detection}
    set no-ssl-error {enable | disable}
    set HTTP2-parse-error-output {enable | disable} on page 63
    set adjust-packet {enable | disable}
end
```

Variable	Description	Default
status {enable | disable}	Enable to record attack log messages on the disk. To record attack logs, disk log storage must be enabled, and the severity levels selected using the log disk on page 66 command.	`enable`
HTTP-parse-error-output {enable | disable}	Enable while debugging only, to log errors of the HTTP protocol parser.	`disable`
packet-log {account-lockout-detection | anti-virus-detection | cookie-security | credential-db-detection | csrf-detection | custom-access | custom-protection-rule | fsa-detection | hidden-fields-failed | HTTP-protocol-constraints | illegal-file-type | illegal-filesize | cors-protection | json-protection | ip-intelligence | padding-oracle | parameter-rule-failed | signature-detection | trojan-detection | user-tracking-detection | xml-protection | machine-learning | openapi-validation | websocket-security | mobile-api-protection | malicious-bots | known-good-bots | syntax-based-detection}	Select one or more detected attack types or validation failures. FortiWeb keeps packet payloads from its HTTP parser buffer with their associated attack log message. Separate each attack type with a space. To add or remove a packet payload type, re-type the entire space-delimited list with the new option included or omitted. Some options have historical names. Correlations with current feature names are: • `custom-protection-rule`—Custom signature detection (not predefined) To empty this list and keep no packet payloads, effectively disabling the feature, enter `unset packet-log`.	`No default`
no-ssl-error {enable | disable}	Enable to stop FortiWeb from logging SSL errors.	`disable`

Variable	Description	Default
	This setting is useful when you use high-level security settings, which generate a high volume of these types of errors. This option is also available in `config server-policy policy` which applies only to the specific server policy. Please note that if there is a discrepancy between the values set individually for server policies and the global value in `config log attack-log`, the global value takes precedence.	
HTTP2-parse-error-output {enable | disable}	Enable while debugging only, to log errors of the HTTP/2 protocol parser.	`enable`
adjust-packet {enable | disable}	When the attack packet log exceeds 4 KB, it will be truncated, removing the excess portion. To ensure that the matched attack pattern is consistently preserved, enable this option so that the truncation retains the relevant portion.	`disable`

Example

This example enables log storage on the hard disk and sets `information` as the minimum severity level that a log message must meet in order for the log to be stored. It also enables retention of packet payloads that triggered custom protection rules along with their correlating attack logs. Conversely, it disables any other packet payload retention that may have been enabled before, because it completely replaces the list each time it is configured.

```
config log disk
   set status enable
   set severity information
end
config log attack-log
   set status enable
   set packet-log custom-protection-rule
end
```

Related topics

- log sensitive on page 86
- log custom-sensitive-rule on page 64
- log event-log on page 71
- log traffic-log on page 95
- log on page 815

log custom-sensitive-rule

Use this command to configure custom rules to obscure sensitive information that is not obscured in log message packet payloads by the predefined sensitivity rules.

Use this command in conjunction with log sensitive on page 86.

If enabled to do so, a FortiWeb appliance will obscure predefined data types, including user names and passwords in log message packet payloads. If other sensitive data in the packet payload is not obscured by the predefined data types, you can create your own data type sensitivity rules, such as ages or other identifying numbers.

Sensitive data definitions are **not** retroactive. They will hide strings in subsequent log messages, but will not affect existing log messages.

This command is relevant only if you have enabled the FortiWeb appliance to keep packet payloads along with their associated log messages, and have selected to obscure logs according to custom data types. For details, see log attack-log on page 61 and log sensitive on page 86.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `loggrp` area. For details, see Permissions on page 46.

Syntax

```
config log custom-sensitive-rule
   edit "<custom-sensitive-rule_name>"
      set expression "<sensitive-type_pattern>"
      set field-name "<parameter-name_pattern>"
      set field-value "<parameter-value_pattern>"
      set type {field-mas-rule | general-mask-rule}
   next
end
```

Variable	Description	Default
"<custom-sensitive-rule_name>"	Enter the name of a new or existing rule. The maximum length is 63 characters. To display the list of existing rules, enter: `edit ?`	No default.
expression "<sensitive-type_pattern>"	Enter a regular expression that matches all and only the strings or numbers that you want to obscure in the packet payloads. For example, to hide a parameter that contains the age of users under 13, you could enter: `age\=[1-13]`	No default.

Variable	Description	Default
	Expressions must not start with an asterisk (*). The maximum length is 255 characters.	
type {field-mas-rule | general-mask-rule}	Select either `general-mask-rule` (a regular expression that will match any substring in the packet payload) or `field-mask-rule` (a regular expression that will match only the value of a specific form input). If you select `general-mask-rule`, configure expression "<sensitive-type_pattern>" on page 64. If you select `field-mask-rule`, configure field-name "<parameter-name_pattern>" on page 65 and field-value "<parameter-value_pattern>" on page 65.	`general-mask-rule`
field-name "<parameter-name_pattern>"	Enter a regular expression that matches all and only the input names whose values you want to obscure. The input name itself will **not** be obscured. If you wish to do this, use `general-mask-rule` instead. The maximum length is 255 characters.	No default.

field-value "<parameter-value_pattern>"	Enter a regular expression that matches all and only the input values that you want to obscure. The maximum length is 255 characters.
	For example, to hide a parameter that contains the age of users under 13, for field-name "<parameter-name_pattern>" on page 65, enter age, and for field-value "<parameter-value_pattern>" on page 65, enter `[1-13]`.
	Valid expressions must not start with an asterisk (*).
	Caution: Field masks using asterisks are greedy: a match for the parameter's value will obscure it, but will **also** obscure the rest of the parameters in the line. To avoid this, enter an expression whose match terminates with, but does not consume, the parameter separator.
	For example, if parameters are separated with an ampersand (&), and you want to obscure the value of the field name `username` but **not** any of the parameters that follow it, you could enter the field value:
	`.*?(?=\&)`
	This would result in:
	`username****&age=13&origurl=%2Flogin`
		No default.

Example

This example enables the FortiWeb appliance to keep all types of packet payloads with their associated log messages. It also enables and defines a custom sensitive data type (applies to age 13 or less) that will be obscured in logs.

```
config log attack-log
   set status enable
```

```
   set packet-log anti-virus-detection cookie-poison custom-access custom-protection-rule hidden-
        fields-failed HTTP-protocol-constraints illegal-file-type illegal-xml-format ip-intelligence
        padding-oracle parameter-rule-failed signature-detection
end
config log sensitive
   set type custom-rule
end
config log custom-sensitive-rule
   edit rule1
      set type general-mask-rule
      set expression "age\\=[1-13]*$"
   next
end
```

Related topics

- log sensitive on page 86
- log attack-log on page 61
- log traffic-log on page 95

log disk

Use this command to enable and configure recording of log messages to the local hard disk.

Logging must be enabled for each individual log type before log messages are recorded to disk. For details, see log attack-log on page 61, log event-log on page 71, and log traffic-log on page 95 for details.

Each log file can have at most 51,200 logs, and each log size is limited to 4k; thus, each log file size is limited to 200M.

You can use SNMP traps to notify you when disk space usage exceeds 80%. For details, see system snmp community on page 383.

You can generate reports based on log messages that you save to the local hard disk. For details, see log reports on page 77.

Syntax

```
config log disk
   set diskfull overwrite
   set severity {alert | critical | debug | emergency | error | information | notification |
        warning}
   set status {enable | disable}
   set log-used-disk <log-used-disk_int>
   set logtype {elog | tlog | alog}
end
```

Variable	Description	Default
status {enable | disable}	Enable to store log messages on the local hard disk. Log messages are stored only if logging is enabled for the individual log types using log attack-log on page 61, log event-log on page 71, and log traffic-log on page 95. Also configure diskfull overwrite on page 67 and severity {alert | critical | debug | emergency | error | information | notification | warning} on page 67.	`enable`
diskfull overwrite	Select `overwrite` to delete the oldest log file in order to free disk space, and then store the new log message. This field is available only if status {enable | disable} on page 67 is `enable`.	`overwrite`
severity {alert | critical | debug | emergency | error | information | notification | warning}	Select the severity level that a log message must meet or exceed in order to cause the FortiWeb appliance to record it.	`information`
log-used-disk <log-used-disk_int>	This field is unique for Docker platform. Enter the log disk size. The valid range is 10-500 G.	`10 G`
logtype {elog | tlog | alog}	Select the log types to be saved on local hard disk.	elog tlog alog

Example

This example enables logging of event and attack logs and recording of the log messages to the local hard disk. Only the log messages with a severity of `notification` or higher are recorded. If all free space on the hard disk is consumed and a new log message is generated, the `diskfull` option determines that the FortiWeb will overwrite the oldest log message. The log messages are saved to a separated log file for each message type.

```
config log disk
   set status enable
   set severity notification
   set diskfull overwrite
end
```

Related topics

- log attack-log on page 61
- log event-log on page 71
- log traffic-log on page 95
- system snmp community on page 383
- log reports on page 77
- formatlogdisk on page 869

log email-policy

Use this command to create an email policy. An email policy identifies email recipients, email address, email connection requirements and authentication information, if required.

You can configure multiple email policies and apply those policies as required in different situations. The FortiWeb appliance can be configured to send email for different situations, such as to alert administrators when certain system events or rule violations occur, or when log reports are available for distribution.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `loggrp` area. For details, see Permissions on page 46.

Syntax

```
config log email-policy
   edit "<email-policy_name>"
      set mailfrom "<address_str>"
      set mailto1 "<recipient_email>"
      set mailto2 "<recipient_email>"
      set mailto3 "<recipient_email>"
      set smtp-server {"<smtp_ipv4>" | "<smtpfqdn>"}
      set smtp-port <smtp-port_int>
      set smtp-auth {enable | disable}
      set smtp-username "<auth_str>"
      set smtp-password "<password_str>"
      set severity {alert | critical | debug | emergency | error | information | notification |
        warning}
      set interval <interval_int>
      set connection-security {NONE | STARTTLS | SSL/TLS}
      set attach-compression {enable | disable}
      set send-email-based-on-interval-time {enable | disable} on page 70
      set company-logo "<company-logo_str>"
      set company-name "<company-name_str>"
      set
   next
end
```

Variable	Description	Default
"<email-policy_name>"	Enter the name of an email policy. The maximum length is 63 characters.	No default.
mailfrom "<address_str>"	Enter the sender email address, such as `FortiWeb@example.com`, that the FortiWeb appliance will use when sending email. The maximum length is 63 characters.	No default.
mailto1 "<recipient_email>"	Enter the email address of the first recipient, such as `admin@example.com`, to which the FortiWeb appliance will send email. You must enter one email address for alert	No default.

Variable	Description	Default
	email to function. The maximum length is 63 characters.	
mailto2 "<recipient_email>"	Enter the email address of the second recipient, if any, to which the FortiWeb appliance will send alert email. The maximum length is 63 characters.	No default.
mailto3 "<recipient_email>"	Enter the email address of the third recipient, if any, to which the FortiWeb appliance will send alert email. The maximum length is 63 characters.	No default.
smtp-server {"<smtp_ipv4>" | "<smtpfqdn>"}	Enter the IP address or fully qualified domain name (FQDN) of the SMTP server, such as `mail.example.com`, that the FortiWeb appliance can use to send email. The maximum length is 63 characters.	No default.
smtp-port <smtp-port_int>	Enter the port on the SMTP server that listens for alerts and generated reports from FortiWeb. The valid range is 1-65,535.	25
smtp-auth {enable | disable}	Enable if the SMTP server requires authentication. Also enable if authentication is not required but is available and you want the FortiWeb appliance to authenticate.	`disable`
smtp-username "<auth_str>"	If you enable smtp-auth {enable | disable} on page 69, enter the user name that the FortiWeb appliance will use to authenticate itself with the SMTP relay. The maximum length is 63 characters. This field is available only if you enable smtp-auth {enable | disable} on page 69.	No default.
smtp-password "<password_str>"	If you enable smtp-auth {enable | disable} on page 69, enter the password that corresponds with the user name. This field is available only if you enable smtp-auth {enable | disable} on page 69.	No default.
severity {alert | critical | debug | emergency | error | information | notification | warning}	Select the severity threshold that log messages must meet or exceed in order to cause an email alert.	`emergency`
interval <interval_int>	Enter the number of minutes FortiWeb waits to send an additional alert if an alert condition of the specified severity level continues to occur after the initial alert. The valid range is 1-2,147,483,647.	1
connection-security {NONE | STARTTLS | SSL/TLS}	Select one of the following options: • `NONE`–FortiWeb applies no security protocol to email. • `STARTTLS`–Encrypts the connection to the SMTP server using STARTTLS. • `SSL/TLS`–Encrypts the connection to the SMTP server using SSL/TLS.	NONE

Variable	Description	Default
attach-compression {enable | disable}	Enable or disable the compression for an alert email policy. With the compression function being enabled, event logs and alerts will be attached to the emails in ZIP format, otherwise they will be attached in TXT format.	`disable`
send-email-based-on-interval-time {enable | disable}	Enable/disable sending emails by interval time.	No default.
company-logo "<company-logo_str>"	Set the company logo in the email policy by entering a Base64 string (base64 encoding) of the image. Only JPG format is supported. Size limit is 36 KB. You are strongly recommended to upload a company logo through the FortiWeb GUI.	No default.
company-name "<company-name_str>"	Set the company name in the email policy. The maximum length is 63 characters.	No default.
logtype {elog | tlog | alog}	Select the log types to be transferred to the SMTP Server. Please note if a particular log type is not saved on local hard disk, it cannot be transferred to the SMTP server, as the logs must be transferred from local storage to remote servers.	elog tlog alog

Example

This example creates email policy for use in multiple situations. When the email policy is attached to rule violations or log reports, FortiWeb sends an email from `fortiweb@example.com`, to `admin@example.com` and `analysis@example.com`, using an SMTP server `mail.example.com`. The SMTP server requires authentication. The FortiWeb appliance authenticates as `fortiweb` when connecting to the SMTP server.

FortiWeb logs messages more severe than a notification. As long as events continue to trigger notification-level log messages, FortiWeb sends an alert email every 10 minutes. (Log messages of other severity levels trigger alert email at their default intervals.) All the related log messages will be attached to the emails in ZIP format.

When the configuration is complete, log in to the web UI to send a sample alert email to test the configuration and the email system.

```
config log email-policy
   edit "Email_Policy1"
      set mailfrom "fortiweb@example.com"
      set mailto1 "admin@example.com"
      set mailto2 "analysis@example.com"
      set smtp-server "mail.example.com"
      set smtp-auth enable
      set smtp-username "fortiweb"
      set smtp-password "fortiWebPassworD2"
      set severity notification
      set interval 10
   next
end
```

Related topics

- log alertMail on page 60
- log trigger-policy on page 97
- system dns on page 286
- router static on page 102

log event-log

Use this command to configure recording of event log messages, and then use other commands to store those messages on the local FortiWeb disk, in local FortiWeb memory, or both. Use other commands to configure a traffic log and attack log.

You must enable disk and/or memory log storage and select log severity levels before FortiWeb will store any event logs.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `loggrp` area. For details, see Permissions on page 46.

Syntax

```
config log event-log
   set status {enable | disable}
   set cpu-high <percentage_int>
   set mem-high <percentage_int>
   set logdisk-high <percentage_int>
   set trigger-policy "<trigger-policy_name>"
end
```

Variable	Description	Default
status {enable | disable}	Enable to record event log messages. To select the destination and the severity threshold of the stored log messages, see log disk on page 66.	`enable`
cpu-high <percentage_int>	Enter a threshold level as a percentage beyond which CPU usage triggers an event log entry. The valid range is 60-99.	`60`
mem-high <percentage_int>	Enter a threshold level as a percentage beyond which memory usage triggers an event log entry. The valid range is 60-99.	`60`

Variable	Description	Default
logdisk-high <percentage_int>	Enter a threshold level as a percentage beyond which log disk usage triggers an event log entry. The valid range is 60-99.	`60`
trigger-policy "<trigger-policy_name>"	Enter the name of the trigger to apply when the CPU, memory, log disk usage, or number of sessions meets or exceeds the threshold (see log trigger-policy on page 97). The maximum length is 63 characters. To display the list of existing trigger policies, enter: `set trigger ?`	No default.

Example

This example enables recording of event logs, enables disk log storage and memory log storage, and sets `alert` as the minimum severity level that a log message must achieve for storage.

```
config log disk
   set status enable
   set severity alert
end
config log event-log
   set status enable
end
```

Related topics

- log disk on page 66
- log attack-log on page 61
- log traffic-log on page 95
- log on page 815

log forti-analyzer

Use this command to configure the FortiWeb appliance to send its log messages to a remote FortiAnalyzer appliance.

You must first define one or more FortiAnalyzer policies using log fortianalyzer-policy on page 74.

Logs sent to FortiAnalyzer are controlled by FortiAnalyzer policies and trigger actions that you configure on the FortiWeb appliance, and are associated with various types of violations.

Logs stored remotely cannot be viewed from the web UI, and cannot be used by FortiWeb to build reports. If you require these features, record logs locally as well as remotely.

Usually, you should set trigger actions for specific types of violations. Failure to do so will result in the FortiWeb appliance logging every occurrence, which could result in high log volume and reduced system performance. Excessive logging for an extended period of time may cause premature hard disk failure.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `loggrp` area. For details, see Permissions on page 46.

Syntax

```
config log forti-analyzer
   set fortianalyzer-policy "<policy_name>"
   set status {enable | disable}
   set severity {alert | critical | debug | emergency | error | information | notification |
      warning}
   set traffic_packet {enable | disable}
   set logtype {elog | tlog | alog}
   set traffic_packet_size <integer> on page 74
end
```

Variable	Description	Default
fortianalyzer-policy "<policy_name>"	Enter the name of an existing FortiAnalyzer policy to use when storing log information remotely. The maximum length is 63 characters. To view a list of the existing FortiAnalyzer policies, enter : `set fortianalyzer-policy ?`	No default.
status {enable | disable}	Enable to record event log messages to FortiAnalyzer if it meets or exceeds the severity level configured in `severity`.	`disable`
severity {alert | critical | debug | emergency | error | information | notification | warning}	Select the severity level that a log message must meet or exceed in order to cause the FortiWeb appliance to save it to FortiAnalyzer.	`information`
traffic_packet {enable | disable}	Enable to append traffic packet log to the traffic logs sent to FortiAnalyzer. The packet information may be helpful for troubleshooting. To use this feature, you must already have enabled `packet-log` in `config log traffic-log`. Please note that enabling this might consume system resources, thus decreasing the performance of sending logs to FortiAnalyzer.	disable
logtype {elog | tlog | alog}	Select the log types to be stored on FortiAnalyzer.	elog tlog alog

Variable	Description	Default
	Please note if a particular log type is not saved on local hard disk, it cannot be saved on an external log server, as the logs must be transferred from local storage to remote servers.	
traffic_packet_size <integer>	The maximum size of the traffic packet payload sent to log servers was 1024 bytes before version 7.4.3. This was extended to 4096 bytes in version 7.4.3. Starting from version 7.6.0, you can set this maximum size yourself with this command. The default value is 1024, and the valid range is 1-4096. Please note that larger packet logs cost more time for FortiWeb to encrypt and compress if the log server requires, increasing the likelihood of the logd queue reaching 80% capacity, which may result in some traffic logs being dropped.	1024,

Example

This example enables FortiAnalyzer logging and recording of the log messages. Only the log messages with a severity of `error` or higher are recorded.

```
config log forti-analyzer
   set status enable
   set severity error
end
```

Related topics

- log fortianalyzer-policy on page 74

log fortianalyzer-policy

Use this command to create policies for use by protection rules to store log messages remotely on a FortiAnalyzer appliance. For example, once you create a FortiAnalyzer policy, you can include it in a trigger policy, which in turn can be applied to a trigger action in a protection rule.

You need to create a FortiAnalyzer policy if you also plan to send log messages to a FortiAnalyzer appliance.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `loggrp` area. For details, see Permissions on page 46.

Syntax

```
   config log fortianalyzer-policy
   edit "<policy_name>"
      config fortianalyzer-server-list
         edit <entry_index>
            set ip-address "<forti-analyzer_ipv4>"
            set is-fazclound {enable|disable}
         end
      next
end
```

Variable	Description	Default
"<policy_name>"	Enter the name of the new or existing FortiAnalyzer policy. The maximum length is 63 characters. To display a list of the existing policies, enter: `edit ?`	No default.
<entry_index>	Enter the index number of the individual entry in the table.	No default.
ip-address "<forti-analyzer_ipv4>"	Enter the IP address of the remote FortiAnalyzer appliance.	No default.
is-fazclound {enable|disable}	Enable or disable using FortiAnalyzer Cloud. When FAZ Cloud is enabled in the FortiAnalyzer Policy, FortiWeb resolves the default FortiAnalyzer Cloud domain (fortianalyzer.forticloud.com) and initiates an OFTP connection for secure log transmission. Upon a successful connection, FortiWeb dynamically updates FortiAnalyzer Cloud domain name resolution by performing periodic DNS checks, ensuring consistent connectivity and reliability. **Note**: Each FortiAnalyzer Policy can have only one FortiAnalyzer server with FAZ Cloud enabled. Additional FortiAnalyzer servers can be included in the policy, but they must have FAZ Cloud disabled.	disable

Example

This example creates a policy entry and assigns an IP address, then enables FortiAnalyzer logging for log messages with a severity of `error` or higher.

```
config log fortianalyzer-policy
   edit "fa-policy1"
      config fortianalyzer-policy
         edit 1
            set ip-address "192.0.2.133"
         end
```

```
      next
end
config log forti-analyzer
   set fortianalyzer-policy "fa-policy1"
   set status enable
   set severity error
end
```

Related topics

- log forti-analyzer on page 72

log ftp-policy

Use this command to configure a connection to an FTP or TFTP server. The `config log reports` configuration uses this policy to specify a server that FortiWeb sends reports to.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `loggrp` area. For details, see Permissions on page 46.

Syntax

```
config log ftp-policy
   edit "<policy_name>"
      set type {ftp | tftp}
      set server "<ftp-server_ipv4>"
      set ftp_auth {enable | disable}
      set ftp_user "<ftp-user_str>"
      set ftp_passwd "<ftp_pswd>"
      set ftp-dir "<ftp-dir_str>"
end
```

Variable	Description	Default
"<policy_name>"	Enter the name of a new or existing FTP/TFTP policy. The maximum length is 63 characters. To display the list of existing policies, enter: `edit ?`	No default.
type {ftp | tftp}	Specify whether the server is FTP or TFTP.	`ftp`
server "<ftp-server_ipv4>"	Enter the IP address of the FTP or TFTP server.	No default.
ftp_auth {enable | disable}	Specify whether the server requires a user name and password for authentication, rather than allowing anonymous connections.	`disable`

Variable	Description	Default
	Available only if type {ftp | tftp} on page 76 is `ftp`.	
ftp_user "<ftp-user_str>"	Enter the user name that FortiWeb uses to authenticate with the server. Available only if ftp_auth {enable | disable} on page 76 is `enable`.	No default.
ftp_passwd "<ftp_pswd>"	Enter the password for the specified username. Available only if ftp_auth {enable | disable} on page 76 is `enable`.	No default.
ftp-dir "<ftp-dir_str>"	Enter the location on the server where FortiWeb stores reports.	No default.

Related topics

- log reports on page 77

log reports

Use this command to configure report profiles.

When generating a report, FortiWeb appliances collate information collected from their log files and present the information in tabular and graphical format.

In addition to log files, your FortiWeb appliance requires a report profile to generate a report. A report profile is a group of settings that contains the report name, file format, subject matter, and other aspects that the FortiWeb appliance considers when generating the report.

FortiWeb appliances can generate reports automatically, according to the schedule that you configure in the report profile, or manually in the web UI when you click the **Run now** icon in the report profile list. You may want to create one report profile for each type of report that you will generate on demand or periodically, by schedule.

Generating reports can be resource intensive. To avoid email processing performance impacts, you may want to generate reports during times with low traffic volume, such as at night.

The number of results in a section's table or graph varies by the report type.

Ranked reports (top **x**, or top **y** of top **x**) can include a different number of results per cross-section, then combine remaining results under "Others." For example, in "Top Attack Severity by Hour of Day," the report includes the top **x** hours, and their top **y** attacks, then groups the remaining results.

- scope_top1 <topX_int> on page 85 is **x**.
- scope_top2 <topY_int> on page 85 is **y**.

Before you generate a report, collect log data that will be the basis of the report. For information on enabling logging to the local hard disk, see log attack-log on page 61 and log disk on page 66.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `loggrp` area. For details, see Permissions on page 46.

Creating a report profile is considerably easier in the web UI. Go to **Log&Report > Report Config**.

Syntax

```
config log reports
   edit "<report_name>"
      set custom_company "<org_str>"
      set custom_footer_options {custom | report-title}
      set custom_header "<header_str>"
      set custom_header_logo "<filename_hex_str>"
      set custom_title_logo "<filename_hex_str>"
      set email_attachment_compress {enable | disable}
      set email_attachment_name "<filename_str>"
      set email_body "<message_str>"
      set email_subject "<subject_str>"
      set filter_string "<log-filter_str>"
      set include_nodata {yes | no}
      set on_demand {enable | disable}
      set output_email {html mht pdf rtf txt}
      set output_email_policy "<policy_name>"
      set output_file {html mht pdf rtf txt}
      set output_ftp {html pdf rtf txt mht}
      set output_ftp_policy "<ftp-policy_name>"
      set period_end "<time_str>" "<date_str>"
      set period_last_n <n_int>
      set period_start "<time_str>" "<date_str>"
      set period_type {last-14-days | last-2-weeks | last-30-days | last-7-days | lastmonth | last-
            n-days | last-n-hours | last-n-weeks | last-quarter | last-week | other | this-month |
            this-quarter | this-week | thiyear | today | yesterday}
      set report_desc "<comment_str>"
      set report_title "<title_str>"
      set report_attack_activity {attacks-type attacks-url attacks-date-type attacks-month-type
            attacks-day-type attacks-hour-type attacks-type-dev attacks-dst-type attacks-dst-ip
            attacks-type-ip attacks-method-type attacks-cat attacks-policy attacks-day attacks-ts
            attacks-td attacks-proto attacks-date-severity attacks-month-severity attacks-day-
            severity attacks-hour-severity attacks-sessionid attacks-srccountry attacks-signature-id
            attacks-type-signature-id attacks-fortisandbox attacks-HTTPhost attacks-username attacks-
            HTTPrefer attacks-HTTPversion attack-summary attack-details}
      set report_event_activity {ev-all ev-all-cat ev-all-type ev-crit-hour ev-crit-day ev-warn-hour
            ev-warn-day ev-info-hour ev-info-day ev-emer-hour ev-emer-day ev-aler-hour ev-aler-day
            ev-err-hour ev-err-day ev-noti-hour ev-noti-day ev-hour ev-hour-cat ev-day ev-day-cat ev-
            stat ev-day-login ev-week-login ev-user-logint}
```

```
      set report_traffic_activity {net-pol net-srv net-src net-dst net-src-dst net-dst-src net-date-
           dst net-hour-dst net-day-dst net-month-dst net-date-src net-hour-src net-day-src net-
           month-src net-srccountry net-HTTPhost net-username net-HTTPrefer net-HTTPversion}
      set report_pci_activity {pci-attacks-date-type pci-attacks-month-type pci-attacks-day-type
           pci-attacks-hour-type}
      set schedule_type {daily | dates | days | none}
      set schedule_days {sun | mon | tue | wed | thu | fri | sat}
      set schedule_dates "<dates_str>"
      set schedule_time "<time_str>"
      set scope_include_summary {yes | no}
      set scope_include_table_of_content {yes | no}
      set scope_top1 <topX_int>
      set scope_top2 <topY_int>
   next
end
```

Variable	Description	Default
"<report_name>"	Enter the name of a new or existing report profile. The maximum length is 63 characters. The profile name will be included in the report header. To display the list of existing report names, enter: `edit ?`	No default.
custom_company "<org_str>"	Enter the name of your department, company, or other organization, if any, that you want to include in the report summary. If the text is more than one word or contains special characters, enclose it in double quotes ("). The maximum length is 191 characters. For details about enabling the summary, see scope_include_summary {yes | no} on page 84.	No default.
custom_footer_options {custom | report-title}	Select either: • `report-title`–Use "<report_name>" on page 79 as the footer text. • `custom`–Provide different footer text.	`report-title`
custom_footer "<footer_str>"	Enter the text, if any, that you want to include at the bottom of each report page. If the text is more than one word or contains special characters, enclose it in double quotes ("). The maximum length is 127 characters. This setting is available only if custom_footer_options {custom | report-title} on page 79 is `custom`.	No default.
custom_header "<header_str>"	Enter the text, if any, that you want to include at the top of each report page. If the text is more than one word or contains special characters, enclose it in double quotes ("). The maximum length is 127 characters.	No default.
custom_header_logo "<filename_hex_str>"	Enter the file name of a custom logo that you have previously uploaded to the FortiWeb appliance. The logo image will be	No default.

Variable	Description	Default
	included in the report header. The maximum length is 255 characters.	
custom_title_logo "<filename_hex_str>"	Enter the file name of a custom logo that you have previously uploaded to the FortiWeb appliance. The logo image will be included in the report title. The maximum length is 255 characters.	No default.
email_attachment_ compress {enable | disable}	Enable to enclose the generated report formats in a compressed archive attached to the email. This field is required if you have enabled email output by enabling one or more of the file formats for email output in output_email {html mht pdf rtf txt} on page 80.	`disable`
email_attachment_name "<filename_str>"	Enter the file name that will be used for the reports attached to the email. The maximum length is 63 characters. This field is required if you have enabled email output by enabling one or more of the file formats for email output in output_email {html mht pdf rtf txt} on page 80.	No default.
email_body "<message_ str>"	Enter the message body of the email. The maximum length is 383 characters. This field is required if you have enabled email output by enabling one or more of the file formats for email output in output_email {html mht pdf rtf txt} on page 80.	No default.
email_subject "<subject_ str>"	Enter the subject line of the email. The maximum length is 191 characters. This field is required if you have enabled email output by enabling one or more of the file formats for email output in output_email {html mht pdf rtf txt} on page 80.	No default.
filter_string "<log-filter_ str>"	Enter a log message filter string that includes or excludes log messages based upon matching log field values. The maximum length is 1,023 characters. For example syntax, see Example on page 85.	No default.
include_nodata {yes | no}	Select whether to include (`yes`) or hide (`no`) reports which are empty because there is no matching log data.	`no`
on_demand {enable | disable}	Enable to run the report one time only. After the FortiWeb appliance completes the report, it removes the report profile from its hard disk. Enter `disable` to schedule a time to run the report, and to keep the report profile for subsequent use.	`disable`
output_email {html mht pdf rtf txt}	Select one or more file types for the report when mailing generated reports.	No default.

Variable	Description	Default
output_email_policy "<policy_name>"	If you set a value for `output_email`, enter the name of the email policy that contains settings for sending the report by email. The maximum length is 63 characters. For details about email policies, see log email-policy on page 68.	No default.
output_file {html mht pdf rtf txt}	Select one or more file types for the report when saving to the FortiWeb hard disk.	`html`
output_ftp {html pdf rtf txt mht}	Select one or more file types for the report when FortiWeb sends reports to an FTP or TFTP server.	No default.
output_ftp_policy "<ftp-policy_name>"	Enter the policy that defines a connection to the appropriate server. For details, see log ftp-policy on page 76.	No default.
period_end "<time_str>" "<date_str>"	Enter the time and date that define the **end** of the span of time whose log messages you want to use when generating the report. The time format is `hh:mm` and the date format is `yyyy/mm/dd`, where: • `hh` is the hour according to a 24-hour clock • `mm` is the minute • `yyyy` is the year • `mm` is the month • `dd` is the day This setting appears only when you select a period_type {last-14-days | last-2-weeks | last-30-days | last-7-days | lastmonth | last-n-days | last-n-hours | last-n-weeks | last-quarter | last-week | other | this-month | this-quarter | this-week | thiyear | today | yesterday} on page 82 of `other`.	No default.
period_last_n <n_int>	Enter the number that defines **n** if the period_type {last-14-days | last-2-weeks | last-30-days | last-7-days | lastmonth | last-n-days | last-n-hours | last-n-weeks | last-quarter | last-week | other | this-month | this-quarter | this-week | thiyear | today | yesterday} on page 82 contains that variable. The valid range is from 1 to 2,147,483,647. This setting appears only when you select a `period_type` of `last-n-days`, `last-n-hours`, or `last-n-weeks`.	No default.
period_start "<time_str>" "<date_str>"	Enter the time and date that defines the **beginning** of the span of time whose log messages you want to use when generating the report. The time format is `hh:mm` and the date format is `yyyy/mm/dd`, where: • `hh` is the hour according to a 24-hour clock • `mm` is the minute • `yyyy` is the year	No default.

Variable	Description	Default
	• `mm` is the month • `dd` is the day This setting appears only when you select a period_type {last-14-days | last-2-weeks | last-30-days | last-7-days | lastmonth | last-n-days | last-n-hours | last-n-weeks | last-quarter | last-week | other | this-month | this-quarter | this-week | thiyear | today | yesterday} on page 82 of `other`.	
period_type {last-14-days | last-2-weeks | last-30-days | last-7-days | lastmonth | last-n-days | last-n-hours | last-n-weeks | last-quarter | last-week | other | this-month | this-quarter | this-week | thiyear | today | yesterday}	Select the span of time whose log messages you want to use when generating the report. If you select `last-n-days`, `last-n-hours`, or `last-nweeks`, you must also define **n** by entering period_last_n <n_int> on page 81. If you select other, you must also define the start and end of the report's time range by entering period_start "<time_str>" "<date_str>" on page 81 and period_end "<time_str>" "<date_str>" on page 81. The span of time will be included in the summary, if enabled. For information on enabling the summary, see scope_include_summary {yes | no} on page 84.	`last-7-days`
report_desc "<comment_str>"	Enter a description of the report, if any, that you want to include in the report summary. If the text is more than one word or contains special characters, surround it with double quotes ("). The maximum length is 63 characters. For information on enabling the summary, see scope_include_summary {yes | no} on page 84.	No default.
report_title "<title_str>"	Enter a title, if any, that you want to include in the report summary. If the text is more than one word or contains special characters, enclose it in double quotes ("). The maximum length is 127 characters. For information on enabling the summary, see scope_include_summary {yes | no} on page 84.	No default.

Variable	Description	Default
report_attack_activity {attacks-type attacks-url attacks-date-type attacks-month-type attacks-day-type attacks-hour-type attacks-type-dev attacks-dst-type attacks-dst-ip attacks-type-ip attacks-method-type attacks-cat attacks-policy attacks-day attacks-ts attacks-td attacks-proto attacks-date-severity attacks-month-severity attacks-day-severity attacks-hour-severity attacks-sessionid attacks-srccountry attacks-signature-id attacks-type-signature-id attacks-fortisandbox attacks-HTTPhost attacks-username attacks-HTTPrefer attacks-HTTPversion attack-summary attack-details}	Enter zero or more options to indicate which charts based upon attack logs to include in the report. For example, to include “Attacks By Policy,” enter a list of charts that includes `attacks-policy`. To include “Top Attacked HTTP Methods by Type,” enter a list of charts that includes `attacks-method-type`.	No default.
report_event_activity {ev-all ev-all-cat ev-all-type ev-crit-hour ev-crit-day ev-warn-hour ev-warn-day ev-info-hour ev-info-day ev-emer-hour ev-emer-day ev-aler-hour ev-aler-day ev-err-hour ev-err-day ev-noti-hour ev-noti-day ev-hour ev-hour-cat ev-day ev-day-cat ev-stat ev-day-login ev-week-login ev-user-logint}	Enter zero or more options to indicate which charts based upon event logs to include in the report. For example, to include “Top Event Categories by Status”, enter a list of charts that includes `ev-stat`.	No default.

Variable	Description	Default
report_traffic_activity {net-pol net-srv net-src net-dst net-src-dst net-dst-src net-date-dst net-hour-dst net-day-dst net-month-dst net-date-src net-hour-src net-day-src net-month-src net-srccountry net-HTTPhost net-username net-HTTPrefer net-HTTPversion}	Enter zero or more options to indicate which charts based upon traffic logs to include in the report. For example, to include “Top Sources By Day of Week”, enter a list of charts that includes `net-day-src`.	No default.
report_pci_activity {pci-attacks-date-type pci-attacks-month-type pci-attacks-day-type pci-attacks-hour-type}	Enter zero or more options to indicate which charts based upon PCI attack logs to include in the report.	No default.
schedule_type {daily | dates | days | none}	Select when the FortiWeb appliance will automatically run the report. If you reboot the FortiWeb appliance while the report is being generated, report generation resumes after the boot process is complete. If `schedule_type` is `daily`, `dates` or `days`, specify the `schedule_time`, `schedule_days`, or `schedule_dates` when the report will be generated. If `schedule_type` is none, the report will be generated only when you manually initiate it.	`none`
schedule_days {sun | mon | tue | wed | thu | fri | sat}	If schedule_type {daily | dates | days | none} on page 84 is `days`, select the day of the week when the report should be generated.	No default.
schedule_dates "<dates_str>"	If schedule_type {daily | dates | days | none} on page 84 is `dates`, select the specific date of the month, from 1 to 31, when the report should be generated. Separate multiple dates with spaces.	No default.
schedule_time "<time_str>"	If schedule_type {daily | dates | days | none} on page 84 is not `none`, select the time of day when the report should be run. The time format is `hh:mm`, where: • `hh` is the hour according to a 24-hour clock • `mm` is the minute	`00:00`
scope_include_summary {yes | no}	Enter `yes` to include a summary section at the beginning of the report. The summary includes: • "<report_name>" on page 79 • custom_company "<org_str>" on page 79 • report_desc "<comment_str>" on page 82	`yes`

Variable	Description	Default
	• the date and time when the report was generated using this profile • the span of time whose log messages were used to generate the report, according to period_type {last-14-days | last-2-weeks | last-30-days | last-7-days | lastmonth | last-n-days | last-n-hours | last-n-weeks | last-quarter | last-week | other | this-month | this-quarter | this-week | thiyear | today | yesterday} on page 82	
scope_include_table_of_content {yes | no}	Enter `yes` to include a table of contents at the beginning of the report. The table of contents includes links to each chart in the report.	`yes`
scope_top1 <topX_int>	Enter **x** number of items (up to 30) to include in the first cross-section of ranked reports. For some report types, you can set the top ranked items for the report. These reports have “Top” in their name, and will always show only the top **x** entries. Reports that do not include “Top” in their name show all information. Changing the values for top field will not affect these reports.	`6`
scope_top2 <topY_int>	Enter **y** number of items (up to 30) to include in the second cross-section of ranked reports. For some report types, you can set the number of ranked items to include in the report. These reports have “Top” in their name, and will always show only the top **x** entries. Some report types have two levels of ranking: the top **y** sub-entries for each top **x** entry. Reports that do not include “Top” in their name show all information. Changing the values for top field will not affect these reports.	`3`

Example

This example configures a report to be generated every Saturday at 1 PM. The report, whose title is `Report 1`, includes all available charts, and covers the last 14 days’ worth of event, traffic, and attack logs. However, it only uses logs where the source IP address was 192.0.2.20. Each time it is generated, it will be saved to the hard disk in both HTML and PDF file formats and will be sent by email in PDF format to recipients defined within the “Log report analysis” email policy.

```
config log reports
   edit "eport_1"
      set Report_attack_activity attacks-type attacks-url attacks-date-type attacks-month-type
            attacks-day-type attacks-hour-type attacks-type-dev attacks-dst-type attacks-dst-ip
            attacks-type-ip attacks-method-type attacks-cat attacks-policy attacks-day attacks-ts
            attacks-td attacks-proto attacks-date-severity attacks-month-severity attacks-day-
            severity attacks-hour-severity attacks-sessionid attacks-signature-id attacks-srccounty
            attacks-type-signature-id
```

```
        set Report_event_activity ev-all ev-all-cat ev-all-type ev-crit-hour ev-crit-day ev-warn-hour
            ev-warn-day ev-info-hour ev-info-day ev-emer-hour ev-emer-day ev-aler-hour ev-aler-day
            ev-err-hour ev-err-day ev-noti-hour ev-noti-day ev-hour ev-hour-cat ev-day ev-day-cat ev-
            stat
        set Report_traffic_activity net-pol net-srv net-src net-dst net-src-dst net-dst-src net-date-
            dst net-hour-dst net-day-dst net-month-dst net-date-src net-hour-src net-day-src net-
            month-src
        set custom_company "Example, Inc."
        set custom_footer_options custom
        set custom_header "A fictitious corporation."
        set custom_title_logo "titlelogo.jpg"
        set filter_string (and src==\'192.0.2.20\')
        set include_nodata yes
        set output_file html pdf
        set output_email html
        set output_email_policy log_report_analysis
        set period_type last-n-days
        set report_desc "A sample report."
        set report_title Report 1
        set schedule_type days
        set custom_footer "Weekly report for Example, Inc."
        set period_last_n 14
        set schedule_days sat
        set schedule_time 01:00
    next
end
```

Related topics

- log attack-log on page 61
- log disk on page 66
- log email-policy on page 68
- log ftp-policy on page 76

log sensitive

Use this command to configure whether the FortiWeb appliance will obscure sensitive information, such as user names and passwords, in log messages for which packet payloads are enabled. Each packet payload has predefined sensitivity rules based on the payload data type. If needed, you can also create custom sensitivity rules to obscure other payload data types using log custom-sensitive-rule on page 64.

This command is relevant only if you have enabled the FortiWeb appliance to keep packet payloads along with their associated log messages. For details, see log attack-log on page 61 and log traffic-log on page 95.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `loggrp` area. For details, see Permissions on page 46.

Syntax

```
config log sensitive
   set type {custom-rule | pre-defined-rule}
end
```

Variable	Description	Default
type {custom-rule | pre-defined-rule}	Select whether the FortiWeb appliance will obscure packet payloads according to predefined data types and/or custom data types. For details, see log custom-sensitive-rule on page 64.	No default.

Example

This example enables the FortiWeb appliance to use a custom sensitive rule to obscure packet payload information that displays information about users that are age 13 and under.

```
config log sensitive
   set type custom-rule
end
config log custom-sensitive-rule
   edit "custom-sensitive-rule1"
      set type general-mask-rule
      set expression "age\\=[1-13]*$"
   next
end
```

Related topics

- log custom-sensitive-rule on page 64
- log attack-log on page 61
- log traffic-log on page 95

log siem-message-policy

Use this command to configure the FortiWeb appliance to send its log messages to one or more a remote ArcSight SIEM (security information and event management) servers.

You must first define one or more SIEM policies using log siem-policy on page 89.

Logs sent to the ArcSight server are controlled by SIEM policies and trigger actions that you configure on the FortiWeb appliance, and are associated with various types of violations.

Logs stored remotely cannot be viewed from the web UI, and cannot be used by FortiWeb to build reports. If you require these features, record logs locally as well as remotely.

Usually, you should set trigger actions for specific types of violations. Failure to do so will result in the FortiWeb appliance logging every occurrence, which could result in high log volume and reduced system performance. Excessive logging for an extended period of time may cause premature hard disk failure.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `loggrp` area. For details, see Permissions on page 46.

Syntax

```
config log siem-message-policy
   set siem-policy "<policy_name>"
   set severity {alert | critical | debug | emergency | error | information | notification |
        warning}
   set status {enable | disable}
   set logtype {elog | tlog | alog}
end
```

Variable	Description	Default
siem-policy "<policy_name>"	Enter the name of an existing SIEM policy to use when storing log information remotely. The maximum length is 63 characters. To view a list of the existing SIEM policies, enter: `set siem-policy ?`	No default.
severity {alert | critical | debug | emergency | error | information | notification | warning}	Select the severity level that a log message must meet or exceed in order to cause the FortiWeb appliance to save it to the ArcSight server.	`information`
status {enable | disable}	Enable to record event log messages to the ArcSight server if it meets or exceeds the severity level specified by severity {alert | critical | debug | emergency | error | information | notification | warning} on page 88.	`disable`
logtype {elog | tlog | alog}	Select the log types to be stored on SIEM servers. Please note if a particular log type is not saved on local hard disk, it cannot be saved on an external log server, as the logs must be transferred from local storage to remote servers.	elog tlog alog

Example

This example enables ArcSight SIEM logging and recording of the log messages. Only the log messages with a severity of `error` or higher are recorded.

```
config log siem-message-policy
   set status enable
   set severity error
   set siem-policy SIEM_Policy1
end
```

Related topics

- log siem-policy on page 89

log siem-policy

Use this command to configure a connection to one or more ArcSight SIEM (security information and event management) servers, IBM QRadar servers or Azure Security Center (if your FortiWeb-VM is deployed on Microsoft Azure). The policy is used by the `log syslogd` configuration to define the specific ArcSight server, QRadar server or Azure Event Hub on which log messages are stored. For details, see log syslogd on page 91.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `loggrp` area. For details, see Permissions on page 46.

Syntax

```
config log siem-policy
   edit "<policy_name>"
      config siem-server-list
         edit <entry_index>
            set type <arcsight-cef | qradar-leef | azure-cef>
            set port <port_int>
            set server "<siem_ipv4>"
         end
      next
end
```

Variable	Description	Default
"<policy_name>"	Enter the name of a new or existing SIEM policy. The maximum length is 63 characters. To display the list of existing policies, enter: `edit ?`	No default.

Variable	Description	Default
<entry_index>	Enter the index number of the individual entry in the table.	No default.
type <arcsight-cef | qradar-leef | azure-cef>	Enter to store log messages to a SIEM (Security Information and Event Management) server. According to the specified SIEM policy, FortiWeb will carry out one of the following actions: • `arcsight-cef`–Store log messages remotely to an ArcSight server • `qradar-leef`–Store log messages remotely to a QRadar server • `azure-cef`–Send log messages to Azure Event Hub (only available for FortiWeb-VM installed on Azure) FortiWeb sends log entries in CEF (Common Event Format) format. There is a 256 byte limit for URLs. If this option is enabled, but no trigger action is selected for a specific type of violation, FortiWeb records every occurrence of that violation to the resource specified by **SIEM Policy**. The Azure CEF policy type requires you to complete Azure event hub settings using the system eventhub on page 289 CLI command. **Note:** Before you enable this option, verify that log frequency is not too great. If logs are very frequent, enabling this option can decrease performance and cause the FortiWeb appliance to send many log messages to the resource. **Note:** You cannot view logs stored remotely from the FortiWeb web UI.	`arcsight-cef`
port <port_int>	Enter the port where the ArcSight or QRadar server listens for log output.	`514`
server "<siem_ipv4>"	Enter the IP address of the ArcSight or QRadar server.	No default.

Example

This example creates `SIEM_Policy1`. FortiWeb contacts the ArcSight server using its IP address, `192.0.2.10`. Communications occur over the standard port number for ArcSight, UDP port `514`. The FortiWeb appliance sends log messages to the server in CEF format.

```
config log siem-policy
   edit "SIEM_Policy1"
      config siem-server-list
         edit 1
            set type arcsight-cef
            set port 514
            set server "192.0.2.10"
         end
      next
```

```
end
```

Related topics

- log siem-policy on page 89
- system dns on page 286
- router static on page 102

log syslogd

Use this command to configure the FortiWeb appliance to send log messages to a Syslog server defined by log syslog-policy on page 93 .

For improved performance, unless necessary, avoid logging highly frequent log types. While logs sent to your Syslog server do not persist in FortiWeb's local RAM, FortiWeb still must use bandwidth and processing resources while sending the log message.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `loggrp` area. For details, see Permissions on page 46.

Syntax

```
config log syslogd
   set status {enable | disable}
   set facility {alert | audit | auth | authpriv | clock | cron | daemon | ftp | kernel | local0 |
        local1 | local2 | local3 | local4 | local5 | local6 | local7 | mail | ntp | user}
   set severity {alert | critical | debug | emergency | error | information | notification |
        warning}
   set policy "<syslogd-policy_name>"
   set logtype {elog | tlog | alog}
   config custom-field
      edit 1
         set name <name1>
         set value <value1>
      next
      edit 2
         set name <name2>
         set value <value2>
      next
end
```

Variable	Description	Default
status {enable | disable}	Enable to send log messages to the Syslog server defined by log syslog-policy on page 93. Also configure: • facility {alert | audit | auth | authpriv | clock | cron | daemon | ftp | kernel | local0 | local1 | local2 | local3 | local4 | local5 | local6 | local7 | mail | ntp | user} on page 92 • policy "<syslogd-policy_name>" on page 92 • severity {alert | critical | debug | emergency | error | information | notification | warning} on page 92	`disable`
facility {alert | audit | auth | authpriv | clock | cron | daemon | ftp | kernel | local0 | local1 | local2 | local3 | local4 | local5 | local6 | local7 | mail | ntp | user}	Enter the facility identifier that the FortiWeb appliance will use to identify itself when sending log messages to the first Syslog server. To easily identify log messages from the FortiWeb appliance when they are stored on the Syslog server, enter a unique facility identifier, and verify that no other network devices use the same facility identifier.	`local7`
severity {alert | critical | debug | emergency | error | information | notification | warning}	Select the severity level that a log message must meet or exceed in order to cause the FortiWeb appliance to send it to the first Syslog server.	`information`
policy "<syslogd-policy_name>"	If logging to a Syslog server is enabled, enter the name of a Syslog policy which describes the Syslog server to which the log message will be sent. The maximum length is 63 characters. For details about Syslog policies, see log syslog-policy on page 93.	No default.
name	Set this option to add customized identifiers in syslog records, for example, add the hostname in syslogs so that you can easily track the logs for specific hosts. Enter a name for the identifier.	No default.
value	Enter the value of the identifier. It can be a fixed value or a variable. In the HA deployment, the configuration is synchronized among the HA group members but meanwhile each member should have its own hostname recorded in the syslog. In this case, you can use the variable such as `set value $hostname` to refer to the hostname defined in `config system global`. Only the hostname variable is supported.	No default.
logtype {elog | tlog | alog}	Select the log types to be stored on Syslog servers.	elog tlog alog

Variable	Description	Default
	Please note if a particular log type is not saved on local hard disk, it cannot be saved on an external log server, as the logs must be transferred from local storage to remote servers.	

Example

This example enables storage of log messages with the `notification` severity level and higher on the Syslog server. The network connections to the Syslog server are defined in `Syslog_Policy1`. The FortiWeb appliance uses the facility identifier `local7` when sending log messages to the Syslog server to differentiate its own log messages from those of other network devices using the same Syslog server.

```
config log syslogd
   set status enable
   set severity notification
   set facility local7
   set policy "Syslog_Policy1"
end
```

log syslog-policy

Use this command to configure a connection to one or more Syslog servers. Each policy can specify connections for up to three Syslog servers. The `log syslogd` configuration uses the policy to define the specific Syslog server or servers on which log messages are stored. For details, see log syslogd on page 91.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `loggrp` area. For details, see Permissions on page 46.

Syntax

```
config log syslog-policy
   edit "<policy_name>"
      config syslog-server-list
         edit <entry_index>
            set port <port_int>
            set proto {tcp | tls | udp}
            set packet {enable | disable}
            set format {cef | csv | default | json}
            set server "<syslog_ipv4/ipv6>"
            set cus-fields <cus-fields_name>
         end
   next
end
```

Variable	Description	Default
"<policy_name>"	Enter the name of a new or existing Syslog policy. The maximum length is 63 characters. The name of the report profile will be included in the report header. To display the list of existing policies, enter: `edit ?`	No default.
<entry_index>	Enter the index number of the individual entry in the table. You can create up to 3 connections.	No default.
port <port_int>	Enter the port number on which the Syslog server listens. The valid range is 1-65,535.	`514`
proto {tcp | tls | udp}	Select the protocol to transfer the logs between FortiWeb and the syslog server.	udp
format {cef | csv | default | json}	Select the format of the system log. Note that CEF is for Syslog server, not for SIEM. If your receiver is a SIEM server such as Azure Sentinel, please refer to Configuring SIEM policies in FortiWeb Administration Guide.	default
server "<syslog_ipv4/ipv6>"	Enter the IPv4 or IPv6 address of the Syslog server.	No default.
packet {enable | disable}	Enable **packet** to include packet payloads in the JSON format logs. Packet payloads supplement the log message by providing the actual request headers and body. This option is available only when the **Format** is **JSON** and the **Protocol** is **TCP** or **TLS**. Please note that using JSON format or enabling packet payloads may have negative impact on system performance.	disable
cus-fields <cus-fields_name>	Select one of the identifiers you have defined in `config log syslogd` under `config custom-field`. It will be attached to the syslog records.	No default.

Example

This example creates `Syslog_Policy1`. The Syslog server is contacted by its IP address, `192.168.1.10`. Communications occur over the standard port number for Syslog, UDP port `514`. The FortiWeb appliance sends log messages to the Syslog server in CSV format.

```
config log syslog-policy
   edit "Syslog_Policy1"
      config log-server-list
         edit 1
            set server "192.168.1.10"
            set port 514
```

```
            set csv enable
        end
    next
end
```

Related topics

- log syslogd on page 91
- system dns on page 286
- router static on page 102

log traffic-log

Use this command to have the FortiWeb appliance record traffic log messages on its local disk. This command also lets you save packet payloads with the traffic logs.

You must enable disk log storage and select log severity levels using log disk on page 66 before any traffic logs are stored on disk.

Packet payloads supplement the log message by providing the actual data associated with the traffic log, which may help you to analyze traffic patterns.

You can view packet payloads in the **Packet Log** column when viewing a traffic logs using the web UI. For details, see the *FortiWeb Administration Guide*:

http://docs.fortinet.com/fortiweb/admin-guides

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `loggrp` area. For details, see Permissions on page 46.

Syntax

```
config log traffic-log
   set packet-log {enable | disable}
   set status {enable | disable}
   set message-event {enable | disable} on page 96
   set low-priority {enable | disable} on page 96
end
```

Variable	Description	Default
status {enable | disable}	Enable to record traffic log messages if disk log storage is enabled, and the logs meet or exceed the severity levels selected using log disk on page 66.	`disable`

Variable	Description	Default
packet-log {enable | disable}	Enable to keep packet payloads stored with their associated traffic log message. For details about obscuring sensitive information in packet payloads, see log sensitive on page 86.	`disable`
message-event {enable | disable}		`disable`

low-priority {enable | disable}	Enable to set the attack log with a higher priority than the traffic log. This way, if the `logd` queue is more than 80% full, FortiWeb will stop generating traffic logs to prioritize the processing of attack logs until the logd queue drops below 80%.
	The following event log will be displayed to notify you of the `logd` status change:
	• When the logd queue exceeds 80% and FortiWeb stops generating traffic logs, you will see the following event log:
	`Log ID=11000516, Log Level=Debug, MSG=Alog to server queue will be full, pause tlog for a while, Action=pause`
	• When the server queue drops below 80% and FortiWeb resumes generating traffic logs, you will see the following event log:
	`Log ID=11000514, Log Level=Debug, MSG=Alog to server queue is ok, resume tlog for a while, Action=resume`
		`disable`

Example

This example enables disk log storage, sets `information` as the minimum severity level that a log message must achieve for storage, enables recording of traffic logs and retention of all packet payloads along with the traffic logs.

```
config log disk
   set status enable
   set severity information
end
config log traffic-log
   set status enable
   set packet-log enable
end
```

Related topics

- log attack-log on page 61
- log event-log on page 71
- log disk on page 66

- log sensitive on page 86
- log on page 815

log trigger-policy

Use this command to configure a trigger policy for use in the notification process.

You apply trigger policies to individual conditions that have an associated action and severity, such as attacks and rule violations. A trigger policy has the following components:

- An email policy (contains the details associated with the recipient email account)
- A Syslog policy (contains details required to communicate with the Syslog server)
- A FortiAnalyzer policy (contains the IP address of the remote FortiAnalyzer appliance)

The trigger policy determines whether an email is sent to administrators when a certain condition occurs and whether the log messages associated with the condition are stored on a Syslog server or FortiAnalyzer.

You define the email, Syslog, and FortiAnalyzer policies before you apply the trigger policy to an individual condition. For details, see log email-policy on page 68, log syslog-policy on page 93, and log fortianalyzer-policy on page 74.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `loggrp` area. For details, see Permissions on page 46.

Syntax

```
config log trigger-policy
   edit "<trigger-policy_name>"
         set email-policy "<email-policy_name>"
         set syslog-policy "<syslog-policy_name>"
         set analyzer-policy "<fortianalyzer-policy_name>"
         set siem-policy "<siem-policy_name>"
   next
end
```

Variable	Description	Default
"<trigger-policy_name>"	Enter the name of a new or existing trigger policy. The maximum length is 63 characters.	No default.
email-policy "<email-policy_name>"	Enter the name of the email policy to be used with the trigger policy. The maximum length is 63 characters. If the conditions associated with the trigger policy occur, the email policy determines the recipients of the notification email messages associated with the condition. For details, see log email-policy on page 68.	No default.
syslog-policy "<syslog-policy_name>"	Enter the name of the Syslog policy to be used with the trigger policy. The maximum length is 63 characters.	No default.

Variable	Description	Default
	If the conditions associated with the trigger policy occur, the Syslog policy determines which Syslog server the messages are sent to. For details, see log syslog-policy on page 93.	
analyzer-policy "<fortianalyzer-policy_name>"	Enter the name of an existing FortiAnalyzer policy to be used with the trigger policy. The maximum length is 63 characters. For details, see log fortianalyzer-policy on page 74.	No default.
siem-policy "<siem-policy_name>"	Enter the name of an existing SIEM policy to be used with the trigger policy. The maximum length is 63 characters. For details, see log siem-policy on page 89.	No default.

Example

This example creates `Trigger_policy1`, which uses `emailpolicy1` to send email notifications about the condition to specific recipients, and `Syslog_Policy1` to submit the log messages to a specific Syslog server.

```
config log trigger-policy
   edit "Trigger_policy1"
      set syslog-policy "Syslog_Policy1"
      set email-policy "emailpolicy1"
   next
end
```

Related topics

- log email-policy on page 68
- log syslog-policy on page 93
- log fortianalyzer-policy on page 74
- log siem-policy on page 89
- waf HTTP-protocol-parameter-restriction on page 556
- waf signature on page 628

router policy

Use this command to configure policy routes that redirect traffic away from a static route.

For example, you can divert traffic for intrusion protection scanning (IPS). It is also useful if your FortiWeb protects web servers for different customers (for example, the clients of a Managed Security Service Provider).

Policy routes can direct traffic to a specific network interface and gateway based on the packet's source and destination IP address.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `netgrp` area. For details, see Permissions on page 46.

Syntax

```
config router policy
   edit <policy_index>
      set iif "<incoming_interface_name>"
      set src "<source_ip>"
      set dst "<destination_ip>"
      set fwmark <fwmark_int> on page 99
      set set action {forward-traffic | stop-policy-routing} on page 99
      set oif "<outgoing_interface_name>"
      set gateway "<router_ip>"
      set priority <priorty_int>
   next
end
```

Variable	Description	Default
<policy_index>	Enter the index number of the policy route. The valid range is 0-65,535.	No default.
"<incoming_interface_name>"	Enter the name of the interface, such as `port1`, on which FortiWeb receives packets it applies this routing policy to.	No default.
src "<source_ip>"	Enter the source IP address and netmask to match, separated with a space. FortiWeb routes matching traffic through the specified interface and gateway.	`0.0.0.0 0.0.0.0`
dst "<destination_ip>"	Enter the destination IP address and netmask to match, separated with a space. FortiWeb routes matching traffic through the specified interface and gateway.	`0.0.0.0 0.0.0.0`
fwmark <fwmark_int>	Enter the Fwmark value specified in Firewall Fwmark Policy. If you don't need to match traffic against the Fwmark value, enter value 0. The valid range is 0-255.	
set action {forward-traffic | stop-policy-routing}	**forward-traffic:** FortiWeb filters traffic against the specified conditions and forwards the traffic to this policy route. **stop-policy-routing:** FortiWeb filters traffic against the specified conditions and forwards the traffic according to the matched static route.	
"<outgoing_interface_name>"	Enter the name of the interface, such as `port2`, through which FortiWeb routes packets that match the specified IP address information.	No default.

Variable	Description	Default
gateway "<router_ip>"	Enter the IP address of a next-hop router. A gateway address is not required for the particular routing policies used as static routes in an one-arm topology. Leave this blank for a one-arm network topology.	`0.0.0.0`
priority <priorty_int>	Enter a value between 1 and 200 that specifies the priority of the route. When packets match more than one policy route, FortiWeb directs traffic to the route with the lowest value.	`200`

Related topics

- router static on page 102
- router setting on page 100

router setting

Use this command to change how FortiWeb handles non-HTTP/HTTPS traffic (for example, SSH and FTP) when it is operating in Reverse Proxy mode.

When this setting is disabled (the default) and FortiWeb is operating in Reverse Proxy mode, the appliance drops any non-HTTP/HTTPS traffic.

When this setting is enabled and FortiWeb is operating in Reverse Proxy mode, the appliance handles non-HTTP/HTTPS protocols in the following ways:

- Any non-HTTP/HTTPS traffic destined for a virtual server on the appliance is dropped.
- For any non-HTTP/HTTPS traffic destined for another destination (for example, a back-end server), FortiWeb acts as a router and forwards it based in its destination address.

This command has no effect when FortiWeb is operating in transparent modes, which allow and forward non-HTTP/HTTPS packets by default.

Use this setting only if necessary. For security and performance reasons, if you have a FortiGate with an Internet/public address virtual IP (VIP) that forwards traffic to your FortiWeb, and your FortiWeb is on the same subnet as your web servers, do not use this setting. Instead, configure the VIP to forward:

- only HTTP/HTTPS to FortiWeb, which forwards it to your servers
- specific traffic such as SSH or SFTP directly to your servers

This avoids latency related to an extra hop. It also avoids accidentally forwarding unscanned protocols.

Routing is best effort. Not all protocols may be supported, such as Citrix Receiver (formerly ICA).

FortiWeb appliances are designed to provide in-depth protection specifically for the HTTP and HTTPS protocols. Because of this, when in **Reverse Proxy mode**, by default, FortiWeb **does not forward non-HTTP/HTTPS protocols** to your protected web servers. That is, IP-based forwarding is disabled. Traffic is only forwarded if picked up and scanned by the HTTP Reverse Proxy. This provides a secure default configuration by blocking traffic to services that might have been unintentionally left open and should not be accessible to the general public.

In some cases, however, a web server provides more services, not just HTTP or HTTPS. A typical exception is a server that also allows SFTP and SSH access. In these cases, enable routing to allow FortiWeb to route the non-HTTP/HTTPS traffic to the server using the server's IP address. For HTTP/HTTPS services, direct traffic to the IP address of the FortiWeb virtual server, which forwards requests to the back-end server after inspection.

This command has no equivalent in the web UI.

Use the following commands to retrieve information about current static route values:

```
config router setting
   get route static
end
```

Use the following commands to view the current value of `ip-forward`:

```
config router setting
   get route setting
end
```

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `netgrp` area. For details, see Permissions on page 46.

Syntax

```
config router setting
   set ip-forward {enable | disable}
   set ip6-forward {enable | disable}
end
```

Variable	Description	Default
ip-forward {enable | disable}	Enable to forward non-HTTP/HTTPS traffic if its IPv4 IP address matches a static route.	`disable`
ip6-forward {enable | disable}	Enable to forward non-HTTP/HTTPS traffic if its IPv6 IP address matches a static route.	`disable`

Example

This example enables forwarding of non-HTTP/HTTPS traffic, based upon whether the IP address matches a route for the web servers' subnet, and regardless of HTTP proxy pickup.

```
config router setting
   set ip-forward enable
end
```

Related topics

- router static on page 102
- router policy on page 98
- router all on page 1

router static

Use this command to configure static routes, including the default gateway.

Static routes direct traffic existing the FortiWeb appliance–you can specify through which network interface a packet will leave, and the IP address of a next-hop router that is reachable from that network interface. The router is aware of which IP addresses are reachable through various network pathways, and can forward those packets along pathways capable of reaching the packets' ultimate destinations.

A default route is a special type of static route. A default route matches all packets, and defines a gateway router that can receive and route packets if no more specific static route is defined for the packet's destination IP address.

During installation and setup, you should have configured at least one static route, a default route, that points to your gateway. You may configure additional static routes if you have multiple gateway routers, each of which should receive packets destined for a different subset of IP addresses.

For example, if a web server is directly attached to one of the network interfaces, but all other destinations, such as connecting clients, are located on distant networks such as the Internet, you might need to add only one route: a default route for the gateway router through which the FortiWeb appliance connects to the Internet.

The FortiWeb appliance examines the packet's destination IP address and compares it to those of the static routes. If more than one route matches the packet, the FortiWeb appliance applies the route with the smallest index number. For this reason, you should give more specific routes a smaller index number than the default route.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `netgrp` area. For details, see Permissions on page 46.

Syntax

```
config router static
   edit <route_index>
      set device "<interface_name>"
      set dst "<destination_ip>"
      set gateway "<router_ip>"
   next
end
```

Variable	Description	Default
<route_index>	Enter the index number of the static route. If multiple routes match a packet, the one with the smallest index number is applied. The valid range is 0-65,535.	No default.
device "<interface_name>"	Enter the name of the network interface device, such as `port1`, through which traffic subject to this route will be outbound. The maximum length is 63 characters.	No default.
dst "<destination_ip>"	Enter the destination IP address and netmask of traffic that will be subject to this route, separated with a space. To indicate all traffic regardless of IP address and netmask (that is, to configure a route to the default gateway), enter `0.0.0.0 0.0.0.0` or `::/0`.	`0.0.0.0 0.0.0.0`
gateway "<router_ip>"	Enter the IP address of a next-hop router. **Caution:** The gateway IP address must be in the same subnet as the interface's IP address. If you change the interface's IP address later, the new IP address must also be in the same subnet as the interface's default gateway address. Otherwise, all static routes and the default gateway will be lost.	`0.0.0.0`

Example

This example configures a default route that forwards all packets to the gateway router `192.0.2.1`, through the network interface named `port1`.

```
config router static
   edit 0
      set dst "0.0.0.0 0.0.0.0"
      set gateway "192.0.2.1"
      set device port1
   next
end
```

Related topics

- router setting on page 100
- router policy on page 98
- system interface on page 351
- log syslog-policy on page 93
- server-policy policy on page 151
- system admin on page 225
- system dns on page 286
- system snmp community on page 383

- wad website on page 421
- traceroute on page 898
- network arp on page 816
- network ip on page 817
- network route on page 818
- "router all" on page 1

server-policy acceleration

Acceleration provides a technology solution to speed up web application response and optimize web pages and resources in real time.

An Acceleration policy specifies the option(s) for optimizing the delivery of web applications. To take full advantage of the benefits that Acceleration offers, you must first create your own Acceleration policy, and then select the policy in **Policy > Server Policy**.

You can also specify certain URLs to be skipped for web application delivery optimization, and add the exception items to the acceleration policy.

FortiWeb offers options for optimizing the delivery of the following web content:

- HTML
- JavaScript
- CSS

If Acceleration is not enabled, go to system feature-visibility to enable it first.

Syntax

```
config server-policy acceleration exception
   edit "<exception_name>"
   config list
      edit "<exception-item_id>"
         set host-status {enable | disable}
         set host <host_int>
         set url-type {plain | regular}
         set url-pattern <url-pattern_str>
         next
      end
   next
end

config server-policy acceleration policy
   edit "<policy_name>"
      set exception <exception_str>
      set html-minify {enable | disable}
```

```
      set html-combine-heads {enable | disable}
      set html-css2head {enable | disable}
      set js-minify {enable | disable}
      set css-minify {enable | disable}
      set image-minify {enable | disable}
   next
end
```

Variable	Description	Default
"<exception_name>"	Enter a name for the exception rule.	No default.
"<exception-item_id>"	Enter an ID for the acceleration exception item.	No default
host-status {enable | disable}	Enable to require that the Host: field of the HTTP request match a protected host names entry in order to match the Acceleration exceptions rule. Also configure host <host_int>.	`disable`
host <host_int>	Select which protected host names entry (either a web host name or IP address) that the `Host:` field of the HTTP request must be in to match the Acceleration exceptions rule.	No default.
url-type {plain | regular}	Select whether url-pattern <url-pattern_str> will contain a literal URL (`plain`), or a regular expression designed to match multiple URLs (`regular`).	`plain`
url-pattern <url-pattern_str>	Depending on your selection in url-type {plain | regular}, enter either: • The literal URL, such as `/index.php`, that the HTTP request must contain in order to match the acceleration rule. The URL must begin with a slash (/). • A regular expression, such as `^/*.php`, matching all and only the URLs to which the acceleration rule should apply. The pattern is **not** required to begin with a slash (/). However, it must at least match URLs that begin with a slash, such as `/index.cfm`. **Note:** Regular expressions beginning with an exclamation point (!) are not supported. For information on language and regular expression matching, see the *FortiWeb Administration Guide*: https://docs.fortinet.com/document/fortiweb	No default.
"<policy_name>"	Enter a name for the acceleration policy.	No default.
exception <exception_str>	Select the acceleration exception rule created.	No default.

Variable	Description	Default
html-minify {enable | disable}	Enable to minify js in the script and delete the extra white space and comments to reduce bandwidth utilization.	`disable`
html-combine-heads {enable | disable}	Enable to combine multiple heads in HTML page to one.	`disable`
html-css2head {enable | disable}	Enable to move CSS elements above script tags. Note: This ensures that the CSS styes are parsed in the head of the HTML page before any body elements are introduced. In so doing, it can effectively reduce the number of times web browsers have to re-flow HTML documents.	`disable`
js-minify {enable | disable}	Enable to minify js in the script and delete the extra white space and comments to reduce bandwidth utilization.	`disable`
css-minify {enable | disable}	Enable to minify js in the script and delete the extra white space and comments to reduce bandwidth utilization.	`disable`
image-minify {enable | disable}	Enable to compress PNG, JPEG, and GIF image responses to WebP format when the client's `Accept` header includes `image/webp`. Applies only to eligible responses with supported `Content-Type`.	`disable`

Related topics

- server-policy policy on page 151

server-policy allow-hosts

Use this command to configure protected host groups.

A protected host group contains one or more IP addresses and/or fully qualified domain names (FQDNs). Each entry in the protected host group defines a virtual or real web host, according to the `Host:` field in the HTTP header of requests from clients, that you want the FortiWeb appliance to protect.

For example, if your web servers receive requests with HTTP headers such as:

```
GET /index.php HTTP/1.1
Host: www.example.com
```

you might define a protected host group with an entry of `www.example.com` and select it in the policy. This would reject requests that are not for that host.

A protected hosts group is usually **not** the same as a physical server.

Unlike a physical server, which is a single IP at the network layer, a protected host group should contain **all** network IPs, virtual IPs, and domain names that clients use to access the web server at the application (HTTP) layer.

For example, clients often access a web server via a **public** network such as the Internet. Therefore the protected host group contains domain names, public IP addresses, and public virtual IPs on a network edge router or firewall that are routable from that public network. But the physical server is only the IP address that the FortiWeb appliance uses to forward traffic to the server and, therefore, is often a **private** network address (unless the FortiWeb appliance operates in Offline Protection or either of the transparent modes).

Protected host groups can be used by:

- Policies
- Input rules
- Server protection exceptions
- URL access rules
- Allowed method exceptions
- HTTP authentication rules
- Hidden fields rules
- Many others

Rules can use protected host definitions to apply rules only to requests for a protected host. If you do not specify a protected host group in the rule, the rule will be applied based upon other criteria such as the URL, but regardless of the `Host:` field.

Policies can use protected host definitions to block connections that are not destined for a protected host. If you do not select a protected host group in a policy, connections will be accepted or blocked regardless of the `Host:` field.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `traroutegrp` area. For details, see Permissions on page 46.

Syntax

```
config server-policy allow-hosts
   edit "<protected-hosts_name>"
      set default-action {allow | deny | deny_no_log}
      config host-list
         edit <protected-host_index>
            set action {allow | deny | deny_no_log}
            set host {"<host_ipv4>" | "<host_fqdn>" | "<host_ipv6>"}
            set ignore-port {enable|disable}
            set include-subdomains {enable|disable}
            set override-headers {enable|disable}
         next
      end
   next
end
```

Variable	Description	Default
"<protected-hosts_name>"	Enter the name of a new or existing group of protected hosts. The maximum length is 63 characters. To display the list of existing groups, enter: `edit ?`	No default.
default-action {allow | deny | deny_no_log}	Select whether to accept or deny HTTP requests whose `Host:` field does **not** match any of the host definitions that you will add to this protected hosts group.	`allow`
<protected-host_index>	Enter the index number of a protected host within its group. Each host-list can contain up to 64 IP addresses and/or fully qualified domain names (FQDNs). The valid range is 1-9,223,372,036,854,775,807.	No default.
action {allow | deny | deny_no_log}	Select whether to accept or deny HTTP requests whose `Host:` field matches the host definition in host {"<host_ipv4>" | "<host_fqdn>" | "<host_ipv6>"} on page 108.	`allow`
host {"<host_ipv4>" | "<host_fqdn>" | "<host_ipv6>"}	Enter the IP address or FQDN of a virtual or real web host, as it appears in the `Host:` field of HTTP headers, such as `www.example.com`. The maximum length is 255 characters. If clients connect to your web servers through the IP address of a virtual server on the FortiWeb appliance, this should be the IP address of that virtual server **or** any domain name to which it resolves, **not** the actual IP address of the web server. For example, if a virtual server 192.0.2.1/24 forwards traffic to the physical server 192.0.2.155, for protected hosts, you would enter: • `192.0.2.1`, the address of the virtual server • `www.example.com`, the domain name that resolves to the virtual server	No default.

Variable	Description	Default
ignore-port {enable|disable}	Enable `ignore-port` so that FortiWeb will ignore the port numbers after the host name, and consider them as a match. For example, if you configure the host name as `example.com`, and enable **Ignore Port**, then the host name with any port numbers (e.g. `example.com:443`, `example.com:80`) will be considered a match. However, please be aware that if the port number falls outside the range of 0 to 65535 or contains a string instead of a numerical value, the system will identify it as abnormal. In such cases, the system will consider it abnormal and take the **Alert and Deny** action. If you don't enable **Ignore Port** but you want to match specific port numbers such as `example.com:443` and `example.com:80`, then you need to add two host name items respectively for `example.com:443` and `example.com:80`.	disable
include-subdomains {enable|disable}	Enable `include-subdomains` so that the sub domains of the host (for example abc.myhost.com) will be protected.	disable
override-headers {enable|disable}	Enable `override-headers` so that host headers can still be identified even if they are overridden with the following headers: • X-Forwarded-Host • X-Host • X-Forwarded-Server • X-HTTP-Host-Override • Forwarded	disable

Example

This example configures a protected hosts group named `example_com_hosts` that contains a website's domain names and its IP address in order to match HTTP requests regardless of which form they use to identify the host.

```
config server-policy allow-hosts
   set default-action deny
   edit "example_com_hosts"
      config host-list
         edit 0
            set host "example.com"
         next
         edit 1
            set host "www.example.com"
         next
         edit 2
            set host "10.0.0.1"
         next
      end
   next
```

```
end
```

Related topics

- server-policy policy on page 151
- waf allow-method-exceptions on page 429
- server-policy custom-application application-policy on page 1
- waf input-rule on page 565
- waf signature on page 628
- waf hidden-fields-rule on page 540

server-policy allow-list

Use this command to configure objects that will be exempt from scans, and it can be applied at the server policy level. For the traffic that arrives at this server policy, it will be screened only according to the server policy based allow list instead of the global one.

This command applies only at server-policy level. If you want to define a allow list that applies globally to all server policies, use `config server-policy pattern custom-global-white-list-group` instead of this one.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `traroutegrp` area. For details, see Permissions on page 46.

Syntax

```
config server-policy allow-list
   edit <entry_index>
      config allow-list-items
         edit <entry_index>
            set type {Cookie | Parameter | URL | Header_Field | Lets_Encrypt}
            set status {enable | disable}
            set domain "<cookie_str>"
            set name "<name_str>"
            set path "<url_str>"
            set request-type {plain | regular}
            set domain-type {plain | regular}
            set name-type {plain | regular}
            set request-file-status {enable | disable}
            set domain-status {enable | disable}
            set request-file "<url_str>"
            set header-type {plain | regular}
            set value-status {enable | disable}
            set value-type {plain | regular}
            set value <header_value_string>
   next
end
```

Variable	Description	Default
<entry_index>	Enter the index number of the individual rule in the table. The valid range is 1-9,223,372,036,854,775,807.	No default.
status {enable | disable}	Enable to exempt this object from all scans.	`enable`
type {Cookie | Parameter | URL | Header_Field | Lets_Encrypt}	Indicate the type of the object. Depending on your selection, the remaining settings vary. Note: If `Type` is `lets_encrypt`, your don't need to specify the Let's Encrypt request-type and request URL as they are fixed. If you are using Let's Encrypt to generate a certificate, it is recommended to enable this allow list, otherwise it may result in certificate retrieval failures if requests from Let's Encrypt are blocked. For more information about Let's Encrypt certificate, see Let's Encrypt certificates.	`URL`
path "<url_str>"	Enter the path as it appears in the cookie, such as `/` or `/blog/folder`. This setting is available if type {Cookie | Parameter | URL | Header_Field | Lets_Encrypt} on page 111 is set to `Cookie`.	No default.
request-type {plain | regular}	Indicate whether the request-file "<url_str>" on page 112 field contains a literal URL (`plain`), or a regular expression designed to match multiple URLs (`regular`). This setting is available if type {Cookie | Parameter | URL | Header_Field | Lets_Encrypt} on page 111 is set to `URL`.	`plain`
domain-type {plain | regular}	Indicate whether the `domain "<cookie_str>"` field will contain a literal domain/IP address (Simple String), or a regular expression designed to match multiple domains/IP addresses (Regular Expression).	`plain`

domain "<cookie_str>"	Enter the partial or complete domain name or IP address as it appears in the cookie, such as:
	`www.example.com`
	`.google.com`
	`192.0.2.50`
	If clients sometimes access the host via IP address instead of DNS, create allow list objects for both.
	This setting is available if type {Cookie | Parameter | URL | Header_Field | Lets_Encrypt} on page 111 is set to `Cookie`.
	Caution: Do not allowlist untrusted subdomains that use vulnerable cookies. It could compromise the security of that domain and its network.
		No default.

Variable	Description	Default
name-type {plain | regular}	Indicate whether the `name "<name_str>"` field will contain a literal parameter name (Simple String), or a regular expression designed to match all parameter names (Regular Expression).	plain
name "<name_str>"	Depending on your selection in `type {Cookie | Parameter | URL | Header_Field | Lets_Encrypt}` on page 111, either: • Enter the name of the cookie as it appears in the HTTP request, such as `NID`. • Enter the name of the parameter as it appears in the HTTP URL or body, such as `rememberme`. This setting is available if type {Cookie | Parameter | URL | Header_Field | Lets_Encrypt} on page 111 is set to `Cookie`, `Parameter`, or `Header_Field`.	No default.
request-file-status {enable | disable}	Enable to apply this rule only to HTTP requests for specific URLs. Configure `request-file "<url_str>"` if it is enabled.	`disable`
domain-status {enable | disable}	Enable to apply this rule only to HTTP requests for specific domains. If enabled, also configure `domain "<cookie_str>"`.	`disable`
request-file "<url_str>"	Depending on your selection in the request-type {plain | regular} on page 111 field, enter either: • The literal URL, such as `/robots.txt`, that the HTTP request must contain in order to match the rule. The URL must begin with a backslash (/). • A regular expression, such as `^/*.html`, matching all and only the URLs to which the rule should apply. The pattern does not require a slash (/); however, it must at match URLs that begin with a backslash, such as `/index.html`. Do not include the domain name, such as `www.example.com`. This setting is available if type {Cookie | Parameter | URL | Header_Field | Lets_Encrypt} on page 111 is set to `URL`.	
header-type {plain | regular}	Indicate whether the type field will contain a literal name (plain), or a regular expression designed to match multiple names (regular).	`plain`
value-status {enable | disable}	Enable to also check the value of the HTTP header. Only the HTTP headers which match both the name and the value will be allowlisted.	`disable`

Variable	Description	Default
value-type {plain | regular}	Indicate whether the header name will contain a literal name (`plain`), or a regular expression designed to match multiple names (`regular`).	`plain`
value <header_value_string>	The value of the HTTP header. Depending on your selection in the `value-type` field, enter either a literal value or a regular expression.	No default.

Example

This example exempts requests for robots.txt from most scans.

```
config server-policy pattern custom-global-allow-list-group
   edit 1
      set request-file "/robots.txt"
   next
end
```

Related topics

- waf web-protection-profile inline-protection on page 720

server-policy health

Use this command to configure server health checks.

Tests for server responsiveness (called “server health checks” in the web UI) poll web servers that are members of a server pool to determine their availability before forwarding traffic. Server health checks can use TCP, HTTP/HTTPS, ICMP `ECHO_REQUEST` (`ping`), TCP SSL, or TCP half-open.

The FortiWeb appliance polls the server at the frequency set in the timeout <seconds_int> on page 116 option. If the appliance does not receive a reply within the timeout period, and you have configured the health check to retry, it attempts a health check again; otherwise, the server is deemed unresponsive. The FortiWeb appliance reacts to unresponsive servers by disabling traffic to that server until it becomes responsive.

If a back-end server will be unavailable for a long period, such as when a server is undergoing hardware repair, it is experiencing extended downtime, or when you have removed a server from the server pool, you can improve the performance of your FortiWeb appliance by disabling the back-end server, rather than allowing the server health check to continue to check for responsiveness. For details, see server-policy server-pool on page 184.

To apply server health checks, select them in a server pool configuration. For details, see server-policy server-pool on page 184.

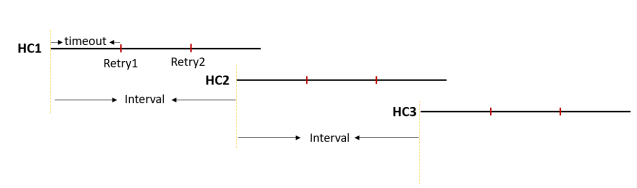
To use this command, your administrator account's access control profile requires either `w` or `rw` permission to the `traroutegrp` area. For details, see Permissions on page 46.

Syntax

```
config server-policy health
   edit "<health-check_name>"
      set trigger-policy "<trigger-policy_name>"
      set relationship {and |or}
      set group-id <int>
      set role {master | slave | standalone}
      configure health-list
         edit <entry_index>
            set type {icmp | tcp | HTTP | tcp-ssl | tcp-half-open}
            set timeout <seconds_int>
            set timeout <seconds_int>
            set timeout <seconds_int>
            set url-path "<request_str>"
            set method {get | head | post}
            set match-type {response-code | match-content | all}
            set response-code {response-code_int}
            set match-content "<match-content_str>"
         next
end
```

Variable	Description	Default
"<health-check_name>"	Enter the name of the server health check. The maximum length is 63 characters. To display the list of existing server health checks, enter: `edit ?`	No default.
trigger-policy "<trigger-policy_name>"	Enter the name of the trigger to apply when the health check detects a failed server (see log trigger-policy on page 97). The maximum length is 63 characters. To display the list of existing trigger policies, enter: `set trigger ?`	No default.
relationship {and |or}	• and–FortiWeb considers the server to be responsive when it passes all the tests in the list. • or–FortiWeb considers the server to be responsive when it passes at least one of the tests in the list.	and
group-id <int>	`group-id` is used together with `role {master | slave}`.	No default.

Variable	Description	Default
	FortiWeb performs health check on the server pool which has referenced a "master" health check, then synchronize the result to all the server pools which have referenced the "slave" health check of the same group-id. This can avoid unnecessary health checks in certain cases such as when different server pools sharing the same IP address. This option is not available if the role is standalone.	
role {master | slave | standalone}	If you want the health check result to be shared across multiple server pools, then specify whether this health check is a master or a slave. This is used together with the above command `group-id <int>`. If the health check result is not to be shared, then choose `standalone`.	standalone
<entry_index>	Enter the index number of the individual rule in the table. The valid range is 1-16.	No default.
type {icmp | tcp | HTTP | tcp-ssl | tcp-half-open}	Select either: • `icmp`–Send ICMP type 8 (`ECHO_REQUEST`) and listen for either ICMP type 0 (`ECHO_RESPONSE`) indicating responsiveness, or timeout indicating that the host is not responsive. • `tcp`–Send TCP `SYN` and listen for either TCP `SYN ACK` indicating responsiveness, or timeout indicating that the host is not responsive. • `HTTP`–Send an HTTP request and listen for the code specified by `response-code`, the page content specified by `match-content`, or both the code and the content, or timeout indicating that the host is not responsive. Apply to server pool members only if the **SSL** setting for the member is disabled. • `tcp-ssl`–Send a TCP SSL request. FortiWeb considers the host to be responsive if the SSL handshake is successful, and closes the connection once the handshake is complete. This type of health check requires fewer resources than `HTTP` or `HTTPS`. Apply to server pool members only if the **SSL** setting for the member is enabled. • `tcp-half-open`–Send TCP `SYN` and listen for either TCP `SYN ACK` indicating responsiveness, or timeout indicating that the host is not responsive. If the response is `SYN ACK`, send TCP `RST` to terminate the	`ping`

Variable	Description	Default
	connection. This type of health check requires fewer resources from the pool member than `tcp`.	
timeout <seconds_int> retry-times <retries_int> interval <seconds_int>	• **`timeout <seconds_int>`**: The maximum duration (in seconds) FortiWeb will wait for a response from a back-end server during a health check. If the server does not respond within this time frame, the health check is considered failed. The valid range is 1-30 . • **`retry-times <retries_int>`**: The number of consecutive retries FortiWeb will perform–each with the configured timeout–if no response is received from the server. The server is marked down only after all retries fail. The valid range is 1 - 10. • **`interval <seconds_int>`**: The frequency (in seconds) at which FortiWeb performs health checks on the back-end server. The valid range is from 1 - 300. The diagram illustrates how FortiWeb's health check mechanism uses `timeout`, `retry-times`, and `interval`. In this example: • Each health check (HC) begins and, if no response is received, performs up to two retries (retry-times = 2), with each retry waiting up to the configured `timeout` duration. • Health checks can run concurrently–starting a new health check does not cancel or override an existing one that is still active. As shown in the diagram, HC2 begins while the second retry of HC1 is still in progress.  **Best Practice Strategy** We recommend setting the interval so that the next health check begins when the last retry of the current health check is underway, as shown in the diagram above. • Example If: • timeout = 3 seconds • retry-times = 2	timeout : 3 retry-times: 3 interval:10

Variable	Description	Default
	Then, the recommended interval is **between 6 and 9 seconds**. This ensures: • Minimal overlap between health check cycles. • Efficient use of CPU and memory by reducing unnecessary concurrency. • Faster failover or recovery detection without redundant checks. **Special Notice for Public Cloud Deployments** If FortiWeb and your back-end resources are hosted on public cloud platforms, be aware that network latency is typically higher compared to on-premises environments. As a result, the default timeout value of 3 seconds may be too short for receiving a response from the server. We recommend configuring a longer `timeout` and `interval` based on the observed network conditions in your environment to ensure reliable health check results.	
url-path "<request_str>"	Enter the URL, such as `/index.html`, that FortiWeb uses in the HTTP/HTTPS request to verify the responsiveness of the server. If the web server successfully returns this URL, and its content matches the expression specified by `match-content`, FortiWeb considers it to be responsive. Available when type {icmp | tcp | HTTP | tcp-ssl | tcp-half-open} on page 115 is `HTTP` or `HTTPS`.	No default.
method {get | head | post}	Specify whether the health check uses the HEAD, GET, or POST method. Available when type {icmp | tcp | HTTP | tcp-ssl | tcp-half-open} on page 115 is `HTTP` or `HTTPS`.	`get`
match-type {response-code | match-content | all}	• `response-code`–If the web server successfully returns the URL specified by `url-path` and the code specified by `response-code`, FortiWeb considers the server to be responsive. • `match-content`–If the web server successfully returns the URL specified by `url-path` and its content matches the `match-content` value, FortiWeb considers the server to be responsive. • `all`–If the web server successfully returns the URL specified by `url-path` and its content matches the `match-content` value, and the code specified by `response-code`, FortiWeb considers the server to be responsive.	`match-content`

Variable	Description	Default
	Available when type {icmp | tcp | HTTP | tcp-ssl | tcp-half-open} on page 115 is HTTP or HTTPS.	
response-code {response-code_int}	Enter the response code that you require the server to return to confirm that it is available, if match-type is response-code or all. Available when type {icmp | tcp | HTTP | tcp-ssl | tcp-half-open} on page 115 is HTTP or HTTPS.	200
match-content "<match-content_str>"	Enter a regular expression that matches the content that must be present in the HTTP reply to indicate proper server connectivity, if match-type is match-content or all. Available when type {icmp | tcp | HTTP | tcp-ssl | tcp-half-open} on page 115 is HTTP or HTTPS.	No default.

Example

This example configures a server health check that periodically requests the main page of the website, /index. If a physical server does not successfully return that page (which contains the word “About”) every 10 seconds (the default), and fails the check at least three times in a row, FortiWeb considers it unresponsive and forwards subsequent HTTP requests to other physical servers in the server farm.

```
config server-policy health
   edit "status_check1"
      set trigger-policy "notification-servers1"
      configure health-list
         edit 1
            set type HTTP
            set retry-times 3
            set url-path "/index"
            set method get
            set match-type match-content
            set regular About
   next
end
```

Related topics

- server-policy server-pool on page 184
- server-policy policy on page 151
- log trigger-policy on page 97

server-policy HTTP-content-routing-policy

Use this command to configure HTTP header-based routing.

Instead of dynamically routing requests to a server pool simply based upon load or connection distribution at the TCP/IP layers, as basic load balancing does, you can forward them based on headers in the HTTP layer.

HTTP header-based routes define how FortiWeb routes requests to server pools. They are based on one or more of the following HTTP header elements:

- Host
- URL
- Parameter
- Referer
- Cookie
- Header
- Source IP
- X.509 certificate
- Geo IP

This type of routing can be useful if, for example, a specific web server or group of servers on the back end support specific web applications, functions, or host names. That is, your web servers or server pools are not identical, but specialized. For example:

- 192.0.2.1–Hosts the website and blog
- 192.0.2.2 and 192.0.2.3–Host movie clips and multimedia
- 192.0.2.4 and 192.0.2.5–Host the shopping cart

If you have configured request rewriting, configure HTTP content-based routing using the original request URL and/or `Host:` name, as it appears **before** FortiWeb has rewritten it. For details about rewriting, see waf url-rewrite url-rewrite-policy on page 698.

To apply your HTTP-based routes, select them when you configure the server policy. For details, see server-policy policy on page 151.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `traroutegrp` area. For details, see Permissions on page 46.

Syntax

```
config server-policy HTTP-content-routing-policy
   edit "<routing-policy_name>"
      set server-pool "<server-pool_name>"
      set HTTP-content-routing-id <HTTP-content-routing-id_str>
      config content-routing-match-list
         edit <entry_index>
            set match-object {HTTP-host | HTTP-request | url-parameter | HTTP-referer | HTTP-cookie |
                  HTTP-header | source-ip | x509-certificate-Subject | x509-certificate-Extension |
                  HTTPS-sni | geo-ip | ztna-ems-tags}
            set match-condition {match-begin | match-end | match-sub | match-domain | match-dir |
                  match-reg | ip-range | ip-range6 | equal | ip-list}
            set x509-subject-name {E | CN | OU | O | L | ST | C}
```

```
            set match-expression "<match-expression_str>"
            set
            set name "<name_str>"
            set name-match-condition {match-begin | match-end | match-sub | match-reg | equal}
            set value "<value_str>"
            set value-match-condition {match-begin | match-end | match-sub | match-reg | equal}
            set start-ip "<start_ip>"
            set end-ip "<end_ip>"
            set reverse {enable | disable}
            set concatenate {and | or}
            set country-list <country-list_str>
            set ip-list <ip-list_str>
        next
    end
  next
end
```

Variable	Description	Default
"<routing-policy_name>"	Enter the name of the HTTP content routing policy. The maximum length is 63 characters. To display the list of existing policies, enter: `edit ?`	No default.
server-pool "<server-pool_name>"	Enter the name of the server pool to which FortiWeb forwards traffic when the traffic matches rules in this policy. For details, see server-policy server-pool on page 184.	No default.
<entry_index>	Enter the index number of the individual rule in the table. The valid range is 1-9,999,999,999,999,999,999.	No default.
HTTP-content-routing-id <HTTP-content-routing-id_str>	Enter a HTTP content routing policy sequence number.	No default.
match-object {HTTP-host | HTTP-request | url-parameter | HTTP-referer | HTTP-cookie | HTTP-header | source-ip | x509-certificate-Subject | x509-certificate-Extension | HTTPS-sni | geo-ip | ztna-ems-tags}	Enter the type of object that FortiWeb examines for matching values: • `HTTP-host`—`Host:` field • `HTTP-request`—A URL • `url-parameter`—A URL parameter and value • `HTTP-referer`—`Referer:` field • `HTTP-cookie`—A cookie name and value • `HTTP-header`—A header name and value • `source-ip`—An IPv4 address or address range or IPv6 address or address range • `x509-certificate-Subject`—A specified Relative Distinguished Name (RDN) in the X509 certificate `Subject` field. Also specify `x509-subject-name`. • `x509-certificate-Extension`—Additional fields that the extensions field adds to the X509 certificate • `HTTPS-sni`— Select this option so that FortiWeb will forward requests based on the SNI in the SSL	No default.

Variable	Description	Default
	handshake. • `geo-ip`– Select this option so that FortiWeb matches against the IP addresses from specified countries. • `ztna-ems-tags`– Select this option so that FortiWeb matches against the ZTNA tags.	
match-condition {match-begin | match-end | match-sub | match-domain | match-dir | match-reg | ip-range | ip-range6 | equal | ip-list}	Enter the type of value to match. Values can be a literal value that appears in the object or a regular expression. The value of match-object {HTTP-host | HTTP-request | url-parameter | HTTP-referer | HTTP-cookie | HTTP-header | source-ip | x509-certificate-Subject | x509-certificate-Extension | HTTPS-sni | geo-ip | ztna-ems-tags} on page 120 determines which content types you can specify. If `match-object` is `HTTP-host`, `HTTP-request`, `HTTP-referer`, or `x509-certificate-Extension`: • `match-begin`–The object to match begins with the specified string. • `match-end`–The object to match ends with the specified string. • `match-sub`–The object to match contains the specified string. • `match-domain`–The host to match contains the specified string between the periods in a domain name. • `ip-list`–The IPs to match.	No default.

	If `match-object` is `HTTP-host` only:
	• `match-domain`–The object to match contains the specified string between the periods in a domain name.
	
	For example, if `match-expression` is `abc`, the condition matches the following hostnames:
	
	`dname1.abc.com`
	`dname1.dname2.abc.com`
	
	However, the same Match Simple String value does not match the following hostnames:
	
	`abc.com`
	`dname.abc`
	
	If `match-object` is `HTTP-request`:
	• `match-dir`–The object to match contains the specified string between delimiting characters (slash) in a domain name.
		No default.

Variable	Description	Default

	For example, if `match-expression` is `abc`, the condition matches the following hostnames:
	
	`test.com/abc/`
	`test.com/dir1/abc/`
	
	However, the same `match-string` value does not match the following hostnames:
	
	`test.com/abc`
	`test.abc.com`
	If `match-object` is `source-ip`:
	• `ip-range`–The source IP to match is an IPv4 IP address or within a range of IPv4 IP addresses.
	• `ip-range6`–The source IP to match is an IPv6 IP address or within a range of IPv6 IP addresses.
	If `match-object` is `HTTP-host`, `HTTP-request`, `HTTP-referer`, `source-ip`, or `x509-certificate-Extension`:
	• `match-reg`–The object to match has a value that matches the specified regular expression.	

ztna-ems-tag <tag_name>	If `match-object` is `ztna-ems-tags`, enter the tag names.	No default.
ztna-ems-tag-combine {and | or}	Available only if `match-object` is `ztna-ems-tags`. **and** means the request only matches if it has all tags specified; **or** means the request matches if it has any of the tags specified. Note: For ZTNA tags, when **Reverse** is on, it means all the request will be matched except the ones that meet the **or** or **and** condition. For example, if Tag_A and Tag_B are specified, and the **Reverse** is on, the matching logic will be: • When **ztna-ems-tag-combine** is **or**, all the request will be matched except the ones having any of the Tag_A and Tag_B tags. • When **ztna-ems-tag-combine** is **and**, all the requests will be matched except the ones having both Tag_A and Tag_B tags.	and
x509-subject-name {E | CN | OU | O | L | ST | C}	Enter the attribute type to match. Available when match-object {HTTP-host | HTTP-request | url-parameter | HTTP-referer | HTTP-cookie | HTTP-header | source-ip | x509-certificate-Subject | x509-certificate-Extension | HTTPS-sni | geo-ip | ztna-ems-tags} on page 120 is `x509-certificate-Subject`.	No default.

Variable	Description	Default
match-expression "<match-expression_str>"	Enter a value to match in the object element specified by match-object {HTTP-host | HTTP-request | url-parameter | HTTP-referer | HTTP-cookie | HTTP-header | source-ip | x509-certificate-Subject | x509-certificate-Extension | HTTPS-sni | geo-ip | ztna-ems-tags} on page 120 and `match-condition`. Examples: • A literal URL, such as `/index.php`, that a matching HTTP request contains. • An expression, such as `^/*.php`, that matches a URL. **Tip:** When you enter a regular expression using the web UI, you can validate its syntax.	No default.
value-match-condition {match-begin | match-end | match-sub | match-reg | equal}	Enter the type of value to match. The value refers to the `x509-subject-name` and can be a literal value that appears in the object or a regular expression. • `match-begin`—The name to match begins with the specified string. • `match-end`—The name to match ends with the specified string. • `match-sub`—The name to match contains the specified string. • `equal`—The name to match is the specified string. • `match-reg`—The name to match matches the specified regular expression.	No default.
name "<name_str>"	Enter the name of the object to match. The value can be a literal value or a regular expression. For example, the name of a cookie embedded by traffic controller software on one of the servers. Available only if match-object {HTTP-host | HTTP-request | url-parameter | HTTP-referer | HTTP-cookie | HTTP-header | source-ip | x509-certificate-Subject | x509-certificate-Extension | HTTPS-sni | geo-ip | ztna-ems-tags} on page 120 is `url-parameter`, `HTTP-cookie`, or `HTTP-header`.	No default.
name-match-condition {match-begin | match-end | match-sub | match-reg | equal}	Enter the type of value to match. The value is specified by `name` and can be a literal value that appears in the object or a regular expression. • `match-begin`—The name to match begins with the specified string. • `match-end`—The name to match ends with the specified string. • `match-sub`—The name to match contains the specified string. • `equal`—The name to match is the specified string. • `match-reg`—The name to match matches the specified	No default.

Variable	Description	Default
	regular expression.	
value "<value_str>"	Enter the object value to match. The value can be a literal value or a regular expression. Available if match-object {HTTP-host | HTTP-request | url-parameter | HTTP-referer | HTTP-cookie | HTTP-header | source-ip | x509-certificate-Subject | x509-certificate-Extension | HTTPS-sni | geo-ip | ztna-ems-tags} on page 120 is `url-parameter`, `HTTP-cookie`, or `HTTP-header`.	No default.
value-match-condition {match-begin | match-end | match-sub | match-reg | equal}	Enter the type of value to match. The value is specified by `value` and can be a literal value or a regular expression. • `match-begin`–The value to match begins with the specified string. • `match-end`–The value to match ends with the specified string. • `match-sub`–The value to match contains the specified string. • `equal`–The value to match is the specified string. • `match-reg`–The value to match matches the specified regular expression.	No default.
start-ip "<start_ip>"	Enter the first IP address in a range of IP addresses. Available if match-condition {match-begin | match-end | match-sub | match-domain | match-dir | match-reg | ip-range | ip-range6 | equal | ip-list} on page 121 is `ip-range` or `ip-range6`.	No default.
end-ip "<end_ip>"	Enter the last IP address in a range of IP addresses. Available if match-object {HTTP-host | HTTP-request | url-parameter | HTTP-referer | HTTP-cookie | HTTP-header | source-ip | x509-certificate-Subject | x509-certificate-Extension | HTTPS-sni | geo-ip | ztna-ems-tags} on page 120 is `source-ip`	No default.
reverse {enable | disable}	When enabled, FortiWeb will route requests to the server pool that do not match the specified values for the Match Object.	`disable`
country-list <country-list_str>	Select countries where the IP addresses originate.	No default.
concatenate {and | or}	Select either: • `and`–A matching request matches this entry in addition to other entries in the HTTP content routing list. • `or`–A matching request matches this entry or other entries in the list.	`and`
ip-list <ip-list_str>	Enter multiple IPs or IP range.	No default.

Example

This HTTP content routing policy routes requests for `www.example.com/school` to the server pool `school-site`.

The content routing has three rules: one matches the host (`www.example.com`), a second matches the `sessid` cookie, and a third matches the /school URL. In combination, the first and third rules match the request for `www.example.com/school`.

```
config server-policy HTTP-content-routing-policy
   edit "content_routing_policy1"
      set server-pool school-site
      config content-routing-match-list
         edit 1
            set match-condition match-reg
            set match-expression "www.example.com "
         next
         edit 2
            set match-object HTTP-cookie
            set name sessid
            set value "hash[a-fA-F0-7]*"
            set name-match-condition match-reg
            set value-match-condition match-reg
         next
         edit 3
            set match-object HTTP-request
            set match-expression "/school"
         next
      end
   next
end
```

Related topics

- server-policy server-pool on page 184
- server-policy policy on page 151
- waf url-rewrite url-rewrite-policy on page 698

server-policy ip-group

Use this command to group IP addresses or IP ranges, so that you can later reference them in **IP Protection > IP List** (`config waf ip-list`).

To use this command, your administrator account's access control profile must have both `r` and `w` permissions to items in the `traroutegrp` category.

Syntax

```
config server-policy ip-group
   edit <index>
      config members
         edit <index>
            set ip <IP_addresses_or_ranges>
         next
      end
   next
end
```

Variable	Description	Default
<IP_addresses_or_ranges>	Enter one of the following values: • A single IP address that a client source IP must match, such as a trusted private network IP address (e.g. an administrator's computer, `172.16.1.20`). Multiple addresses or ranges should be separated with comma ",". • A range or addresses (e.g. 1.2.3.4,2001::1,1.2.3.4-1.2.3.40,2001::1-2001::100).	No default.

server-policy pattern custom-data-type

Use this command to configure custom data types to augment the predefined data types. You can add custom data types to input rules to define the data type of an input, and to auto-learning profiles to detect valid input parameters.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `traroutegrp` area. For details, see Permissions on page 46.

Syntax

```
config server-policy pattern custom-data-type
   edit "<custom-data-type_name>"
      set expression "<regex_pattern>"
   next
end
```

Variable	Description	Default
"<custom-data-type_name>"	Enter the name of the custom data type. The maximum length is 63 characters. To display the list of existing types, enter:	No default.

Variable	Description	Default
	`edit ?`	
expression "<regex_pattern>"	Enter a regular expression that defines the data type. It should match all data of that type, but nothing else. The maximum length is 2,071 characters.	No default.

Example

This example configures two custom data types.

```
config server-policy pattern custom-data-type
   edit "Level 3 Password-custom"
      set expression "^aaa"
   next
   edit "Custom Data Type 1"
      set expression "^555"
   next
end
```

server-policy pattern custom-global-white-list-group

Use this command to configure objects that will be exempt from scans.

This command applies to all the server-policies. If you want to define an allow list that applies specifically to a certain server policiy, use `config server-policy allow-list` instead of this one.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `traroutegrp` area. For details, see Permissions on page 46.

Syntax

```
config server-policy pattern custom-global-white-list-group
   edit <entry_index>
      set status {enable | disable}
      set type {Cookie | Parameter | URL | Header_Field }
      set domain "<cookie_str>"
      set name "<name_str>"
      set path "<url_str>"
      set request-type {plain | regular}
      set domain-type {plain | regular}
      set name-type {plain | regular}
      set request-file-status {enable | disable}
      set domain-status {enable | disable}
```

```
      set request-file "<url_str>"
      set header-type {plain | regular}
      set value-status {enable | disable}
      set value-type {plain | regular}
      set value <header_value_string>
   next
end
```

Variable	Description	Default
<entry_index>	Enter the index number of the individual rule in the table. The valid range is 1-9,223,372,036,854,775,807.	No default.
status {enable | disable}	Enable to exempt this object from all scans.	`enable`
type {Cookie | Parameter | URL | Header_Field }	Indicate the type of the object. Depending on your selection, the remaining settings vary.	`URL`
path "<url_str>"	Enter the path as it appears in the cookie, such as `/` or `/blog/folder`. This setting is available if type {Cookie | Parameter | URL | Header_Field } on page 128 is set to `Cookie`.	No default.
request-type {plain | regular}	Indicate whether the request-file "<url_str>" on page 129 field contains a literal URL (`plain`), or a regular expression designed to match multiple URLs (`regular`). This setting is available if type {Cookie | Parameter | URL | Header_Field } on page 128 is set to `URL`.	`plain`
domain-type {plain | regular}	Indicate whether the `domain "<cookie_str>"` field will contain a literal domain/IP address (Simple String), or a regular expression designed to match multiple domains/IP addresses (Regular Expression).	`plain`

domain "<cookie_str>"	Enter the partial or complete domain name or IP address as it appears in the cookie, such as:
	`www.example.com`
	`.google.com`
	`192.0.2.50`
	If clients sometimes access the host via IP address instead of DNS, create allow list objects for both.
	This setting is available if type {Cookie | Parameter | URL | Header_Field } on page 128 is set to `Cookie`.
	Caution: Do not allowlist untrusted subdomains that use vulnerable cookies. It could compromise the security of that domain and its network.
		No default.

name-type {plain | regular}	Indicate whether the `name "<name_str>"` field will contain a literal parameter name (Simple String), or a regular expression designed to match all parameter names (Regular Expression).	plain

Variable	Description	Default
name "<name_str>"	Depending on your selection in `type {Cookie | Parameter | URL | Header_Field } on page 128`, either: • Enter the name of the cookie as it appears in the HTTP request, such as `NID`. • Enter the name of the parameter as it appears in the HTTP URL or body, such as `rememberme`. This setting is available if type {Cookie | Parameter | URL | Header_Field } on page 128 is set to `Cookie`, `Parameter`, or `Header_Field`.	No default.
request-file-status {enable | disable}	Enable to apply this rule only to HTTP requests for specific URLs. Configure `request-file "<url_str>"` if it is enabled.	`disable`
domain-status {enable | disable}	Enable to apply this rule only to HTTP requests for specific domains. If enabled, also configure `domain "<cookie_str>"`.	`disable`
request-file "<url_str>"	Depending on your selection in the request-type {plain | regular} on page 128 field, enter either: • The literal URL, such as `/robots.txt`, that the HTTP request must contain in order to match the rule. The URL must begin with a backslash (/). • A regular expression, such as `^/*.html`, matching all and only the URLs to which the rule should apply. The pattern does not require a slash (/); however, it must at match URLs that begin with a backslash, such as `/index.html`. Do not include the domain name, such as `www.example.com`. This setting is available if type {Cookie | Parameter | URL | Header_Field } on page 128 is set to `URL`.	
header-type {plain | regular}	Indicate whether the type field will contain a literal name (plain), or a regular expression designed to match multiple names (regular).	`plain`
value-status {enable | disable}	Enable to also check the value of the HTTP header. Only the HTTP headers which match both the name and the value will be allowlisted.	`disable`
value-type {plain | regular}	Indicate whether the header name will contain a literal name (`plain`), or a regular expression designed to match multiple names (`regular`).	`plain`
value <header_value_string>	The value of the HTTP header. Depending on your selection in the `value-type` field, enter either a literal value or a regular expression.	No default.

Example

This example exempts requests for robots.txt from most scans.

```
config server-policy pattern custom-global-allow-list-group
   edit 1
      set request-file "/robots.txt"
   next
end
```

Related topics

- waf web-protection-profile inline-protection on page 720

server-policy pattern threat-score-profile

The settings in `config server-policy pattern threat-weight` apply to all the web protection profiles in a ADOM. However, if you want to differentiate the Threat Score settings in different web protection profiles, you can use `server-policy pattern threat-score-profile` to create multiple Threat Score profiles and apply them to different web protection profiles.

For details about Threat Weight, see the *FortiWeb Administration Guide*:

http://docs.fortinet.com/fortiweb/admin-guides

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `admingrp` area. For details, see Permissions on page 46.

Syntax

```
config server-policy pattern threat-score-profile
   edit <name>
      set low-level-score-end <level_ int>
      set medium-level-score-end <level_int>
      set statistics-period {one-day | three-days | one-week}
      set malicious-action {none | alert | alert_deny | block-period | client-id-block-period}
      set malicious-block-period <minutes_int>
      set suspicious-action {none | alert | alert_deny | block-period | client-id-block-period}
      set suspicious-block-period <minutes_int>
      set signature-only-threat-score {enable | disable}
      set signature-score-threshold <int>
      set signature-action {alert | alert_deny | block-period | client-id-block-period}
      set signature-block-period <int>
      set always-record-signature-alog {enable | disable}

end
```

Variable	Description	Default
low-level-score-end <level_int>	Set the low level threat score for different risk levels of a client based on the threat weight sum of all the security violations launched by the client at the time of the last access.	100
medium-level-score-end <level_int>	Set the high threat score for different risk levels of a client based on the threat weight sum of all the security violations launched by the client at the time of the last access.	200
statistics-period {one-day | three-days | one-week}	Select the amount of time in days that FortiWeb will store the threat score data for an active client. For example, when the statistics period is 3 days, and the total threat score in this period is 150. Then 150 will be taken as the score to compare with those set fo thrusted/suspicious/malicious clients.	three-days
malicious-action {none | alert | alert_deny | block-period | client-id-block-period}	• **block-period:** Block a malicious client based on source IP. • **client-id-block-period:** Block a malicious client based on the FortiWeb generated client ID. This is useful when the source IP of a certain client keeps changing. • **alert:** Accept the connection and generate an alert email and/or log message. • **alert_deny :** Block the request (or reset the connection) and generate an alert and/or log message.	none
malicious-block-period <minutes_int>	When selecting **block-period** or **client-id-block-period**, you need to enter the number of minutes that you want to block subsequent requests from the IP or client. Valid range is 1-1440 minutes.	10
suspicious-action {none | alert | alert_deny | block-period | client-id-block-period}	• **block-period:** Block a suspicious client based on source IP. • **client-id-block-period:** Block a suspicious client based on the FortiWeb generated client ID. This is useful when the source IP of a certain client keeps changing. • **alert:** Accept the connection and generate an alert email and/or log message. • **alert_deny :** Block the request (or reset the connection) and generate an alert and/or log message.	none
suspicious-block-period <minutes_int>	When selecting **block-period** or **client-id-block-period**, you need to enter the number of minutes that you want to block subsequent requests from the IP or client. Valid range is 1-1440 minutes.	10
signature-only-threat-score {enable | disable}	Enable **signature-only-threat-score** to limit Threat Score threshold calculation to signature violations only.	disable

Variable	Description	Default
	When enabled, a single signature violation from the client will not trigger the system to take actions according to the settings on the **Signature** page. The system will calculate threat scores and take action only when the **signature-only-threat-score** threshold is reached. An exception is for the **Erase** action, when means the system will take immediate action if the client violates a signature for which the action is **Erase**.	
signature-score-threshold <int>	Enter a threshold value for the signature violations. Available only when **signature-only-threat-score** is enabled.	200
signature-action {alert | alert_deny | block-period | client-id-block-period}	• **block-period:** Block a client based on source IP. • **client-id-block-period:** Block a client based on the FortiWeb generated client ID. This is useful when the source IP of a certain client keeps changing. • **alert:** Accept the connection and generate an alert email and/or log message. • **alert_deny :** Block the request (or reset the connection) and generate an alert and/or log message. Available only when **signature-only-threat-score** is enabled.	alert_deny
signature-block-period <int>	When selecting **block-period** or **client-id-block-period**, you need to enter the number of minutes that you want to block subsequent requests from the IP or client. Available only when **signature-only-threat-score** is enabled.	10
always-record-signature-alog {enable | disable}	When disabled, the Signature module itself will no longer record logs. Signature log will be generated only when the **signature-only-threat-score** exceeds the threshold. When enabled, every time a signature rule is triggered, the signature attack log will be generated. Available only when **signature-only-threat-score** is enabled.	disable

Related Topics

- waf web-protection-profile inline-protection on page 720

server-policy pattern threat-weight

Use this command to configure the global threat weight of security violations. When a security violation is detected, the threat weight of the security violation is used to calculate the threat score of a client that launched the event.

For details about Threat Weight, see the *FortiWeb Administration Guide*:

http://docs.fortinet.com/fortiweb/admin-guides

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `admingrp` area. For details, see Permissions on page 46.

Syntax

```
config server-policy pattern threat-weight
   set allow-hosts-level {low | critical | informational | moderate | substantial | severe}
   set allow-hosts-op {enable | disable}
   set allow-method-level {low | critical | informational | moderate | substantial | severe}
   set allow-method-op {enable | disable}
   set api-management-level {low | critical | informational | moderate | substantial | severe}
   set api-management-op {enable | disable}
   set biometrics-based-detection -level {low | critical | informational | moderate | substantial |
      severe}
   set biometrics-based-detection-op {enable | disable}
   set bot-deception-level {low | critical | informational | moderate | substantial | severe}
   set bot-deception-op {enable | disable}
   set client-management-expire <time_int>
   set concurrent-users-peraccount- exceeds-limit-level {low | critical | informational | moderate |
      substantial | severe}
   set concurrent-users-peraccount- exceeds-limit-op {enable | disable}
   set cookie-signature-checkfailed- level {low | critical | informational | moderate | substantial
      | severe}
   set cookie-signature-checkfailed- op {enable | disable}
   set cors-protection-level {low | critical | informational | moderate | substantial | severe}
   set cors-protection-op {enable | disable}
   set credential-stuffing-defenselevel {low | critical | informational | moderate | substantial |
      severe}
   set credential-stuffing-defenseop {enable | disable}
   set csrf-protection-level {low | critical | informational | moderate | substantial | severe}
   set csrf-protection-op {enable | disable}
   set custom-policy-op {enable | disable}
   set custom-signature-op {enable | disable}
   set fail-to-validate-json-schemalevel {low | critical | informational | moderate | substantial |
      severe}
   set fail-to-validate-json-schemaop {enable | disable}
   set fail-to-validate-xml-schemalevel {low | critical | informational | moderate | substantial |
      severe}
   set fail-to-validate-xml-schemaop {enable | disable}
   set forbid-xml-entities-level {low | critical | informational | moderate | substantial | severe}
   set forbid-xml-entities-op {enable | disable}
   set format-not-allowed-inwebsocket- level {low | critical | informational | moderate |
      substantial | severe}
   set format-not-allowed-inwebsocket- op {enable | disable}
   set geo-ip-level {low | critical | informational | moderate | substantial | severe}
```

```
    set geo-ip-op {enable | disable}
    set grpc-rate-limit-level {low | critical | informational | moderate | substantial | severe}
    set grpc-rate-limit-op {enable | disable}
    set grpc-parse-level {low | critical | informational | moderate | substantial | severe}
    set grpc-parse-op {enable | disable}
    set grpc-size-limit-level {low | critical | informational | moderate | substantial | severe}
    set grpc-size-limit-op {enable | disable}
    set hidden-field-protection-level {low | critical | informational | moderate | substantial |
      severe}
    set hidden-field-protection-op {enable | disable}
    set http-access-limit-level {low | critical | informational | moderate | substantial | severe}
    set http-access-limit-op {enable | disable}
    set http-flood-prevention-level {low | critical | informational | moderate | substantial |
      severe}
    set http-flood-prevention-op {enable | disable}
    set http-protocol-constraints-op {enable | disable}
    set illegal-file-size-level {low | critical | informational | moderate | substantial | severe}
    set illegal-file-size-op {enable | disable}
    set illegal-file-type-level {low | critical | informational | moderate | substantial | severe}
    set illegal-file-type-op {enable | disable}
    set ip-list-level {low | critical | informational | moderate | substantial | severe}
    set ip-list-op {enable | disable}
    set ip-replay-violation-level {low | critical | informational | moderate | substantial | severe}
    set ip-replay-violation-op {enable | disable}
    set ip-reputation-level {low | critical | informational | moderate | substantial | severe}
    set ip-reputation-op {enable | disable}
    set json-element-lengthexceeded- level {low | critical | informational | moderate | substantial |
      severe}
    set json-element-lengthexceeded- op {enable | disable}
    set known-bots-op {enable | disable}
    set low-level <level_int>
    set low-level-score-end <level_ int>
    set malicious-action {alert | alert_deny | block-period | client-id-block-period}
    set malicious-block-period <minutes_int>
    set malicious-file-detected-byfortisandbox- level {low | critical | informational | moderate |
      substantial | severe}
    set malicious-file-detected-byfortisandbox- op {enable | disable}
    set malicious-ips-level {low | critical | informational | moderate | substantial | severe}
    set malicious-ips-op {enable | disable}
    set man-in-browser-protectionlevel {low | critical | informational | moderate | substantial |
      severe}
    set man-in-browser-protectionop {enable | disable}
    set medium-level-score-end <level_int>
    set ml-bot-detection-level {low | critical | informational | moderate | substantial | severe}
    set ml-bot-detection-op {enable | disable}
    set ml-anomaly-detection-level {low | critical | informational | moderate | substantial | severe}
    set ml-anomaly-detection-op {enable | disable}
    set ml-api-level {low | critical | informational | moderate | substantial | severe}
    set ml-api-op {enable | disable}
    set mobile-api-protection-level {low | critical | informational | moderate | substantial |
      severe}
    set mobile-api-protection-op {enable | disable}
    set openapi-validation-level {low | critical | informational | moderate | substantial | severe}
    set openapi-validation-op {enable | disable}
    set origin-not-allowed-level {low | critical | informational | moderate | substantial | severe}
    set origin-not-allowed-op {enable | disable}
    set padding-oracle-protectionlevel {low | critical | informational | moderate | substantial |
      severe}
```

```
    set padding-oracle-protection-op {enable | disable}
    set parameter-validation-level {low | critical | informational | moderate | substantial | severe}
    set parameter-validation-op {enable | disable}
    set quarantined-ip-level {low | critical | informational | moderate | substantial | severe}
    set quarantined-ip-op {enable | disable}
    set session-fixation-protectionlevel {low | critical | informational | moderate | substantial |
      severe}
    set session-fixation-protectionop {enable | disable}
    set session-idle-timeout-level {low | critical | informational | moderate | substantial | severe}
    set session-idle-timeout-op {enable | disable}
    set signature-op {enable | disable}
    set size-exceeds-limit-level {low | critical | informational | moderate | substantial | severe}
    set size-exceeds-limit-op {enable | disable}
    set sql-xss-sbd-op {enable | disable}
    set statistics-period {one-day | three-days | one-week}
    set suspicious-action {alert | alert_deny | block-period | client-id-block-period}
    set suspicious-block-period <minutes_int>
    set tcp-flood-prevention-level {low | critical | informational | moderate | substantial | severe}
    set tcp-flood-prevention-op {enable | disable}
    set threshold-based-detectionlevel {low | critical | informational | moderate | substantial |
      severe}
    set threshold-based-detection-op {enable | disable}
    set threat-score-profile {enable | disable}
    set trojan-detected-level {low | critical | informational | moderate | substantial | severe}
    set trojan-detected-op {enable | disable}
    set url-access-level {low | critical | informational | moderate | substantial | severe}
    set url-access-op {enable | disable}
    set url-encryption-level {low | critical | informational | moderate | substantial | severe}
    set url-encryption-op {enable | disable}
    set virus-detected-level {low | critical | informational | moderate | substantial | severe}
    set virus-detected-op {enable | disable}
    set websocket-extensions-notallowed-level {low | critical | informational | moderate |
      substantial | severe}
    set websocket-extensions-notallowed-op {enable | disable}
    set websocket-traffic-notallowed-level {low | critical | informational | moderate | substantial |
      severe}
    set websocket-traffic-notallowed-op {enable | disable}
    set wsdl-validation-failed-level {low | critical | informational | moderate | substantial |
      severe}
    set wsdl-validation-failed-op {enable | disable}
    set wsi-check-failed-level {low | critical | informational | moderate | substantial | severe}
    set wsi-check-failed-op {enable | disable}
    set xml-element-lengthexceeded-level {low | critical | informational | moderate | substantial |
      severe}
    set xml-element-lengthexceeded-op {enable | disable}
    set ztna-level {low | critical | informational | moderate | substantial | severe}
    set ztna-op {enable | disable}
end
```

Variable	Description	Default
allow-hosts-level {low | critical | informational | moderate | substantial | severe}	Set the threat weight for Protected Hostname violations.	`moderate`

Variable	Description	Default
allow-hosts-op {enable | disable}	Enable to configure the threat weight for Protected Hostname violations.	`disable`
allow-method-level {low | critical | informational | moderate | substantial | severe}	Set the threat weight for HTTP request method violations.	`moderate`
allow-method-op {enable | disable}	Enable to configure the threat weight for HTTP request method violations.	`enable`
set api-management-level {low | critical | informational | moderate | substantial | severe}	Set the threat weight for API Gateway policy violations.	`moderate`
api-management-op {enable | disable}	Enable to configure the threat weight for API Gateway policy violations.	`enable`
biometrics-based-detection -level {low | critical | informational | moderate | substantial | severe}	Set the threat weight for biometrics based detection rule violations.	`substantial`
biometrics-based-detection-op {enable | disable}	Enable to configure the threat weight for biometrics based detection rule violations.	`disable`
bot-deception-level {low | critical | informational | moderate | substantial | severe}	Set the threat weight for bot deception policy violations.	`substantial`
bot-deception-op {enable | disable}	Enable to configure the threat weight for bot deception policy violations.	`disable`
client-management-expire <time_int>	Set the amount of time that FortiWeb will store the tracked client information. Once the information has been stored for longer than the set amount of time, FortiWeb will remove that information.	15 days
concurrent-users-per-account-exceeds-limit-level {low | critical | informational | moderate | substantial | severe}	Set the threat weight for violations that the number of concurrent users per account exceeds the limit.	`moderate`

Variable	Description	Default
concurrent-users-per-account-exceeds-limit-op {enable | disable}	Enable to configure the threat weight for violations that the number of concurrent users per account exceeds the limit.	`enable`
cookie-signature-check-failed-level {low | critical | informational | moderate | substantial | severe}	When the security mode is None or Signed, enable to configure the threat weight for cookie tampering protection rule violations.	`substantial`
cookie-signature-check-failed-op {enable | disable}	Enable to configure the threat weight for cookie tampering protection rule violations.	`enable`
cors-protection-level {low | critical | informational | moderate | substantial | severe}	Set the threat weight for CORS protection rule violations.	`moderate`
cors-protection-op {enable | disable}	Enable to configure the threat weight for CORS protection rule violations.	`enable`
credential-stuffing-defense-level {low | critical | informational | moderate | substantial | severe}	Set the threat weight for Credential Stuffing attacks.	`severe`
credential-stuffing-defense-op {enable | disable}	Enable to configure the threat weight for Credential Stuffing attacks.	`enable`
csrf-protection-level {low | critical | informational | moderate | substantial | severe}	Set the threat weight for CSRF protection rule violations.	`substantial`
csrf-protection-op {enable | disable}	Enable to configure the threat weight for CSRF protection rule violations.	`enable`
custom-policy-op {enable | disable}	Enable to configure the threat weight for custom policy violations.	`enable`
custom-signature-op {enable | disable}	Enable to configure the threat weight for custom signature policy violations.	`disable`
fail-to-validate-json-schema-level {low | critical | informational | moderate | substantial | severe}	Set the threat weight for JSON protection rule violations.	`substantial`

Variable	Description	Default
fail-to-validate-json-schema-op {enable | disable}	Enable to configure the threat weight for violation of failing to validate JSON schema file.	`enable`
fail-to-validate-xml-schema-level {low | critical | informational | moderate | substantial | severe}	Set the threat weight for violation of failing to validate JSON schema file.	`moderate`
fail-to-validate-xml-schema-op {enable | disable}	Enable to configure the threat weight for violation of failing to validate XML schema file.	`enable`
forbid-xml-entities-level {low | critical | informational | moderate | substantial | severe}	Set the threat weight for violation of failing to validate XML schema file.	`substantial`
forbid-xml-entities-op {enable | disable}	Enable to configure the threat weight for forbidden XML entities violations.	`enable`
format-not-allowed-in-websocket-level {low | critical | informational | moderate | substantial | severe}	When the WebSocket connection is established, data is transmitted in the form of frame. Set the threat weight for violation that frame formats are not allowed.	`moderate`
format-not-allowed-in-websocket-op {enable | disable}	Enable to configure the threat weight for violation that frame formats are not allowed.	`enable`
geo-ip-level {low | critical | informational | moderate | substantial | severe}	Set the threat weight for requests from blocked countries or regions based on the associated source IP address.	`critical`
geo-ip-op {enable | disable}	Enable to configure the threat weight for Geo IP block policy violations.	`enable`
grpc-rate-limit-level {low | critical | informational | moderate | substantial | severe}	Set the threat weight for gRPC rate limit violations.	`moderate`
grpc-rate-limit-op {enable | disable}	Enable to configure the threat weight for gRPC rate limit violations.	`enable`

Variable	Description	Default
grpc-parse-level {low | critical | informational | moderate | substantial | severe}	Set the threat weight for gRPC format violations.	`substantial`
grpc-parse-op {enable | disable}	Enable to configure the threat weight for gRPC format violations.	`enable`
grpc-size-limit-level {low | critical | informational | moderate | substantial | severe}	Set the threat weight for gRPC size limit violations.	`moderate`
grpc-size-limit-op {enable | disable}	Enable to configure the threat weight for gRPC size limit violations.	`enable`
hidden-field-protection-level {low | critical | informational | moderate | substantial | severe}	Set the threat weight for attempts to tamper with hidden field rules.	`substantial`
hidden-field-protection-op {enable | disable}	Enable to configure the threat weight for hidden field protection rule violations.	`enable`
http-access-limit-level {low | critical | informational | moderate | substantial | severe}	Set the threat weight for violation that the number of HTTP requests per second, per source IP address exceeds the limit.	`moderate`
http-access-limit-op {enable | disable}	Enable to configure the threat weight for violation that the number of HTTP requests per second, per source IP address exceeds the limit.	`enable`
http-flood-prevention-level {low | critical | informational | moderate | substantial | severe}	Set the threat weight for violation that the number ofHTTP requests per second, per session, per URL exceeds the limit.	`moderate`
HTTP-flood-prevention-op {enable | disable}	Enable to configure the threat weight for violation that the number of HTTP requests per second, per session, per URL exceeds the limit.	`enable`
HTTP-protocol-constraints-op {enable | disable}	Enable to configure the threat weight for HTTP protocol constraints. Once enabled, the threat weight for each HTTP protocol constraint may be set using waf HTTP-protocol-parameter-restriction on page 556.	`enable`

Variable	Description	Default
illegal-file-size-level {low | critical | informational | moderate | substantial | severe}	Set the threat weight for the file size detection and restriction violation.	`moderate`
illegal-file-size-op {enable | disable}	Enable to configure the threat weight for the file size detection and restriction violation.	`enable`
illegal-file-type-level {low | critical | informational | moderate | substantial | severe}	Set the threat weight for the file type detection and restriction violation.	`substantial`
illegal-file-type-op {enable | disable}	Enable to configure the threat weight for the file type detection and restriction violation.	`enable`
ip-list-level {low | critical | informational | moderate | substantial | severe}	Set the threat weight for requests from blocklisted IP addresses.	`critical`
ip-list-op {enable | disable}	Enable to configure the threat weight for requests from blocklisted IP addresses.	`enable`
ip-replay-violation-level {low | critical | informational | moderate | substantial | severe}	When the security mode is Encrypted, select whether FortiWeb uses the IP address of a request to determine the owner of the cookie. Set the threat weight for IP replay violations.	`substantial`
ip-replay-violation-op {enable | disable}	Enable to configure the threat weight for IP replay violations.	`enable`
ip-reputation-level {low | critical | informational | moderate | substantial | severe}	Set the threat weight for requests from IP addresses with a poor reputation.	`critical`
ip-reputation-op {enable | disable}	Enable to configure the threat weight for requests from IP addresses with a poor reputation.	`enable`
json-element-length-exceeded-level {low | critical | informational | moderate | substantial | severe}	Set the threat weight for the violation that the JSON element length exceeds.	`moderate`
json-element-length-exceeded-op {enable | disable}	Enable to configure the threat weight for the violation that the JSON element length exceeds.	`enable`

Variable	Description	Default
known-bots-op {enable | disable}	Enable to configure the threat weight for the known bots attacks.	`disable`
low-level <level_int>	Set the risk level value for Low level.	10
low-level-score-end <level_int>	Set the low level threat score for different risk levels of a client based on the threat weight sum of all the security violations launched by the client at the time of the last access.	100
malicious-action {alert | alert_deny | block-period | client-id-block-period}	• **block-period:** Block a malicious client based on source IP. • **client-id-block-period:** Block a malicious client based on the FortiWeb generated client ID. This is useful when the source IP of a certain client keeps changing. • **alert:** Accept the connection and generate an alert email and/or log message. • **alert_deny :** Block the request (or reset the connection) and generate an alert and/or log message.	none
malicious-block-period	When selecting **block-period** or **client-id-block-period**, you need to enter the number of minutes that you want to block subsequent requests from the IP or client. Valid range is 1-1440 minutes.	10
malicious-file-detected-by-fortisandbox-level {low | critical | informational | moderate | substantial | severe}	Set the threat weight for the violation of malicious file detection by FortiSandbox.	`severe`
malicious-file-detected-by-fortisandbox-op {enable | disable}	Enable to configure the threat weight for the violation of malicious file detection by FortiSandbox.	`enable`
malicious-ips-level {low | critical | informational | moderate | substantial | severe}	Set the threat weight for the violation that the number of TCP connections per HTTP session exceeds the limit.	`moderate`
malicious-ips-op {enable | disable}	Enable to configure the threat weight the violation that the number of TCP connections per HTTP session exceeds the limit.	`enable`

Variable	Description	Default
man-in-browser-protection-level {low | critical | informational | moderate | substantial | severe}	Set the threat weight for MiTB attacks.	`substantial`
man-in-browser-protection-op {enable | disable}	Enable to configure the threat weight for MiTB attacks.	`enable`
medium-level-score-end <level_int>	Set the high threat score for different risk levels of a client based on the threat weight sum of all the security violations launched by the client at the time of the last access.	`200`
ml-bot-detection-level {low | critical | informational | moderate | substantial | severe}	Set the threat weight for ML Based Bot Detection rule violations.	`moderate`
ml-bot-detection-op {enable | disable}	Enable to configure the threat weight for ML Based Bot Detection rule violations.	`disable`
ml-anomaly-detection-level {low | critical | informational | moderate | substantial | severe}	Set the threat weight for ML Anomaly Detection rule violations.	`substantial`
ml-anomaly-detection-op {enable | disable}	Enable to configure the threat weight for ML Anomaly Detection rule violations.	`disable`
ml-api-level {low | critical | informational | moderate | substantial | severe}	Set the threat weight for ML API Detection rule violations.	`substantial`
ml-api-op {enable | disable}	Enable to configure the threat weight for ML API Detection rule violations.	`disable`
mobile-api-protection-level {low | critical | informational | moderate | substantial | severe}	Set the threat weight for mobile API protection rule violations.	`substantial`
mobile-api-protection-op {enable | disable}	Enable to configure the threat weight for mobile API protection rule violations.	`enable`
openapi-validation-level {low | critical | informational | moderate | substantial | severe}	Set the threat weight for OpenAPI validation rule violations.	`moderate`

Variable	Description	Default
openapi-validation-op {enable | disable}	Enable to configure the threat weight for OpenAPI validation rule violations.	`enable`
origin-not-allowed-level {low | critical | informational | moderate | substantial | severe}	Set the threat weight for the violation of origin not allowed.	low
origin-not-allowed-op {enable | disable}	Enable to configure the threat weight for the violation of origin not allowed.	enable
padding-oracle-protection-level {low | critical | informational | moderate | substantial | severe}	Set the threat weight for padding oracle attacks.	`severe`
padding-oracle-protection-op {enable | disable}	Enable to configure the threat weight for padding oracle attacks.	`enable`
parameter-validation-level {low | critical | informational | moderate | substantial | severe}	Set the threat weight for parameter validation violation.	`moderate`
parameter-validation-op {enable | disable}	Enable to configure threat weight for parameter validation violation.	`enable`
quarantined-ip-level {low | critical | informational | moderate | substantial | severe}	Set the threat weight for FortiGate Quarantined IPs.	`critical`
quarantined-ip-op {enable | disable}	Enable to configure the threat weight for FortiGate Quarantined IPs.	`disable`
session-fixation-protection-level {low | critical | informational | moderate | substantial | severe}	Set the threat weight for session fixation protection rule violation.	`moderate`
session-fixation-protection-op {enable | disable}	Enable to configure the threat weight for session fixation protection rule violation.	`enable`
session-idle-timeout-level {low | critical | informational | moderate | substantial | severe}	Set the threat weight for the violation of session idle timeout.	`moderate`

Variable	Description	Default
session-idle-timeout-op {enable | disable}	Enable to configure the threat weight for the violation of session idle timeout.	`enable`
signature-op {enable | disable}	Enable to set the threat weight for each signature rule.	`enable`
size-exceeds-limit-level {low | critical | informational | moderate | substantial | severe}	Set the threat weight for the violation when the maximum acceptable frame header and body size in bytes exceeds the limit.	`moderate`
size-exceeds-limit-op {enable | disable}	Enable to configure the threat weight for the violation when the maximum acceptable frame header and body size in bytes exceeds the limit.	`enable`
sql-xss-sbd-op {enable | disable}	Enable to configure the threat weight for the SQL/XSS syntax based detection rule violation.	`enable`
statistics-period {one-day | three-days | one-week}	Select the amount of time in days that FortiWeb will store the threat score data for an active client. For example, when the statistics period is 3 days, and the total threat score in this period is 150. Then 150 will be taken as the score to compare with those set fo thrusted/suspicious/malicious clients.	three-days
suspicious-action {alert | alert_deny | block-period | client-id-block-period}	• **block-period:** Block a suspicious client based on source IP. • **client-id-block-period:** Block a suspicious client based on the FortiWeb generated client ID. This is useful when the source IP of a certain client keeps changing. • **alert:** Accept the connection and generate an alert email and/or log message. • **alert_deny :** Block the request (or reset the connection) and generate an alert and/or log message.	none
suspicious-block-period	When selecting **block-period** or **client-id-block-period**, you need to enter the number of minutes that you want to block subsequent requests from the IP or client. Valid range is 1-1440 minutes.	10
tcp-flood-prevention-level {low | critical | informational | moderate | substantial | severe}	Set the threat weight for the violation when the number of fully-formed TCP connections per source IP address exceeds the limit.	`moderate`

Variable	Description	Default
tcp-flood-prevention-op {enable | disable}	Enable to configure the threat weight for the violation when the number of fully-formed TCP connections per source IP address exceeds the limit.	`enable`
threshold-based-detection-level {low | critical | informational | moderate | substantial | severe}	Set the threat weight for the threshold based detection rule violation.	`substantial`
threshold-based-detection-op {enable | disable}	Enable to configure the threat weight for the threshold based detection rule violation.	`disable`
threat-score-profile {enable | disable}	If you want to differentiate the Threat Score settings in different web protection profiles, you can enable **threat-score-profile**. After enabling it, use `config server-policy pattern threat-score-profile` to create multiple Threat Score profiles and apply them to different web protection profiles.	`disable`
trojan-detected-level {low | critical | informational | moderate | substantial | severe}	Set the threat weight for the Trojan detection rule violation.	`enable`
trojan-detected-op {enable | disable}	Enable to configure the threat weight for the Trojan detection rule violation.	`severe`
url-access-level {low | critical | informational | moderate | substantial | severe}	Set the threat weight for the URL access rule violation.	`substantial`
url-access-op {enable | disable}	Enable to configure the threat weight for the URL access rule violation.	`enable`
url-encryption-level {low | critical | informational | moderate | substantial | severe}	Set the threat weight for URL Encryption rule violations.	`substantial`
url-encryption-op {enable | disable}	Enable to configure the threat weight for URL Encryption rule violations.	`disable`
virus-detected-level {low | critical | informational | moderate | substantial | severe}	Set the threat weight for the virus detection rule violation.	`critical`

Variable	Description	Default
virus-detected-op {enable | disable}	Enable to configure the threat weight for the virus detection rule violation.	`enable`
websocket-extensions-not-allowed-level {low | critical | informational | moderate | substantial | severe}	Set the threat weight for the violation of extension header in WebSocket handshake packet.	`substantial`
websocket-extensions-not-allowed-op {enable | disable}	Enable to configure the threat weight for the violation of extension header in WebSocket handshake packet.	`enable`
websocket-traffic-not-allowed-level {low | critical | informational | moderate | substantial | severe}	Set the threat weight for the WebSocket traffic blocking violation.	`substantial`
websocket-traffic-not-allowed-op {enable | disable}	Enable to configure the threat weight for the WebSocket traffic blocking violation.	`enable`
wsdl-validation-failed-level {low | critical | informational | moderate | substantial | severe}	Set the threat weight for the WSDL file validation rule violation.	`substantial`
wsdl-validation-failed-op {enable | disable}	Enable to set the threat weight for the WSDL file validation rule violation.	`enable`
wsi-check-failed-level {low | critical | informational | moderate | substantial | severe}	Set the threat weight for the WS-security rule violation.	`moderate`
wsi-check-failed-op {enable | disable}	Enable to set the threat weight for the WS-security rule violation.	`enable`
xml-element-length-exceeded-level {low | critical | informational | moderate | substantial | severe}	Set the threat weight for the violation that the XML element length exceeds.	`moderate`
xml-element-length-exceeded-op {enable | disable}	Enable to configure the threat weight for the violation that the XML element length exceeds.	`enable`

Variable	Description	Default
ztna-level {low | critical | informational | moderate | substantial | severe}	Set the threat weight for ZTNA rule violations.	`substantial`
ztna-op {enable | disable}	Enable to configure the threat weight for ZTNA rule violations.	`disable`

Related Topics

- waf web-protection-profile inline-protection on page 720

server-policy persistence-policy

Use this command to configure a persistence method and timeout that you can apply to server pools. The persistence policy applies to all members of the server pool.

After FortiWeb has forwarded the first packet from a client to a pool member, some protocols require that subsequent packets also be forwarded to the same back-end server until a period of time passes or the client indicates that it has finished transmission.

To apply a persistence policy, select it when you configure a server pool. For details, see server-policy server-pool on page 184.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `traroutegrp` area. For details, see Permissions on page 46.

Syntax

```
config server-policy persistence-policy
   edit "<persistence-policy_name>"
      set type { source-ip | persistent-cookie | asp-sessionid | php-sessionid | jsp-sessionid |
            insert-cookie | HTTP-header | url-parameter | rewrite-cookie | embedded-cookie | ssl-
            session-id }
      set cookie-name "<cookie-name_str>"
      set timeout "<timeout_int>"
      set ipv4-netmask "<v4mask>"
      set ipv6-mask-length "<v6mask>"
      set HTTP-header "<HTTP-header_str>"
      set url-parameter "<url-parameter_str>"
      set cookie-path "<cookie-path_str>"
      set cookie-domain "<cookie-domain_str>"
      set secure-cookie {enable | disable}
   next
end
```

Variable	Description	Default
"<persistence-policy_name>"	Enter the name of the persistence policy. The maximum length is 63 characters. To display the list of existing persistence policies, enter: `edit ?`	No default.
type { source-ip | persistent-cookie | asp-sessionid | php-sessionid | jsp-sessionid | insert-cookie | HTTP-header | url-parameter | rewrite-cookie | embedded-cookie | ssl-session-id }	• `source-ip`—Forwards subsequent requests with the same client IP address and subnet as the initial request to the same pool member. To define how FortiWeb derives the appropriate subnet from the IP address, configure ipv4-netmask "<v4mask>" on page 150 and ipv6-mask-length "<v6mask>" on page 150. • `persistent-cookie`—If an initial request contains a cookie whose name matches the cookie-name "<cookie-name_str>" on page 149 value, FortiWeb forwards subsequent requests that contain the same cookie value to the same pool member as the initial request. • `asp-sessionid`—If a cookie in the initial request contains an ASP .NET session ID value, FortiWeb forwards subsequent requests with the same session ID value to the same pool member as the initial request. FortiWeb preserves the original cookie name. • `php-sessionid`—If a cookie in the initial request contains a PHP session ID value, FortiWeb forwards subsequent requests with the same session ID value to the same pool member as the initial request. FortiWeb preserves the original cookie name. • `jsp_sessionid`—FortiWeb forwards subsequent requests with the same JSP session ID as the inital request to the same pool member. FortiWeb preserves the original cookie name. • `insert-cookie`—FortiWeb inserts a cookie with the name specified by cookie-name "<cookie-name_str>" on page 149 to the initial request and forwards all subsequent requests with this cookie to the same pool member. FortiWeb uses this cookie for persistence only and does not forward it to the pool member. Also specify cookie-path "<cookie-path_str>" on page 150 and cookie-domain "<cookie-domain_str>" on page 150.	`source-ip`

Variable	Description	Default
	• `HTTP-header`—Forwards subsequent requests with the same value for an HTTP header as the initial request to the same pool member. Also configure `HTTP-header`. • `url-parameter`—Forwards subsequent requests with the same value for a URL parameter as the initial request to the same pool member. Also configure `url-parameter`. • `rewrite-cookie`—If the HTTP response has a `Set-Cookie:` value that matches the value specified by cookie-name "<cookie-name_str>" on page 149, FortiWeb replaces the value with a randomly generated cookie value. FortiWeb forwards all subsequent requests with this generated cookie value to the same pool member. • `embedded-cookie`—If the HTTP response contains a cookie with the name specified by cookie-name "<cookie-name_str>" on page 149, FortiWeb preserves the original cookie value and adds a randomly generated cookie value and a ~ (tilde) as a prefix. FortiWeb forwards all subsequent requests with this cookie and prefix to the same pool member. • `ssl-session-id`—If a cookie in the initial request contains an SSL session ID value, FortiWeb forwards subsequent requests with the same session ID value to the same pool member as the initial request. FortiWeb preserves the original cookie name. For persistence types that use cookies, you can use the `sessioncookie-enforce` setting to maintain persistence for transactions within a session. For details, see server-policy policy on page 151.	
cookie-name "<cookie-name_str>"	Enter a value to match or the name of the cookie that FortiWeb inserts. Available only when the persistence type uses a cookie.	No default.
timeout "<timeout_int>"	Enter the maximum amount of time between requests that FortiWeb maintains persistence, in seconds.	`300`

Variable	Description	Default
	FortiWeb stops forwarding requests according to the established persistence after this amount of time has elapsed since it last received a request from the client with the associated property (for example, an IP address or cookie). Instead, it again selects a pool member using the load balancing method specified in the server pool configuration.	
ipv4-netmask "<v4mask>"	Enter the IPv4 subnet used for session persistence. For example, if IPv4 Netmask is 255.255.255.255, FortiWeb can forward requests from IP addresses 192.0.2.1 and 192.0.2.2 to different server pool members. If IPv4 Netmask is 255.255.255.0, FortiWeb forwards requests from IP addresses 192.0.2.1 and 192.0.2.2 to the same pool member.	`255.255.255.255`
ipv6-mask-length "<v6mask>"	Enter the IPv6 network prefix used for session persistence.	`128`
HTTP-header "<HTTP-header_str>"	Enter the name of the HTTP header that the persistence feature uses to route requests.	No default.
url-parameter "<url-parameter_str>"	Enter the name of the URL parameter that the persistence feature uses to route requests.	No default.
cookie-path "<cookie-path_str>"	Enter a path attribute for the cookie that FortiWeb inserts, if type { source-ip | persistent-cookie | asp-sessionid | php-sessionid | jsp-sessionid | insert-cookie | HTTP-header | url-parameter | rewrite-cookie | embedded-cookie | ssl-session-id } on page 148 is `insert-cookie`.	No default.
cookie-domain "<cookie-domain_str>"	Enter a domain attribute for the cookie that FortiWeb inserts, if type { source-ip | persistent-cookie | asp-sessionid | php-sessionid | jsp-sessionid | insert-cookie | HTTP-header | url-parameter | rewrite-cookie | embedded-cookie | ssl-session-id } on page 148 is `insert-cookie`.	No default.
secure-cookie {enable | disable}	Configure the secure cookie to force browsers to return the cookie only for HTTPS traffic.	`disable`

Example

This example creates the persistence policy `ip-persistence`. When this policy is applied to a server pool, FortiWeb forwards initial requests from an IP address using the load-balancing algorithm configured for the pool. It forwards any subsequent requests with the same client IP address as the initial request to the same pool member. After FortiWeb has

not received a request from the IP address for 400 seconds, it forwards any subsequent initial requests from the IP address using the load-balancing algorithm.

```
config server-policy persistence-policy
   edit "ip-persistence"
      set type source-ip
      set timeout 400
   next
end
```

Related topics

- server-policy server-pool on page 184

server-policy policy

Use this command to configure HTTP, FTP, and AD FS server policies.

FortiWeb applies only one server policy to each connection.

HTTP policy behavior varies by the operation mode. FTP and AD FS server policies are available only in Reverse Proxy mode. For details, see *FortiWeb Administration Guide*:

http://docs.fortinet.com/fortiweb/admin-guides

When you switch the operation mode, FortiWeb deletes server policies from the configuration file if they are not applicable in the current operation mode.

To determine which type of server policy to create, configure protocol {HTTP | FTP | ADFSPIP} on page 166.

Before you configure an HTTP server policy, you can configure several policies and profiles:

- Configure a virtual server and server pool. For details, see server-policy vserver on page 217 and server-policy server-pool on page 184.
- To route traffic based on headers in the HTTP layer, configure one or more HTTP content routing policies. For details, see server-policy HTTP-content-routing-policy on page 119.
- To restrict traffic based upon which hosts you want to protect, configure a group of protected host names. For details, see server-policy allow-hosts on page 106.
- If you plan to authenticate users, you need to configure users, user groups, and authentication rules and policy, and include the policy in an inline web protection profile. For details, see user ldap-user on page 405, "user local-user" on page 1, user ntlm-user on page 408, "user user-group" on page 1, "waf HTTP-authen HTTP-authen-rule" on page 1, and "waf HTTP-authen HTTP-authen-policy" on page 1.
- To apply a web protection profile to a server policy, you must first configure them. For details, see waf web-protection-profile inline-protection on page 720 (Reverse Proxy mode or either of the transparent modes), or waf web-protection-profile offline-protection on page 731 (Offline Protection mode) .
- If you want to use the FortiWeb appliance to apply SSL to connections instead of using physical servers, you must also import a server certificate or create a Server Name Indication (SNI) configuration. For details, see system certificate local on page 264, system certificate sni on page 270, and system certificate urlcert on page 274.

- If you want the FortiWeb appliance to verify the certificate provided by an HTTP client to authenticate themselves, you must also define a certificate verification rule. If you want to specify whether a client is required to present a personal certificate or not based on the request URL, create a URL-based client certificate group. For details, see system certificate verify on page 275.

You can also use SNMP traps to notify you of policy status changes, or when a policy enforces your network usage policy. For details, see system snmp community on page 383.

Before you configure an FTP server policy, you need to:

- Configure an FTP command restriction rule. For details, see waf ftp-command-restriction-rule on page 522.
- Configure an FTP file check rule. For details, see waf ftp-file-security on page 525.
- Enable IP reputation intelligence. For details, see waf ip-intelligence-ignore-x-forwarded-for on page 574.
- Create a geo IP rule. For details, see waf geo-block-list on page 529.
- Create an IP list. For details, see waf ip-list on page 575.
- Configure an FTP security inline profile. For details, see waf ftp-protection-profile.

Before you configure an AD FS server policy, you need to:

- Configure a virtual server and server pool. For details, see server-policy vserver on page 217 and server-policy server-pool on page 184.server-policy vserver on page 217
- Import a certificate file and a CA file. For details, see system certificate local on page 264 and system certificate ca on page 254.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `traroutegrp` area. For details, see Permissions on page 46.

Syntax

```
config server-policy policy
   edit "<policy_name>"
      set allow-hosts "<hosts_name>"
      set block-port <port_int>
      set case-sensitive {enable | disable}
      set certificate "<certificate_name>"
      set chunk-encoding {enable | disable}
      set client-certificate-forwarding {enable | disable}
      set server-policy policy
      set client-certificate-forwarding-sub-header "<header_str>"
      set client-real-ip {enable | disable}
      set client-real-ip-random-port {enable | disable}
      set real-ip-addr <real-ip-addr_str>
      set client-timeout <seconds_int>
      set comment "<comment_str>"
      set data-capture-port <port_int>
      set deployment-mode {server-pool | HTTP-content-routing | offline-protection | transparent-
            servers | wccp-servers}
      set ftp-protection-profile <profile_name>
      set half-open-threshold <packets_int>
      set hpkp-header "<hpkp_name>"
      set hsts-header {enable | disable}
      set hsts-max-age <timeout_int>
      set HTTP2 {enable | disable}
      set http2-window-size <int>
      set HTTP-header-timeout <seconds_int>
```

```
    set http-parse-max-size <integer>
    set HTTP-pipeline {enable | disable}
    set HTTP-to-HTTPS {enable | disable}
    set redirect-naked-domain {enable | disable}
    set http3-service <datasource>
    set HTTPS-service "<service_name>"
    set implicit_ssl {enable | disable}
    set intermediate-certificate-group "<CA-group_name>"
    set internal-cookie-HTTPonly {enable | disable}
    set internal-cookie-secure {enable | disable}
    set internal-cookie-samesite {enable | disable}
    set internal-cookie-samesite-value {strict | lax | none}
    set monitor-mode {enable | disable}
    set noparse {enable | disable}
    set prefer-current-session {enable |disable}
    set protocol {HTTP | FTP | ADFSPIP}
    set server-pool "<server-pool_name>"
    set service "<service_name>"
    set proxy-protocol {enable | disable}
    set use-proxy-protocol-addr {enable | disable} on page 164
    set replacemsg <replacemsg_name>
    set sessioncookie-enforce {enable | disable}
    set sni {enable | disable}
    set sni-certificate "<sni_name>"
    set sni-strict {enable | disable}
    set certificate-type {enable | disable}
    set lets-certificate <name>
    set ssl {enable | disable}
    set ssl-cipher {medium | high | custom}
    set ssl-client-verify "<verifier_name>"
    set ssl-custom-cipher {<cipher_1> <cipher2> <cipher3> ...}
    set tls13-custom-cipher {<cipher_1> <cipher2> <cipher3> ...}
    set rfc7919-comply {enable | disable}
    set supported-groups {X25519 | prime256v1 | secp384r1 | secp521r1 | brainpoolP256r1 |
          brainpoolP384r1 | brainpoolP512r1 | ffdhe2048 | ffdhe3072 | ffdhe4096 | ffdhe6144 |
          ffdhe8192}
    set ssl-noreg {enable | disable}
    set ssl-quiet-shutdown {enable | disable}
    set ssl-session-timeout <ssl-session-timeout_int>
    set status {enable | disable}
    set syncookie {enable | disable}
    set tcp-recv-timeout <seconds_int>
    set tls-v10 {enable | disable}
    set tls-v11 {enable | disable}
    set tls-v12 {enable | disable}
    set tls-v13 {enable | disable}
    set urlcert {enable | disable}
    set urlcert-group "<urlcert-group_name>"
    set urlcert-hlen <len_int>
    set vserver "<vserver_name>"
    set v-zone "<bridge_name>"
    set server-policy policy
    set traffic-mirror {enable | disable}
    set traffic-mirror-type {client-side | server-side| both-side}
    set traffic-mirror-profile <traffic-mirror-profile_str>
    set adfs-certificate-ssl-client-verify <adfs-certificate-ssl-client-verify_str>}
    set adfs-certificate-service <adfs-certificate-service_str>}
```

```
      set multi-certificate {enable | disable}
      set certificate-group <certificate-group_str>}
      set acceleration-policy <acceleration-policy_str>
      set web-cache {enable | disable}
      set retry-on {enable | disable}
      set retry-on-cache-size <retry-on-cache-size_int>
      set retry-on-connect-failure {enable | disable}
      set retry-times-on-connect-failure <retry-times-on-connect-failure_int>
      set retry-on-HTTP-layer {enable | disable}
      set retry-times-on-HTTP-layer <retry-times-on-HTTP-layer_int>
      set retry-on-HTTP-response-codes {404 | 408 | 500 | 501 | 502 | 503 | 504}
      set replacemsg-on-connect-failure {disable | enable}
      set tcp-conn-timeout <integer>
      set ztna-profile <string>
      set reply-100-continue {enable | disable}
      set forward-expect-100-continue {enable | disable}
      set transaction-based-persistence {enable | disable}
      set no-ssl-error-log {enable | disable}
      config HTTP-content-routing-list
         edit <entry_index>
            set content-routing-policy-name "<content-routing_name>"
            set is-default {yes | no}
            set profile-inherit {enable | disable}
            set server-policy policy
            set replacemsg <replacemsg_name>
         next
      end
   next
end
```

Variable	Description	Default
"<policy_name>"	Enter the name of the policy. The maximum length is 63 characters. To display the list of existing policies, enter: `edit ?`	No default.
allow-hosts "<hosts_name>"	Enter the name of a protected hosts group to allow or reject connections based upon whether the `Host:` field in the HTTP header is empty or does or does not match the protected hosts group. The maximum length is 63 characters. To display the list of existing groups, enter: `edit ?` If you do not select a protected hosts group, FortiWeb accepts pr blocks requests based upon other criteria in the policy or protection profile, but regardless of the `Host:` field in the HTTP header.	No default.

Variable	Description	Default
	Note: Unlike HTTP 1.1, HTTP 1.0 does **not** require the `Host:` field. The FortiWeb appliance does not block HTTP 1.0 requests because they do not have this field, regardless of whether or not you have selected a protected hosts group.	
block-port <port_int>	Enter the number of the physical network interface port that FortiWeb uses to send TCP `RST` (reset) packets when a request violates the policy. The valid range varies by the number of physical ports on the NIC. For example, to send TCP `RST` from `port1`, enter: `set block-port port1` Available only when the operating mode is Offline Protection.	No default.
case-sensitive {enable | disable}	Enable to differentiate uniform resource locators (URLs) according to upper case and lower case letters for features that act upon the URLs in the headers of HTTP requests, such as block list rules, and allow list rules. For example, when enabled, an HTTP request involving `http://www.`**E**`xample.com/` would **not** match protection profile features that specify `http://www.`**e**`xample.com` (difference highlighted in bold).	No default.
certificate "<certificate_name>"	Enter the name of the certificate that FortiWeb uses to encrypt or decrypt SSL-secured connections. The maximum length is 63 characters. To display the list of existing certificates, enter: `edit ?` If sni {enable | disable} on page 168 is `enable`, FortiWeb uses a Server Name Indication (SNI) configuration instead of or in addition to this server certificate. For details, see sni {enable | disable} on page 168.	No default.

Variable	Description	Default
	This option is used only if HTTPS-service "<service_name>" on page 164 is configured.	
chunk-encoding {enable | disable}	Enable to encode the response packets. This option applies only to the packets sent from FortiWeb to the clients. After FortiWeb receives a packet from the back-end server, it will decode the packet first (if it's encoded), scan it against the security rules, and then send the encoded packet (if the `chunk-encoding` is set to `enable`) to the clients. However, if no web protection profile is selected in the server policy, the chunk-encoding option won't take effect. In this case, FortiWeb forwards whatever it receives from the back-end server to the clients without performing the encoding operation. Please note in previous releases we use `chunk-decode-enabled`. If you configured `chunk-decode-enabled enable` previously, then in this release it will automatically be switched to `chunk-encoding disable`, and vice versa.	`disable`
client-certificate-forwarding {enable | disable}	Enable to include the X.509 personal certificate presented by the client during the SSL/TLS handshake, if any, in an `X-Client-Cert:` HTTP header when forwarding the traffic to the protected web server. FortiWeb still validates the client certificate itself, but this can be useful if the web server requires the client certificate for the purpose of server-side identity-based functionality.	`disable`
client-certificate-forwarding-cert-header "<header_str>"	Enter a custom certificate header that will include the Base64 certificate of the X.509 personal certificate presented by the client during the SSL/TLS handshake when it forwards the traffic to the protected web server.	x-client-cert
client-certificate-forwarding-sub-header "<header_str>"	Enter a custom subject header that will include the subject of the X.509 personal certificate presented by the client during	x-client-dn

Variable	Description	Default
	the SSL/TLS handshake when it forwards the traffic to the protected web server.	
client-real-ip {enable | disable}	Enter `enable` to configure FortiWeb to use the source IP address of the client that originated the request when it connects to a back-end server on behalf of that client. By default, when the operation mode is Reverse Proxy, the source IP for connections between FortiWeb and back-end servers is the address of a FortiWeb network interface. **Note:** To ensure FortiWeb receives the server's response, configure FortiWeb as the server's gateway. Available only if the operating mode is Reverse Proxy.	`disable`
client-real-ip-random-port {enable | disable}	Enable to use a random port for the client real IP. It recommend to enable random port if the following configurations are set, otherwise it may lead to traffic disruption: • deployment-mode is HTTP-content-routing, and; • prefer-current-session is disabled, and; • client-real-ip is enabled, and; • real-ip-addr is not specified.	`disable`
real-ip-addr <real-ip-addr_str>	Specify an IP address or address range to directly connect to the back-end server.	No default.
client-timeout <seconds_int>	Enter the amount of time (in seconds) that FortiWeb will keep open a connection with an idle client that isn't sending data. The valid range is 1-1200. A value of 0 means that there is no timeout. Please note that this option doesn't work for HTTP/2 traffic.	0
comment "<comment_str>"	Enter a description or other comment. If the comment is more than one word or contains special characters, surround the comment with double quotes ("). The maximum length is 999 characters.	No default.

Variable	Description	Default
data-capture-port <port_int>	Enter the network interface of incoming traffic that the policy attempts to apply a profile to. The IP address is ignored. Available only if the operating mode is offline inspection.	
deployment-mode {server-pool | HTTP-content-routing | offline-protection | transparent-servers | wccp-servers}	Specify the distribution method that FortiWeb uses when it forwards connections accepted by this policy. • `server-pool`—Forwards connections to a server pool. Depending on the pool configuration, FortiWeb either forwards connections to a single physical server or domain server or distributes the connection among the pool members. Also configure server-pool "<server-pool_name>" on page 167. This option is available only if the operating mode is Reverse Proxy mode. • `HTTP-content-routing`—Use HTTP content routing to route HTTP requests to a specific server pool. This option is available only if the FortiWeb appliance is operating in Reverse Proxy mode. • `offline-detection` — Allows connections to pass through the FortiWeb appliance and applies an Offline Protection profile. Also configure server-pool "<server-pool_name>" on page 167. This is the only option available if operating mode is Offline Protection. • `transparent-servers`—Allows connections to pass through the FortiWeb appliance and applies a protection profile. Also configure server-pool "<server-pool_name>" on page 167. This is the only option available when the operating mode is either True Transparent Proxy or Transparent Inspection. • `wccp-servers`—FortiWeb is a Web Cache Communication Protocol (WCCP) client that receives traffic	No default.

Variable	Description	Default
	from a FortiGate configured as a WCCP server. Also configure server-pool "<server-pool_name>" on page 167. This is the only option available when the operation mode is WCCP.	
ftp-protection-profile <profile_name>	Enter the FTP security profile to apply to connections that this policy monitors. If you haven't created a profile yet, see waf ftp-protection-profile or instructions about creating one.	No default.
half-open-threshold <packets_int>	Enter the maximum number of TCP SYN packets, including retransmission, that FortiWeb allows to be sent per second to a destination address. If this threshold is exceeded, the FortiWeb appliance treats the traffic as a DoS attack and ignores additional traffic from that source address. The valid range is 10-10,000. Available only when the operating mode is Reverse Proxy or True Transparent Proxy and syncookie {enable | disable} on page 174 is enabled.	8192
hpkp-header "<hpkp_name>"	Select an HPKP profile, if any, to use to verify certificates when clients attempt to access a server. HPKP prevents attackers from carrying out *Man in the Middle* (MITM) attacks with forged certificates. Available only when the operating mode is Reverse Proxy.	No default.
hsts-header {enable | disable}	Enable to combat MITM attacks on HTTP by injecting the RFC 6797 (http://tools.ietf.org/html/rfc6797) strict transport security header into the reply, such as: `Strict-Transport-Security: max-age=31536000; includeSubDomains;Preload`	disable

Variable	Description	Default
	This header forces the client to use HTTPS for subsequent visits to this domain. If the certificate does not validate, it also causes a fatal connection error: the client's web browser does not display any dialog that allows the user to override the certificate mismatch error and continue. Available only if HTTPS-service "<service_name>" on page 164 is configured.	
hsts-max-age <timeout_int>	Enter the time to live in seconds for the HSTS header. Available only if hsts-header {enable | disable} on page 159 is enabled. The valid range is 3,600-31,536,000.	`7776000`
HTTP2 {enable | disable}	FortiWeb's HTTP/2 security inspection is only supported for Revers Proxy mode and True Transparent Proxy mode. This option enables FortiWeb operating in **Reverse Proxy** mode (see opmode {offline-protection | reverse-proxy | transparent | transparent-inspection | wccp} on page 381) to negotiate HTTP/2 with clients via SSL ALPN (Application-Layer Protocol Negotiation) during the SSL handshake if the client's browser supports HTTP/2 protocol. With the HTTP/2 being enabled, FortiWebcan recognize HTTP/2 traffic and apply the security services to it. To enable HTTP/2 communication between the FortiWeb and back-end web servers for HTTP/2 inspections in Reverse Proxy mode, see HTTP2 {enable | disable} on page 195.	disable

Variable	Description	Default
	Available only when `opmode` is set to `reverse-proxy`, deployment-mode {server-pool | HTTP-content-routing | offline-protection | transparent-servers | wccp-servers} on page 158 is set to `server-pool` and HTTPS-service "<service_name>" on page 164 is set correctly. FortiWeb supports HTTP/2 only for HTTPS connections and HTTP Content Routing is not supported for HTTP/2. When `opmode` is set to `transparent` and `deployment-mode` is set to `transparent-servers`, this is not available. It only requires HTTP2 {enable | disable} on page 195 to enable the HTTP/2 security inspections in **True Transparent Proxy** mode; this option here is not required. For more details about HTTP/2 support, see the FortiWeb Administration Guide: http://docs.fortinet.com/fortiweb/admin-guides	
http2-window-size <int>	Enter the window size (determining the amount of data in bytes that FortiWeb is willing to receive at any given time) for HTTP/2 connections between FortiWeb and the client. The valid range is 65,535-2,147,483,647 bytes.	65,535
HTTP-header-timeout <seconds_int>	Enter the amount of time (in seconds) that FortiWeb will wait for the whole HTTP request header after a client sets up a TCP connection. The valid range is 0-1200. A value of 0 means that there is no timeout.	0
http-parse-max-size <integer>	Enter the maximum size for HTTP parser to check headers and parameters. The valid range is 524288-2097152.	524288

Variable	Description	Default
HTTP-pipeline {enable | disable}	Specify whether FortiWeb accelerates transactions by bundling them inside the same TCP connection, instead of waiting for a response before sending/receiving the next request. This can increase performance when pages containing many images, scripts, and other auxiliary files are all hosted on the same domain, and therefore logically could use the same connection. When FortiWeb is operating in Reverse Proxy or True Transparent Proxy mode, it can automatically use HTTP pipelining for requests with the following characteristics: • HTTP version is 1.1 • The Connection general-header field does not include the "close" option (for example, `Connection: close`) • The HTTP method is `GET` or `HEAD`	`enable`
HTTP-to-HTTPS {enable | disable}	Specify enable to automatically redirect all HTTP requests to the HTTPS service with the same URL and parameters. Also configure HTTPS-service and ensure service uses port 443 (the default). Available only when the operation mode is Reverse Proxy.	`disable`
redirect-naked-domain {enable | disable}	Enable to redirect naked domain requests to “www” domain requests. This option is available only in Reverse Proxy mode.	`disable`
http3-service <datasource>	Specify the custom or predefined service that defines the UDP port number where the virtual server receives HTTP/3 traffic. Please note that enabling HTTP/3 Service requires TLS 1.3 to be enabled under **SSL Connection Settings** from the **Advanced SSL settings** in the server policy. HTTP/3 Service Limitations: • **Scope of Support** HTTP/3 service is supported only for connections between the client and	No default.

Variable	Description	Default

	FortiWeb. Connections with the back-end server currently do not support HTTP/3.
	• **Security Modules Supporting HTTP/3**
	  • Allow Method
	  • Client Management
	  • CORS Protection
	  • DLP (Data Loss Prevention)
	  • File Upload
	  • GraphQL Protection
	  • HTTP Protocol Constraints
	  • HTTP Header Security
	  • JSON Protection
	  • ML-based API Protection
	  • ML-based Anomaly Detection
	  • OpenAPI Validation
	  • Signature
	  • Site Publish
	  • SQL/XSS Syntax Based Detection
	  • URL Access
	  • User Tracking
	  • Waiting Room
	  • X-Forwarded-For
	  • XML Protection
	• **Security modules not supporting HTTP/3 traffic**
	  • Advanced Bot Protection
	  • Quarantined IP
	  • Biometric based Bot Detection
	  • Web Socket
	  • ML based Bot Detection
	  • ADFS Proxy
	  • TCP Flood Prevention
	  • Malicious IPs
	  • gRPC Portocol Security
	• **Operational Mode**
	HTTP/3 is available only in Reverse Proxy mode.
	• **Configuration Constraints**	

Variable	Description	Default
	If either of the following options is enabled in server policy, the HTTP/3 connections will hang due to certificate verification error. • Advanced SSL settings > Certificate Verification for HTTPS • SNI Policy with Certificate Verify selected.	
HTTPS-service "<service_name>"	Enter the custom or predefined service that defines the port number on which the virtual server receives HTTPS traffic. The maximum length is 63 characters. To display the list of existing services, enter: `edit ?` Available only when the operating mode is Reverse Proxy. For other operation modes, use the server pool configuration to enable SSL inspection instead.	No default.
proxy-protocol {enable | disable}	Enable this option when proxy servers or load balancers are installed before FortiWeb, for example, when a load balancer with proxy protocol enabled is deployed before FortiWeb-VM on AWS. When Proxy Protocol is enabled, FortiWeb can receive client connection information in the proxy protocol package passed through proxy servers and load balancers.	`disable`
use-proxy-protocol-addr {enable | disable}	Enable to use the source address of the proxy protocol in server policy. If disabled, the source address of the connection will be used.	`enable`
replacemsg <replacemsg_name>	Specifies the replacement message to return when a backend server becomes unavailable. • When configured **at the server policy level** (`config server-policy policy`), this message applies to all traffic handled by the policy. • When configured **at the HTTP**	No default.

Variable	Description	Default
	Content Routing (HCR) policy level (`config http-content-routing-list`), this message overrides the server-level setting and applies **only to matching traffic** based on content routing rules. If no CR-level replacement message is defined, FortiWeb falls back to the server policy-level setting.	
intermediate-certificate-group "<CA-group_name>"	Enter the name of an intermediate certificate authority (CA) group, if any, that FortiWeb uses to validate the CA signing chain in a client's certificate. The maximum length is 63 characters. To display the list of existing groups, enter: `edit ?` Available only if HTTPS-service "<service_name>" on page 164 is configured.	No default.
internal-cookie-HTTPonly {enable | disable}	Enable to assign an `HTTPonly` flag to internal cookies. This feature is independent of the Cookie Security policy, if any, that you have in use.	`enable`
internal-cookie-secure {enable | disable}	Enable to assign a `secure` flag to internal cookies . This flag can only be assigned if the connection is over SSL. This feature is independent of the Cookie Security policy, if any, that you have in use.	`disable`
internal-cookie-samesite {enable | disable}	Enable to assign a `SameSite` flag to internal cookies. This feature is independent of the Cookie Security policy, if any, that you have in use. If enabled, it applies to User Tracking, Anomaly Detection, Site Publish, and Client Management.	`disable`
internal-cookie-samesite-value {strict | lax | none}	• strict: any request from the third parties will not carry such cookies; • lax: any request from the third parties will not carry such cookies except for GET requests that navigate to the destination URL. • none: set the value as none if a	`lax`

Variable	Description	Default
	cookie is required to be sent by cross origin.	
monitor-mode {enable | disable}	Enable to override deny and redirect actions defined in the server protection rules for the selected policy. This setting enables FortiWeb to log attacks without performing the deny or redirect action. Disable to allow FortiWeb to perform attack deny/redirect actions as defined by the server protection rules.	`disable`
noparse {enable | disable}	Enable this option to apply the server policy as a pure proxy, without parsing the content. In this case, the policy allows all traffic to pass through the FortiWeb appliance without applying any protection rules. See also "debug application HTTP" on page 1 and debug flow trace on page 789. This option applies to server policy only when the FortiWeb appliance operates in Reverse Proxy or True Transparent Proxy mode. **Caution:** Use this only during debugging and for as brief a period as possible. This feature disables many protection features. See also HTTP-parse-error-output {enable | disable} on page 62.	`disable`
prefer-current-session {enable |disable}	Enable to forward subsequent requests from an identified client connection to the same server pool as the initial connection from the client. This option allows FortiWeb to improve its performance by skipping the process of matching HTTP header content to content routing policies for connections it has already evaluated and routed. Available only when deployment-mode {server-pool | HTTP-content-routing | offline-protection | transparent-servers | wccp-servers} on page 158 is `HTTP-content-routing`.	`disable`
protocol {HTTP | FTP | ADFSPIP}	Select one of the following: • `HTTP`–Specifies that the server policy governs HTTP traffic. Specific	HTTP

Variable	Description	Default
	options for configuring an HTTP server policy become available. • `FTP`—Specifies that the server policy governs FTP traffic. Specific options for configuring an FTP server policy become available. • `ADFSPIP`—Specifies that the server policy governs AD FS traffic. Specific options for configuring an AD FS server policy become available.	
server-pool "<server-pool_name>"	Enter the name of the server pool whose members receive the connections. To display the list of existing servers, enter: `edit ?` This field is applicable only if deployment-mode {server-pool | HTTP-content-routing | offline-protection | transparent-servers | wccp-servers} on page 158 is `server-pool`, `offline-protection` or `transparent-servers`. **Caution:** Multiple virtual servers/policies can forward traffic to the same server pool. If you do this, consider the total maximum load of connections that all virtual servers forward to your server pool. This configuration can multiply traffic forwarded to your server pool, which can overload it and cause dropped connections.	No default.
service "<service_name>"	Enter the custom or predefined service that defines the port number on which the virtual server receives HTTP traffic. The maximum length is 63 characters. To display the list of existing services, enter: `edit ?` Available only when the operating mode is Reverse Proxy.	No default.
sessioncookie-enforce {enable | disable}	• `enable`—When FortiWeb maintains session persistence using cookies, it inserts a cookie in subsequent transactions in a session if the transaction does not contain a	`disable`

Variable	Description	Default
	control cookie. This option is useful if your environment uses TCP multiplexing, which combines HTTP requests from multiple clients in a single session for load balancing or other purposes. • `disable`–When FortiWeb maintains session persistence using cookies, it tracks or inserts the cookie for the first transaction of a session only. It does not track or insert a cookie in subsequent transactions in the session, even if the transaction does not contain a control cookie. For details about configuring session persistence, see server-policy persistence-policy on page 147.	
sni {enable | disable}	Enable to use a Server Name Indication (SNI) configuration instead of or in addition to the server certificate specified by `certificate <certificate_name>`. The SNI configuration enables FortiWeb to determine which certificate to present on behalf of the members of a pool based on the domain in the client request. For details, see system certificate sni on page 270. If you specify both a SNI configuration and a certificate, FortiWeb uses the certificate specified by certificate "<certificate_name>" on page 155 when the requested domain does not match a value in the SNI configuration. If you enable sni-strict {enable | disable} on page 169, FortiWeb always ignores the value of certificate "<certificate_name>" on page 155. Available only if HTTPS-service "<service_name>" on page 164 is configured.	`disable`

Variable	Description	Default
sni-certificate "<sni_name>"	Enter the name of the Server Name Indication (SNI) configuration that specifies which certificate FortiWeb uses when encrypting or decrypting SSL-secured connections for a specified domain. The SNI configuration enables FortiWeb to present different certificates on behalf of the members of a pool according to the requested domain. If only one certificate is required to encrypt and decrypt traffic that this policy applies to, specify certificate "<certificate_name>" on page 155 instead. Available only if HTTPS-service "<service_name>" on page 164 is configured.	No default.
sni-strict {enable | disable}	Select to configure FortiWeb to ignore the value of certificate "<certificate_name>" on page 155 when it determines which certificate to present on behalf of server pool members, even if the domain in a client request does not match a value in the specified SNI configuration.	`disable`
certificate-type {enable | disable}	Enable allow FortiWeb to automatically retrieve CA certificates from Let's Encrypt.	disable
lets-certificate <name>	Select the Letsencrypt certificate you have created. See system certificate letsencrypt.	No default.
ssl {enable | disable}	Enable so that connections between clients and FortiWeb use SSL/TLS. Enabling `ssl` will allow you to configure additional SSL options and settings, including specifying supported SSL protocols and uploading certificates.	disable
ssl-cipher {medium | high | custom}	Specify whether the set of cipher suites that FortiWeb allows creates a medium-security, high-security, or custom configuration. If custom, also specify `ssl-custom-cipher`.	`medium`

Variable	Description	Default
	This is not allowed to set to `custom` if `HTTP2` is set to `enable`. For details, see the *FortiWeb Administration Guide*: http://docs.fortinet.com/fortiweb/admin-guides Available only if HTTPS-service "<service_name>" on page 164 is configured.	
ssl-client-verify "<verifier_name>"	Enter the name of a certificate verifier, if any, to use when an HTTP client presents their personal certificate. If you do not select one, the client is not required to present a personal certificate. If the client presents an invalid certificate, the FortiWeb appliance does not allow the connection. To be valid, a client certificate must: • Not be expired • Not be revoked by either the certificate revocation list (CRL) (see system certificate verify on page 275) • Be signed by a certificate authority (CA) whose certificate you have imported into the FortiWeb appliance; if the certificate has been signed by a chain of intermediate CAs, those certificates must be included in an intermediate CA group (see intermediate-certificate-group "<CA-group_name>" on page 165) • Contain a `CA` field whose value matches the CA certificate • Contain an `Issuer` field whose value matches the `Subject` field in the CA certificate Personal certificates, sometimes also called user certificates, establish the identity of the person connecting to the website. You can require that clients present a certificate alternatively or in addition to HTTP authentication. For details, see the *FortiWeb Administration Guide*:	No default.

Variable	Description	Default
	http://docs.fortinet.com/fortiweb/admin-guides The maximum length is 63 characters. To display the list of existing verifiers, type: `edit ?` This option is used only if HTTPS-service "<service_name>" on page 164 is configured. The client must support TLS 1.0, TLS 1.1, or TLS 1.2.	
ssl-custom-cipher {<cipher_1> <cipher2> <cipher3> ...}	Specify one or more cipher suites that FortiWeb allows. Separate the name of each cipher with a space. To remove from or add to the list of ciphers, retype the entire list. Valid values are: ECDHE-ECDSA-AES256-GCM-SHA384 ECDHE-RSA-AES256-GCM-SHA384 DHE-DSS-AES256-GCM-SHA384 DHE-RSA-AES256-GCM-SHA384 ECDHE-ECDSA-CHACHA20-POLY1305 ECDHE-RSA-CHACHA20-POLY1305 DHE-RSA-CHACHA20-POLY1305 ECDHE-ECDSA-AES256-CCM8 ECDHE-ECDSA-AES256-CCM DHE-RSA-AES256-CCM8 DHE-RSA-AES256-CCM ECDHE-ECDSA-AES128-GCM-SHA256 ECDHE-RSA-AES128-GCM-SHA256 DHE-DSS-AES128-GCM-SHA256 DHE-RSA-AES128-GCM-SHA256 ECDHE-ECDSA-AES128-CCM8 ECDHE-ECDSA-AES128-CCM DHE-RSA-AES128-CCM8 DHE-RSA-AES128-CCM ECDHE-ECDSA-AES256-SHA384 ECDHE-RSA-AES256-SHA384 DHE-RSA-AES256-SHA256 DHE-DSS-AES256-SHA256 ECDHE-ECDSA-CAMELLIA256-SHA384	ECDHE-ECDSA-AES256-GCM-SHA384 ECDHE-RSA-AES256-GCM-SHA384 ECDHE-ECDSA-CHACHA20-POLY1305 ECDHE-RSA-CHACHA20-POLY1305 ECDHE-ECDSA-AES128-GCM-SHA256 ECDHE-RSA-AES128-GCM-SHA256 ECDHE-ECDSA-AES256-SHA384 ECDHE-RSA-AES256-SHA384 ECDHE-ECDSA-AES128-SHA256

Variable	Description	Default
	ECDHE-RSA-CAMELLIA256-SHA384 DHE-RSA-CAMELLIA256-SHA256 DHE-DSS-CAMELLIA256-SHA256 ECDHE-ECDSA-AES128-SHA256 ECDHE-RSA-AES128-SHA256 DHE-RSA-AES128-SHA256 DHE-DSS-AES128-SHA256 ECDHE-ECDSA-CAMELLIA128-SHA256 ECDHE-RSA-CAMELLIA128-SHA256 DHE-RSA-CAMELLIA128-SHA256 DHE-DSS-CAMELLIA128-SHA256 ECDHE-ECDSA-AES256-SHA ECDHE-RSA-AES256-SHA DHE-RSA-AES256-SHA DHE-DSS-AES256-SHA DHE-RSA-CAMELLIA256-SHA DHE-DSS-CAMELLIA256-SHA ECDHE-ECDSA-AES128-SHA ECDHE-RSA-AES128-SHA DHE-RSA-AES128-SHA DHE-DSS-AES128-SHA DHE-RSA-CAMELLIA128-SHA DHE-DSS-CAMELLIA128-SHA AES256-GCM-SHA384 AES256-CCM8 AES256-CCM AES128-GCM-SHA256 AES128-CCM8 AES128-CCM AES256-SHA256 CAMELLIA256-SHA256 AES128-SHA256 CAMELLIA128-SHA256 AES256-SHA CAMELLIA256-SHA AES128-SHA CAMELLIA128-SHA DHE-RSA-SEED-SHA ECDHE_RSA_DES_CBC3_SHA DES_CBC3_SHA	ECDHE-RSA-AES128-SHA256 ECDHE-ECDSA-AES256-SHA ECDHE-RSA-AES256-SHA ECDHE-ECDSA-AES128-SHA ECDHE-RSA-AES128-SHA AES256-GCM-SHA384 AES128-GCM-SHA256 AES256-SHA256 AES128-SHA256

Variable	Description	Default
tls13-custom-cipher {<cipher_1> <cipher2> <cipher3> ...}	Specify one or more TLS 1.3 cipher suites that FortiWeb allows. Separate the name of each cipher with a space. To remove from or add to the list of ciphers, retype the entire list. Valid values are: TLS_AES_256_GCM_SHA384 TLS_CHACHA20_POLY1305_SHA256 TLS_AES_128_GCM_SHA256 TLS_AES_128_CCM_SHA256 TLS_AES_128_CCM_8_SHA256	TLS_AES_256_GCM_SHA384
rfc7919-comply {enable | disable}	Enable to apply cipher suites that comply with RFC-9719.	disable
supported-groups {X25519 | prime256v1 | secp384r1 | secp521r1 | brainpoolP256r1 | brainpoolP384r1 | brainpoolP512r1 | ffdhe2048 | ffdhe3072 | ffdhe4096 | ffdhe6144 | ffdhe8192}	Select the RFC-9719 ciphers to be supported. The Supported Group is Elliptic Curve Parameters, while SSL/TLS negotiation could choose different Elliptic Curve algorithms, so please make sure to choose the corresponding ciphers in `ssl-custom-cipher`. • At least one FFDHE group should be selected. • At least one DHE cipher should be added. Due to design limitation, you need to select `custom` in `ssl-cipher {medium | high | custom}` and make sure to include at least one DHE cipher in the selected list. Using `High` or `Medium` together with RFC-9719 will lead to unexpected error. We will fix it in the future release. The system will return error if any of the above two conditions is not met. Please note RFC7919 does not comply with TLS 1.3, so if you have only enabled `tls-v13`, then RFC7919 will not take effect even if it's enabled. To apply both TLS 1.3 and RFC7919, it's recommended to enable a non-TLS 1.3 protocol, then select at least one DHE cipher.	No default

Variable	Description	Default
ssl-noreg {enable | disable}	Specify whether FortiWeb ignores requests from clients to renegotiate TLS or SSL. Protects against denial-of-service (DoS) attacks that use TLS/SSL renegotiation to overburden the server. Available only if HTTPS-service "<service_name>" on page 164 is configured.	`enable`
ssl-session-timeout <ssl-session-timeout_int>	When FortiWeb is configured as an SSL server, you can set SSL session timeout intervals via the CLI. This is available only in Reverse Proxy and True Transparent Proxy modes.	No default.
status {enable | disable}	Enable to allow the policy to be used when evaluating traffic for a matching policy. **Note:** You can use SNMP traps to notify you of changes to the policy's status. For details, see system snmp community on page 383.	No default.
syncookie {enable | disable}	Enable to detect TCP `SYN` flood attacks. For details, see the *FortiWeb Administration Guide*: http://docs.fortinet.com/fortiweb/admin-guides Available only when the operating mode is Reverse Proxy or True Transparent Proxy.	`disable`
tcp-recv-timeout <seconds_int>	Enter the amount of time (in seconds) that FortiWeb will wait for a client to send a request after the client sets up a TCP connection. The valid range is 0-300. A value of 0 means that there is no timeout.	0
tls-v10 {enable | disable}	Specifies whether clients can connect securely to FortiWeb using the TLS 1.0 cryptographic protocol. This must be set to `disable` if HTTP2 {enable | disable} on page 160 is set to `enable`.	`enable`

Variable	Description	Default
	Available only if HTTPS-service "<service_name>" on page 164 is configured.	
tls-v11 {enable | disable}	Specifies whether clients can connect securely to FortiWeb using the TLS 1.1 cryptographic protocol. This must be set to `disable` if HTTP2 {enable | disable} on page 160 is set to `enable`. Available only if HTTPS-service "<service_name>" on page 164 is configured.	`enable`
tls-v12 {enable | disable}	Specifies whether clients can connect securely to FortiWeb using the TLS 1.2 cryptographic protocol. Available only if HTTPS-service "<service_name>" on page 164 is configured.	`enable`
tls-v13 {enable | disable}	Specifies whether clients can connect securely to FortiWeb using the TLS 1.3 cryptographic protocol. Available only if HTTPS-service "<service_name>" on page 164 is configured.	`disable`
urlcert {enable | disable}	Specifies whether FortiWeb uses a URL-based client certificate group to determine whether a client is required to present a personal certificate. Available only if HTTPS-service "<service_name>" on page 164 is configured.	`disable`
urlcert-group "<urlcert-group_name>"	Enter the URL-based client certificate group that determines whether a client is required to present a personal certificate. If the URL the client requests does not match an entry in the group, the client is not required to present a personal certificate. For details about creating a group, see system certificate urlcert on page 274.	No default.

Variable	Description	Default
urlcert-hlen <len_int>	Specify the maximum allowed length for an HTTP request with a URL that matches an entry in the URL-based client certificate group, in kilobytes. FortiWeb blocks any matching requests that exceed the specified size. This setting prevents a request from exceeding the maximum buffer size. The valid range is 16-10240.	No default.
vserver "<vserver_name>"	Enter the name of a virtual server that provides the IP address and network interface of incoming traffic that FortiWeb routes and to which the policy applies a protection profile. The maximum length is 63 characters. To display the list of existing virtual servers, enter: `edit ?` Available only if the operating mode is Reverse Proxy.	No default.
v-zone "<bridge_name>"	Enter the name of the bridge that specifies the network interface of the incoming traffic that the policy applies a protection profile to. The maximum length is 15 characters. To display the list of existing bridges, enter: `edit ?` Available only if the operating mode is True Transparent Proxy or Transparent Inspection.	No default.
	Note: If the connection fails when you have selected a certificate verifier, verify that the certificate meets the web browser's requirements. Web browsers may have their own certificate validation requirements in addition to FortiWeb requirements. For example, personal certificates for client authentication may be required to either: • Not be restricted in usage/purpose by the CA, or • Contain a `Key Usage` field that	

Variable	Description	Default
	contains `Digital Signature` or have a `ExtendedKeyUsage` or `EnhancedKeyUsage` field whose value contains `Client Authentication` If the certificate does **not** satisfy browser requirements, although it may be installed in the browser, when the FortiWeb appliance requests the client's certificate, the browser may not display a certificate selection dialog to the user, or the dialog may not contain that certificate. In that case, verification fails. For browser requirements, see your web browser's documentation.	
<entry_index>	Enter the index number of the individual entry in the table.	No default.
content-routing-policy-name "<content-routing_name>"	Enter the name of a HTTP content routing policy that this server policy uses. To display the list of existing error pages, enter: `edit ?`	No default.
is-default {yes | no}	Enter `yes` to specify that FortiWeb applies the protection profile to any traffic that does not match conditions specified in the HTTP content routing policies.	No default.
profile-inherit {enable | disable}	Enter `enable` to specify that FortiWeb applies the web protection profile for the server policy to connections that match the routing policy.	`disable`
implicit_ssl {enable | disable}	Enable so that FortiWeb will communicate with the pool member using implicit SSL.	No default.
ssl-quiet-shutdown {enable | disable}	For HTTPS connection, when disabled, FortiWeb sends ssl alert message to the client or server pool first, and then FIN. When enabled, FortiWeb directly sends FIN message instead of sending ssl alert message.	`disable`
traffic-mirror {enable | disable}	Enable to send traffic to third party IPS/IDS devices through network	`disable`

Variable	Description	Default
	interfaces for traffic monitoring. Available only when protocol {HTTP | FTP | ADFSPIP} on page 166 is HTTP.	
traffic-mirror-profile <traffic-mirror-profile_str>	Select the mirror policy created.	No default.
traffic-mirror-type {client-side | server-side| both-side}	Select the traffic mirror type. For True Transparent Proxy mode, only Client Side type is available, which only allows traffic from client side to be sent to IPS/IDS devices. For Reverse Proxy mode, you can select Client Side, Server Side, or Client and Server.	No default.
multi-certificate {enable | disable}	Enable to allow FortiWeb to use multiple local certificates.	disable
adfs-certificate-service <adfs-certificate-service_str>}	Configure this option if the AD FS server requires client certificate for authentication. Select the pre-defined service **TLSCLIENTPORT** if FortiWeb uses service port 49443 to listen the certification authentication requests.	No default.
adfs-certificate-ssl-client-verify <adfs-certificate-ssl-client-verify_str>}	Select the certificate validation rule you have created.	No default.
certificate-group <certificate-group_str>}	Select the multi-certificate file you have created.	No default.
acceleration-policy <acceleration-policy_str>	Select the acceleration policy you have created.	No default.
web-cache {enable | disable}	Enable to create a web cache policy to allow FortiWeb to cache responses from your servers.	disable
real-ip-addr <real-ip-addr_str>	Specify an IP address or address range to directly connect to the back-end server.	No default.
retry-on {enable | disable}	Enable to configure whether to retry a failed TCP connection or HTTP request in Reverse Proxy mode. A TCP connection failure retry can help when pserver is unreachable unexpectedly, FortiWeb will reconnect the single server or switch to the other	disable

Variable	Description	Default
	server when more than one pserver is available in the server pool. An HTTP layer retry can help when pserver can be connected but it returns certain failure response codes, such as 404, 408, 500, 501, 502, 503, and 504. FortiWeb will reconnect the single server or switch to the other server when more than one pserver is available in the server pool.	
retry-on-cache-size <retry-on-cache-size_int>	Enter a cache size limit for the HTTP request packet. HTTP failure retry will take effect once the request packet size is smaller than this defined size. TCP connection failure retry will take effect once the HTTP request packet size in TCP connection is smaller than this defined size.	512
retry-on-connect-failure {enable | disable}	Enable to configure the retry times in case of any TCP connection failure.	`disable`
retry-times-on-connect-failure <retry-times-on-connect-failure_int>	Enter the retry times when FortiWeb reconnects the single server or switch to the other pserver. The valid range is 1-5.	3
retry-on-HTTP-layer {enable | disable}	Enable to configure the retry times and failure response code in case of any HTTP connection failure. Only GET and HEAD methods are supported now.	`enable`
retry-times-on-HTTP-layer <retry-times-on-HTTP-layer_int>	Enter the retry times when FortiWeb reconnects the single server or switch to the other pserver. The valid range is 1-5.	3
retry-on-HTTP-response-codes {404 | 408 | 500 | 501 | 502 | 503 | 504}	Select the failure return code when pserver can be connected to determine enabling HTTP failure retry.	All values
replacemsg-on-connect-failure {disable | enable}	If this option is enabled, when the health check is disabled and the back-end server is not responsive, FortiWeb will send the 503 error code to the client. When enabled, you should also configure `tcp-conn-timeout` to specify the timeout value.	disable

Variable	Description	Default
tcp-conn-timeout <integer>	When the health check is disabled and the back-end server is not responsive, FortiWeb will wait for the specified time until it sends the 503 error code. It's recommended to set a value smaller than 20 (seconds). This is to avoid too many times of retry being accumulated during the waiting time, which may cause the connection to be closed before FortiWeb has the chance to send the error code. This option is at the server policy level. You can also set the `tcp-usertimeout` under `system network-option` which affects all server policies on FortiWeb appliance. If the timeout is configured both at the policy and the appliance level, FortiWeb will take the value whichever is smaller. Sometimes when there is a third device, such as a gateway, deployed between FortiWeb and the back-end server, FortiWeb will directly get the status code from the third device instead of waiting along the timeout period. The valid range for this option is 0-600 (seconds). 0 means FortiWeb will send 503 error code as soon as it detects the back-end server is not responsive.	120
tlog {enable | disable}	Enable to log traffic events such as HTTP requests and responses, and the expiration of HTTP sessions. To avoid unnecessary resource consumption, the system will not generate traffic log for all server policies unless specified. After enabling this option, you also need to enable the traffic log setting in **Log&Report**. • If traffic log is disabled in **Log&Report**, the system won't generate traffic log even if you have enabled it in **Server Policy**. • If traffic log is: • Enabled in **Log&Report**,	disable

Variable	Description	Default
	• Enabled in server policy A, • Disabled in server policy B, then the system will only generate traffic log for server policy A. **Tip:** Because resources for this feature increase as your traffic increases, if you do not need traffic data, disable this feature to improve performance and improve hardware life.	
ldap-health {enable | disable}	Enable LDAP server's health check.	disable
ztna-profile <string>	Specify the ZTNA (Zero Trust Network Access) profile. For more information, see Configuring a ZTNA Profile.	no default
reply-100-continue {enable | disable}	• When disabled, the clients should wait for FortiWeb to forward the `100-continue` response sent by server. • When enabled, FortiWeb will not wait for the server's `100-continue` response. Instead it directly reply `100-continue` header to clients to reduce delay. **Note:**FortiWeb only supports HTTP/1.1, so the `100-continue` response sent by FortiWeb will be `HTTP/1.1 100-continue`.	enable
forward-expect-100-continue {enable | disable}	• When disabled, FortiWeb will remove the `Expect: 100-continue` header from the request packets then forward them to servers. • When enabled, the `Expect: 100-continue` will be forwarded to server. It's recommended to set `reply-100-continue` as `enabled` and `forward-expect-100-continue` as `disabled`, so that FortiWeb can directly reply `100-continue` header to reduce delay, then remove the `Expect: 100-continue` header from request packets to avoid unnecessary header being forwarded.	disable

Variable	Description	Default
transaction-based-persistence {enable | disable}	Enable this option so that persistence information will be checked by each transaction, rather than the connection itself. Transactions with distinct persistence information will be directed to different back-end servers to ensure optimal load balancing. This functionality is beneficial in scenario such as FortiWeb is deployed behind Cloudflare which forwards different customer's traffic within the same connection.	disable
no-ssl-error-log {enable | disable}	Enable to stop FortiWeb from logging SSL errors for this server policy. This setting is useful when you use high-level security settings, which generate a high volume of these types of errors. Instead of setting the `no-ssl-error` value individually for each server policy, you can configure a global value through `config log attack-log` so that all server policies adhere to it. Please note that if there is a discrepancy between the values set individually for server policies and the global value in `config log attack-log`, the global value takes precedence.	disable
url-normalize-backslash {enable | disable}	When enabled, FortiWeb can handle backslash (\) as slash (/) when parsing URLs, for instance, "yoursite\WEB-INF\web.xml" can be handled as "yoursite/WEB-INF/web.xml".	disable
payload-based-content-type {enable | disable}	By default, the payload body is scanned for attacks under any condition, regardless of its content type.	disable

Variable	Description	Default
	However, conducting a payload body scan for specific content types may be unnecessary and could potentially result in numerous false positives. To avoid such situations, you can enable `payload-based-content-type` to skip payload body scan for most of the content types except for the following high-risk ones. Meanwhile, if the system cannot determine the content type of a payload, it will be deemed high-risk and subject to a security scan. • multipart/related • application/soap+xml • text/xml, application/xml, application/vnd.syncml+xml, application/vnd.ms-sync.wbxml • multipart/form-data (boundary is required) • text/html • application/x-www-form-urlencoded • text/plain • application/x-amf • text/css • application/x-javascript • multipart/x-mixed-replace • application/javascript • application/rpc • text/javascript • application/rss+xml • application/xhtml+xml • message/HTTP • application/json, text/json • all other application/...xml... • application/octet-stream • application/mapi-http	
tag <tag_name>	Enter the tags you want to attach to this server policy. This helps in labeling server policy for future usage such as sorting, filtering and acknowledging policies. It's created by `config system object-tagging`.	no default

Example

This example configures a web protection server policy. FortiWeb forwards HTTPS connections received by the virtual server named `virtual_ip1` to a server pool named `apache1`, which contains a single physical server. FortiWeb uses the certificate named `certificate1` during SSL negotiations with the client, then forwards traffic to the server pool.

```
config server-policy policy
   edit "HTTPS-policy"
      set deployment-mode server-pool
      set vserver "virtual_ip1"
      set server-pool "apache1"
      set web-protection-profile "inline-protection1"
      set HTTPS-service HTTPS
      set certificate "certificate1"
      set ssl-client-verify
      set case-sensitive disable
      set status enable
   next
end
```

Related topics

- server-policy allow-hosts on page 106
- system certificate local on page 264
- system certificate ocsp-stapling on page 268
- server-policy HTTP-content-routing-policy on page 119
- server-policy server-pool on page 184
- server-policy service custom on page 209
- server-policy vserver on page 217
- system snmp community on page 383
- system settings on page 380
- system v-zone on page 396
- waf web-protection-profile inline-protection on page 720
- waf web-protection-profile offline-protection on page 731
- "debug application dssl" on page 1
- "debug application HTTP" on page 1
- "debug application ssl" on page 1
- "debug application ustack" on page 1
- debug flow filter on page 785
- policy on page 828

server-policy server-pool

Use this command to configure an HTTP, FTP, or AD FS server pool.

Server pools define a group of one or more physical or domain servers (web servers) that FortiWeb distributes connections among, or where the connections pass through to, depending on the operation mode. Reverse Proxy mode actively distributes connections; Offline Protection and either of the transparent modes do not actively distribute connections.

To apply the server pool configuration, do one of the following:

- Select it in a server policy directly.
- Select it in an HTTP content writing policy that you can, in turn, select in a server policy.

For details, see server-policy policy on page 151 and server-policy HTTP-content-routing-policy on page 119.

To determine which type of server policy to create, configure protocol {HTTP | FTP | ADFSPIP} on page 189. If you're planning to configure an FTP server policy, you'll need to confirm that system feature-visibility on page 295 is enabled. For details, see system feature-visibility on page 295.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `traroutegrp` area. For details, see Permissions on page 46.

Syntax

```
config server-policy server-pool
   edit "<server-pool_name>"
      set comment "<comment_str>"
      set health "<health-check_name>"
      set HTTP-reuse {aggressive | always | never | safe}
      set lb-algo {least-connections | round-robin | weighted-round-robin | uri-hash | full-uri-hash
            | host-hash | host-domain-hash | src-ip-hash | least-response-time | probabilistic-
           weighted-least-response-time}
      set persistence "<persistence-policy_name>"
      set protocol {HTTP | FTP | ADFSPIP}
      set reuse-conn-idle-time <int>
      set reuse-conn-max-count <int>
      set reuse-conn-max-request <int>
      set reuse-conn-total-time <int>
      set server-balance {enable | disable}
      set server-pool-id
      set type {offline-protection | reverse-proxy | transparent-servers-for-ti | transparent-
            servers-for-tp | transparent-servers-for-wccp}
      set proxy-protocol {enable | disable}
      set proxy-protocol-version {v1 | v2}
      set adfs-server-name <adfs-server-name_str>
      config pserver-list
         edit <entry_index>
            set analyzer-policy "<fortianalyzer-policy_name>"
            set backup-server {enable | disable}
            set certificate "<certificate_name>"
            set certificate-verify "<verifier_name>"
            set client-certificate "<client-certificate_name>"
            set client-certificate-forwarding {enable | disable}
            set client-certificate-forwarding-cert-header "<header_str>"
            set client-certificate-forwarding-sub-header "<header_str>"
            set client-certificate-proxy {enable | disable}
            set client-certificate-proxy-sign-ca <sign_ca>
            set conn-limit <conn-limit_int>
            set domain "<server_fqdn>"
```

```
            set health-check-inherit {enable | disable}
            set hlck-domain <hlck-domain_str>
            set hpkp-header "<hpkp_name>"
            set hsts-header {enable | disable}
            set hsts-max-age <timeout_int>
            set HTTP2 {enable | disable}
            set http2-window-size <int>
            set implicit_ssl {enable | disable}
            set intermediate-certificate-group "<CA-group_name>"
            set ip {"address_ipv4" | "address_ipv6"}
            set port <port_int>
            set server-certificate-verify {enable | disable}
            set server-certificate-verify-action {alert | alert_deny | redirect}
            set server-certificate-verify-policy "<policy_name>"
            set recover <recover_int>
            set server-side-sni {enable | disable}
            set server-type {physical | domain | sdn-connector}
            set sdn-addr-type {private | public | all}
            set sdn {aws | azure}
            set filter <string>
            set session-id-reuse {enable | disable}
            set session-ticket-reuse {enable | disable}
            set sni {enable | disable}
            set sni-certificate "<sni_name>"
            set sni-strict {enable | disable}
            set certificate-type {enable | disable}
            set lets-certificate <name>
            set ssl {enable | disable}
            set ssl-cipher {medium | high | custom}
            set ssl-custom-cipher {<cipher_1> <cipher2> <cipher3> ...}
            set tls13-custom-cipher on page 203
            set rfc7919-comply {enable | disable}
            set supported-groups {X25519 | prime256v1 | secp384r1 | secp521r1 | brainpoolP256r1 |
                 brainpoolP384r1 | brainpoolP512r1 | ffdhe2048 | ffdhe3072 | ffdhe4096 | ffdhe6144 |
                 ffdhe8192}
            set ssl-noreg {enable | disable}
            set ssl-quiet-shutdown {enable | disable}
            set ssl-session-timeout <ssl-session-timeout_int> on page 207
            set status {disable |enable | maintain}
            set tls-v10 {enable | disable}
            set tls-v11 {enable | disable}
            set tls-v12 {enable | disable}
            set tls-v13 {enable | disable} on page 206
            set url-cert {enable | disable}
            set urlcert-group "<urlcert-group_name>"
            set urlcert-hlen <len_int>
            set warm-rate <warm-rate_int>
            set  warm-up <warm-up_int>
            set weight <weight_int>
            set adfs-username <adfs-username_str>
            set adfs-password <adfs-password_str>
            set multi-certificate {enable | disable}
            set certificate-group <certificate-group_str>
            set enforce-trust-establishment {enable | disable}
        next
    end
next
```

```
end
```

Variable	Description	Default
"<server-pool_name>"	Enter the name of the server pool. The maximum length is 63 characters. To display the list of existing servers, enter: `edit ?`	No default.
comment "<comment_str>"	Enter a description or other comment. If the comment is more than one word or contains special characters, surround the comment with double quotes ("). The maximum length is 199 characters.	No default.
health "<health-check_name>"	Enter the name of a server health check FortiWeb uses to determine the responsiveness of server pool members. The maximum length is 63 characters. When you specify a health check for the pool, by default, all pool members use that health check. To select a different health check for a pool member, in the pool member configuration, specify `disable` for `health-check-inherit` and the health check to use for `health`. To display the list of existing health checks, enter: `edit ?` Available only if type {offline-protection | reverse-proxy | transparent-servers-for-ti | transparent-servers-for-tp | transparent-servers-for-wccp} on page 191 is `reverse-proxy` and server-balance {enable | disable} on page 191 is enable. **Note:** If a pool member is unresponsive, wait until the server becomes responsive again before disabling its server health check. Server health checks record the up or down status of the server. If you deactivate the server health check while the server is unresponsive, the server health check cannot update the recorded status, and FortiWeb continues to regard the physical server as if it were unresponsive. You can determine the physical server's connectivity status using the **Service Status** widget or an SNMP trap. For details, see system snmp community on page 383.	No default.
HTTP-reuse {aggressive | always | never | safe}	Configure multiplexing so that FortiWeb uses a single connection to a server for requests from multiple clients. Enter one of these options: • `aggressive`–The first request from a client can use a cached server connection only when the cached server connection has been used by more than one client.	never

Variable	Description	Default
	• `always`—Client requests will use an available connection cached server connection. • `never`—Disable multiplexing. • `safe`—A client will establish a new connection for the first request, but will use an available cached server connection for subsequent requests. **Note**: This option is available only when the protocol {HTTP | FTP | ADFSPIP} on page 189 is `HTTP`.	
lb-algo {least-connections | round-robin | weighted-round-robin | uri-hash | full-uri-hash | host-hash | host-domain-hash | src-ip-hash | least-response-time | probabilistic-weighted-least-response-time}	Select the load-balancing algorithms that FortiWeb uses when it distributes new connections among server pool members. • `least-connections`—Distributes new connections to the member with the fewest number of existing, fully-formed connections. • `round-robin`—Distributes new connections to the next member of the server pool, regardless of weight, response time, traffic load, or number of existing connections. Unresponsive servers are avoided. • `weighted-round-robin`—Distributes new connections using the round robin method, except that members with a higher weight value receive a larger percentage of connections. • `uri-hash`—Distributes new TCP connections using a hash algorithm based on the URI found in the HTTP header, excluding hostname. • `full-uri-hash`—Distributes new TCP connections using a hash algorithm based on the full URI string found in the HTTP header. The full URI string includes the hostname and path. • `host-hash`—Distributes new TCP connections using a hash algorithm based on the hostname in the HTTP Request header Host field. • `host-domain-hash`—Distributes new TCP connections using a hash algorithm based on the domain name in the HTTP Request header Host field. • `src-ip-hash`—Distributes new TCP connections using a hash algorithm based on the source IP address of the request. • `least-response-time`—Distributes the incoming traffic to the server with the shortest average response time and the lowest number of connections, thus making the client connect to the most efficient back-end server.	`round-robin`

Variable	Description	Default
	• `probabilistic-weighted-least-response-time`—For the `least-response-time`, in extreme cases there might be a server consistently has relatively low response time compared to others, which causes most of traffic to be distributed to one server. As a solution to this case, `probabilistic-weighted-least-response-time` distributes traffic based on least response time as well as probabilities. The least response time server is most likely to receive traffic, while the rest servers still have a chance to process some of the traffic. **Note**: When protocol {HTTP | FTP | ADFSPIP} on page 189 is set to `FTP`, only `round-robin`, `weighted-round-robin`, `least-connections`, and `src-ip-hash` are available. For hash-based methods, if you specify a value for `persistence`, after an initial client request, FortiWeb routes any subsequent requests according to the persistence method. Otherwise, it routes subsequent requests according to the hash-based algorithm. Available only if type {offline-protection | reverse-proxy | transparent-servers-for-ti | transparent-servers-for-tp | transparent-servers-for-wccp} on page 191 is `reverse-proxy` and server-balance {enable | disable} on page 191 is enable.	
persistence "<persistence-policy_name>"	Enter the name of the persistence policy that specifies a session persistence method and timeout to apply to the pool. For details, see server-policy persistence-policy on page 147. **Note**: This option is available only when the protocol {HTTP | FTP | ADFSPIP} on page 189 is `HTTP`.	No default.
adfs-server-name <adfs-server-name_str>	Enter a name for the AD FS Server. It should be the federation service name. This option is mandatory if the AD FS Server needs to verify the server name in the SSL handshake. This is only available if the server pool type is ADFSPIP.	No default.
protocol {HTTP | FTP | ADFSPIP}	Select one of the following: • `HTTP`—Specifies that the server pool governs HTTP traffic. Specific options for configuring an HTTP server pool become available. • `FTP`—Specifies that the server pool governs FTP traffic. Specific options for configuring an FTP server pool become available.	HTTP

Variable	Description	Default
	• ADFSPIP—Specifies that the server pool governs ADFSPIP traffic. Specific options for configuring an ADFSPIP server pool become available.	
proxy-protocol {enable | disable}	If the back-end server enables proxy protocol, you need to enable the Proxy Protocol option on FortiWeb so that the TCP SSL and HTTP traffic can successfully go through. The real IP address of the client will be included in the proxy protocol header. Available only if the type {offline-protection | reverse-proxy | transparent-servers-for-ti | transparent-servers-for-tp | transparent-servers-for-wccp} is Reverse Proxy, True Transparent Proxy, Offline Protection, or Transparent Inspection.	disable
proxy-protocol-version {v1 | v2}	Select the proxy protocol version for the back-end server. Available only if the type {offline-protection | reverse-proxy | transparent-servers-for-ti | transparent-servers-for-tp | transparent-servers-for-wccp} is Reverse Proxy, or True Transparent Proxy.	v1
reuse-conn-idle-time <int>	Enter an idle time limit for a cached server connection. If a cached server connection remains idle for the set duration, it will be closed. The valid range is 1-1000.	10
reuse-conn-max-count <int>	Enter the maximum number of allowed cached server connections. If FortiWeb meets the set number, no more cached server connections will be established. The valid range is 1-1000 for each pserver. **Note**: The minimum number of cached connections depends on the number of CPU kernels of the FortiWeb platform. For example, a FortiWeb 4000E has 40 CPU kernels, so there are always at least 40 reusable connections for each pserver. In addition, the valid range is set for each pserver; if there are two pservers and you enter a value of 1000, there will be up to 2000 reusable connections.	100
reuse-conn-max-request <int>	Enter the maximum number of HTTP responses that the cached server connection may handle. If a cached server connection meets the set number, it will be closed. The valid range is 1-1000.	100
reuse-conn-total-time <int>	Enter the maximum time limit in which a cached server connection may be reused. If a cached server connection exists for longer than the set limit, it will be closed. The valid range is 1-1000.	100

Variable	Description	Default
server-balance {enable | disable}	Specifies whether the pool contains a single server or multiple members. If the value is `enabled`, FortiWeb uses the specified load-balancing algorithm to distribute TCP connections among the members. If a member is unresponsive to the specified server health check, FortiWeb forwards subsequent connections to another member of the pool. Available only when type {offline-protection | reverse-proxy | transparent-servers-for-ti | transparent-servers-for-tp | transparent-servers-for-wccp} on page 191 is `reverse-proxy`.	`disable`
server-pool-id	A 64-bit random integer assigned to each server policy. The `policy-id` is a unique identification number for each server policy. When administrative domains (ADOMs) are enabled, ADOMs can create unique server policies with policy names that are identical to other server policies created by different ADOMs, so the `policy-id` can easily differentiate between different policies created by different ADOMs that may share the same policy name.	No default.
type {offline-protection | reverse-proxy | transparent-servers-for-ti | transparent-servers-for-tp | transparent-servers-for-wccp}	Select the current operation mode of the appliance to display the corresponding pool options. For details, see opmode {offline-protection | reverse-proxy | transparent | transparent-inspection | wccp} on page 381. **Note**: This option is applicable only when the protocol {HTTP | FTP | ADFSPIP} on page 189 is HTTP.	`reverse-proxy`
<entry_index>	Enter the index number of the member entry within the server pool. The valid range is 1-9,223,372,036,854,775,807. For round robin-style load-balancing, the index number indicates the order in which FortiWeb distributes connections.	No default.
backup-server {enable | disable}	Enter `enable` to configure this pool member as a backup server. FortiWeb only routes connections for the pool to a backup server when all the other members of the server pool fail their server health check. The backup server mechanism does not work if you do not specify server health checks for the pool members. If you select this option for more than one pool member,	`disable`

Variable	Description	Default
	FortiWeb uses the load balancing algorithm to determine which member to use.	
certificate "<certificate_name>"	Enter the name of the certificate that FortiWeb uses to decrypt SSL-secured connections. Available only if ssl {enable | disable} on page 201 is `enable`. The maximum length is 63 characters. To display the list of existing certificates, enter: `edit ?` **Note**: This option is available only when the protocol {HTTP | FTP | ADFSPIP} on page 189 is `HTTP`.	No default.
certificate-verify "<verifier_name>"	Enter the name of a certificate verifier, if any, to use when an HTTP client presents their personal certificate. If you do not specify one, the client is not required to present a personal certificate. However, if ssl {enable | disable} on page 201 is `enable` and the domain in the client request matches an entry in the specified SNI policy, FortiWeb uses the SNI configuration to determine which certificate verifier to use. Personal certificates, sometimes also called user certificates, establish the identity of the person connecting to the website. For details about how the client's certificate is verified, see ssl-client-verify "<verifier_name>" on page 170. You can require that clients present a certificate alternatively or in addition to HTTP authentication. For details, see config waf HTTP-authen HTTP-authen-rule on page 1. Available only if ssl {enable | disable} on page 201 is `transparent-servers-for-tp` and `ssl` is `enable`. For Reverse Proxy mode, configure this setting in the server policy instead. See ssl-client-verify "<verifier_name>" on page 170. The maximum length is 63 characters. To display the list of existing verifiers, enter: `edit ?` **Note:** The client must support TLS 1.0, TLS 1.1, or TLS 1.2. **Note**: This option is available only when the protocol {HTTP | FTP | ADFSPIP} on page 189 is `HTTP`.	No default.
client-certificate "<client-certificate_name>"	Enter the client certificate that FortiWeb uses to connect to this server pool member.	`disable`

Variable	Description	Default
	Used when connections to this pool member require a valid client certificate. Available only if type {offline-protection | reverse-proxy | transparent-servers-for-ti | transparent-servers-for-tp | transparent-servers-for-wccp} on page 191 is `reverse-proxy` or `transparent-servers-for-tp` and ssl {enable | disable} on page 201 is `enable`. To upload a client certificate for FortiWeb, see the *FortiWeb Administration Guide*: http://docs.fortinet.com/fortiweb/admin-guides **Note**: This option is available only when the protocol {HTTP | FTP | ADFSPIP} on page 189 is `HTTP`.	
client-certificate-forwarding {enable | disable}	Enable to configure FortiWeb to include any X.509 personal certificates presented by clients during the SSL/TLS handshake with the traffic it forwards to the pool member. Available only if type {offline-protection | reverse-proxy | transparent-servers-for-ti | transparent-servers-for-tp | transparent-servers-for-wccp} on page 191 is `transparent-servers-for-tp` and ssl {enable | disable} on page 201 is `enable`. **Note**: This option is available only when the protocol {HTTP | FTP | ADFSPIP} on page 189 is `HTTP`.	`disable`
client-certificate-forwarding-cert-header "<header_str>"	Enter a custom certificate header that will include the Base64 certificate of the X.509 personal certificate presented by the client during the SSL/TLS handshake when it forwards the traffic to the protected web server. **Note**: This option is available only when the protocol {HTTP | FTP | ADFSPIP} on page 189 is `HTTP`.	x-client-cert
client-certificate-forwarding-sub-header "<header_str>"	Enter a custom subject header that will include the subject of the X.509 personal certificate presented by the client during the SSL/TLS handshake when it forwards the traffic to the protected web server. **Note**: This option is available only when the protocol {HTTP | FTP | ADFSPIP} on page 189 is `HTTP`.	x-client-dn
client-certificate-proxy {enable | disable}	Enable to configure seamless PKI integration. When this option is configured, FortiWeb attempts to verify client certificates when users make requests and resigns new certificates that it sends to the server. Also configure client-certificate-proxy-sign-ca <sign_ca> on page 194. **Note**: This option is available only when the protocol {HTTP | FTP | ADFSPIP} on page 189 is `HTTP`.	disable

Variable	Description	Default
client-certificate-proxy-sign-ca <sign_ca>	Select a Sign CA FortiWeb will use to verify and resign new client certificates. **Note**: This option is available only when the protocol {HTTP | FTP | ADFSPIP} on page 189 is `HTTP`.	No default.
conn-limit <conn-limit_int>	Specifies the maximum number of TCP connections that FortiWeb forwards to this pool member. For no limit, specify `0` (the default value). The valid range is 0-1,048,576.	`0`
domain "<server_fqdn>"	Enter the fully-qualified domain name of the web server to include in the pool, such as `www.example.com`. **Warning:** Server policies do not apply features that do not yet support IPv6 to domain servers whose DNS names resolve to IPv6 addresses. **Tip:** For domain servers, FortiWeb queries a DNS server to query and resolve each web server's domain name to an IP address. For improved performance, do one of the following: • use physical servers instead • ensure highly reliable, low-latency service to a DNS server on your local network Available only if server-type {physical | domain | sdn-connector} on page 198 is `domain`.	No default.
health-check-inherit {enable | disable}	Select either: • `enable`—Use the health check specified by `health` in the server pool configuration. • `disable`—Use the health check specified by `health` in this pool member configuration.	enable
`hlck-domain <hlck-domain_str>`	Enter the domain name of the server pool.	No default.
hpkp-header "<hpkp_name>"	Enter an HPKP profile, if any, to use to verify certificates when clients attempt to access a server. HPKP prevents attackers from carrying out Man in the Middle (MITM) attacks with forged certificates. Available only when the operating mode is True Transparent Proxy. **Note**: This option is available only when the protocol {HTTP | FTP | ADFSPIP} on page 189 is `HTTP`.	disable
hsts-header {enable | disable}	Enable to combat MITM attacks on HTTP by injecting the RFC 6797 (http://tools.ietf.org/html/rfc6797) strict transport security header into the reply, such as:	`disable`

Variable	Description	Default
	`Strict-Transport-Security: max-age=31536000; includeSubDomains;Preload` This header forces the client to use HTTPS for subsequent visits to this domain. If the certificate does not validate, it also causes a fatal connection error: the client's web browser does not display a dialog that allows the user to override the certificate mismatch error and continue. Available only if type {offline-protection | reverse-proxy | transparent-servers-for-ti | transparent-servers-for-tp | transparent-servers-for-wccp} on page 191 is `transparent-servers-for-tp` and ssl {enable | disable} on page 201 is `enable`. **Note**: This option is available only when the protocol {HTTP | FTP | ADFSPIP} on page 189 is `HTTP`.	
hsts-max-age <timeout_int>	Enter the time to live in seconds for the HSTS header. This setting applies only if hsts-header {enable | disable} on page 194 is `enable`. **Note**: This option is available only when the protocol {HTTP | FTP | ADFSPIP} on page 189 is `HTTP`.	`7776000`
HTTP2 {enable | disable}	Enable to allow HTTP/2 communication between the FortiWeb and this back-end web server for HTTP/2 security inspections in Reverse Proxy mode; or enable HTTP/2 security inspections in True Transparent Proxy mode. When HTTP/2 security inspection is enabled in **Reverse Proxy mode** (see server-policy policy on page 151): 1. `enable`–Make sure the traffic is transferred in HTTP/2 between FortiWeb and this web server, if this web server supports HTTP/2. **Note:** Make sure that this back web server really supports HTTP/2 before you enable this, or connections will go failed. 2. `disable`–Make FortiWeb to converse HTTP/2 to HTTP/1.x for this web server, or converse HTTP/1.x to HTTP/2 for the clients, if this web server does not support HTTP/2. When FortiWeb operates in **True Transparent Proxy mode**(see opmode {offline-protection | reverse-proxy | transparent | transparent-inspection | wccp} on page 381): 1. `enable`–Enable HTTP/2 security inspection. It only requires this option to be enabled and the SSL be well-configured to enable the HTTP/2	disable

Variable	Description	Default
	security inspection. No HTTP/2 configuration is required for server-policy policy on page 151. When HTTP/2 inspection is enabled in True Transparent Proxy mode, FortiWeb performs no protocol conversions between HTTP/1.x and HTTP/2, which means HTTP/2 connections will not be established between clients and back-end web servers if the web servers do not support HTTP/2. 2. `disable`—Disable HTTP/2 security inspection. **Note:** 1. This option is available only if type {offline-protection | reverse-proxy | transparent-servers-for-ti | transparent-servers-for-tp | transparent-servers-for-wccp} on page 191 is set to `reverse-proxy` or `transparent-servers-for-tp`; and when `type` is `transparent-servers-for-tp`, this option is available only if ssl {enable | disable} on page 201 is `enable`. 2. Please confirm your FortiWeb operation mode and the HTTP versions your back-end web servers are running first to make appropriate configuration here, so that HTTP/2 inspection can work correctly with your web servers. 3. For details about HTTP/2 support, see the FortiWeb Administration Guide: http://docs.fortinet.com/fortiweb/admin-guides **Note**: This option is available only when the protocol {HTTP | FTP | ADFSPIP} on page 189 is `HTTP`.	
http2-window-size <int>	Enter the window size (determining the amount of data in bytes that FortiWeb is willing to receive at any given time) for HTTP/2 connections between the back-end server and FortiWeb. The valid range is 65,535-2,147,483,647 bytes.	131,070
implicit_ssl {enable | disable}	Enable so that FortiWeb will communicate with the pool member using implicit SSL. **Note**: This option is available only when the protocol {HTTP | FTP | ADFSPIP} on page 189 is set to `FTP`.	disable
intermediate-certificate-group "<CA-group_name>"	Enter the name of a group of intermediate certificate authority (CA) certificates, if any, that FortiWeb presents to clients to complete the signing chain for them and validate the server certificate's CA signature.	No default.

Variable	Description	Default
	If clients receive certificate warnings that the server certificate configured in certificate "<certificate_name>" on page 192 has been signed by an intermediary CA, rather than directly by a root CA or other CA currently trusted by the client, configure this option. Alternatively, include the entire signing chain in the server certificate itself before uploading it to the FortiWeb appliance, thereby completing the chain of trust with a CA already known to the client. For details, see the FortiWeb Administration Guide: http://docs.fortinet.com/fortiweb/admin-guides Available only if type {offline-protection | reverse-proxy | transparent-servers-for-ti | transparent-servers-for-tp | transparent-servers-for-wccp} on page 191 is `transparent-servers-for-tp` and ssl {enable | disable} on page 201 is `enable`. For Reverse Proxy mode, configure this setting in the server policy instead. For details, see intermediate-certificate-group "<CA-group_name>" on page 165. **Note**: This option is available only when the protocol {HTTP | FTP | ADFSPIP} on page 189 is `HTTP`.	
ip {"address_ipv4" | "address_ipv6"}	Enter the IP address of the web server to include in the pool. **Warning:** Server policies do not apply to features that do not yet support IPv6 to servers specified using IPv6 addresses. Available only if server-type {physical | domain | sdn-connector} on page 198 is `physical`.	No default.
port <port_int>	Enter the TCP port number where the pool member listens for connections. The valid range is 1-65,535.	`80` (HTTP)/`21` (FTP)
recover <recover_int>	Specify the number of seconds that FortiWeb waits before it forwards traffic to this pool member after a health check indicates that this server is available again. The default is `0` (disabled). The valid range is 0-86,400. After the recovery period elapses, FortiWeb assigns connections at the rate specified by warm-rate <warm-rate_int> on page 207. Examples of when the server experiences a recovery and warm-up period: • A server is coming back online after the health check monitor detected it was down. • A network service is brought up before other	`0`

Variable	Description	Default
	daemons have finished initializing and therefore the server is using more CPU and memory resources than when startup is complete. To avoid connection problems, specify the separate warm-up rate, recovery rate, or both. **Tip:** During scheduled maintenance, you can also manually apply these limits by setting status {disable |enable | maintain} on page 204 to `maintain`.	
server-side-sni {enable | disable}	Specify whether FortiWeb supports Server Name Indication (SNI) for back-end servers that it applies this policy to. Enable this feature when the operating mode is transparent proxy, end-to-end encryption is required, and the back-end web server itself requires SNI support. When the operating mode is Reverse Proxy, you enable server-side SNI support using the server policy. **Note**: This option is available only when the protocol {HTTP | FTP | ADFSPIP} on page 189 is `HTTP`.	`disable`
server-type {physical | domain | sdn-connector}	Specify whether to specify the pool member by IP address, domain, or automatically pulled by SDN connector. If your application servers are deployed on AWS or Azure, you can select `sdn-connector` to authorize FortiWeb to access the VM instances in your public cloud account, in order to automatically obtain the IP addresses.	`physical`
sdn-addr-type {private | public | all}	Select whether you want FortiWeb to get the public or private addresses of your application's VM instances, or select `all` to get both the public and the private addresses. **Note:** If you are using private IP addresses, ensure that FortiWeb can successfully establish connections with your application's VM instances in order to forward the traffic. Available only if the `server-type` is `sdn-connector`.	`private`
sdn {aws | azure}	Select the SDN connector you have created. See system sdn-connector Available only if the `server-type` is `sdn-connector`.	No default.

Variable	Description	Default
filter <string>	Once you select the SDN collector that you have created, the available filter options for your VMs in your public cloud account will be listed here. You can select multiple filter options among instance IDs, image IDs, tags, etc. FortiWeb will find the VM instance, for example, whose instance ID is i-12345678 in your AWS account, then obtain the IP address of this instance and record it as the origin server's IP. **AWS** • instance-id (e.g. instance-id=i-12345678) • image-id (e.g. image-id=ami-123456) • key-name (e.g. key-name=aws-key-name) • subnet-id (e.g. subnet-id=sub-123456) • tag:*TagName* (The tag attached to the instance. *TagName* is a variable. It can be any value you have named for the tag. e.g. tag:Type=appserver. Up to 8 tags are supported.) **Azure** • vm-name (e.g. vm-name=myVM01) • tag:*TagName* (The tag attached to the virtual machine. *TagName* is a variable. It can be any value you have named for the tag, e.g. tag:Type=appserver. Up to 8 tags are supported.) Available only if the `server-type` is `sdn-connector`.	No default.
session-id-reuse {enable | disable}	Enable so that FortiWeb reuses the session ID when establishing an SSL connection to a pserver. If the SSL connection has a server name, FortiWeb can only reuse a session ID for the specified pserver. If both a session ticket and ID exist for a pserver, FortiWeb will reuse the ticket. **Note**: This option is available only when ssl {enable | disable} on page 201 is enabled.	disable
session-ticket-reuse {enable | disable}	Enable so that FortiWeb reuses the session ticket when establishing an SSL connection to a pserver. If the SSL connection has a server name, FortiWeb can only reuse a session ticket for the specified pserver. **Note**: This option is available only when ssl {enable | disable} on page 201 is enabled.	disable
sni {enable | disable}	Enable to use a Server Name Indication (SNI) configuration instead of or in addition to the server certificate specified by certificate "<certificate_name>" on page 192.	`disable`

Variable	Description	Default
	The SNI configuration enables FortiWeb to determine which certificate to present on behalf of the members of a pool based on the domain in the client request. For details, see system certificate sni on page 270. If you specify both a SNI configuration and a certificate, FortiWeb uses the certificate specified by certificate "<certificate_name>" on page 192 when the requested domain does not match a value in the SNI configuration. If you enable sni-strict {enable | disable} on page 200, FortiWeb always ignores the value of certificate "<certificate_name>" on page 192. Available only if type {offline-protection | reverse-proxy | transparent-servers-for-ti | transparent-servers-for-tp | transparent-servers-for-wccp} on page 191 is `transparent-servers-for-tp` and ssl {enable | disable} on page 201 is `enable`. **Note**: This option is available only when the protocol {HTTP | FTP | ADFSPIP} on page 189 is HTTP.	
sni-certificate "<sni_name>"	Enter the name of the Server Name Indication (SNI) configuration that specifies which certificate FortiWeb uses when encrypting or decrypting SSL-secured connections for a specified domain. The SNI configuration enables FortiWeb to present different certificates on behalf of the members of a pool according to the requested domain. If only one certificate is required to encrypt and decrypt traffic that this policy applies to, specify certificate "<certificate_name>" on page 192 instead. Available only if sni {enable | disable} on page 199 is enabled. **Note**: This option is available only when the protocol {HTTP | FTP | ADFSPIP} on page 189 is HTTP.	No default.
sni-strict {enable | disable}	Select to configure FortiWeb to ignore the value of certificate "<certificate_name>" on page 192 when it determines which certificate to present on behalf of server pool members, even if the domain in a client request does not match a value in the specified SNI configuration. **Note**: This option is available only when the protocol {HTTP | FTP | ADFSPIP} on page 189 is HTTP.	`disable`
certificate-type {enable | disable}	Enable allow FortiWeb to automatically retrieve CA certificates from Let's Encrypt.	disable

Variable	Description	Default
lets-certificate <name>	Select the Letsencrypt certificate you have created. See system certificate letsencrypt.	No default.
ssl {enable | disable}	For Reverse Proxy, Offline Protection, and Transparent Inspection modes, specifies whether connections between FortiWeb and the pool member use SSL/TLS. For True Transparent Proxy and WCCP modes, specifies whether FortiWeb performs SSL/TLS processing for the pool members and connections between FortiWeb and the pool member use SSL/TLS. For Offline Protection and transparent modes, also configure certificate "<certificate_name>" on page 192. FortiWeb uses the certificate to decrypt and scan connections before passing the encrypted traffic through to the pool members (SSL inspection). For True Transparent Proxy, also configure certificate "<certificate_name>" on page 192 and additional SSL settings as required. FortiWeb handles SSL negotiations and encryption and decryption, instead of the pool member (SSL offloading). For Reverse Proxy mode, you can configure SSL offloading for all members of a pool using a server policy. For details, see server-policy policy on page 151. **Note:** When this option is enabled, the pool member must be configured to apply SSL. **Note:** Ephemeral (temporary key) Diffie-Hellman exchanges are not supported if the FortiWeb appliance is operating in Transparent Inspection or Offline Protection mode.	No default.
ssl-cipher {medium | high | custom}	For Reverse Proxy mode, specifies whether secure connections between FortiWeb and the server pool member use a medium-security, high-security, or custom set of cipher suites. For True Transparent Proxy and WCCP modes, specifies whether secure connections between clients and FortiWeb and between FortiWeb and the server pool member use a medium-security, high-security, or custom set of cipher suites. If custom, also specify ssl-custom-cipher {<cipher_1> <cipher2> <cipher3> ...} on page 202. Do not set to `custom` if `HTTP2 {enable | disable} on page 195` is set to `enable`. For details, see the *FortiWeb Administration Guide*: http://docs.fortinet.com/fortiweb/admin-guides	`medium`

Variable	Description	Default
	Available only if type {offline-protection | reverse-proxy | transparent-servers-for-ti | transparent-servers-for-tp | transparent-servers-for-wccp} on page 191 is `reverse-proxy`, `transparent-servers-for-tp`, or `transparent-servers-for-wccp`, and ssl {enable | disable} on page 201 is `enable`.	
ssl-custom-cipher {<cipher_1> <cipher2> <cipher3> ...}	Specify one or more cipher suites that FortiWeb allows. Separate the name of each cipher with a space. To remove from or add to the list of ciphers, retype the entire list. Valid values are: ECDHE-ECDSA-AES256-GCM-SHA384 ECDHE-RSA-AES256-GCM-SHA384 DHE-DSS-AES256-GCM-SHA384 DHE-RSA-AES256-GCM-SHA384 ECDHE-ECDSA-CHACHA20-POLY1305 ECDHE-RSA-CHACHA20-POLY1305 DHE-RSA-CHACHA20-POLY1305 ECDHE-ECDSA-AES256-CCM8 ECDHE-ECDSA-AES256-CCM DHE-RSA-AES256-CCM8 DHE-RSA-AES256-CCM ECDHE-ECDSA-AES128-GCM-SHA256 ECDHE-RSA-AES128-GCM-SHA256 DHE-DSS-AES128-GCM-SHA256 DHE-RSA-AES128-GCM-SHA256 ECDHE-ECDSA-AES128-CCM8 ECDHE-ECDSA-AES128-CCM DHE-RSA-AES128-CCM8 DHE-RSA-AES128-CCM ECDHE-ECDSA-AES256-SHA384 ECDHE-RSA-AES256-SHA384 DHE-RSA-AES256-SHA256 DHE-DSS-AES256-SHA256 ECDHE-ECDSA-CAMELLIA256-SHA384 ECDHE-RSA-CAMELLIA256-SHA384 DHE-RSA-CAMELLIA256-SHA256 DHE-DSS-CAMELLIA256-SHA256 ECDHE-ECDSA-AES128-SHA256 ECDHE-RSA-AES128-SHA256 DHE-RSA-AES128-SHA256	ECDHE-ECDSA-AES256-GCM-SHA384 ECDHE-RSA-AES256-GCM-SHA384 ECDHE-ECDSA-CHACHA20-POLY1305 ECDHE-RSA-CHACHA20-POLY1305 ECDHE-ECDSA-AES128-GCM-SHA256 ECDHE-RSA-AES128-GCM-SHA256 ECDHE-ECDSA-AES256-SHA384 ECDHE-RSA-AES256-SHA384 ECDHE-ECDSA-AES128-SHA256 ECDHE-RSA-AES128-SHA256 ECDHE-ECDSA-AES256-SHA

Variable	Description	Default
	DHE-DSS-AES128-SHA256 ECDHE-ECDSA-CAMELLIA128-SHA256 ECDHE-RSA-CAMELLIA128-SHA256 DHE-RSA-CAMELLIA128-SHA256 DHE-DSS-CAMELLIA128-SHA256 ECDHE-ECDSA-AES256-SHA ECDHE-RSA-AES256-SHA DHE-RSA-AES256-SHA DHE-DSS-AES256-SHA DHE-RSA-CAMELLIA256-SHA DHE-DSS-CAMELLIA256-SHA ECDHE-ECDSA-AES128-SHA ECDHE-RSA-AES128-SHA DHE-RSA-AES128-SHA DHE-DSS-AES128-SHA DHE-RSA-CAMELLIA128-SHA DHE-DSS-CAMELLIA128-SHA AES256-GCM-SHA384 AES256-CCM8 AES256-CCM AES128-GCM-SHA256 AES128-CCM8 AES128-CCM AES256-SHA256 CAMELLIA256-SHA256 AES128-SHA256 CAMELLIA128-SHA256 AES256-SHA CAMELLIA256-SHA AES128-SHA CAMELLIA128-SHA DHE-RSA-SEED-SHA ECDHE_RSA_DES_CBC3_SHA DES_CBC3_SHA	ECDHE-RSA-AES256-SHA ECDHE-ECDSA-AES128-SHA ECDHE-RSA-AES128-SHA AES256-GCM-SHA384 AES128-GCM-SHA256 AES256-SHA256 AES128-SHA256
tls13-custom-cipher	Specify one or more TLS 1.3 cipher suites that FortiWeb allows. Separate the name of each cipher with a space. To remove from or add to the list of ciphers, retype the entire list. Valid values are:	TLS_AES_256_GCM_SHA384

Variable	Description	Default
	TLS_AES_256_GCM_SHA384 TLS_CHACHA20_POLY1305_SHA256 TLS_AES_128_GCM_SHA256 TLS_AES_128_CCM_SHA256 TLS_AES_128_CCM_8_SHA256	
rfc7919-comply {enable | disable}	Enable to apply cipher suites that comply with RFC-9719.	disable
supported-groups {X25519 | prime256v1 | secp384r1 | secp521r1 | brainpoolP256r1 | brainpoolP384r1 | brainpoolP512r1 | ffdhe2048 | ffdhe3072 | ffdhe4096 | ffdhe6144 | ffdhe8192}	Select the RFC-9719 ciphers to be supported. The Supported Group is Elliptic Curve Parameters, while SSL/TLS negotiation could choose different Elliptic Curve algorithms, so please make sure to choose the corresponding ciphers in `ssl-custom-cipher`. • At least one FFDHE group should be selected. • At least one DHE cipher should be added. Due to design limitation, you need to select `custom` in `ssl-cipher {medium | high | custom}` and make sure to include at least one DHE cipher in the selected list. Using `High` or `Medium` together with RFC-9719 will lead to unexpected error. We will fix it in the future release. The system will return error if any of the above two conditions is not met. Please note RFC7919 does not comply with TLS 1.3, so if you have only enabled `tls-v13`, then RFC7919 will not take effect even if it's enabled. To apply both TLS 1.3 and RFC7919, it's recommended to enable a non-TLS 1.3 protocol, then select at least one DHE cipher.	No default
ssl-noreg {enable | disable}	Select to configure FortiWeb to ignore requests from clients to renegotiate TLS or SSL. Protects against denial-of-service (DoS) attacks that use TLS/SSL renegotiation to overburden the server. Available only if type {offline-protection | reverse-proxy | transparent-servers-for-ti | transparent-servers-for-tp | transparent-servers-for-wccp} on page 191 is `transparent-servers-for-tp` and ssl {enable | disable} on page 201 is `enable`. **Note**: This option is available only when the protocol {HTTP | FTP | ADFSPIP} on page 189 is `HTTP`.	`enable`
status {disable |enable | maintain}	To specify the status of the pool member, enter one of the following values: • `enable`–Specifies that this pool member can	`enable`

Variable	Description	Default
	receive new sessions from FortiWeb. • `disable`–Specifies that this pool member does not receive new sessions from FortiWeb and FortiWeb closes any current sessions as soon as possible. • `maintain`–Specifies that this pool member does not receive new sessions from FortiWeb but FortiWeb maintains any current connections.	
tls-v10 {enable | disable}	For Reverse Proxy mode, specifies whether secure connections between FortiWeb and the server pool member can use the TLS 1.0 cryptographic protocol. For True Transparent Proxy and WCCP modes, specifies whether secure connections between clients and FortiWeb and between FortiWeb and the server pool member can use the TLS 1.0 cryptographic protocol. This must be set to `disable` if HTTP2 {enable | disable} on page 195 is set to `enable`. Available only if type {offline-protection | reverse-proxy | transparent-servers-for-ti | transparent-servers-for-tp | transparent-servers-for-wccp} on page 191 is `reverse-proxy`, `transparent-servers-for-tp`, or `transparent-servers-for-wccp`, and ssl {enable | disable} on page 201 is `enable`.	`enable`
tls-v11 {enable | disable}	For Reverse Proxy mode, specifies whether secure connections between FortiWeb and the server pool member can use the TLS 1.1 cryptographic protocol. For True Transparent Proxy and WCCP modes, specifies whether secure connections between clients and FortiWeb and between FortiWeb and the server pool member can use the TLS 1.1 cryptographic protocol. This must be set to `disable` if HTTP2 {enable | disable} on page 195 is set to `enable`. Available only if type {offline-protection | reverse-proxy | transparent-servers-for-ti | transparent-servers-for-tp | transparent-servers-for-wccp} on page 191 is `reverse-proxy`, `transparent-servers-for-tp`, or `transparent-servers-for-wccp`, and ssl {enable | disable} on page 201 is `enable`.	`enable`
tls-v12 {enable | disable}	For Reverse Proxy mode, specifies whether secure connections between FortiWeb and the server pool member can use the TLS 1.2 cryptographic protocol. For True Transparent Proxy and WCCP modes, specifies whether secure connections between clients and FortiWeb and between FortiWeb and the server pool member can use the TLS 1.2 cryptographic protocol.	`enable`

Variable	Description	Default
	Available only if type {offline-protection | reverse-proxy | transparent-servers-for-ti | transparent-servers-for-tp | transparent-servers-for-wccp} on page 191 is `reverse-proxy`, `transparent-servers-for-tp`, or `transparent-servers-for-wccp`, and ssl {enable | disable} on page 201 is `enable`.	
tls-v13 {enable | disable}	For Reverse Proxy mode, specifies whether secure connections between FortiWeb and the server pool member can use the TLS 1.3 cryptographic protocol. For True Transparent Proxy and WCCP modes, specifies whether secure connections between clients and FortiWeb and between FortiWeb and the server pool member can use the TLS 1.3 cryptographic protocol. Available only if type {offline-protection | reverse-proxy | transparent-servers-for-ti | transparent-servers-for-tp | transparent-servers-for-wccp} on page 191 is `reverse-proxy`, `transparent-servers-for-tp`, or `transparent-servers-for-wccp`, and ssl {enable | disable} on page 201 is `enable`.	`disable`
url-cert {enable | disable}	Specifies whether FortiWeb uses a URL-based client certificate group to determine whether a client is required to present a personal certificate. Available only if HTTPS-service "<service_name>" on page 164 is configured. **Note**: This option is available only when the protocol {HTTP | FTP | ADFSPIP} on page 189 is `HTTP`.	`disable`
urlcert-group "<urlcert-group_name>"	Enter the URL-based client certificate group that determines whether a client is required to present a personal certificate. If the URL the client requests does not match an entry in the group, the client is not required to present a personal certificate. For details about creating a group, see system certificate urlcert on page 274. **Note**: This option is available only when the protocol {HTTP | FTP | ADFSPIP} on page 189 is `HTTP`.	No default.
urlcert-hlen <len_int>	Enter the maximum allowed length for an HTTP request with a URL that matches an entry in the URL-based client certificate group, in kilobytes. FortiWeb blocks any matching requests that exceed the specified size. This setting prevents a request from exceeding the maximum buffer size.	No default.

Variable	Description	Default
	The valid range is 16-128. **Note**: This option is available only when the protocol {HTTP | FTP | ADFSPIP} on page 189 is `HTTP`.	
warm-rate <warm-rate_int>	Specify the maximum connection rate (per second) while the pool member is starting up. The default is 10 connections per second. The valid range is 1-86,400. The warm up calibration is useful with servers that bring up the network service before other daemons are initialized. As these types of servers come online, CPU and memory are more utilized than they are during normal operation. For these servers, you define separate rates based on warm-up and recovery behavior. For example, if warm-up <warm-up_int> on page 207 is `5` and `warm-rate` is `2`, the maximum number of new connections increases at the following rate: • 1st second–Total of 2 new connections allowed (0+2). • 2nd second–2 new connections added for a total of 4 new connections allowed (2+2). • 3rd second–2 new connections added for a total of 6 new connections allowed (4+2). • 4th second–2 new connections added for a total of 8 new connections allowed (6+2). • 5th second–2 new connections added for a total of 10 new connections allowed (8+2).	`10`
warm-up <warm-up_int>	Specify for how long (in seconds) FortiWeb forwards traffic at a reduced rate after a health check indicates that this pool member is available again but it cannot yet handle a full connection load. For example, when the pool member begins to respond but startup is not fully complete. The default is `0` (disabled). The valid range is 0-86,400.	`0`
weight <weight_int>	If the server pool uses the weighted round robin load-balancing algorithm, type the numerical weight of the pool member. Members with a greater weight receive a greater proportion of connections. The valid range is 1-9,999.	`0`
`ssl-session-timeout <ssl-session-timeout_int>`	When FortiWeb is configured as an SSL server, you can set SSL session timeout intervals via the CLI. This is available only in Reverse Proxy and True Transparent Proxy modes.	No default.

Variable	Description	Default
`ssl-quiet-shutdown {enable | disable}`	For HTTPS connection, when disabled, FortiWeb sends ssl alert message to the client or server pool first, and then FIN. When enabled, FortiWeb directly sends FIN message instead of sending ssl alert message.	`Disable`
`server-certificate-verify {enable | disable}`	Enable so that FortiWeb appliance will verify certificates presented by HTTP server.	`Disable`
`server-certificate-verify-policy "<policy_name>"`	Enter the certificate verity policy name.	No default.
`server-certificate-verify-action {alert | alert_deny | redirect}`	Select which action the FortiWeb appliance will take when it detects a certificate violation.	No default.
`adfs-username <adfs-username_str>`	Type the username that will be used by FortiWeb to connect with the AD FS server. You should include the domain to which FortiWeb and the AD FS server belong. For example, damain1\administrator.	No default.
`adfs-password <adfs-password_str>`	Type the password that will be used by FortiWeb to connect with the AD FS server.	No default.
`multi-certificate {enable | disable}`	Enable this option to allow FortiWeb to use multiple local certificates. Available when: ssl {enable | disable} on page 201 is enabled, and FortiWeb is operating in TTP or WCP mode that performs SSL inspection.	`disable`
`certificate-group <certificate-group_str>`	Select the the multi-certificate file you have created.	No default.
enforce-trust-establishment {enable | disable}	Enable to establish trust with ADFS servers before building up connections.	`disable`

Example

This example configures a server pool named `server-pool1`. It consists of two physical servers: `192.0.2.10` and `192.0.2.11`.

When both servers are available, FortiWeb forwards connections to the server with the smallest number of connections.

```
config server-policy server-pool
   edit "server-pool1"
      set type reverse-proxy
```

```
      set server-balance enable
      set lb-algo least-connections
      config pserver-list
         edit 1
            set status enable
            set server-type physical
            set ip "192.0.2.10"
            set ssl disable
            set port 8081
         next
         edit 2
            set status enable
            set server-type physical
            set ip "192.0.2.11"
            set ssl disable
            set port 8082
         next
      end
   next
end
```

Related topics

- server-policy policy on page 151
- server-policy HTTP-content-routing-policy on page 119
- system certificate local on page 264
- server-policy health on page 113
- server-policy persistence-policy on page 147
- waf ftp-protection-profile on page 527
- system feature-visibility on page 295

server-policy service custom

Use this command to configure a custom service.

You can add a custom services to a policy to define the protocol and listening port of a virtual server. For details, see server-policy policy on page 151.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `traroutegrp` area. For details, see Permissions on page 46.

Syntax

```
config server-policy service custom
   edit "<service_name>"
      set port <port_int>
      set protocol TCP
```

```
    next
end
```

Variable	Description	Default
"<service_name>"	Enter the name of the new or existing custom network service. The maximum length is 63 characters. To display the list of existing services, enter: `edit ?`	No default.
port <port_int>	Enter the port number on which a virtual server will receive TCP/IP connections for HTTP or HTTPS requests. The valid range is 1-65,535.	No default.

Example

This example configures a service definition named `SOAP1`.

```
config server-policy service custom
   edit "SOAP1"
      set port 8081
      set protocol TCP
   next
end
```

Related topics

- server-policy vserver on page 217
- server-policy policy on page 151
- server-policy custom-application application-policy on page 1

server-policy service predefined

Use this command to view a predefined service.

This command only displays predefined services. It **cannot** be used to modify them. If you attempt to edit the port number and protocol, the appliance will discard your settings.

Predefined Internet services can be selected in a policy in order to define the protocol and listening port of a virtual server. For details, see server-policy policy on page 151.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `traroutegrp` area. For details, see Permissions on page 46.

Syntax

```
config server-policy service predefined
   edit "<service_name>"
      show
   next
end
```

Variable	Description	Default
"<service_name>"	Enter the name of a predefined network service, such as HTTP or HTTPS. The maximum length is 63 characters. To display the list of existing services, enter: edit ?	No default.

Example

This example shows the default settings for all of the predefined services.

```
config server-policy service predefined
   show
```

Output:

```
config server-policy service predefined
   edit HTTP
      set port 80
      set protocol TCP
   next
   edit HTTPS
      set port 443
      set protocol TCP
   next
end
```

Related topics

- server-policy vserver on page 217
- server-policy policy on page 151
- server-policy service custom on page 209

server-policy setting

Use this command to configure the server policy settings.

Syntax

```
config server-policy setting
   set core-file-count <core-file-count_int>
   set enable-core-file {enable | disable | enable-best-effort}
   set enable-session-statistics {enable | disable}
   set enable-single-worker {enable | disable}
   set hsm {enable | disable}
   set hsm-manufacturer {luna | primus}
   set no-session-limit {enable | disable}
   set no-ssl-encrypt-then-mac {enable | disable}
   set offline-session-timeout {seconds_int}
   set use-first-ack-mac {enable | disable}
   set dpdk {enable | disable}
   set high-compatibility-mode {enable | disable}
   set graceful-shutdown {enable | disable}
   set server-pool-connection-limit-log {enable | disable}
   set tls13-early-data-mode {enable | disable}
   set record-content-routing-error-log {enable | disable}
   set server-invalid-no-reponse {enable | disable}
   set using-dns-proxy {enable | disable} on page 214
   set df-flag {enable | disable}
   set tls12-compatible-sigalg {enable | disable}
   set corefile-ha-failover {enable | disable}
   set reverse-dns-cache-timeout <int>
   set crldp-update-interval <int>
   set crldp-ttl-failed <int>
end
```

Variable	Description	Default
core-file-count <core-file-count_int>	The maximum core dump file number. The valid values are 3 and 5.	No default
enable-core-file {enable | disable | enable-best-effort}	**disable:** Disable coredump for proxyd. **enable:** Enable coredump action for proxyd. It will stop if coredump cannot finish in hung task timeout seconds. **enable-best-effort:** Enable coredump action for proxy. It will stop until the entire core file is generated. This option is useful to analyze a tough issue, though it may cause your service to stop responding for a long time	disable
enable-session-statistics {enable | disable}	Enable/disable session statistics for FortiView.	No default
enable-single-worker {enable | disable}	Enable/disable single worker mode. If enabled, there will be only one worker thread to handle the traffic. It's usually used for diagnose only.	No default
hsm {enable | disable}	Specifies whether the settings you use to integrate FortiWeb with an HSM (hardware security module) are displayed in the web UI.	No default

Variable	Description	Default
hsm-manufacturer {luna | primus}	Specify the HSM manufacturer. Currently, FortiWeb supports LUNA HSM and Primus HSM.	`luna`
no-session-limit {enable | disable}	Enable not to limit the maximum concurrency sessions of FortiWeb-VM. If this option is disabled, the maximum concurrent sessions for all the policies on a VM is 20,000 (2vCPUs), 50,000 (4vCPUs), or 100,000 (8vCPUs); For each policy, the number is 8,000 (2vCPUs), 15,000 (4vCPUs), or 50,000 (8vCPUs).	No default
no-ssl-encrypt-then-mac {enable | disable}	Disable to include the encrypt-then-mac extension in the packets sent by the client.	`disable`
use-first-ack-mac {enable | disable}	Once enabled, machine learning only observes the source MAC of two ACK packets for a URL at Three-way handshake. If disabled, machine leaning observes all ACK packets, which continues refreshing MAC, with the performance affected.	`enable`
dpdk {enable | disable}	Enable/disable DPDK for packet processing.	No default
high-compatibility-mode {enable | disable}	When this option is enabled, all SSL traffic is decrypted and encrypted using the CPU. While this mode is compatible with most environments, it is not efficient, as it places a heavy load on the CPU. To improve SSL traffic processing efficiency, you can set this option to "disable", allowing SSL encryption and decryption to be handled by the hardware SSL acceleration card. This significantly enhances the performance of session establishment and processing. To verify whether your hardware platform supports an SSL acceleration card, run the following command: `# diagnose hardware check sslcard` If the output shows "`pass`", it indicates that your platform has a properly functioning SSL acceleration card. **Note:** On platforms that do not support an SSL acceleration card—including FortiWeb-VM—SSL encryption and decryption will continue to be handled by the CPU, even if this option is set to "disable." In summary, it is recommended to set this option to "enable" only in environments that require high compatibility, such as when using a Hardware Security Module (HSM) for SSL sessions. In such cases, offloading SSL processing to the acceleration card may cause compatibility issues, so the option should be set to "enable".	`disable`

Variable	Description	Default
offline-session-timeout {seconds_int}	This setting only works in Offline Protection mode. It's a session optimization option. FortiWeb's resources will be unnecessarily consumed if the connection always keeps on. With this option, you can configure the session timeout value to avoid them staying on for too long. The valid range is seconds 30-1200 seconds.	No default
graceful-shutdown {enable | disable}	If disabled, the peer TCP connections are reset during system shutdown.	`enable`
server-pool-connection-limit-log {enable | disable}	Enable to send a warning level event log when the connection number of each real server reaches the limitation.	`disable`
tls13-early-data-mode {enable | disable}	Enable O-RTT in TLS 1.3.	`disable`
record-content-routing-error-log {enable | disable}	If enabled, the reason of the content routing failure will be recorded in event log.	`disable`
server-invalid-no-reponse {enable | disable}	Enable this option so that closes the client connection when all the servers in the server pool are unresponsive.	`disable`
using-dns-proxy {enable | disable}	This option is enabled by default. If it is disabled, the system uses `getaddrinfo` to resolve the domain name.	`enable`
df-flag {enable | disable}	Enable to allow FortiWeb to send non DF-flag packet to pass the device with low MTU.	`disable`
tls12-compatible-sigalg {enable | disable}	When `tls12-compatible-sigalg` is enabled, signature algorithm negotiation in TLS handshake for FortiWeb behaves exactly the same as OpenSSL 1.1.0. Please note executing this command causes the proxyd to restart so all current sessions will be dropped. This command is specific to very rare case. Do not use it unless suggested by Fortinet support team.	`disable`
corefile-ha-failover {enable | disable}	Enable to trigger HA fail-over upon proxyd coredump, so that the secondary node can immediately take over the traffic when coredump file is being generated on the primary node. Note the following when using this command: • You should set `enable-core-file` to `enable` or `enable-best-effort` for the `corefile-ha-failover` to work. • The `enable-core-file` and `corefile-ha-failover` attributes will NOT be synchronized to other devices in the same HA group, so you need to configure these configurations on each device if needed.	disable

Variable	Description	Default
	• Currently only the proxyd daemon coredump can trigger `corefile-ha-failover`. Other daemons can't trigger it. • This function works in active-passive and active-active standard HA modes. It is not suggested to enable it in HA Manager mode on public clouds, because usually the load balancer in front of the FortiWeb devices will do health check and guarantee that traffic is dispatched to the healthy nodes. • It is recommended to enable this option only on one FortiWeb, usually the primary device. Otherwise a proxyd coredump occurring on both devices may lead to HA fail-over back and forth between two devices.	
reverse-dns-cache-timeout <int>	The system caches the reverse DNS lookup results. You can set the `reverse-dns-cache-timeout` value so that the cached items can be removed after the expiration time. The valid value range is 1-1440.	60 (minutes)

crldp-update-interval <int>	Specify the update interval (in seconds) for Certificate Revocation Lists (CRL) distribution point. CRL files can be outdated, so the CRL distribution point should check from time to time for each entry so as to keep them up-to-date.
	you can run the following commands to check the CRL retrieval debug information
	`diagnose debug application crl_update <0-8>`
	`diag debug enable`
		3 (seconds)

crldp-ttl-failed <int>	Specify the TTL (time-to-alive) in minutes for failed retrievals. If FortiWeb fails to retrieve CRL from the distribution point, it will make another attempt to retrieve it after the specified `crldp-ttl-failed` time.
	If the CRL is expired, the system will block the client traffic even if it has a valid certificate. You can allow the use of previously retrieved CRLs when the current CRL distribution point retrievals fail or are pending.
	`config system certificate verify`
	`set crl-allow-expired enable`
	`end`
	We highly recommend enabling it as a temporary solution only when the CRL has expired. Ideally, we strongly suggest using the most up-to-date CRL file at all times to ensure that the client with revoked certificates can be promptly blocked.
	For more information on CRL, see "Revoking certificates" in FortiWeb Administration Guide.
		5 (minutes)

Related topics

- server-policy vserver on page 217
- server-policy policy on page 151

server policy traffic-mirror

Use this command to configure FortiWeb to send traffic to third party IPS/IDS devices through network interfaces for traffic monitoring in Reverse Proxy and True Transparent Proxy modes.

See system feature-visibility on page 295 for how to enable traffic mirror first.

Syntax

```
config server-policy traffic-mirror
   edit "<traffic-mirror_name>"
   config mirror-rule
      edit mirror-rule <mirror-rule_str>
         set mode {direct | switch | server}
         set interface <interface_int>
         set destination-mac <destination-mac_str>
         set server-ip <server-ip_str>
         set server-port <server-port_int>
         next
      end
   next
end
```

Variable	Description	Default
"<traffic-mirror_name>"	Enter a name for the traffic mirror policy.	No default.
mirror-rule <mirror-rule_str>	Select the sequence number of the mirror rule created.	No default.
mode {direct | switch | server}	Select one of the three modes: • `Direct`–the mirrored packets are directly sent to IPS/IDS devices. • `Switch`–the mirrored packets are sent to IPS/IDS devices through the switch. • `Server`–the mirrored packets are sent to the designated IP of IPS/IDS devices.	`direct`
interface <interface_int>	When the mode is Direct, select one FortiWeb port to connect to IPS/IDS device. When the mode is Switch, select one FortiWeb port to connect to the switch.	No default.

Variable	Description	Default
destination-mac <destination-mac_str>	Type the MAC of IPS/IDS interface, where the traffic from FortiWeb goes to. Available only when mode {direct | switch | server} on page 216 is Switch.	No default.
server-ip <server-ip_str>	Enter the designated IP of IPS/IDS devices. Available only when mode {direct | switch | server} on page 216 is Server.	No default.
server-port <server-port_int>	Enter the HTTP port that the IPS/IDS devices can listen to. Available only when mode {direct | switch | server} on page 216 is Server.	No default.

Example

This example configures a traffic mirror policy.

```
config server-policy traffic-mirror
   edit policy1
   config mirror-rule
      edit 2
         set mode direct
         set interface port1

         end
   next
end
```

Related topics

- system feature-visibility on page 295

server-policy vserver

Use this command to configure virtual servers.

Before you can create a policy, you must first configure a virtual server which defines the network interface or bridge and IP address on which traffic destined for an individual physical server or server farm will arrive.

When the FortiWeb appliance receives traffic destined for a virtual server, it can then forward the traffic to a physical server or a server farm. The FortiWeb appliance identifies traffic as being destined for a specific virtual server if:

- The traffic arrives on the network interface or bridge associated with the virtual server
- For Reverse Proxy mode, the destination address is the IP address of a virtual server (the destination IP address is ignored in other operation modes, **except** that it must **not** be identical with the physical server's IP address)

Virtual servers can be on the same subnet as physical servers. This configuration creates a one-arm HTTP proxy. For example, the virtual server 192.0.2.1/24 could forward to the physical server 192.0.2.2.

However, this is **not** recommended. Unless your network's routing configuration prevents it, it could allow attackers that are aware of the physical server's IP address to bypass FortiWeb by accessing the physical server directly.

To apply virtual servers, select them within a server policy. For details, see server-policy policy on page 151.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `traroutegrp` area. For details, see Permissions on page 46.

Syntax

```
config server-policy vserver
   edit "<virtual-server_name>"
      config vip-list
         edit server-policy vserver
            set interface "<interface_name>"
            set status {enable | disable}
            set vip "<vip_str>"
            set use-interface-ip {enable | disable}
         next
      end
   next
end
```

Variable	Description	Default
"<virtual-server_name>"	Enter the name of the new or existing virtual server. The maximum length is 63 characters. To display the list of existing servers, enter: `edit ?`	`disable`
"<vip-list_id>"	Enter the sequence number of the virual IP in the table.	No default.
status {enable | disable}	Enable to accept traffic destined for this virtual server.	No default.
interface "<interface_name>"	Enter the name of the network interface or bridge, such as `port1` or `bridge1`, to which the virtual server is bound, and on which traffic destined for the virtual server will arrive. The maximum length is 63 characters. To display the list of existing interfaces, enter: `edit ?`	No default.
vip "<vip_str>"	Enter the IPv4 or IPv6 address and subnet of the virtual server.	`0.0.0.0` ::/0

Variable	Description	Default
use-interface-ip {enable | disable}	For FortiWeb-VM on Microsoft Azure, specify whether the virtual server uses the IP address of the specified interface, instead of an IP specified by `vip` or `vip6`.	`disable`

Example

This example configures a virtual server named `inline_vip1` on the network interface named `port1`.

The port number on which the virtual server will receive traffic is defined separately, in the policies that use this virtual server definition.

```
config server-policy vserver
   edit "inline_vip1"
      config vip-list
         edit 2
            set interface port1
            set status enable
            set vip "192.0.2.1 255.255.255.0"
         next
      end
   next
end
```

Related topics

- system interface on page 351
- server-policy policy on page 151
- server-policy service custom on page 209
- ping on page 878
- network ip on page 817

server-policy ztna-profile

Use this command to configure ZTNA profile.

For more information on ZTNA, please refer to "Chapter: Zero Trust Network Access (ZTNA)" in *FortiWeb Administration Guide*.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `traroutegrp` area. For details, see Permissions on page 46.

Syntax

```
config server-policy ztna-profile
   edit <ztna-profile_name>
      set action {pass | alert_deny | deny_no_log}
      config rule list
         edit <rule-list_index>
            set rule-name <ztna-rule_name>
         next
      end
   next
end
```

Variable	Description	Default
"<ztna-profile_name>"	Enter the name of the ZTNA profile. The maximum length is 63 characters. To display the list of existing profiles, enter: `edit ?`	No default.
action {pass | alert_deny | deny_no_log}	Select the specific action to be taken when the request matches the policy. • `pass`–Accept the request. • `alert_deny`–Block the request (or reset the connection) and generate an alert email and/or log message. • `deny_no_log`–Deny a request. Do not generate a log message.	`pass`
<rule-list_index>	Enter the rule list index number.	No default.
ztna-rule_name	Enter the ZTNA rule name. See server-policy ztna-rule on page 220 for how to create ZTNA rules.	No default.

Related topics

- system endpoint-control on page 831
- server-policy ztna-profile on page 219
- server-policy ztna-rule on page 220

server-policy ztna-rule

Use this command to configure ZTNA rule.

For more information on ZTNA, please refer to "Chapter: Zero Trust Network Access (ZTNA)" in *FortiWeb Administration Guide*.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `traroutegrp` area. For details, see Permissions on page 46.

Syntax

```
config server-policy ztna-rule
   edit <ztna-rule_name>
      set action {pass | alert_deny | deny_no_log}
      config ems-tag-condition
         edit <ems-tag-condition_index>
            set ems-tag <tag_name>
            set combine {and | or}
         next
      end
      config source-address-condition
         edit <source-address-condition_index>
            set source-address <IP_address>
         next
      end
      config geo-condition
         edit <geo-condition_index>
            set country-list <country>
         next
      end
   next
end
```

Variable	Description	Default
"<ztna-rule_name>"	Enter the name of the ZTNA rule. The maximum length is 63 characters. To display the list of existing rules, enter: `edit ?`	No default.
action {pass | alert_deny | deny_no_log}	Select the specific action to be taken when the request matches the rule. • `pass`–Accept the request. • `alert_deny`–Block the request (or reset the connection) and generate an alert email and/or log message. • `deny_no_log`–Deny a request. Do not generate a log message.	`pass`
<ems-tag-condition_index>	Enter the EMS tag condition index number.	No default.
ems-tag	Enter the EMS tag to match. The EMS tags are automatically synchronized from FortiClient EMS.	No default.

Variable	Description	Default
combine {and | or}	**and** means the request only matches if it has all tags specified; **or** means the request matches if it has any of the tags specified.	and
<source-address-condition_index>	Enter the source IP address condition index number.	No default.
source-address <IP_address>	Enter one of the following values in **Source IPv4/IPv6/IP Range**: • A single IP address that a client source IP must match, such as a trusted private network IP address (e.g. an administrator's computer, `192.0.2.109`). • A range of addresses (e.g., `192.0.2.1-192.0.2.255` or `10:200::10:1-10:200:10:100`).	No default.
<geo-condition_index>	Enter the GEO country condition index number.	No default.
set country-list <country>	Enter countries to match.	No default.

If multiple conditions are added in one ZTNA rule, the matching logic is:

- For conditions in different types (Source IP, GEO and ZTNA Tags), their relationship is ALL.
- For conditions in the same type, their relationship is OR.

If a request matches with the conditions specified in the rule, FortiWeb will take corresponding actions specified in the rule.

Related topics

- system endpoint-control on page 831
- server-policy ztna-rule on page 220
- server-policy ztna-profile on page 219

system accprofile

Use this command to configure access control profiles for administrators.

If you have configured RADIUS queries for authenticating administrators, you can override the locally-selected access profile by using a RADIUS VSA. For details, see system admin on page 225.

Access profiles determine administrator accounts' permissions.

When an administrator has only read access to a feature, the administrator can access the web UI page for that feature, and can use the `get` and `show` CLI command for that feature, but cannot make changes to the configuration. There are no **Create** or **Apply** buttons, or `config` CLI commands. Lists display only the **View** icon instead of icons for **Edit**, **Delete** or other modification commands. Write access is required for modification of any kind.

In larger companies where multiple administrators divide the share of work, access profiles often reflect the specific job that each administrator does ("role"), such as user account creation or log auditing. Access profiles can limit each administrator account to their assigned role. This is sometimes called role-based access control (RBAC).

The `prof_admin` access profile, a special access profile assigned to the `admin` administrator account and required by it, **does not** appear in the list of access profiles. It exists by default and cannot be changed or deleted, and consists of essentially UNIX `root`-like permissions.

If you create more administrator accounts, whether to harden security or simply to prevent accidental modification, create other access profiles with the minimal degrees and areas of access that each role requires. Then assign each administrator account the appropriate role-based access profile.

For example, for a person whose only role is to audit the log messages, you might make an access profile named `auditor` that only has **Read** permissions to the **Log & Report** area.

For information on how each access control area correlates to which CLI commands that administrators can access, see Permissions on page 46

To use this command, your administrator account's access control profile must have both `r` and `w` permissions to items in the `admingrp` category.

Syntax

```
config system accprofile
   edit "<access-profile_name>"
      set admingrp {none | r | rw | w}
      set authusergrp {none | r | rw | w}
      set loggrp {none | r | rw | w}
      set mlgrp {none | r | rw | w}
      set mntgrp {none | r | rw | w}
      set netgrp {none | r | rw | w}
      set sysgrp {none | r | rw | w}
      set traroutegrp {none | r | rw | w}
      set syncookie {enable | disable}
      set webgrp {none | r | rw | w}
      set wvsgrp {none | r | rw | w}
   next
end
```

Variable	Description	Default
"<access-profile_name>"	Enter the name of the access profile. The maximum length is 63 characters. To display the list of existing profiles, enter: `edit ?`	No default.

Variable	Description	Default
admingrp {none | r | rw | w}	Enter the degree of access that administrator accounts using this access profile will have to the system administrator configuration. Available only when administrative domains (ADOMs) are disabled. For details, see .	none
authusergrp {none | r | rw | w}	Enter the degree of access that administrator accounts using this access profile will have to the HTTP authentication user configuration.	none
loggrp {none | r | rw | w}	Enter the degree of access that administrator accounts using this access profile will have to the logging and alert email configuration.	none
`mlgrp {none | r | rw | w}`	Enter the degree of access that administrator accounts using this access profile will have to the machine learning configuration.	none
mntgrp {none | r | rw | w}	Enter the degree of access that administrator accounts using this access profile will have to maintenance commands. Unlike the other rows, whose scope is an area of the configuration, the maintenance access control area does not affect the configuration. Instead, it indicates whether the administrator can perform special system operations such as changing the firmware.	none
netgrp {none | r | rw | w}	Enter the degree of access that administrator accounts using this access profile will have to the network interface and routing configuration.	none
sysgrp {none | r | rw | w}	Enter the degree of access that administrator accounts using this access profile will have to the basic system configuration (except for areas included in other access control areas such as `admingrp`).	none
traroutegrp {none | r | rw | w}	Enter the degree of access that administrator accounts using this access profile will have to the server policy (formerly called traffic routing) configuration.	none
wadgrp {none | r | rw | w}	Enter the degree of access that administrator accounts using this access profile will have to the web anti-defacement configuration.	none
webgrp {none | r | rw | w}	Enter the degree of access that administrator accounts using this access profile will have to the web protection profile configuration.	none
wvsgrp {none | r | rw | w}	Enter the degree of access that administrator accounts using this access profile will have to the web vulnerability scanner.	none

Example

This example configures an administrator access profile named `full_access`, which permits both read and write access to all special operations and parts of the configuration.

Even though this access profile configures full access, administrator accounts using this access profile will **not** be fully equivalent to the `admin` administrator. The `admin` administrator has some special privileges that are inherent in that account and cannot be granted through an access profile, such as the ability to reset other administrators' passwords without knowing their current password. Other accounts should therefore not be considered a substitute, even if they are granted full access.

```
config system accprofile
   edit "full_access"
      set admingrp rw
      set authusergrp rw
      set loggrp rw
      set mlgrp rw
      set mntgrp rw
      set netgrp rw
      set sysgrp rw
      set traroutegrp rw
      set wadgrp rw
      set webgrp rw
      set wvsgrp rw
   next
end
```

Related topics

- system admin on page 225
- server-policy custom-application application-policy on page 1
- Permissions on page 46

system admin

Use this command to configure FortiWeb administrator accounts. In its factory default configuration, a FortiWeb appliance has one administrator account, named `admin`. That administrator has permissions that grant full access to the FortiWeb configuration and firmware. After connecting to the web UI or the CLI using the `admin` administrator account, you can configure additional administrator accounts with various levels of access to different parts of the FortiWeb configuration.

Administrators can access the web UI and the CLI through the network, depending on administrator account's trusted hosts, ADOMs, and the administrative access protocols enabled for each of the FortiWeb appliance's network interfaces. For details, see system interface on page 351, , and Connecting to the CLI on page 33.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `admingrp` area. For details, see Permissions on page 46.

Syntax

```
config system admin
   edit "<administrator_name>"
      set access-profile "<access-profile_name>"
      set accprofile-override {enable | disable}
      set domains "<adom_name>"
      set password "<password_str>"
      set email-address "<contact_email>"
      set first-name "<name_str>"
      set last-name "<surname_str>"
      set mobile-number "<cell-phone_str>"
      set phone-number "<phone_str>"
      set trusthosts "<management-computer_ipv4mask>"
      set ip6trusthosts "<management-computer_ipv6mask>"
      set type {local-user | remote-user}
      set admin-usergroup "<remote-auth-group_name>"
      set wildcard {enable | disable}
      set sshkey "<sshkey_str>"
      set force-password-change {enable | disable} on page 230
   next
end
```

Variable	Description	Default
"<administrator_name>"	Enter the name of the administrator account, such as `admin1` or `admin@example.com`, that can be referenced in other parts of the configuration. Do not use spaces or special characters except the 'at' symbol (`@`). The maximum length is 63 characters. To display the list of existing accounts, enter: `edit ?` **Note:** This is the user name that the administrator must provide when logging in to the CLI or web UI. If using an external authentication server such as RADIUS or Active Directory, this name will be passed to the server via the remote authentication query.	No default.
access-profile "<access-profile_name>"	Enter the name of an access profile that gives the permissions for this administrator account. See also system accprofile on page 222. The maximum length is 63 characters.	No default.

Variable	Description	Default

	You can select **prof_admin**, a special access profile used by the `admin` administrator account. However, selecting this access profile will **not** confer all of the same permissions of the `admin` administrator. For example, the new administrator would not be able to reset lost administrator passwords.
	To display the list of existing profiles, enter:
	`edit ?`
	Tip: Alternatively, if your administrator accounts authenticate via a RADIUS query, you can assign their access profile through the RADIUS server using RFC 2548 (http://www.ietf.org/rfc/rfc2548.txt) Microsoft Vendor-specific RADIUS Attributes.
	On the RADIUS server, create an attribute named:
	`ATTRIBUTE` FortiWeb`-Access-Profile 6`
	then set its value to be the name of the access profile that you want to assign to this account. Finally, in the CLI, use accprofile-override {enable | disable} on page 227 to enable the override.
	If none is assigned on the RADIUS server, or if it does not match the name of an existing access profile on FortiWeb, FortiWeb will fail back to use the one locally assigned by this setting.	

accprofile-override {enable | disable}	Enable to use the access profile indicated by the RADIUS query response, and ignore access-profile "<access-profile_name>" on page 226. This setting applies only if admin-usergroup "<remote-auth-group_name>" on page 229 is configured to use a RADIUS query to authenticate this account.	`disable`
domains "<adom_name>"	Enter the name of the administrative domain (ADOM) to assign and restrict this administrative account to it. You can set multiple ADOMs, each separated with comma ",". This setting applies only if ADOMs are enabled in `config system global`.	No default.
password "<password_str>"	Enter a password for the administrator account. The maximum length is 32 characters. The minimum length is 1 character. For improved security, the password should be at least 8 characters long, be sufficiently complex, and be changed regularly.	No default.

Variable	Description	Default
	This setting applies only when `type` is `local-user`. For accounts defined on a remote authentication server, the FortiWeb appliance will instead query the server to verify whether the password given during a login attempt matches the account's definition.	
email-address "<contact_email>"	Enter an email address that can be used to contact this administrator. The maximum length is 63 characters.	No default.
first-name "<name_str>"	Enter the first name of the administrator. The maximum length is 63 characters.	No default.
last-name "<surname_str>"	Enter the surname of the administrator. The maximum length is 63 characters.	No default.
mobile-number "<cell-phone_str>"	Enter a cell phone number that can be used to contact this administrator. The maximum length is 63 characters.	No default.
phone-number "<phone_str>"	Enter a phone number that can be used to contact this administrator. The maximum length is 63 characters.	No default.
trusthosts "<management-computer_ipv4mask>"	Enter the IP address and netmask of a management computer or management LAN from which the administrator is allowed to log in to the FortiWeb appliance. You can specify up to 10 trusted hosts, separated with space. To allow login attempts from any IP address, enter `0.0.0.0/0.0.0.0`. If you allow administrators to log in from any IP address, consider choosing a longer and more complex password, and limiting administrative access to secure protocols to minimize the security risk. For details about administrative access protocols, see system interface on page 351. **Note:** For improved security, restrict all three trusted host addresses to the IP addresses of computers from which only this administrator will log in.	`0.0.0.0 0.0.0.0`
ip6trusthosts "<management-computer_ipv6mask>"	Enter the IP address and netmask of a management computer or management LAN from which the administrator is allowed to log in to the FortiWeb appliance. You can specify up 10 trusted hosts, separated with space. To allow login attempts from any IP address, enter `::/0`.	`::/0`

Variable	Description	Default
	Caution: If you allow logins from any IP address, consider choosing a longer and more complex password, and limiting administrative access to secure protocols to minimize the security risk. Unlike IPv4, IPv6 does **not** isolate public from private networks via NAT, and therefore can increase availability of your FortiWeb's web UI/CLI to IPv6 attackers unless you have carefully configured your firewall/FortiGate and routers. For details about administrative access protocols, see system interface on page 351. **Note:** For improved security, restrict all three trusted host addresses to the IP addresses of computers from which only this administrator will log in.	
type {local-user | remote-user}	Select either: • `local-user`–Authenticate this account locally, with the FortiWeb appliance itself. • `remote-user`–Authenticate this account via a remote server such as an LDAP or RADIUS server. Also configure admin-usergroup "<remote-auth-group_name>" on page 229. If there is only one account configured on FortiWeb (i.e. the `admin` user), before setting it as a remote user, do make sure the remote authentication server is safe and stable. Once the remote authentication server is damaged and the account credentials are lost, FortiWeb can't recover it, which means the only one account that can log in to FortiWeb is lost. The configurations will be lost and you need to re-install FortiWeb image.	No default.
admin-usergroup "<remote-auth-group_name>"	Enter the name of the remote authentication group whose settings the FortiWeb appliance will use to connect to a remote authentication server when authenticating login attempts for this account. The maximum length is 63 characters. To display the list of existing groups, enter: `edit ?` For details about configuring remote authentication groups, see user admin-usergrp on page 402.	No default.
wildcard {enable | disable}	Used when administrator accounts authenticate via a RADIUS query. This setting applies only if the value of type {local-user | remote-user} on page 229 is `remote-user`.	No default.
sshkey "<sshkey_str>"	The public key used for connecting to the CLI using a public-private key pair.	No default.

Variable	Description	Default
	For more information on connecting to the CLI using a public-private key pair, see “Connecting to the CLI” in the *FortiWeb Administration Guide*: http://docs.fortinet.com/fortiweb/admin-guides	
force-password-change {enable | disable}	Enable/disable force password change for next login. This field can be configured only when **Password Policy** is enabled in **System > Admin > Settings**.	Disable

Example

This example configures an administrator account with an access profile that grants only permission to read logs. This account can log in only from an IP address on the management LAN (`192.0.2.0/24`), or from one of two specific IP addresses (`192.0.2.15` and `192.0.2.50`).

```
config system admin
   edit log-auditor
      set access-profile log_read_access
      set password P@ssw0rd
      set email-address log-admin@example.com
      set trusthost1 192.0.2.0 255.255.255.0
      set trusthost2 192.0.2.15 255.255.255.255
      set trusthost3 192.0.2.50 255.255.255.255
      set force-password-change enable
end
```

To display all dashboard status and widget settings, enter:

```
config system admin
   show
```

Related topics

- system accprofile on page 222
- system global on page 314
- user admin-usergrp on page 402

system admin-certificate ca

When FortiWeb's certificate-based Web UI login is applied. Besides the administrators' certificates information, the corresponding certificate authority (CA) certificates are required to be stored on the FortiWeb appliance. Certificate

authorities validate and sign other certificates in order to indicate to third parties that those other certificates are authentic and can be trusted. FortiWeb authorizes the administrator's login by verifying its certificate with the corresponding CA.

Use this command to show the names of the CA certificates that are relative to the administrators' certificates. You use the web UI to upload these certificates.

CA certificates are not used directly here (no set operations are defined), but they are required when you create a PKI user (an administrator that FortiWeb authorizes base on his certificate) on the FortiWeb. For details, see user pki-user on page 413.

For information about certificate-based Web UI login, see the *FortiWeb Administration Guide*:

http://docs.fortinet.com/fortiweb/admin-guides

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `admingrp` area. For details, see Permissions on page 46.

Syntax

```
show system admin-certificate ca
```

Example

```
config system admin-certificate ca
   edit "CA_Cert_1"
   next
   edit "CA_Cert_2"
   next
end
```

system admin-certificate intermediate-ca

If the certificate you are applying for HTTPS access to FortiWeb's GUI management is signed by several intermediate CAs, you need to import all the intermediate CA certificates of the certificate chain. FortiWeb will then send the intermediate CA certificates together with the server certificate when administrators access FortiWeb's GUI via HTTPS.

Intermediate CAs must belong to a group in order to be selected in a certificate verification rule. For how to add the intermediate certificates in a group, seesystem admin-certificate intermediate-ca-group.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `admingrp` area. For details, see system accprofile on page 222

Syntax

```
config system admin-certificate intermediate-ca
   edit "<certificate_name>"
      set certificate "<certificate_str>"
   next
end
```

Variable	Description	Default
"<certificate_name>"	Enter the name of a certificate file. The maximum length is 63 characters.	No default.
certificate "<certificate_str>"	Set the certificate. Only certificates in PEM format may be set.	No default.

Example

This example adds a certificate to `Inter_Cert_1`

```
config system certificate intermediate-certificate
   edit "Inter_Cert_1"
   set certificate "-----BEGIN CERTIFICATE-----
   MIIDkjCCAnoCCQCbXq6VYR1CijANBgkqhkiG9w0BAQUFADCBijELMAkGA1UEBhMC
   SU4xEjAQBgNVBAgMCUthcm5hdGFrYTESMBAGA1UEBwwJQmFuZ2Fsb3JlMREwDwYD
   VQQKDAhGb3J0aW5ldDEMMAoGA1UECwwDTEFCMQ0wCwYDVQQDDAR0ZXN0MSMwIQYJ
   KoZIhvcNAQkBFhRzdXBwb3J0QGZvcnRpbmV0LmNvbTAeFw0xMjEyMDUxMDE1NTla
   Fw0xNDEyMDUxMDE1NTlaMIGKMQswCQYDVQQGEwJJTjESMBAGA1UECAwJS2FybmF0
   YWthMRIwEAYDVQQHDAlCYW5nYWxvcmUxETAPBgNVBAoMCEZvcnRpbmV0MQwwCgYD
   VQQLDANMQUIxDTALBgNVBAMMBHRlc3QxIzAhBgkqhkiG9w0BCQEWFHN1cHBvcnRA
   Zm9ydGluZXQuY29tMIIBIjANBgkqhkiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEArvHH
   eXZJilTr4TbH/5O5jFxKQ5dILr/561JOJ5UZWtgs9VhXSuCzmrs6FX35vyc7NR+9
   tCbMrl7qA68MxBMuu6phf2r77M9bsp3rOZE2nFR+lhjpWrXBk7/puFLBbI2yqh8d
   7DB25m5pI0ClmbdJ5GGlc/1wHULQhFQSYCMSVjc34esvaLE8oAVFWHAZX14dbAbj
   gC4CMbayzJZaYEfh/7suMwvdwS3sYjOwZYq6DFEF5ZPpKN+ji9J+8EmAvaZS2m3M
   fFdPFf4eEAgsHmYasqxH7s4Ksc2zTm3cG5srRCqEsEddhoblI1JvmApoN2JiNiYJ
   hYiEPyJdf2z+dADwXwIDAQABMA0GCSqGSIb3DQEBBQUAA4IBAQCbA8kKwVRPri/d
   L8okLny6FygJ0auPbuRQCUGAWpfdKdXn6iyMlLuR066j82o2yrQ0ddgRcdaExT0I
   RCoC2NqhzZvy8JJW2A+KTXutwdGGg8ckHQ5UVRtNo/lPZ6Quz8AsswzNk2Qx6OtF
   FcTEBNxVTHKabQR46ChIa3sG032Wiuj6Y2Rv77mTmmDRZnrY8QGZd2zMm3riAqUf
   IGil0/yg0AhA+ZBt5rer3X+GTknhDAPJ+yU2WS1c8pPj3A3DI0+xwTOq/sNCqTmc
   xb7Q1VM/1kiOE9YaPasAJuQ7WHmnd8J0vHw1/e+whf/lsKxV0ClBNL/JdlyNAMvy
   isnZYL58
   -----END CERTIFICATE-----"
   next
end
```

Related topics

- system admin-certificate intermediate-ca-group

system admin-certificate intermediate-ca-group

Use this command to group intermediate CA certificates for HTTPS access to FortiWeb's GUI management.

Intermediate CAs must belong to a group in order to be selected in a certificate verification rule.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `admingrp` area. For details, see Permissions on page 46.

Syntax

```
config system admin-certificate intermediate-ca-group
   edit "<admin_intermediate-ca-group_name>"
      config members
         edit <admin_intermediate-ca_index>
            set name "<admin_intermediate_ca_name>"
         next
      end
   next
end
```

Variable	Description	Default
"<admin_intermediate-ca-group_name>"	Enter the name of an admin intermediate certificate authority (CA) group. The maximum length is 63 characters.	No default.
<admin_intermediate-ca_index>	Enter the index number of an admin intermediate CA within its group. The valid range is 1-9,999,999,999,999,999,999.	No default.
name "<admin_intermediate_ca_name>"	Enter the name of a previously uploaded admin intermediate CA certificate. The maximum length is 63 characters. See system admin-certificate intermediate-ca.	No default.

Related topics

- system admin-certificate intermediate-ca

system admin-certificate local

The FortiWeb appliance presents its own HTTPS server certificate for secure connections (HTTPS) to its Web UI. By default, A Fortinet factory certificate is used as the certificate, which is named `defaultcert` in FortiWeb. You can also import other certifications to FortiWeb and replace the `defaultcert` with any of them for secure Web UI connections.

Use this command to edit the comment associated with the these FortiWeb's administration certificates that are stored locally on the FortiWeb appliance.

For information on how to upload a certificate file to change FortiWeb's default certificate, see the *FortiWeb Administration Guide*:

http://docs.fortinet.com/fortiweb/admin-guides

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `admingrp` area. For details, see Permissions on page 46.

Syntax

```
config system admin-certificate local
   edit "<certificate_name>"
      set comment "<comment_str>"
      set certificate "<certificate_str>"
      set passwd "<passwd_str>"
      set private-key "<private-key_str>"
      set flag 0
      set status ok
      set type certificate
      set is-primus-hsm {yes | no}
      set primus-partition <partition_name>
   next
end
```

Variable	Description	Default
"<certificate_name>"	Enter the name of a certificate file. The maximum length is 63 characters.	No default.
comment "<comment_str>"	Enter a description or other comment. If the comment contains more than one word or contains an apostrophe, surround the comment in double quotes ("). The maximum length is 127 characters.	No default.
certificate "<certificate_str>"	Enter the sequence number of the certificate file.	No default.
passwd "<passwd_str>"	When exporting the private key file from certificate factories, you can choose to enter a password to encrypt the file. Thus when you import the file into FortiWeb, you shall enter this password. This is optional.	No default.
private-key "<private-key_str>"	Enter the sequence number of the key file.	No default.
flag 0	Indicate if a password was saved. This is used by FortiWeb for backwards compatibility.	`0`
status ok	Indicates the status of an imported certificate:	`ok`

Variable	Description	Default
	• na—Indicates that the certificate was successfully imported, and is currently selected for use by the FortiWeb appliance. • ok—Indicates that the certificate was successfully imported but is not selected as the certificate currently in use. To use the certificate, see . • pending—Indicates that the certificate request was generated, but must be downloaded, signed, and imported before it can be used as a local certificate.	
type certificate	Indicates whether the file is a certificate or a certificate signing request (CSR).	certificate
is-primus-hsm {yes | no}	Specify whether you configured the CSR for this certificate to work with an integrated HSM.	no
primus-partition <partition_name>	Enter the name of the HSM partition you selected when you created the CSR for this certificate.	No default.

Example

This example adds a comment to the certificate named certificate1.

```
config system admin-certificate local
   edit "certificate1"
      set comment "This is a certificate that FortiWeb uses for secure Web UI connections."
   next
end
```

system advanced

Use this command to configure several system-wide options that determine how FortiWeb scans traffic.

To use this command, your administrator account's access control profile must have either w or rw permission to the sysgrp area. For details, see Permissions on page 46.

Syntax

```
config system advanced
   set circulate-url-decode {enable | disable}
   set decoding-enhancement {enable | disable}
   set max-cache-size <cache_int>
   set max-dlp-cache-size <percentage_int>
   set max-dos-alert-interval <seconds_int>
```

```
    set share-ip {enable | disable}
    set anypktstream {enable | disable}
    set max-bot-alert-interval <interval_int> on page 237
    set ignore-undefined-query-param {enable | disable}
    set key-attr {enable | disable}
    set key-max-length <int>
    set key-printable {enable | disable}
    set owasp-top10-compliance {enable | disable}
end
```

Variable	Description	Default
circulate-url-decode {enable | disable}	Enable to detect URL-embedded attacks that are obfuscated using recursive URL encoding (that is, multiple levels' worth of URL encoding). Encoded URLs can be legitimately used for non-English URLs, but can also be used to avoid detection of attacks that use special characters. Encoded URLs can now be decoded to scan for these types of attacks. Several encoding types are supported. For example, you could detect the character `A` that is encoded as either `%41`, `%x41`, `%u0041`, or `\t41`. Disable to decode only one level's worth of the URL, if encoded.	`enable`
decoding-enhancement {enable | disable}	Enable to decode cookies and parameters using base64 or CSS for specified URLs. To configure decoding enhancement, see system decoding enhancement on page 284.	disable
max-cache-size <cache_int>	Type the maximum size (in KB) of the body of the HTTP response from the web server that FortiWeb will cache per URL for body compression, decompression, rewriting, and XML detection. Increasing the body cache may decrease performance. Valid values range from 32 to 10240. The default value is 64. Increasing the body cache may decrease performance.	`512`
max-dlp-cache-size <percentage_int>	Type the maximum percentage of max-cache-size <cache_int> on page 236—the body of the HTTP response from the web server—that FortiWeb buffers and scans. Responses are cached to improve performance on compression, decompression, and rewriting on often-requested URLs.	`12`
max-dos-alert-interval <seconds_int>	Type the maximum amount of time that FortiWeb will converge into a single log message during a DoS attack or padding oracle attack.	`180`

Variable	Description	Default
share-ip {enable | disable}	Enable to analyze the ID field of IP headers in order to attempt to detect when multiple clients share the same source IP address. To configure the difference between packets' ID fields that FortiWeb will treat as a shared IP, see system ip-detection on page 358. Enabling this option is required for features that have a separate threshold for shared IP addresses. If you disable the option, those features will behave as if there is only a single threshold, regardless of whether the source IP is shared by many clients.	`disable`
anypktstream {enable | disable}	Enable to configure FortiWeb to scan partial TCP connections. In some cases, FortiWeb is deployed after a client has already created a connection with a back-end server. If this option is disabled, FortiWeb ignores any traffic that is part of a pre-existing session.	`disable`
max-bot-alert-interval <interval_int>	Type the maximum amount of interval time that FortiWeb will send an attack log during a bot attack. The valid range is 0-300 seconds.	60
ignore-undefined-query-param {enable | disable}	Enable to bypass undefined query parameters in policies.	`disable`
key-attr {enable | disable}	Requests with certain content types, such as PDF, tend to have extremely long parameter names or non-printable characters. While these characteristics are legitimate, they are prone to triggering signatures, resulting in unnecessary resource consumption and numerous false positives. To avoid such situations, you can enable `key-attr`. This feature allows requests with extremely long parameter names or non-printable characters to bypass scanning and be directly forwarded to the back-end server. However, it's important to note that in certain content types listed below, an unusually long parameter name or non-printable characters can actually be an indicator of attacks. In these cases, FortiWeb will conduct a security scan on requests with these content types, regardless of the `key-attr` settings. Additionally, if the `content-type` header is absent, the request will be treated as high-risk, prompting a security scan as well. • multipart • soap+xml • text/xml, application/xml,application/vnd.syncml+xml, application/vnd.ms-sync.wbxml • multipart/form-data (boundary is required)	disable

Variable	Description	Default
	• text/html • application/x-www-form-urlencoded • text/plain • text/css • application/x-javascript • multipart/x-mixed-replace • application/javascript • text/javascript • application/rss+xml • message/HTTP • application/json, text/json • all other application/...xml	
key-max-length <int>	If the parameter name exceeds the max length value you have specified, FortiWeb will skip the security check and directly pass it on to the back-end server. The valid range is 1-1,024.	1024
key-printable {enable | disable}	If this option is enabled, all the characters in the parameter name must be printable. Otherwise FortiWeb will skip the security check and directly pass it on to the back-end server. If this option is disabled, regardless whether the characters in the parameter name is printable or not, it should be proceeded for security check.	disable
owasp-top10-compliance {enable | disable}	Enable this option so that the **OWASP Top10 Compliance** dashboard will display as one of the monitors in **Dashboard**. It provides visibility into the level of security your applications have in terms of protection from OWASP (Open Web Application Security Project) vulnerabilities.	disable

Related topics

- server-policy policy on page 151
- system certificate local on page 264
- system ip-detection on page 358
- waf application-layer-dos-prevention on page 446
- waf HTTP-protocol-parameter-restriction on page 556

system antivirus

Use this command to configure system-wide FortiGuard Antivirus scan settings.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
config system antivirus
   set default-db {basic | extended}
   set scan-bzip2 {enable | disable}
   set uncomp-size-limit <limit_int>
   set uncomp-nest-limit <limit_int>
   set use-fsa {enable | disable}
end
```

Variable	Description	Default
default-db {basic | extended}	Select which of the antivirus signature databases to use when scanning HTTP `POST` requests for viruses, either: • `basic`–Select to use only the signatures of viruses and greyware that have been detected by FortiGuard's networks to be recently spreading in the wild. • `extended`–Select to use all signatures, regardless of whether the viruses or greyware are currently spreading.	`basic`
scan-bzip2 {enable | disable}	Enable to scan archives that are compressed using the BZIP2 algorithm. **Tip:** Scanning BZIP2 archives can be very CPU-intensive. To improve performance, block the BZIP2 file type, then disable this option.	`enable`
uncomp-size-limit <limit_int>	Type the maximum size in kilobytes (KB) of the memory buffer that FortiWeb will use to temporarily undo the compression that a client or web server has applied to traffic, in order to inspect and/or modify it. For details, see "waf file-uncompress-rule" on page 1.	5000

Variable	Description	Default
	Caution: In FortiWeb versions prior to 8.0.0, files that exceeded this buffer limit were bypassed and not scanned or rewritten. Beginning in FortiWeb 8.0.0, partial inspection is applied: FortiWeb truncates the content to the configured buffer size and attempts to perform File Security, Web Shell Detection, and Data Loss Prevention scans on the available data. This provides additional protection by enabling detection based on headers, metadata, and initial content chunks. To enforce hard limits and block files that exceed the buffer size entirely, configure waf HTTP-protocol-parameter-restriction with max-http-content-length or max-HTTP-body-length <limit_int> (page 1) . It is recommended to start with `action` set to `alert` to monitor traffic impact, then switch to `alert_deny` if no disruptions occur. The maximum acceptable values are: 102400 KB: FortiWeb 100D, 100E, 100F, 400C, 400D, 400E, 400F, 600D, 600E, 600F, 1000C, 3000CFsx, 4000C 204800 KB: FortiWeb 1000D, 2000D, 3000D, 3000DFsx, 4000D, 1000E, 2000E, 3010E, 1000F, 2000F 358400 KB: FortiWeb 3000E, 4000E, 3000F, 4000F	
uncomp-nest-limit <limit_int>	Type the maximum number of allowed levels of compression (“nesting”) that FortiWeb will attempt to decompress.	`12`
use-fsa {enable | disable}	Enable to use the Signature Database from FortiSandbox to supplement the AV Signature Database. If enabled, FortiWeb will download the malware package from FortiSandbox's Signature Database every minute.	`disable`

system automation-email

Use this command to configure the email notification settings in the Automation feature.

To use this command, your administrator account’s access control profile must have either `w` or `rw` permission to the `mntgrp` area. For details, see Permissions on page 46.

Syntax

```
config system automation-email
  edit <email_name>
    set subject <string>
```

```
    set body <string>
    set email-policy <email_policy_name>
  next
end
```

Variable	Description	Default
<email_name>	Enter the name of the email. You can reference it in a stitch.	No default.
subject <string>	Enter the subject of the email to be sent.	No default.
body <string>	Enter the email body. Simple string and two parameters are supported: 1. **%%log%%**: All fields from the log event triggering this stitch. 2. **%%results%%**:The complete result from previous action, such as CLI script.	No default.

Related topics

- system automation-script on page 241
- system automation-trigger on page 242
- system automation-stitch on page 243

system automation-script

Use this command to configure the CLI commands to be run in the Automation feature.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `mntgrp` area. For details, see Permissions on page 46.

Syntax

```
config system automation-script
  edit <script_name>
    set script "<Cli_1>"
    set script "<Cli_2>"
  next
end
```

Variable	Description	Default
<script_name>	Enable to override the default list of FDN servers, and connect to a specific server.	No default.
script "<cli>"	Enter the CLI commands to be run when certain trigger occurs. You can enter multiple CLI command lines.	No default.

Related topics

- system automation-trigger on page 242
- system automation-stitch on page 243
- system automation-email on page 240

system automation-trigger

Use this command to configure the triggers in the Automation feature.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `mntgrp` area. For details, see Permissions on page 46.

Syntax

```
config system automation-trigger
   edit <trigger_name>
      set comments <string>
      set trigger-type event_based
      set event-type {high-cpu | event-log | reboot | HA}
      set logid <int>
      config fields
         edit <index>
            set name <string>
            set value <string>
         next
      end
   next
end
```

Variable	Description	Default
<trigger_name>	Enter a name for the trigger.	No default.
comments <string>	Enter a description for the trigger.	No

Variable	Description	Default
		default.
trigger-type event_based	Now we only support event_based trigger.	event_based
set event-type {high-cpu | event-log | reboot | HA}	Select the type of the event for the trigger. FortiWeb will take action when the specified event occurs. • high-cpu: Available memory is less than 100 MB. • event-log: The system prints certain even logs. • reboot: The system reboots. • HA: HA fail-over occurs.	No default.
If the `event-type` is `event-log`, define the following parameters:		
logid	Enter the id of the event log.	No default.
<index>	Enter the index of the filter to filter out specific event logs.	No default.
name <string>	The name of the log field to be used to filter out certain logs.	No default.
value <string>	The value of the log field to be used to filter out certain logs.	No default.

Related topics

system automation-stitch

Use this command to configure the stitch in the Automation feature.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `mntgrp` area. For details, see Permissions on page 46.

Syntax

```
config system automation-stitch
  edit <stitch_name>
    set status {disable | enable}
    set action_interval <int>
```

```
    set comments <string>
    set trigger <trigger_name>
    config  actions
      edit "email"
        set type email
        set email-name <string>
        set delay 1
      next
      edit "script"
        set type script
        set script-name <string>
        set delay 0
      next
    end
  next
end
```

Variable	Description	Default
status {enable | disable}	Select whether to enable or disable this stitch.	`disable`
action_interval <int>	Specify the interval time to execute each action.	3 (seconds)
comments <string>	Enter a description for the stitch.	No default.
trigger <trigger_name>	The name of the trigger you have defined by `config system automation-trigger`.	No default.
email-name <string>	The name of the email action you have defined by `config system automation-email`.	No default.
script-name <string>	The name of the script action you have defined by `config system automation-script`.	No default.

Related topics

- system automation-email on page 240
- system automation-script on page 241
- system automation-trigger on page 242

system autoupdate override

Use this command to override the default Fortiguard Distribution Server (FDS) and update FortiGuard services from the specified address.

If you cannot connect to the FortiGuard Distribution Network (FDN) or if your organization provides updates using their own FortiGuard server, you can specify the IP address of the FDS server so that the FortiWeb appliance connects to this server instead of the default server on Fortinet's public FDN.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `mntgrp` area. For details, see Permissions on page 46.

Syntax

```
config system autoupdate override
   set status {enable | disable}
   set address {"<fds_fqdn>" | "<fds_ipv4>"}
   set fail-over {enable | disable}
end
```

Variable	Description	Default
status {enable | disable}	Enable to override the default list of FDN servers, and connect to a specific server.	`disable`
address {"<fds_fqdn>" | "<fds_ipv4>"}	Enter either the IP address or fully qualified domain name (FQDN) of the FDS override. If you connect with a FortiWeb device who is acting as an FDS proxy, you should enter port number 8989 after the IP address.	No default.
fail-over {enable | disable}	Enable to fail over to one of the public FDN servers if FortiWeb cannot reach the server specified in your FDS override.	`enable`

Related topics

- system autoupdate schedule on page 245

system autoupdate schedule

Use this command to configure how the FortiWeb appliance will access the Fortinet Distribution Network (FDN) to retrieve updates. The FDN is a world-wide network that delivers FortiGuard service updates of predefined robots, data types, suspicious URLS, IP address reputations, and attack signatures used to detect attacks such as:

- Cross-site scripting (XSS)
- SQL injection
- Common exploits

Alternatively, you can manually upload update packages. For details, see the FortiWeb Administration Guide:
http://docs.fortinet.com/fortiweb/admin-guides

FortiWeb appliances connect to the FDN by connecting to the Fortinet Distribution Server (FDS) nearest to the FortiWeb appliance based on its configured time zone.

In addition to manual update requests, FortiWeb appliances support an automatic scheduled updates, by which the FortiWeb appliance periodically polls the FDN to determine if there are any available updates.

If you want to connect to a specific FDS, you must enter system autoupdate override on page 244. If your FortiWeb appliance must connect through a web proxy, you must also enter system autoupdate tunneling on page 247.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `mntgrp` area. For details, see Permissions on page 46.

Syntax

```
config system autoupdate schedule
   set status {enable | disable}
   set frequency {daily | every | weekly}
   set time "<time_str>"
   set day {Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday}
end
```

Variable	Description	Default
status {enable | disable}	Enable to periodically request signature updates from the FDN.	`enable`
frequency {daily | every | weekly}	Select the frequency with which the FortiWeb appliance will request signature updates.	`every`
time "<time_str>"	Enter the time at which the FortiWeb appliance will request signature updates. The time format is `hh:mm`, where: • `hh` is the hour according to a 24-hour clock • `mm` is the minute	`00:00`
day {Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday}	Select which day of the week that the FortiWeb appliance will request signature updates. This option applies only if `frequency` is `weekly`.	`Monday`

Example

This example configures weekly signature update requests on Sunday at 2:00 PM.

```
config system autoupdate schedule
   set status enable
   set frequency weekly
   set day Sunday
   set time 14:00
end
```

Related topics

- system autoupdate override on page 244
- system autoupdate tunneling on page 247

system autoupdate tunneling

Use this command to configure the FortiWeb appliance to use a proxy server to connect to the Fortinet Distribution Network (FDN).

The FortiWeb appliance will connect to the proxy using the HTTP `CONNECT` method, as described in RFC 2616 (http://tools.ietf.org/rfc/rfc2616.txt).

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
config system autoupdate tunneling
   set status {enable | disable}
   set address {"<proxy_fqdn>" | "<proxy_ipv4>"}
   set port <port_int>
   set username "<proxy-user_str>"
   set password "<proxy-password_str>"
end
```

Variable	Description	Default
status {enable | disable}	Enable to connect to the FDN through a web proxy.	`disable`
address {"<proxy_fqdn>" | "<proxy_ipv4>"}	Enter either the IP address or fully qualified domain name (FQDN) of the web proxy. The maximum length is 63 characters.	No default.
port <port_int>	Enter the port number on which the web proxy listens for connections. The valid range is 0-65,535.	`0`
username "<proxy-user_str>"	If the proxy requires authentication, enter the FortiWeb appliance's login name on the web proxy. The maximum length is 49 characters.	No default.
password "<proxy-password_str>"	If the proxy requires authentication, enter the password for the FortiWeb appliance's login name on the web proxy. The maximum length is 49 characters.	No default.

Example

This example configures the FortiWeb appliance to connect through a web proxy that requires authentication.

```
config system autoupdate tunneling
   set status enable
   set address "192.168.1.10"
   set port 1443
   set username "fortiweb"
   set password "myPassword1"
end
```

Related topics

- system autoupdate schedule on page 245

system backup

Use this command to configure automatic backups of the system configuration to an FTP or SFTP server. You can either run the backup immediately or schedule it to run periodically.

The backup can include all uploaded files such as error pages, WSDL files, certificates, and private keys. Fortinet recommends that if you have many such files, that you include them in the backup. This saves you valuable time if you need to restore the configuration in an emergency.

Fortinet strongly recommends that you password-encrypt this backup, and store it in a secure location. This backup method includes sensitive data such as your HTTPS certificates' private keys. Unauthorized access to private keys compromises the security of all HTTPS requests using those certificates.

To restore a backup, see backup full-config on page 857.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `mntgrp` area. For details, see Permissions on page 46.

Syntax

```
config system backup
   edit "<backup_name>"
      set config-type {full-config |cli-config | waf-config}
      set ml-flag {disable | enable}
      set encryption {enable | disable}
      set encryption-passwd "<password_str>"
      set ftp-auth {enable | disable}
      set ftp-user "<user_str>"
      set ftp-passwd "<password_str>"
```

```
      set ftp-dir "<directory-path_str>"
      set ftp-server {"<server_ipv4>" | "<server_fqdn>"}
      set protocol-type {ftp | sftp}
      set schedule_type {now | days}
      set schedule_days {sun mon tue wed thu fri sat}
      set schedule_time "<time_str>"
   next
end
```

Variable	Description	Default
"<backup_name>"	Enter the name of the backup configuration. The maximum length is 59 characters. To display the list of existing backups, enter: `edit ?`	No default.
config-type {full-config |cli-config | waf-config}	Select either: • `full-config` – Include both the configuration file and other uploaded files, such as certificate and error page files, in the backup. • `cli-config` – Include only the configuration file in the backup. • `waf-config` – Include only the web protection profiles in the backup.	`cli-config`
ml-flag {disable | enable}	Enable to include machine leaning data in the backup. This option takes effect only when the `config-type` is set to `full-config`.	`disable`
encryption {enable | disable}	Enable to encrypt the backup file with a `.zip` extension. **Caution:** Unlike when downloading a backup from the web UI to your computer, this **does** include all certificates and private keys. Fortinet strongly recommends that you password-encrypt this backup, and store it in a secure location.	`disable`
encryption-passwd "<password_str>"	Enter the password that will be used to encrypt the backup file. This field appears only if you enable encryption {enable | disable} on page 249.	No default.
ftp-auth {enable | disable}	Enable if the server requires that you provide a user name and password for authentication, rather than allowing anonymous connections. When enabled, you must also configure ftp-user "<user_str>" on page 249 and ftp-passwd "<password_str>" on page 250. Disable for FTP servers that allow anonymous uploads.	`disable`
ftp-user "<user_str>"	Enter the user name that the FortiWeb appliance will use to authenticate with the server. The maximum length is 127 characters. This variable is not available unless ftp-auth {enable | disable} on page 249 is `enable`.	No default.

Variable	Description	Default
ftp-passwd "<password_str>"	Enter the password corresponding to the account specified in ftp-user "<user_str>". The maximum length is 127 characters. This variable is not available unless ftp-auth {enable | disable} on page 249 is `enable`.	No default.
ftp-dir "<directory-path_str>"	Enter the directory path on the server where you want to store the backup file. The maximum length is 127 characters.	No default.
ftp-server {"<server_ipv4>" | "<server_fqdn>"}	Enter either the IP address or fully qualified domain name (FQDN) of the server. The maximum length is 127 characters.	No default.
protocol-type {ftp | sftp}	Select whether to connect to the server using FTP or SFTP.	`ftp`
schedule_type {now | days}	Select one of the schedule types: • `now`–Use this to initiate the FTP backup immediately upon ending the command sequence. • `days`–Enter this to allow you to set days and a time to run the backup automatically. You must also configure schedule_days {sun mon tue wed thu fri sat} on page 250 and schedule_time "<time_str>" on page 250	`now`
schedule_days {sun mon tue wed thu fri sat}	Enter one or more days of the week when you want to run a periodic backup. Separate each day with a blank space. For example, to back up the configuration on Monday and Friday, enter: `set schedule_days mon,fri` This command is available only if schedule_type {now | days} on page 250 is `days`.	No default.
schedule_time "<time_str>"	Enter the time of day to run the backup. The time format is `hh:mm`, where: • `hh` is the hour according to a 24-hour clock • `mm` is the minute This command is available only if schedule_type {now | days} on page 250 is `days`.	`00:00`

Related topics

- restore config on page 889
- backup cli-config on page 856

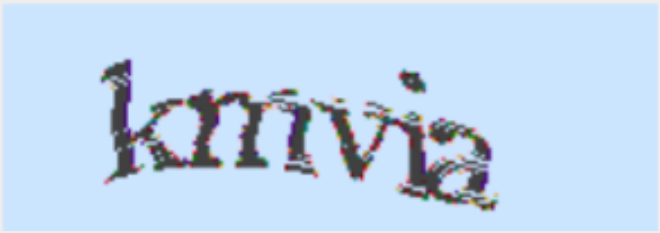
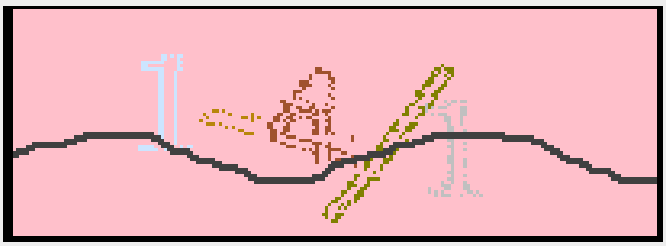
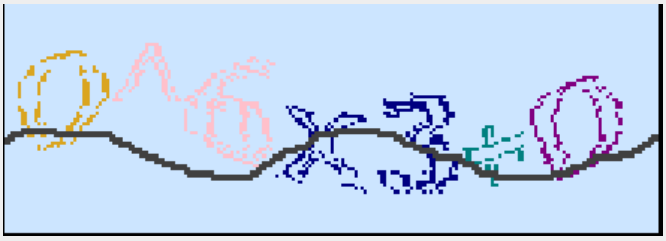
system captcha

Use this command to specify difficulty levels "easy/medium/hard" of CAPTCHA challenge.

To use this command, your administrator account's access control profile must have both `r` and `w` permissions to items in the `admingrp` category.

Syntax

```
config system captcha
   set captcha-difficulty-level {easy | medium | hard}
end
```

Variable	Description	Default
captcha-difficulty-level {easy | medium | hard}	Specify different levels "easy/medium/hard" of CAPTCHA challenge. Below are examples of the easy/medium/hard level challenges. Easy (simple letters, no operators):  Medium (default mode) (3 operands, add/subtract/multiply/divide result between -100 ~ 100):  Hard (add/subtract/multiply/divide/power): 	medium

system captcha-puzzle

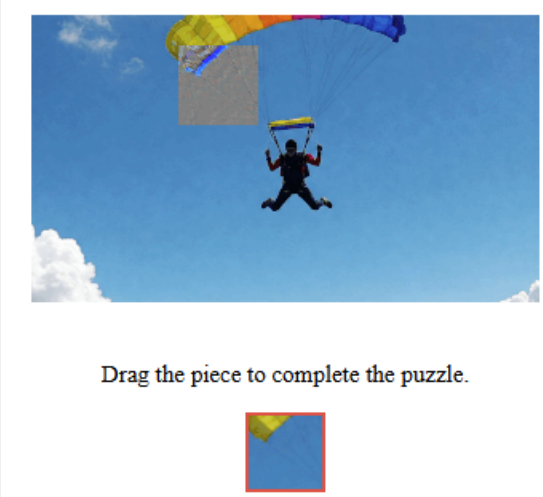
Use this command to configure the difficulty level of Puzzle CAPTCHA challenges used in bot confirmation workflows. Puzzle CAPTCHA presents an image-based challenge that requires human interaction and helps prevent access by bots and headless browsers.

This command controls the system-wide difficulty setting for all Puzzle CAPTCHA challenges. Higher difficulty levels reduce the visual contrast between the puzzle piece and the background image, making the challenge harder for bots. The image content itself is not customizable.

To use this command, your administrator account's access control profile must have both `r` and `w` permissions to items in the `admingrp` category.

Syntax

```
config system captcha-puzzle
   set captcha-puzzle-difficulty-level {easy | medium | hard}
end
```

Variable	Description	Default
captcha-puzzle-difficulty-level {easy | medium | hard}	Specifies the visual complexity of the Puzzle CAPTCHA challenge: • **easy**: The puzzle piece contains clearly identifiable elements (e.g., bright colors or unique shapes), making alignment intuitive.  • **medium**: The puzzle piece contains more ambiguous color gradients and less distinct borders, requiring more attention to context. This is the default difficulty.	medium

Variable	Description	Default
	 Drag the piece to complete the puzzle.  • **hard**: The puzzle piece includes subtle visual textures (e.g., blur, shadow, or partial occlusion) with few obvious visual anchors, increasing difficulty for bots and humans alike.  Drag the piece to complete the puzzle. 	

system central-management

Use this command to enable cross domain access feature for central management in the web UI and CLI.

Syntax

```
config system central management
   set cm-access {enable | disable}
   set system central-management
end
```

Variable	Description	Default
cm-access {enable | disable}	Enable/disable the cross domain access feature for central management.	disable
system central-management	Enter the URL to access FortiWeb Manager.	disable

Example

This example shows enabling central management feature.

```
config system central-management
   set cm-accsss enable
   set allow-origin https://10.200.111.100

end
```

system certificate ca

Use this command to show the names of certificates for a certificate authority (CA). You use the web UI to upload these certificates.

Certificate authorities validate and sign other certificates in order to indicate to third parties that those other certificates are authentic and can be trusted

CA certificates are not used directly, but must first be grouped in order to be selected in a certificate verification rule. For details, see system certificate ca-group on page 256.

For information on how to upload a certificate file, see the FortiWeb Administration Guide:

http://docs.fortinet.com/fortiweb/admin-guides

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `admingrp` area. For details, see Permissions on page 46.

Syntax

```
show system certificate ca
config system certificate ca
   edit "<certificate_name>"
      set certificate "<certificate_ str>"
   next
end
```

Variable	Description	Default
"<certificate_name>"	Enter the name of a certificate file. The maximum length is 63 characters.	No default.
certificate "<certificate_ str>"	Set the certificate. Only certificates in PEM format may be set.	No default.

Example

This example creates two CA certificate items, `CA_Cert_1` and `CA_Cert_2`.

```
config system certificate ca
   edit "CA_Cert_1"
   next
   edit "CA_Cert_2"
   next
end
```

This example adds a certificate to `CA_Cert_1`

```
config system certificate local
   edit "CA_Cert_1"
   set certificate "-----BEGIN CERTIFICATE-----
   MIIDkjCCAnoCCQCbXq6VYR1CijANBgkqhkiG9w0BAQUFADCBijELMAkGA1UEBhMC
   SU4xEjAQBgNVBAgMCUthcm5hdGFrYTESMBAGA1UEBwwJQmFuZ2Fsb3JlMREwDwYD
   VQQKDAhGb3J0aW5ldDEMMAoGA1UECwwDTEFCMQ0wCwYDVQQDDAR0ZXN0MSMwIQYJ
   KoZIhvcNAQkBFhRzdXBwb3J0QGZvcnRpbmV0LmNvbTAeFw0xMjEyMDUxMDE1NTla
   Fw0xNDEyMDUxMDE1NTlaMIGKMQswCQYDVQQGEwJJTjESMBAGA1UECAwJS2FybmF0
   YWthMRIwEAYDVQQHDAlCYW5nYWxvcmUxETAPBgNVBAoMCEZvcnRpbmV0MQwwCgYD
   VQQLDANMQUIxDTALBgNVBAMMBHRlc3QxIzAhBgkqhkiG9w0BCQEWFHN1cHBvcnRA
   Zm9ydGluZXQuY29tMIIBIjANBgkqhkiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEArvHH
   eXZJilTr4TbH/5O5jFxKQ5dILr/561JOJ5UZWtgs9VhXSuCzmrs6FX35vyc7NR+9
   tCbMrl7qA68MxBMuu6phf2r77M9bsp3rOZE2nFR+lhjpWrXBk7/puFLBbI2yqh8d
   7DB25m5pI0ClmbdJ5GGlc/1wHULQhFQSYCMSVjc34esvaLE8oAVFWHAZX14dbAbj
   gC4CMbayzJZaYEfh/7suMwvdwS3sYjOwZYq6DFEF5ZPpKN+ji9J+8EmAvaZS2m3M
```

```
    fFdPFf4eEAgsHmYasqxH7s4Ksc2zTm3cG5srRCqEsEddhoblI1JvmApoN2JiNiYJ
    hYiEPyJdf2z+dADwXwIDAQABMA0GCSqGSIb3DQEBBQUAA4IBAQCbA8kKwVRPri/d
    L8okLny6FygJ0auPbuRQCUGAWpfdKdXn6iyMlLuR066j82o2yrQ0ddgRcdaExT0I
    RCoC2NqhzZvy8JJW2A+KTXutwdGGg8ckHQ5UVRtNo/lPZ6Quz8AsswzNk2Qx6OtF
    FcTEBNxVTHKabQR46ChIa3sG032Wiuj6Y2Rv77mTmmDRZnrY8QGZd2zMm3riAqUf
    IGil0/yg0AhA+ZBt5rer3X+GTknhDAPJ+yU2WS1c8pPj3A3DI0+xwTOq/sNCqTmc
    xb7Q1VM/1kiOE9YaPasAJuQ7WHmnd8J0vHw1/e+whf/lsKxV0ClBNL/JdlyNAMvy
    isnZYL58
    -----END CERTIFICATE-----"
    next
end
```

Related topics

- system certificate ca-group on page 256
- system certificate verify on page 275

system certificate ca-group

Use this command to group certificate authorities (CA).

CAs must belong to a group in order to be selected in a certificate verification rule.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `admingrp` area. For details, see Permissions on page 46.

Syntax

```
config system certificate ca-group
   edit "<ca-group_name>"
      config members
         edit <ca_index>
            set type {CA | TSL}
            set publish-dn {enable | disable}
            set tsl "<tsl_name>"
            set name "<ca_name>"
            set trust-anchor {enable | disable}
         next
      end
   next
end
```

Variable	Description	Default
"<ca-group_name>"	Enter the name of a certificate authority (CA) group. The maximum length is 63 characters.	No default.

Variable	Description	Default
<ca_index>	Enter the index number of a CA within its group. The valid range is 1-999,999,999,999,999,999.	No default.
name "<ca_name>"	Enter the name of a previously uploaded CA certificate.	No default.
type {CA | TSL}	Select to upload CA certificate or TSL.	CA
`tsl "<tsl_name>"`	Enter the name of a TSL.	No default.
publish-dn {enable | disable}	Enable to list only certificates related to the specified CA Group. This is beneficial when a client installs many certificates in its browser or when apps don't list client certificates. If you enable this option, also enable the option in a certificate verification rule. For details, see system certificate verify on page 275.	enable
trust-anchor {enable | disable}	If `partial-chain` is enabled in `config system certificate verify`, you need to enable `trust anchor` for the system to perform partial chain verification.	disable

Example

This example groups two CA certificates into a CA group named `caVEndors1`.

```
config system certificate ca-group
   edit "caVendors1"
      config members
         edit 1
            set name "CA_Cert_1"
         next
         edit 2
            set "name CA_Cert_2"
         next
      end
   next
end
```

Related topics

- certificate ca on page 1
- system certificate local on page 264
- system certificate verify on page 275

system certificate crl

Use this command to edit the URL associated with a previously uploaded certificate revocation list (CRL).

To ensure that your FortiWeb appliance validates only certificates that have not been revoked, you should periodically upload a current certificate revocation list, which may be provided by certificate authorities (CA).

For information on how to upload a CRL, see the FortiWeb Administration Guide:

http://docs.fortinet.com/fortiweb/admin-guides

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `admingrp` area. For details, see Permissions on page 46.

Syntax

```
config system certificate crl
   edit "<crl_name>"
      set certificate "<certificate_str>"
      set type {HTTP | local | scep}
      set url "<crl_str>"
   next
end
```

Variable	Description	Default
"<crl_name>"	Enter the name of a CRL. The maximum length is 63 characters.	No default.
certificate "<certificate_str>"	Set the certificate. Only certificates in PEM format may be set.	No default.
type {HTTP | local | scep}	Specify how you set the certificate. `HTTP`–query for the certificate from a HTTP server `local`–set the certificate through certificate <certificate_str_pem>. `scep`–query for the certificate from a SCEP server	`local`
url "<crl_str>"	If type {HTTP | local | scep} on page 258 is set as `HTTP` or `scep`, enter the URL of the certificate. The maximum length is 127 characters.	No default.

Related topics

- certificate ca on page 1
- system certificate local on page 264
- system certificate crl-group on page 259
- system certificate verify on page 275

system certificate crl-group

Use this command to create a group of CRLs that you have already uploaded to FortiWeb.

To ensure that FortiWeb validates only certificates that have not been revoked, you should periodically upload current certificate revocation lists (CRL) that may be provided by certificate authorities (CA). Once you've uploaded the CRL(s) you want to use, create CRL groups to include in your FortiWeb configuration.

For more information about CRLs and CRL groups, see the *FortiWeb Administration Guide*:

http://docs.fortinet.com/fortiweb/admin-guides

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `admingrp` area. For details, see Permissions on page 46.

Syntax

```
config system certificate crl-group
   edit <crl_group_name>
   config members
      edit <entry_index>
         set <crl_name>
      next
   end
   next
end
```

Variable	Description	Default
<crl_group_name>	Type the name of the CRL group. You will use this name to select the CRL group in other parts of the configuration. The maximum length is 63 characters.	No default.
<entry_index>	Type the index number of the individual entry in the table.	No default.
<crl_name>	Type the name of a CRL that you want to include in the group. The maximum length is 63 characters. For details, see system certificate crl on page 258.	No default.

Related topics

- system certificate crl on page 258
- system certificate verify on page 275

system certificate intermediate-certificate

Use this command to upload the names of uploaded intermediate CA certificate.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `admingrp` area. For details, see Permissions on page 46.

Syntax

```
config system certificate intermediate-certificate
   edit "<certificate_name>"
      set certificate "<certificate_str>"
   next
end
```

Variable	Description	Default
"<certificate_name>"	Enter the name of a certificate file. The maximum length is 63 characters.	No default.
certificate "<certificate_str>"	Set the certificate. Only certificates in PEM format may be set.	No default.

Example

This example creates three intermediate certificate items, `Inter_Cert_1`, `Inter_Cert_2` and `Inter_Cert_3`.

```
config system certificate intermediate-certificate
   edit "Inter_Cert_1"
   next
   edit "Inter_Cert_2"
   next
   edit "Inter_Cert_3"
   next
end
```

This example adds a certificate to `Inter_Cert_1`

```
config system certificate local
   edit "Inter_Cert_1"
   set certificate "-----BEGIN CERTIFICATE-----
   MIIDkjCCAnoCCQCbXq6VYR1CijANBgkqhkiG9w0BAQUFADCBijELMAkGA1UEBhMC
   SU4xEjAQBgNVBAgMCUthcm5hdGFrYTESMBAGA1UEBwwJQmFuZ2Fsb3JlMREwDwYD
   VQQKDAhGb3J0aW5ldDEMMAoGA1UECwwDTEFCMQ0wCwYDVQQDDAR0ZXN0MSMwIQYJ
   KoZIhvcNAQkBFhRzdXBwb3J0QGZvcnRpbmV0LmNvbTAeFw0xMjEyMDUxMDE1NTla
   Fw0xNDEyMDUxMDE1NTlaMIGKMQswCQYDVQQGEwJJTjESMBAGA1UECAwJS2FybmF0
   YWthMRIwEAYDVQQHDAlCYW5nYWxvcmUxETAPBgNVBAoMCEZvcnRpbmV0MQwwCgYD
   VQQLDANMQUIxDTALBgNVBAMMBHRlc3QxIzAhBgkqhkiG9w0BCQEWFHN1cHBvcnRA
   Zm9ydGluZXQuY29tMIIBIjANBgkqhkiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEArvHH
```

```
    eXZJilTr4TbH/5O5jFxKQ5dILr/561JOJ5UZWtgs9VhXSuCzmrs6FX35vyc7NR+9
    tCbMrl7qA68MxBMuu6phf2r77M9bsp3rOZE2nFR+lhjpWrXBk7/puFLBbI2yqh8d
    7DB25m5pI0ClmbdJ5GGlc/1wHULQhFQSYCMSVjc34esvaLE8oAVFWHAZX14dbAbj
    gC4CMbayzJZaYEfh/7suMwvdwS3sYjOwZYq6DFEF5ZPpKN+ji9J+8EmAvaZS2m3M
    fFdPFf4eEAgsHmYasqxH7s4Ksc2zTm3cG5srRCqEsEddhoblI1JvmApoN2JiNiYJ
    hYiEPyJdf2z+dADwXwIDAQABMA0GCSqGSIb3DQEBBQUAA4IBAQCbA8kKwVRPri/d
    L8okLny6FygJ0auPbuRQCUGAWpfdKdXn6iyMlLuR066j82o2yrQ0ddgRcdaExT0I
    RCoC2NqhzZvy8JJW2A+KTXutwdGGg8ckHQ5UVRtNo/lPZ6Quz8AsswzNk2Qx6OtF
    FcTEBNxVTHKabQR46ChIa3sG032Wiuj6Y2Rv77mTmmDRZnrY8QGZd2zMm3riAqUf
    IGil0/yg0AhA+ZBt5rer3X+GTknhDAPJ+yU2WS1c8pPj3A3DI0+xwTOq/sNCqTmc
    xb7Q1VM/1kiOE9YaPasAJuQ7WHmnd8J0vHw1/e+whf/lsKxV0ClBNL/JdlyNAMvy
    isnZYL58
    -----END CERTIFICATE-----"
    next
end
```

Related topics

- certificate inter-ca on page 1
- system certificate intermediate-certificate-group on page 261
- server-policy policy on page 151

system certificate intermediate-certificate-group

Use this command to group intermediate CA certificates.

Intermediate CAs must belong to a group in order to be selected in a certificate verification rule.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `admingrp` area. For details, see Permissions on page 46.

Syntax

```
config system certificate intermediate-certificate-group
   edit "<intermediate-ca-group_name>"
      config members
         edit <intermediate-ca_index>
            set name "<ca_name>"
         next
      end
   next
end
```

Variable	Description	Default
"<intermediate-ca-group_name>"	Enter the name of an intermediate certificate authority (CA) group. The maximum length is 63 characters.	No default.
<intermediate-ca_index>	Enter the index number of an intermediate CA within its group. The valid range is 1-9,999,999,999,999,999,999.	No default.
name "<ca_name>"	Enter the name of a previously uploaded intermediate CA certificate. The maximum length is 63 characters.	No default.

Related topics

- certificate inter-ca on page 1
- system certificate intermediate-certificate on page 260
- server-policy policy on page 151

system certificate letsencrypt

Instead of uploading CA certificate from your local directory, an easier way is to configure FortiWeb to obtain a CA certificate from Let's encrypt on behalf of you.

It's recommended to configure Let's Encrypt certificate through Web UI, where more functions are offered. Refer to "Let's Encrypt certificates" in *FortiWeb Administration Guide*.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `admingrp` area. For details, see Permissions on page 46.

Syntax

```
config system certificate letsencrypt
   edit "<certificate_name>"
      set domain "<application_domain_name>" on page 263
      set renewal-period <int>
      set validation-method {HTTP-01 | TLS-ALPN-01 | DNS-01}
      set key-type {RSA-2048 | RSA-3072 | RSA-4096}
      config subject-alternative-names
         edit <index>
            set san-dns <domain_name>
         end
   next
end
```

Variable	Description	Default
"<certificate_name>"	Enter the name of a certificate file. The maximum length is 63 characters.	No default.

Variable	Description	Default
domain "<application_domain_name>"	Enter the domain name of your application. FortiWeb will then retrieve the CA certificate for this domain from Let's encrypt. For Let's encrypt certificate, it's supported to added add up to 11 domains. One of them should be root domain, while the rest 10 should all belong to the root domain. It's recommended to enter the root domain here, then add the rest domain items in `san-dns <domain_name>`.	No default.
renewal-period <int>	Set how soon FortiWeb obtains the TLS certificate from Let's Encrypt. The valid range is 1-60 days.	30 (days)
validation-method {HTTP-01 | TLS-ALPN-01 | DNS-01}	• **HTTP-01**: Let's Encrypt will send HTTP request to FortiWeb for validation. When in RP mode, you must select HTTP service and uses port 80 for it in the server policy which uses the Let's Encrypt certificate. When in TTP mode, the back-end server which uses Letsencrypt certificate should have port 80 enabled. **Redirect HTTP to HTTPS** should not be enabled when the validation is in process. • **TLS-ALPN-01**: This method allows Let's Encrypt to send HTTPS requests to FortiWeb for validation. You must select HTTPS service in the server policy which uses the Let's Encrypt certificate. • **DNS-01**: This method allows Let's Encrypt to do validation through your DNS provider. FortiWeb will generate a TXT record, then you need to add this TXT record to the DNS record. Refer to "Fulfilling the DNS-01 challenge" in *FortiWeb Administration Guide*.	HTTP-01
key-type {RSA-2048 | RSA-3072 | RSA-4096}	Select Key Type. RSA algorithm with different key length can be implemented and accepted by the Let's Encrypt Server. Those key sizes are 2048, 3072, and 4096 bits. Please note that larger keys consume more computing resources, however, achieve better security.	RSA-2048
san-dns <domain_name>	Enter domain names. Up to 10 items can be added and they all should belong to the same domain.	No default.

Related topics

- system certificate ca on page 254
- system certificate ca-group on page 256
- system certificate verify on page 275

system certificate local

Use this command to edit the comment associated with a server certificate that is stored locally on the FortiWeb appliance.

You can also configure settings for a certificate that works with an HSM (hardware security module). For details about HSM integration, see system hsm info on page 347 and the FortiWeb Administration Guide:

http://docs.fortinet.com/fortiweb/admin-guides

FortiWeb appliances require these certificates to present when clients request secure connections, including when:

- Administrators connect to the web UI (HTTPS connections only)
- Web clients use SSL or TLS to connect to a virtual server, if you have enabled SSL off-loading in the policy (HTTPS connections and Reverse Proxy mode)
- Web clients use SSL or TLS to connect to a physical server (HTTPS connections and true transparent mode)

FortiWeb appliances also require certificates in order to decrypt and scan HTTPS connections travelling through it if operating in Offline Protection or Transparent Inspection modes.

Which certificate will be used, and how, depends on the purpose.

- For connections to the web UI, the FortiWeb appliance presents its default certificate. The FortiWeb appliance's default certificate does not appear in the list of local certificates. It's used only for connections to the web UI and cannot be removed.
- For SSL off-loading or SSL decryption, upload certificates that do **not** belong to the FortiWeb appliance, but instead belong to the protected hosts. Then, select which one the FortiWeb appliance will use when configuring the SSL option in a policy or server farm.

For information on how to upload a certificate file, see the FortiWeb Administration Guide:

http://docs.fortinet.com/fortiweb/admin-guides

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `admingrp` area. For details, see Permissions on page 46.

Syntax

```
config system certificate local
   edit "<certificate_name>"
      set comment "<comment_str>"
```

```
    set status {na | ok | pending}
    set type {certificate | csr}
    set flag {0 | 1}
    set is-hsm {no | yes}
    set partition-number "<partition_name>"
    set certificate "<certificate_str>"
    set private-key "<private_key_str>"
    set passwd "<password>"
  next
end
```

Variable	Description	Default
"<certificate_name>"	Enter the name of a certificate file. The maximum length is 63 characters.	No default.
comment "<comment_str>"	Enter a description or other comment. If the comment contains more than one word or contains an apostrophe, surround the comment in double quotes ("). The maximum length is 127 characters.	No default.
status {na | ok | pending}	Indicate the status of an imported certificate: • na–Indicates that the certificate was successfully imported, and is currently selected for use by the FortiWeb appliance. • ok–Indicates that the certificate was successfully imported but is not selected as the certificate currently in use. To use the certificate, select it in a policy or server farm. • pending–Indicates that the certificate request was generated, but must be downloaded, signed, and imported before it can be used as a local certificate.	No default.
type {certificate | csr}	Indicate whether the file is a certificate or a certificate signing request (CSR).	No default.
flag {0 | 1}	Indicate if a password was saved. This is used by FortiWeb for backwards compatibility.	No default.
is-hsm {no | yes}	Specify whether you configured the CSR for this certificate to work with an integrated HSM.	no
partition-number "<partition_name>"	Enter the name of the HSM partition you selected when you created the CSR for this certificate.	No default.
certificate "<certificate_str>"	Set the certificate. Only certificates in PEM format may be set.	No default.
private-key "<private_key_str>"	Set the private key for the certificate. Only private keys in PEM format may be set.	No default.
passwd "<password>"	Enter the password for the certificate.	No default.

Example

This example adds a comment to the certificate named `certificate1`.

```
config system certificate local
   edit "certificate1"
      set comment "This is a certificate for the host www.example.com."
   next
end
```

This example adds a certificate named `certificate2`

```
config system certificate local
   edit "certificate2"
   set private-key "-----BEGIN RSA PRIVATE KEY-----
   Proc-Type: 4,ENCRYPTED
   DEK-Info: DES-EDE3-CBC,82EAF556E3621A07
   ZYqcytKrfYGksrp/6rFf4Ma3rIiW/63EiyxHFLSl8NVOLfM+AWHYm5flnKJI4Ava
   iZnv64QlmLxTSDgU+/rS9XBaDlg6DKoIDtDTlVvg99vU3I9TrU+LRMPaLCidVw/h
   GMlKtvF8UGFACAM1HwTJ/zBejgaAN0ZKcmxDNX0RwgHQwTP1/dwXRae+uk9dK8Ya
   kw9jcu5SM7aQuUKEFdvdkhI9fo8uMH8lKwSViaDx50/BZfEQx5+cRHooS/AZfnnr
   BjBlaAZA+zjuvp5mbDh76CO8+i+++09e4g5Kj83ZoRfVXkOUonfRug5FvAT7YFEi
   lgnG+ChW5BrDtOq25Y4jQcPyqM9dL8lkpMhfK+rayGWVyOfQAX0AtNNM0itbjb7U
   m78N71RVjjz4We2QCkIBv5AibsPgJwq54M6VDZ3CIJ+f2QVvvypnN2UjV1epih6N
   yS0RxVqwC2HObwdbffviMjH1a5AOSIFnEYHOAwAxIf3nlZWAf1HhW8Oc6IofqTuO
   R5SeWnoYxFVFakhGcyMRw3sd/ekTp8tRoK8QbINn3L38AEMtp8HKSHWm+MWdIQeK
   WNYW4AZsrKfmXIQpGzuaan50fh6y6eVevxB9zx/uVN2XxD/TmDs5KnLjw7A4ks7V
   Ds0c8bSLOT8BE+qfb7I/mUjVbsbGxgX40ducmm/C7HR/bgbSV2u6PK92ieQ22q6q
   7RATzFtvHuJ3OmJtrMKhlHGMHVSA01GhheL3m2JhHMKMoJfwhYLab1+UCV4n5GOi
   MogQY9UQ022WRCtpTPes5Sl5IMVY/Oj1nP/QcUMK8a7iPtAZWPYN7HEPXDfU/Urm
   52HbC0fSQ/eGG5gQ7kDy9N/aLZf9wDMgj5zjX2lmnMT/h1sD29+bUCoo4ODT2Kk1
   i6HyZX+J6KNDYM5aNOdhyZabVZBZOU1GvtLMzzrd5pEugFs7Rzt0+NJ54d7jGgav
   0QwKCKIDevSdZG0ZeXLTvQONF9Pzo6i/E3uwIKuHFAnTAtq6UrKveRLtWWXuSBim
   AAifL8s23T0BJAa75C6b3+F5IUTC/K9e5vrUbBDWDsjSjsWgbkoPBDlEpWLI+Ogu
   Th6nZeQx0U+gt1bC+bJTIKdVDbxgjVGXIEvmnzc7KU0cBHmmIQggqfQwdVTeSVUx
   z9JefVD9accpoem6ghdS/0xaQztbdvb5NAM9LX2o/HFECThcLWGke/jxgAKvFQX4
   MZBFy1UukQeCgHfwJCIMw1D/tupKwAqzsvm351E0C8eTuC1OWFvtkzQNoFkyD2vS
   gWSFKz85nswSMkobWFNJxMmDuS1QlAHUFuzpcVOJgrE6DMpdYE3DeKmsVMsLsNM/
   l7H3SlnvEptVf3fm5PpCxtOM60nqsQuveHEgkmk5gt8CLtE8bV81yv7JDvkXUFV2
   5HlFRZ/RZAQgAeKiAS6REwHuE/dEhZKh7Jq2o02G0NXeAXR/WqeN0SWSw0dEVf39
   TMARg27X27zx0Wg2g8pBC1nxA1zyzMfYI2OTwvFZFNPVenGCVUw1dFt8eolAOscO
   LakQuCWrFrW7kiRQlxVK/o67fKTkBVt7zM5WjBEO3beGWe2TkRUWUg==
   -----END RSA PRIVATE KEY-----"
   set certificate "-----BEGIN CERTIFICATE-----
   MIIDkjCCAnoCCQCbXq6VYR1CijANBgkqhkiG9w0BAQUFADCBijELMAkGA1UEBhMC
   SU4xEjAQBgNVBAgMCUthcm5hdGFrYTESMBAGA1UEBwwJQmFuZ2Fsb3JlMREwDwYD
   VQQKDAhGb3J0aW5ldDEMMAoGA1UECwwDTEFCMQ0wCwYDVQQDDAR0ZXN0MSMwIQYJ
   KoZIhvcNAQkBFhRzdXBwb3J0QGZvcnRpbmV0LmNvbTAeFw0xMjEyMDUxMDE1NTla
   Fw0xNDEyMDUxMDE1NTlaMIGKMQswCQYDVQQGEwJJTjESMBAGA1UECAwJS2FybmF0
   YWthMRIwEAYDVQQHDAlCYW5nYWxvcmUxETAPBgNVBAoMCEZvcnRpbmV0MQwwCgYD
   VQQLDANMQUIxDTALBgNVBAMMBHRlc3QxIzAhBgkqhkiG9w0BCQEWFHN1cHBvcnRA
   Zm9ydGluZXQuY29tMIIBIjANBgkqhkiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEArvHH
   eXZJilTr4TbH/5O5jFxKQ5dILr/561JOJ5UZWtgs9VhXSuCzmrs6FX35vyc7NR+9
   tCbMrl7qA68MxBMuu6phf2r77M9bsp3rOZE2nFR+lhjpWrXBk7/puFLBbI2yqh8d
   7DB25m5pI0ClmbdJ5GGlc/1wHULQhFQSYCMSVjc34esvaLE8oAVFWHAZX14dbAbj
   gC4CMbayzJZaYEfh/7suMwvdwS3sYjOwZYq6DFEF5ZPpKN+ji9J+8EmAvaZS2m3M
```

```
    fFdPFf4eEAgsHmYasqxH7s4Ksc2zTm3cG5srRCqEsEddhoblI1JvmApoN2JiNiYJ
    hYiEPyJdf2z+dADwXwIDAQABMA0GCSqGSIb3DQEBBQUAA4IBAQCbA8kKwVRPri/d
    L8okLny6FygJ0auPbuRQCUGAWpfdKdXn6iyMlLuR066j82o2yrQ0ddgRcdaExT0I
    RCoC2NqhzZvy8JJW2A+KTXutwdGGg8ckHQ5UVRtNo/lPZ6Quz8AsswzNk2Qx6OtF
    FcTEBNxVTHKabQR46ChIa3sG032Wiuj6Y2Rv77mTmmDRZnrY8QGZd2zMm3riAqUf
    IGil0/yg0AhA+ZBt5rer3X+GTknhDAPJ+yU2WS1c8pPj3A3DI0+xwTOq/sNCqTmc
    xb7Q1VM/1kiOE9YaPasAJuQ7WHmnd8J0vHw1/e+whf/lsKxV0ClBNL/JdlyNAMvy
    isnZYL58
    -----END CERTIFICATE-----"
    next
end
```

Related topics

- server-policy policy on page 151
- server-policy server-pool on page 184

system certificate multi-local

Use this command to configure RSA, DSA, and ECDSA certificates into multi-certificate, and reference them in server policy in Reverse Proxy mode and pserver in TTP or WCCP mode.

Syntax

```
config system certificate multi-local
   edit "<certificate-multi-local_name>" on page 267
      set comment "<comment_str>" on page 267
      set rsa-cert <rsa-cert_str> on page 267
      set dsa-cert <dsa-cert_str> on page 267
      set ecc-cert <ecc-cert_str> on page 268
   next
end
```

Variable	Description	Default
"<certificate-multi-local_ name>"	Enter the name of a multi-certificate file.	No default.
comment "<comment_str>"	Enter a description or other comment.	No default.
rsa-cert <rsa-cert_str>	Select the RSA certificate created in system certificate local (page 1).	No default.
dsa-cert <dsa-cert_str>	Select the DSA certificate created in system certificate local (page 1).	No default.

Variable	Description	Default
ecc-cert <ecc-cert_str>	Select the ECDSA certificate created in system certificate local (page 1).	No default.

Related topics

- system certificate local on page 264
- server-policy policy on page 151
- server-policy server-pool on page 184

system certificate ocsp-stapling

Use this command to configure an OCSP server.

Once an OCSP server is configured, OCSP stapling is enabled. When OCSP stapling is enabled, FortiWeb periodically fetches the revocation status of the specified certificate from the OCSP server and caches the response for a period if the revocation status is contained in the response.

For more information on OCSP stapling, see the *FortiWeb Administration Guide*:

http://docs.fortinet.com/fortiweb/admin-guides

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `admingrp` area. For details, see Permissions on page 46.

Syntax

```
config system certificate ocsp-stapling
   edit "<ocsp_name>"
      set certificate "<certificate_name>"
      set local-cert "<certificate_name>"
      set comment "<comment_str>"
      set ocsp_url "<url>"
   next
end
```

Variable	Description	Default
"<ocsp_name>"	Enter the name of an OCSP group. The maximum length is 63 characters.	No default
certificate "<certificate_name>"	A CA certificate that has been imported in FortiWeb.	No default

Variable	Description	Default
local-cert "<certificate_name>"	The local certificate of the server certificate to be queried.	No default
comment "<comment_str>"	Optionally, enter a comment for the OCSP group.	No default
ocsp_url "<url>"	Enter URL of the OCSP server corresponding to the specified CA certificate.	No default

Related topics

- system certificate local on page 264
- system certificate ca on page 254
- server-policy policy on page 151
- server-policy server-pool on page 184

system certificate server-certificate-verify

Use this command to configure how the FortiWeb appliance will verify certificates presented by HTTP server.

Syntax

```
config system certificate server-certificate-verify
   edit "<certificate_verificator_name>"
      set ca "<ca-group_name>"
      set crl "<crl-group_name>"
   next
end
```

Variable	Description	Default
"<certificate_verificator_name>"	Enter the name of a certificate verifier. The maximum length is 63 characters.	No default.
ca "<ca-group_name>"	Enter the name of an existing CA Group that you want to use to authenticate client certificates.	No default.
crl "<crl-group_name>"	Enter the name of an existing CRL Group, if any, to use to verify the revocation status of client certificates.	No default.

Related topics

- system certificate ca-group on page 256
- system certificate crl on page 258

system certificate sni

In some cases, the members of a server pool or a single pool member host multiple secure websites that use different certificates. Use this command to create a Server Name Indication (SNI) configuration that identifies the certificate to use by domain.

You can select a SNI configuration in a server policy only when the operating mode is Reverse Proxy mode and an HTTPS configuration is applied to the policy.

Not all web browsers support SNI. Go to the following location for a list of web browsers that support SNI:

http://en.wikipedia.org/wiki/Server_Name_Indication#Browsers_with_support_for_TLS_server_name_indication.5B10.5D

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `admingrp` area. For details, see Permissions on page 46.

Syntax

```
config system certificate sni
   edit "<sni_name>"
      config members
         edit <entry_index>
            set domain-type {plain | regular}
            set domain "<server_fqdn>"
            set multi-local-cert {enable | disable}
            set multi-local-cert-group <multi-local-cert-group_name>
            set certificate-type {enable | disable}
            set lets-certificate <name>
            set local-cert "<local-cert_name>"
            set inter-group "<intermediate-cagroup_name>"
            set verify "<certificate_verificator_name>"
         end
      next
end
```

Variable	Description	Default
"<sni_name>"	Enter the name of an Server Name Indication (SNI) configuration.	No default.
<entry_index>	Enter the index number of an SNI configuration entry. The valid range is 1-9,999,999,999,999,999,999.	No default.

Variable	Description	Default
domain-type {plain | regular}	Specify `plain` to match a domain to certificates using a literal domain specified in `domain`. Specify `regular` to match multiple domains to certificates using a regular expression specified in `domain`.	`plain`
domain "<server_fqdn>"	Enter the domain of the secure website (HTTPS) that uses the certificate specified by local-cert "<local-cert_name>" on page 271. Enter a literal domain if domain-type {plain | regular} on page 271 is set to `plain`; or enter a regular expression if `domain-type` is set to `regular`.	No default.
multi-local-cert {enable | disable}	Enable this option to allow FortiWeb to use multiple local certificates.	`disable`
multi-local-cert-group <multi-local-cert-group_name>	Select the multi-certificate you have created.	No default.
certificate-type {enable | disable}	Enable allow FortiWeb to automatically retrieve CA certificates from Let's Encrypt.	disable
lets-certificate <name>	Select the Letsencrypt certificate you have created. See system certificate letsencrypt.	No default.
local-cert "<local-cert_name>"	Enter the name of the server certificate that FortiWeb uses to encrypt or decrypt SSL-secured connections for the website specified by domain "<server_fqdn>" on page 271.	No default.
inter-group "<intermediate-cagroup_name>"	Enter the name of a group of intermediate certificate authority (CA) certificates, if any, that FortiWeb presents to validate the CA signature of the certificate specified by local-cert "<local-cert_name>" on page 271. If clients receive certificate warnings that an intermediary CA has signed the server certificate configured in local-cert "<local-cert_name>" on page 271, rather than by a root CA or other CA currently trusted by the client directly, configure this option. Alternatively, include the entire signing chain in the server certificate itself before uploading it to the FortiWeb appliance, thereby completing the chain of trust with a CA already known to the client. See the FortiWeb Administration Guide: http://docs.fortinet.com/fortiweb/admin-guides	No default.
verify "<certificate_verificator_name>"	Enter the name of a certificate verifier, if any, that FortiWeb uses when an HTTP client presents its personal certificate. If you do not select one, the client is not required to present a personal certificate.	No default.

Variable	Description	Default
	Personal certificates, sometimes also called user certificates, establish the identity of the person connecting to the website (PKI authentication). You can require that clients present a certificate alternatively or in addition to HTTP authentication. For details, see "waf HTTP-authen HTTP-authen-rule" on page 1. To display the list of existing verifiers, enter: `edit ?` **Note:** The client must support TLS 1.0.	

Related topics

- system certificate local on page 264
- system certificate intermediate-certificate-group on page 261
- system certificate verify on page 275

system certificate xml-client-certificate

Use this command to show names of the uploaded XML client certificates that are stored locally on the FortiWeb appliance.

The XML client certificate is used for request verification or response encryption.

Syntax

```
config system certificate xml-client-certificate
   edit system certificate xml-client-certificate on page 272
      set certificate <certificate_str>
      set secret-key <secret-key_str>
   next
end
```

Variable	Description	Default
"<xml-client-certificate_name>"	Enter the name of an XML client certificate.	No default.
certificate <certificate_str>	Set the certificate. Only certificates in PEM format may be set.	No default.

Variable	Description	Default
secret-key <secret-key_str>	Enter the secret key string. This is optional, used only for HMAC-SHA-1 sign.	No default.

Related topics

- waf ws security on page 744
- system certificate xml-client-certificate on page 272

system certificate tsl-ca

Use this command to show the names of Trust Service Lists (TSL) for a certificate authority (CA). You use the web UI to upload the TSL.

For information on how to upload a TSL, see the FortiWeb Administration Guide:

http://docs.fortinet.com/fortiweb/admin-guides

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `admingrp` area. For details, see Permissions on page 46.

Syntax

```
config system certificate tsl-ca
   edit "<tsl-ca_name>"
      set type {file | url}
      set distribute-url
   next
end
```

Variable	Description	Default
"<tsl-ca_name>"	Enter the name of a TSL.	No default
type {file | url}	Select the way to upload a TSL.	No default
`distribute-url`	Enter the distribution URL of the TSL.	No default

Related topics

- system certificate ca
- system certificate ca-group

system certificate urlcert

Use this command to configure the URL-based client certificate feature for a server policy or server pool. This feature allows you to require a certificate for some requests and not for others. Whether a client is required to present a personal certificate or not is based on the requested URL and the rules you specify in the URL-based client certificate group.

A URL-based client certificate group specifies the URLs to match and whether the matched request is required to present a certificate or exempt from presenting a certificate.

When the URL-based client certificate feature is enabled, clients are not required to present a certificate if the request URL is specified as exempt in the URL-based client certificate group rule or URL of the request does not match a rule.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `admingrp` area. For details, see Permissions on page 46.

Syntax

```
config system certificate urlcert
   edit "<url-cert-group_name>"
      config list
         edit <entry_index>
            set url "<url_str>"
            set require {enable | disable}
         end
      next
end
```

Variable	Description	Default
"<url-cert-group_name>"	Enter the name for the URL-based client certificate group.	No default.
<entry_index>	Enter the index number of an URL-based client certificate group entry.	No default.
url "<url_str>"	Enter a URL to match. When the URL of a client request matches this value and the value of `require` is `enable`, FortiWeb requires the client to present a private certificate.	No default.
require {enable | disable}	Specify whether client requests with the URL specified by `url` are required to present a personal certificate.	No default.

Variable	Description	Default
	When you select `disable`, FortiWeb does not require client requests with the specified URL to present a personal certificate.	

Related topics

- server-policy policy on page 151
- server-policy server-pool on page 184

system certificate verify

Use this command to configure how the FortiWeb appliance will verify certificates presented by HTTP clients.

To apply a certificate verification rule, select it in a policy. For details, see server-policy policy on page 151.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `admingrp` area. For details, see Permissions on page 46.

Syntax

```
config system certificate verify
   edit "<certificate_verificator_name>"
      set ca "<ca-group_name>"
      set crl "<crl-group_name>"
      set publish-dn {enable | disable}
      set strictly-need-cert {enable | disable}
      set partial-chain {enable | disable}
      set crl-allow-expired {enable | disable}
   next
end
```

Variable	Description	Default
"<certificate_verificator_name>"	Enter the name of a certificate verifier. The maximum length is 63 characters.	No default.
ca "<ca-group_name>"	Enter the name of an existing CA Group that you want to use to authenticate client certificates.	No default.
crl "<crl-group_name>"	Enter the name of an existing CRL Group, if any, to use to verify the revocation status of client certificates.	No default.

Variable	Description	Default
publish-dn {enable | disable}	Enable to list only certificates related to the specified CA Group. This is beneficial when a client installs many certificates in its browser or when apps don't list client certificates. If you enable this option, also enable the option in a CA Group. For details, see system certificate ca-group on page 256.	disable
strictly-need-cert {enable | disable}	Enable to strictly require verifying the client certificate.	enable
partial-chain {enable | disable}	Enable to do partial certificate chain validation. External clients can be validated by the Intermediate CA only. When this option is enabled, you also need to enable `partial-chain` in `config system certificate ca-group`.	disable
crl-allow-expired {enable | disable}	Enable this option to allow the use of previously retrieved CRLs when the current CRL distribution point retrievals fail or are pending, or when you want to manually upload a CRL file. We highly recommend enabling it as a temporary solution only when the CRL has expired. Ideally, we strongly suggest using the most up-to-date CRL file at all times to ensure that the client with revoked certificates can be promptly blocked.	disable

Related topics

- system certificate ca-group on page 256
- system certificate crl on page 258
- server-policy policy on page 151
- server-policy server-pool on page 184

system certificate xml-client-certificate-group

Use this command to group XML client certificates.

Syntax

```
config system certificate xml-client-certificate-group
   edit system certificate xml-client-certificate-group
      config members
         edit <entry_index>
            set client-name <name_str>
```

```
        next
      end
   next
end
```

Variable	Description	Default
"<xml-client-certificate-group_name>"	Type the name of the XML client certificate group. You will use this name to select the client certificate group in other parts of the configuration.	No default.
<entry_index>	Type the index number of the individual entry in the table.	No default.
client-name <name_str>	Type the name of a client that you want to include in the group.	No default.

Related topics

- system certificate xml-client-certificate on page 272
- waf ws security

system conf-sync

Use this command to configure non-HA configuration synchronization settings.

This command configures, but does **not** execute, the synchronization. To do this, use the web UI.

This command works only when administrative domains (ADOMs) are disabled.

This type of synchronization is used between FortiWeb appliances that are not part of a native FortiWeb high availability (HA) pair, such as when you need to clone the configuration once, or when HA is provided by an external device.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `sysgrp` area. For details, see Permissions on page 1.

Syntax

```
config system conf-sync
   set ip "<remote-fortiweb_ipv4>"
   set password "<password_str>"
   set sync-type {full-sync | partial-sync}
   set server-port <port_int>
   set auto-sync {enable | disable}
   set frequency {daily | every | weekly}
   set day {Friday | Monday | Saturday | Sunday | Thursday | Tuesday | Wednesday}
```

```
    set time "<hh:mm>"
end
```

Variable	Description	Default
ip "<remote-fortiweb_ipv4>"	Enter the IP address of the remote FortiWeb appliance that you want to synchronize with the local FortiWeb appliance.	`0.0.0.0`
password "<password_str>"	Type the administrator password for the remote FortiWeb appliance. The maximum length is 63 characters.	No default.
sync-type {full-sync | partial-sync}	Select one of the synchronization types. For all operation modes except WCCP, `full-sync` updates the entire configuration of the peer FortiWeb appliance **except for** the following items: • Network interface used for synchronization (prevents sync from accidentally breaking connectivity with future syncs) • Administrator accounts • Access profiles • HA settings For the WCCP operation mode, `full-sync` updates the entire configuration **except for** the following items: • `config system interface` • `config route static` • `config route policy` • `config system wccp` • Administrator accounts • Access profiles • HA settings For all operation modes, `partial-sync` updates the configuration of the peer FortiWeb appliance, **except for** the following items: router ... server-policy health server-policy HTTP-content-routing-policy server-policy persistence-policy server-policy policy server-policy server-pool server-policy service custom server-policy service predefined server-policy vserver system ...	`partial-sync`

Variable	Description	Default
server-port <port_int>	Type the port number of the remote (peer) FortiWeb appliance that is used to connect to the local appliance for configuration synchronization. The valid range is from 1 to 65,535. **Caution:** The port number used with this command must be different than the port number used with the command or the submitting operation will fail.	955
auto-sync {enable | disable}	Enable to automatically synchronize the configurations hourly, daily, or weekly. Also configure the `frequency`, `day`, and `time` commands accordingly.	disable
frequency {daily | every | weekly}	Enter how often you want the configurations to synchronize: • `daily`–Synchronizes the configuration every day at a specified time. Also configure the `day` and `time` commands. For example, Selecting `10:30` will synchronize the configurations every day at 10:30. • `every`–Synchronizes the configuration after an interval you set using the `time` command. For example, entering `05:00` for the `time` command will synchronize the configurations every five hours. • `weekly`–Synchronizes the configuration on a specific day and time. For example, selecting `Sunday` for `day` and `5:15` for `time` will synchronize the configurations every Sunday at 5:15.	No default.
day {Friday | Monday | Saturday | Sunday | Thursday | Tuesday | Wednesday}	If `auto-sync` is enabled and the `frequency` is set to `weekly`, enter the day of the week on which you want the configurations to synchronize.	No default.
time "<hh:mm>"	Enter the time of day or interval at which the configurations will be synchronized: • `daily`–Sets the time of day at which the configurations will be synchronized. • `every`–Sets the interval at which the configurations will be synchronized. • `weekly`–Sets the time of day at which the configurations will be synchronized.	No default.

Related topics

- system settings on page 380

system console

Use this command to configure the management console settings. Usually this is set during the early stages of installation and needs no adjustment.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
config system console
   set baudrate {9600 | 19200 | 38400 | 57600 | 115200}
   set mode {batch | line}
   set output {more | standard}
   set shell {cli | sh}
end
```

Variable	Description	Default
baudrate {9600 | 19200 | 38400 | 57600 | 115200}	Select the baud rate of the console connection. The rate should conform to the specifications of your specific FortiWeb appliance.	`9600`
mode {batch | line}	Select the console input mode: either batch or line.	`line`
output {more | standard}	Select either: • `more`–When displaying multiple pages' worth of output, pause after displaying each page's worth of text. When the display pauses, the last line displays `--More--`. You can then either: • Press the spacebar to display the next page. • Type `Q` to truncate the output and return to the command prompt. • `standard`–Do not pause between pages' worth of output, and do not offer to truncate output.	`standard`
shell {cli | sh}	Select either: • `cli`–Command-line shell. • `sh`–Busybox shell.	cli

Example

This example configures the local console connection to operate at 9,600 baud, and to show long output in a paged format.

```
config system console
   set baudrate 9600
   set output more
```

```
end
```

Related topics

- system admin on page 225

system cpumem-monitor

Use this command to configure CPU and memory monitoring parameters, including capture intervals, utilization thresholds, and log retention limits. By adjusting these settings, you can fine-tune the frequency of resource checks, detect high usage conditions, and enable per-CPU monitoring for more granular analysis. Debugging and log retention controls allow for efficient troubleshooting and long-term data collection.

Syntax

```
config system cpumem-monitor
   set cpu-capture-interval <int>
   set cpu-check-interval <int>
   set cpu-high-threshold <int>
   set cpumem-monitor {enable|disable}
   set debug {enable|disable}
   set max-files <int>
   set mem-capture-interval <int>
   set mem-change-threshold <int>
   set mem-check-interval <int>
   set mem-high-threshold <int>
   set per-cpu-detect {enable|disable}
end
```

Variable	Description	Default
cpu-capture-interval <int>	Specify the minimum time (in seconds) between consecutive CPU usage captures. Valid range: 1-86400.	60
cpu-check-interval <int>	Specify the interval (in seconds) for checking CPU utilization. Valid range: 1-86400.	1
cpu-high-threshold <int>	Set the CPU utilization threshold (%) for high usage detection. Valid range: 10-100.	90
cpumem-monitor {enable|disable}	Enable or disable monitoring of CPU and memory usage.	disable
debug {enable|disable}	Enable or disable debug mode for the CPU and memory monitor.	disable

Variable	Description	Default
max-files <int>	Define the maximum number of retained monitoring log files. Valid range: 1-1000.	10
mem-capture-interval <int>	Specify the minimum time (in seconds) between consecutive memory usage captures. Valid range: 1-86400.	1800
mem-change-threshold <int>	Set the memory utilization change threshold (%) for anomaly detection. Valid range: 1-100.	10
mem-check-interval <int>	Specify the interval (in seconds) for checking memory utilization. Valid range: 1-86400.	300
mem-high-threshold <int>	Set the memory utilization threshold (%) for high usage detection. Valid range: 10-100.	90
per-cpu-detect {enable|disable}	Enable or disable per-CPU usage detection.	disable

Example

```
config system cpumem-monitor
  set cpu-capture-interval 30
  set cpu-check-interval 1
  set cpu-high-threshold 90
  set cpumem-monitor enable
  set debug enable
  set max-files 10
  set mem-capture-interval 1800
  set mem-change-threshold 10
  set mem-check-interval 300
  set mem-high-threshold 90
  set per-cpu-detect enable
end
```

system csf

You can configure Fabric Connector to use Single Sign-On (SSO) to log in to FortiWeb with FortiGate's administrator accounts.

Use this command to configure the Fabric Connector on FortiWeb. Single sign-on with FortiGate requires configurations on FortiGate as well. For how to configure SSO with FortiGate, see Fabric Connector: Single Sign On with FortiGate.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
config system csf
   set  status {enable | disable}
   set  configuration-sync {enable | disable}
   set upstream-ip <fortigate ip>
   set  upstream-port <port for fabric>
   set management-ip <fortiweb mgmt ip>
   setmanagement-port <port for fortiweb mgmt>
end
```

Variable	Description	Default
status {enable | disable}	Enable or disable the Fabric Connector.	`disable`
configuration-sync {enable | disable}	`Enable` means when Fabric connection with FortiGate is established, the **Single Sign-On** mode would be enabled automatically and FortiGate would enable synchronizing **SAML Single-Sign-On** related settings to the FortiWeb device. `Disable` means when Fabric connection with the FortiGate is established, you need to manually enable **Single Sign-On** mode and manually configure the **SAML Single-Sign-On** settings. It's recommended to set it as `enable`.	`Enable`
upstream-ip <fortigate ip>	The FortiGate IP. If you have multiple FortiGate appliances and they are deployed as Fabric net, enter the IP address of the Fabric root. This IP would be the IP of the interface that is selected in the **Allow other Security Fabric devices to join** field on the FortiGate.	`0.0.0.0`
upstream-port <port for fabric>	Use the default 8013.	`8013`
management-ip <fortiweb mgmt ip>	Enter FortiWeb GUI management IP.	`No default`
management-port <port for fortiweb mgmt>	Enter FortiWeb GUI management HTTPS port. This must be the same as the setting of the HTTPS in **System > Admin > Settings** in FortiWeb	`No default`

Related topics

- system saml

system decoding enhancement

Use this command to configure decoding enhancement. You can decode cookies and parameters using base64 or CSS for specified URLs.

To configure decoding enhancement, you must first enable the feature. For details, see system advanced on page 235.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
config system decoding-enhancement
   edit <entry_index>
      set url-type {plain | regular}
      set url-pattern "<url_string>"
      set b64arg enable
      config field-list
         edit <entry_index>
            set base64-decoding {enable | disable}
            set css-decoding {enable | disable}
            set field-name "<parameter_cookie_str>"
            set field-name-type {plain | regular}
            set field-type {parameter | cookie}
         next
      end
   next
end
```

Variable	Description	Default
<entry_index>	Enter the index number of the decoding rule that you want to create or modify.	No default.
url-type {plain | regular}	Enter to select between: • `plain`–A simple string; a string of text that contains a literal URL. • `regular`–A regular expression; a string of text that defines a search pattern for a URL that may come in many variations.	No default.
url-pattern "<url_string>"	Enter the URL path for which you want the decoding rule to apply.	No default.
b64arg {enable | disable}	When it's enabled, all the parameters in the URL will be decoded before being parsed. If you only want to decode certain parameters instead of all, you can disable this option and then enable the `base64-decoding` to apply the decoding for specified parameters.	enable

Variable	Description	Default
<entry_index>	Enter the index number of the field that you want to create or modify.	No default.
base64-decoding {enable | disable}	Configure to enable Base64 decoding for the field.	disable
css-decoding {enable | disable}	Configure to enable CSS decoding for the field.	disable
field-name "<parameter_ cookie_str>"	Enter the parameter or cookie string for the field.	No default.
field-name-type {plain | regular}	Enter to select between: • `plain`–A simple string; a string of text that contains a literal URL. • `regular`–A regular expression; a string of text that defines a search pattern for a URL that may come in many variations.	No default.
field-type {parameter | cookie}	Enter to select between: • parameter–Enter to set a parameter field for the field. • cookie–Enter to set a cookie field for the field.	No default.

Example

This example enables decoding enhancement and creates a decoding rule with a parameter field type.

```
config system advanced
   set decoding-enhancement enable
end
config system decoding-enhancement
   edit 1
      set url-type plain
      set url-pattern "/decoding"
      config field-list
         edit 1
            set base64-decoding enable
            set css-decoding enable
            set field-type parameter
            set field-name-type plain
            set field-name key
         next
      end
   next
end
```

Related Topic(s)

- system advanced on page 235

system dns

Use this command to configure the FortiWeb appliance with its local domain name, and the IP addresses of the domain name system (DNS) servers that the FortiWeb appliance will query to resolve domain names such as www.example.com into IP addresses.

FortiWeb appliances require connectivity to DNS servers for DNS lookups. Use either the DNS servers supplied by your Internet service provider (ISP) or the IP addresses of your own DNS servers. You must provide unicast, non-local addresses for your DNS servers. Local host and broadcast addresses will not be accepted.

For improved performance, use DNS servers on your local network.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
config system dns
   set primary "<dns_ipv4>"
   set secondary "<dns_ipv4>"
   set domain "<local-domain_str>"
end
```

Variable	Description	Default
primary "<dns_ipv4>"	Enter the IP address of the primary DNS server.	`8.8.8.8`
secondary "<dns_ipv4>"	Enter the IP address of the secondary DNS server.	`0.0.0.0`
domain "<local-domain_str>"	Enter the name of the local domain to which the FortiWeb appliance belongs, if any. The maximum length is 127 characters. This field is optional. It will not appear in the `Host:` field of HTTP headers for client connections to protected web servers. **Note:** You can also configure the host name. For details, see .	No default.

Example

This example configures the FortiWeb appliance with the name of the local domain to which it belongs, example.com. It also configures its host name, `fortiweb`. Together, this configures the FortiWeb appliance with its own fully qualified domain name (FQDN), fortiweb.example.com.

```
config system global
   set hostname "fortiweb"
end
config system dns
   set domain "example.com"
end
```

Related topics

- log syslog-policy on page 93
- router static on page 102
- system interface on page 351
-
- server-policy policy on page 151

system encryption-method

Use this command to use generate a random private encryption key and store it into the TPM (Trusted Platform Module). This key is used to encrypt and decrypt configuration passwords and certificates, ensuring that sensitive data remains protected. In HA deployments, the encryption key is automatically synchronized to the secondary node's TPM, preventing unauthorized access across different systems.

After enabling private encryption, it is recommended to generate a sample using `execute private-encryption-key sample` and record the output. If backup configurations fail to restore, the private key may have changed. Use `execute private-encryption-key verify` with the previously recorded sample to check if it matches the current private key. If verification fails, a new private key was generated, and the backup configuration must be re-encrypted. For details, see private-encryption-key on page 885.

Syntax

```
config system encryption-method
   set private-encryption-key {enable|disable}
end
```

Variable	Description	Default
private-encryption-key {enable|disable}	When enabled, FortiWeb generates a random encryption key and stores it in TPM.	disable

Related topic

private-encryption-key on page 885

system endpoint-control

Use this command to set a FortiClient EMS connector.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
config system endpoint-control fctems
   edit <ems_connector_name>
      set server <IP_address>
      set https-port <port>
      set server-verification {enable | disable}
      set ca-cert <cert_name>
      set source-ip <IP_address>
      set call-timeout <int>
      set preserve-ssl-session {enable | disable}
      set fingerprint <fingerprint>
      set EMS_SN <EMS_EN>
   next
end
```

Variable	Description	Default
<ems_connector_name>	Enter the name of the EMS connector.	No default.
server <IP_address>	Enter the EMS server IP address.	No default.
https-port <port>	Enter the HTTPS access port number.	443
server-verification {enable | disable}	Enable this option to verify the FortiClient EMS certificate that is used for the HTTPS connection between FortiWeb and FortiClient EMS.	disable

Variable	Description	Default
ca-cert <cert_name>	Select the certificate for verifying FortiClient EMS server certificate that is used for the connection between FortiWeb and FortiClient EMS.	No default.
source-ip <IP_address>	Enter the allowed source IP addresses of the API calls.	0.0.0.0
call-timeout <int>	Enter the timeout value for the API calls from FortiWeb to EMS server.	15
preserve-ssl-session {enable | disable}	Enable/disable preservation of EMS SSL session connection.	disable
fingerprint <fingerprint>	Enter the EMS server fingerprint.	automatically populated once EMS is verified.
EMS_SN <EMS_EN>	Enter the EMS server serial number.	automatically populated once EMS is verified.

It's highly recommended not to change the default value of the variables except `<ems_connector_name>`, `server <IP_address>`, and `https-port <port>`.

Related topics

- system endpoint-control on page 831
- system endpoint-control on page 288
- server-policy ztna-profile on page 219
- server-policy ztna-rule on page 220

system eventhub

When FortiWeb-VM is deployed on Azure, use this command to manually configure the FortiWeb appliance to send log messages to Azure Event Hubs.

Alternatively, you can create the configuration automatically using a PowerShell script. For details, see the *FortiWeb-VM Azure Install Guide*:

https://docs.fortinet.com/fortiweb/hardware

When the event hub configuration is complete, FortiWeb sends health logs to Azure Event Hub.

If you also create a corresponding Azure CEF SIEM policy (see log siem-policy on page 89), FortiWeb also sends security logs to Azure Event Hub.

This command is available for FortiWeb-VM running on Microsoft Azure only.

You can use the Azure classic portal to obtain the values that the `config system eventhub` settings require. For detailed instructions, see the *FortiWeb-VM Azure Install Guide*:

https://docs.fortinet.com/fortiweb/hardware

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
config system eventhub
   set status {enable | disable}
   set appliance_id "<subscription_str>"
   set policy_saskey "<primary-key_str>"
   set policy_name "<policy-name_str>"
   set eventhub_name "<ehub-name_str>"
   set servicebus_namespace "<servicebus-namespace_str>"
end
```

Variable	Description	Default
status {enable | disable}	Enter `enable` to activate the Azure event hub configuration.	`disable`
appliance_id "<subscription_str>"	Enter the subscription (ID) that has the access to the Azure Event Hub	No default.
policy_saskey "<primary-key_str>"	Enter the primary shared access key that the specified policy (by `policy_name <policy-name_str>`) uses for Shared Access Signature authentication on the Azure Event Hub.	No default.
policy_name "<policy-name_str>"	Enter the name of the Shared Access policy created for the Azure Event Hub.	No default.
eventhub_name "<ehub-name_str>"	Enter the name of the Azure Event Hub that is associated with the specified service bus (by `servicebus_namespace <servicebus-namespace_str>`).	No default.
servicebus_namespace "<servicebus-namespace_str>"	Enter the Service Bus Namespace that the Event Hub is created at.	No default.

Related topics

- log siem-policy on page 89
- log siem-message-policy on page 87

system external-resource

Use this command to create IP address connectors which allow you to dynamically import an external block list from an HTTP/HTTPS server in the form of a plain text file. Block lists can be used to enforce special security requirements, such as blocking access from certain IP addresses. The lists are dynamically imported, so that any changes are immediately imported by FortiWeb.

After you have imported your external block list through the IP Address connector, you can apply the IP External resource in **IP Protection > IP List**.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
config system external-resource
   edit <external-IP-name>
      set status {enable | disable}
      set protocol {HTTP | HTTPS}
      set local-cert <cert-name>
      set verify-host-cert {enable | disable}
      set ca <ca_cert_name>
      set http-basic-authentication {enable | disable}
      set username <string> #HTTP basic authentication username
      set password <string> #HTTP basic authentication password
      set refresh-rate <int> #Time interval to refresh external resource (1 - 43200 min)
      set resource <string> #external-resource enable/disable
   next
end
```

Variable	Description	Default
<external-IP-name>	Specify the name of the IP Address connector. Valid characters are A-Z, a-z, 0-9, _, and -. No spaces.	No default
status {enable | disable}	Enable the external IP connector.	disable
protocol {HTTP | HTTPS}	Select the protocol used for the connections between FortiWeb and the IP External resource.	HTTP

Variable	Description	Default
local-cert <cert-name>	Select the TLS certificate used for the HTTPS connection between FortiWeb and the IP External resource. It should be uploaded in the **Local** tab in **Sever Objects > Certificates > Local**. Available only if `HTTPS` is selected for `Protocol`.	No default
verify-host-cert {enable | disable}	Enable this option to verify the IP External resource's URI is valid by checking the ownership of the CA certificate. Available only if `HTTPS` is selected for `Protocol`.	disable
ca <ca_cert_name>	Select the CA certificate of the IP External resource's URI. It should be uploaded in the **CA** tab in **Sever Objects > Certificates > CA**. Available only if `HTTPS` is selected for `Protocol`.	No default
username <string>	Specify the username to be used to access this IP address list. With username and password specified, the system will automatically enable HTTP Basic Authentication.	No default
password <string>	Specify the password to be used to access this IP address list. With username and password specified, the system will automatically enable HTTP Basic Authentication.	No default
refresh-rate <int>	Specify the refresh rate in minutes. (Default: 5. Range: 1-43200 minutes). FortiWeb will retrieve the data from the HTTP/HTTPS server periodically according to the refresh rate.	5
resource <string>	Specify the URI of the HTTP/HTTPS server where the IP address list is stored.	No default

Related topics

- waf ip-list on page 575

system fail-open

If your appliance's hardware model, network cabling, and configuration supports it, you can configure fail-to-wire/bypass behavior. This allows traffic to pass through unfiltered between 2 ports (a link pair) while the FortiWeb appliance is shut

down, rebooting, or has unexpectedly lost power such as due to being accidentally unplugged or PSU failure.

Fail-open is supported **only**:

- when the operation mode is True Transparent Proxy, Transparent Inspection, or WCCP
- in standalone mode (**not** HA)
- for a bridge (V-zone) between ports wired to a CP7 processor or other hardware which provides support for fail-to-wire
  - FortiWeb 600D: port1 + port2
  - FortiWeb 1000D: port3 + port4 or port5 + port6
  - FortiWeb 1000E: port3 + port4 + port5 + port6
  - FortiWeb 2000E: port1 + port2 or port3 + port4
  - FortiWeb3000E/4000E: port9 + port10, port11 + port12, port13 + port14, or port15 + port16
  - FortiWeb 3010E: port3 + port4, port9 + port10, port11 + port12, port13 + port14 or port15 + port16
  - FortiWeb 600F: port3 + port4
  - FortiWeb 1000F: port1 + port2, port3 + port4, port5 + port6 or port7 + port8
  - FortiWeb 2000F: port1 + port2 or port3 + port4
  - FortiWeb 3000F: port5 + port6, port11 + port12, port13 + port14, port15 + port16 or port17 + port18
  - FortiWeb 4000F: port1 + port2, port3 + port4, port13 + port14, port15 + port16, port17 + port18 or port19 + port20

FortiWeb HA clusters, and ports not wired to a CP7/fail-open chip do **not** support fail-to-wire.

In the case of HA, don't use fail-open–instead, use a standby HA appliance to provide full fault tolerance.

Bypass results in degraded security while FortiWeb is shut down, and therefore HA is usually a better solution: it ensures that degraded security does not occur if one of the appliances is shut down. If it is possible that **both** of your HA FortiWeb appliance could simultaneously lose power, you can add an external bypass device such as FortiBridge.

Fail-to-wire may be useful if you are required by contract to provide uninterrupted connectivity, or if you consider connectivity interruption to be a greater risk than being open to attack during the power interruption.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
config system fail-open
   set port3-port4 {poweroff-bypass | poweroff-cutoff}
end
```

Variable	Description	Default
port3-port4 {poweroff-bypass | poweroff-cutoff}	Select either: • `poweroff-bypass`–Behave like a wire when powered off, allowing connections to pass directly	`poweroff-bypass`

Variable	Description	Default
	through from one port to the other, bypassing policy and profile filtering. • `poweroff-keep`–Interrupt connectivity when powered off. **Note:** The name of this setting varies by which ports are wired together for bypass in your specific hardware model.	

Related topics

- system ha on page 326

system fds proxy

Use this command to configure the FortiWeb proxy to override the default list of FDN servers and update FortiGuard service packages from a new address.

Before using this command, you must configure FortiWeb to act as a proxy server. To do so, set `fds-proxy` to `enable`. See system global for how to enable `fds-proxy`.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
config system fds proxy override
   set override_switch {enable | disable}
   set address "<fds_IPv4>"
end

config system fds proxy schedule
   set status {enable | disable}
   set frequency {every | daily | weekly}
   set time
   set day {Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday}
end
```

Variable	Description	Default
override_switch {enable | disable}	Enable to override the default list of FDN servers and connect to a specific server.	disable

Variable	Description	Default
address "<fds_IPv4>"	Enter either an IP address or fully qualified domain name (FQDN) of the FDS override, so that FortiWeb proxy will obtain FortiGuard service packages from this address.	No default.
status {enable | disable}	Enable to schedule updating the database per certain frequency.	disable
frequency {every | daily | weekly}	Set the database update frequency.	No default.
time	Set the hour and minute ranges; hh: 0-23, mm 0-59 or 60=random.	No default.
day {Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday}	Set the specific day during one week to update the database.	No default.

Example

This example enables FortiWeb to act as an FDS proxy and update FortiGuard service packages from `192.0.2.1`.

```
config system global
   set fds-proxy enable
end

config system fds proxy
   set override_switch enable
   set address "192.0.2.1"
end
```

system feature-visibility

Use this command to enable or disable the ability to view configuration options for these features in the web UI and CLI:

1. System features
   - Traffic Mirror
   - Replacement Message for AJAX requests
   - Firewall
   - Debug
   - WCCP
   - reCAPTCHA
2. Security Features
   - FTP Security
   - Mobile Application Identification
   - Signature Update Management

- FortiGate Integration
- Web Anti-Defacement
- Padding Oracle Protection
- Web Vulnerability Scan

3. Additional Features
   - ADFS Policy
   - Acceleration
   - Web Cache
   - API Gateway
   - ICAP Server

When these features are disabled, options for configuring these features are hidden in the web UI and CLI. If you're planning to configure and implement these features in your FortiWeb configuration, you'll need to enable feature visibility for them first.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
config system feature-visibility
   set acceleration-policy {enable | disable}
   set adfs-policy {enable | disable}
   set api-gateway {enable | disable}
   set debug-log {enable | disable}
   set firewall {enable | disable}
   set recaptcha {enable | disable}
   set fortigate-integration {enable | disable}
   set ftp-security {enable | disable}
   set mobile-app-identification {enable | disable}
   set padding-oracle {enable | disable}
   set support-ajax-requests {enable | disable}
   set support-icap-server {enable | disable}
   set traffic-mirror {enable | disable}
   set wad {enable | disable}
   set wccp-mode {enable | disable}
   set web-cache {enable | disable}
   set wvs {enable | disable}
   set ztna {enable | disable}
end
```

Variable	Description	Default
acceleration-policy {enable | disable}	Enable to display acceleration policy configuration options.	disable
adfs-policy {enable | disable}	Enable to display ADFS policy and ADFS server pool options.	disable

Variable	Description	Default
api-gateway {enable | disable}	Enable to display API users, API gateway rule and policy configuration options.	disable
debug-log {enable | disable}	Enable to display debug log configurations.	disable
firewall {enable | disable}	Enable to display firewall policy and NAT policy configuration options.	disable
recaptcha {enable | disable}	Enable to display `user recaptcha-user` configurations.	disable
fortigate-integration {enable | disable}	Enable to display FortiGate integration configuration options.	disable
ftp-security {enable | disable}	Enable to display FTP security rule, profile, and policy configuration options.	disable
mobile-app-identification {enable | disable}	Enable to display the JWT token secret and token header to verify a request from a mobile application.	disable
padding-oracle {enable | disable}	Enable to display padding oracle rule configuration options.	disable
support-ajax-requests {enable | disable}	Enable to display support AJAX requests options.	disable
support-icap-server {enable | disable}	Enable to display ICAP server configuration options.	disable
traffic-mirror {enable | disable}	Enable to display traffic mirror rule, profile, and policy configuration options.	disable
wad {enable | disable}	Enable to display web anti-defacement configuration options.	disable
wccp-mode {enable | disable}	Enable to display WCCP client configuration options.	disable
web-cache {enable | disable}	Enable to display web cache policy and profile configuration options.	disable
wvs {enable | disable}	Enable to display web vulnerability scan policy and profile configuration options.	disable
ztna {enable | disable}	Enable to display Zero Trust Network Access (ZTNA) policy and profile configuration options.	

Related Topics

- waf web-protection-profile inline-protection on page 720
- waf ftp-protection-profile on page 527

- waf ftp-command-restriction-rule on page 522
- waf ftp-file-security on page 525
- server-policy policy on page 151
- server-policy server-pool on page 184
- system replacemsg on page 1

system fips-cc

Use this command to enable and configure Federal Information Processing Standards (FIPS) and Common Criteria (CC) compliant mode.

The following FortiWeb images don't support `fips-cc` mode:

- FWB_HYPERV
- FWB_XENAWS
- FWB_XENAWS_ONDEMAND
- FWB_AWSCLD
- FWB_VM_PAYG
- FWB_AZURE
- FWB_AZURE_ONDEMAND
- FWB_KVM
- FWB_KVM_PAYG
- FWB_GCP
- FWB_GCP_ONDEMAND
- FWB_OCI
- FWB_OCI_ONDEMAND
- FWB_ALI
- FWB_FTCLD
- FWB_GCPCLD
- FWB_OCICLD

The `fips-ciphers` mode is only supported by the following images:

- FWB_XENAWS
- FWB_XENAWS_ONDEMAND
- FWB_AZURE
- FWB_AZURE_ONDEMAND

Syntax

```
config system fips-cc
   set status {enable | disable | fips-ciphers}
   set entropy-token {dynamic |  enable | disable}
```

```
    set reseed-interval <reseed-interval_int>
    set ssl-client-restrict {enable | disable}
end
```

Variable	Description	Default
status {enable | disable | fips-ciphers}	Select `enable` or `disable` to turn on and off the `fips-cc` operation mode. `fips-ciphers` is a special kind of FIPS mode. **fips-ciphers mode** The `fips-ciphers` mode is only supported by FortiWeb-VMs on AWS and Azure. In `fips-ciphers` mode, FortiWeb has the following limitations: 1. For the business traffic going through FortiWeb, both HTTP and HTTPS protocols are allowed, but TLS 1.0 and TLS 1.1 are not supported for HTTPS traffic. Only the following SSL ciphers are allowed: **For TLS1.3** • TLS_AES_256_GCM_SHA384 • TLS_AES_128_GCM_SHA256 **For TLS1.2** • ECDHE-ECDSA-AES256-GCM-SHA384 • ECDHE-RSA-AES256-GCM-SHA384 • DHE-RSA-AES256-GCM-SHA384 • ECDHE-ECDSA-AES128-GCM-SHA256 • ECDHE-RSA-AES128-GCM-SHA256 • DHE-RSA-AES128-GCM-SHA256 2. For the traffic to FortiWeb's CLI and GUI, HTTP and Telnet are not allowed. Only HTTPS and SSH are allowed. The supported SSL ciphers for HTTPS traffic are the same as listed above. The supported ciphers for SSH traffic include: • diffie-hellman-group-exchange-sha256 • ssh-rsa • hmac-sha2-256 • hmac-sha2-512 • aes128-gcm@openssh.com • aes256-gcm@openssh.com 3. shell mode is disable in `fips-ciphers` mode. To ensure a truly `fips-ciphers` configuration, it's recommended to start with a clean install or do a factory reset first. Once `fips-ciphers` mode is enabled, disabling this mode would be done by a factory reset.	disable

Variable	Description	Default
entropy-token {dynamic | enable | disable}	Use the entropy token to seed the RNG in FIPS-CC mode. • When the status is enabled, the entropy token is used to seed or reseed the RNG, and it must be inserted to FortiWeb. • When the status is disabled, the entropy token is not used to seed or reseed the RNG, but the old method will be used to seed or reseed the RNG. • When the status is dynamic, it means when entropy token is present, the entropy token will be used to seed or reseed the RNG; if the token is not present, the old method will be used to seed or reseed the RNG.	`disable`
reseed-interval <reseed-interval_int>	Set the interval to reseed the RNG. The valid range is 0-1440 minutes.	1440
ssl-client-restrict {enable | disable}	Enable/disable ciphers restriction.	`disable`

system firewall address

Use this command to configure IP addresses and address ranges that FortiWeb's built-in stateful firewall uses. You use the address configuration in a firewall policy. For details, see system firewall firewall-policy on page 302.

Syntax

```
config system firewall address
   edit "<firewall-address_name>"
         set type {ip-netmask | ip-range}
         set ip-netmask "<firewall-address_ipv4mask>"
         set ip-address-value "<firewall-address_ipv4>"
end
```

Variable	Description	Default
"<firewall-address_name>"	Enter a name that identifies this firewall address configuration.	No default.
type {ip-netmask | ip-range}	Select how this configuration specifies a firewall address or addresses: • `ip-netmask`–A single IP address and netmask. • `ip-range`–A single IP address or a range of IP addresses.	`ip-range`

Variable	Description	Default
ip-netmask "<firewall-address_ipv4mask>"	Enter an IPv4 address and subnet mask, separated by a forward slash (/). For example, `192.0.2.2/24`. Available when type {ip-netmask | ip-range} on page 300 is `ip-netmask`.	No default.
ip-address-value "<firewall-address_ipv4>"	Enter a single IP address or a range of addresses. For example, `192.0.2.1`, or `192.0.2.1-192.0.2.255`. Available when type {ip-netmask | ip-range} on page 300 is `ip-range`.	No default.

Related topics

- system firewall firewall-policy on page 302
- system firewall service on page 301

system firewall service

Use this command to configure the protocols and ports that FortiWeb's built-in stateful firewall uses. You use the service configuration in a firewall policy. For details, see system firewall firewall-policy on page 302.

Syntax

```
config system firewall service
   edit "<firewall-service_name>"
         set protocol {TCP | UDP | ICMP}
         set source-port-min <source-port-min_int>
         set source-port-max <source-port-max_int>
         set destination-port-min <source-port-min_int>
         set destination-port-max <source-port-max_int>
end
```

Variable	Description	Default
"<firewall-service_name>"	Enter a name that identifies this firewall service configuration.	No default.
protocol {TCP | UDP | ICMP}	Select the protocol for this firewall service configuration.	`TCP`
source-port-min <source-port-min_int>	Enter the start port in the range of source ports for this firewall service.	`0`

Variable	Description	Default
source-port-max <source-port-max_int>	Enter the end port in the range of source ports for this firewall service	65535
destination-port-min <source-port-min_int>	Enter the start port in the range of destination ports for this firewall service.	0
destination-port-max <source-port-max_int>	Enter the end port in the range of destination ports for this firewall service	65535

Related topics

- system firewall address on page 300
- system firewall firewall-policy on page 302

system firewall firewall-policy

Use this command to configure the policies that FortiWeb's built-in stateful firewall uses to determine which traffic to allow and deny.

The firewall policy uses address and service configurations that you create separately. For details, see system firewall address on page 300 and system firewall service on page 301.

Syntax

```
config system firewall firewall-policy
   set default-action {deny | accept}
   config firewall-policy-match-list
      edit <entry_index>
         set in-interface "<incoming_interface_name>"
         set out-interface "<outgoing_interface_name>"
         set src-address "<firewall-address_name>"
         set dest-address "<firewall-address_name>"
         set service "<firewall-service_name>"
         set action {deny | accept}
         set vzone-enable {enable | disable}
         set vzone "<vzone_name>"


end
```

Variable	Description	Default
default-action {deny | accept}	Select either: • `deny`—Firewall blocks traffic that does not match a policy rule. However, administrative access is still allowed on network interfaces for which it has been configured. • `accept`—Firewall allows traffic that does not match a policy rule.	`accept`
<entry_index>	Enter the index number of the policy rule in the table.	No default.
in-interface "<incoming_interface_name>"	Enter the name of the interface (for example, `port1`) on which FortiWeb receives packets it applies this firewall policy rule to.	No default.
out-interface "<outgoing_interface_name>"	Enter the name of the interface (for example, `port2`) through which FortiWeb routes packets it applies this firewall policy rule to.	No default.
src-address "<firewall-address_name>"	Enter the name of the firewall address configuration that specifies the source IP address or addresses to which this policy applies. For details about creating firewall address configurations, see system firewall address on page 300.	No default.
dest-address "<firewall-address_name>"	Enter the name of the firewall address configuration that specifies the source IP address or addresses to which this policy rule applies. For details about creating firewall address configurations, see system firewall address on page 300.	No default.
service "<firewall-service_name>"	Enter the name of the firewall service configuration that specifies the protocols and ports to which this policy rule applies. For details about creating firewall address configurations, see system firewall address on page 300.	No default.
action {deny | accept}	Enter either: • `deny`—Firewall blocks traffic that matches this policy rule. However, administrative access is still allowed on network interfaces for which it has been configured. • `accept`—Firewall allows traffic that matches this policy rule.	deny
vzone-enable {enable | disable}	Select to enable a V-zone (bridge). If this option is enabled, select a V-zone to use. V-zones allow network connections to travel through FortiWeb's physical network ports without explicitly connecting to one of its IP addresses. This option is available only when the operation mode is True Transparent Proxy or Transparent Inspection mode.	disable

Variable	Description	Default
vzone "<vzone_name>"	Select a configured V-zone. For details about creating a V-zone, see system v-zone on page 396.	No default.

Example

This example configures a firewall policy to deny any HTTP services but coming from specified sources.

```
config system firewall address
   edit "alloowed_source"
      set type ip-range
      set ip-address-value "172.22.203.100-172.22.203.115"
end
config system firewall address
   edit "site1"
      set type ip-netmask
      set ip-netmask "206.11.0.2/24"
end
config system firewall service
   edit "HTTP"
      set protocol TCP
      set destination-port-min 80
      set destination-port-max 80
end
config system firewall firewall-policy
   set default-action deny
   config firewall-policy-match-list
      edit 1
         set in-interface port1
         set out-interface port2
         set src-address site1
         set dest-address site1
         set service HTTP
         set action accept
      next
   end
end
```

Related topics

- system firewall address on page 300
- system firewall service on page 301

system firewall fwmark-policy

Use this command to mark the traffic coming in FortiWeb. Using it together with policy route, you can direct the marked traffic to go out of FortiWeb through a specified interface or/and to a specified next-hop gateway.

Syntax

```
config system firewall fwmark-policy
   edit "<fwmark-policy-name>" on page 305
         set from <firewall_source-address_name> on page 305
         set to <firewall_destination-address_name> on page 305
         set in-interface <incoming_interface_name> on page 305
         set service <firewall-service_name>" on page 305
         set mark <mark_int> on page 305
end
```

Variable	Description	Default
"<fwmark-policy-name>"	The name of the fwmark policy.	No default.
from <firewall_source-address_name>	Enter the name of the firewall address configuration that specifies the source IP address or addresses to which this policy applies. For details about creating firewall address configurations, see system firewall address on page 300.	No default.
to <firewall_destination-address_name>	Enter the name of the firewall address configuration that specifies the source IP address or addresses to which this policy rule applies. For details about creating firewall address configurations, see system firewall address on page 300.	No default.
in-interface <incoming_interface_name>	Enter the name of the interface (for example, `port1`) on which FortiWeb receives packets it applies this firewall policy rule to.	No default.
service <firewall-service_name>"	Enter the name of the firewall service configuration that specifies the protocols and ports to which this policy rule applies. For details about creating firewall address configurations, see system firewall address on page 300.	No default.
mark <mark_int>	Enter a value to mark the traffic that matches with the conditions above. The valid range is 1-255.	No default.

Example

```
config system firewall fwmark-policy
edit "1"
      set from 1
      set to 2
      set in-interface port2
      set service ALL_TCP
      set mark 234
   next
end
```

system firewall admin-policy

While security profiles control traffic flowing through the FortiWeb, admin policies (named as Firewall Admin Policy in GUI) control inbound traffic that is going to a FortiWeb interface.

Administrative access traffic (HTTPS, PING, SSH, and others) can be controlled by allowing or denying the service in the interface settings. Trusted hosts can be configured under an administrator to restrict the hosts that can access the administrative service.

To further restrict access, you can use admin policies to granularly define the source and destination addresses, interface, and services.

Traffic destined for the all the network interfaces of FortiWeb is subject to the admin firewall policy.

The firewall admin policy uses address and service configurations that you create separately. For details, see system firewall address on page 300 and system firewall service on page 301.

Syntax

```
config system firewall admin-policy
   config firewall-admin-policy-match-list
      edit <entry_index>
         set in-interface "<incoming_interface_name>"
         set src-address "<firewall-address_name>"
         set dest-address "<firewall-address_name>"
         set service "<firewall-service_name>"
         set action {deny | accept}
end
```

Variable	Description	Default
<entry_index>	Enter the index number of the policy rule in the table.	No default.

Variable	Description	Default
in-interface "<incoming_interface_name>"	Enter the name of the interface (for example, `port1`) on which FortiWeb receives packets it applies this firewall policy rule to.	No default.
src-address "<firewall-address_name>"	Enter the name of the firewall address configuration that specifies the source IP address or addresses to which this policy applies. For details about creating firewall address configurations, see system firewall address on page 300.	No default.
dest-address "<firewall-address_name>"	Enter the name of the firewall address configuration that specifies the source IP address or addresses to which this policy rule applies. For details about creating firewall address configurations, see system firewall address on page 300.	No default.
service "<firewall-service_name>"	Enter the name of the firewall service configuration that specifies the protocols and ports to which this policy rule applies. For details about creating firewall address configurations, see system firewall address on page 300.	No default.
action {deny | accept}	Enter either: • `deny`—Firewall blocks traffic that matches this policy rule. • `accept`—Firewall allows traffic that matches this policy rule.	deny

Related topics

- system firewall address on page 300
- system firewall service on page 301

system firewall dnat policy

Use this command to configure a firewall DNAT policy. Firewall DNAT policies translate the destination IP address.

Firewall DNAT policies are available in Reverse Proxy, True Transparent Proxy, and Transparent Inspection operating modes.

FortiWeb applies a firewall DNAT policy only if IP forwarding is enabled. For details about IP forwarding, see router setting on page 100.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
config system firewall dnat-policy
   edit "<policy_name>" on page 308
      set external-start <external_ipv4> on page 308
      set mapped-start <mapped_ipv4> on page 308
      set mapped-end <mapped_ipv4> on page 308
      set ingress-interface <ingress_port> on page 308
      set protocol {tcp | udp | icmp} on page 308
      set port-forwarding {enable | disable} on page 309
      set external-port-start <external_port> on page 309
      set external-port-end <external_port> on page 309
      set mapped-port-start <mapped_port> on page 309
      set mapped-port-end <mapped_port> on page 309
   next
end
```

Variable	Description	Default
"<policy_name>"	Enter a name that identifies the firewall DNAT policy. Don't use spaces or special characters. The maximum length is 63 characters.	No default.
external-start <external_ipv4>	Enter the first IP address of an IP range to match the destination IP address in the packet header that you want to translate. The external addresses must be one-to-one mapped to the translated addresses. For example, if the external IP range contains 10 addresses, the mapped IP range must also contain 10 addresses. After you configure the `mapped-start` and `mapped-end`, the system will calculate how many addresses are included in the range and automatically determine the last IP address of the external IP range. The IP address must be IPv4.	0.0.0.0
mapped-start <mapped_ipv4>	Enter the first IP address of an IP range that you want to translate the external IP to.	0.0.0.0
mapped-end <mapped_ipv4>	Enter the last IP address of an IP range that you want to translate the external IP to.	0.0.0.0
ingress-interface <ingress_port>	Enter the interface to match the network interface through which the packet comes in FortiWeb.	No default.
protocol {tcp | udp | icmp}	Select the protocol type of the packets that you want to translate.	No default.

Variable	Description	Default
port-forwarding {enable | disable}	Enable to translate the port in destination IP address.	No default.
external-port-start <external_port>	Enter the first port in the port range to match the port in destination IP address. This option is available only when `port-forwarding` is enabled.	0
external-port-end <external_port>	Enter the last port in the port range to match the port in destination IP address. This option is available only when `port-forwarding` is enabled.	0
mapped-port-start <mapped_port>	Enter the first port in the port range to translate the external port range to. This option is available only when `port-forwarding` is enabled.	0
mapped-port-end <mapped_port>	Enter the last port in the port range to translate the external port range to. This option is available only when `port-forwarding` is enabled.	0

Related Topic

- router setting on page 100
- system firewall snat-policy on page 309

system firewall snat-policy

Use this command to configure a firewall SNAT policy. Firewall SNAT policies translate a matching source IP address to a single IP address or an IP address in an address pool.

Firewall SNAT policies are available in Reverse Proxy, True Transparent Proxy, and Transparent Inspection operating modes.

FortiWeb applies a firewall SNAT policy only if IP forwarding is enabled. For details about IP forwarding, see router setting on page 100.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
config system firewall snat-policy
   edit "<policy_name>" on page 310
      set source-start <source_ipv4> on page 310
      set source-end <source_ipv4> on page 310
      set out-interface “<egress_port>” on page 310
      set destination-start <destination_ipv4> on page 310
      set destination-end <destination_ipv4> on page 310
      set trans-to-type {ip | pool | no-nat} on page 310
      set trans-to-ip “<translation_ipv4>” on page 310
      set trans-to-ip-start “<first_ipv4>” on page 311
      set trans-to-ip-end “<last_ipv4>” on page 311
   next
end
```

Variable	Description	Default
"<policy_name>"	Enter a name that identifies the firewall SNAT policy. Don't use spaces or special characters. The maximum length is 63 characters.	No default.
source-start <source_ipv4>	Enter the first IP in the IP range to match the source IP address in the packet header that you want to translate. The IP address must be an IPv4 address.	0.0.0.0/0
source-end <source_ipv4>	Enter the last IP in the IP range to match the source IP address in the packet header that you want to translate. The IP address must be an IPv4 address.	
out-interface “<egress_port>”	Select the interface that FortiWeb will use to forward traffic that matches the source-start <source_ipv4> on page 310.	No default.
destination-start <destination_ipv4>	Enter the first IP in the IP range to match the destination IP address in the packet header. The IP address must be an IPv4 address.	0.0.0.0/0
destination-end <destination_ipv4>	Enter the last IP in the IP range to match the destination IP address in the packet header. . The IP address must be an IPv4 address.	
trans-to-type {ip | pool | no-nat}	Select one of the following: • `ip`–Select to translate the source IP to an IP address that you specify. • `pool`–Select to translate the source IP to the next available IP address in an IP address pool that you specify. • `no-nat`–Select to not perform SNAT for the matched traffic.	ip
trans-to-ip “<translation_ipv4>”	Enter the IP address that you want to translate the source IP to. An example IP address is `192.0.2.2`. The IP address must be an IPv4 address.	0.0.0.0

Variable	Description	Default
	This option is available only when the trans-to-type {ip | pool | no-nat} on page 310 is set to `IP`.	
trans-to-ip-start “<first_ipv4>”	Enter the first IP address in the SNAT pool. An example IP address is `192.0.2.3`. The IP address must be an IPv4 address. This option is available only when the trans-to-type {ip | pool | no-nat} on page 310 is set to `pool`.	0.0.0.0
trans-to-ip-end “<last_ipv4>”	Enter the last IP address in the SNAT pool. An example IP address is `192.0.2.4`. The IP address must be an IPv4 address. This option is available only when the trans-to-type {ip | pool | no-nat} on page 310 is set to `pool`.	0.0.0.0

Related Topic

- router setting on page 100
- system firewall dnat policy on page 307

system fortigate-integration

FortiGate appliances can maintain a list of source IPs that it prevents from interacting with the network and protected systems. You can configure FortiWeb to receive this list of IP addresses at intervals you specify. Then, you configure an inline protection profile to detect the IP addresses in the list and take an appropriate action.

This feature is available only if the operating mode is Reverse Proxy or True Transparent Proxy.

This command configures a FortiGate appliance that provides banned source IPs. To configure FortiWeb to detect the quarantined IP addresses and take the appropriate action, configure the FortiGate Quarantined IPs settings in an inline protection profile. For details, see waf web-protection-profile inline-protection on page 720.

To use this command, your administrator account’s access control profile must have either `w` or `rw` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
config system fortigate-integration
   set server "<domain_name_or_ipv4>"
   set port <port_int>
   set protocol {HTTP | HTTPS}
   set server-verification {enable | disable} on page 312
   set ca-cert <cert_name>
   set username "<username_str>"
   set password "<password_str>"
```

```
    set schedule-frequency <schedule-frequency_int>
    set flag {enable | disable}
end
```

Variable	Description	Default
server "<domain_name_or_ipv4>"	Enter the FortiGate IP address or domain name that is used for administrative access.	No default.
port <port_int>	Specify the port that the FortiGate uses for administrative access via HTTPS. In most cases, this is port 443.	`80`
protocol {HTTP | HTTPS}	Specify whether the FortiGate and FortiWeb communicate securely using HTTPS.	`HTTP`
server-verification {enable | disable}	Enable this option to verify the TLS certificates used for the HTTPS connection between FortiWeb and FortiGate. Available only if **HTTPS** is selected for **Protocol**.	disable
ca-cert <cert_name>	Select the certificate for the HTTPS connection between FortiWeb and FortiGate. It should be uploaded in **System > Admin > Certificates > Admin Cert CA**.	No default.
username "<username_str>"	Enter the name of the administrator account that FortiWeb uses to connect to the FortiGate.	No default.
password "<password_str>"	Enter the password for the FortiGate administrator account that FortiWeb uses.	No default.
schedule-frequency <schedule-frequency_int>	Enter how often FortiWeb checks the FortiGate for an updated list of banned source IP addresses per hour, for example, once or twice per hour. The valid range is 1 to 5.	`1`
flag {enable | disable}	Enables or disables the transmission of quarantined source IP address information from the specified FortiGate.	`disable`

Related topics

- waf file-upload-restriction-policy on page 514
- log reports on page 77
- system fortisandbox-statistics on page 902

system fortisandbox

Use this command to configure FortiWeb to submit all files that match your upload restriction rules to FortiSandbox.

FortiSandbox evaluates whether the file poses a threat and returns the result to FortiWeb. If FortiSandbox determines that the file is malicious, FortiWeb performs the following tasks:

- Generates an attack log message that contains the result.
- For 10 minutes after it receives the FortiSandbox results, takes the action specified by the file security policy. During this time, it does not re-submit the file to FortiSandbox.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
config system fortisandbox
   set type {fsa | cloud}
   set server "<server_ipv4>"
   set cache-timeout <timeout_int>
   set email "<email_str>"
   set interval <interval_int>
   set elog {enable | disable}
   set region {Europe | Global | US | Japan}
end
```

Variable	Description	Default
type {fsa | cloud}	Specify whether FortiWeb submits files that match the upload restriction rules to a FortiSandbox physical appliance (or FortiSandbox-VM) or to FortiWeb Cloud Sandbox. The FortiWeb Cloud Sandbox option requires you to register your FortiWeb and a FortiWeb FortiGuard Sandbox Cloud Service subscription.	`fsa`
server "<server_ipv4>"	Enter the IP address of the FortiSandbox to send files to. Available only when `type` is `fsa`.	No default.
cache-timeout <timeout_int>	Enter how long FortiWeb waits before it clears the hash table entry for an uploaded file that was evaluated by FortiSandbox, in hours. The valid range is 1-168. FortiWeb stores file evaluation results from FortiSandbox in a hash table. Whenever a client uploads a file, FortiWeb looks for a table entry that matches it. If there is a matching entry, FortiWeb takes action based on the stored result. If there is no matching entry, FortiWeb sends the file to FortiSandbox for evaluation.	`72`
email "<email_str>"	Enter the email address that FortiSandbox sends weekly reports and notifications to.	No default.

Variable	Description	Default
interval <interval_int>	Enter a number that specifies how often FortiWeb retrieves statistics from FortiSandbox, in minutes.	`5`
elog {enable | disable}	Enter so that FortiWeb will report event logs when it successfully submits files to FortiSandbox.	`disable`
region {Europe | Global | US | Japan}	Available only when the **type** is **cloud** (FortiWeb Cloud Sandbox). Datacenters are located in Canada, Germany, the United States, and Japan to ensure better performance. The default region is Global. Select a country or region from the list. FortiWeb will retrieve and establish a connection to the appropriate FortiSandbox Cloud server IP based on the selected region.	`Global`

Example

This example creates a connection to a FortiSandbox at `192.0.2.2` that retrieves statistics at the default interval (5 minutes) and sends a weekly report to admin@example.com.

```
config system fortisandbox
   set server "192.0.2.2"
   set email "admin@example.com"
end
```

Related topics

- waf file-upload-restriction-policy on page 514
- log reports on page 77
- system fortisandbox-statistics on page 902
- forticloud-sandbox on page 870

system global

Use this command to configure system-wide settings such as language, display refresh rate and listening ports of the web UI, the time zone and host name of the FortiWeb appliance, and NTP time synchronization.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
config system global
   set admin-port <port_int>
   set admin-sport <port_int>
   set admin-tls-v10 {enable | disable}
   set admin-tls-v11 {enable | disable}
   set admin-tls-v12 {enable | disable}
   set admin-tls-v13 {enable | disable}
   set admin-ssl-custom-cipher <cipher1 cipher2 ...>
   set admin-tls13-custom-cipher <cipher1 cipher2 ...>
   set admin-lockout-threshold <admin-lockout-threshold_int>
   set admin-lockout-duration <minutes_int>
   set admintimeout <minutes_int>
   set adom-admin {enable | disable}
   set auth-timeout <milliseconds_int>
   set cli-signature {enable | disable}
   set confsync-port <port_int>
   set debug-monitor-interval <int>
   set debug-memory-boundary <int>
   set dh-params {1024 | 1536 | 2048 | 3072 | 4096 | 6144 | 8192}
   set dst {enable | disable}
   set fds-proxy {enable | disable}
   set force-us-only {enable | disable}
   set hostname "<host_name>"
   set admin-HTTPS-pki-required {enable | disable}
   set HTTPS-certificate "<certificate_name>"
   set HTTPS-intermediate-certificate "<certificate_group_name>"
   set ie6workaround {enable | disable}
   set language {english |japanese | simch | trach}
   set multi-factor-authentication {optional | mandatory}
   set ntpserver {"<ntp_fqdn>" | "<ntp_ipv4>"}
   set ntpsync {enable | disable}
   set pre-login-banner {enable | disable}
   set record-cli-fail-cmd {enable | disable}
   set refresh <seconds_int>
   set syncinterval <minutes_int>
   set timezone "<time-zone-code_str>"
   set tftp {enable | disable}
   set ssh-fips {enable | disable}
   set cert-expire-check-time <cert-expire-check-time _int>
   set ipv6-dad-ha {enable | disable} on page 323
   set fortiguard-anycast {enable | disable} on page 324
   set updated-debug-log {enable | disable}
   set power-status {enable | disable}
   set shell-access {enable | disable}
   set shell-username <user_name>
   set shell-password <password>
   set shell-timeout <int>
   set shell-history-size
   set shell-trusthostv4
   set shell-trusthostv6
   set admin-forticloud-sso-login {enable | disable}
   set advanced-bot-protection {enable | disable}
   set advanced-bot-protection-portal-domain <fortiabp.forticloud.com>
   set advanced-bot-protection-query-timeout <int>
```

```
    set advanced-bot-protection-js-attribute-enable {enable | disable}
    set advanced-bot-protection-js-attribute <string>
    set sys-perf-log-interval <interval>
end
```

Variable	Description	Default
admin-port <port_int>	Enter the port number on which the FortiWeb appliance listens for HTTP access to the web UI. The valid range is 1-65,535.	`80`
admin-sport <port_int>	Enter the port number on which the FortiWeb appliance listens for HTTPS (SSL-secured) access to the web UI. The valid range is 1-65,535.	`443`
admin-tls-v10 {enable | disable}	Enable to specify TSL 1.0 clients can use to connect securely to the FortiWeb appliance.	`disable`
admin-tls-v11 {enable | disable}	Enable to specify TSL 1.1 clients can use to connect securely to the FortiWeb appliance.	`disable`
admin-tls-v12 {enable | disable}	Enable to specify TSL 1.2 clients can use to connect securely to the FortiWeb appliance.	`enable`
admin-tls-v13 {enable | disable}	Enable to specify TSL 1.3 clients can use to connect securely to the FortiWeb appliance.	`disable`
admin-ssl-custom-cipher <cipher1 cipher2 ...>	Enter the ciphers that are supported for the TSL 1.0, 1.1, 1.2 connections.	no default
admin-tls13-custom-cipher <cipher1 cipher2 ...>	Enter the ciphers that are supported for the TSL 1.3 connections. Only available when `admin-tls-v13` is enabled.	no default
admin-lockout-threshold <admin-lockout-threshold_int>	Enter the number of invalid logon attempts before the account is locked out. The valid range is 1-10.	`3`
admin-lockout-duration <minutes_int>	Set the length of time the account remains locked. The valid range is 1-2147483647 seconds.	`60`

Variable	Description	Default
admintimeout <minutes_int>	Enter the amount of time (in minutes) after which an idle administrative session with the web UI or CLI will be automatically logged out. The valid range is 1-480. To improve security, do not increase the idle timeout.	`5`
adom-admin {enable | disable}	Enable to be able to restrict administrator accounts to specific administrative domains. See also `domains <adom_name>` in `config system admin`. **Note:** After you type `end`, if this setting is enabled, the CLI will terminate your session and restructure the configuration to use ADOMs. Global settings will remain in the global configuration scope, but objects that are configurable separately per ADOM such as services are moved to the `root` ADOM. To continue by configuring additional ADOMs, log in again, then go to Defining ADOMs on page 57.	`disable`
auth-timeout <milliseconds_int>	Enter the number of milliseconds that FortiWeb will wait for the remote authentication server to respond to its query. The valid range is 1-60,000. If administrator logins often time out, and FortiWeb is configured to query an external RADIUS or LDAP server, increasing this value may help. This setting only affects remote authentication queries for **administrator** accounts. To configure the query connection timeout for end-user accounts, use auth-timeout <timeout_int> (page 1) instead.	`2000`
cli-signature {enable | disable}	Enable to be able to enter custom attack signatures via the CLI.	`disable`

Variable	Description	Default
	Typically, attack signatures should be entered using the web UI, where you can verify syntax and test matching of your regular expression. If you are sure that your expression is correct, you can enable this option to enter your custom signature via the CLI.	
confsync-port <port_int>	Enter the port number the local FortiWeb uses to listen for a remote (peer) FortiWeb. Used when you have configured FortiWeb to synchronize its configuration. The valid range is 1-65,535. **Caution:** The port number must be different than the port number set using config server-policy custom-application application-policy (page 1).	`8333`
debug-monitor-interval <int>	It controls the frequency in minutes for collecting debug information. The valid range is 1 - 65535.	5
debug-memory-boundary <int>	The configuration sets the memory usage threshold (boundary) for collecting debug information. If memory usage exceeds the defined boundary and the top 10 processes include proxyd or ml_daemon, then the system will enable jemalloc debugging to generate jeprof.out files. The valid range is 1 - 100 (%).	70
dh-params {1024 | 1536 | 2048 | 3072 | 4096 | 6144 | 8192}	Specifies the key length that FortiWeb presents in Diffie-Hellman exchanges. Most web browsers require a key length of at least 2048.	`2048`
dst {enable | disable}	Enable to automatically adjust the FortiWeb appliance's clock for daylight savings time (DST).	`disable`

Variable	Description	Default
fds-proxy {enable | disable}	Enable to configure FortiWeb to act as a proxy for the FDN. FortiWeb proxy will obtain FortiGuard service packages from the default list of FDN servers and distribute the packages to other FortiWeb devices. On FortiWeb proxy, port 8989 is used as the listening port for the package update requests from other FortiWeb devices, and the concurrent connection limit is 128. When FortiWeb proxy receives downloading requests from several devices at the same time, the requests will be queued and processed one by one. With this option enabled, you can configure system autoupdate overrideon other FortiWeb devices so that they can connect with this FortiWeb proxy to update FortiGuard service packages. If you want to override the default FDN servers and specify a new address for the FortiWeb proxy to obtain FortiGuard service packages, see system fds proxy.	disable
force-us-only {enable | disable}	Enable so that FortiWeb will receive FortiGuard service updates from FortiGuard servers located only in the United States.	disable
hostname "<host_name>"	Enter the host name of this FortiWeb appliance. Host names may include US-ASCII letters, numbers, hyphens, and underscores. The maximum length is 63 characters. Spaces and special characters are not allowed. The host name of the FortiWeb appliance is used in several places. • It appears in the **System Information** widget on the **Status** tab of the web UI, and in the config router all (page 1) CLI command. • It is used in the command prompt of the CLI. • It is used as the SNMP system	`FortiWeb`

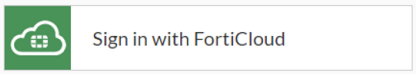
Variable	Description	Default
	name. For details about SNMP, see system snmp sysinfo on page 387. The **System Information** widget and the config router all (page 1) CLI command will display the full host name. However, if the host name is longer than 16 characters, the CLI and other places display the host name in a truncated form ending with a tilde (~) to indicate that additional characters exist, but are not displayed. For example, if the host name is FortiWeb1234567890, the CLI prompt would be `FortiWeb123456789~#`. **Note:** You can also configure the local domain name. For details, see system dns on page 286.	
admin-HTTPS-pki-required {enable | disable}	Enable to use certificate-based Web UI login. Before enabling this, please make sure the related configurations are set correctly. For details, see system admin-certificate ca on page 230, user pki-user on page 413, and user admin-usergrp on page 402.	`disable`
HTTPS-certificate "<certificate_name>"	Specifies the certificate that FortiWeb uses for the accesses to its Web UI through HTTPS. This must be one of the certificates stored locally on the FortiWeb for administration. For details, see system admin-certificate local on page 233.	`defaultcert`
HTTPS-intermediate-certificate "<certificate_group_name>"	Specifies the intermediate CA group if any. See system admin-certificate intermediate-ca-group.	`No default`
ie6workaround {enable | disable}	Enable to use the work around for a navigation bar freeze issue caused by using the web UI with Microsoft Internet Explorer 6.	`disable`

Variable	Description	Default
language {english |japanese | simch | trach}	Select which language to use when displaying the web UI. The display's web pages will use UTF-8 encoding, regardless of which language you choose. UTF-8 supports multiple languages, and allows all of them to be displayed correctly, even when multiple languages are used on the same web page. For example, your organization could have websites in both English and simplified Chinese. Your FortiWeb administrators prefer to work in the English version of the web UI. They could use the web UI in English while writing rules to match content in both English and simplified Chinese **without** changing this setting. Both the rules and the web UI will display correctly, as long as all rules were input using UTF-8. Usually, your text input method or your management computer's operating system should match the display, and also use UTF-8. If they do not, you may not be able to correctly display both your input and the web UI at the same time. For example, your web browser's or operating system's default encoding for simplified Chinese input may be GB2312. However, you **usually** should switch it to be UTF-8 when using the web UI, **unless** you are writing regular expressions that must match HTTP client's requests, and those requests use GB2312 encoding. For more information on language support in the web UI and CLI, see Language support & regular expressions on page 50. **Note:** This setting does **not** affect the display of the CLI.	`english`
multi-factor-authentication {optional | mandatory}	Configure to set 2FA for admin account security.	`optional`

Variable	Description	Default
	• optional: only when an admin user enters correct username and password, the Token Code window pops up to require the token code for account security. • mandatory: only when an admin user enters correct username and password as well as the token code, the authentication can succeed for login.	
ntpserver {"<ntp_fqdn>" | "<ntp_ipv4>"}	Enter the IP address or fully qualified domain name (FQDN) of a Network Time Protocol (NTP) server or pool, such as `pool.ntp.org`, to query in order to synchronize the FortiWeb appliance's clock. The maximum length is 63 characters. For details about NTP and to find the IP address of an NTP server that you can use, go to: http://www.ntp.org/	`pool.ntp.org`
ntpsync {enable | disable}	Enable to automatically update the system date and time by connecting to a NTP server. Also configure ntpserver {"<ntp_fqdn>" | "<ntp_ipv4>"}, syncinterval <minutes_int> and timezone "<time-zone-code_str>".	`enable`
pre-login-banner {enable | disable}	Enable to add a login disclaimer message for administrators logging in to FortiWeb. This disclaimer is a statement that a user accepts or declines. It is useful for environments such as corporations that are governed by strict usage policies for forensics and legal reasons.	`disable`
record-cli-fail-cmd {enable | disable}	Enable so that FortiWeb will generate an event log if a CLI command fails or is executed incorrectly.	disable
refresh <seconds_int>	Enter the automatic refresh interval (in seconds) for the web UI's **System Status Monitor** widget.	`80`

Variable	Description	Default
	The valid range is 0-9,223,372,036,854,775,807. To disable automatic refreshes, type `0`.	
syncinterval <minutes_int>	Enter how often (in minutes) the FortiWeb appliance should synchronize its time with the Network Time Protocol (NTP) server. The valid range is 1-1440. To disable time synchronization, type `0`.	`60`
tftp {enable | disable}	Specify whether FortiWeb can perform backups, restoration, firmware updates and other tasks using TFTP.	`enable`
timezone "<time-zone-code_str>"	Enter the two-digit code for the time zone in which the FortiWeb appliance is located. The valid range is from `00` to `75`. To display a list of time zone codes, their associated the GMT time zone offset, and contained major cities, type `set timezone ?`.	`04`
ssh-fips {enable | disable}	A setting used with Federal Information Processing Standards (FIPS) and Common Criteria (CC) compliant mode. When the FIPS-CC certification process is complete, a separate document will provide detailed information about this command.	`disable`
cert-expire-check-time <cert-expire-check-time _ int>	Set the notification time (the days) before the certificate expires. The valid value range is 0-365. When the value is 0, it means no certificate expiration will be checked. When the value is 100, it means notification will be sent 100 days before the certificate expires.	`0`
ipv6-dad-ha {enable | disable}	Enable to perform IPv6 DAD detection on the primary appliance in Active-Passive and standard Active-Active HA groups.	`disable`
updated-debug-log {enable | disable}	Diasble it if too many FDS disconnection logs are generated.	`enable`

Variable	Description	Default
fortiguard-anycast {enable | disable}	If enabled, FortiWeb will be upgraded from the Anycast server. The default domain is globalupdate.fortinet.net and the corresponding USG domain name is usupdate.fortinet.net. If disabled, FortiWeb will upgraded from the original server, the default domain is update.fortiguard.net and the corresponding USG domain name is usupdate.fortiguard.net.	`disable`
power-status {enable | disable}	Enable to show the power status.	`disable`
shell-access {enable | disable}	Enable Shell access through SSH.	`disable`
shell-username <user_name>	Enter the user name for Shell access.	N/A
shell-password <password>	Enter the password for Shell access.	N/A
shell-timeout <int>	Enter the time period after which the Shell access will be expired. The valid range is 1-1200 minutes.	10
shell-history-size	Specify the size of the command history file which is stored in "$HOME/.ash_history". Using `diag cli commmand` to view the history of the commands executed in Shell. The valid range is 1-4096 lines.	1024
shell-trusthostv4	Specify the IPv4 addresses or range of the trust-hosts who are allowed to access FortiWeb through Shell.	0.0.0.0/0
shell-trusthostv6	Specify the IPv6 addresses or range of the trust-hosts who are allowed to access FortiWeb through Shell.	::/0
admin-forticloud-sso-login {enable | disable}	Enable this option to allow accounts created in FortiCloud Account Services to access FortiWeb. Once enabled, the following option will show on the FortiWeb Login page.	disable

Variable	Description	Default
	 The permission of these accounts in FortiWeb will be consistent with the ones in FortiCloud Account Services, either Read-Only or Read-Write for all the areas of configurations.	
advanced-bot-protection {enable | disable}	Enable the bot detection service provided by FortiGuard Advanced Bot Protection. For more information on this service, see fortiabp.forticloud.com. For the whole process of the FortiGuard ABP integration configuration, refer to "Configuring Advanced Bot Protection policy" in *FortiWeb Administration Guide*.	disable
advanced-bot-protection-portal-domain <fortiabp.forticloud.com>	Enter the address of FortiGuard Advanced Bot Protection. This is a fixed address, which should be set as us.mtls.fortiabp.forticloud.com.	us.mtls.fortiabp.forticloud.com
advanced-bot-protection-query-timeout <int>	FortiWeb will stop connecting with FortiGuard Advanced Bot Protection if the query has been failed for the specified period. The valid range is 1-10.	6
advanced-bot-protection-js-attribute-enable {enable | disable}	Enable to add js attribute to script tag.	enable
advanced-bot-protection-js-attribute <string>	Configure the js attribute to add. The default value is set to "async"	async
sys-perf-log-interval <interval>	FortiWeb generates system performance logs every 5 minutes. This data is sent to the connected FortiAnalyzer to display in its dashboard widget. You can run this command to change the log generation interval, measured in minutes. The default value is 5, and the valid range is 0-15. A value of 0 disables this feature.	5

Example

This example configures time synchronization with a public NTP server pool. The FortiWeb appliance is located in the Pacific Time zone (code `04`) and will synchronize its time with the NTP server pool every 60 minutes.

```
config system global
   set timezone 08
   set ntpsync enable
   set ntpserver "pool.ntp.org"
   set syncinterval 30
end
```

For an example that includes a host name, see system dns on page 286.

Related topics

- system admin on page 225
- system autoupdate schedule on page 245
- system interface on page 351
- system dns on page 286
- system advanced on page 235
- router static on page 102
- date on page 865
- time on page 897
- system status on page 904

system ha

Use this command to configure the FortiWeb appliance to act as a member of a high availability (HA) cluster in order to improve availability.

By default, FortiWeb appliances are each a single, standalone appliance and operate independently.

If you have purchased more than one, however, you can configure multiple FortiWeb appliances in **active-passive**, **standard active-active**, or **high volume active-active** HA mode. This improves availability so that you can achieve 99.999% service level agreement (SLA) uptimes regardless of, for example, hardware failure or maintenance periods.

If you have multiple FortiWeb appliances but do **not** need failover, you can still synchronize the configuration. This can be useful for cloned network environments and externally load-balanced active-active HA. For details, see "server-policy custom-application application-policy" on page 1.

Unless specially stated, the configurations of `config system ha` can be automatically synchronized from primary to secondary appliances.

For more information on HA, including troubleshooting, failover behavior, synchronized data, and network topology, see the *FortiWeb high availability (HA)* section under *Key Concepts* chapter in *FortiWeb Administration Guide*:

https://docs.fortinet.com/document/fortiweb

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
config system ha
   set mode {active-passive | active-active-standard | active-active-high-volume |standalone}
   set group-id <group_int>
   set group-name "<pair-name_str>"
   set sdn-connector <string>
   set lb-ocid <string>
   set priority <level_int>
   set override {enable | disable}
   set network-type {flat | udp-tunnel}
   set tunnel-local "<tunnel-local_str>"
   set tunnel-peer "<tunnel-peer_str>"
   set hbdev "<interface_name>"
   set hbdev-backup "<interface_name>"
   set lacp-ha-secondary {enable | disable}
   set link-failed-signal {enable | disable}
   set hb-interval <milliseconds_int>
   set hb-lost-threshold <seconds_int>
   set arps <arp_int>
   set arp-interval <seconds_int>
   set monitor {"<interface_name>" ...}
   set boot-time <limit_int>
   set ha-mgmt-status {enable | disable}
   set ha-mgmt-interface "<interface_name>"
   set schedule {ip | leastconnection | round-robin}le {ip | leastconnection | round-robin}
   set session-sync-broadcast {enable | disable}
   set session-sync-dev {"<interface_name>" ...}
   set session-warm-up <seconds_int>
   set weight-1 <weight_int>
   set weight-2 <weight_int>
   set weight-3 <weight_int>
   set weight-4 <weight_int>
   set weight-5 <weight_int>
   set weight-6 <weight_int>
   set weight-7 <weight_int>
   set weight-8 <weight_int>
   set session-pickup {enable | disable}
   set persistence-sync {enable | disable}
   set hlck-sync {enable | disable}
   set hlck-period-sync {enable | disable}
   set hlck-period-timeout <integer>
   set eip-addr <class_ip>
   set eip-aid <eip-aid_str>
   set ha-eth-type <ha-eth-type_str>
   set hc-eth-type <hc-eth-type_str>
   set hbcast-eth-type <hbcast-eth-type_str>
```

```
    set l2ep-eth-type <l2ep-eth-type_str>
    set 17-persistence-sync {enable | disable}
    set server-policy-hlck {enable | disable}
    set encryption {enable | disable}
    set key <passwd>
end
```

Variable	Description	Default
mode {active-passive | active-active-standard | active-active-high-volume |standalone}	Select one of the following: • `active-passive`—Form an HA group with another FortiWeb appliance. The appliances operate together, with the standby assuming the role of the active appliance if it fails. • `active-active-standard`—The primary appliance in a standard active-active HA group plays the role as the central controller to receive traffic from clients and send the processed traffic to back-end web servers, and vice versa. The primary appliance distributes the traffic to all the HA members (including itself) according to the specified load-balancing algorithm so that each FortiWeb appliance performs the security services to protect the traffic. • `active-active-high-volum`—Unlike the standard active-active HA mode where the primary acts as a traffic distributor, the members in high volume active-active mode don't reply on the primary to distribute traffic, instead, they can directly receive traffic from the clients and process the traffic independently. It significantly increases the traffic throughput of the HA group. • `standalone`—Operate each appliance independently. **Note:** To avoid connectivity issues, do not use config system ha to remove an appliance from an HA cluster. Instead, use ha disconnect on page 871, which removes the appliance from the cluster and changes the HA mode to standalone.	`standalone`
group-id <group_int>	Enter a number that identifies the HA pair. **Both members of the HA pair must have the same group ID.** If you have more than one HA pair on the same network, each HA pair must have a different group ID. Changing the group ID changes the cluster's virtual MAC address. The valid range is 0 to 63.	`0`
group-name "<pair-name_str>"	Enter a name to identify the HA pair if you have more than one. This setting is optional, and does not affect HA function. The maximum length is 63 characters.	No default.

Variable	Description	Default
sdn-connector <string>	Select the OCI SDN connector you have created. See system sdn-connector. Available only when FortiWeb-VM is deployed in active-passive mode on OCI.	No default.
lb-ocid <string>	Enter the Load Balancer's OCID. To get the Load Balancer OCID: 1. Log in to OCI. 2. Go to **Core Infrastructure > Networking > Load Balancers**. 3. Click the load balancer used for the HA cluster. 4. Copy the OCID of this load balancer. Available only when FortiWeb-VM is deployed in active-passive mode on OCI.	No default.
priority <level_int>	Enter the priority of the appliance when electing the primary appliance in the HA pair. On standby devices, this setting can be reconfigured using the CLI command ha manage on page 875. This setting is optional. The smaller the number, the higher the priority. The valid range is 0 to 9. This setting can't be synchronized from primary to secondary appliances. You should configure it on each HA member. **Note:** • By default, unless you enable override {enable | disable} on page 329, uptime is more important than this setting. • This setting can't be synchronized from primary to secondary appliances. You should configure it on each HA member. It's suggested to leave it with default value.	`5`
override {enable | disable}	Enable to make priority <level_int> on page 329 a more important factor than uptime when selecting the primary appliance.	`disable`
network-type {flat | udp-tunnel}	Select the common HA mode flat or udp-tunnel mode on OpenStack platform.	`flat`
tunnel-local "<tunnel-local_str>"	Set the local IP address on OpenStack platform. This filed can be configured only when the network type is upd-tunnel. **Note:** This setting can't be synchronized from primary to secondary appliances. You should configure it on each HA member. It's suggested to leave it with default value.	No default.

Variable	Description	Default
tunnel-peer "<tunnel-peer_str>"	Set the peer IP address on OpenStack platform. This filed can be configured only when the network type is upd-tunnel. **Note:** This setting can't be synchronized from primary to secondary appliances. You should configure it on each HA member. It's suggested to leave it with default value.	No default.
hbdev "<interface_name>"	Select which port on this appliance that the main and standby appliances will use to send heartbeat signals and synchronization data between each other (i.e. the HA heartbeat link). The maximum length is 15 characters. Connect this port to the same port number on the other member of the HA cluster. (e.g., If you select `port3` for the primary heartbeat link, connect port3 on **this** appliance to port3 on the **other** appliance.) At least one heartbeat interface must be selected on each appliance in the HA cluster. Ports that currently have an IP address assigned for other purposes (that is, virtual servers or bridges) cannot be re-used as a heartbeat link. At least one heartbeat interface must be selected on each appliance in the HA cluster. Ports that currently have an IP address assigned for other purposes (that is, virtual servers or bridges) cannot be re-used as a heartbeat link. **Tip:** If enough ports are available, you can select both a primary heartbeat interface and a secondary heartbeat interface (hbdev-backup "<interface_name>" on page 330) on each appliance in the HA pair to provide heartbeat link redundancy. You cannot use the same port as both the primary and secondary heartbeat interface on the same appliance, as this is incompatible with the purpose of link redundancy. **Note:** If a switch is used to connect the heartbeat interfaces, the heartbeat interfaces must be reachable by Layer 2 multicast.	No default.
hbdev-backup "<interface_name>"	Select a secondary, standby port on this appliance that the main and standby appliances will use to send heartbeat signals and synchronization data between each other (i.e. the HA heartbeat link). It must **not** be the same network interface as hbdev "<interface_name>" on page 330. The maximum length is 15 characters. Connect this port to the same port number on the other member of the HA cluster. (e.g., If you select `port4` for the secondary heartbeat link, connect port4 on **this** appliance to port4 on the **other** appliance.)	No default.

Variable	Description	Default
	Ports that currently have an IP address assigned for other purposes (that is, virtual servers or bridges) cannot be re-used as a heartbeat link.	
lacp-ha-secondary {enable | disable}	Enable to provide support for 2 LACP interfaces, also known as "bridges," "V-zones," or "aggregated links." For more information about configuring bridges, see the *FortiWeb Administration Guide*: http://docs.fortinet.com/fortiweb/admin-guides	disable
link-failed-signal {enable | disable}	Enable to ensure that all equipment in the network detects the new primary unit in a cluster after a failover occurs. When a failover occurs in an HA active-passive cluster, the new primary unit broadcasts gratuitous ARP packets so that switches will refresh their MAC forwarding tables and detect the new primary unit. However, sometimes switches will not immediately detect a failover and refresh MAC forwarding tables to recognize a new primary unit. This command shuts down each interface (except for the heartbeat interfaces and reserve management interfaces) of the former primary unit for about a second so that any remaining equipment that did not automatically detect the failover will refresh their MAC forwarding tables and recognize the new primary unit,	disable
arps <arp_int>	Enter the number of times that the FortiWeb appliance will broadcast address resolution protocol (ARP) packets (IPv4 environment) or Neighbor Solicitation (NS) packets (IPv6 environment) when it takes on the main role. Even though a new NIC has not actually been connected to the network, FortiWeb does this to notify the network that a different physical port has become associated with the IP address and virtual MAC of the HA pair. This is sometimes called “using gratuitous ARP packets to train the network,” and can occur when the main appliance is starting up, or during a failover. Also configure arp-interval <seconds_int> on page 332. Normally, you do not need to change this setting. Exceptions include: • Increase the number of times the main appliance sends gratuitous ARP packets if your HA pair takes a long time to fail over or to train the network. Sending more gratuitous ARP packets may help the failover to happen faster. • Decrease the number of times the main appliance sends gratuitous ARP packets if your HA pair has a large number of VLAN interfaces and virtual domains.	`10`

Variable	Description	Default
	Because gratuitous ARP packets are broadcast, sending them may generate a large amount of network traffic. As long as the HA pair still fails over successfully, you could reduce the number of times gratuitous ARP packets are sent to reduce the amount of traffic produced by a failover. The valid range is 1-16.	
arp-interval <seconds_int>	Enter the number of seconds to wait between each broadcast of ARP/NS packets. Normally, you do not need to change this setting. Exceptions include: • Decrease the interval if your HA pair takes a long time to fail over or to train the network. Sending ARP packets more frequently may help the failover to happen faster. • Increase the interval if your HA pair has a large number of VLAN interfaces and virtual domains. Because gratuitous ARP packets are broadcast, sending them may generate a large amount of network traffic. As long as the HA pair still fails over successfully, you could increase the interval between when gratuitous ARP packets are sent to reduce the rate of traffic produced by a failover. The valid range is 1-20.	3
hb-interval <milliseconds_int>	Enter the number of 100-millisecond intervals to set the pause between each heartbeat packet that the one FortiWeb appliance sends to the other FortiWeb appliance in the HA pair. This is also the amount of time that a FortiWeb appliance waits before expecting to receive a heartbeat packet from the other appliance. This part of the configuration is synchronized between the active appliance and standby appliance. The valid range is 1-20 (that is, between 100 and 2,000 milliseconds). **Note:** Although this setting is synchronized between the main and standby appliances, you should initially configure both appliances with the same hb-interval <milliseconds_int> on page 332 to prevent inadvertent failover from occurring before the initial synchronization.	1
hb-lost-threshold <seconds_int>	Enter the number of times one of HA appliances retries the heartbeat and waits to receive HA heartbeat packets from the other HA appliance before assuming that the other appliance has failed.	3

Variable	Description	Default
	This part of the configuration is synchronized between the main appliance and standby appliance. Normally, you do not need to change this setting. Exceptions include: • Increase the failure detection threshold if a failure is detected when none has actually occurred. For example, during peak traffic times, if the main appliance is very busy, it might not respond to heartbeat packets in time, and the standby appliance may assume that the main appliance has failed. • Reduce the failure detection threshold or detection interval if administrators and HTTP clients have to wait too long before being able to connect through the main appliance, resulting in noticeable down time. The valid range is 1-60. **Note:** Although this setting is synchronized between the main and standby appliances, you should initially configure both appliances with the same hb-lost-threshold <seconds_int> on page 332 to prevent inadvertent failover from occurring before the initial synchronization. **Note:** You can use SNMP traps to notify you when a failover is occurring. For details, see system snmp community on page 383.	
monitor {"<interface_name>" ...}	Enter the name of one or more network interfaces that each directly correlate with a physical link. These ports will be monitored for link failure. Separate the name of each network interface with a space. To remove from or add to the list of monitored network interfaces, retype the entire list. Port monitoring (also called interface monitoring) monitors physical network ports to verify that they are functioning properly and linked to their networks. If the physical port fails or the cable becomes disconnected, a failover occurs. You can monitor physical interfaces, but **not** VLAN subinterfaces or 4-port switches. **Note:** To prevent an unintentional failover, do not configure port monitoring **until** you configure HA on both appliances in the HA pair, and have plugged in the cables to link the physical network ports that will be monitored.	No default.
boot-time <limit_int>	Enter the maximum number of seconds that a appliance will wait for a heartbeat or synchronization connection after the appliance returns online. If this limit is exceeded, the appliance will assume that the other unit is unresponsive, and assume the role of the main appliance.	`30`

Variable	Description	Default
	Due to the default heartbeat and synchronization intervals, as long as the HA pair are cabled directly together, the default value is usually sufficient. If the HA heartbeat link passes through other devices, such as routers and switches, however, a larger value may be needed. You may notice this especially when updating the firmware. The valid range is 1-100 seconds.	
ha-mgmt-status {enable | disable}	Specifies whether the network interface you select provides administrative access to this appliance when it is a member of the HA cluster. When this option is selected, you can access the configuration for this cluster member using the IP address of the specified network interface. The interface configuration, including administrative access and other settings, is not synchronized with other cluster members. You can configure up to eight reserve management ports in each HA cluster. You cannot configure routing for the port you select.	`disable`
ha-mgmt-interface "<interface_name>"	Specifies the network interface that provides administrative access to this appliance when it is a member of the HA cluster.	No default.
schedule {ip | leastconnection | round-robin}	Specifies the load-balancing algorithm used by the primary appliance (in an active-active HA cluster) to distribute received traffic over the available cluster members. • `ip`—Consistently distribute the traffic coming from a source to the same cluster member. • `leastconnection`—Dynamically distribute traffic to a cluster member who has the fewest connections processing. • `round-robin`—Distribute traffic among the available members in a circular order. Note that FortiWeb's Session Management is not supposed by the active-active HA deployment with the algorithm By connections or Round-robin being used for the load-balancing. Available only when mode {active-passive | active-active-standard | active-active-high-volume |standalone} on page 328 is `active-active-standard` or `active-active-high-volume`.	`ip`

Variable	Description	Default
session-sync-broadcast {enable | disable}	Specifies whether the primary appliance in an active-active HA cluster synchronizes sessions to others in broadcast. By default, session information is synchronized in unicast. Broadcast will be recommended if a active-active HA cluster contains many appliances. Available only when mode {active-passive | active-active-standard | active-active-high-volume |standalone} on page 328 is `active-active-standard` or `active-active-high-volume`.	`disable`
session-sync-dev {"<interface_name>" ...}	The primary appliance use the heartbeat interface (hbdev "<interface_name>" on page 330) to synchronize its session table to other appliances in an active-active HA cluster by default. However, you can use extra interfaces (up to four interfaces) for the session synchronization when the HA cluster is in heavy traffic. Specifies the network interface(s) of this FortiWeb appliance for session synchronizations. For example, typing `set session-sync-dev port3 port4 port5` for using port3, port4 and port5 to synchronize session information. **Note:** • Only the primary appliance in the active-active HA cluster is allowed to set `session-sync-dev`. The configuration here will be synchronized to all the secondary appliance in the cluster by the primary, and all the appliances send or receive session information with the same interface configuration. • The heartbeat interface will not participate in the session synchronization anymore if other interfaces are specified here. • It can not specify the heartbeat interface to `session-sync-dev`. • Available only when mode {active-passive | active-active-standard | active-active-high-volume |standalone} on page 328 is `active-active-standard` or `active-active-high-volume`.	No default.
session-warm-up <seconds_int>	Specifies the active-active HA warm-up time that the primary appliance will hold traffic distribution to wait for the active-active HA negotiation (determine the primary and secondary, and necessary synchronizations) completes (when every time the active-active HA starts). Available only when mode {active-passive | active-active-standard | active-active-high-volume |standalone} on page 328 is `active-active-standard` or `active-active-high-volume`.	`10`

Variable	Description	Default
weight-1 <weight_int>	When the system ha on page 326 algorithm is `ip`, sets the weight for the first unit in an active-active HA cluster. The primary unit performs weighted round-robin according to the specified weight to distribute the first packet coming from the source IP to cluster members. The weight of each unit can be set with a range of 0-256.	1
weight-2 <weight_int>	When the `schedule` algorithm is `ip`, sets the weight for the second unit in an active-active HA cluster. The primary unit performs weighted round-robin according to the specified weight to distribute the first packet coming from the source IP to cluster members. The weight of each unit can be set with a range of 0-256.	1
weight-3 <weight_int>	When the system ha on page 326 algorithm is `ip`, sets the weight for the third unit in an active-active HA cluster. The primary unit performs weighted round-robin according to the specified weight to distribute the first packet coming from the source IP to cluster members. The weight of each unit can be set with a range of 0-256.	1
weight-4 <weight_int>	When the system ha on page 326 algorithm is `ip`, sets the weight for the fourth unit in an active-active HA cluster. The primary unit performs weighted round-robin according to the specified weight to distribute the first packet coming from the source IP to cluster members. The weight of each unit can be set with a range of 0-256.	1
weight-5 <weight_int>	When the system ha on page 326 algorithm is `ip`, sets the weight for the fifth unit in an active-active HA cluster. The primary unit performs weighted round-robin according to the specified weight to distribute the first packet coming from the source IP to cluster members. The weight of each unit can be set with a range of 0-256.	1
weight-6 <weight_int>	When the system ha on page 326 algorithm is `ip`, sets the weight for the sixth unit in an active-active HA cluster. The primary unit perform weighted round-robin according to the specified weight to distribute the first packet coming from the source IP to cluster members. The weight of each unit can be set with a range of 0-256.	1
weight-7 <weight_int>	When the system ha on page 326 algorithm is `ip`, sets the weight for the seventh unit in an active-active HA cluster. The primary unit performs weighted round-robin according to the specified weight to distribute the first packet coming from the source IP to cluster members.	1

Variable	Description	Default
	The weight of each unit can be set with a range of 0-256.	
weight-8 <weight_int>	When the system ha on page 326 algorithm is `ip`, sets the weight for the eighth unit in an active-active HA cluster. The primary unit performs weighted round-robin according to the specified weight to distribute the first packet coming from the source IP to cluster members. The weight of each unit can be set with a range of 0-256.	1
session-pickup {enable | disable}	Enable so that the primary unit in the HA cluster synchronizes the session table with all cluster units. If a cluster unit fails, the HA session table information is available to the remaining cluster units which can use the session table to resume connections without interruption. Enable for session fail-over protection. If this is not required, disabling may reduce CPU usage and reduce HA heartbeat network bandwidth usage. **Note**: Only sessions that have been established for longer than 30 seconds will be synchronized.	disable
persistence-sync {enable | disable}	Enable/disable the persistence synchronization.	`disable`
eip-addr <class_ip>	Enter the elastic IP address for HA on AWS.	No default.
eip-aid <eip-aid_str>	Enter the ID of the elastic IP for HA on AWS.	No default.
ha-eth-type <ha-eth-type_str>	HA heartbeat packet Ethertype (4-digit hex). The range is 0x8890-0x889F. **Note:** This setting can't be synchronized from primary to secondary appliances. You should configure it on each HA member. It's suggested to leave it with default value.	`0x8890`
hc-eth-type <hc-eth-type_str>	Tuple session HA heartbeat packet Ethertype (4-digit hex). The range is 0x8890-0x889F. **Note:** This setting can't be synchronized from primary to secondary appliances. You should configure it on each HA member. It's suggested to leave it with default value.	`8891`
hbcast-eth-type <hbcast-eth-type_str>	Broadcast HA heartbeat packet Ethertype (4-digit hex). The range is 0x8890-0x889F.	`8893`
l2ep-eth-type <l2ep-eth-type_str>	Telnet session HA heartbeat packet Ethertype (4-digit hex). The range is 0x8890-0x889F.	`8894`

Variable	Description	Default
	Note: This setting can't be synchronized from primary to secondary appliances. You should configure it on each HA member. It's suggested to leave it with default value.	
17-persistence-sync {enable | disable}	When FortiWeb is operating in HA Active-Passive (AP) mode, you can enable Layer 7 Persistence Synchronization. This option enables session synchronization when there's a failover that causes the secondary appliance to take over as the new primary, and is useful for web applications that require sticky sessions.	disable
hlck-sync {enable | disable}	Enable to synchronize the back-end servers' health check status from the primary to the secondary nodes. This ensures that when an HA fail-over occurs, the new primary FortiWeb appliance can immediately know the health status of the back-end servers, ensuring seamless traffic continuity during fail-over.	disable
hlck-period-sync {enable | disable}	By default, the health check status is synchronized when there are changes in the back-end server health check status. Use this command if you prefer to synchronize it periodically instead.	disable
hlck-period-timeout <integer>	The interval of the health check status synchronization. The default interval is 3000 seconds. The valid range is 600-3000.	3,000
server-policy-hlck {enable | disable}	Enable to check the server policy health. Server policy health check is only available if the operation mode is Reverse Proxy, and the HA mode is Active-Active.	`disable`
encryption {enable | disable}	Enable to encrypt the heartbeat traffic between primary and secondary appliances. If you want to set an HA group, make sure the encryption status is the same across all members, otherwise the HA group can't successfully be built.	`disable`
key <passwd>	Enter the password to encrypt the heartbeat traffic between primary and secondary appliances when they are in Federal Information Processing Standards (FIPS) mode or in non-FIPS mode with `encryption` enabled. **Note:** This setting can't be synchronized from primary to secondary appliances. You should configure it on each HA member, and the password on all the members should be the same. It's suggested to leave it with default value.	`ffffffe12345678`

Example

This example configures a FortiWeb appliance as one appliance in an active-passive HA pair whose group ID is 1. The primary heartbeat occurs over port3, and the secondary heartbeat link is over port4. Priority is more important than uptime when electing the main appliance. The appliance will wait 30 seconds after boot time for a heartbeat or synchronization before assuming that it should be that main appliance. Aside from the heartbeat link, failover can also be triggered by port monitoring of port1 and port2.

```
config system ha
   set mode active-passive
   set group-id 1
   set priority 6
   set override enable
   set hbdev port3
   set hbdev-backup port4
   set arps 3
   set arp-interval 2
   set hb-interval 1
   set hb-lost-threshold 3
   set monitor port1 port2
   set boot-time 30
end
```

Related topics

- system interface on page 351
- "debug application hasync" on page 1
- "debug application hatalk" on page 1
- system ha status on page 842
- ha disconnect on page 871
- ha manage on page 875
- ha synchronize on page 876
- system status on page 904

system ha-aa-server-policy-hlck

To check whether the server policies are running properly on the HA cluster, you can configure server policy heath check. The configurations are synchronized to all members in the cluster. The system sends an HTTP or HTTPS request, and waits for a response that matches the values required by the health check rule. A timeout indicates that the connection between the HA cluster member and the back-end server is not available. The system then generates event logs. The primary node will not distribute traffic to this HA member until the connection is recovered.

Server policy health check is only available if the operation mode is **Reverse Proxy**, and the HA mode is **Active-Active-Standard**.

You should first enable the **HA Health Check** option on the **HA** tab in **System > High Availability > Settings**, or enable it through the command `config system ha`, then configure a health check on the **HA Health Check** tab.

FortiWeb only supports checking the health of server policies in the root administrative domain.

To use this command, your administrator account's access control profile must have `rw` or `w` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
config system ha-aa-server-policy-hlck
   edit "<health-check_id>"
      set HTTPS {enable | disable}
      set client-cert <client-certificate-name>
      set relationship {and | or}
      config health-list
         edit <entry_index>
            set time-out <seconds_int>
            set retry-times <retries_int>
            set interval <seconds_int>
            set url-path "<request_str>"
            set method {get | head | post}
            set match-type {response-code | match-content | all}
            set response-code {response-code_int}
            set match-content "<match-content_str>"
         next
      end
   next
end
```

Variable	Description	Default
"<health-check_id"	Enter the ID of the server policy health check. The maximum length is 63 characters. To display the list of existing server health checks, enter: `edit ?`	No default.
`HTTPS {enable | disable}`	Enable to use the HTTPS protocol for the health check connections with the back-end server. The systems uses HTTP protocol if this option is disabled.nd you can configure the client certificate for the connection.	
`client-cert <client-certificate-name>`	If HTTPS is enabled, you can specify a Client Certificate for the connection. This is optional. The Client Certificate is imported on GUI in System > Certificates > Local or by CLI command `config system certificate local`.	
relationship {and |or}	• and–FortiWeb considers the server to be responsive when it passes all the tests in the list. • or–FortiWeb considers the server to be responsive when it passes at least one of the tests in the list.	and

Variable	Description	Default
<entry_index>	Enter the index number of the individual rule in the table. The valid range is 1-16.	No default.
timeout <seconds_int>	Enter the number of seconds which must pass after the server health check to indicate a failed health check. The valid range is 1-10 .	`3`
retry-times <retries_int>	Enter the number of times, if any, a failed health check will be retried before the server is determined to be unresponsive. The valid range is 1-10.	`3`
interval <seconds_int>	Enter the number of seconds between each server health check. The valid range is from 1-10.	`10`
url-path "<request_str>"	Enter the URL, such as `/index.html`, that FortiWeb uses in the HTTP/HTTPS request to verify the responsiveness of the server. If the web server successfully returns this URL, and its content matches the expression specified by `match-content`, FortiWeb considers it to be responsive.	No default.
method {get | head | post}	Specify whether the health check uses the HEAD, GET, or POST method.	`get`
match-type {response-code | match-content | all}	• `response-code`—If the web server successfully returns the URL specified by `url-path` and the code specified by `response-code`, FortiWeb considers the server to be responsive. • `match-content`—If the web server successfully returns the URL specified by `url-path` and its content matches the `match-content` value, FortiWeb considers the server to be responsive. • `all`—If the web server successfully returns the URL specified by `url-path` and its content matches the `match-content` value, and the code specified by `response-code`, FortiWeb considers the server to be responsive.	`match-content`
response-code {response-code_int}	Enter the response code that you require the server to return to confirm that it is available, if `match-type` is `response-code` or `all`.	`200`
match-content "<match-content_str>"	Enter a regular expression that matches the content that must be present in the HTTP reply to indicate proper server connectivity, if `match-type` is `match-content` or `all`.	No default.

Example

This example configures a server policy health check that periodically requests the main page of the website, `/index`. If FortiWeb can't receive responses containing the required page (which contains the word “About”) every 10 seconds (the default), and the check fails at least three times in a row, FortiWeb considers the connection between itself and the server being broken. The primary node will then stop distributing traffic to this HA member until the connection is recovered.

```
config config system ha-aa-server-policy-hlck
   edit "status_check1"
      set trigger-policy "notification-servers1"
      configure health-list
         edit 1
            set type HTTP
            set retry-times 3
            set url-path "/index"
            set method get
            set match-type match-content
            set regular About
   next
end
```

system ha-mgmt-router-static

For a FortiWeb applicance in an HA group, the configurations set by `config router policy` and `config router static` are synchronized by all the group members, but the configurations set by `HA Mgmt Static Route` or `HA Mgmt Policy route` are applied only to this specific member.

Use this command to add or delete a static route that is used only by this HA member. It is useful when you want to connect this cluster member to back-end servers that are not in the server pool of the HA group.

To use this command, your administrator account’s access control profile must have `rw` or `w` permission to the `sysgrp` area. For details, see Permissions on page 46.

Only one default route (the static route with destination as 0.0.0.0/0) is allowed on FortiWeb appliance. For example, if you have configured a default route in **Network > Route**, then it's not allowed to configure another default route in HA route settings.

Syntax

```
config system ha-mgmt-router-static
   edit <route_index>
      set device "<interface_name>"
      set dst "<destination_ip>"
      set gateway "<router_ip>"
   next
end
```

Variable	Description	Default
<route_index>	Enter the index number of the static route. If multiple routes match a packet, the one with the smallest index number is applied. The valid range is 0-65,535.	No default.
device "<interface_name>"	Enter the name of the network interface, such as `port1`, through which traffic subject to this route will be outbound. The maximum length is 63 characters.	No default.
dst "<destination_ip>"	Enter the destination IP address and netmask of traffic that will be subject to this route, separated with a space. To indicate all traffic regardless of IP address and netmask (that is, to configure a route to the default gateway), enter `0.0.0.0 0.0.0.0` or `::/0`.	`0.0.0.0 0.0.0.0`
gateway "<router_ip>"	Enter the IP address of a next-hop router. **Caution:** The gateway IP address must be in the same subnet as the interface's IP address. If you change the interface's IP address later, the new IP address must also be in the same subnet as the interface's default gateway address. Otherwise, all static routes and the default gateway will be lost.	`0.0.0.0`

system ha-mgmt-router-policy

For a FortiWeb applicance in an HA group, the configurations set by `config router policy` and `config router static` are synchronized by all the group members, but the configurations set by `HA Mgmt Static Route` or `HA Mgmt Policy route` are applied only to this specific member.

Use this command to add or delete a policy route that is used only by this HA member. It is useful when you want to connect this cluster member to back-end servers that are not in the server pool of the HA group.

To use this command, your administrator account's access control profile must have `rw` or `w` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
config system ha-mgmt-router-policy
   edit <policy_index>
      set iif "<incoming_interface_name>"
      set src "<source_ip>"
      set dst "<destination_ip>"
      set oif "<outgoing_interface_name>"
      set gateway "<router_ip>"
      set priority <priorty_int>
   next
end
```

Variable	Description	Default
<policy_index>	Enter the index number of the policy route. The valid range is 0-65,535.	No default.
"<incoming_interface_name>"	Enter the name of the interface, such as `port1`, on which FortiWeb receives packets it applies this routing policy to.	No default.
src "<source_ip>"	Enter the source IP address and netmask to match, separated with a space. FortiWeb routes matching traffic through the specified interface and gateway.	`0.0.0.0 0.0.0.0`
dst "<destination_ip>"	Enter the destination IP address and netmask to match, separated with a space. FortiWeb routes matching traffic through the specified interface and gateway.	`0.0.0.0 0.0.0.0`
"<outgoing_interface_name>"	Enter the name of the interface, such as `port2`, through which FortiWeb routes packets that match the specified IP address information.	No default.
gateway "<router_ip>"	Enter the IP address of a next-hop router. A gateway address is not required for the particular routing policies used as static routes in an one-arm topology. Leave this blank for a one-arm network topology.	`0.0.0.0`
priority <priorty_int>	Enter a value between 1 and 200 that specifies the priority of the route. When packets match more than one policy route, FortiWeb directs traffic to the route with the lowest value.	`200`

system ha-node

For the high volume active-active mode, you should allocate appliances to the HA group.

Syntax

```
config system ha-node
   edit <HA_node_number>
         set <HA_node_device_SN>
   next
end
```

Variable	Description	Default
<HA_node_number>	The index number of the node to be selected as an HA group member.	N/A
<HA_node_device_SN>	The serial number of the node.	N/A

Example

```
config system ha-node
   edit 1
         set sn FV100XXXXXXXXXX
   next
end
```

system icapserver

Use this command to configure FortiWeb to submit all files that match your upload restriction rules to ICAP server.

ICAP server evaluates whether the file poses a threat and returns the result to FortiWeb. If ICAP determines that the file is malicious, FortiWeb performs the following tasks:

- Generates an attack log message that contains the result.
- Takes the action specified by the file security policy. During this time, it does not re-submit the file to ICAP server.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
config system icapserver
   set server "<server_ipv4>"
   set cache-timeout <timeout_int>
   set port <port_int>
   set elog {enable | disable}
   set service-name <name_str>
   set ssl {enable | disable}
end
```

Variable	Description	Default
server "<server_ipv4>"	Enter the IP address or domain name of the ICAP server to send files to.	No default.
port <port_int>	Enter the port on which the ICAP server is listening.	1344 or 11344

Variable	Description	Default
	When ssl {enable | disable} on page 346 is enable, the default port is 11344, while when ssl {enable | disable} on page 346 is disable, the default port is 1344.	
cache-timeout <timeout_int>	After it receives the ICAP results, FortiWeb takes the action specified by the file security policy. During this time, it does not re-submit the file to ICAP server. The valid range is 1-168 hours.	`72`
elog {enable | disable}	Enter so that FortiWeb will report event logs when it successfully submits files to FortiSandbox.	`disable`
service-name <name_str>	The name of the ICAP service, which appears in the URL configured in the ICAP client. For example, `icap://<ip_address>/<name>`.	No default
ssl {enable | disable}	Enable to encrypt the transmission. The port varies depending on whether this option is enabled or not.	`disable`

Example

This example creates a connection to an ICAP server at `192.0.2.2` that retrieves statistics and sends a weekly report to admin@example.com.

```
config system icapserver
   set server "192.0.2.2"
   set ssl enable
   set cache-timeout 5
end
```

Related topics

- waf file-upload-restriction-policy on page 514
- log reports on page 77

system ha-traffic-distribution

The domain name of your application is paired with one or more IP addresses. These IP addresses are called Virtual IPs in FortiWeb. When your users visit your application, the destination of these requests are these virtual IP addresses. If you have deployed a FortiWeb HA cluster in your network, these requests will arrive first at FortiWeb cluster for threat detection, then be forwarded to the back-end servers. The traffic distribution controls which FortiWeb appliances in the cluster process the traffic destined to certain virtual IPs.

Syntax

```
config system ha-traffic-distribution
   edit <traffic-distribution_name>
         set node-order <the_index_of_node_with_highest_priority>
         set node-order <the_index_of_node_with_secondary_priority>
         set node-order <the_index_of_node_with_third_priority>
         ...
         set vip-list <vip_names>
   next
end
```

Variable	Description	Default
<traffic-distribution_name>	The name of the traffic distribution.	N/A
node-order <the_index_of_node_with_highest_priority> node-order <the_index_of_node_with_secondary_priority> node-order <the_index_of_node_with_third_priority> ...	The priority order of the nodes that process the traffic to the VIP. The node with the highest priority processes the traffic to the specified VIPs. If this node is down, the secondary node takes over the traffic, and so on.	N/A
vip-list <vip_names>	The name of the VIP. You can assign the same VIP to different traffic distributions.	N/A

Example

```
config system ha-traffic-distribution
   edit traffic1
         set node-order 2
         set node-order 3
         set node-order 1
         set vip-list vip1
   next
end
```

system hsm info

Use this command to edit the configuration so that FortiWeb will work with SafeNet Network HSM 7 (hardware security module). The HSM integration allows FortiWeb to retrieve a per-connection SSL session key instead of loading the local private key and certificate.

Because the HSM configuration requires you to upload a server certificate, you can create it using the web UI only. After you create the configuration in the web UI, this command allows you to edit it.

For detailed information on integrating HSM with FortiWeb, see the *FortiWeb Administration Guide*:

https://docs.fortinet.com/document/fortiweb

Before you can show or edit HSM configuration in the CLI and access HSM settings in the web UI, use the following command to enable the HSM settings:

```
config server-policy setting
   set high-compatibility-mode enable
   set hsm enable
end
```

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
config system hsm info
   set ip "<hsm_ipv4>"
   set port <port_int>
   set timeout <timeout_int>
   set filename "<filename_str>"
   set register-status {enable| disable}
end
```

Variable	Description	Default
ip "<hsm_ipv4>"	Enter the IP address of the HSM.	No default.
port <port_int>	Enter the port where FortiWeb establishes an NTLS connection with the HSM.	`1792`
timeout <timeout_int>	Enter a timeout value for the connection between HSM and FortiWeb.	No default.
filename "<filename_str>"	Shows the name of the server certificate file from the HSM. You cannot edit this option using the CLI.	No default.
register-status {enable| disable}	Enable to create FortiWeb as a client of the HSM.	`disable`

Related topics

- system hsm partition on page 349
- system certificate local on page 264

system hsm partition

Use this command to edit information about the partition that the FortiWeb HSM client is assigned to. The partition settings are part of the configuration that allows FortiWeb to work with SafeNet Luna SA HSM (hardware security module).

Before you can show or edit HSM configuration in the CLI and access HSM settings in the web UI, use the following command to enable the HSM settings:

```
config server-policy setting
   set hsm enable
```

For additional HSM integration settings, see system hsm info on page 347.

For detailed information on integrating HSM with FortiWeb, see the *FortiWeb Administration Guide*:

https://docs.fortinet.com/document/fortiweb

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
config system hsm partition
   edit "<partition_name>"
      set password <password_int>
end
```

Variable	Description	Default
"<partition_name>"	Enter the name of a partition that the FortiWeb HSM client is assigned to.	No default.
password <password_int>	Enter the partition password.	No default.

Related topics

- system hsm info on page 347
- system certificate local on page 264

system icapserver

Use this command to configure FortiWeb to submit all files that match your upload restriction rules to ICAP server.

ICAP server evaluates whether the file poses a threat and returns the result to FortiWeb. If ICAP determines that the file is malicious, FortiWeb performs the following tasks:

- Generates an attack log message that contains the result.
- Takes the action specified by the file security policy. During this time, it does not re-submit the file to ICAP server.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
config system icapserver
   set server "<server_ipv4>"
   set cache-timeout <timeout_int>
   set port <port_int>
   set elog {enable | disable}
   set service-name <name_str>
   set ssl {enable | disable}
end
```

Variable	Description	Default
server "<server_ipv4>"	Enter the IP address or domain name of the ICAP server to send files to.	No default.
port <port_int>	Enter the port on which the ICAP server is listening. When ssl {enable | disable} on page 350 is enable, the default port is 11344, while when ssl {enable | disable} on page 350 is disable, the default port is 1344.	1344 or 11344
cache-timeout <timeout_int>	After it receives the ICAP results, FortiWeb takes the action specified by the file security policy. During this time, it does not re-submit the file to ICAP server. The valid range is 1-168 hours.	72
elog {enable | disable}	Enter so that FortiWeb will report event logs when it successfully submits files to FortiSandbox.	disable
service-name <name_str>	The name of the ICAP service, which appears in the URL configured in the ICAP client. For example, `icap://<ip_address>/<name>`.	No default
ssl {enable | disable}	Enable to encrypt the transmission. The port varies depending on whether this option is enabled or not.	disable

Example

This example creates a connection to an ICAP server at `192.0.2.2` that retrieves statistics and sends a weekly report to admin@example.com.

```
config system icapserver
   set server "192.0.2.2"
   set ssl enable
   set cache-timeout 5
end
```

Related topics

- waf file-upload-restriction-policy on page 514
- log reports on page 77

system interface

Use this command to configure:

- The network interfaces associated with the physical network ports of the FortiWeb appliance
- VLAN subinterfaces or 802.3ad link aggregates associated with physical network interfaces

Both the network interfaces and VLAN subinterfaces can include administrative access.

You can restrict which IP addresses are permitted to log in as a FortiWeb administrator through the network interfaces and VLAN subinterfaces. For details, see system admin on page 225.

When the FortiWeb appliance is operating in either of the transparent modes, VLANs do not support Cisco discovery protocol (CDP).

The Link Aggregation Control Protocol (LACP) Interface and Redundant Interface are currently supported only when FortiWeb is deployed in Reverse Proxy or True Transparent Proxy mode. It can be applied to VLAN subinterfaces. It cannot be applied to ports that are used for the HA heartbeat, but it can be applied to monitor ports in an HA cluster. It is not supported in FortiWeb-VM.

You can use SNMP traps to notify you when a network interface's configuration changes, or when a link is brought down or brought up. For details, see system snmp community on page 383.

To use this command, your administrator account's access control profile must have either `rw` permission to the `netgrp` area. For details, see Permissions on page 46.

Syntax

```
config system interface
   edit "<interface_name>"
      set status {up | down}
      set type {aggregate | physical | vlan | redundant}
      set algorithm {layer2 | layer2_3 | layer3_4}
      set allowaccess {HTTP HTTPS ping snmp ssh FortiWeb-manager}
      set ip6-allowaccess {HTTP HTTPS ping snmp ssh FortiWeb-manager}
      set wccp {enable | disable}
      set description "<comment_str>"
      set interface "<interface_name>"
      set intf {"<port_name>" ...}
      set ip "<interface_ipv4mask>"
      set ip6 "<interface_ipv6mask>"
      set mode {static | dhcp}
      set ip6-mode {static | dhcp}
      set vlanid <vlan-id_int>
      set vlanproto {8021q | 8021ad} on page 356
      set lacp-speed {fast | slow}
      set mtu <mtu_int>
      set system interface
      set system interface
      set system interface
      set system interface
      config secondaryip
         edit <entry_index>
            set ip {"<interface_ipv4mask>" | "<interface_ipv6mask>"}
         next
         end
      next
   end
```

Variable	Description	Default
"<interface_name>"	Enter the name of a network interface. The maximum length is 15 characters.	No default.
status {up | down}	Enable (select `up`) to bring up the network interface so that it is permitted to receive and/or transmit traffic. **Note:** This administrative status from this command is **not** the same as its detected physical link status. For example, even though you have used `config system interface` to configure port1 with `set status up`, if the cable is physically unplugged, `diagnose hardware nic list port1` may indicate correctly that the link is down (`Link detected: no`).	`up`
algorithm {layer2 | layer2_3 | layer3_4}	Select the connectivity layers that will be considered when distributing frames among the aggregated physical ports. • `layer2`–Consider only the MAC address. This results in the most even distribution of frames, but may be	`layer2`

Variable	Description	Default
	disruptive to TCP if packets frequently arrive out of order. • `layer2_3`–Consider both the MAC address and IP session. Queue frames involving the same session to the same port. This results in slightly less even distribution, and still does not guarantee perfectly ordered TCP sessions, but does result in less jitter within the session. • `layer3_4`–Consider both the IP session and TCP connection. Queue frames involving the same session and connection to the same port. Distribution is not even, but this does prevent TCP retransmissions associated with link aggregation.	
allowaccess {HTTP HTTPS ping snmp ssh FortiWeb-manager}	Enter the IPv4 protocols that will be permitted for administrative connections to the network interface or VLAN sub-interface. Separate each protocol with a space. To remove from or add to the list of permitted administrative access protocols, retype the entire list. • `ping`–Allow ICMP ping responses from this network interface. • `HTTP`–Allow HTTP access to the web UI. The HTTP access to FortiWeb's GUI will be automatically redirected to HTTPS, so you can't enable HTTP alone, it should be enabled along with HTTPS. • `HTTPS`–Allow secure HTTP (HTTPS) access to the web UI. • `snmp`–Allow SNMP access. For details, see system snmp community on page 383. **Note:** This setting only configures which network interface will **receive** SNMP queries. To configure which network interface will **send** traffic, see system snmp community on page 383. • `ssh`–Allow SSH access to the CLI. • `FortiWeb-manager` – Allow FortiWeb Manager to use this interface to administer this appliance.	`ping HTTPS ssh`

Variable	Description	Default
	Caution: Enable administrative access only on network interfaces or VLAN subinterfaces that are connected to trusted private networks or directly to your management computer. If possible, enable only secure administrative access protocols such as HTTPS or SSH. Failure to restrict administrative access could compromise the security of your FortiWeb appliance. Consider allowing ping only when troubleshooting.	
ip6-allowaccess {HTTP HTTPS ping snmp ssh FortiWeb-manager}	Enter the IPv6 protocols that will be permitted for administrative connections to the network interface or VLAN subinterface. Separate each protocol with a space. To remove from or add to the list of permitted administrative access protocols, retype the entire list. • `ping`–Allow ICMP ping responses from this network interface. • `HTTP`–Allow HTTP access to the web UI. The HTTP access to FortiWeb's GUI will be automatically redirected to HTTPS, so you can't enable HTTP alone, it should be enabled along with HTTPS. • `HTTPS`–Allow secure HTTP (HTTPS) access to the web UI. • `snmp`–Allow SNMP access. For details, see system snmp community on page 383. **Note:** This setting only configures which network interface will **receive** SNMP queries. To configure which network interface will **send** traffic, see system snmp community on page 383. • `ssh`–Allow SSH access to the CLI. • `FortiWeb-manager` – Allow FortiWeb Manager to use this interface to administer this appliance. **Caution:** Enable administrative access only on network interfaces or VLAN subinterfaces connected to trusted private networks or directly to your management computer. If possible, enable only secure administrative access protocols such as HTTPS or SSH. Failure to restrict administrative access could compromise the security of your FortiWeb appliance. Consider allowing ping only when troubleshooting.	`ping`
wccp {enable | disable}	Specify whether FortiWeb uses the interface to communicate with a FortiGate unit configured as a WCCP server. Available only when the operation mode is WCCP.	`disable`

Variable	Description	Default
description "<comment_str>"	Enter a description or other comment. If the comment is more than one word or contains an apostrophe, surround the comment with double quotes ("). The maximum length is 63 characters.	No default.
interface "<interface_name>"	Enter the name of the network interface with which the VLAN subinterface will be associated. The maximum length is 15 characters. This field is available only if type {aggregate | physical | vlan | redundant} on page 355 is `vlan`.	No default.
intf {"<port_name>" ...}	Enter the names of 2 physical network interfaces or more that will be combined into the aggregate link. Only physical network interfaces may be aggregated. The maximum length is 15 characters each. This field is available only if type {aggregate | physical | vlan | redundant} on page 355 is `vlan`.	No default.
ip "<interface_ipv4mask>"	Enter the IPv4 address and netmask of the network interface, if any. The IP address must be on the same subnet as the network to which the interface connects. Two network interfaces cannot have IP addresses on the same subnet. The default setting for port1 is `192.168.1.99` with a netmask of `255.255.255.0`. Other ports have no default.	Varies by the interface.
ip6 "<interface_ipv6mask>"	Enter the IPv6 address and netmask of the network interface, if any. The IP address must be on the same subnet as the network to which the interface connects. Two network interfaces cannot have IP addresses on the same subnet.	`::/0`
lacp-speed {fast | slow}	Select the rate of transmission for the LACP frames (LACPUs) between FortiWeb and the peer device at the other end of the trunking cables, either: • **SLOW**–Every 30 seconds. • **FAST**–Every 1 second. **Note:** This must match the setting on the other device. If the rates do not match, FortiWeb or the other device could mistakenly believe that the other's ports have failed, effectively disabling ports in the trunk.	`slow`
type {aggregate | physical | vlan | redundant}	Indicates whether the interface is directly associated with a single physical network port, a group of redundant interfaces, or is instead a VLAN subinterface or link aggregate. The default varies by whether you are editing a network interface associated with a physical port (`physical`) or creating a new subinterface/aggregate (`vlan` or `aggregate`).	Varies by the interface.

Variable	Description	Default
mode {static | dhcp}	Specify whether the interface obtains its IPv4 address and netmask using DHCP.	`static`
ip6-mode {static | dhcp}	Specify whether the interface obtains its IPv6 address and netmask using DHCP.	`static`
vlanid <vlan-id_int>	Enter the VLAN ID of packets that belong to this VLAN subinterface. • If one physical network port (that is, a VLAN trunk) will handle multiple VLANs, create multiple VLAN subinterfaces on that port, one for each VLAN ID that will be received. • If multiple, different physical network ports will handle the same VLANs, on each of the ports, create VLAN subinterfaces that have the same VLAN IDs. The VLAN ID is part of the tag that is inserted into each Ethernet frame in order to identify traffic for a specific VLAN. VLAN header addition is handled automatically, and does not require that you adjust the maximum transmission appliance (MTU). Depending on whether the device receiving a packet operates at Layer 2 or Layer 3 of the network, this tag may be added, removed or rewritten before forwarding to other nodes on the network. For example, a Layer 2 switch or FortiWeb appliance operating in either of the transparent modes would typically add or remove a tag when forwarding traffic among members of the VLAN, but would **not** route tagged traffic to a different VLAN ID. In contrast, a FortiWeb appliance operating in Reverse Proxy mode, inspecting the traffic to make routing decisions based upon higher-level layers/protocols, might route traffic between different VLAN IDs (also known as inter-VLAN routing) if indicated by its policy, such as if it has been configured to do WSDL-based routing. For the maximum number of interfaces, including VLAN subinterfaces, see the *FortiWeb Administration Guide*: https://docs.fortinet.com/document/fortiweb This field is available only when type {aggregate | physical | vlan | redundant} on page 355 is `vlan`. The valid range is between 1 and 4094 and must match the VLAN ID added by the IEEE 802.1q-compliant router or switch connected to the VLAN subinterface.	`0`
vlanproto {8021q | 8021ad}	Select either the VLAN type 802.1Q or 802.1ad.	`802.1Q`
<entry_index>	Enter the index number of the individual entry in the table.	No default.

Variable	Description	Default
ip {"<interface_ipv4mask>" | "<interface_ipv6mask>"}	Type an additional IPv4 or IPv6 address and netmask for the network interface. Available only when `ip-src-balance` or `ip6-src-balance` is enabled. For details, see system network-option on page 362.	No default.
mtu <mtu_int>	Enter the maximum transmission unit (MTU) that the interface supports. Valid values are 512-9216 (for IPv4) or 1280-9216 (for IPv6). You cannot specify an MTU for a VLAN interface that is larger than the MTU of the corresponding physical interface.	`1500`

Example

This example configures the network interface named port1, associated with the first physical network port, with the IP address and subnet mask `192.0.2.1/24`. It also enables ICMP `ECHO` (ping) and HTTPS administrative access to that network interface, and enables it.

```
config system interface
   edit port1
      set ip 192.0.2.1 255.255.255.0
      set allowaccess ping HTTPS
      set status up
   next
end
```

Example

This example configures the network subinterface named vlan_100, associated with the physical network interface port1, with the IP address and subnet mask `192.0.2.1/24`. It does not allow administrative access.

```
config system interface
   edit vlan_100
      set type vlan
      set ip 192.0.2.1 255.255.255.0
      set status up
      set vlanid 100
      set interface port1
   next
end
```

Related topics

- system v-zone on page 396
- router static on page 102
- server-policy vserver on page 217
- system snmp community on page 383
- system admin on page 225
- system ha on page 326
- system network-option on page 362
- ping on page 878
- hardware nic on page 810
- network ip on page 817
- network sniffer on page 821

system ip-detection

Use this command to configure how FortiWeb analyzes the identification (ID) field in IP packet headers in order to distinguish source IP addresses that are actually Internet connections shared by multiple clients, not single clients.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
config system ip-detection
   set share-ip-detection-level {low | medium | high}
end
```

Variable	Description	Default
share-ip-detection-level {low | medium | high}	Select how different packets' ID fields can be before FortiWeb detects that an IP is shared by multiple clients.	`low`

Related topics

- system advanced on page 235

system manager-mode

The autoscaling options on FortiWeb are automatically configured after initial deployment. You can use this command to change the default configurations.

Syntax

```
config system manager
      set mode {server | client | standalone}
      set server-type {physical}
      set server-ip <server_ip_address>
      set server-port <integer>
      set config-sync-port <integer>
      set connection-interval <integer>
      set connection-lost-threshold <integer>
      set callback-url <string>
      set callback-interval <integer>
      set server-public-ip <server_public_ip_address>
   next
end
```

Variable	Description	Default
mode {server | client | standalone}	After the VMs in auto-scaling cluster are deployed, the function APP elects a server VM. You can use this command to change the role of the VM.	No default.
server-type {physical}	Currently we only support physical server. More types will be supported in future releases.	physical
server-ip <server_ip_address>	Enter port1's IP address of the server.	port1's IP address.
server-port	Enter a TCP port number. The clients use `server-ip`: `server-port` to communicate with the server, for example, register with the server to join, leave, etc.	996
config-sync-port <integer>	Enter the port that is used for configuration synchronization. The configurations of the server will be synchronized to all the clients in the cluster.	997
`connection-interval <integer>`	Enter the number of seconds between each server-client connection. The valid range is from 1-10.	10

Variable	Description	Default
`connection-lost-threshold <integer>`	Enter the number of seconds which must pass after the server confirmed that the client's connection is lost. The valid range is 1-10 .	3
`callback-url <string>`	The URL of the function APP. The VMs in the auto-scaling cluster uses this URL to communicate with the function APP. This URL is broadcasted to all the VMs in the cluster when they are deployed, so that they can communicate with the function APP. The function APP will then elect a server VM among all the available VMs.	function APP's IP address
callback-interval <integer>	Specify the interval time for FortiWeb-VM to send heartbeat request to callback URL. The valid range is 10-600 seconds.	30
`server-public-ip`	The public IP address of the Server. You can use this address to access the server's GUI and CLI.	server VM's IP address

system nethsm

Use this command to configure Securosys Primus HSM integration on FortiWeb. This step follows enabling HSM and specifying primus as the manufacturer in config server-policy setting.

Integrating with Securosys Primus HSM offloads cryptographic operations to a dedicated hardware security module, ensuring strong key protection and efficient processing. Once configured, FortiWeb utilizes the HSM for SSL/TLS key management, digital signatures, and secure encryption/decryption, leveraging hardware acceleration to enhance security and compliance with high-assurance standards.

Prerequisites

Before configuring Securosys Primus HSM on FortiWeb, ensure the following prerequisites are met. These credentials and files are required when setting up PKCS pin authentication on FortiWeb:

- Active account with HSM username, setup password, and PKCS#11 password.
- PKCS#11 API provider installed on the client machine.
- Primus HSM configuration file obtained and configured.
- Client registered to the HSM server and permanent secret retrieved.

Once you have configured and saved this configuration, FortiWeb will validate the configuration file and partition parameters. If all values match the expected HSM settings, the Primus HSM integration is established. At this point, cryptographic operations can be performed securely using the configured partition.

Next steps:

- Generate a Local CSR on FortiWeb – Create a CSR on FortiWeb with the Primus HSM enabled, selecting the appropriate HSM partition.
- Obtain a Signed Certificate – Download the CSR, submit it to a Certificate Authority (CA) for signing, and retrieve the signed certificate.
- Import the Signed Certificate into FortiWeb – Upload the signed certificate to FortiWeb for use in SSL/TLS encryption.
- Apply the Certificate in Server Policy – Assign the imported certificate to the relevant server policy to secure traffic with HSM-backed encryption.

For the complete configuration workflow of Securosys Primus HSM on FortiWeb, refer to the FortiWeb Administration Guide.

Syntax

```
config system nethsm
   set status {enable|disable}
   set primus-cfg <cfg_content>
   set primus-cfg-version <version_number>
   config partitions
      edit <entry_index>
         set name <partition_name>
         set pkcs11-pin <pin>
         set secret <permanent_secret>
         set slot-id <slot_id>
      next
   end
end
```

Variable	Description	Default
status {enable|disable}	Enable the **status** to activate the Primus HSM integration.	disable
primus-cfg <cfg_content>	The primus configuration file content.	No default.
primus-cfg-version <version_number>	The version tracker of primus hsm configuration file.	No default.
config partitions		
<entry_index>	Enter the index number of the individual entry in the table. The valid range is from 1-9,999,999,999,999,999,999.	No default.
name <partition_name>	Define the partition name. This value must exactly match the `user_name` field in the uploaded Primus HSM configuration file to ensure authentication. For more information, see the Securosys documentation.	No default.

Variable	Description	Default
pkcs11-pin <pin>	Enter the PKCS#11 authentication PIN required to establish a secure session with the HSM. This PIN is used for cryptographic operations and must correspond to the PIN configured on the HSM.	No default.
secret <permanent_secret>	Provide the Permanent Secret associated with the partition. This secret serves as a cryptographic key to authenticate and encrypt communications between FortiWeb and the HSM.	No default.
slot-id <slot_id>	Specify the Slot ID corresponding to the HSM partition. This value must match the `id` defined in the uploaded configuration file. It corresponds to the PKCS#11 Slot ID assigned to the partition, serving as a unique identifier within the HSM. The correct Slot ID is required to establish secure access and ensure proper key management operations. For more information, see the Securosys documentation.	0

Related topics:

- debug primuslog on page 799
- debug pkcs11providerlog on page 798

system network-option

Use this command to configure system-wide TCP connection options.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `netgrp` area. For details, see Permissions on page 46.

Syntax

```
config system network-option
   set tcp-timestamp {enable | disable}
   set tcp-tw-recycle {enable | disable}
   set ip-src-balance {enable | disable}
   set ip6-src-balance {enable | disable}
   set tcp-buffer {default | high | max | ultra}
   set arp_ignore {enable | disable}
   set loopback-mtu <loopback-mtu_int>
   set tcp-usertimeout <tcp-usertimeout_int>
   set tcp-keepcnt <tcp-keepcnt_int>
   set tcp-keepidle <tcp-keepidle_int>
```

```
    set tcp-keepintvl <tcp-keepintvl_int>
    set loopback-tso-gso {enable | disable}
    set route-priority {system | dhcp}
    set dns-priority {system | dhcp}
    set dns-cache-timeout <dns-cache-timeout_int>
    set tcp-mtu-probing {enable | disable}
    set  ipfrag-high-thresh <ipfrag-high-thresh_int>
    set  ipfrag-low-thresh <ipfrag-low-thresh_int>
    set ipfrag-timeout <ipfrag-timeout_int>
    set ip6frag-high-thresh <ip6frag-high-thresh_int>
    set ip6frag-low-thresh <ip6frag-low-thresh_int>
    set ip6frag-timeout <ip6frag-timeout_int>
    set tcp-usertimeout <integer>
    set ip-local-port-warning-threshold {high | normal | low | disable}
    set ip-local-port-assign-ex {enable | disable}
end
```

Variable	Description	Default
tcp-timestamp {enable | disable}	Enable to: • Verify whether clients' TCP timestamps are sequential • Include TCP timestamps in packets from FortiWeb Disabling this option can be useful when multiple clients are in front of a source NAT gateway such as a FortiGate. If it applies source NAT but forwards packets to FortiWeb **without** modifying the TCP timestamp, packets received from that source IP will appear to FortiWeb to have an unstable timestamp. FortiWeb will therefore drop out-of-sequence packets. Disabling therefore prevents packets dropped due to this cause, and can improve performance in that case. **Caution:** Disabling this option affects FortiWeb's dynamic calculation of TCP retransmission timeout (RTO) and therefore round trip time (RTT). If you disable the timestamp when it is not necessary, this can result in decreased application performance.	`enable`
tcp-tw-recycle {enable | disable}	Enable to quickly recycle sockets that are ready to close (i.e. in the `TIME_WAIT` state per the TCP RFC). This option can be useful in networks with both sustained high load and bursts of new connection requests. If all sockets are busy, new connection requests may be refused. Enabling this option frees sockets more quickly. **Caution:** Enabling this option can cause issues with external load balancers and HA failover if they are not expecting the connection to close quickly. This can result in decreased application performance. Generally, it is safer to wait for sockets to safely close before they are reused.	`disable`

Variable	Description	Default
ip-src-balance {enable | disable}	Enable to allow FortiWeb to connect to the back-end servers using more than one IPv4 address. FortiWeb uses a round-robin load-balancing algorithm to distribute the connections among the available IP addresses. To specify the additional IP addresses, see system interface on page 351. This option is useful for performance testing when the number of concurrent connections between FortiWeb and a back-end server exceeds the number of ports that a single IP can provide.	`disable`
ip6-src-balance {enable | disable}	Enable to allow FortiWeb to connect to the back-end servers using more than one IPv6 address. FortiWeb uses a round-robin load-balancing algorithm to distribute the connections among the available IP addresses. To specify the additional IP addresses, see system interface on page 351.	`disable`
tcp-buffer {default | high | max | ultra}	`default`: 64 KB `high`: 614 KB `max`: 1228 KB `ultra`: 3992 KB This option is useful when amount of traffic between a server pool member and FortiWeb is significantly larger than traffic between FortiWeb and the client.	`max`
arp_ignore {enable | disable}	Specify how FortiWeb responds to ARP requests. • `disable`–Reply for any local target IP address, configured on any interface. • `enable`–Reply only if the target IP address is local address configured on the incoming interface.	`disable`
loopback-mtu <loopback-mtu_int>	If the operation mode is True Transparent Proxy, specify a global MTU for v-zones. **Caution:** If this value is smaller than a v-zone's MTU, this value replaces the larger value in the v-zone configuration. Available only when the operation mode is True Transparent Proxy.	`65536`
tcp-usertimeout <tcp-usertimeout_int>	Enter how long FortiWeb waits before it closes the connection with a client that is not sending any data or responding with ACK to keepalive packets, in seconds.	`120`
tcp-keepcnt <tcp-keepcnt_int>	Enter only if no value is specified for tcp-usertimeout <tcp-usertimeout_int> on page 364. Fortinet recommends that you always specify a `tcp-usertimeout` value.	`3`

Variable	Description	Default
tcp-keepidle <tcp-keepidle_int>	Enter how long FortiWeb waits before it sends a client or server that keeps a connection with FortiWeb open without sending data a keepalive packet, in seconds.	`60`
tcp-keepintvl <tcp-keepintvl_int>	Enter how often FortiWeb sends a keepalive packet to a client that keeps a connection open without sending data, in seconds.	`20`
loopback-tso-gso {enable | disable}	Used for debugging.	`disable`
route-priority {system | dhcp}	Configure the priority of route IP address obtained by the system and dhcp, whose route IP address has the priority.	No default
dns-priority {system | dhcp}	Configure the priority of DNS obtained by the system and dhcp, whose DNS has the priority.	No default
dns-cache-timeout <dns-cache-timeout_int>	Configure how long the DNS proxy cache expires. The valid range is 0~60 (minutes). Only integers are supported. For example, if the value is set to 3, the DNS proxy queries the DNS records from the DNS server and renews the records in the cache every 3 minutes. Please note that if the DNS records in the DNS server are changed during the 3-minute interval, and a client requests for a connection to the domain at this point, the connection will fail because the DNS record stored in the DNS proxy cache is not valid anymore. To avoid this problem, you can set the `dns-cache-timeout` to a smaller value, so that the DNS proxy renews its cache more frequently. You can also set it to 0 (the default value), which means the DNS proxy doesn't cache the DNS records. It initiates query to the DNS server whenever there is a request to look up the DNS records.	`0`
tcp-mtu-probing {enable | disable}	Enable to negotiate with the upstream and downstream switches to get the maximum MTU value. Adjust the MTU accordingly for actual need.	`disable`
ipfrag-high-thresh <ipfrag-high-thresh_int>	Enter the maximum threshold of the queued IP fragments memory that FortiWeb receives. The valid range is 0-4194304 bytes.	`4194304`
ipfrag-low-thresh <ipfrag-low-thresh_int>	Enter the minimum threshold of the queued IP fragments memory that FortiWeb receives. The valid range is 0-3145728 bytes.	`3145728`
ipfrag-timeout <ipfrag-timeout_int>	Type the number of seconds before the next IP fragment is received. The valid range is 0-30 seconds.	`30`

Variable	Description	Default
ip6frag-high-thresh <ip6frag-high-thresh_int>	Enter the maximum threshold of the queued IP6 IP fragments memory that FortiWeb receives. The valid range is 0-4194304 bytes.	`4194304`
ip6frag-low-thresh <ip6frag-low-thresh_int>	Enter the minimum threshold of the queued IP6 fragments memory that FortiWeb receives. The valid range is 0-3145728 bytes.	`3145728`
ip6frag-timeout <ip6frag-timeout_int>	Type the number of seconds before the next IP6 fragment is received. The valid range is 0-30 seconds.	`30`
tcp-usertimeout <integer>	When the health check is disabled and the back-end server is not responsive, FortiWeb will wait for the specified time until it sends the 503 error code. It's recommended to set a value smaller than 20 (seconds). This is to avoid too many times of retry being accumulated during the waiting time, which may cause the connection to be closed before FortiWeb has the chance to send the error code. This option is at the appliance level. It affects all the policies on the appliance. You can also set the `tcp-conn-timeout` under `config server-policy policy` which only affects a specific policy. If the timeout is configured both at the policy and the appliance level, FortiWeb will take the value whichever is smaller. Sometimes when there is a third device, such as a gateway, deployed between FortiWeb and the back-end server, FortiWeb will directly get the status code from the third device instead of waiting along the timeout period. The valid range for this option is 0-600 (seconds). 0 means FortiWeb will send the 503 error code as soon as it detects the back-end server is not responsive.	120
ip-local-port-warning-threshold {high | normal | low | disable}	FortiWeb allocates a different port number (ranging from 1024 to 65535) for each connection with the back-end server to distinguish these connections. When the port numbers are nearly exhausted, CPU usage will be high. It is suggested to create a new network interface for the back-end server connections when facing port exhaustion. It's important to stay informed about the port exhaustion situation so that you can take timely action to avoid CPU high usage. An efficient way to achieve this is by configuring FortiWeb to generate Port Exhaustion logs based on port usage levels: • `High`: The ports are almost fully utilized. • `Normal`: There are a few available ports, and the system is struggling to allocate ports to all current	normal

Variable	Description	Default
	connections. It is highly likely that the ports will soon be exhausted. • `Low`: There are some available ports, and the system is functioning adequately. However, you should be prepared for the possibility that ports might be exhausted during a traffic spike. Another option is `disable`, which will disable generating the port exhaustion logs.	
ip-local-port-assign-ex {enable | disable}	Enable this option to mitigate the port exhaustion situation. However, please note that this is a temporary solution and could impact system performance. Adding a new network interface for back-end server connections should be considered a high-priority solution when port exhaustion occurs.	disable

Example

This example assigns additional IP addresses to port1. FortiWeb uses a round-robin load-balancing algorithm to distribute connections to back-end servers among the available IP addresses.

```
config system network-option
   set ip-src-balance enable
end

config system interface
   edit port1
      set type physical
      set ip 192.0.2.71/24
      set allowaccess HTTPS ping ssh snmp HTTP telnet
      config secondaryip
         edit 1
            set ip 192.0.2.72/24
         next
         edit 2
            set ip 192.0.2.73/24
         next
      end
   next
end
```

Related topics

- system interface on page 351
- ping on page 878
- network ip on page 817
- network sniffer on page 821

system ntp

Use this command to manage the connection to an NTP server.

To use this command, your administrator account's access control profile must have `rw` permission to the `netgrp` area. For details, see Permissions on page 46.

Syntax

```
config system ntp
   set ntpsync {enable|disable}
   set syncinterval <integer>
   config ntp-server
      edit <no.>
         set server <server_name>
         set authentication {enable|disable}
         set key-type {aes128|aes256|sha1|sha256}
         set key <key>
         set key-id <key_id>
         set ip-type {v4|v6|both}
      next
   end
end
```

Variable	Description	Default
`ntpsync`	Enable/disable use of NTP. When **ntpsync** is **enabled**, **config ntp-server** becomes configurable.	Enable
`syncinterval`	Specify how often the system synchronizes its time with the NTP server. The default is 60 minutes. The valid range is 1-1440.	60
config ntp-server		
`server`	Specify the IP address or domain name of an NTP server or pool, such as `pool.ntp.org`. To find an NTP server, go to http://www.ntp.org.	No default
`authentication`	Enable to apply authentication keys to secure the NTP server. This is disabled by default.	disable
`key-type`	The **key-type** option is available if **authentication** is **enabled**. Select the key type from the following: • aes128 • aes256 • sha1 • sha256 The default option is sha1.	sha1

Variable	Description	Default
key	The **key** option is available if **authentication** is **enabled**. Specify the Key in hexadecimal format. The maximum length is 127 digits or characters.	No default
key-id	The **key-id** option is available if **authentication** is **enabled**. Specify the Key ID. The valid range is 0-65536	No default
ip-type	Select the IP type from the following: • v4 • v6 • both The default option is v4.	v4

Example

```
config system time ntp
   set ntpsync enable
   set syncinterval 1
   config  ntp-server
      edit 1
         set server 10.159.0.114
         set authentication enable
         set key-type aes256
         set key ENC
         set key-id 7
         set ip-type v4
      next
   end
end
```

system object-tagging

Use this command to create tags that can be attached to server policy. It helps in labeling server policy for future usage such as sorting, filtering and acknowledging policies.

To use this command, your administrator account's access control profile must have both `r` and `w` permissions to items in the `admingrp` category.

Syntax

```
config system object-tagging
   edit <string>
      set color <color-id>
```

```
   next
end
```

Variable	Description	Default
<string>	The name of the tag.	no default
<color-id>	Assign a color to this tag. The valid range is 0-32.	1

system password-policy

Use this command to configure a password policy for administrator accounts that set rules for password characteristics.

Syntax

```
config system password-policy
   set status {enable | disable}
   set min-length-option {enable | disable}
   set mini-length <mini-length_int>
   set single-admin-mode {enable | disable}
   set character-requirements {enable | disable}
   set min-upper-case-letter <min-upper-case-letter_int>
   set min-lower-case-letter <min-lower-case-letter_int>
   set mini-number <mini_number_int>
   set min-non-alphanumeric <min-non-alphanumeric_int>
   set forbid-password-reuse {enable | disable}
   set history-password-number <history-password-number_int>
   set expire-status {enable | disable}
   set expire-day <expire-day_int>

end
```

Variable	Description	Default
status {enable | disable}	Enable to enforce password rules for administrator accounts. When you configure rules for the password policy, administrator accounts that don't adhere to the password policy will be prompted to update their password upon logging in. For some cloud platforms such as AWS, Azure, and GCP, etc., it is enabled by default.	disable
min-length-option {enable | disable}	Enable/disable to set the minimum length for the password.	`disable`

Variable	Description	Default
mini-length <mini-length_int>	Enter the minimum password length. The valid range is 8-128.	8
single-admin-mode {enable | disable}	Enable/disable to activate single admin user login.	disable
character-requirements {enable | disable}	Enable/disable to set characters, upper/lower case, numbers (0-9), and special.	0
min-upper-case-letter <min-upper-case-letter_int>	Enter the number of upper case characters. The valid range is 0-128.	0
min-lower-case-letter <min-lower-case-letter_int>	Enter the number of lower case characters. The valid range is 0-128.	0
mini-number <mini_number_int>	Enter the number of number characters. The valid range is 0-128. Only numbers 0-9 are supported.	0
min-non-alphanumeric <min-non-alphanumeric_int>	Enter the number of special characters. The valid range is 0-128.	0
forbid-password-reuse {enable | disable}	Enable forbidding password re-use.	disable
history-password-number <history-password-number_int>	Enter the number of history passwords that can not be re-used. The valid range is 1-10.	3
expire-status {enable | disable}	Enable password expiration.	disable
expire-day <expire-day_int>	Enter the valid period for the password. The valid range 1-999 days	90

Example

This example enables configuration of the password policy.

```
config system password-policy
   set status enable
   set system password-policy
   set min-length 8
   set single-admin-mode enable
   set character-requirements enable
   set min-upper-case-letter 2
   set min-lower-case-letter 2
   set min-number 2
   set min-non-alphanumeric 3
   set forbid-password-reuse enable
   set history-password-number 2
   set expire-status enable
   set expire-day 100
```

```
end
```

system raid

Use this command to configure the RAID level.

Currently, only RAID level 1 is supported, and only on the following models shipped with FortiWeb 4.0 MR1 or later:

- FortiWeb-1000B
- FortiWeb-1000C
- FortiWeb-1000D
- FortiWeb-1000E
- FortiWeb-1000F
- FortiWeb-2000E
- FortiWeb-3000C
- FortiWeb-3000D
- FortiWeb-3000E
- FortiWeb-4000C
- FortiWeb-4000D
- FortiWeb-4000E

Note: All supported platforms use hardware RAID, except for the FortiWeb-1000E and 1000F models, which implement software RAID.

RAID cannot be activated on older appliances that were upgraded to FortiWeb 4.0 MR1.

Back up the data regularly. RAID is not a substitute for regular backups. RAID 1 (mirroring) is designed to improve hardware fault tolerance, but cannot negate all risks.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
config system raid
   set level {raid1}
end
```

Variable	Description	Default
level {raid1}	Enter the RAID level. Currently, only RAID level 1 is supported.	`raid1`

Example

This example sets RAID level 1.

```
config system raid
   set level raid1
end
```

Related topics

- create-raid level on page 861
- create-raid rebuild on page 864
- hardware raid list on page 813

system recaptcha-api

Use this command to specify the URL that FortiWeb will use to send API calls to Google reCAPTCHA service, and the timeout of the API request.

To use this command, your administrator account's access control profile must have both `r` and `w` permissions to items in the `admingrp` category.

Syntax

```
config system recaptcha-api
   set url <string>
   set timeout <int>
   set recaptcha-v3-score-threshold <string>
end
```

Variable	Description	Default
url <string>	Specify the URL of the Google reCAPTCHA service. FortiWeb sends API calls to this URL to verify client's response to the reCAPTCHA challenge. Currently the URL is https://www.google.com/recaptcha/api/siteverify. Please note this URL is subject to change by Google. Please refer to https://developers.google.com/recaptcha/docs/verify#api_request for the latest URL and make sure FortiWeb is configured with the latest URL.	https://www.google.com/recaptcha/api/siteverify
timeout <int>	If there isn't any result returned from Google	10 (seconds)

Variable	Description	Default
	reCAPTCHA service by the timeout period, the bot confirmation will be treated as failed.	
recaptcha-v3-score-threshold <string>	reCAPTCHA v3 returns a score for each request. The score is based on interactions with your application. If the score surpasses the `recaptcha-v3-score-threshold`, FortiWeb will take corresponding actions. The valid range is 0-1.	0.5

system replacemsg-image

Use this command to add images that the FortiWeb HTML web pages can use. These pages are the ones that FortiWeb uses for blocking, authentication, and unavailable servers.

You cannot edit the images that FortiWeb provides by default.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
config system replacemsg-image
   edit "<image_name>"
      set image-type {gif | jpg | png | tiff}
      set image-base64 <image_code>
end
```

Variable	Description	Default
"<image_name>"	Enter the name of the image to add.	No default
image-type {gif | jpg | png | tiff}	Specify the image file format of the image to add.	No default
image-base64 <image_code>	Enter the HTTP page return code as clear text, Base64-encoded. Ensure the value has the following properties: • Its length is divisible by 4 (a rule of Base64 encoding) • It begins with characters that identify its format (for example, R0lGO for GIF, iVBORw0K for PNG) • The format matches the value of `image-type`	No default

system saml

You can configure Fabric Connector to use Single Sign-On (SSO) to log in to FortiWeb with FortiGate's administrator accounts.

Use this command to configure the single sign on options on FortiWeb. Before using this command, you need to first use `config system csf` to configure the Fabric Connector. For a complete guide, see Fabric Connector: Single Sign On with FortiGate.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
config system saml
   set status {enable | disable}
   set default-login-page
   set default-profile
   set  idp-entity-id
   set  idp-single-sign-on-url
   set idp-single-logout-url
   set server-address
end
```

Variable	Description	Default
status {enable | disable}	Enable or disable single sign on mode. When this is enabled, the **Single Sign-On** option will be available on the login page of FortiWeb.	`disable`
default-login-page	• `normal`: When accessing to FortiWeb GUI, the login page has both **Single Sign-On** and **Non Single Sign-On** login options. • `sso`: When accessing to FortiWeb GUI, it would redirect to the **SAML Single Sign-On** login page. **Non Single Sign-On** login is not available. User can only log in with FortiGate administrator accounts	`normal`
default-profile	Logging in to FortiWeb via FortiGate Fabric Single Sign-On does not share the same admin profile between FortiWeb and FortiGate. It requires specifying profiles to those FortiGate administrator accounts on FortiWeb. Choose the profiles you have created in `config system accprofile`. The selected profiles will be assigned to the FortiGate administrator accounts that are used to log in to FortiWeb via the SAML Single Sign-On. The following two default profiles are available as well as the customized profiles if any: • `admin_no_access`: users will be assigned with none access privilege. • `prof_admin`: this is FortiWeb's default profile for root admin.	`No default`
idp-entity-id	It's automatically synchronized from FortiGate if you have configured `set configuration-sync enable` in `config system csf`.	`No default`

Variable	Description	Default
idp-single-sign-on-url	It's automatically synchronized from FortiGate if you have configured `set configuration-sync enable` in `config system csf`.	No default
idp-single-logout-url	It's automatically synchronized from FortiGate if you have configured `set configuration-sync enable` in `config system csf`.	No default
server-address	It's automatically synchronized from FortiGate if you have configured `set configuration-sync enable` in `config system csf`.	No default

Related topics

- system csf

system sdn-connector

Use this command to create external connectors for Amazon Web Services (AWS), Microsoft Azure, and OCI.

The AWS and Azure connectors authorize FortiWeb to automatically retrieve the IP addresses of the back-end servers deployed on AWS or Azure.

OCI Connector is available only when FortiWeb-VM is deployed on OCI. It is used to obtain FortiWeb HA member information in Active-Passive mode.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
config system sdn-connector
   edit <name>
      set status {enable | disable}
      set type {azure | aws | oci}
      set update-interval <int>
      set access-key <string> on page 377
      set secret-key <string> on page 377
      set region <string>
      set tenant-id <string>
      set subscription-id <string>
      set client-id <string>
      set client-secret <string>
      set resource-group <string>
      set azure-region <string>
      setserver-region-type {commercial | government}
      set server-region <region-id>
      set user-ocid <string>
      set tenant-ocid <string>
```

```
    set compartment-ocid <string>
    set private-key <userdef>
  end
end
```

Variable	Description	Default
`<name>`	Enter a name for the external connector object.	`No default`
`status {enable | disable}`	Enable or disable the external connector object.	`enable`
`type {azure | aws | oci}`	Select the type of the connector.	`No default`
`update-interval <int>`	Specify the update interval for the connector to get AWS objects and dynamically populates the information in the server pool configuration.	`60`
AWS connector settings		
`access-key <string>`	Specify the access key ID. An access key on AWS grants programmatic access to your resources. If you have security considerations, it's recommended to create an IAM role specially for FortiWeb and grant read-only access. See this article for how to get access key ID and secret access key on AWS: https://docs.aws.amazon.com/general/latest/gr/aws-sec-cred-types.html.	`No default`
`secret-key <string>`	Specify the secret access key.	`No default`
`region <string>`	Specify the region where your instances are deployed, for example, us-west-2.	`No default`
Azure connector settings You must create an Azure AD application to generate the Azure client ID and corresponding Azure client secret. This application must be a service principal. Otherwise, the Fabric connector cannot read the inventory. You can find the complete instructions at Use portal to create an Azure Active Directory application and service principal that can access resources. Keep the following in mind when you get to the part about making a new application registration: • The Application type has two options. Choose Web app/API. • The Sign-on URL has the asterisk commonly associated with a required field, but this is not applicable in this case. Put in any valid URL in the field to complete the form and enable the Create button.		

Variable	Description	Default
`tenant-id <string>`	See instructions above for how to find the Tenant ID.	`No default`
`subscription-id <string>`	The ID of the subscription where your application server is deployed.	`No default`
`client-id <string>`	See instructions above for how to find the Client ID.	`No default`
`client-secret <string>`	See instructions above for how to find the Client Secret.	`No default`
`resource-group <string>`	The name of the resource group where your application server is deployed. Make sure that the service principal (app registration) is granted for the network contributor and VM contributor roles for the target resource group.	`No default`
`azure-region <string>`	The region where your application server is deployed.	`No default`

OCI Connector settings
you need to generate the RSA key that will be used for authentication when FortiWeb-VM connects to the load balancer.
1. Log in to a Linux system which has installed OpenSSL.
2. Open a SHELL terminal, enter the following commands:
`openssl genrsa -out ./oci_api.key 2048`
`openssl rsa -pubout -in ./oci_api.key -out ./oci_api_pub.key`
The file `oci_api.key` is the RSA private key file and the file `oci_api_pub.key` is its paired public key file.
3. Log in OCI. Go to **Governance and Administration > Identity > User**.
4. Select the proper user you wan to use.
5. Click **Add Public Key**, copy the text in `oci_api_pub.key` file, and then paste it into the **PUBLIC KEY** field on the **Add Public Key** window.
6. Click **Add**.
For a complete guide on the OCI connector settings, see Configuring OCI Connector.		

`server-region-type {commercial | government}`	If your OCI server region is either “US Federal Cloud with DISA Impact Level 5 Authorization Regions” or “US Government Cloud with FedRAMP Authorization Regions”, please select `Government`. Otherwise please select `Commercial`.	`commercial`
`server-region <region-id>`	Enter the Region Identifier of your load balancer. • For `Commercial` regions, please find the Region Identifier on this page: https://docs.cloud.oracle.com/en-us/iaas/Content/General/Concepts/regions.htm	`No default`

Variable	Description	Default

	• For `Government` regions, please find the Region Identifier on the following pages:
	  • https://docs.cloud.oracle.com/en-us/iaas/Content/General/Concepts/govfeddod.htm
	  • https://docs.cloud.oracle.com/en-us/iaas/Content/General/Concepts/govfedramp.htm	

`user-ocid <string>`	To get the User OCID: 1. Log in to OCI. 2. Go to **Governance and Administration > Identity > User**. 3. Click the user you want to use. 4. Copy the OCID of this user.	`No default`
`tenant-ocid <string>`	To get the tenant OCID: 1. Log in to OCI. 2. Go to **Governance and Administration > Administration > Tenancy Details**. 3. Click the Tenancy you want to use. 4. Copy the OCID of this Tenancy.	`No default`
`compartment-ocid <string>`	To get the compartment OCID: 1. Log in to OCI. 2. Go to **Governance and Administration > Identity > Compartments**. 3. Click the compartment that your load balancer is located in. 4. Copy the OCID of this Tenancy. **Note:** If you don't have a compartment, you can leave this option empty.	`No default`
`private-key <userdef>`	Upload the private key file you have generated when system sdn-connector on page 376.	`No default`

To apply the external connector, you need to select it in the server pool configurations so that FortiWeb can use the connector to automatically retrieve the IP addresses of the back-end servers deployed on AWS or Azure.

Here is an example:

```
config server-policy server-pool
   edit pool
      config pserver-list
         edit 1
            set server-type sdn-connector
            set sdn-addr-type public
            set sdn aws
            set filter InstanceId=i-04d15747127e4f8fe
         next
      end
   next
end
```

Related topics

- server-policy server-pool

system settings

Use this command to configure the operation mode and gateway of the FortiWeb appliance.

You will usually set the operation mode once, during installation. Exceptions include if you install the FortiWeb appliance in Offline Protection mode for evaluation purposes, before deciding to switch to another mode for more feature support in a permanent deployment.

Back up your configuration before changing the operation mode. Changing modes deletes any policies not applicable to the new mode, TCP SYN flood protection settings, all static routes, all V-zone (bridge) IPs, and all VLANs. You must re-cable your network topology to suit the operation mode, unless you are switching between the two transparent modes, which have similar network topology requirements.

The physical topology must match the operation mode. You may need to re-cable your deployment after changing this setting. For details, see the *FortiWeb Installation Guide*.

There are four operation modes:

- **Reverse proxy**–Requests are destined for a virtual server's network interface and IP address on the FortiWeb appliance. The FortiWeb appliance applies the first applicable policy, then forwards permitted traffic to a real web server. The FortiWeb appliance logs, blocks, or modifies violations according to the matching policy and its protection profile. **Most features are supported.**
- **Offline Protection** – Requests are destined for a real web server instead of the FortiWeb appliance; traffic is duplicated to the FortiWeb through a span port. The FortiWeb appliance monitors traffic received on the virtual server's network interface (regardless of the IP address) and applies the first applicable policy. Because it is not inline with the destination, it does **not** forward permitted traffic. The FortiWeb appliance logs or blocks violations according to the matching policy and its protection profile. If FortiWeb detects a malicious request, it sends a TCP RST (reset) packet to the web server and client to attempt to terminate the connection. It does **not** otherwise modify traffic. (It cannot, for example, apply SSL, load-balance connections, or support user authentication.)

  Unlike in Reverse Proxy mode or True Transparent Proxy mode, actions other than **Alertcannot** be guaranteed to be successful in Offline Protection mode. The FortiWeb appliance will attempt to block traffic that violates the policy by mimicking the client or server and requesting to reset the connection. However, the client or server may receive the reset request after it receives the other traffic due to possible differences in routing paths.

  Most organizations do **not** permanently deploy their FortiWeb appliances in Offline Protection mode. Instead, they will use Offline Protection as a way to learn about their web servers' protection requirements and to form some of the appropriate configuration during a transition period, after which they will switch to one of the operation modes that places the appliance inline between all clients and all web servers.

  Switching out of Offline Protection mode when you are done with transition can prevent bypass problems that can arise as a result of misconfigured routing. It also offers you the ability to offer some protection features that cannot be supported in a span port topology used with offline detection.

- **True transparent proxy** – Requests are destined for a real web server instead of the FortiWeb appliance. The FortiWeb appliance **transparently proxies** the traffic arriving on a network port that belongs to a Layer 2 bridge, applies the first applicable policy, and lets permitted traffic pass through. The FortiWeb appliance logs, blocks, or modifies violations according to the matching policy and its protection profile. **No changes to the IP address scheme of the network are required.** This mode supports user authentication via HTTP but **not** HTTPS.
- **Transparent Inspection** – Requests are destined for a real web server instead of the FortiWeb appliance. The FortiWeb appliance **asynchronously inspects** traffic arriving on a network port that belongs to a Layer 2 bridge, applies the first applicable policy, and lets permitted traffic pass through. The FortiWeb appliance logs or blocks traffic according to the matching policy and its protection profile, but does **not** otherwise modify it. (It cannot, for example, apply SSL, load-balance connections, or support user authentication.

Unlike in Reverse Proxy mode or True Transparent Proxy mode, actions other than **Alertcannot** be guaranteed to be successful in Transparent Inspection mode. The FortiWeb appliance will attempt to block traffic that violates the policy. However, due to the nature of asynchronous inspection, the client or server may have already received the traffic that violated the policy.

The default operation mode is Reverse Proxy.

Feature support varies by operation mode. For details, see the *FortiWeb Administration Guide*:

https://docs.fortinet.com/document/fortiweb

You can use SNMP traps to notify you if the operation mode changes. For details, see system snmp community on page 383.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
config system settings
   set opmode {offline-protection | reverse-proxy | transparent | transparent-inspection | wccp}
   set gateway "<router_ipv4>"
   set stop-guimonitor {enable | disable}
   set enable-cache-flush {enable | disable}
   set enable-debug-log {enable | disable}
   set enable-machine-learning-debug {enable | disable}
   set enable-file-upload {enable | disable}
end
```

Variable	Description	Default
opmode {offline-protection | reverse-proxy | transparent | transparent-inspection | wccp}	Select the operation mode of the FortiWeb appliance. If you have not yet adjusted the physical topology to suit the new operation mode, see the *FortiWeb Administration Guide*: https://docs.fortinet.com/document/fortiweb	`reverse-proxy`

Variable	Description	Default
	You may also need to reconfigure IP addresses, VLANs, static routes, bridges, policies, TCP SYN flood prevention, and virtual servers, and on your web servers, enable or disable SSL. **Note:** If you select `offline-protection`, you can configure the port from which TCP `RST` (reset) commands are sent to block traffic that violates a policy. For details, see block-port <port_int> on page 155.	
gateway "<router_ipv4>"	Type the IPv4 address of the default gateway. This setting is visible only if opmode {offline-protection | reverse-proxy | transparent | transparent-inspection | wccp} on page 381 is either True Transparent Proxy, Transparent Inspection, or WCCP. FortiWeb will use the `gateway` setting to create a corresponding static route under router static with the first available index number. Packets will egress through `port1` or `mgmt1`, the hard-coded management network interface for the transparent operation modes.	`none`
stop-guimonitor {enable | disable}	Enable to configure FortiWeb to stop checking whether the process that generates the web UI (HTTPSd) is defunct. In some cases, a process that has completed execution can still have an entry in the process table, which can create a resource leak. When this setting is disabled, FortiWeb checks the process and stops and reloads the web UI if it determines that the process is defunct.	`enable`
enable-cache-flush {enable | disable}	Enable to configure FortiWeb to clear its cache memory every 45 minutes and generate an event log message for the action.	`enable`
enable-debug-log {enable | disable}	Enable so that FortiWeb will record crash, daemon, kernel, netstat, and core dump logs.	`enable`
enable-machine-learning-debug {enable | disable}	Enable so that FortiWeb will record machine learning debug.	`enable`
enable-file-upload {enable | disable}	Enable to upload the debugging file.	`disable`

Related topics

- server-policy policy on page 151
- server-policy vserver on page 217

system snmp community

Use this command to configure the FortiWeb appliance's SNMP agent to belong to an SNMP version 1 or 2c community, and to select which events cause the FortiWeb appliance to generate SNMP traps.

To configure the SNMP agent as a member of a SNMP version 3 community, see system snmp user on page 389.

The FortiWeb appliance's simple network management protocol (SNMP) agent allows queries for system information can send traps (alarms or event messages) to the computer that you designate as its SNMP manager. In this way you can use an SNMP manager to monitor the FortiWeb appliance. You can add the IP addresses of up to eight SNMP managers to each community, which designate the destination of traps and which IP addresses are permitted to query the FortiWeb appliance.

An SNMP community is a grouping of equipment for network administration purposes. You must configure your FortiWeb appliance to belong to at least one SNMP community so that community's SNMP managers can query the FortiWeb appliance's system information and receive SNMP traps from the FortiWeb appliance.

You can add up to three SNMP communities. Each community can have a different configuration for queries and traps, and the set of events which trigger a trap. Use SNMP traps to notify the SNMP manager of a wide variety of types of events. Event types range from basic system events, such as high usage of resources, to when an attack type is detected or a specific rule is enforced by a policy.

Before you can use SNMP, you must activate the FortiWeb appliance's SNMP agent and add it as a member of at least one community. For details, see system snmp sysinfo on page 387. You must also enable SNMP access on the network interface through which the SNMP manager will connect. For details, see system interface on page 351.

On the SNMP manager, you must also verify that the SNMP manager is a member of the community to which the FortiWeb appliance belongs, and compile the necessary Fortinet proprietary management information blocks (MIBs) and Fortinet-supported standard MIBs. For information on MIBs, see the *FortiWeb Administration Guide*:

https://docs.fortinet.com/document/fortiweb

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
config system snmp community
   edit <community_index>
      set status {enable | disable}
      set name "<community_str>"
      set events {cpu-high | intf-ip | log-full | mem-low | netlink-down-status | netlink-up-
            status | policy-start | policy-stop | pserver-failed | sys-ha-cluster-status-change |
            sys-ha-member-join | sys-ha-member-leave | sys-mode-change | waf-amethod-attack | waf-
            hidden-fields | waf-pvalid-attack | waf-signature-detection  | power-supply-failure}
      set query-v1-port <port_int>
      set query-v1-status {enable | disable}
      set query-v2c-port <port_int>
      set query-v2c-status {enable | disable}
      set trap-v1-lport <port_int>
      set trap-v1-rport <port_int>
      set trap-v1-status {enable | disable}
      set trap-v2c-lport <port_int>
```

```
      set trap-v2c-rport <port_int>
      set trap-v2c-status {enable | disable}
      config hosts
         edit <snmp-manager_index>
            set ip {"<manager_ipv4>" | "<manager_ipv6>"}
         next
      end
   next
end
```

Variable	Description	Default
<community_index>	Enter the index number of a community to which the FortiWeb appliance belongs. The valid range is 1-9,999,999,999,999,999,999.	No default.
status {enable | disable}	Enable to activate the community. This setting takes effect only if the SNMP agent is enabled. For details, see system snmp sysinfo on page 387.	`disable`
name "<community_str>"	Enter the name of the SNMP community to which the FortiWeb appliance and at least one SNMP manager belongs. The maximum length is 63 characters. The FortiWeb appliance will not respond to SNMP managers whose query packets do not contain a matching community name. Similarly, trap packets from the FortiWeb appliance will include community name, and an SNMP manager may not accept the trap if its community name does not match.	No default.
events {cpu-high | intf-ip | log-full | mem-low | netlink-down-status | netlink-up-status | policy-start | policy-stop | pserver-failed | sys-ha-cluster-status-change | sys-ha-member-join | sys-ha-member-leave | sys-mode-change | waf-amethod-attack | waf-hidden-fields | waf-pvalid-attack | waf-signature-detection | power-supply-failure}	Enter one or more of the following SNMP event names in order to cause the FortiWeb appliance to send traps when those events occur. Traps will be sent to the SNMP managers in this community. Also enable traps. • `cpu-high`–CPU usage has exceeded 80%. • `intf-ip`–A network interface's IP address has changed. For details, see system interface on page 351. • `log-full`–Local log disk space usage has exceeded 80%. If the space is consumed and a new log message is triggered, the FortiWeb appliance will either drop it or overwrite the oldest log message, depending on your configuration. For details, see log disk on page 66. • `mem-low`–Memory (RAM) usage has exceeded 80%. • `netlink-down-status`–A network interface has been brought down (disabled). This could be due to either an administrator changing the network interface's settings, or due to HA executing a failover. • `netlink-up-status`–A network interface has been brought up (enabled).This could be due to either an administrator changing the network interface's settings, or due to HA executing a failover. • `policy-start`–A policy was enabled. For details, see	No default.

Variable	Description	Default
	server-policy policy on page 151. • `policy-stop`–A policy was disabled. For details, see server-policy policy on page 151. • `pserver-failed`–A server health check has determined that a physical server that is a member of a server farm is now unavailable. For details, see server-policy policy on page 151. on page 1. • `sys-ha-cluster-status-change`–HA cluster status was changed. • `sys-ha-member-join`–HA member has joined. • `sys-ha-member-leave`–HA member has left. • `sys-mode-change`–The operation mode was changed. See system settings on page 380.	
	• `waf-amethod-attack`–FortiWeb enforced an allowed methods restriction. For details, see waf web-protection-profile inline-protection on page 720, waf web-protection-profile offline-protection on page 731, and waf allow-method-exceptions on page 429. • `waf-hidden-fields`–FortiWeb detected a hidden fields attack. • `waf-pvalid-attack`–FortiWeb enforced an input/parameter validation rule. For details, see waf parameter-validation-rule on page 626. • `waf-signature-detection`–FortiWeb enforced a signature rule. For details, see waf signature on page 628. • `waf-url-access-attack`–FortiWeb enforced a URL access rule. See waf url-access url-access-rule on page 693. • `power-supply-failure`–FortiWeb detects the power supply fails. It is only available for 2000E, 3000E, 3010E, and 4000E.	
query-v1-port <port_int>	Enter the port number on which the FortiWeb appliance will listen for SNMP v1 queries from the SNMP managers of the community. The valid range is 1-65,535.	`161`
query-v1-status {enable | disable}	Enable to respond to queries using the SNMP v1 version of the SNMP protocol.	`enable`
query-v2c-port <port_int>	Enter the port number on which the FortiWeb appliance will listen for SNMP v2c queries from the SNMP managers of the community. The valid range is 1-65,535.	`161`
query-v2c-status {enable | disable}	Enable to respond to queries using the SNMP v2c version of the SNMP protocol.	`enable`
trap-v1-lport <port_int>	Enter the port number that will be the source (also called	`162`

Variable	Description	Default
	local) port number for SNMP v1 trap packets. The valid range is 1-65,535.	
trap-v1-rport <port_int>	Enter the port number that will be the destination (also called remote) port number for SNMP v1 trap packets. The valid range is 1-65,535.	`162`
trap-v1-status {enable | disable}	Enable to send traps using the SNMP v1 version of the SNMP protocol.	`enable`
trap-v2c-lport <port_int>	Enter the port number that will be the source (also called local) port number for SNMP v2c trap packets. The valid range is 1-65,535.	`162`
trap-v2c-rport <port_int>	Enter the port number that will be the destination (also called remote) port number for SNMP v2c trap packets. The valid range is 1-65,535.	`162`
trap-v2c-status {enable | disable}	Enable to send traps using the SNMP v2c version of the SNMP protocol.	`enable`
<snmp-manager_index>	Enter the index number of an SNMP manager for the community. The valid range is 1-9,999,999,999,999,999,999.	No default.
ip {"<manager_ipv4>" | "<manager_ipv6>"}	Enter the IP address of the SNMP manager that, if traps and/or queries are enabled in this community: • Will receive traps from the FortiWeb appliance • Will be permitted to query the FortiWeb appliance SNMP managers have read-only access. To allow any IP address using this SNMP community name to query the FortiWeb appliance, enter `0.0.0.0`. **Note:** Entering `0.0.0.0` effectively disables traps if there are no other host IP entries, because there is no specific destination for trap packets. If you do not want to disable traps, you must add at least one other entry that specifies the IP address of an SNMP manager.	No default.

Example

For an example, see system snmp sysinfo on page 387.

Related topics

- system snmp sysinfo on page 387
- system interface on page 351
- server-policy policy on page 151

system snmp sysinfo

Use this command to enable and configure basic information for the FortiWeb appliance's SNMP agent.

Before you can use SNMP, you must activate the FortiWeb appliance's SNMP agent and add it as a member of at least one community. For details, see system snmp community on page 383. You must also enable SNMP access on the network interface through which the SNMP manager will connect. For details, see system interface on page 351.

On the SNMP manager, you must also verify that the SNMP manager is a member of the community to which the FortiWeb appliance belongs, and compile the necessary Fortinet proprietary management information blocks (MIBs) and Fortinet-supported standard MIBs. For information on MIBs, see the *FortiWeb Administration Guide*:

https://docs.fortinet.com/document/fortiweb

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
config system snmp sysinfo
   set contact-info "<contact_str>"
   set description "<description_str>"
   set location "<location_str>"
   set status {enable | disable}
   set engine-id "<engine-id_str>"
end
```

Variable	Description	Default
contact-info "<contact_str>"	Type the contact information for the administrator or other person responsible for this FortiWeb appliance, such as a phone number or name. The contact information can contain only letters (a-z, A-Z), numbers, hyphens (-) and underscores (_). The maximum length is 63 characters.	No default.
description "<description_ str>"	Type a description of the FortiWeb appliance. The string can contain only letters (a-z, A-Z), numbers, hyphens (-) and underscores (_). The maximum length is 63 characters.	No default.
location "<location_str>"	Type the physical location of the FortiWeb appliance. The string can contain only letters (a-z, A-Z), numbers, hyphens (-) and underscores (_). The maximum length is 63 characters.	No default.
status {enable | disable}	Enable to activate the SNMP agent, enabling the FortiWeb appliance to send traps and/or receive queries for the communities in which you have enabled queries and/or traps.	`disable`

Variable	Description	Default
	This setting enables queries only if SNMP administrative access is enabled on one or more network interfaces. For details, see system interface on page 351.	
engine-id "<engine-id_str>"	Enter the SNMP engineID string. The maximum is 24 characters.	No default

Example1234

This example enables the SNMP agent, configures it to belong to a community named public whose SNMP manager is `192.0.2.20`. The SNMP manager is not directly attached, but can be reached through the network interface named port3.

This example also configures the SNMP agent to send traps using SNMP v2c for high CPU or memory usage, and when the primary appliance fails; it also enables responses to SNMP v2c queries through the network interface named port3 (along with the previously enabled administrative access protocols, ICMP ping, HTTPS, and SSH).

```
config system snmp sysinfo
   set contact-info "admin_example_com"
   set description "FortiWeb-1000E"
   set location "Rack_2"
   set status enable
   set engine-id 246
end

config system snmp community
   edit 1
      set status enable
      set name public
      set events cpu-high
      set query-v1-status disable
      set query-v2c-port 161
      set query-v2c-status enable
      set trap-v1-status disable
      set trap-v2c-lport 162
      set trap-v2c-rport 162
      set trap-v2c-status enable
      config hosts
         edit 1
            set interface port3
            set ip 192.0.2.20
         next
      end
   next
end
config system interface
   edit port3
      set allowaccess ping HTTPS ssh snmp
   next
end
```

Related topics

- system snmp community on page 383
- system interface on page 351
- router static on page 102

system snmp user

Use this command to configure the FortiWeb appliance's SNMP agent to belong to an SNMP version 3 community, and to select which events cause the FortiWeb appliance to generate SNMP traps.

To configure the SNMP agent as a member of a SNMP version version 1 or 2c community and for more information on the SNMP agent, see system snmp community on page 383.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
config system snmp user
   edit name "<user_str>"
      set status {enable | disable}
      set security-level { noauthnopriv | authnopriv | authpriv >
      set auth-proto {sha1 | sha224 | sha256 | sha384 | sha512 | md5}
      set auth-pwd "<auth-password_str>"
      set priv-proto {aes | des | aes256}
      set priv-pwd "<priv-password_str>"
      set query-status {enable | disable}
      set query-port <port_int>
      set trap-status {enable | disable}
      set trapport-local <port_int>
      set trapport-remote <port_int>
      set events {cpu-high | intf-ip | log-full | mem-low | netlink-down-status | netlink-up-
            status | policy-start | policy-stop | pserver-failed | sys-ha-cluster-status-change |
            sys-ha-member-join | sys-ha-member-leave | sys-mode-change | waf-amethod-attack | waf-
            hidden-fields | waf-pvalid-attack | waf-signature-detection | waf-url-access-attack |
            power-supply-failure}
      set "<snmp-manager_index>"
      config hosts
         edit "<snmp-manager_index>"
            set {"<manager_ipv4> | <manager_ipv6>"}
         next
      end
   next
end
```

Variable	Description	Default
name "<user_str>"	Enter the name of the SNMP user to which the FortiWeb appliance and at least one SNMP manager belongs. The maximum length is 63 characters. The FortiWeb appliance does not respond to SNMP managers whose query packets do not contain a matching community name. Similarly, trap packets from the FortiWeb appliance include the community name, and an SNMP manager may not accept the trap if its community name does not match.	No default.
status {enable | disable}	Enable to activate the community. This setting takes effect only if the SNMP agent is enabled. For details, see system snmp sysinfo on page 387.	`disable`
security-level { noauthnopriv | authnopriv | authpriv >	Enter the security level. • `noauthnopriv`–No additional authentication or encryption compared to SNMP v1 and v2. • `authnopriv`–The SNMP manager needs to provide the password specified in this community configuration. Also specify `auth-proto` and `auth-pwd`. • `authpriv`–Adds both authentication and encryption. Also specify `auth-proto`, `auth-pwd`, `priv-proto`, and `priv-pwd`. Ensure that the SNMP manager and FortiWeb use the same protocols and passwords.	No default.
auth-proto {sha1 | sha224 | sha256 | sha384 | sha512 | md5}	If the `security-level` option includes authentication, specify the authentication protocol.	`sha1`
auth-pwd "<auth-password_str>"	If the `security-level` option includes authentication, specify the authentication password.	No default.
priv-proto {aes | des | aes256}	If the `security-level` option is `authprivuser_name`, specify the encryption protocol.	`aes`
priv-pwd "<priv-password_str>"	If the `security-level` option is `authprivuser_name`, specify the encryption password.	No default.
query-status {enable | disable}	Enable to respond to queries using the SNMP v3 version of the SNMP protocol.	`enable`
query-port <port_int>	Enter the port number on which the FortiWeb appliance listens for SNMP v3 queries from the SNMP managers of the community. The valid range is 1-65,535.	`161`
trap-status {enable | disable}	Enable to send traps using the SNMP v3 version of the SNMP protocol.	`enable`
trapport-local <port_int>	Enter the port number that is the source (also called local) port number for SNMP v3 trap packets. The valid range is 1-65,535.	`162`

Variable	Description	Default
trapport-remote <port_int>	Enter the port number that is the destination (also called remote) port number for SNMP v3 trap packets. The valid range is 1-65,535.	162
events {cpu-high | intf-ip | log-full | mem-low | netlink-down-status | netlink-up-status | policy-start | policy-stop | pserver-failed | sys-ha-cluster-status-change | sys-ha-member-join | sys-ha-member-leave | sys-mode-change | waf-amethod-attack | waf-hidden-fields | waf-pvalid-attack | waf-signature-detection | waf-url-access-attack | power-supply-failure}	Enter the name of one or more the SNMP events. When FortiWeb detects the specified events, it sends traps to the SNMP managers in this community. Also enable `trap-status`. • `cpu-high`–CPU usage has exceeded 80%. • `intf-ip`–A network interface's IP address has changed. See system interface on page 351. • `log-full`–Local log disk space usage has exceeded 80%. If the space is consumed and a new log message is triggered, the FortiWeb appliance will either drop it or overwrite the oldest log message, depending on your configuration. For details, see log disk on page 66. • `mem-low`–Memory (RAM) usage has exceeded 80%. • `netlink-down-status`–A network interface has been brought down (disabled). This could be due to either an administrator changing the network interface's settings, or due to HA executing a failover. • `netlink-up-status`–A network interface has been brought up (enabled). This could be due to either an administrator changing the network interface's settings, or due to HA executing a failover. • `policy-start`–A policy was enabled. For details, see server-policy policy on page 151. • `policy-stop`–A policy was disabled. For details, see server-policy policy on page 151. • `pserver-failed`–A server health check has determined that a physical server that is a member of a server farm is now unavailable. For details, see server-policy policy on page 151. • `sys-ha-cluster-status-change`–HA cluster status was changed. • `sys-ha-member-join`–HA member has joined. • `sys-ha-member-leave`–HA member has left. • `sys-mode-change`–The operation mode was changed. For details, see system settings on page 380. • `power-supply-failure`–FortiWeb detects the power supply fails. It is only available for 2000E, 3000E, 3010E, and 4000E.	No default.
	• `waf-amethod-attack`–FortiWeb enforced an allowed methods restriction. For details, see waf web-protection-profile inline-protection on page 720, waf web-protection-profile offline-protection on page 731, and	

Variable	Description	Default
	waf allow-method-exceptions on page 429. • `waf-hidden-fields`–FortiWeb detected a hidden fields attack. • `waf-pvalid-attack`–FortiWeb enforced an input/parameter validation rule. For details, see waf parameter-validation-rule on page 626. • `waf-signature-detection`–FortiWeb enforced a signature rule. For details, see waf signature on page 628. • `waf-url-access-attack`–FortiWeb enforced a URL access rule. For details, see waf url-access url-access-rule on page 693. • `power-supply-failure`–FortiWeb detects the power supply failure. It is only available for 2000E, 3000E, 3010E, and 4000E.	
"<snmp-manager_index>"	Enter the index number of an SNMP manager for the community. The valid range is 1-9,999,999,999,999,999,999.	No default.
{"<manager_ipv4> | <manager_ipv6>"}	Enter the IP address of the SNMP manager that can do the following when you enable traps, queries, or both in this community: • Receive traps from the FortiWeb appliance • Query the FortiWeb appliance SNMP managers have read-only access. To allow any IP address using this SNMP community name to query the FortiWeb appliance, enter `0.0.0.0` or `::`. **Note:** Entering `0.0.0.0` or `::` effectively disables traps if there are no other host IP entries, because there is no specific destination for trap packets. If you do not want to disable traps, add at least one other entry that specifies the IP address of an SNMP manager.	No default.

Example

For an example, see system snmp sysinfo on page 387.

Related topics

- system snmp sysinfo on page 387
- system interface on page 351
- server-policy policy on page 151

system sso-admin

With Single Sign-On Mode enabled, users will be redirected to FortiGate's Single Sign-On Provider page when they click **Single Sign-On** on FortiWeb's login page. They will be required to log in with FortiGate's administrator account.

Use this command to create a SSO admin account and grant permissions for this account.

For how to configure SSO with FortiGate, see Fabric Connector: Single Sign On with FortiGate.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `admingrp` area. For details, see Permissions on page 46.

Syntax

```
config system sso-admin
   edit <name>
      set access-profile <profile name>
      set domains <adom name>
   end
end
```

Variable	Description	Default
`<name>`	Enter a name of the administrator account, such as `admin1` or `admin@example.com`, that can be referenced in other parts of the configuration. Do not use spaces or special characters except the 'at' symbol (`@`). The maximum length is 63 characters. To display the list of existing accounts, enter: `edit ?` **Note:** This is the user name that the administrator must provide when logging in to the CLI or web UI.	No `default`
`access-profile <profile_name>`	Enter the name of an access profile that gives the permissions for this administrator account. See also system accprofile on page 222. The maximum length is 63 characters. You can select **prof_admin**, a special access profile used by the `admin` administrator account. However, selecting this access profile will **not** confer all of the same permissions of the `admin` administrator. For example, the new administrator would not be able to reset lost administrator passwords. To display the list of existing profiles, enter: `edit ?`	No `default`
`domains <adom_name>`	Enter the name of an administrative domain (ADOM) to assign and restrict this administrative account to it.	`root`

Related topics

- system admin

system tcpdump

Use this command to configure capturing packets.

To use this command, your administrator account's access control profile must have `rw` permission to the `netgrp` area. For details, see Permissions on page 46.

Syntax

```
config system tcpdump
   edit file id
      set "<filter_str>"
      set {any | "<interface_str>"}
      set "<max-packet-count_int>"

end
```

Variable	Description	Default
file id	Enter the packet capture file ID.	No default
"<max-packet-count_int>"	Specify the maximum packets you want to capture for the policy. Capture will stop automatically if the total captured packets hit the count.	`4000`
"<filter_str>"	Specify which protocols and port numbers that you do or do not want to capture, such as `'tcp and port 80 and host IP1 and ( IP2 or IP3 )'`, or leave this field blank for no filters. **Note** that please use the same filter expression as `tcpdump` for this filter, you can refer to the Linux main page of TCPDUMP (http://www.tcpdump.org/manpages/tcpdump.1.html).	No default.
{any | "<interface_str>"}	Select the network interface on which you want to capture packets, such as `port1`, or `any` for all interfaces.	`any`
"<max-packet-count_int>"	Specify the maximum packets you want to capture for the policy. Capture will stop automatically if the total captured packets hit the count.	`4000`

Related topics

- debug on page 775

system vip

The virtual IP addresses are the IP addresses that paired with the domain name of your application. When users visit your application, the destination of their requests are these IP addresses.

You can later attach one or more virtual IP addresses to a virtual server, and then reference the virtual server in a server policy. The web protection profile in the server policy will be applied to all the virtual IPs attached to this virtual server.

Only the global administrators can create, edit, and delete VIPs.

Syntax

```
config system vip
   edit <vip_name> on page 395
      set vip <ip&netmask> on page 395
      set vip6 <ip&netmask> on page 395
      set interface <interface_name> on page 396
      set index <the_index_number> on page 396
      set domains <adom_name>
   next
end
```

Variable	Description	Default
<vip_name>	Enter a unique name that can be referenced by other parts of the configuration. The maximum length is 63 characters.	No default
vip <ip&netmask>	Enter the IPv4 address and subnet of the virtual IP. If the FortiWeb appliance is operating in Offline Protection mode or either of the transparent modes, because FortiWeb ignores this IP address when it determines whether or not to apply a server policy to the connection, you can specify any IP address except the address of the web server. The virtual IP address cannot be the same with the IP address of any one of the interfaces.	0.0.0.0/0
vip6 <ip&netmask>	Enter the IPv6 address and subnet of the virtual IP.	::/0

Variable	Description	Default
	If the FortiWeb appliance is operating in Offline Protection mode or either of the transparent modes, because FortiWeb ignores this IP address when it determines whether or not to apply a server policy to the connection, you can specify any IP address except the address of the web server. The virtual IP address cannot be the same with the IP address of any one of the interfaces.	
interface <interface_name>	Enter the name of the network interface or bridge the virtual IP is bound to and where traffic destined for the virtual IP arrives.	port1
index <the_index_number>	Enter the index number for this vip.	No default
domains <adom_name>	Enter the ADOM you want to create this virtual IP in.	No default

system v-zone

Use this command to configure bridged network interfaces, also called v-zones.

Bridges allow network connections to travel through the FortiWeb appliance's physical network ports **without** explicitly connecting to one of its IP addresses.

For FortiWeb-VM, you must create vSwitches **before** you can configure a bridge. For details, see the FortiWeb-VM Install Guide:

https://docs.fortinet.com/fortiweb/hardware

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `netgrp` area. For details, see Permissions on page 46.

Syntax

```
config system v-zone
   edit "<bridge_name>"
      set interfaces {"<interface_name>" "<interface_name>" ...}
      set monitor {enable | disable}
      set mtu <mtu_int>
      set use-interface-macs {"<interface_name>" "<interface_name>" ...}
      set multicast-snooping {enable | disable}
   next
end
```

Variable	Description	Default
"<bridge_name>"	Type the name of the bridge. The maximum length is 15 characters. To display the list of existing bridges, type: `edit ?`	No default.
interfaces {"<interface_name>" "<interface_name>" ...}	Type the names of two or more network interfaces that currently have no IP address of their own, nor are members of another bridge, and therefore could be members of this bridge. Separate each name with a space. The maximum length is 63 characters.	No default.
mtu <mtu_int>	Enter the maximum transmission unit (MTU) that the bridge supports. When you specify the MTU for a bridge, FortiWeb automatically sets the MTU for the v-zone members to the same value. Valid values are 512-9216 (for IPv4) or 1280-9216 (for IPv6).	`1500`
multicast-snooping {enable | disable}	Enable/disable multicast snooping.	No default
monitor {enable | disable}	Specifies whether FortiWeb automatically brings down all members of this v-zone if one member goes down.	`disable`
use-interface-macs {"<interface_name>" "<interface_name>" ...}	Enter the names of network interfaces that are members of the bridge and send and transmit traffic using the MAC address of their corresponding FortiWeb network interface. When the operation mode is True Transparent Proxy, by default, traffic to the back-end servers preserves the MAC address of the source. If you are using FortiWeb with front-end load balancers that are in a high availability cluster that uses multiple bridges, this mechanism can cause switching problems on failover. When the v-zone uses the MAC address of the FortiWeb network interface instead, a failover does not interrupt the flow of traffic. Available only when the operation mode is True Transparent Proxy.	No default.

Example

This example configures a true bridge between port3 and port4. The bridge has no virtual network interface, and so it cannot respond to pings.

```
config system v-zone
   edit bridge1
      set interfaces port3 port4
```

```
    next
end
```

Related topics

- system interface on page 351
- system settings on page 380

system wccp

Use this command to configure FortiWeb as a Web Cache Communication Protocol (WCCP) client. This configuration allows a FortiGate configured as a WCCP server to redirect HTTP and HTTPS traffic to FortiWeb for inspection.

If your WCCP configuration includes multiple WCCP clients, the WCCP server can balance the traffic load among the clients. In addition, it detects when a client fails and redirects sessions to clients that are still available.

WCCP was originally designed to provide web caching with load balancing and fault tolerance and is described by the Web Cache Communication Protocol Internet draft.

This feature requires the operation mode to be WCCP. For details, see system settings on page 380.

For information on connecting and configuring your network devices for WCCP mode, see the *FortiWeb Administration Guide*:

https://docs.fortinet.com/document/fortiweb

For detailed information on configuring FortiGate and other Fortinet devices to act as a WCCP service group, see the FortiGate WCCP topic in the *[[[Undefined variable FortinetVariables.ProductName7]]] Handbook*:

https://docs.fortinet.com/fortigate/admin-guides

Syntax

```
config system wccp
   edit service-id <service-id_int>
      set cache-id "<cache-id_ipv4>"
      set router-list "<router-list_ipv4>"
      set group-address "<group-address_ipv4>"
      set authentication {enable | disable}
      set password "<passwd_str>"
      set cache-engine-method {GRE | L2}
      set ports <ports_int>
      set primary-hash [src-ip | dst-ip | src-port | dst-port}
      set priority <priority_int>
      set protocol <priority_int>
      set assignment-weight <assignment-weight_int>
      set assignment-bucket-format {ciso-implementation | wccp-v2}
      set return-to-sender {enable | disable}
   end
```

Variable	Description	Default
service-id <service-id_int>	Enter the service ID of the WCCP service group that this WCCP client belongs to. For HTTP traffic, the service ID is 0. For other types of traffic (for example, HTTPS), the valid range is 51-256. Do not use 1-50, which are reserved by the WCCP standard.	`51`
cache-id "<cache-id_ipv4>"	Enter the IP address of the FortiWeb interface that communicates with the WCCP server. Ensure that the WCCP protocol is enabled for the specified network interface. For details, see system settings on page 380.	No default.
router-list "<router-list_ipv4>"	Enter the IP addresses of the WCCP servers in the WCCP service group. You can specify up to 8 servers. To configure more than 8 WCCP servers, use Group Address instead.	No default.
group-address "<group-address_ipv4>"	Enter the IP addresses of the clients for multicast WCCP configurations. The multicast address allows you to configure a WCCP service group with more than 8 WCCP clients. The valid range of multicast addresses is 224.0.0.0-239.255.255.255.	No default.
authentication {enable | disable}	Specify whether communication between the WCCP server and client is encrypted using the MD5 cryptographic hash function.	`disable`
password "<passwd_str>"	Enter the password used by the WCCP server and clients. All servers and clients in the group use the same password. The maximum password length is 8 characters. Available only when authentication {enable | disable} on page 399 is `enabled`.	No default.
cache-engine-method {GRE | L2}	Enter how the FortiGate unit transmits traffic to FortiWeb: • `GRE`—The WCCP server encapsulates redirected	`GRE`

Variable	Description	Default
	packets within a generic routing encapsulation (GRE) header. The packets also have a WCCP redirect header. • `L2`–The WCCP server overwrites the original MAC header of the IP packets and replaces it with the MAC header for the WCCP client.	
ports <ports_int>	Enter the port numbers of the sessions that this client inspects. The valid range is 0-65535. Enter 0 to specify all ports.	`80`
primary-hash [src-ip | dst-ip | src-port | dst-port}	Enter the hashing scheme that the WCCP server uses in combination with `assignment-weight` to direct traffic, when the WCCP service group has more than one WCCP client. Specify one or more of the following values: • `src-ip`–Source IP address • `dst-ip`–Destination IP address • `src-port`–Source port • `dst-port`–Destination port	`src-ip dst-ip`
priority <priority_int>	Enter a value that specifies the priority that this service group has. If more than one service group is available to scan the traffic specified by `ports` and `protocol`, the WCCP server transmits all the traffic to the service group with the highest `priority` value.	`0`
protocol <priority_int>	Enter the protocol of the network traffic the WCCP service group transmits. For TCP sessions, enter `6`. Valid values are 0-256.	`6`
assignment-weight <assignment-weight_int>	Enter a value that the WCCP server uses in combination with `primary-hash` to direct traffic, when the WCCP service group has more than one WCCP client. The valid range is 0-256.	`0`
assignment-bucket-format {ciso-implementation | wccp-v2}	Enter the hash table bucket format for the WCCP cache engine. • `cisco-implementation`–Source IP address • `wccp-v2`–Web Cache Communication Protocol version 2	`ciso-implementation`
return-to-sender {enable | disable}	Specify whether FortiWeb routes traffic back to the client instead of the WCCP server.	`disable`

Example

This example configures FortiWeb as a WCCP client that belongs to the WCCP service group 52 and specifies the interface used for WCCP client functionality (`192.0.2.100`) and the WCCP server (`192.0.2.1`).

```
config system wccp
   edit service-id 52
      set cache-id "192.0.2.100"
      set router-list "192.0.2.1"
      set ports 80 443
      set primary-hash src-ip dst-ip
```

Related topics

- system settings on page 380
- system interface on page 351

system certificate xml-server-certificate

Use this command to show names of the uploaded XML server certificates that are stored locally on the FortiWeb appliance.

The XML server certificate is used for request decryption or response signature.

Syntax

```
config system certificate xml-server-certificate
   edit system certificate xml-server-certificate
      set certificate <certificate_str> on page 401
      set private-key <private-key_str>
      set passwd <passwd_str>
   next
end
```

Variable	Description	Default
"<xml-server-certificate_name>"	Enter the name of an XML server certificate.	No default.
certificate <certificate_str>	Set the certificate. Only certificates in PEM format may be set.	No default.
private-key <private-key_str>	Set the key file to upload.	No default.

Variable	Description	Default
passwd <passwd_str>	Type the password that is used to encrypt the file, enabling the FortiWeb appliance to decrypt and install the certificate.	No default.

Related topics

- waf ws security on page 744

user admin-usergrp

Use this command to configure LDAP/RADIUS/PKI/TACACS+ remote authentication groups that can be used when configuring a FortiWeb administrator account.

Before you can add a remote authentication group, you must first define at least one query for LDAP, RADIUS, or TACACS+ accounts (see user ldap-user on page 405 or "server-policy custom-application application-policy" on page 1), a PKI user (see user pki-user on page 413), or a TACACS+ user (see user tacacs+ user on page 419).

For information about certificate-based Web UI login, see the *FortiWeb Administration Guide*:

https://docs.fortinet.com/document/fortiweb

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `authusergrp` area. For details, see Permissions on page 46.

Syntax

```
config user admin-usergrp
   edit "<group_name>"
      config members
         edit <entry_index>
            set type {ldap | radius | pki | tacacs+}
            set ldap-name "<query_name>"
            set radius-name "<query_name>"
            set tacacs+-name "<tacacs+_name>"
         next
      end
   next
end
```

Variable	Description	Default
"<group_name>"	Enter the name of the remote authentication group. The maximum length is 63 characters.	No default.
<entry_index>	Enter the index number of the individual entry in the table. The valid range is 1-9,999,999,999,999,999,999.	No default.

Variable	Description	Default
type {ldap | radius | pki | tacacs+}	Select the protocol used for the query, LDAP, RADIUS, PKI or TACACS+.	`ldap`
ldap-name "<query_name>"	Enter the name of an existing LDAP account query. The maximum length is 63 characters. To display the list of existing queries, enter: `edit ?`	No default.
radius-name "<query_name>"	Enter the name of an existing RADIUS account query. The maximum length is 63 characters. To display the list of existing queries, enter: `edit ?`	No default.
pki-name "<pki_name>"	Enter the name of an existing PKI user. The maximum length is 63 characters. To display the list of existing queries, enter: `edit ?`	No default.
tacacs+-name "<tacacs+_name>"	Enter the name of an existing TACACS+. The maximum length is 63 characters. To display the list of existing queries, enter: `edit ?`	No default.

Example

This example creates a remote authentication group using an existing LDAP user query named `LDAP Users 1`. Because remote authentication groups use LDAP queries by default, the LDAP query type is not explicitly configured.

```
config user admin-usergrp
   edit "Admin LDAP"
      config members
         edit 0
            set ldap-name "LDAP Users 1"
         next
      end
   next
end
```

Related topics

- system admin on page 225
- user ldap-user on page 405
- user pki-user on page 413
- user radius-user on page 414
- "server-policy custom-application application-policy" on page 1
- user tacacs+ user on page 419

user kerberos-user

Use this command to specify a Kerberos Key Distribution Center (KDC) that FortiWeb can use to obtain a Kerberos service ticket for web applications on behalf of clients.

Because FortiWeb determines the KDC to use based on the realm of the web application, you do not have to specify the KDC in the site publish rule.

For details, see waf site-publish-helper rule on page 643 and the *FortiWeb Administration Guide*:

https://docs.fortinet.com/document/fortiweb

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `authusergrp` area. For details, see Permissions on page 46.

Syntax

```
config user kerberos-user
   edit "<kdc_name>"
      set realm "<realm_str>"
      set shortname <shortname _str>
      set status {enable | disable}
      config server-members
         edit "<entry_index>"
            set server <server_str>
            set port <port_int>
         next
      end
   next
end
```

Variable	Description	Default
"<kdc_name>"	Enter the name of the Key Distribution Center (KDC).	No default.
realm "<realm_str>"	Enter the domain of the domain controller (DC) that the Key Distribution Center (KDC) belongs to.	No default.
shortname <shortname _str>	Enter the shortname for the realm you specified (This is optional). A shortname is an alias of the delegated realm; it can be any set of characters except for symbols "@", "/" and "\". For example, the shortname can include the domain name of the realm that is not fully qualified. With a shortname being configured, the format of UPN can be username@shortname.	No default.
status {enable | disable}	Specify whether the KDC configuration is enabled.	`enable`

Variable	Description	Default
server <server_str>	Enter the IP address of the KDC.	No default.
port <kdc-port_int>	Enter the port the KDC uses to listen for requests.	No default.
"<entry_index>"	Enter the index number of the server in the table.	No default.

Related topics

- waf site-publish-helper rule on page 643
- "waf site-publish-helper keytab_file" on page 1

user ldap-user

Use this command to configure queries that can be used for remote authentication of either FortiWeb administrators or end users via an LDAP server.

To apply LDAP queries to end users, select a query in a user group that is then selected within an authentication rule, which is in turn selected within an authentication policy, which is ultimately selected within an inline protection profile used for web protection. For details, see "user user-group" on page 1.

To apply LDAP queries to administrators, select a query in an admin group and reference that group in a system administrator configuration. For details, see user admin-usergrp on page 402.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `authusergrp` area. For details, see Permissions on page 46.

Syntax

```
config user ldap-user
   edit "<ldap-query_name>"
      set bind-type {anonymous | simple | regular}
      set common-name-id "<cn-attribute_str>"
      set distinguished-name "<search-dn_str>"
      set filter "<query-filter_str>"
      set group_authentication {enable | disable}
      set group_dn "<group-dn_str>"
      set group-type {edirectory | open-ldap | windows-ad}
      set password "<bind-password_str>"
      set port <port_int>
      set protocol {ldaps | starttls}
      set server "<ldap_ipv4_domain>"
      set ssl-connection {enable | disable}
      set ca-cert <ca_name>
```

```
    set username "<bind-dn_str>"
  next
end
```

Variable	Description	Default
"<ldap-query_name>"	Enter the name of the LDAP user query. The maximum length is 63 characters. To display the list of existing queries, enter: `edit ?`	No default.
bind-type {anonymous | simple | regular}	Select one of the following LDAP query binding styles: • `simple`–Bind using the client-supplied password and a bind DN assembled from the common-name-id "<cn-attribute_str>" on page 406, distinguished-name "<search-dn_str>" on page 406, and the client-supplied user name. • `regular`–Bind using a bind DN and password that you configure in username "<bind-dn_str>" on page 408 and password "<bind-password_str>" on page 407. • `anonymous`–Do not provide a bind DN or password. Instead, perform the query without authenticating. Select this option only if the LDAP directory supports anonymous queries.	`simple`
common-name-id "<cn-attribute_str>"	Enter the identifier, often `cn`, for the common name (CN) attribute whose value is the user name. The maximum length is 63 characters. Identifiers may vary by your LDAP directory's schema.	No default.
distinguished-name "<search-dn_str>"	Enter the distinguished name (DN) such as `ou=People,dc=example,dc=com`, that, when prefixed with the common name, forms the full path in the directory to user account objects. The maximum length is 255 characters.	No default.
filter "<query-filter_str>"	Enter an LDAP query filter string, if any, that will be used to filter out results from the query's results based upon any attribute in the record set. The maximum length is 255 characters. This option is valid only when bind-type {anonymous | simple | regular} on page 406 is `regular`.	No default.
group_authentication {enable | disable}	Enable to only include users that are members of an LDAP group. Also configure group-type {edirectory | open-ldap | windows-ad} on page 407 and group_dn "<group-dn_str>" on page 407. This option is valid only when bind-type {anonymous | simple | regular} on page 406 is `regular`.	`enable`

Variable	Description	Default
group_dn "<group-dn_str>"	Enter the distinguished name of the LDAP user group, such as `ou=Groups,dc=example,dc=com`. The maximum length is 255 characters. This option is valid only when group_authentication {enable | disable} on page 406 is enabled.	No default.
group-type {edirectory | open-ldap | windows-ad}	Select the schema that matches your server's LDAP directory. Group membership attributes may have different names depending on an LDAP directory schemas. The FortiWeb appliance will use the group membership attribute that matches your directory's schema when querying the group DN. This option is valid only when group_authentication {enable | disable} on page 406 is enabled.	`open-ldap`
password "<bind-password_str>"	Enter the password of the username "<bind-dn_str>" on page 408. The maximum length is 63 characters. This field may be optional if your LDAP server does not require the FortiWeb appliance to authenticate when performing queries, and does not appear if bind-type {anonymous | simple | regular} on page 406 is `anonymous` or `simple`.	No default.
port <port_int>	Enter the port number where the LDAP server listens. The valid range is 1-65535. The default port number varies by your selection in ssl-connection {enable | disable} on page 407; port 389 is typically used for non-secure connections or for STARTTLS-secured connections, and port 636 is typically used for SSL-secured (LDAPS) connections.	`389`
protocol {ldaps | starttls}	Select whether to secure the LDAP query using LDAPS or STARTTLS. You may need to reconfigure port <port_int> to correspond to the change in protocol. This field is applicable only if ssl-connection {enable | disable} on page 407 is `enable`.	`ldaps`
server "<ldap_ipv4_domain>"	Type the server IP or domain address of the LDAP server.	`0.0.0.0`
ssl-connection {enable | disable}	Enable to connect to the LDAP servers using an encrypted connection, then select the style of the encryption in protocol {ldaps | starttls} on page 407.	`enable`
ca-cert <ca_name>	Enter the name of the certificate so the FortiWeb will only accept a certificate from the LDAP server that is signed by this CA. Only available when `ssl-connection` is enabled.	No default.

Variable	Description	Default
username "<bind-dn_str>"	Enter the bind DN, such as `cn=FortiWebA,dc=example,dc=com`, of an LDAP user account with permissions to query the distinguished-name "<search-dn_str>" on page 406. The maximum length is 255 characters. This field may be optional if your LDAP server does not require the FortiWeb appliance to authenticate when performing queries, and does not appear if bind-type {anonymous | simple | regular} on page 406 is `anonymous` or `simple`.	No default.

Example

This example configures an LDAP user query to the server at `192.0.2.100` on port `389`. SSL and TLS are disabled. To bind the query, the FortiWeb appliance will use the bind DN `cn=Manager,dc=example,dc=com`, whose password is `mySecretPassword`. Once connected and bound, the query for search for user objects in `ou=People,dc=example,dc=com`, comparing the user name supplied by the HTTP client to the value of each object's `cn` attribute. Group authentication is disabled.

```
config user ldap-user
   edit "ldap-user1"
      set server "192.0.2.100"
      set ssl-connection disable
      set port 389
      set common-name-id "cn"
      set distinguished-name "ou=People,dc=example,dc=com"
      set bind-type regular
      set username "cn=Manager,dc=example,dc=com"
      set password "mySecretPassword"
      set group-authentication disable
   next
end
```

Related topics

- "user user-group" on page 1
- system admin on page 225
- user admin-usergrp on page 402

user ntlm-user

Use this command to configure user accounts that will authenticate with the FortiWeb appliance via an NT LAN Manager (NTLM) server.

NTLM queries can be made to a Microsoft Windows or Active Directory server that has been configured for NTLM authentication. Both NTLM v1 and NTLM v2 versions of the protocol are supported.

NTLM user queries are used by the HTTP authentication feature to authorize HTTP requests. For details, see the *FortiWeb Administration Guide*:

https://docs.fortinet.com/document/fortiweb

To incorporate NTLM user account queries, add them to a user group that is selected within an authentication rule, which is in turn selected within an authentication policy. For details, see "user user-group" on page 1.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `authusergrp` area. For details, see Permissions on page 46.

Syntax

```
config user ntlm-user
   edit "<ntlm-query_name>"
      set port <port_int>
      set server "<ntlm_ipv4>"
   next
end
```

Variable	Description	Default
"<ntlm-query_name>"	Enter the name of the NTLM user query. The maximum length is 63 characters. To display the list of existing queries, enter: `edit ?`	No default.
port <port_int>	Enter the port number where the NTLM server listens. The valid range is 1-65535.	`445`
server "<ntlm_ipv4>"	Enter the IP address of the NTLM server.	No default.

Example

This example configures an NTLM query connection to a server at `192.0.2.101` on port `445`.

```
config user ntlm-user
   edit "ntlm-user1"
      set server "192.0.2.101"
      set port 445
   next
end
```

Related topics

- "user user-group" on page 1

user oauth-user request

FortiWeb supports front-end authentication with third party authentication servers such as Google and Facebook.

Use this command to create OAuth requests. For more information about OAuth requests, refer to "OAuth authorization & OIDC authentication" in FortiWeb Administration Guide.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `authusergrp` area. For details, see Permissions on page 46.

Syntax

```
config user oauth-user request
   edit <oauth_request_name>
      set type {authz | token | refresh | validate | userinfo | jwks}
      set endpoint <string>
      set method {get | post}
      set ctype {urlencoded | json}
      set user-key <string>
      set tls-check {enable | disable}
      set tls-ca <ca_name>
      config custom-headers
         edit <index>
            set <custom-parameters_name>
            set <custom-parameters_value>
         next
      end
      config custom-parameters
         edit <index>
            set <custom-headers_name>
            set <custom-headers_value>
         next
      end
   next
end
```

Variable	Description	Default
<oauth_request_name>	Enter a name for the request.	No default
type {authz | token | refresh | validate | userinfo | jwks}	Select the OAuth request types.	authz
endpoint <string>	Enter the OAuth request URL.	No default
method {get | post}	Select the request method.	post
ctype {urlencoded | json}	Select the request content type.	urlencoded
user-key <string>	Indicate username keyword in response.	No default

Variable	Description	Default
tls-check {enable | disable}	Enable to do strict TLS verification even with a custom CA certificate to check the TLS traffic between FortiWeb and the third party OAuth authorization servers.	disable
tls-ca <ca_name>	Select the certificate to check the TLS traffic. It's uploaded in **System > Admin > Certificates**.	No default
<custom-headers_name>	Enter the name of the header to insert in the request.	No default
<custom-headers_value>	Enter the value of the header.	No default
<custom-parameters_name>	Enter the name of the parameter to insert into the request.	No default
<custom-parameters_value>	Enter the value of the parameter.	No default

Related topics

- user oauth-user server

user oauth-user server

FortiWeb supports front-end authentication with third party authentication servers such as Google and Facebook.

Use this command to add the third party authentication server information.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `authusergrp` area. For details, see Permissions on page 46.

Syntax

```
config user oauth-user server
   edit <server_name>
      set mode {client | resource-server | both}
      set  scope <string>
      set oidc {enable | disable}
      set client-id <string>
      set client-secret <passwd>
      set redirect-endpoint <string>
      set authz-req <datasource>
      set token-req <datasource>
      set validate-req <datasource>
      set validate-frequency {session | transaction | interval}
      set validate-interval <integer>
```

```
    set userinfo-req <datasource>
    set jwks-req <datasource> on page 412
  next
end
```

Variable	Description	Default
mode {client | resource-server | both}	Select whether FortiWeb works as an authorization client or a resource server, or both.	No default
scope <string>	Enter the scope field for OAuth.	No default
oidc {enable | disable}	Enable to use OIDC authentication.	disable
client-id <string>	A client credential. Assigned by authorization server.	urlencoded
client-secret <passwd>	A client credential. Assigned by authorization server.	No default
redirect-endpoint <string>	Redirection URL back to FortiWeb.	disable
authz-req <datasource>	The authorization request created in `config user oauth-user request`.	No default
token-req <datasource>	The token request created in `config user oauth-user request`.	No default
refresh-req <datasource>	The refresh request created in `config user oauth-user request`.	No default
validate-req <datasource>	The valid request created in `config user oauth-user request`.	No default
validate-frequency {session | transaction | interval}	Whether to validate the request per session, transaction, or every several second.	No default
validate-interval <integer>	If the validate-frequency is interval, then enter the interval time.	No default
userinfo-req <datasource>	The user info request created in `config user oauth-user request`.	No default
jwks-req <datasource>	The JWKS request created in `config user oauth-user request`. Available only if `oidc` is enabled.	No default

Related topics

- user oauth-user request

user pki-user

In FortiWeb's certificate-based Web UI login, a PKI user is the administrator that FortiWeb will authorizes his Web UI access based on his PKI certificate. With this command, you can create a PKI user for FortiWeb to verify and authorize the Web UI accesses from the user.

Before creating a PKI user, you must import the CA certificate (through FortiWeb Web UI) associated with the user to the FortiWeb. For details, see system admin-certificate ca on page 230.

After the PKI user is created, include it in an admin group through user admin-usergrp on page 402.

For information about certificate-based Web UI login, see the *FortiWeb Administration Guide*:

https://docs.fortinet.com/document/fortiweb

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `admingrp` area. For details, see Permissions on page 46.

Syntax

```
config user pki-user
   edit "<pki-user_name>"
      set cacert "<cacert_str>"
      set subject "<subject_str>"
   next
end
```

Variable	Description	Default
"<pki-user_name>"	Enter the name of a PKI user. The maximum length is 63 characters.	No default.
cacert "<cacert_str>"	Specifies the CA certificate associated with the PKI user's certificate. It must be one of the CA certificates stored on the FortiWeb for administration. For details, see system admin-certificate ca on page 230.	No default.
subject "<subject_str>"	Specifies the subject of the PKI user's certificate, such as `C = US, ST = Washington, O = yourorganization, CN = yourname`.	No default.

Example

This example adds a PKI user associated with the CA certificate `CA_Cert_1`.

```
config user pki-user
   edit "pki_user1"
      set cacert "CA_Cert_1"
      set subject "C = US, ST = Washington, O = oganization, CN = Bradley Avery"
   next
```

```
end
```

user radius-user

Use this command to configure RADIUS queries used to authenticate end-users and/or administrators.

If you use a RADIUS query for administrators, separate it from the queries for regular users. **Do not combine administrator and user queries into a single entry.** Failure to separate queries will allow end-users to have administrative access the FortiWeb web UI and CLI.

Remote Authentication and Dial-in User Service (RADIUS) servers provide authentication, authorization, and accounting functions. The FortiWeb authentication feature uses RADIUS user queries to authenticate and authorize HTTP requests. (The HTTP protocol does not support active logouts, and can only passively log out users when their connection times out. Therefore FortiWeb does **not** fully support RADIUS accounting.) RADIUS authentication with realms (e.g., the person logs in with an account such as admin@example.com) are supported.

To authenticate a user, the FortiWeb appliance sends the user's credentials to RADIUS for authentication. If RADIUS authentication succeeds, the user is successfully authenticated with the FortiWeb appliance. If RADIUS authentication fails, the appliance refuses the connection. To override the default authentication scheme, select a specific authentication protocol or change the default RADIUS port.

To incorporate RADIUS users, they must be in a user group selected within an authentication rule, which is in turn selected within an authentication policy. For details, see "server-policy custom-application application-policy" on page 1.

For access profiles, FortiWeb appliances support RFC 2548 (http://www.ietf.org/rfc/rfc2548.txt) Microsoft Vendor-specific RADIUS Attributes. If you do not want to use them, you can configure them locally instead. For details, see system accprofile on page 222.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `authusergrp` area. For details, see Permissions on page 46.

Syntax

```
config user radius-user
   edit "<radius-query_name>"
      set secret "<password_str>"
      set server {radius_ipv4 | radius_ipv6 | domain name}
      set server-port <port_int>
      set auth-type {default | chap | ms_chap | ms_chap_v2 | pap}
      set nas-ip "<nas_ipv4>"
      set secondary-secret "<password_str>"
      set secondary-server {radius2_ipv4 | domain name}
      set secondary-server-port <port_int>
      set fac-push {enable | disable}
   next
```

```
end
```

Variable	Description	Default
"<radius-query_name>"	Enter a unique name that can be referenced in other parts of the configuration. Do not use spaces or special characters. The maximum length is 63 characters. To display the list of existing queries, enter: `edit ?` **Note:** This is the name of the query only, **not** the administrator or end-user's account name/login, which is defined by either "<administrator_name>" on page 226 or "username <user_str>" (page 1).	No default.
secret "<password_str>"	Enter the RADIUS server secret key for the primary RADIUS server. The primary server secret key should be a maximum of 16 characters in length, but is allowed to be up to 63 characters.	No default.
server {radius_ipv4 | radius_ipv6 | domain name}	Enter the IP address or domain name of the RADIUS server to query for users.	No default.
server-port <port_int>	Enter the port number where the RADIUS server listens. The valid range is 1-65535.	`1812`
auth-type {default | chap | ms_chap | ms_chap_v2 | pap}	Enter the authentication method. The `default` option uses PAP, MS-CHAP-V2, and CHAP, in that order.	`default`
nas-ip "<nas_ipv4>"	Enter the NAS IP address and called station ID. For details, see RFC 2548 (http://www.ietf.org/rfc/rfc2548.txt). If you do not enter an IP address, the IP address of the network interface that the FortiWeb appliance uses to communicate with the RADIUS server is applied.	`0.0.0.0`
secondary-secret "<password_str>"	Enter the RADIUS server secret key for the secondary RADIUS server. The secondary server secret key should be a maximum of 16 characters in length, but is allowed to be up to 63 characters.	No default.
secondary-server {radius2_ipv4 | domain name}	Enter the IP address or domain name of the secondary RADIUS server.	No default.
secondary-server-port <port_int>	Enter the port number where the secondary RADIUS server listens. The valid range is 1-65535.	`1812`
fac-push {enable | disable}	If you are using FAC Radius server to authenticate clients, you can enable this option to send FortiToken mobile notification automatically to clients for extra token authentication.	`disable`

Related topics

- user admin-usergrp on page 402
- "user user-group" on page 1

user recaptcha-user

Use this command to create a reCAPTCHA server that FortiWeb uses to perform bot confirmation with Google reCAPTCHA service. This requires you to set the site key and secret key in the reCAPTCHA server configurations in FortiWeb so that it can communicates with the reCAPTCHA service on behalf of your application server.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `authusergrp` area. For details, see Permissions on page 46.

To use this command, you should enable `recaptcha` in `system feature-visibility`. See system feature-visibility.

Syntax

```
config user recaptcha-user
   edit "<recaptcha_server_name>"
      set type {tickbox | invisible | reCAPTCHA-V3}
      set site-key <str>
      set secret-key <str>
   next
end
```

Variable	Description	Default
type {tickbox | invisible | reCAPTCHA-V3}	Select the type of the reCAPTCHA service you have registered in Google.	tickbox
site-key <str>	Enter the site key	No default.
secret-key <str>	Enter the secret key.	No default.

user saml-user

Use this command to configure queries that can be used for remote authentication of either FortiWeb administrators or end users via a Security Assertion Markup Language (SAML) server.

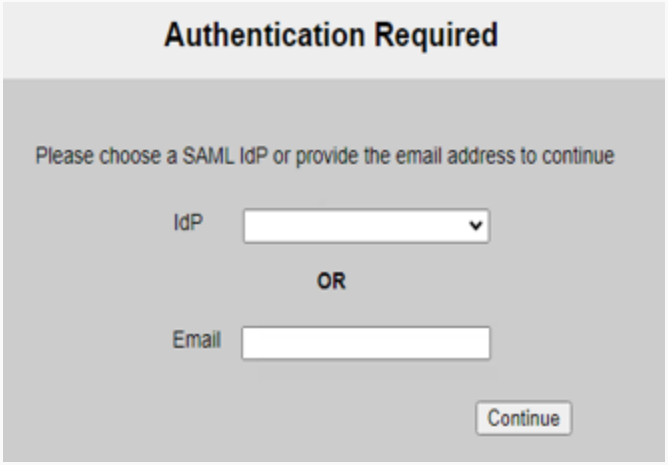
To use a SAML server for client authentication, you need to first add this SAML server to a SAML server pool (for details, see waf site-publish-helper saml-spool on page 655), then select the server pool in a site publish rule (for details, see waf site-publish-helper rule on page 643.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `authusergrp` area. For details, see Permissions on page 46.

Syntax

```
config user saml-user
   edit "<saml_server_name>"
      set entityID "<server_URL>"
      set service-path "<server_URL_path>"
      set enforce-signing {enable | disable}
      set slo-bind {post | redirect}
      set slo-path "<slo_URL_path>"
      set sso-bind <post>
      set sso-path "<sso_URL_path>"
      config mapping-domains
         edit <index>
            set domain <domain_name>
         next
      end
   next
end
```

Variable	Description	Default
"<saml_server_name>"	Enter a name that can be referenced by other parts of the configuration. The maximum length is 63 characters.	No default.
entityID "<server_URL>"	Enter the URL for the SAML server. The communications protocol must be HTTPS.	No default.
service-path "<server_URL_path>"	Enter a path for the SAML server at the URL you specified in entityID "<server_URL>" on page 417.	No default.
enforce-signing {enable | disable}	Enable to enforce signing verification to digitally sign the SAML message, and then the Identity Provider will verify the signature to confirm its integrity.	disable
slo-bind {post | redirect}	Select the binding that the server will use when the service provider initiates a single logout request: • `POST`–SAML protocol messages are transported via the user's browser in an XHTML document using base64-encoding. • `REDIRECT`–SAML protocol messages will be carried in the URL of an HTTP `GET` request. Because the length of URLs is limited, this option is best for shorter messages. If the SAML message contains information that the IDP is not yet aware of, you can sign the message for security purposes.	POST

Variable	Description	Default
slo-path "<slo_URL_path>"	Enter a partial URL that the IDP will use to confirm with the service provider that a user has been logged out.	No default.
sso-bind <post>	Select the binding that the server will use to transport the SAML authentication request to the IDP.	POST
sso-path "<sso_URL_path>"	Enter a partial URL that the IDP will use to confirm with the service provider that a user has been authenticated.	No default.
<index>	Enter the index number for the domain name.	No default
domain <domain_name>	Add domain names for this server. When users log in with an email address suffixed with the specified domain name, the authentication request will be forwarded to this SAML server. For instance, if a user enters "xxx@example.com" in the **Email** field, FortiWeb will forward the request to the SAML server which is configured with the domain name "example.com".  You can add multiple domain names for one SAML server. Similarly, it's allowed to associate multiple SAML server with the same domain name.	No default

Example

This example configures a SAML server at `https://sp.example.com/samlsp`. We specify the Service Path, Assertion Consumer Service (ACS), and Single Logout Service (SLS). We use a `POST` binding for ACS and a `REDIRECT` binding for SLS.

```
config user saml-user
   edit "saml_example"
      set entityID "https://sp.example.com/samlsp"
      set service-path "/saml.sso"
      set slo-bind redirect
      set slo-path "/SLO/REDIRECT"
      set sso-bind post
```

```
      set sso-path "/SAML2/POST"
   next
end
```

Related topic

- waf site-publish-helper rule on page 643

user tacacs+ user

Use this command to configure TACACS+ queries that can be used for authentication of administrators' access to the web UI or CLI.

To authenticate an administrator, the FortiWeb appliance sends the administrator's credentials to TACACS+ server for authentication. If the TACACS+ server replies to the query with a signal of successful authentication, the client is successfully authenticated with the FortiWeb appliance. If TACACS+ authentication fails or the query returns a negative result, the appliance refuses the connection.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `authusergrp` area. For details, see "Permissions" on page 1.

Syntax

```
config user tacacs+-user
   edit "<tacacs+-user_name>" on page 419
      set server {radius_ipv4 | domain name} on page 419
      set secret "<password_str>" on page 419
      set auth-type {auto | ms_chap | chap | pap | ascii} on page 419
   next
end
```

Variable	Description	Default
"<tacacs+-user_name>"	Enter a unique name that can be referenced in other parts of the configuration. The maximum length is 63 characters.	No default.
server {radius_ipv4 | domain name}	Enter the IP address or domain name of the TACACS+ server.	No default.
secret "<password_str>"	Enter the TACACS+ server secret key for the TACACS+ server.	No default.
auth-type {auto | ms_chap | chap | pap | ascii}	Select **Auto** to automatically assign an authentication type or select **Specify** to specify a type among MSCHAP, CHAP, PAP, and ASCII.	`Auto`

Related topics

- user tacacs+ user on page 419
- user user-group on page 1

wad file-filter

Use this command to specify the names of directories and files that you want to exclude from anti-defacement monitoring. Alternatively, you can specify the folders and files you want FortiWeb to monitor and it will exclude any others.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `wadgrp` area. For details, see Permissions on page 46.

Syntax

```
config wad file-filter
   edit "<wad-file-filter_name>"
      set filter-type {block-file-list | allow-file-list}
         edit <entry_index>
            set file-type {directory | regular-file}
            set file-name "<file_str>"
         next
   end
```

Variable	Description	Default
"<wad-file-filter_name>"	Enter the name of the file filter you can reference in other parts of the configuration.	No default.
filter-type {block-file-list | allow-file-list}	Specify the type of filter: • `block-file-list`–A list of files or folders that the anti-defacement feature does not monitor. • `allow-file-list`–A list of files or folders that the anti-defacement feature monitors. The feature ignores all other files and folders. FortiWeb still applies criteria in the anti-defacement configuration to these items. For example, if the file size exceeds the maximum, FortiWeb does not monitor it.	No default.
<entry_index>	Enter the index number of the individual entry in the table.	No default.
file-type {directory | regular-file}	Specify the type of item to add to the list: • `directory`–A folder or directory path. • `regular-file`–A file.	No default.

Variable	Description	Default
file-name "<file_str>"	Enter the name of the folder or file to add to the list. Ensure that the name exactly matches the folder or file that you want to specify. If file-type {directory | regular-file} on page 420 is `directory`, include the / (forward slash). For example, if `file-type` is `directory` and you want to add a folder `abc` that is under the root folder of a website, enter `/abc`. You can restrict the filter condition to a specific file by including file path information in `file-name`. For example, a website contains many files with the name `123.txt`. To specify the instance located in the `abc` folder only, enter `/abc/123.txt`.	No default.

Example

This example creates a filter `video-folder` that excludes the folder `/abc` from anti-defacement monitoring when it is applied to an anti-defacement monitoring configuration.

```
config wad file-filter
   edit "video-folder"
      set filter-type block-file-list
         edit 1
            set file-type directory
            set file-name "/abc"
         next
      end
```

Related topics

- wad website on page 421

wad website

Use this command to enable and configure website defacement attack detection and automatic repair.

The FortiWeb appliance monitors the website's files for any changes and folder modifications at specified time intervals. If it detects a change that could indicate a defacement attack, the FortiWeb appliance notifies you, and can quickly react by automatically restoring the website contents to the previous backup revision.

Optionally, you can specify a filter that either defines which files and folders FortiWeb does not scan when it looks for changes (blocklist) or the specific files and folders you want it to monitor (allowlist). For details, see wad file-filter on page 420.

FortiWeb automatically backs up website files and creates a revision in the following cases:

- When the FortiWeb appliance initiates monitoring for the first time, the FortiWeb appliance downloads a backup copy of the website's files and stores it as the first revision.
- If the FortiWeb appliance could not successfully connect during a monitor interval, it creates a new revision the next time it re-establishes the connection.

When you intentionally modify the website, you must disable the `monitor` option; otherwise, the FortiWeb appliance sees your changes as a defacement attempt and undoes them.

Backup copies omit files exceeding the file size limit and/or matching the file extensions that you have configured the FortiWeb appliance to omit. For details, see backup-max-fsize <limit_int> on page 423 and backup-skip-ftype "<extensions_str>" on page 423.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `wadgrp` area. For details, see Permissions on page 46.

Syntax

```
config wad website
   edit <entry_index>
      set alert-email "<email-policy_name>"
      set auto {disable | restore | acknowledge}
      set backup-max-fsize <limit_int>
      set backup-skip-ftype "<extensions_str>"
      set connect-type {ftp | smb | ssh}
      set description "<comment_str>"
      set hostname-ip {"<host_ipv4>" | "<host_fqdn>"}
      set interval-other <seconds_int>
      set interval-root <seconds_int>
      set monitor {enable | disable}
      set monitor-depth <folders_int>
      set name "<name_str>"
      set password "<password_str>"
      set port <port_int>
      set share-name "<share_str>"
      set user "<user_str>"
      set web-folder "<path_str>"
      set file-filter "wad-file-filter_name>"
   next
end
```

Variable	Description	Default
<entry_index>	Enter the index number of the individual entry in the table. The valid range is 1-16.	No default.
alert-email "<email-policy_name>"	Enter the name of the email policy that specifies the email address that FortiWeb sends an email to when it detects that the website changed. (See log email-policy on page 68.)The maximum length is 63 characters.	No default.

Variable	Description	Default
auto {disable | restore | acknowledge}	Enter the action that FortiWeb takes when it detects that the website has changed. • `disable`–FortiWeb takes no action. You can use the web UI to manually restore all or some of the changed files. • `restore`–Restore the website to the previous revision number. • `acknowledge`–Accept changes to the website. **Note**: When you intentionally modify the website, type `acknowledge`. Otherwise, the FortiWeb appliance detects your changes as a defacement attempt and undoes them.	`disable`
backup-max-fsize <limit_int>	Enter a file size limit in kilobytes (KB) to indicate which files will be included in the website backup. Files exceeding this size will not be backed up. The valid range is 1-1,048,576 kilobytes. **Note:** Backing up large files can impact performance.	`10240`
backup-skip-ftype "<extensions_str>"	Enter zero or more file extensions, such as `iso,avi`, to exclude from the website backup. Separate each file extension with a comma. The maximum length is 512 characters. **Note:** Backing up large files, such as video and audio, can impact performance.	No default.
connect-type {ftp | smb | ssh}	Select which protocol to use when connecting to the website in order to monitor its contents and download website backups. For Microsoft Windows-style shares, enter `smb`.	`ftp`
description "<comment_str>"	Enter a description or other comment. If the comment is more than one word or contains special characters, surround the comment with double quotes ("). The maximum length is 255 characters.	No default.
hostname-ip {"<host_ipv4>" | "<host_fqdn>"}	Enter the IP address or fully qualified domain name (FQDN) of the physical server on which the website is hosted. This will be used when connecting by SSH or FTP to the website to monitor its contents and download backup revisions, and therefore could be different from the real or virtual web host name that may appear in the `Host:` field of HTTP headers.	No default.
interval-other <seconds_int>	Enter the amount of time (in seconds) between each monitoring connection from the FortiWeb appliance to the web server. During this connection, the FortiWeb appliance examines the website's subfolders to see if any files have been changed by comparing the files with the latest backup. The valid range is 1-86,400.	`600`

Variable	Description	Default
	If any file change is detected, the FortiWeb appliance will download a new backup revision. If you've enabled auto {disable | restore | acknowledge} on page 423, the FortiWeb appliance will revert the files to their previous version.	
interval-root <seconds_int>	Enter the number of seconds between each monitoring connection from the FortiWeb appliance to the web server. During this connection, the FortiWeb appliance examines web-folder "<path_str>" on page 425 (but **not** its subfolders) to see if any files have been changed by comparing the files with the latest backup. The valid range is 1-86,400. If any file change is detected, the FortiWeb appliance will download a new backup revision. If you've enabled auto {disable | restore | acknowledge} on page 423, the FortiWeb appliance will revert the files to their previous version.	`60`
monitor {enable | disable}	Enable to monitor the website's files for changes, and to download backup revisions that can be used to revert the website to its previous revision if the FortiWeb appliance detects a change attempt.	`enable`
monitor-depth <folders_int>	Enter how many folder levels deep to monitor for changes to the website's files. Files in subfolders deeper than this level will not be backed up. The valid range is 1-10.	`5`
name "<name_str>"	Enter a name for the website. The maximum length is 63 characters. This name will not be used when monitoring the website, nor will it be referenced in any other part of the configuration, and therefore can be any identifier that is useful to you. It does not need to be the website's FQDN or virtual host name.	No default.
password "<password_str>"	Enter the password for the user name you entered in user "<user_str>" on page 425. The maximum length is 63 characters.	No default.
port <port_int>	Enter the port number on which the website's physical server listens. The standard port number for FTP is 21; the standard port number for SSH is 22. This is applicable only if connect-type {ftp | smb | ssh} on page 423 is `ftp` or `ssh`.	`21`
share-name "<share_str>"	Enter the name of the shared folder on the web server. The maximum length is 63 characters.	No default.

Variable	Description	Default
	This variable appears only if connect-type {ftp | smb | ssh} on page 423 is `smb`.	
user "<user_str>"	Enter the user name that the FortiWeb appliance will use to log in to the website's physical server. The maximum length is 63 characters.	No default.
web-folder "<path_str>"	Enter the path to the website's folder, such as `public_html`, on the physical server. The path is relative to the initial location when logging in with the user name that you specify in user "<user_str>". The maximum length is 1,023 characters. Available only if the value of connect-type {ftp | smb | ssh} on page 423 is `ftp` or `ssh`.	No default.
file-filter "wad-file-filter_name>"	Enter the filter that specifies either the files and folders that FortiWeb excludes from anti-defacement monitoring or the specific files and folders to monitor.	No default.

Example

```
config wad website
   edit 1
      set alert-email "email_policy_1"
      set connect-type ssh
      set hostname-ip "192.0.2.10"
      set monitor enable
      set name "www.example.com"
      set password "P@ssword1"
      set port 22
      set user "fortiweb"
      set web-folder "public_html"
      set file-filter "video-folder"
   next
end
```

Related topics

- wad file-filter on page 420
- system interface on page 351
- router static on page 102

waf advanced-bot-protection

FortiGuard Advanced Bot Protection is a SaaS (Software as a Service) solution designed to protect your online applications from malicious bots and automated attacks.

By incorporating FortiGuard Advanced Bot Protection (FortiGuard ABP) into FortiWeb's server policy, client traffic will be directed to the FortiGuard ABP service deployed on Google Cloud. It can analyze the traffic to identify any malicious bot behavior and suggest appropriate actions in response.

FortiGuard ABP builds up a machine learning model to protect against a wide range of threats, including Data harvesting, Credential stuffing attacks, Account takeover attempts, and DDoS attacks.

This topic introduces the FortiGuard ABP related CLI commands in FortiWeb. For the whole process of the FortiGuard ABP integration configuration, refer to "Configuring Advanced Bot Protection policy" in *FortiWeb Administration Guide*.

Syntax

```
config waf advanced-bot-protection
   edit waf advanced-bot-protection on page 426
      set application-id <string>
      set action {alert | deny_no_log | alert_deny | block-period | block-period-client}
      set severity {High | Medium | Low | Info}
      set trigger <trigger-policy_name>
      set exception {exception-policy-id}
      set bot-confirmation {enable | disble}
      set bot-recognition {captcha-enforcement | captcha-puzzle-enforcement | recaptcha-enforcement
          | recaptcha-v3-enforcement}
      set recaptcha <recaptcha_server_name>
      set validation-timeout <validation-timeout_int>
   next
end
```

Variable	Description	Default
"<advanced-bot-protection_name>"	Enter a name for the Advanced Bot Protection policy. You can reference it in the Web Protection Profile.	No default
application-id <string>	Enter the Application ID assigned to your FortiGuard ABP Application. The Application ID is used to bind this Advanced Bot Protection policy to the FortiGuard ABP Application. To obtain the ID, go to **Application** page of FortiGuard ABP, click the Settings icon in the **Action** column, then click **Copy Application ID**.	No default
action {alert | deny_no_log | alert_deny | block-period | block-period-client}	Select which action FortiWeb will take when FortiGuard ABP suggests a request is from a bot: • `alert`—Accept the connection and generate an alert email and/or log message.	alert

Variable	Description	Default
	• `alert_deny`–Block the request (or reset the connection) and generate an alert and/or log message. • `deny_no_log`–Block the request (or reset the connection). • `block-period`–Block subsequent requests from the client for a number of seconds. • `block-period-client`–Block a malicious or suspicious client based on the FortiWeb generated client ID. This is useful when the source IP of a certain client keeps changing. This option takes effect only when you enable Client Management in the Server Policy.	
block-period <content-scraping-block-period_int>	Enter the number of seconds that you want to block subsequent requests from an IP or client ID after FortiWeb detects content scraping activities. The valid range is 1-3,600 seconds. Available only if action {alert | deny_no_log | alert_deny | block-period | block-period-client} is set to `block-period` and `block-period-client`.	600
severity {High | Medium | Low | Info}	When policy violations are recorded in the attack log, each log message contains a **Severity Level** (`severity_level`) field. Select which severity level FortiWeb will use when FortiGuard ABP suggests a request is from a bot: • Informative • Low • Medium • High	Medium
trigger <trigger-policy_name>	Select the trigger, if any, that FortiWeb will use when it logs and/or sends an alert email when FortiGuard ABP suggests a request is from a bot. For details, see "Viewing log messages" on page 1.	No default.
exception {exception-policy-id}	Select the exception policy which specifies the elements to be exempted from the FortiGuard ABP scan.	No default
bot-confirmation {enable | disble}	Enable to confirm if the client is indeed a bot. The system sends RBE (Real Browser Enforcement) JavaScript or CAPTCHA to the client to double check if it's a bot.	enable

Variable	Description	Default

bot-recognition {captcha-enforcement | captcha-puzzle-enforcement | recaptcha-enforcement | recaptcha-v3-enforcement}	• `captcha-enforcement` – Requires the client to successfully fulfill a CAPTCHA request. CAPTCHA verification will not pop out for the bot confirmation again for the same user within 10 mins timeout.
	• `captcha-puzzle-enforcement`–Presents an interactive image-based puzzle challenge to the user. This method is resistant to headless browsers and scripted bots, and is suitable for high-security scenarios where traditional challenges are easily bypassed. If the client cannot successfully fulfill the request within the bot-confirmation-max-attempt-times <int>, or doesn't fulfill the request within the validation-timeout <validation-timeout_int>, FortiWeb applies the `action`.
	When selected:
	  • FortiWeb intercepts the request and serves a visual CAPTCHA that requires drag-and-drop interaction before allowing access to the backend.
	  • The original backend response is cached by FortiWeb and only delivered after the user successfully completes the challenge.
	  • No customization of the puzzle or replacement message is currently supported.
	• `recaptcha-enforcement`– Requires the client to successfully fulfill a reCAPTCHA request.
	• `recaptcha-v3-enforcement`: Requires the client to successfully fulfill a reCAPTCHA v3 request. If the client cannot successfully fulfill the request within the Validation Timeout, FortiWeb applies the Action and sends the reCAPTCHA block page. For details, see "Customizing error and authentication pages (replacement messages)" in *FortiWeb Administration Guide*.
	You can set the threshold of the reCAPTCHA v3 score through CLI
	`config system recaptcha-api`
	`set recaptcha-v3-score-threshold <string> *The value range is 0 to 1`
	`end`
		`captcha-enforcement`

Variable	Description	Default
recaptcha <recaptcha_server_name>	Enter the reCAPTCHA server you have created through user recaptcha-user	No default.
bot-confirmation-max-attempt-times <int>	If `captcha-enforcement` or `captcha-puzzle-enforcement` is selected for `bot-recognition`, enter the maximum number of attempts that a client may attempt to fulfill a CAPTCHA/Puzzle CAPTCHA request.	
validation-timeout <validation-timeout_int>	Enter the maximum amount of time (in seconds) that FortiWeb waits for results from the client.	20

Related topics

- waf bot-deception on page 1
- waf biometrics-based-detection on page 449
- waf threshold-based-detection on page 679
- waf known-bots on page 586

waf allow-method-exceptions

Use this command to configure the FortiWeb appliance with combinations of URLs and host names, which are exceptions to HTTP request methods that are generally allowed or denied according to the inline or Offline Protection profile.

While most URL and host name combinations controlled by a profile may require similar HTTP request methods, you may have some that require different methods. Instead of forming separate policies and profiles for those requests, you can configure allowed method exceptions. The exceptions define specific HTTP request methods that are allowed by specific URLs and hosts.

To apply allowed method exceptions, select them within an inline or Offline Protection profile. For details, see waf web-protection-profile inline-protection on page 720 or waf web-protection-profile offline-protection on page 731.

Before you configure an allowed method exception, if you want to apply it only to HTTP requests for a specific real or virtual host, you must first define the web host in a protected hosts group. For details, see server-policy allow-hosts on page 106.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `wafgrp` area. For details, see Permissions on page 46.

Syntax

```
config waf allow-method-exceptions
   edit "<method-exception_name>"
      config allow-method-exception-list
```

```
        edit <entry_index>
           set allow-request {get post head options trace connect delete put patch webdav rpc
                others}
           set host "<protected-hosts_name>"
           set host-status {enable | disable}
           set request-file "<url_str>"
           set request-type {plain | regular}
        next
     end
  next
end
```

Variable	Description	Default
"<method-exception_ name>"	Enter the name of the allowed methods exception. The maximum length is 63 characters. To display a list of the existing exceptions, enter: `edit ?`	No default.
<entry_index>	Enter the index number of the individual entry in the table. The valid range is 1-9,999,999,999,999,999,999.	No default.
allow-request {get post head options trace connect delete put patch webdav rpc others}	Select one or more of the allowed HTTP request methods that are an exception for that combination of URL and host. Methods that you do not select will be denied. The **OTHERS** option includes methods not specifically named in the other options. It often may be required by WebDAV applications such as Microsoft Exchange Server and Subversion, which may require HTTP methods not commonly used by web browsers, such as `PROPFIND` and `BCOPY`. For details, see RFC 4918 (http://tools.ietf.org/html/rfc4918). **Note:** If a **WAF Auto Learning Profile** will be selected in the policy with an Offline Protection profile that uses this allowed method exception, you must enable the HTTP request methods that will be used by sessions that you want the FortiWeb appliance to learn about. If a method is disabled, the FortiWeb appliance will reset the connection, and therefore cannot learn about the session.	No default.
host "<protected-hosts_ name>"	Enter the name of a protected host that the `Host:` field of an HTTP request must be in order to match the exception. The maximum length is 255 characters. This setting is used only if host-status {enable | disable} on page 430 is `enable`.	No default.
host-status {enable | disable}	Enable to require that the `Host:` field of the HTTP request match a protected hosts entry in order to match the allowed method exception. Also configure host "<protected-hosts_ name>" on page 430.	`disable`

Variable	Description	Default
request-file "<url_str>"	Depending on your selection in request-type {plain | regular} on page 431, either: • Enter the literal URL, such as `/index.php`, that is an exception to the generally allowed HTTP request methods. The URL must begin with a slash (/). • Enter a regular expression, such as `^/*.php`, matching all and only the URLs which are exceptions to the generally allowed HTTP request methods. The pattern is **not** required to begin with a slash (/). However, it must at least match URLs that begin with a slash, such as `/index.cfm`. For example, if multiple URLs on a host have identical HTTP request method requirements, you would type a regular expression matching all of and only those URLs. Do not include the name of the web host, such as `www.example.com`, which is configured separately in host "<protected-hosts_name>" on page 430. The maximum length is 255 characters. **Note:** Regular expressions beginning with an exclamation point (!) are not supported. For information on language and regular expression matching, see the *FortiWeb Administration Guide*: https://docs.fortinet.com/document/fortiweb	No default.
request-type {plain | regular}	Indicate whether request-file "<url_str>" on page 431 is a literal URL (`plain`) or a regular expression (`regular`).	`plain`

Example

This example adds an exception to the list of allowed methods (`post`) that can be used in HTTP requests. In addition to the allowed methods already specified in protection profiles that use this exception, web hosts included in the protected hosts group named `example_com_hosts` (such as `example.com`, `www.example.com`, and `192.0.2.10`) are allowed to receive POST requests to the Perl file that handles the guestbook.

```
config waf allow-method-exceptions
   edit "auto-learn-profile2"
      config allow-method-exception-list
         edit 1
            set allow-request post
            set host "example_com_hosts"
            set host-status enable
            set request-file "/perl/guesbook.pl"
            set request-type plain
         next
      end
   next
end
```

Related topics

- server-policy allow-hosts on page 106
- waf web-protection-profile inline-protection on page 720
- waf web-protection-profile offline-protection on page 731

waf allow-method-policy

Use this command to allow only specific HTTP request methods.

To define specific exceptions to this policy, use waf allow-method-exceptions on page 429.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `wafgrp` area. For details, see Permissions on page 46.

Syntax

```
config waf allow-method-policy
   edit "<allowed-methods_name>"
      set allow-method {get post head options trace connect delete put patch webdav rpc}
      set override-header {enable | disable}
      set override-parameter {enable | disable}
      set severity {High | Medium | Low | Info}
      set triggered-action "<trigger-policy_name>"
      set allow-method-exception "<method-exception_name>"
   next
end
```

Variable	Description	Default
"<allowed-methods_name>"	Enter the name of a new or existing allowed methods policy. This field cannot be modified if you are editing an existing allowed method exception. To modify the name, delete the entry, then recreate it using the new name. The maximum length is 63 characters. To display a list of the existing policies, enter: `edit ?`	No default.
override-header {enable | disable}	When Override Header or Override Parameter settings are enabled, FortiWeb should check methods from these headers or parameters as well as the HTTP method used in the actual request. If any of the methods are not in the allowed method list, FortiWeb should deny the request.	disable

Variable	Description	Default
override-parameter {enable | disable}	When Override Header or Override Parameter settings are enabled, FortiWeb should check methods from these headers or parameters as well as the HTTP method used in the actual request. If any of the methods are not in the allowed method list, FortiWeb should deny the request.	disable
allow-method {get post head options trace connect delete put patch webdav rpc}	Select one or more HTTP request methods that you want to allow for this specific policy. Methods that you do not select will be denied, unless specifically allowed for a host and/or URL in analyzer-policy "<fortianalyzer-policy_name>" on page 98. The `others` option includes methods not specifically named in the other options. It often may be required by WebDAV applications such as Microsoft Exchange Server 2003 and Subversion, which may require HTTP methods not commonly used by web browsers, such as `PROPFIND` and `BCOPY`. For details, see RFC 2518 (http://tools.ietf.org/html/rfc4918). **Note:** If a **WAF Auto Learning Profile** is used in the server policy where the HTTP request method is applied (via the **Web Protection Profile**), you must enable the HTTP request methods that will be used by sessions that you want the FortiWeb appliance to learn about. If a method is disabled, the FortiWeb appliance will reset the connection, and therefore cannot learn about the session.	No default.
severity {High | Medium | Low | Info}	Select the severity level to use in logs and reports generated when a violation of the policy occurs.	`High`
triggered-action "<trigger-policy_name>"	Enter the name of the trigger policy you want FortiWeb to apply when a violation of the HTTP request method policy occurs. Trigger policies determine who will be notified by email when the policy violation occurs, and whether the log message associated with the violation are recorded. The maximum length is 63 characters. To display a list of the existing policies, enter: `set triggered-action ?`	No default.
allow-method-exception "<method-exception_name>"	Enter the name of an existing HTTP request method exception, if any, to apply to it. The maximum length is 63 characters. To display a list of the existing policy, enter: `set allow-method-exception ?`	No default.

Example

This example allows the HTTP `GET` and `POST` methods and rejects others, except according to the exceptions defined in `MethodExceptions1`.

```
config waf allow-method-policy
   edit "allowpolicy1"
      set allow-method get post
      set triggered-action "TriggerActionPolicy1"
      set allow-method-exception "MethodExceptions1"
   next
end
```

Related topics

- waf allow-method-exceptions on page 429

waf api-learning-policy

The machine learning based API Protection learns the REST API data structure from user traffic samples and then build a mathematical model to screen out malicious API requests.

It analyzes the method, URL, and endpoint data of the API request samples to generate an API data structure file for your application. This model describes the API data schema model of endpoint data. If the incoming API request violates the data structure, it will be detected as an attack.

Use this command to edit machine learning based API Protection policies.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `wafgrp` area. For details, see Permissions on page 46.

Syntax

```
config waf api-learning-policy
   edit <api-learning-policy_ID>
      set policy-id <index>
      set status {enable | disable}
      set ip-list-type {Trust | Black}
      set start-training-cnt <integer>
      set url-replacer-policy <string>
      set action-mlapi {alert | alert_deny | block-period | standby}
      set block-period-mlapi <integer>
      set severity-mlapi {High | Medium | Low | Info}
      set trigger-mlapi <datasource>
      set schema-property {maximum | minimum | maxLength | minLength | maxItems | minItems}
      set data-format {date-time | date | time | email | hostname | ipv4 | ipv6}
      set de-duplication-all {enable | disable}
      set de-duplication-count <integer>
```

```
    set schema-required-ratio <integer>
    set schema-ignored-ratio <integer>
    set svm-sensitivity-level {1 | 2| 3 | 4}
  next
end
```

Variable	Description	Default
<api-learning-policy_ID>	Specify the API protection policy ID.	`No default`
policy-id <index>	Specify the server policy ID to associate this API protection policy with.	`No default`
status {enable | disable}	Enable or disable API protection.	`enable`
ip-list-type {Trust | Black}	Allow or deny sample collection from the Source IP list.	`trust`
start-training-cnt <integer>	The system will start building API Protection machine learning model if the sample count reaches the `start-training-cnt`.	`No default`
url-replacer-policy <datasource>	Specify the URL replacer policy you want to use. If your applications have dynamic URLs or unusual parameter styles, you must use URL Replacer Policy to recognize them. See waf machine-learning url-replacer-rule/policy on page 606 for more information.	`No default`
action-mlapi {alert | alert_ deny | block-period}	Choose the action FortiWeb takes when an API attack is detected. `alert`–Accepts the connection and generates an alert email and/or log message. `alert_deny`–Blocks the request (or resets the connection) and generates an alert and/or log message. `block-period`–Blocks the request for a certain period of time. `standby`–Selecting `standby` will activate the continuous learning mode. The system will continuously adjust the API learning models to adapt to changes in the API schema. This includes scenarios such as the introduction of new APIs, modifications to existing parameters, etc. It is important to note that blocking violations is not supported in continuous learning mode at present. However, you can go to **API View** to download the learned schema, then upload it to **API Validation**, which allows you to block malformed API requests.	`alert_deny`
block-period-mlapi <integer>	Enter the number of seconds that you want to block the requests. The valid range is 1-3,600 seconds. This option only takes effect when you choose	`600`

Variable	Description	Default
	Period Block in **Action**.	
severity-mlapi {High | Medium | Low | Info}	Select the severity level for this anomaly type. The severity level will be displayed in the alert email and/or log message.	`High`
trigger-mlapi <datasource>	Select a trigger policy that you have set in **Log&Report > Log Policy > Trigger Policy**. If an API attack is detected, it will trigger the system to send email and/or log messages according to the trigger policy.	`No default`
schema-property {maximum | minimum | maxLength | minLength | maxItems | minItems}	In the learned model, it could include these properties and data formats under the string type. Specify the schema properties that will be learned by the API Protection machine learning model.	`No default`
data-format {date-time | date | time | email | hostname | ipv4 | ipv6}	Specify the data format that will be learned by the API Protection machine learning model.	`No default`
schema-required-ratio <integer>	The `schema-required-ratio` is the threshold for the required type. If the percentage of samples including a certain field is over the `schema-required-ratio`, this field will be treated as the required type and learned in the final model.	`No default`
schema-ignored-ratio <integer>	If the percentage of samples including a certain field is lower than the `schema-required-ratio`, this field will be discarded in the final model.	`No default`
svm-sensitivity-level {1 | 2| 3 | 4}	Increasing the security level introduces more conditions that a request must meet to pass the scan. For example, a request that successfully passes at level 1 might be flagged as an anomaly at level 4 due to stricter criteria. While higher security levels enhance protection by enforcing more rigorous requirements, they also increase the risk of mistakenly blocking legitimate traffic.	`1`

waf api-learning-rule

Use this command to specify the domains to be protected by the ML based API protection model, and the API paths to be learned by the model.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `wafgrp` area. For details, see Permissions on page 46.

Syntax

```
config waf api-learning-rule
   edit <api-learning-rule_ID>
      set domain-name <index>
      config api-path-list
         edit api-path-list <id>
            set api-path-type {plain | regular}
            set api-path <string>
         next
      end
   next
end
```

Variable	Description	Default
`<api-protection-rule_ID>`	Specify the API protection policy ID.	`No default`
`domain-name <string>`	Enter the name of the domain to be protected.	`No default`
`api-path-list <index>`	Enter the API path list ID. The system by default learns API requests to all the URL paths of the domain. If you want to restrict the learning to certain API paths, specify the API paths that you want to system to learn.	`No default`
`api-path-type {plain | regular}`	Specify whether the API pattern must contain a literal URL (`plain`), or a regular expression designed to match multiple URLs (`regular`).	`plain`
`api-path <string>`	• If the `api-path-type` is `plain`, then enter the the literal URL, such as `/folder1/index.htm` that the HTTP request must contain in order to match the rule, or use wildcards to match multiple URLs, such as `/folder1/*` or `/folder1/*/index.htm`. The URL must begin with a slash (/). • If the `api-path-type` is `regular`, then enter a regular expression, such as `^/*\.jsp\?uid\=(.*)`, matching all and only the URLs to which the rule should apply. The pattern does not require a slash (/); however, it must at least match URLs that begin with a slash, such as `/profile.cfm`.	`No default`

waf api-policy

Use this command to create API gateway policy.

Syntax

```
config waf api-policy
   edit <api-policy_name>
   config api-rule-list
         edit <api-rule-list_id>
            set api-rule-name <api-rule-name_str>
         next
      end
   next
end
```

Variable	Description	Default
<api-policy_name>	Enter a name for the API gateway policy.	No default.
<api-rule-list_id>	The index number of the API gateway rule entry.	No default.
api-rule-name <api-rule-name_str>	Select the created API gateway rule.	No default.

Related topics

- waf api-user-group on page 445
- waf api-rules on page 438
- waf api-users on page 443

waf api-rules

To restrict API access, you can use this command to configure certain rules involving API key verification, API key carryover, API user grouping, sub-URL setting, and specified actions FortiWeb will take in case of any API call violation.

Syntax

```
config waf api-rules
   edit <api-rules_name>
      set api-key-verification {enable | disable}
      set allow-user-group <allow-user-group_name>
      set api-key-location {HTTP-parameter | HTTP-header}
      set header-field-name <header-field-name_str>
      set parameter-name <parameter-name_str>
      set rate-limit-period <rate-limit-period_int>
      set rate-limit-requests <rate-limit-requests_int>
      set rate-limit-user-period <rate-limit-user-period_int>
      set rate-limit-user-requests <rate-limit-user-requests_int>
      set x-ratelimit-headers <enable|disable>
      set action {alert | deny_no_log | alert_deny | block-period}
```

```
      set block-period <block-period_int>
      set severity {High | Medium | Low | Info}
      set trigger-policy <trigger-policy_str>
      set host <host_str>
      set host-status {enable | disable}
      config attach-HTTP-header
         edit <attach-HTTP-header_id>
            set HTTP-header-item <HTTP-header-item_str>
         next
      end
      config match-url-prefixes
         edit <match-url-prefixes_id>
            set frontend-prefix <frontend-prefix_str>
            set backend-prefix <backend-prefix_str>
         next
      end
      config sub-url-setting
         edit <sub-url-setting_id>
            set HTTP-method {get | post | head | options | trace | connect | delete | put | patch |
                 any}
            set type {plain | regular}
            set url-expression <url-expression_str>
            set api-key-verification {enable | disable}
            set api-key-location {HTTP-parameter | HTTP-header}
            set header-field-name <header-field-name_str>
            set parameter-name <parameter-name_str>
            set rate-limit-period <rate-limit-period_int>
            set rate-limit-requests <rate-limit-requests_int>
            set rate-limit-user-period <rate-limit-user-period_int>
            set rate-limit-user-requests <rate-limit-user-requests_int>
            set allow-user-group <allow-user-group_name>
            set api-key-inherit {enable | disable}
         next
      end
   next
end
```

Variable	Description	Default
<api-rules_name>	Type a unique name for the API gateway rule.	No default
api-key-verification {enable | disable}	When an user makes an API request, the API key will be included in HTTP header or parameter, FortiWeb obtains the API key from the request. When this option is enabled, FortiWeb verifies the key to check whether the key belongs to an valid API user.	`disable`
allow-user-group <allow-user-group_str>	Select a user group created to define which users have the persmission to access the API. Available only when waf api-rules is enable.	`disable`
api-key-location {HTTP-parameter | HTTP-header}	Indicate where FortiWeb can find your API key in HTTP request: • HTTP-parameter • HTTP-header	`HTTP-parameter`

Variable	Description	Default
header-field-name <header-field-name_str>	Enter the header filed name in which FortiWeb can find the API key whenapi-key-location {HTTP-parameter | HTTP-header} is HTTP Header.	No default.
parameter-name <parameter-name_str>	Enter the parameter name in which FortiWeb can find the API key when api-key-location {HTTP-parameter | HTTP-header} is HTTP Parameter.	No default.
rate-limit-period <rate-limit-period_int>	Type the maximum number of API call requests allowed **in a certain number of seconds**.	No default.
rate-limit-requests <rate-limit-requests_int>	Type the **maximum number of API call requests** allowed in a certain number of seconds.	No default.
rate-limit-user-period <rate-limit-user-period_int>	Limit API requests by users. Type the maximum number of API call requests allowed per user **in a certain number of seconds**.	No default.
rate-limit-user-requests <rate-limit-user-requests_int>	Type the **maximum number of API call requests** allowed per user in a certain number of seconds.	No default.
x-ratelimit-headers {enable | disable}	Enable to add **X-RateLimit-*** headers in the response packet if the user exceeds the rate limit. The following information can be displayed to users: the request limit, the remaining requests, and the minimum time to wait before the user is allowed to send the next request.	disable
action {alert | deny_no_log | alert_deny | block-period}	Select which action FortiWeb will take when it detects any API call violation: • `alert`—Accept the connection and generate an alert email and/or log message. • `alert_deny`—Block the request (or reset the connection) and generate an alert and/or log message. • `deny_no_log`—Block the request (or reset the connection). • `block-period`—Block subsequent requests from the client for a number of seconds. Also configure waf api-rules.	`alert`
block-period <block-period_int>	Enter the number of seconds that you want to block subsequent requests from a client after FortiWeb detects any API call violation. The valid range is 1-10,000 seconds. Available only if waf api-rules is set to `block-period`.	600
severity {High | Medium | Low | Info}	When policy violations are recorded in the attack log, each log message contains a **Severity Level** (`severity_level`) field. Select which severity level FortiWeb will use when it logs any API call violation:	`Low`

Variable	Description	Default
	• Informative • Low • Medium • High	
trigger-policy <trigger-policy_str>	Select the trigger, if any, that FortiWeb will use when it logs and/or sends an alert email about any API call violation. For details, see "Viewing log messages" on page 1.	No default.
host <host_str>	Select the name of a protected host that the `Host: field` of an HTTP request must be in to match the API gateway rule. This option is available only if waf api-rules is enable.	No default.
host-status {enable | disable}	Enable to apply this rule only to HTTP requests for specific web hosts. Also configure waf api-rules.	`disable`
<attach-HTTP-header_id>	Enter the sequence number of the HTTP header.	No default.
HTTP-header-item <HTTP-header-item_str>	Enter the HTTP header item.	No default.
<match-url-prefixes_id>	The sequence number of the match URL prefixes.	No default.
frontend-prefix <frontend-prefix_str>	Enter the Frontend Prefix; the frontend prefix is the URL path in a client call, for example, `/fortiweb/`, the URL is like this `https://172.22.14.244/fortiweb/example.json?param=value`.	No default.
backend-prefix <backend-prefix_str>	Enter the Backend Prefix; the backend prefix is the path which the client request will be replaced with, for example, `/api/v1.0/System/Status/`. After the URL rewriting, the URL is like this `https://10.200.3.183:90/api/v1.0/System/Status/example.json?param=value`.	No default.
<sub-url-setting_id>	Enter the sequence number of the sub-URL.	No default.
HTTP-method {get | post | head | options | trace | connect | delete | put | patch | any}	Select the HTTP method from the drop down list.	`GET`
type {plain | regular}	Select whether the url-expression <url-expression_str> field must contain either: • plain –The field is a string that the request URL must exactly. • regular–The field is a regular expression that defines a set of matching URLs.	plain

Variable	Description	Default
url-expression <url-expression_str>	Depending on your selection in type {plain | regular}, enter either: • The literal URL, such as `/index.php`, that the HTTP request must contain in order to match the input rule. The URL must begin with a backslash (/). • A regular expression, such as `^/*.php`, matching all and only the URLs to which the input rule should apply. The pattern does not require a slash (/).; however, it must at least match URLs that begin with a slash, such as `/index.cfm`.	No default.
api-key-verification {enable | disable}	When an user makes an API request, the API key will be included in HTTP header or parameter, FortiWeb obtains the API key from the request. When this option is enabled, FortiWeb verifies the key to check whether the key belongs to an valid API user.	`disable`
api-key-location {HTTP-parameter | HTTP-header}	Indicate where FortiWeb can find your API key in HTTP request: • HTTP-parameter • HTTP-header Available only when api-key-verification {enable | disable} is enable.	`HTTP-parameter`
header-field-name <header-field-name_str>	Enter the header filed name in which FortiWeb can find the API key when api-key-location {HTTP-parameter | HTTP-header} is HTTP-header.	No default.
parameter-name <parameter-name_str>	Enter the parameter name in which FortiWeb can find the API key when api-key-location {HTTP-parameter | HTTP-header} is HTTP-parameter.	No default.
rate-limit-period <rate-limit-period_int>	Type the maximum number of API call requests allowed **in a certain number of seconds**.	No default.
rate-limit-requests <rate-limit-requests_int>	Type the **maximum number of API call requests** allowed in a certain number of seconds.	No default.
rate-limit-user-period <rate-limit-user-period_int>	Limit API requests by users. Type the maximum number of API call requests allowed per user **in a certain number of seconds**.	No default.
rate-limit-user-requests <rate-limit-user-requests_int>	Type the **maximum number of API call requests** allowed per user in a certain number of seconds.	No default.
allow-user-group <allow-user-group_name>	Select a user group created to define which users have the persmission to access the API.	No default.

Variable	Description	Default
	Available only when api-key-verification {enable | disable} is enable.	
api-key-inherit {enable | disable}	When an user makes an API request, the API key will be included in HTTP header or parameter of sub URL, FortiWeb obtains the API key from the request. When this option is enabled, FortiWeb verifies the key to check whether the key belongs to an valid API user.	`disable`

Related topics

- waf api-user-group on page 445
- waf api-policy on page 437
- waf api-users on page 443

waf api-users

Use this command to define API users to restrict access to APIs based on API keys.

Syntax

```
config waf api-users
   edit <api-user_name>
      set email <email_str>
      set comments <comments_str>
      set uuid <uuid_str>
      set api-key <api-key_str>
      set create-time <create-time_str>
      set key-mode {dynamic | jwt | standard}
      set url <jwt_url>
      set headers <jwt_hearders>
      set params <jwt_parameters>
      set phantom-token-name <token_name>
      set token-name <token_name>
      set header-verification <string>
      set payload-validation <string>
      set rsa-key
      config ip-access-list
         edit <ip-access-list_id>
            set ip <ip_str>
         next
      end
      config http-referer-list
         edit <http-referer-list_id>
            set http-referer <http-referer_str>
```

```
        next
      end
    next
end
```

Variable	Description	Default
<api-user_name>	Enter a name that identifies the user.	No default.
email <email_str>	Type the email address of the user that is used for contact purpose.	No default.
comments <comments_str>	Optionally, enter a description or comments for the user.	No default.
uuid <uuid_str>	Enter a unique identifier for the requesting user.	No default.
api-key <api-key_str>	Specify an API key for the API user; the minimum length is 40 characters.	No default.
key-mode {dynamic | jwt | standard}	**Standard** Once the API user is created successfully, an API key and UUID are automatically assigned to this user by FortiWeb. **Dynamic** FortiWeb adopts RSA algorithm to generate token. It uses public key to encode, and private key to decode a random string with minimum length 64. You need to enter the RSA key for dynamic key. **JWT** JSON Web Token (JWT) is an open standard (RFC 7519) that defines a way for transmitting information -like authentication and authorization facts- between two parties: an issuer and an audience. For the JWT key, you need to enter the value for the following fields so that FortiWeb can communicate with the JWT server to validate the key.	Standard
url <jwt_url>	The URL that FortiWeb uses to communicate with the JWT server.	No default.
headers <jwt_hearders>	The headers append to the URL.	No default.
params <jwt_parameters>	The parameters append to the URL.	No default.
phantom-token-name <token_name>	The name of the phantom token used for JWT key.	No default.
token-name <token_name>	The name of the token used for JWT key.	No default.

Variable	Description	Default
header-verification <string>	The header verification used for JWT key.	No default.
payload-validation <string>	The payload verification used for JWT key.	No default.
rsa-key	The RSA key used for Dynamic key or JWT key.	No default.
create-time <create-time_str>	Specify the API user creation time.	No default.
<ip-access-list_id>	The index number of the IP entry.	No default.
<ip_str>	Specify the IP addresses from which the API key can only be used.	No default.
<http-referer-list_id>	The index number of the referer HTTP header entry.	No default.
http-referer <http-referer_str>	Specify the referer HTTP header in which the specified URLs are present.	No default.

Related topics

- waf api-policy on page 437
- waf api-rules on page 438
- waf api-user-group on page 445

waf api-user-group

Use this command to create API user group which defines specific permissions of the group users can perform.

Syntax

```
config waf api-user-group
   edit <api-user-group_name>
   config user-list
         edit <user-list_id>
            set api-user-name <api-user-name_str>
         next
      end
   next
end
```

Variable	Description	Default
<api-user-group_name>	Enter a name for the API user group.	No default.
<user-list_id>	The index number of the API user entry.	No default.
api-user-name <api-user-name_str>	Select the created API user name.	No default.

Related topics

- waf api-policy on page 437
- waf api-rules on page 438
- waf api-users on page 443

waf application-layer-dos-prevention

Use this command to create an HTTP-layer DoS protection policy. Once you create the policy, reference it in an inline protection profile that is used by a server policy.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `wafgrp` area. For details, see Permissions on page 46.

Syntax

```
config waf application-layer-dos-prevention
   edit "<app-dos-policy_name>"
      set enable-HTTP-session-based-prevention {enable | disable}
      set HTTP-connection-flood-check-rule "<rule_name>"
      set HTTP-request-flood-prevention-rule "<rule_name>"
      set enable-layer4-dos-prevention {enable | disable}
      set layer4-access-limit-rule "<rule_name>"
      set layer4-connection-flood-check-rule "<rule_name>"
      set layer3-fragment-protection {enable | disable}
   next
end
```

Variable	Description	Default
"<app-dos-policy_name>"	Enter the name of a new or existing rule. The maximum length is 63 characters. To display the list of existing rules, enter: `edit ?`	No default.

Variable	Description	Default
enable-HTTP-session-based-prevention {enable | disable}	Enable to use DoS protection based on session cookies. Also configure HTTP-connection-flood-check-rule "<rule_name>" on page 447 and HTTP-request-flood-prevention-rule "<rule_name>" on page 447.	`disable`
HTTP-connection-flood-check-rule "<rule_name>"	Enter the name of an existing rule that sets the maximum number of HTTP requests per second to a specific URL. The maximum length is 63 characters. To display a list of the existing rules, enter: `set HTTP-connection-flood-check-rule ?` This setting applies only if enable-HTTP-session-based-prevention {enable | disable} on page 447 is enabled.	No default.
HTTP-request-flood-prevention-rule "<rule_name>"	Enter the name of an existing rule that limits TCP connections from the same client. The maximum length is 63 characters. To display a list of the existing rules, enter: `set HTTP-request-flood-prevention-rule ?` This setting applies only if enable-HTTP-session-based-prevention {enable | disable} on page 447 is enabled.	No default.
enable-layer4-dos-prevention {enable | disable}	Enable to use DoS protection that is **not** based on session cookies. Also configure layer4-access-limit-rule "<rule_name>" on page 447 and layer4-connection-flood-check-rule "<rule_name>" on page 447.	`disable`
layer4-access-limit-rule "<rule_name>"	Enter the name of a rule that limits the number of HTTP requests per second from any source IP address. The maximum length is 63 characters. To display a list of the existing rules, enter: `set layer4-access-limit-rule ?` This setting applies only if enable-layer4-dos-prevention {enable | disable} on page 447 is enabled.	No default.
layer4-connection-flood-check-rule "<rule_name>"	Enter the name of an existing rule that limits the number of TCP connections from the same source IP address. The maximum length is 63 characters. To display a list of the existing rules, enter: `set layer4-connection-flood-check-rule ?` This setting applies only if enable-layer4-dos-prevention {enable | disable} on page 447 is enabled.	No default.
layer3-fragment-protection {enable | disable}	Enable to prevent attacks of fragmented packets.	`disable`

Example

This example shows the settings for a DoS protection policy that protects a web portal using existing DoS prevention rules.

```
config waf application-layer-dos-prevention
   edit "Web Portal DoS Policy"
         set enable-HTTP-session-based-prevention enable
         set HTTP-connection-flood-check-rule "Web Portal TCP Connect Limit"
         set HTTP-request-flood-prevention-rule "Web Portal HTTP Request Limit"
         set enable-layer4-dos-prevention enable
         set layer4-access-limit-rule "Web Portal HTTP Request Limit"
         set layer4-connection-flood-check-rule "Web Portal Network Connect Limit"
   next
end
```

Related topics

- waf HTTP-connection-flood-check-rule on page 544
- waf HTTP-request-flood-prevention-rule on page 560
- waf layer4-access-limit-rule on page 597
- waf layer4-connection-flood-check-rule on page 601
- system advanced on page 235

waf base-signature-disable

Use this command to disable individual or whole categories of data leak and attack signatures in every signature group that currently exists.

For example, if you disable a certain signature ID with this command, the signature ID in every signature group you have defined will be disabled.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `wafgrp` area. For details, see Permissions on page 46.

Syntax

```
config waf base-signature-disable
   edit "<signature-ID_name>"
   next
end
```

Variable	Description	Default
"<signature-ID_name>"	Enter the name of an individual signature or signature category ID. The maximum length is 63 characters. For example, to disable the first cross-site scripting attack signature everywhere it is currently selected, you would enter: edit 010000001	No default.

Example

This example globally disables the XSS signature whose ID is 010000001.

```
config waf base-signature-disable
   edit "010000001"
   next
end
```

Related topics

- waf signature on page 628

waf biometrics-based-detection

By checking the client events such as mouse movement, keyboard, screen touch, and scroll, etc in specified period, FortiWeb judges whether the request comes from a human or from a bot. You can use this command to configure the biometrics based detection rule to define the client event, collection period, and the request URL, etc.

Syntax

```
config waf biometrics-based-detection
   edit <biometrics-based-detection-name_str>
      set mouse-movement {enable | disable}
      set page-focus {enable | disable}
      set click {enable | disable}
      set screen-touch {enable | disable}
      set keyboard {enable | disable}
      set scroll {enable | disable}
      set bot-traits {enable | disable}
      set bot-traits-num <int>
      set event-collection-time <time_int>
      set bot-effective-time <time_int>
      set action {alert | alert_deny | | deny_no_log}
      set severity {high | medium | low | Info}
      set trigger <trigger_policy>
```

```
        set bot-access-rate <int>
        config url-list
           edit <url-list_id>
              set host <host_str>
              set host-status {enable | disable}
              set type {simple-string | regex-expression}
              set url <url_str>
           next
        end
     next
  end
```

Variable	Description	Default
<biometrics-based-detection-name_str>	Type a unique name that can be referenced in other parts of the configuration.	No default.
mouse-movement {enable | disable}	Enable to monitor the mouse movement event.	`enable`
page-focus {enable | disable}	Enable to monitor how long the user stays on the page.	`disable`
keyboard {enable | disable}	Enable to monitor the keyboard event.	`enable`
click {enable | disable}	Enable to monitor the click event.	`enable`
screen-touch {enable | disable}	Enable to monitor the screen touch event.	`disable`
scroll {enable | disable}	Enable to monitor the scroll event.	`disable`
bot-traits {enable | disable}	For the requests passing the Monitor Client Events check, you can enable `bot-traits` to implement an additional layer of detection to check whether the requests are generated by bots. `bot-traits` looks at the properties of the client's browser for values commonly used by bots. By examining these characteristics, it becomes possible to effectively identify and filter out malicious events that are artificially simulated by scripts. This is particularly useful in detecting web crawlers that leverage headless browsing techniques to simulate browser behaviors in order to bypass conventional bot detection methods.	`disable`
bot-traits-num <int>	Specify how many bot traits should be detected to identify a client as a bot.	`5`

Variable	Description	Default
	The valid range is 2-10.	
event-collection-time <time_int>	Specify how long the events will be collected from the client.	`15`
bot-effective-time <time_int>	For the identified bot, choose the time period before FortiWeb tests and verifies the bot again.	`5`
action {alert | alert_deny | | deny_no_log}	Select which action FortiWeb will take when it detects a violation of the policy: • **Alert**–Accept the connection and generate an alert email and/or log message. • **Alert & Deny**–Block the request (or reset the connection) and generate an alert and/or log message. • **Deny (no log)**–Block the request (or reset the connection). The default value is **Alert**.	`Alert`
severity {high | medium | low | Info}	When policy violations are recorded in the attack log, each log message contains a **Severity Level** (`severity_level`) field. Select which severity level FortiWeb will use when it logs a violation of the policy: • Informative • Low • Medium • High	`Low`
trigger <trigger_policy>	Select the trigger, if any, that FortiWeb will use when it logs and/or sends an alert email about a violation of the policy. For details, see "Viewing log messages" on page 1.	No default.
bot-access-rate <int>	Specify the bot-access-rate to define the maximum bot JS requests per second per IP. The detection threshold is calculated using the formula: *bot-access-rate × (report_waiting_time + event_collection_time)*	`5`

Variable	Description	Default
	Clients exceeding this value are identified as bots. The valid range is 1 to 100, with a default of 5.	
<url-list_id>	Enter the sequence number of the URL.	No default.
host <host_str>	Select the name of a protected host that the `Host: field` of an HTTP request must be in to match the bot deception policy. This option is available only if waf biometrics-based-detection on page 449 is enabled.	No default.
host-status {enable | disable}	Enable to apply this rule only to HTTP requests for specific web hosts. Also configure host <host_str>.	`disable`
type {simple-string | regex-expression}	Select whether the url <url_str> field must contain either: • **simple-string**–The field is a string that the request URL must exactly. • **regex-expression**–The field is a regular expression that defines a set of matching URLs.	`simple-string`
url <url_str>	Depending on your selection in type {simple-string | regex-expression}, enter either: • The literal URL, such as `/index.php`, that the HTTP request must contain in order to match the input rule. The URL must begin with a backslash (/). • A regular expression, such as `^/*.php`, matching all and only the URLs to which the input rule should apply. The pattern does not require a slash (/).; however, it must at least match URLs that begin with a slash, such as `/index.cfm`. When you have finished typing the regular expression, click the >> (test) icon.	No default.

Variable	Description	Default
	This opens the Regular Expression Validator window where you can finetune the expression. For details, see Appendix D: Regular expressions.	

Related topics

waf bot-mitigation-policy on page 468

waf bot-detection-policy

Use this command to edit bot detection policies.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `wafgrp` area. For details, see Permissions on page 46.

Syntax

```
config waf bot-detection-policy
   edit <bot-detection-policy_ID>
      set policy-id <server-policy-id>
      set model-status {enable | disable}
      set advanced-mode {enable | disable}
      set client-identification-method {IP | IP-and-User-Agent | Cookie}
      set sampling-count <integer>
      set sampling-count-per-client <integer>
      set sampling-time-per-vector <integer>
      set training-accuracy <percentage>
      set cross-validation <percentage>
      set testing-accuracy <percentage>
      set selected-model {Strict | Loose}
      set anomaly-count <integer>
      set bot-confirmation {enable | disable}
      set verification-method {Disable | Real-Browser-Enforcement | Captcha-Enforcement | Captcha-
            Puzzle-Enforcement| Recaptcha-Enforcement | Recaptcha-v3-Enforcement}
      set recaptcha <recaptcha_server_name>
      set validation-timeout <integer>
      set max-attempt-times <integer>
      set mobile-verification-method {Disable | Mobile-Token-Validation} on page 461
      set auto-refresh {enable | disable}
      set refresh-factor <value-from-0-to-one>
      set minimum-vector-number <integer>
      set action {alert | deny_no_log | alert_deny | block-period}
```

```
      set block-period <integer>
      set severity {High | Medium | Low | Info}
      set trigger <trigger_policy_name>
      config allow-source-ip
         edit <allow-source-ip-list-id>
            set ip <ip-address>
         next
      end
      config bot-detection-exception-list
         edit <bot-detection-exception-list-id>
            set host <string>
            set host-status {enable | disable}
            set url-type {plain | regular}
            set url-pattern <string>
         next
      end
   next
end
```

Variable	Description	Default
`policy-id <server-policy-id>`	Associate this bot detection policy with the specified server policy.	No defalut
`model-status {enable | disable}`	Enable or disable bot detection.	enable
`advanced-mode {enable | disable}`	Enable or disable the advanced settings in the bot detection policy	disable
`client-identification-method {IP | IP-and-User-Agent | Cookie}`	The data collected in one sample should be from the same user. The system uses **IP**, **IP and User-Agent**, or **Cookie** to identify a user. **IP**: The traffic data in one sample should come from the same source IP. **IP and User-Agent**: The traffic data in one sample should come from the same source IP and User-Agent (the browser). **Cookie**: The traffic data in one sample should have the same cookie value.	IP-and-User-Agent
`sampling-count <integer>`	This controls how many samples should be collected during the sample collection period. More samples mean the model will be more accurate; but at the same time, it costs longer time to complete the sample collection. Not all traffic data will be collected as samples. The system abandons traffic data if it meets one of the following criteria: • The system sends Javascript challenge	1000

Variable	Description	Default
	to user clients before collecting samples from them. If a client doesn't pass the challenge, the system will not collect sample data from it. • The traffic is from malicious IPs reported by the IP Intelligence feature, or is recognized as a bot by the system. • The traffic is from Known Engines, such as Google and Bing. The system also skips the known engine traffic when executing bot detection. Using these criteria is to exclude malicious traffic and the traffic from known engines that act like a bot, thus to make sure the bot detection model is built upon valid data collected from regular users.	
`sampling-count-per-client <integer>`	This controls how many samples FortiWeb will collect from each client (user) in an hour. For example, if the value is set to 3, and a client generates 10 samples in an hour, the system only collects the first 3 samples from this client in an hour. If the client generates more samples in the second hour, the system continues collecting samples from this client until the sample count reaches 3. This option prevents the system from continuously collecting samples from one client, thus to avoid the interference of the bot traffic in the sampling stage.	3
`sampling-time-per-vector <integer>`	Each vector (also called sample) records a certain user's behaviors in a certain time range. This option defines how long the time range is. For example, if the **Sample Time Per Vector** is 5 minutes, the system will record a certain user's behaviors in 5 minutes and count it as one sample.	5
`training-accuracy <userdef>`	The training accuracy is calculated by this formula: **The number of the regular samples in the training sample set/the total number of training samples * 100%**.	95%

Variable	Description	Default
	As we have introduced in the Basic Concepts section, multiple models are built based on multiple parameter combinations in the SVM algorithm. The system uses each model to detect anomalies in the sample set, and calculates the training accuracy for each model. For example, if there are 100 training samples, and 90 of them are treated as regular samples by a model, then the training accuracy for this model is 90%. The default value for the training accuracy is 95%, which means only the models whose training accuracy equals to or higher than 95% will be selected as qualified models.	
`cross-validation <userdef>`	The system divides the training sample sets evenly into three parts, let's say, Part A, B and C. The system executes three rounds of bot detection: • First, the system observes the samples in Part A and B to build up a mathematical model, then uses this model to detect anomalies in Part C. • Then, the system observes the samples in Part B and C to build up a mathematical model, then uses this model to detect anomalies in Part A. • At last, the system observes the samples in Part A and C to build up a mathematical model, then uses this model to detect anomalies in Part B. The cross-validation value is calculated by this formula: **The total number of the regular samples/the total number of samples * 100%.** For example, if there are 100 samples, and 10 anomalies are detected in the three rounds, then the cross-validation value for this model is: (100-10)/100 * 100% = 90%. The default value for the training accuracy is 90%, which means only the models whose Cross-Validation Value equals to or higher than 90% will be selected as qualified models.	90%

Variable	Description	Default
`testing-accuracy <userdef>`	Three quarters of the samples are divided into training sample set, and one quarter of the samples are divided into testing sample set. The system uses the models built for the training sample set to detect anomalies in the testing sample set. If the training accuracy and testing accuracy for a model vary greatly, it may indicate the model is not invalid. The testing accuracy is calculated by this formula: **The number of the regular samples in the testing sample set/the number of the testing samples * 100%.** For example, if there are 100 testing samples, and 95 of them are treated as regular samples by a model, then the testing accuracy for this model is 95%. The default value for the training accuracy is 95%, which means only the models whose testing accuracy equals to or higher than 95% will be selected as qualified models.	95%
`selected-model {Strict | Loose}`	Multiple models are built during the model building stage. The system uses training accuracy, cross-validation value, and testing accuracy to select qualified models. The **Model Type** is used to select the one final model out of all the qualified models. • If you configure the Model Type to **Loose**, the system chooses the model which has the **highest** training accuracy among all the qualified models. • If you configure the Model Type to **Strict**, the system chooses the model which has the **lowest** training accuracy among all the qualified models. The Strict Model detects more anomalies, but there are chances that regular users are false positively detected as bots. The Moderate Model is comparatively loose. It's less likely to conduct false positive detection, but there are risks that real bots might be escaped from detection.	loose

Variable	Description	Default
	There isn't a perfect option for every situation. Whichever model type you choose, you can always leverage the other commands to mitigate the side effects, for example, using `bot-confirmation enable` to avoid false positive detections.	
`anomaly-count <integer>`	If the system detects certain times of anomalies from a user, it takes actions such as sending alerting emails or blocking the traffic from this user. **Anomaly Count** controls how many times of anomalies are allowed for each user. For example, the Anomaly Count is set to 4, and the system has detected 3 anomalies in the last 6 vectors. If the 7th vector is detected again as an anomaly, the system will take actions. Please note that if no valid traffic is collected for the 7th vector (for example, the user leaves your application), the system will clear the anomaly count and the user information. If the user revisits your application, he/she will be treated as new users and the system starts anomaly counting afresh. Since this option allows certain times of anomalies from a user, it might be a good choice if you want to avoid false positive detections.	3
`bot-confirmation {enable | disable}`	If the number of anomalies from a user has reached the **Anomaly Count**, the system executes **Bot Confirmation** before taking actions. The **Bot Confirmation** is to confirm if the user is indeed a bot. The system sends RBE (Real Browser Enforcement) JavaScript or CAPTCHA to the client to double check if it's a real bot.	enable

Variable	Description	Default

`verification-method {Disable | Real-Browser-Enforcement | Captcha-Enforcement | Captcha-Puzzle-Enforcement| Recaptcha-Enforcement | Recaptcha-v3-Enforcement}`	**Disabled:** Not to carry out the real browser verification.
	• **Real-Browser-Enforement**–Specifies whether FortiWeb returns a JavaScript to the client to test whether it is a web browser or automated tool when it meets any of the specified conditions. If the client fails the test or does not return results before the Validation Timeout expires, FortiWeb applies the Action. If the client appears to be a web browser, FortiWeb allows the client to exceed the action.
	• **Captcha-Enforcement**–Requires the client to successfully fulfill a CAPTCHA request. If the client cannot successfully fulfill the request within the Max Attempt Times or doesn't fulfill the request within the Validation Timeout, FortiWeb applies the Action and sends the CAPTCHA block page. For details, see "Customizing error and authentication pages (replacement messages)" in *FortiWeb Administration Guide*. CAPTCHA verification will not pop out for the bot confirmation again for the same user within 10 mins timeout.
	• **Captcha-Puzzle-Enforcement**–Presents an interactive image-based puzzle challenge to the user. This method is resistant to headless browsers and scripted bots, and is suitable for high-security scenarios where traditional challenges are easily bypassed.
	When selected:
	  • FortiWeb intercepts the request and serves a visual CAPTCHA that requires drag-and-drop interaction before allowing access to the backend.
	  • The original backend response is cached by FortiWeb and only delivered after the user successfully completes the challenge.
		Real-Browser-Enforcement

Variable	Description	Default

	• No customization of the puzzle or replacement message is currently supported.
	• **Recaptcha-Enforcement**–Requires the client to successfully fulfill a reCAPTCHA request. If the client cannot successfully fulfill the request within the Validation Timeout, FortiWeb applies the Action and sends the reCAPTCHA block page. For details, see "Customizing error and authentication pages (replacement messages)" in *FortiWeb Administration Guide*.
	• **Recaptcha-v3-Enforcement**: Requires the client to successfully fulfill a reCAPTCHA v3 request. If the client cannot successfully fulfill the request within the Validation Timeout, FortiWeb applies the Action and sends the reCAPTCHA block page. For details, see "Customizing error and authentication pages (replacement messages)" in *FortiWeb Administration Guide*.
	You can set the threshold of the reCAPTCHA v3 score through CLI
	`config system recaptcha-api`
	`set recaptcha-v3-score-threshold <string> *The value range is 0 to 1`
	`end`
	It will trigger the action policy if the traffic is not from web browser.	

`recaptcha <recaptcha_server_name>`	Enter the reCAPTCHA server you have created through user recaptcha-user	No default.
`validation-timeout <integer>`	Enter the maximum amount of time (in seconds) that FortiWeb waits for results from the client for Bot Confirmation. The default value is 20. The valid range is 5-30.	20
`max-attempt-times <integer>`	The maximum number of the CAPTCHA enforcement or Puzzle CAPTCHA enforcement validation attempts. If the client fails the validation for the specified time, the system will trigger the action policy.	3

Variable	Description	Default
	This is only available if the verification-method is set to CAPTCHA-Enforcement or Captcha-Puzzle-Enforcement.	
`mobile-verification-method {Disable | Mobile-Token-Validation}`	**Disable**: Disable the system to verify whether the sample traffic is from mobile devices. **Mobile-Token-Validation**: The system verifies the mobile token to confirm if the traffic is from mobile devices.	disable
`auto-refresh {enable | disable}`	If this is enabled, FortiWeb detects if the current model is applicable. If not, FortiWeb will refresh the current model automatically.	enable
`refresh-factor <userdef>`	Auto Refresh Factor controls the timing to trigger the model refreshment when a certain number of false positive vectors are detected. FortiWeb makes statistics for the bot detection in the past 24 hours. It counts the number of the following vectors: • All vectors in the past 24 hours (A), • Anomaly vectors (B), and • The anomaly vectors that are confirmed as bots (C) If **(B - C)/(A - C) > 1 - Auto Refresh Factor * training accuracy**, the model will be refreshed. • **(B - C)** is the false positive vectors, and **(A - C)** is the regular vectors. **(B - C)/(A - C)** represents the false positive rate. • **(1 - Auto Refresh Factor * training accuracy)** is an adjusted anomaly vector rate. You can consider it as an auto refresh threshold. If the false positive rate **(B - C)/(A - C)** becomes greater than the auto refresh threshold **(1 - Auto Refresh Factor * training accuracy)**, the system determines the current model is not applicable and automatically refreshes the model. The following table calculates the value of the auto refresh threshold when the Auto Refresh Factor is set to 0-1 (assuming the training accuracy is the default value 95%).	0.7

<table>
<tr><th>Variable</th><th>Description</th><th>Default</th></tr>
<tr><td></td><td>For example, if the Auto Refresh Factor is set to 0.8, the auto refresh threshold will be 1 - 0.8 * 95% = 0.24, which means the system automatically refreshes the model when the false positive rate is greater than 0.24 (e.g. 24 false positive vectors and 100 regular vectors).
You can use this table to quickly decide a value for the Auto Refresh Factor that is suitable for your situation.
<table><tr><th>Auto Refresh Factor</th><th>Auto Refresh Threshold
1 - Auto Refresh Factor * training accuracy
*Assuming the training accuracy is the default value 95%.</th></tr><tr><td>0</td><td>1</td></tr><tr><td>0.1</td><td>0.905</td></tr><tr><td>0.2</td><td>0.81</td></tr><tr><td>0.3</td><td>0.715</td></tr><tr><td>0.4</td><td>0.62</td></tr><tr><td>0.5</td><td>0.525</td></tr><tr><td>0.6</td><td>0.43</td></tr><tr><td>0.7</td><td>0.335</td></tr><tr><td>0.8</td><td>0.24</td></tr><tr><td>0.9</td><td>0.145</td></tr><tr><td>1</td><td>0.05</td></tr></table></td><td></td></tr>
<tr><td><code>minimum-vector-number <integer></code></td><td>As we mentioned above, the system decides whether to update the bot detection model based on the statistics in the past 24 hours. If very few vectors are detected in the past 24 hours, it may interfere the rightness of the model refreshment decision.
Set a value for the Minimum Vector Number, so that the system won't update the model if the number of the vectors hasn't reached this value.
If the value is set to 0, the system will use the value of the Sample Count as the Minimum Vector Number.</td><td>0</td></tr>
<tr><td><code>action {alert | deny_no_log | alert_deny | block-period}</code></td><td>The action FortiWeb takes when a user client is confirmed as a bot: alert–Accepts the connection and generates an alert email and/or log message. deny_no_log–Blocks the request. No logs will be generated. alert_deny–Blocks the request (or resets the connection) and generates an alert and/or log message. block-period–Blocks the request for a certain period of time.</td><td>alert</td></tr>
</table>

Variable	Description	Default
`block-period <integer>`	Enter the number of seconds that you want to block the requests. The valid range is 1-3,600 seconds. This option only takes effect when you choose **Period Block** in **Action**.	600
`severity {High | Medium | Low | Info}`	Select the severity level for this anomaly type. The severity level will be displayed in the alert email and/or log message.	High
`trigger <trigger-policy-name>`	Select a trigger policy. If an anomaly is detected, it will trigger the system to send email and/or log messages according to the trigger policy.	No default
`<ip-address>`	If specified, the system will collect sample data only from the these IP addresses.	No default
`host <string>`	The system collects samples from any IP address except the specified IP address or FQDN of a protected host.	No default
`host-status {enable | disable}`	Enable or disable comparing the URLs to the `Host:` field in the HTTP header.	enable
`url-type {plain | regular}`	Specify whether the Exception URLs must contain either: • **plain**–The field is a string that the Exception URL must match exactly. • **regular**–The field is a regular expression that defines a set of matching URLs.	No default
`url-pattern <string>`	Depending on the `url-type`, enter either: • **plain**–The literal URL, such as `/index.php`, that the HTTP request must contain in order to match the rule. The URL must begin with a slash (`/`). • **regular**–A regular expression, such as `^/*.php`, matching the URLs to which the rule should apply. The pattern does not require a slash (`/`), but it must match URLs that begin with a slash, such as `/index.cfm`. Do not include the domain name, such as `www.example.com`, which is configured separately in `[bot-detection-exception-list] <No.> host <string>`.	No default

waf bot-mitigation-exception

You can use this command to create exception policy to omit bot mitigation attack scans when you know that some parameters or URLs may trigger positives during normal use. The exception policy can be applied in Bot Mitigation policy, Biometrics Based Detection, Threshold Based Detection, and Bot Deception.

Syntax

```
config waf bot-mitigate-exception
   edit edit "<bot_excetpion_policy-name>"
      config exception-element-list
         edit <index>
            set match-target CLIENT_IP
            set operator {EQ |NE}
            set ip-range <IP_range>
            set concatenate-type {AND | OR}
         next
         edit <index>
            set match-target host
            set operator {STRING_MATCH | REGEXP_MATCH}
            set value <string>
            set concatenate-type {AND | OR}
         next
         edit <index>
            set match-target URI
            set operator {STRING_MATCH | REGEXP_MATCH}
            set value <string>
            set concatenate-type {AND | OR}
         next
         edit <index>
            set match-target FULL_URL
            set operator {STRING_MATCH | REGEXP_MATCH}
            set value <string>
            set concatenate-type {AND | OR}
         next
         edit <index>
            set match-target PARAMETER
            set operator {STRING_MATCH | REGEXP_MATCH}
            set value-name <string>
            set value-check {enable | disable}
            set value <string>
            set concatenate-type {AND | OR}
         next
         edit <index>
            set match-target COOKIE
            set operator {STRING_MATCH | REGEXP_MATCH}
            set value-name <string>
            set value-check {enable | disable}
            set value <string>
            set concatenate-type {AND | OR}
         next
      end
```

```
  next
end
```

Variable	Description	Default
`<bot_excetpion_policy-name>`	Enter the name of the bot mitigation exception policy.	No default
`<index>`	Enter the index number of the exception element.	No default
	match-target CLIENT_IP	
`operator {EQ |NE}`	• `EQ`–Equal. FortiWeb does not perform a bot mitigation attack scan for requests with a client IP address or IP range that matches the value of `ip-range`. • `NE`–Not Equal. FortiWeb only performs a bot mitigation attack scan for requests with a client IP address or IP range that matches the value of `ip-range`.	EQ
`CLIENT_IP <ip>`	Specify the client IP addres that FortiWeb uses to determine whether or not to perform a bot mitigation attack scan for the request.	No default
`ip-range <IP_range>`	Specify the client IP address or IP range that FortiWeb uses to determine whether or not to perform a bot mitigation attack scan for the request.	No default
	match-target host	
`operator {STRING_MATCH | REGEXP_MATCH}`	• `STRING_MATCH`–`Value` is a literal host name. • `REGEXP_MATCH`–`Value` is a regular expression that matches all and only the host name that the exception applies to.	REGEXP_MATCH
`value <string>`	Specifies the `Host:` field value to match.	No default
	match-target URI	
`operator {STRING_MATCH | REGEXP_MATCH}`	• `STRING_MATCH`–`Value` is a literal URL, such as `/folder1/index.htm` that the HTTP request must contain in order to match the rule, or use wildcards to match multiple URLs, such as `/folder1/*` or `/folder1/*/index.htm`. • `REGEXP_MATCH`–`Value` is a regular expression that matches all and only the URIs that the exception applies to.	REGEXP_MATCH

Variable	Description	Default
`value <string>`	Specifies a URL value to match. You can use up to 2048 characters in regex configuration for signature. The value does not include parameters. For example, `/testpage.php`, which match requests for `http://www.test.com/testpage.php?a=1&b=2`. If `operator` is `STRING_MATCH`, ensure the value starts with a forward slash (/) (for example, `/causes-false-positives.php`). If `operator` is `REGEXP_MATCH`, the value does not require a forward slash (/). However, ensure that it can match values that contain a forward slash. Do not include a domain name or parameters. To match a domain name, use the **Host** element type. To match a URL that includes parameters, use the **Full URL** type.	No default
	match-target FULL_URL	
`operator {STRING_MATCH | REGEXP_MATCH}`	• `STRING_MATCH`–`Value` is a literal URL, such as `/folder1/index.htm` that the HTTP request must contain in order to match the rule, or use wildcards to match multiple URLs, such as `/folder1/*` or `/folder1/*/index.htm`. • `REGEXP_MATCH`–`Value` is a regular expression that matches all and only the URLs that the exception applies to.	REGEXP_ MATCH
`value <string>`	Specifies a URL value that includes parameters to match. For example, `/testpage.php?a=1&b=2`, which match requests for `http://www.test.com/testpage.php?a=1&b=2`. If `operator` is `STRING_MATCH`, ensure the value starts with a forward slash (/) (for example, `/testpage.php?a=1&b=2`). If `operator` is `REGEXP_MATCH`, the value does not require a forward slash (/). However, ensure that it can match values that contain a forward slash. Do not include a domain name. To match a domain name, use the **Host** element type. To match a URL that does not include parameters, use the **URI** type.	No default
	match-target PARAMETER	

Variable	Description	Default
`operator {STRING_MATCH | REGEXP_MATCH}`	• `STRING_MATCH`–`Name` is the literal name of a parameter. • `REGEXP_MATCH`– `Name` is a regular expression that matches all and only the name of the parameter that the exception applies to.	REGEXP_ MATCH
`value-name <string>`	Specifies the name of the parameter to match.	No default
`value-check {enable | disable}`	Enable to specify a parameter value to match in addition to the parameter name.	disable
`value <string>`	Specifies the parameter value to match.	No default
	match-target COOKIE	
`operator {STRING_MATCH | REGEXP_MATCH}`	• `STRING_MATCH`–`Name` is the literal name of a cookie. • `REGEXP_MATCH`– `Name` is a regular expression that matches all and only the name of the cookie that the exception applies to.	REGEXP_ MATCH
`value-name <string>`	Specifies the name of the cookie to match.	No default
`value-check {enable | disable}`	Select to specify a cookie value to match in addition to the cookie name.	disable
`value <string>`	Specifies the cookie value to match.	No default
`concatenate-type {and | or}`	• `And`–A matching request matches this entry in addition to other entries in the exemption list. • `Or`–A matching request matches this entry instead of other entries in the exemption list. Later, you can use the exception list options to adjust the matching sequence for entries. The lower the index number, the earlier it will be processed.	and

Related topics

- waf bot-deception on page 1
- waf biometrics-based-detection on page 449
- waf threshold-based-detection on page 679
- waf known-bots on page 586

waf bot-mitigation-policy

You can use this command to integrate the bot deception policy, the biometrics based detection rule, and threshold based detection rule, and apply the policy in the web protection profile for bot mitigation.

Syntax

```
config waf bot-mitigate-policy
   edit bot-deception <bot-deception_str>
      set bot-deception <bot-deception_str>
      set biometrics-based-detection <biometrics-based-detection_str>
      set threshold-based-detection <threshold-based-detection_str>
      set known-bots <known-bots_str>
   next
end
```

Variable	Description	Default
"<bot-mitigate-policy_name>"	Enter a name for the bot mitigation policy.	No default
bot-deception <bot-deception_str>	Select a bot deception policy from the created policy list.	No default
biometrics-based-detection <biometrics-based-detection_str>	Select a biometrics based detection rule from the created rule list.	No default
threshold-based-detection <threshold-based-detection_str>	Select a threshold based detection rule from the created rule list.	No default
known-bots <known-bots_str>	Select a known bots rule from the created rule list.	No default

Related topics

- waf bot-deception on page 1
- waf biometrics-based-detection on page 449
- waf threshold-based-detection on page 679
- waf known-bots on page 586

waf cookie-security

Use this command to configure FortiWeb features that prevent cookie-based attacks.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
config waf cookie-security
   edit "<cookie-security_name>"
      set security-mode {no |encrypted | signed}
      set action {alert |alert_deny | block-period | remove_cookie | deny_no_log}
      set block-period <block-period_int>
      set severity {High |Medium | Low | Info}
      set  trigger "trigger-policy_name>"
      set cookie-replay-protection-type {no | IP}
      set max-age <max-age_int>
      set secure-cookie {enable | disable}
      set HTTP-only {enable | disable}
      set allow-suspicious-cookies{Never |Always | Custom}
      set allow-time "<time_str>"
      config cookie-security-exception-list
         edit <entry_index>
            set cookie-name "<cookie-name_str>"
            set cookie-domain "<cookie-domain_str>"
            set cookie-path "<cookie-path_str>"
      end
   next
end
```

Variable	Description	Default
"<cookie-security_name>"	Enter the cookie security policy name. The maximum length is 63 characters.	No default.
security-mode {no |encrypted | signed}	Enter the security mode for the cookie security policy • no–FortiWeb does not apply cookie tampering protection or encrypt cookie values. • `encrypted`–Encrypts cookie values the back-end web server sends to clients. Clients see encrypted cookies only. FortiWeb decrypts cookies submitted by clients before it sends them to the back-end server. • `signed`–Prevents tampering (cookie poisoning) by tracking the cookie value. This option requires you to enable Session Management in the protection policy and the client to support cookies. For details, see waf web-protection-profile inline-protection on page 720.	no

Variable	Description	Default
	When FortiWeb receives the first HTTP or HTTPS request from a client, it uses a cookie to track the session. When you select this option, the session-tracking cookie includes a hash value that FortiWeb uses to detect tampering with the cookie from the back-end server response. If FortiWeb determines the cookie from the client has changed, it takes the specified action according to action {alert |alert_deny | block-period | remove_cookie | deny_no_log} on page 470.	
action {alert |alert_deny | block-period | remove_ cookie | deny_no_log}	Select one of the following actions that the FortiWeb appliance will perform when it detects cookie poisoning: • `alert`–Accept the request and generate an alert email and/or log message. • `alert_deny`–Block the request (or reset the connection) and generate an alert email and/or log message. You can customize the web page that FortiWeb returns to the client with the HTTP status code. • `block-period`–Block subsequent requests from the client for a number of seconds. Also configure block-period <block-period_int> on page 471. **Note:** If FortiWeb is deployed behind a NAT load balancer, when using this option, you **must** also define an X-header that indicates the original client's IP. For details, see waf x-forwarded-for on page 746. Failure to do so may cause FortiWeb to block **all** connections when it detects a violation of this type. • `remove_cookie`–Accept the request, but remove the poisoned cookie from the datagram before it reaches the web server, and generate an alert and/or log message. • `deny_no_log`–Deny a request. Do not generate a log message. **Caution:** This setting will be ignored if monitor-mode {enable | disable} on page 166 is enabled. **Note:** Logging and/or alert email will occur only if enabled and configured. See config log disk and config log alertemail.	`alert`

Variable	Description	Default
	Note: If you select an auto-learning profile with this rule, you should select alert. If the action is alert_deny, for example, the FortiWeb appliance will block the request or reset the connection when it detects an attack, resulting in incomplete session information for the auto-learning feature. For details about auto-learning requirements, see "waf web-protection-profile autolearning-profile" on page 1.	
block-period <block-period_int>	Enter the number of seconds to block a connection when action {alert |alert_deny | block-period | remove_cookie | deny_no_log} on page 470 is set to `block-period`. The valid range is from 1 to 3,600 seconds.	`600`
severity {High |Medium | Low | Info}	Select the severity level to use in logs and reports generated when cookie poisoning is detected.	`High`
trigger "trigger-policy_name>"	Enter the name of the trigger to apply when cookie poisoning is detected. For details, see log trigger-policy on page 97. The maximum length is 63 characters. To display the list of existing trigger policies, type: `set trigger ?`	No default.
cookie-replay-protection-type {no | IP}	Select whether FortiWeb uses the IP address of a request to determine the owner of the cookie. Because the public IP of a client is not static in many environments, Fortinet recommends that you do not enable Cookie Replay. Available only when security-mode {no |encrypted | signed} on page 469 is `encrypted`.	`no`
max-age <max-age_int>	Set the cookie security attributes. Enter the maximum age, in minutes, permitted for cookies that do not have an “Expires” or “Max-Age” attribute. To configure no expiry age for cookies, enter 0.	`0`
secure-cookie {enable | disable}	Set the cookie security attributes. Enable to add the secure flag to cookies, which forces browsers to return the cookie only when the request is for an HTTPS page.	`disable`
HTTP-only {enable | disable}	Set the cookie security attributes. Enable to add the HttpOnly flag to cookies, which prevents client-side scripts from accessing the cookie.	`enable`
samesite { enable | disable }	Enable to add the "SameSite" attribute so that you can declare that your cookie should be restricted to a first-party or same-site context.	`disable`

Variable	Description	Default
samesite-value {strict | lax | none}	• `strict`: Any request from the third parties will not carry such cookies; • `lax`: Any request from the third parties will not carry such cookies except for GET requests that navigate to the destination URL. • `none`: Set the value as none if a cookie is required to be sent by cross origin.	`lax`
allow-suspicious-cookies {Never |Always | Custom}	Select whether FortiWeb allows requests that contain cookies that it does not recognize or that are missing cookies. • When security-mode {no |encrypted | signed} on page 469 is `encrypted`, suspicious cookies are cookies for which FortiWeb does not have a corresponding encrypted cookie value. • When cookie-replay-protection-type {no | IP} on page 471 is `IP`, the suspicious cookie is a missing cookie that tracks the client IP address. In many cases, when you first introduce the cookie security features, cookies that client browsers have cached earlier generate false positives. To avoid this problem, either select `Never`, or select `Custom` and enter an appropriate date on which to start taking the specified action against suspicious cookies. • `Never`–FortiWeb does not take the action specified by `action` against suspicious cookies. • `Always`–FortiWeb always takes the specified action against suspicious cookies. • `Custom`–FortiWeb takes the specified action against suspicious cookies starting on the date specified by allow-time "<time_str>" on page 472. This feature is not available if security-mode {no |encrypted | signed} on page 469 is `signed`.	`Custom`
allow-time "<time_str>"	Set the date on which FortiWeb starts to take the specified action against suspicious cookies if allow-suspicious-cookies{Never |Always | Custom} on page 472 is `Custom`.	No default.
<entry_index>	Enter the index number of a new or existing entry in the exception list of the cookie security policy.	No default.
cookie-name "<cookie-name_str>"	Set the exception cookie entry name.	No default.
cookie-domain "<cookie-domain_str>"	Enter the partial or complete domain name or IP address as it appears in the cookie. For example: `www.example.com`, `.google.com` or `192.0.2.50`.	No default.

Variable	Description	Default
cookie-path "<cookie-path_str>"	Enter the path as it appears in the cookie, such as / or /blog/folder.	No default.

Related topics

- waf web-protection-profile inline-protection on page 720

waf client-side-protection-policy

Use this command to configure a Client-Side Protection policy.

Client-Side Protection enables browser-level threat detection by monitoring JavaScript execution and DOM activity in real time. Unlike traditional WAF features that inspect only HTTP traffic, this feature inserts a JavaScript collector or performs passive HTML analysis to detect in-browser threats such as script injection, credential theft, and DOM manipulation.

Client-Side Protection is designed to mitigate risks highlighted in the OWASP Top 10 for client-side security and works in conjunction with static mechanisms like HTTP security headers and Subresource Integrity.

After defining the policy, you must assign it to an inline Web Protection Profile and apply that profile to a Server Policy. To activate enforcement, the Web Protection Profile must also include an HTTP Header Security policy and a Subresource Integrity Check policy.

Before You Begin:

- A valid license for the Client-Side Protection service is required. Without it, the feature is unavailable in both the CLI and GUI.
- Ensure that HTTP Header Security and Subresource Integrity Check policies are configured, as they are required for this feature to operate when applied in a Web Protection Profile.

Syntax

```
config waf client-side-protection-policy
   edit <name>
      set host-status {enable|disable}
      set host <string>
      set js-collector {enable|disable}
      set url-type {plain|regular}
      set url-pattern <string>
      set collect-ip-range <ip_range>
      set passive-assessment {enable|disable}
   next
end
```

Variable	Description	Default
`<name>`	Enter a name for the policy.	No default
`host-status {enable|disable}`	Enable to apply the policy only to requests for a specific host. Useful in multi-tenant or multi-site deployments.	`disable`
`host <string>`	Define the hostname to match when **Host Status** is **enabled**.	No default
`js-collector {enable|disable}`	Enables or disables injection of the JavaScript collector into eligible HTTP responses. This option is available only through the CLI; in the GUI, the collector is always enabled and cannot be turned off. The JavaScript collector captures detailed browser-side telemetry, including: Script execution DOM changes Access to cookies or local storage If disabled, FortiWeb will no longer collect this dynamic behavioral data. The Client-Side Protection dashboard will instead display only static attributes–such as known file hashes, sizes, or CVE references. This option is intended for specialized environments where script injection must be avoided. It should be used with caution, as disabling it significantly reduces visibility and enforcement capabilities.	`enable`
`url-type {plain|regular}`	Specify the URL matching method: • plain – use a simple string for an exact match with a static path. • regular – use a regular expression pattern to match with regex syntax.	`plain`
`url-pattern <string>`	Enter the URL or pattern to target for monitoring.	No default
`collect-ip-range <ip_range>`	Define a set of client IP addresses from which JavaScript activity will be collected. In **Monitor** mode, only clients in this range will trigger data collection and enforcement logic.	No default
`passive-assessment {enable|disable}`	Enable passive HTML analysis of script and resource elements (e.g., `<script>`, `<iframe>`, `<form>`) to identify unauthorized or modified third-party content without relying on JavaScript injection. This is disabled by default.	`disable`

Example

```
config waf client-side-protection-policy
    edit csp_policy_1
        set host-status enable
        set host www.example.com
        set js-collector enable
        set url-type plain
        set url-pattern /secure/
        set collect-ip-range 192.168.1.0/24
        set passive-assessment disable
```

```
    next
end
```

waf csrf-protection

Use this command to protect against cross-site request forgery (CSRF). CSRF is an attack that exploits the trust that a site has in a user's browser to transmit unauthorized commands.

The CRSF protection feature is not supported when the operation mode is Offline Protection or Transparent Inspection.

To protect back-end servers from CSRF attacks, you create two lists of items: a list of web pages to protect against CSRF attacks, and a corresponding list of the URLs found in the requests that the pages generate. For more information on configuring CSRF protection, including troubleshooting and adding parameter filters, see the *FortiWeb Administration Guide*:

https://docs.fortinet.com/document/fortiweb

To apply a CSRF protection rule, you select it in an inline protection profile. For details, see waf web-protection-profile inline-protection on page 720.

Before you configure a CSRF protection rule, if you want to apply it only to HTTP requests for a specific real or virtual host, you must first define the web host in a protected hosts group. For details, see server-policy allow-hosts on page 106.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `wafgrp` area. For details, see Permissions on page 46.

Syntax

```
config waf csrf-protection
   edit "<csrf-rule_name>"
      set action {alert | alert_deny | block-period | deny_no_log}
      set block-period <seconds_int>
      set severity {High | Medium | Low | Info}
      set trigger <trigger-policy_name>
      set
      config csrf-page-list
         edit <entry_index>
            set host <host_name>
            set request-url <url_str>
            set host-status {enable | disable}
            set request-type {plain | regular}
            set parameter-filter {enable | disable}
            set parameter-name <parameter-name_str>
            set parameter-value-type {plain | regular}
            set parameter-value <parameter-value_str>
         next
      end
      config csrf-url-list
         edit <entry_index>
            set host <host_name>
```

```
            set request-url <url_str>
            set host-status {enable | disable}
            set request-type {plain | regular}
            set parameter-filter {enable | disable}
            set parameter-name <parameter-name_str>
            set parameter-value-type {plain | regular}
            set parameter-value <parameter-value_str>
        next
    end
  next
end
```

Variable	Description	Default
"<csrf-rule_name>"	Enter the name of a new or existing rule. The maximum length is 63 characters. To display the list of existing rules, enter: `edit ?`	No default.
action {alert | alert_deny | block-period | deny_no_log}	Enter the action that FortiWeb takes when it detects a missing or incorrect anti-CSRF parameter: • `alert`–Accept the request and generate an alert email, a log message, or both. • `alert_deny`–Block the request (reset the connection) and generate an alert email, a log message, or both. You can customize the web page that FortiWeb returns to the client with the HTTP status code. • `block-period`–Block subsequent requests from the client for a number of seconds. Also configure block-period <seconds_int> on page 476. • `deny_no_log`–Deny a request. Do not generate a log message. **Note:** Logging and alert email occur only if the corresponding settings are enabled and configured. For details, see log disk on page 66 and log alertMail on page 60.	`alert`
block-period <seconds_int>	Enter the number of seconds that you want to block subsequent requests from the client after the FortiWeb appliance detects a CSRF attack. The valid range is 1-3,600 seconds. This setting applies only if action {alert | alert_deny | block-period | deny_no_log} on page 476 is `block-period`.	`600`
severity {High | Medium | Low | Info}	Select the severity level to use in any logs and reports that FortiWeb generates when a violation of this rule occurs.	`Low`
trigger <trigger-policy_name>	Enter the name of the trigger to apply when this rule is violated. For details, see log trigger-policy on page 97. The maximum length is 63 characters.	No default.

Variable	Description	Default
	To display the list of existing trigger policies, enter: `set trigger ?`	
ajaxcheck {disable | enable}	By default, FortiWeb runs a script to append the parameter `tknfv` (the anti-CSRF token) to any HTML link elements that have the href attribute (`<a href>`) and HTML form elements. Enabling this option will run another script to modify the page's native XMLHttpRequest function and add the CSRF parameter `tknfv` onto it. If the **Ajaxcheck Status** option in **Advanced Protection > Man in the Browser Protection** is also enabled, the AJAX requests will also contain the parameters for MiTB: `check_url`, `check_action`, and `local_url`.	`disable`
<entry_index>	Enter the index number of the individual entry in the table.	No default.
host <host_name>	Enter a protected host name (either a web host name or IP address) that the `Host:` field of the HTTP request matches. This setting applies only if host-status {enable | disable} on page 477 is `enable`.	No default.
request-url <url_str>	Enter either a literal URL or regular expression, depending on the value of `request-type`.	No default.
host-status {enable | disable}	Enter `enable`to apply this rule only to HTTP requests for specific web hosts. Also configure `host`. Disable to match the rule based on the URL and any parameter filter only.	`disable`
request-type {plain | regular}	Select whether request-url <url_str> on page 477 contains a literal URL (`plain`), or a regular expression designed to match multiple URLs (`regular`).	`plain`
parameter-filter {enable | disable}	Enter `enable` to specify a parameter name and value to match. The parameter can be located in either the URL or the HTTP body of a request.	`disable`
parameter-name <parameter-name_str>	Enter the name of the parameter name to match.	No default.
parameter-value-type {plain | regular}	Select whether parameter-value <parameter-value_str> on page 477 contains a literal value (`plain`) or a regular expression designed to match multiple parameters (`regular`).	`plain`
parameter-value <parameter-value_str>	Enter either a literal parameter or regular expression, depending on the value of parameter-value-type {plain | regular} on page 477.	No default.

Variable	Description	Default
	To match any parameter value, for `parameter-value-type`, enter `regular`, and for `parameter-value`, enter * (asterisk).	

Example

The web page `csrf_login.html` contains the following HTML form:

```
<form name="do_some_action" id="form1" action="csrf_test2.php" method="GET">
   <input type="text" name="username" value=""/>
   <Input type="text" name="password" value=""/>
   <input type="submit" value="do Action"/>
</form>
```

This form generates the following request when the page is added to the list of pages protected by a CSRF protection policy:

```
http://target-site.com/csrf_
      test2.php?username=test&password=123&tknfv=3DF5BDCCIG3DCXNTE3RUNCTKRS3E36AD
```

The CSRF protection feature adds the parameter `tknfv` with a value that matches the session ID.

To create this example, you add `csrf_login.html` to the list of pages and `/csrf_check2.php` to the list of URLs.

```
config waf csrf-protection
   edit "csrf_rule1"
      set action alert_deny
      config csrf-page-list
         edit 1
            set request-url "csrf_login.html"
            set request-type regular
         next
      end
      config csrf-url-list
         edit 1
            set request-url "/csrf_check2.php"
            set request-type plain
         next
      end
   next
end
```

waf custom-access policy

Use this command to configure custom access policies. Custom access policies group custom access rules.

To apply a custom access policy, select it within an inline protection profile or Offline Protection profile. For details, see waf web-protection-profile inline-protection on page 720 or waf web-protection-profile offline-protection on page 731.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `wafgrp` area. For details, see Permissions on page 46.

Syntax

```
config waf custom-access policy
   edit "<custom-policy_name>"
      config rule
         edit <entry_index>
            set rule-name "<custom-rule_name>"
            set threat-weight {low | critical | informational | moderate | substantial | severe}
         next
      end
   next
end
```

Variable	Description	Default
"<custom-policy_name>"	Enter the name of a new or existing custom policy. The maximum length is 63 characters. To display a list of the existing policies, enter: `edit ?`	No default.
<entry_index>	Enter the index number of the individual entry in the table. The valid range is 1-9,223,372,036,854,775,807.	No default.
rule-name "<custom-rule_name>"	Enter the name of the existing custom access rule to add to the policy. The maximum length is 63 characters.	No default.
threat-weight {low | critical | informational | moderate | substantial | severe}	Set the weight for the threat per a custom policy	moderate

Example

For an example, see waf custom-access rule on page 480.

Related topics

- waf web-protection-profile inline-protection on page 720
- waf web-protection-profile offline-protection on page 731
- waf custom-access rule on page 480

waf custom-access rule

Use this command to configure custom access rules.

What if you want to allow a web crawler, but only if it is not too demanding, and comes from a source IP that is known to be legitimate for that crawler? What if you want to allow only a client that is a senior manager's IP, and only if it hasn't been infected by malware whose access rate is contributing to a DoS?

Advanced access control rules provide a degree of flexibility for these types of complex conditions. You can combine any or all of these criteria:

- Source IP
- User
- HTTP Session
- Rate limit (including rate limiting for specific types of content)
- HTTP header or response code
- URL
- Predefined or custom attack or data leak signature violation
- Transaction or packet interval timeout
- Real browser enforcement
- CAPTCHA enforcement

In the rule, add all criteria that you require allowed traffic to match.

Before you can apply a custom access rule, you must first group it with any others that you want to apply in a custom access policy. For details, see waf custom-access policy on page 478.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `wafgrp` area. For details, see Permissions on page 46.

Syntax

```
config waf custom-access rule
   edit "<custom-access_name>"
      set action {alert | alert_deny | block-period | deny_no_log | redirect}
      set block-period <seconds_int>
      set severity {High | Medium | Low | Info}
      set trigger "<trigger-policy_name>"
      set bot-recognition {captcha-enforcement | captcha-puzzle-enforcement | recaptcha-enforcement
            | recaptcha-v3-enforcement | real-browser-enforcement | disable}
      set recaptcha <recaptcha_server_name>
      set max-attempt-times <attempts_int>
      set validation-timeout <seconds_int>
      set mobile-app-identification {disabled | mobile-token-validation}
      set bot-confirmation {enable | disable}
      config access-limit-filter
         edit <entry_index>
            set access-rate-limit <rate_int>
         next
      end
      config HTTP-header-filter
```

```
    edit <entry_index>
      set header-name-type {custom | predefined}
      set header-field-check {enable | disable}
      set predefined-header {host | connection | authorization | x-pad  | cookie | referer |
        user-agent  | X-Forwarded-For | Accept}
      set pre-header-type {plain | regular}
      set pre-header-rev-match {enable | disable}
      set custom-header-name "<key_str>"
      set cus-header-type {plain | regular}
      set cus-header-name-type {plain | regular}
      set cus-header-rev-match {enable | disable}
      set header-value "<value_str>"
      set HTTP-hline-missing-check {enable | disable}
      set HTTP-hline-empty-check {enable | disable}
      set misformatted-basic-scheme-check {enable | disable}
      set HTTP-method-check {enable | disable}
      set HTTP-method-value-type {plain | regular}
      set HTTP-method-value "<HTTP-method-value_str>"
      set HTTP-method-rev-match {enable | disable} on page 489
    next
  end
  config method
    edit <entry_index>
      set method-type {predefined|custom}
      set predefined-method-set {GET POST HEAD OPTIONS TRACE CONNECT DELETE PUT PATCH WEBDAV
        RPC OTHERS}
      set custom-method-type {plain |regular}
      set custom-method-value <string>
      set method-reverse-match {enable|disable}
    next
  end
  config source-ip-filter
    edit <entry_index>
      set source-ip <ip_range>
      set exclusive-match {no | yes}
    next
  end
  config user-filter
    edit <entry_index>
      set reverse-match {no | yes}
      set user-name "<user-name_str>"
    next
  end
  config geo-filter
    edit <entry_index>
      set match-exclusive {yes | no}
      set country-list <country-list_str>
    next
  end
  config url-filter
    edit <entry_index>
      set request-file "<url_str>"
      set reverse-match {no | yes}
    next
  end
  config HTTP-transaction
    edit <entry_index>
```

```
      set HTTP-transation-timeout "<timeout_int>"
   next
end
config response-code
   edit <entry_index>
      set <response-code_int>
      set response-code-max <response-code_int>
      set response-code-rev-match {enable | disable}
   next
end
config content-type
   edit <entry_index>
      set {text/html text/plain text/xml application/xml application/soap+xml application/json
        application/octet-stream text/javascript text/}
      set content-type-rev-match {enable | disable}
   next
end
config packet-interval
   edit <entry_index>
      set packet-interval-timeout <timeout_int>
   next
end
config parameter
   edit <entry_index>
      set name-type {plain |regular}
      set name <parameter_name>
      set value-check {enable | disable}
      set value <value_regular_expression>
      set location-check {enable | disable}
      set location {URL | HTTP-body}
      set parameter-rev-match {enable | disable}
   next
end
config main-class
   edit {010000000 | 020000000 | 030000000 | 040000000 | 050000000 | 060000000 | 090000000|
        070000000 080000000 | 100000000}
      set select-all {enable | disable}
      set no-subclass {enable | disable}
      set syntax-validation {enable | disable}
   next
end
config sub-class
   edit <sub-class_id>
      set select-all {enable | disable}
      set no-subclass {enable | disable}
   next
end
set signature <signature_id>
config custom-signature
   edit <entry_index>
      set custom-signature-enable {enable | disable}
      set {custom-signature-group | custom-signature}
      set "<custom-signature-name_str>"
   next
end
config occurrence
   edit <entry_index>
```

```
            set occurrence-num "<occurrence_int>"
            set within "<within_int>"
            set percentage-flag {enable | disable}
            set percentage "<percentage_int>"
            set traced-by {Source-IP | User | Http-Session}
        next
    end
  next
end
```

Variable	Description	Default
"<custom-access_name>"	Enter the name of a new or existing custom access rule. The maximum length is 63 characters. To display a list of the existing rule, enter: `edit ?`	No default.
action {alert | alert_deny | block-period | deny_no_log | redirect}	Select the specific action to be taken when the request matches the signature. • `alert`–Accept the request and generate an alert email and/or log message. **Note:** If type {request | response} on page 501 is response, it does **not** cloak, except for removing sensitive headers. Sensitive information in the body remains unaltered. • `alert_deny`–Block the request (or reset the connection) and generate an alert email and/or log message. This option is applicable only if `type` is `signature-creation`. You can customize the web page that FortiWeb returns to the client with the HTTP status code. • `block-period`–Block subsequent requests from the client for a number of seconds. Also configure block-period <seconds_int> on page 484. • `deny_no_log`–Deny a request. Do not generate a log message. **Note:** If FortiWeb is deployed behind a NAT load balancer, when using this option, you **must** also define an X-header that indicates the original client's IP. Failure to do so may cause FortiWeb to block **all** connections when it detects a violation of this type. For details, see waf x-forwarded-for on page 746.	`alert`

Variable	Description	Default
	• `redirect`–Redirect the request to the URL that you specify in the protection profile and generate an alert email and/or log message.	
block-period <seconds_int>	Enter the length of time (in seconds) for which the FortiWeb appliance will block additional requests after a source IP address violates this rule. The block period is shared by all clients whose traffic originates from the source IP address. The valid range is 1-3,600 seconds.	`600`
severity {High | Medium | Low | Info}	Select the severity level to use in logs and reports generated when a violation of the rule occurs.	`High`
trigger "<trigger-policy_name>"	Enter the name of the trigger to apply when this policy is violated. For details, see log trigger-policy on page 97. The maximum length is 63 characters. To display the list of existing trigger policies, enter: `set trigger ?`	No default.
bot-recognition {captcha-enforcement | captcha-puzzle-enforcement | recaptcha-enforcement | recaptcha-v3-enforcement | real-browser-enforcement | disable}	Select between: • `captcha-enforcement`–Requires the client to successfully fulfill a CAPTCHA request. If the client cannot successfully fulfill the request within the `max-attempt-times <attempts_int> on page 486`, or doesn't fulfill the request within the `validation-timeout <seconds_int> on page 486`, FortiWeb applies the `action` and sends the CAPTCHA block page. • `captcha-puzzle-enforcement`–Presents an interactive image-based puzzle challenge to the user. This method is resistant to headless browsers and scripted bots, and is suitable for high-security scenarios where traditional challenges are easily bypassed. If the client cannot successfully fulfill the request within the `max-attempt-times <attempts_int> on page 486`, or doesn't fulfill the request within the	`disable`

Variable	Description	Default

	`validation-timeout <seconds_int>` on page 486, FortiWeb applies the `action`.
	When selected:
	• FortiWeb intercepts the request and serves a visual CAPTCHA that requires drag-and-drop interaction before allowing access to the backend.
	• The original backend response is cached by FortiWeb and only delivered after the user successfully completes the challenge.
	• No customization of the puzzle or replacement message is currently supported.
	• `recaptcha-enforcement`—Requires the client to successfully fulfill a reCAPTCHA request. If the client cannot successfully fulfill the request within the `validation-timeout <seconds_int>` on page 486, FortiWeb applies the `action` and sends the CAPTCHA block page. CAPTCHA verification will not pop out for the bot confirmation again for the same user within 10 mins timeout.
	• `recaptcha-v3-enforcement`: Requires the client to successfully fulfill a reCAPTCHA v3 request. If the client cannot successfully fulfill the request within the Validation Timeout, FortiWeb applies the Action and sends the reCAPTCHA block page. For details, see "Customizing error and authentication pages (replacement messages)" in *FortiWeb Administration Guide*.
	You can set the threshold of the reCAPTCHA v3 score through CLI
	`config system recaptcha-api`
	`set recaptcha-v3-score-threshold <string> *The value range is 0 to 1`
	`end`
	• `real-browser-enforcement`—Enable to return a JavaScript to the client to test whether it is a web browser or automated	

Variable	Description	Default
	tool when it violates the access rule. If the client either fails the test or does not return results before the timeout specified by validation-timeout <seconds_int>, FortiWeb applies the specified action. If the client appears to be a web browser, FortiWeb allows the client to violate the rule. • `disable`—Disable this option to simply apply the access rule.	
`recaptcha <recaptcha_server_name>`	Enter the reCAPTCHA server you have created through user recaptcha-user	No default.
mobile-app-identification {disabled | mobile-token-validation}	For mobile clients that cannot execute Java script or CAPTCHA, FortiWeb can verify the request is legitimate by verifying the JTW-token a mobile application carries when it access a web server.	Disabled
bot-confirmation {enable | disable}	Enable to confirm if the client is indeed a bot. The system sends RBE (Real Browser Enforcement) JavaScript or CAPTCHA to the client to double check if it's a bot.	disable
max-attempt-times <attempts_int>	If `captcha-enforcement` or `captcha-puzzle-enforcement` is selected for bot-recognition {captcha-enforcement | captcha-puzzle-enforcement | recaptcha-enforcement | recaptcha-v3-enforcement | real-browser-enforcement | disable} on page 484, enter the maximum number of attempts that a client may attempt to fulfill a CAPTCHA request. The valid range is 1-5. Available only when `captcha-enforcement` or `captcha-puzzle-enforcement` is selected for `bot-recognition`.	3
validation-timeout <seconds_int>	Specifies the maximum amount of time that FortiWeb waits for results from the web browser test. The valid range is 5-30.	`20`
`config access-limit-filter`		
<entry_index>	Enter the index number of the individual entry in the table. The valid range is 1-9,999,999,999,999,999,999.	No default.
access-rate-limit <rate_int>	Enter the rate threshold for source IP addresses.	`1`

Variable	Description	Default
	The valid range is 1-65535. To disable the rate limit, enter `0`. **Note:** Blocking a shared source IP address could block innocent clients that share the same source IP address with an offending client.	
`config HTTP-header-filter`		
header-name-type {custom | predefined}	Select whether to define the HTTP header filter by selecting a predefined HTTP header name, or by typing the name of a custom HTTP header. Also configure header-value "<value_str>" and, depending on which you indicate in this option, either: • predefined-header {host | connection | authorization | x-pad | cookie | referer | user-agent | X-Forwarded-For | Accept} on page 487 • pre-header-type {plain | regular} on page 487 • pre-header-rev-match {enable | disable} on page 488 • pre-header-rev-match {enable | disable} • pre-header-rev-match {enable | disable} on page 488 • pre-header-rev-match {enable | disable}	`predefined`
header-field-check {enable | disable}	Enable/disable checking the HTTP header field.	No default.
predefined-header {host | connection | authorization | x-pad | cookie | referer | user-agent | X-Forwarded-For | Accept}	Select the name (key) of the HTTP header such as `Accept:` that must be present in order for the request to be allowed. This field appears only if header-name-type {custom | predefined} on page 487 is `predefined`.	`host`
pre-header-type {plain | regular}	Indicate whether header-value "<value_str>" on page 490 is a literal header value (`plain`) or a regular expression that indicates multiple possible valid header values (`regular`).	`plain`

Variable	Description	Default
pre-header-rev-match {enable | disable}	Indicate how to use predefined-header {host | connection | authorization | x-pad | cookie | referer | user-agent | X-Forwarded-For | Accept} on page 487 and header-value "<value_str>" on page 490 when determining whether or not this condition has been met. • no–If the regular expression **does** match the request object, the condition is met. • yes–If the regular expression does **not** match the request object, the condition is met. The effect is equivalent to preceding a regular expression with an exclamation point (!). If all conditions are met, the FortiWeb appliance will allow access.	disable
custom-header-name "<key_str>"	Enter the name (key) **without** the trailing colon (:), such as X-Real-IP, of the HTTP header that must be present in order for the request to be allowed. For example, if the specified name is test, then both atest, test1, atest1 will be considered a match. This field appears only if header-name-type {custom | predefined} on page 487 is custom.	No default.
cus-header-type {plain | regular}	Indicate whether header-value "<value_str>" on page 490 is a literal header value (plain) or a regular expression that indicates multiple possible valid header values (regular).	plain
cus-header-name-type {plain | regular}	Indicate whether custom-header-name "<key_str>" on page 488is a literal header name (plain) or a regular expression that indicates multiple possible valid header names (regular).	plain
cus-header-rev-match {enable | disable}	Indicate how to use custom-header-name "<key_str>" on page 488 and header-value "<value_str>" on page 490 when determining whether or not this condition has been met. • no–If the regular expression **does** match the request object, the condition is met. • yes–If the regular expression does **not** match the request object, the condition is met. The effect is equivalent to preceding a	disable

Variable	Description	Default
	regular expression with an exclamation point (!). If all conditions are met, the FortiWeb appliance will allow access.	
HTTP-hline-empty-check {enable | disable}	If you enable **Header Empty Value Check**, the request matches the condition if it contains the specified header but the value of the matched header is empty. The `HTTP-hline-empty-check` checks whether a certain header has empty value.	`disable`
misformatted-basic-scheme-check {enable | disable}	Enable to check the Misformatted Basic Scheme. This field appears only when: • `header-name-type` is `predefined`. • `predefined-header` is `authorization` • `HTTP-hline-missing-check` is `disable` • `HTTP-hline-empty-check` is `disable`	`disable`
`HTTP-method-check {enable | disable}`	Enable **HTTP Method Check** and configure a plain string or regular expression for the HTTP method that FortiWeb will search for in the header field.	`disable`
`HTTP-method-value-type {plain | regular}`	Select a plain string or regular string.	No default.
`HTTP-method-value "<HTTP-method-value_str>"`	To prevent accidental matches, specify as much of the header's value as possible. Do not use an ambiguous substring.	No default.
`HTTP-method-rev-match {enable | disable}`	When you enable **HTTP Method Check**, you can also enable **HTTP Method Reverse Match** so that the request matches the condition if the header does not contain the HTTP method's exact value or regular expression.	`disable`
HTTP-hline-missing-check {enable | disable}	If you enable **HTTP-hline-missing-check**, the request matches the condition if it **does not** contain the specified header name. The `HTTP-hline-missing-check` checks whether a certain header is missing. `HTTP-hline-empty-check` and `HTTP-hline-missing-check` can't be enabled at the same time.	`disable`

Variable	Description	Default
	This setting does not take effect for HTTP2 packets without the following headers: • `:method` • `:scheme` • `:path` • `:authority` • `:status` HTTP2 packets without the above headers will not go far to be scanned against the `HTTP-hline-missing-check` setting. It will be considered as illegitimate and be abandoned directly when it arrives at FortiWeb at the first place.	
header-value "<value_str>"	Depending on your selection in pre-header-type {plain | regular} on page 487, either: • Type the literal header value. Your specified HTTP header must **contain** in order to match the filter. Value matching is **case sensitive**. For example, if the specified name is `test`, then both `atest`, `test1`, `atest1` will be considered a match. If you require a filter based upon more than one HTTP header, create multiple entries in the set, one for each HTTP header. • Type a regular expression, such as `192\.0\.2\.*`, matching all and only the header values which accepted HTTP header values must match. For details about language and regular expression matching, see the *FortiWeb Administration Guide*: https://docs.fortinet.com/document/fortiweb **Tip:** To prevent accidental matches, specify as much of the header's value as possible. Do not use an ambiguous substring. For example, entering the value `192.0.2.1` would **also** match the IPs 192.0.2.10-19 and 192.0.2.100-199. This result may be unintended. The better solution would be to configure either: • A regular expression such as `^192.0.2.1$` or • A source IP condition instead of an HTTP header condition	No default.

Variable	Description	Default
`config method`		
method-type {predefined|custom}	Configure the HTTP methods that FortiWeb will search for in the header field. Select whether to use the predefined method types or define custom types.	predefined
predefined-method-set {GET POST HEAD OPTIONS TRACE CONNECT DELETE PUT PATCH WEBDAV RPC OTHERS}	Select the methods that FortiWeb will search for in the header field. Please note that if you only select WEBDAV, then some of the methods included in WEBDAV (GET, HEAD, POST, DELETE, PUT) won't be scanned by the system; The WEBDAV related attack log won't have WEBDAV keyword in it, instead, it will be shown as the individual method violations.	No default.
custom-method-type {plain |regular}	If you have defined `custom` for `method-type`, then select whether to use plain string or regular string.	plain
custom-method-value <string>	To prevent accidental matches, specify as much of the header's value as possible. Do not use an ambiguous substring.	No default.
method-reverse-match {enable|disable}	Enable **method-reverse-match** so that the request matches the condition if the header does not contain the HTTP method's exact value or regular expression.	disable
`config source-ip-filter`		
source-ip <ip_range>	Enter the IP address or IP address range that specifies the clients that FortiWeb allows. For example: • `1.2.3.4` • `2001::1` • `1.2.3.4-1.2.3.40` • `2001::1-2001::100` Depending on your configuration of how FortiWeb will derive the client's IP (see waf x-forwarded-for on page 746), this may be the IP address that is indicated in an HTTP header rather than the IP header.	No default.
`exclusive-match {no | yes}`	Set whether the condition can be met when source IP does not match.	`No`

Variable	Description	Default
`config user-filter`		
user-name "<user-name_str>"	Enter the user name to match.	No default.
reverse-match {no | yes}	Indicate how to use user-name "<user-name_str>" on page 492 when determining whether or not this rule's condition has been met. • no–If the regular expression **does** match the user name, the condition is met. • `yes`–If the regular expression does **not** match the user name, the condition is met. The effect is equivalent to preceding a regular expression with an exclamation point (`!`).	no
`config url-filter`		
request-file "<url_str>"	Enter a regular expression that defines either all matching or all non-matching URLs. Then, also configure reverse-match {no | yes} on page 492. For example, for the URL access rule to match all URLs that begin with `/wordpress`, you could enter `^/wordpress`, then, in `reverse-match {yes | no}`, select `no`. The pattern is **not** required to begin with a slash (/). The maximum length is 255 characters. **Note:** Regular expressions beginning with an exclamation point (`!`) are not supported. Instead, use `reverse-match {yes | no}`.	No default.
reverse-match {no | yes}	Indicate how to use request-file "<url_str>" on page 492 when determining whether or not this rule's condition has been met. • no–If the regular expression **does** match the request URL, the condition is met. • `yes`–If the regular expression does **not** match the request URL, the condition is met. The effect is equivalent to preceding a regular expression with an exclamation point (`!`).	no
`config HTTP-transaction`		

Variable	Description	Default
HTTP-transation-timeout "<timeout_int>"	Enter a timeout value of 1-3600 seconds. If the lifetime of a HTTP transaction exceeds this value, the transaction matches this condition.	5
config response-code		
<response-code_int>	Specify the start and end code in a range of HTTP response codes. To specify a single code, enter the same value for the start and end codes (for example, 404-404 or 500-503). If its HTTP response code is within this range, the HTTP transaction matches this condition.	404
response-code-max <response-code_int>	Specify the maximum start and end code in a range of HTTP response codes.	No default.
response-code-rev-match {enable | disable}	Enable it so that the response matches the condition if the code is not in the specified range.	disable
config content-type		
{text/html text/plain text/xml application/xml application/soap+xml application/json application/octet-stream text/javascript text/}	Specify a file content type to match. Use with occurrence to detect and control web scraping (content scraping) activity.	application/soap+xml application/xml (or)text/xml text/html text/plain application/json application/octet-stream text/javascript text/css
content-type-rev-match {enable | disable}	Enable it so that the content type matches the condition if it's not the specified type.	disable
config packet-interval		
packet-interval-timeout <timeout_int>	Specify the maximum number of seconds allowed between packets arriving from either the client or server (request or response packets), in seconds. Enter a value from 1 to 60. If the interval exceeds this value, the HTTP transaction matches this condition.	1
config parameter		

Variable	Description	Default
name-type {plain |regular}	Indicate whether the parameter name is a literal value (plain) or a regular expression that indicates multiple possible valid values (regular).	plain
name <parameter_name>	Enter either a literal value or a regular expression to match the parameter name.	No default.
value-check {enable | disable}	Enable to check the value of the specified parameters.	disable
value <value_regular_ expression>	Enter a regular expression to match the parameter value.	No default.
location-check {enable | disable}	The system by default search for the parameters in both URL and HTTP body. You can enable **Location Check** to restrict the search to either URL or HTTP body.	disable
location {URL | HTTP-body}	Specify whether to scan the parameters in URL or HTTP body.	No default.
parameter-rev-match {enable | disable}	Enable **parameter-rev-match** so that the request matches the condition if the URL or HTTP body **does not** contain the specified parameter names or values.	disable
`config main-class`		
{010000000 | 020000000 | 030000000 | 040000000 | 050000000 | 060000000 | 090000000| 070000000 080000000 | 100000000}	Specify the ID of a signature violation category (main-class). Each ID corresponds to a signature category used in the **Signature Violation** filter of a custom access rule. Categories with **2 levels** of configuration (main-class → signature): • 010000000 – Cross Site Scripting • 020000000 – Cross Site Scripting (Extended) • 030000000 – SQL Injection • 040000000 – SQL Injection (Extended) • 070000000 – Trojans Categories with **3 levels** of configuration (main-class → sub-class → signature): • 050000000 – Generic Attacks • 060000000 – Generic Attacks (Extended)	No default.

Variable	Description	Default
	• 080000000 – Information Disclosure • 090000000 – Known Exploits • 100000000 – Personally Identifiable Information Ensure the relevant signatures are enabled in the signature configuration before referencing them in the access rule. For details, see waf signature on page 628.	
`select-all {enable | disable}`	Indicates whether all items under the specified main-class are included. This field reflects the current matching scope and is updated automatically based on how subclass or signature selections are made. It is not typically configured directly. **For 2-level categories:** • enable – All signatures under the main-class are selected. • disable – Some signatures are excluded. **For 3-level categories:** • enable – All sub-classes under the main-class are selected. • disable – Some sub-classes are excluded.	No default.
`no-subclass {enable | disable}`	Indicates whether partial selection is active under the main-class. **In 2-level categories:** • Always shown as `enable`, since sub-classes do not exist and direct signature selection is required. **In 3-level categories:** • enable –All sub-classes are included – no filtering at the sub-class level. • disable – Only a subset of sub-classes has been selected using `config sub-class`.	No default.

Variable	Description	Default
	This field is set automatically to reflect the current selection state for the main-class. It is not usually configured manually.	
`syntax-validation {enable | disable}`	Applicable only to the following signature violation categories (main-classes): • 010000000 – Cross Site Scripting • 020000000 – Cross Site Scripting (Extended) • 030000000 – SQL Injection • 040000000 – SQL Injection (Extended) For each of these categories, you can optionally enable a secondary validation step using Syntax-Based Detection (SBD). When enabled, FortiWeb will only trigger the rule if both the signature match and the syntax-based check succeed. This helps reduce false positives for inputs that resemble known attack patterns but are syntactically safe.	`disable`
`signature <signature_id>`	Specifies the list of individual signature IDs that are explicitly selected because they were not included by selecting all signatures under the associated main-class or sub-class. This list is automatically populated when only a subset of signatures is selected–either directly under a main-class (for 2-level categories) or within sub-classes (for 3-level categories). The list is cumulative, containing all signature IDs selected across all configured main-classes and sub-classes.	No default.
`config custom-signature`		
custom-signature-enable {enable | disable}	Specify whether the current custom signature filter is enabled.	`disable`
{custom-signature-group | custom-signature}	Specify whether "<custom-signature-name_str>" on page 496 specifies a custom signature group or an individual signature.	`custom-signature-group`
"<custom-signature-name_str>"	Specify the custom signature group or individual signature to match. Ensure the signature is enabled in signature configuration before you use it in an advanced access control rule. For details, see waf signature on page 628.	No default.

Variable	Description	Default
`config occurrence`		
occurrence-num "<occurrence_int>"	Specify the maximum number of times a transaction can match other filter types in the current rule during the time period specified by `within`. Enter a value between 1-100,000. If the number of matches exceeds this threshold, the associated HTTP source client IP address or client matches this condition.	`1`
within "<within_int>"	Specify the time period during which FortiWeb counts the number of times transactions match other filter types in the current rule. Enter a value between 1-600.	`1`
percentage-flag {enable | disable}	Specify whether the current filter matches when the rate of matches with other filter types in the current rule exceeds the percentage "<percentage_int>" on page 497.	`disable`
percentage "<percentage_int>"	The maximum rate of matches with other filter types in the current rule, expressed as percent of hits. If percentage-flag {enable | disable} on page 497 is enabled and the number of matches exceeds this threshold, the associated HTTP source client IP address or client matches this condition.	No default.
traced-by {Source-IP | User | Http-Session}	Specify whether FortiWeb determines the rate at which a transaction matches other filter types in the current rule by counting matches by source client IP address or by client. To specify `user`, ensure that the value of client-management {enable | disable} on page 722 is `enable`.	`source-ip`
`config geo-filter`		
<entry_index>	Enter the index number of the individual entry in the table.	No default.
match-exclusive {yes | no}	If you select yes, FortiWeb matches the traffic from all countries except the ones you select. If you select no, FortiWeb matches the traffic from the countries you select.	`No`
country-list <country-list_str>	Enter the countries you select.	No default.

Example

This example allows access to URLs beginning with “/admin”, but only if they originate from `192.0.2.5`, and only if the client does not exceed 5 requests per second.

Clients that violate this rule will be blocked for 60 seconds (the default duration). The violation will be logged in the attack log using `severity_level=High`, and all servers configured in `notification-servers1` will be used to notify the network administrator.

```
config waf custom-access rule
   edit "combo-IP-rate-URL-rule1"
      set action block-period
      set severity High
      set trigger "notification-servers1"
      config access-limit-filter
         edit 1
            set access-rate-limit 5
         next
      end
      config source-ip-filter
         edit 1
            set source-ip "192.0.2.5"
         next
      end
      config url-filter
         edit 1
            set request-file "/admin*"
         next
      end
   next
end
config waf custom-access policy
   edit "combo-IP-rate-URL-policy1"
      config rule
         edit 1
            set rule-name "combo-access-rate-rule1"
         next
      end
   next
end
```

Related topics

- waf custom-access policy on page 478
- log trigger-policy on page 97
- waf signature on page 628

waf custom-protection-group

Use this command to configure custom protection groups, creating sets of custom protection rules that can be used with attack signatures (“server protection rule”).

Before you can configure this command, you must first define your custom data leak and attack signatures. For details, see waf custom-protection-rule on page 500.

To use this command, your administrator account’s access control profile must have either `w` or `rw` permission to the `wafgrp` area. For details, see Permissions on page 46.

Syntax

```
config waf custom-protection-group
   edit "<custom-protection group_name>"
      config type-list
         edit <entry_index>
            set custom-protection-rule "<rule_name>"
         next
      end
   next
end
```

Variable	Description	Default
"<custom-protection group_name>"	Enter the name of a new or existing group. The maximum length is 63 characters. To display the list of existing group, enter: `edit ?`	No default.
<entry_index>	Enter the index number of the individual entry in the table. The valid range is 1-9,999,999,999,999,999,999.	No default.
custom-protection-rule "<rule_name>"	Enter the name of the custom protection rule to associate with the custom protection group. The maximum length is 63 characters. To display a list of the existing rules, enter: `set custom-protection-rule ?`	No default.

Example

This example groups `custom protection rule 1` and `custom protection rule 3` together within `Custom Protection group 1`.

```
config waf custom-protection-group
   edit "Custom Protection group 1"
      config type-list
         edit 1
```

```
            set custom-protection-rule "custom protection rule 3"
         next
         edit 3
            set custom-protection-rule "custom protection rule 1"
         next
      end
   next
end
```

Related topics

- waf signature on page 628
- waf custom-protection-rule on page 500

waf custom-protection-rule

Use this command to configure custom data leak and attack signatures.

Before you enter custom signatures via the CLI, first enable it.

To use your custom signatures, you must first group them so that they can be included in a rule. For details, see waf custom-protection-group on page 499.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `wafgrp` area. For details, see Permissions on page 46.

Syntax

```
config waf custom-protection-rule
   edit "<custom-protection rule_name>"
      set type {request | response}
      set action {alert | alert_deny | alert_erase | redirect | block-period | send_HTTP_response |
            only_erase | deny_no_log}
      set block-period <seconds_int>
      set severity {High | Medium | Low | Info}
      set trigger "<trigger-policy_"name>
      set threat-weight {low | critical | informational | moderate | substantial | severe}
      config meet-condition
         edit <entry_index>
            set operator {RE | GT | LT | NE | EQ}
            set request-target {REQUEST_FILENAME REQUEST_URI REQUEST_HEADERS_NAMES REQUEST_HEADERS
                  REQUEST_COOKIES_NAMES REQUEST_COOKIES ARGS_NAMES ARGS_VALUE REQUEST_RAW_URI
                  REQUEST_BODY CONTENT_LENGTH HEADER_LENGTH BODY_LENGTH COOKIE_NUMBER ARGS_NUMBER
                  HTTP_METHOD HTTP_METHOD}
```

```
            set response-target {RESPONSE_BODY RESPONSE_HEADER CONTENT_LENGTH HEADER_LENGTH BODY_
                LENGTH RESPONSE_CODE}
            set threshold <threshold_int>
            set case-sensitive {enable | disable}
            set expression <regex_pattern>
        next
    end
  next
end
```

Variable	Description	Default
"<custom-protection rule_name>"	Enter the name of the new or existing custom signature. The maximum length is 63 characters. To display a list of the existing rules, enter: `edit ?`	No default.
type {request | response}	Specify the type of regular expression: • `request`–The expression is an attack signature. • `response`–The expression is a server information disclosure signature.	`request`
action {alert | alert_deny | alert_erase | redirect | block-period | send_HTTP_response | only_erase | deny_no_log}	Select the specific action to be taken when the request matches the this signature. • `alert`–Accept the request and generate an alert email and/or log message. **Note:** If type {request | response} on page 501 is `response`, it does **not** cloak, except for removing sensitive headers. Sensitive information in the body remains unaltered. • `alert_deny`–Block the request (or reset the connection) and generate an alert email and/or log message. This option is applicable only if `type` is `signature-creation`. You can customize the web page that FortiWeb returns to the client with the HTTP status code. • `alert_erase`–Hide replies with sensitive information (sometimes called “cloaking”). Block the reply (or reset the connection) or remove the sensitive information, and generate an alert email and/or log message. If the sensitive information is a status code, you can customize the web page that FortiWeb returns to the client with the HTTP status code. **Note:** This option is not fully supported in Offline Protection mode. Effects will be identical to `alert`; sensitive information will not be blocked or erased. • `block-period`–Block subsequent requests from the client for a number of seconds. Also configure block-period <seconds_int> on page 567.	`alert`

Variable	Description	Default
	Note: If FortiWeb is deployed behind a NAT load balancer, when using this option, you **must** also define an X-header that indicates the original client's IP. Failure to do so may cause FortiWeb to block **all** connections when it detects a violation of this type. For details, see waf x-forwarded-for on page 746. • `redirect`–Redirect the request to the URL that you specify in the protection profile and generate an alert email and/or log message. Also configure redirect-url "<redirect_fqdn>" on page 728 and rdt-reason {enable | disable} on page 729. • `send_HTTP_response`–Block and reply to the client with an HTTP error message, and generate an alert email, a log message, or both. • `only_erase`–Hide replies with sensitive information (sometimes called "cloaking"). Block the reply (or reset the connection) or remove the sensitive information without generating an alert email and/or log message. This option is applicable only if `type` is `response`; and this option is not supported in Offline Protection mode. You can customize the web page that FortiWeb returns to the client with the HTTP status code. For details, see "system replacemsg" on page 1. • `deny_no_log`–Deny a request. Do not generate a log message.	
	Caution: This setting will be ignored if monitor-mode {enable | disable} on page 166 is enabled. **Note:** Logging and/or alert email will occur only if enabled and configured. For details, see log disk on page 66 and log alertMail on page 60.	
block-period <seconds_int>	If action {alert | alert_deny | alert_erase | redirect | block-period | send_HTTP_response | only_erase | deny_no_log} on page 501 is `block-period`, enter the number of seconds that you want to block subsequent requests from the client after the FortiWeb appliance detects that the client has violated the rule. For details about viewing the list of currently blocked clients, see the *FortiWeb Administration Guide*: https://docs.fortinet.com/document/fortiweb The valid range is 1-3,600 seconds.	`600`
severity {High | Medium | Low | Info}	When rule violations are recorded in the attack log, each log message contains a **Severity Level** (`severity_level`) field. Select which severity level the FortiWeb appliance will	`Medium`

Variable	Description	Default
	use when it logs a violation of the rule.	
trigger "<trigger-policy_ "name>	Select which trigger policy, if any, that the FortiWeb appliance will use when it logs and/or sends an alert email about a violation of the rule. For details, see log trigger-policy on page 97. The maximum length is 63 characters. To display the list of existing trigger policies, enter: `set trigger ?`	No default.
threat-weight {low | critical | informational | moderate | substantial | severe}	Set the threat weight.	`moderate`
<entry_index>	Enter the index number of the individual entry in the table. The valid range is from 1-9,999,999,999,999,999,999.	No default.
operator {RE | GT | LT | NE | EQ}	• `RE`—The signature matches when the value of a selected target in the request or response matches the value of `expression`. • `GT`—The signature matches when specified target has a value greater than the value of `threshold`. • `LT`—The signature matches when specified target has a value less than the value of `threshold`. • `NE`— The signature matches when specified target has a different value than `threshold`. • `EQ`— The signature matches when specified target has the same value as `threshold`.	`RE`

Variable	Description	Default
request-target {REQUEST_FILENAME REQUEST_URI REQUEST_HEADERS_ NAMES REQUEST_ HEADERS REQUEST_ COOKIES_NAMES REQUEST_COOKIES ARGS_NAMES ARGS_ VALUE REQUEST_RAW_ URI REQUEST_BODY CONTENT_LENGTH HEADER_LENGTH BODY_LENGTH COOKIE_ NUMBER ARGS_ NUMBER HTTP_METHOD HTTP_METHOD}	Enter the name of one or more locations in the HTTP request to scan for a signature match. For example, `ARGS_NAMES` for the names of parameters or `REQUEST_COOKIES` for strings in the HTTP `Cookie:` header.	No default.
response-target {RESPONSE_BODY RESPONSE_HEADER CONTENT_LENGTH HEADER_LENGTH BODY_LENGTH RESPONSE_CODE}	Enter the name of one or more locations in the HTTP response to scan for a signature match.	No default.
threshold <threshold_int>	Enter the value that FortiWeb compares to the target value to determine if a request or response matches.	No default.
case-sensitive {enable | disable}	Enable to differentiate upper case and lower case letters when evaluating the web server's response for data leaks according to expression <regex_pattern> on page 504. For example, when enabled, an HTTP reply containing the phrase `Credit card` would **not** match an expression that looks for the phrase `credit card` (difference highlighted in bold).	`disable`

expression <regex_ pattern>	When operator {RE | GT | LT | NE | EQ} on page 503 is `RE`, type a regular expression that matches either an attack from a client or a data leak from the server.
	If `action` is Alert & Erase, enclose the portion of the regular expression to erase in brackets.
	
	For example, the following command erases the expression "webattack" from the response packet:
	`config waf custom-protection-rule`
	`edit "test"`
	`set type response`
		No default.

Variable	Description	Default
	set action alert_erase config meet-condition edit 1 set response-target RESPONSE_BODY set expression "(webattack)" next end next end To prevent false positives, it should not match anything else. The maximum length is 2,071 characters.	

Example

This example configures a signature to detect and block an LFI attack that uses directory traversal through an unsanitized `controller` parameter in older versions of Joomla. Each time it detects an attack, the trigger policy named `notification-servers1` sends an alert email and attack log messages whose severity level is `High`.

```
config waf custom-protection-rule
   edit "Joomla_controller_LFI"
      set type request
      set action alert_deny
      set severity High
      set trigger "notification-servers1"
      config meet-condition
         edit 1
            set request-target REQUEST_RAW_URI
            set expression "^/index\.php\?option=com_ckforms\&controller=(\.\.\/)+?"
         next
      end
   next
end
```

Related topics

- waf custom-protection-group on page 499
- log trigger-policy on page 97

waf dlp exception

Use this command to configure DLP Exception to apply to the DLP Policy.

The **DLP Exception** feature allows you to define granular bypass conditions for traffic that would otherwise trigger Data Loss Prevention (DLP) rules. You can create exception objects composed of one or more match elements, each

specifying conditions such as client IP, HTTP header, URI, or payload hash. These exceptions can be assigned to DLP policies to exclude matching traffic from enforcement. This enables more accurate DLP coverage while minimizing false positives and maintaining support for trusted applications and sources.

Syntax

```
config waf dlp exception
   edit <name>
      config exception-element-list
         edit <entry_index>
            set match-target {HOST | URI | FULL_URL | PARAMETER | COOKIE | CLIENT_IP | HTTP_HEADER |
                  PAYLOAD_SHA256 | FILE_SHA256}
            set operator {STRING_MATCH | REGEXP_MATCH | EQ | NE}
            set ip <IP_range>
            set value {<value_str> | <value_pattern>}
            set value-check {enable | disable}
            set value-name {<value-name_str> | <value-name_pattern>}
            set concatenate-type {AND | OR}
         next
      end
   next
end
```

Variable	Description	Default
`<name>`	Name of the DLP exception object. This name is referenced when assigning the exception to a DLP policy.	No default
config exception-element-list		
`<entry_index>`	Index number of the exception element entry.	No default
`match-target {HOST | URI | FULL_URL | PARAMETER | COOKIE | CLIENT_IP | HTTP_HEADER | PAYLOAD_SHA256 | FILE_SHA256}`	Specifies the traffic field to match against. Each target supports specific operators and field options.	No default
`operator {STRING_MATCH | REGEXP_MATCH | EQ | NE}`	Defines how the value is compared: • STRING_MATCH - Direct string comparison. • REGEXP_MATCH - Regular expression comparison. • EQ, NE - Equal / Not Equal (only supported for **CLIENT_IP**).	No default
`ip <IP_range>`	Specifies the source IP address to match. Only used when **match-target** is **CLIENT_IP**. Accepts both IPv4 and IPv6.	No default
`value {<value_str> | <value_pattern>}`	Specifies the value to match for the selected target. For **PAYLOAD_SHA256** and **FILE_SHA256**, this must be a 64-character SHA-256 hash string. This field is **not available** when **match-target** is **CLIENT_IP**.	No default

Variable	Description	Default
`value-check {enable | disable}`	Enable to match the value of a specified name-value pair. Only applicable for **PARAMETER**, **COOKIE**, and **HTTP_HEADER**. When enabled, **value-name** and **value** must be defined.	`disable`
`value-name {<value-name_str> | <value-name_pattern>}`	Specifies the name of the parameter, cookie, or HTTP header to inspect when value-check is enabled. Only applicable to **PARAMETER**, **COOKIE**, and **HTTP_HEADER**.	No default
`concatenate-type {AND | OR}`	Defines how this exception element is evaluated with others: • AND - All conditions must match. • OR - Any condition may match.	`AND`

Example

```
config waf dlp exception
  edit "DLP_exp"
    config  exception-element-list
      edit 1
        set match-target HTTP_HEADER
        set operator STRING_MATCH
        set value XYZ_Corp_Marketing_Tool
        set value-check enable
        set value-name User-Agent
    end
end
```

waf exclude-url

Use this command to configure URLs that are exempt from a file compression or file decompression rule.

To apply an exclusion, include it in a compression or decompression rule. For details, see waf file-compress-rule on page 509.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `wafgrp` area. For details, see Permissions on page 46.

Syntax

```
config waf exclude-url
   edit "<rule_name>"
      config exclude-rules
         edit <entry_index>
            set host "<protected-host_name>"
            set host-status {enable | disable}
            set request-file "<url_str>"
```

```
        next
      end
   next
end
```

Variable	Description	Default
"<rule_name>"	Enter the name of a new or existing exception. The maximum length is 63 characters. To display a list of the existing exceptions, enter: `edit ?`	No default.
<entry_index>	Enter the index number of the individual entry in the table. The valid range is 1-9,999,999,999,999,999,999.	No default.
host "<protected-host_name>"	Enter the name of a protected host that the `Host:` field of an HTTP request must be in order to match the exception. The maximum length is 255 characters. This setting applies only if host-status {enable | disable} on page 508 is `enable`.	No default.
host-status {enable | disable}	Enable to apply this exception only to HTTP requests for specific web hosts. Also configure host "<protected-host_name>" on page 508. Disable to match the exception based upon the other criteria, such as the URL, but regardless of the `Host:` field.	`disable`
request-file "<url_str>"	Enter the literal URL, such as `/archives`, to which the exception applies. The URL must begin with a slash (/). Do not include the name of the host, such as `www.example.com`, which is configured separately using `host`. The maximum length is 255 characters.	No default.

Example

This example configures two exclusion rules, one for compression and the other for decompression. Either rule can be referenced by name in a file compression or file decompression rule.

```
config waf exclude-url
   edit "Compression Exclusion"
      config exclude-rules
         edit 1
            set host "192.0.2.2"
            set host-status enable
            set request-file "/archives"
         next
      end
   next
   edit "Decompression Exclusion"
      config exclude-rules
         edit 1
            set host "www.example.com"
```

```
            set host-status enable
            set request-file "/products.cfm"
         next
      end
   next
end
```

Related topics

- waf file-compress-rule on page 509

waf file-compress-rule

Use this command to compress specific file types in HTTP replies.

Compression can reduce bandwidth, which can reduce delivery time to end users. Modern browsers automatically decompress files before they display web pages.

You can configure most web servers to compress files when they respond to a request. However, if you do not want to configure each of your web servers separately, or if you want to offload compression for performance reasons, you can configure FortiWeb to do the compression.

When FortiWeb needs to inspect or modify the complete response body, compression applies only to responses with a pre-compressed file size smaller than the max-cache-size setting in System Advanced Settings. If a file exceeds this limit, FortiWeb transmits it uncompressed. You can adjust the maximum file size using the `config system advanced` command's `max-cache-size` setting. For details, see system advanced on page 235.

However, if FortiWeb does not need to inspect or modify the full response body, compression applies to all response sizes.

To apply a compression rule, select it in an inline protection profile. For details, see waf web-protection-profile inline-protection on page 720.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `wafgrp` area. For details, see Permissions on page 46.

Syntax

```
config waf file-compress-rule
   edit "<rule_name>"
      set compression-type {gzip | brotli | zstd}
      set compression-level {level1 | level2 | ...}
      set exclude-url "<exclusion-rule_name>"

   next
end
      config content-types
         edit "<content-types_id>"
            set content-type "<content-type_name>"
```

```
end
```

Variable	Description	Default
"<rule_name>"	Enter the name of a new or existing rule. The maximum length is 63 characters. To display the list of existing rules, enter: `edit ?`	No default.
<entry_index>	Enter the index number of the individual entry in the table. The valid range is 1-9,999,999,999,999,999,999.	No default.
compression-type {gzip | brotli | zstd}	Set the file compression type. • **gzip** – FortiWeb will use gzip for file compression. For details, see https://tools.ietf.org/html/rfc1952. • **brotli** – FortiWeb will use Brotli for file compression. For details, see https://tools.ietf.org/html/rfc7932. • **zstd** – FortiWeb will use Zstandard (zstd) for file compression. For details, see https://datatracker.ietf.org/doc/html/rfc8478.	No default.
compression-level {level1 | level2 | ...}	Set the compression level for the file to be compressed. This option is available only when you select **brotli** or **zstd** for the compression-type. Set the compression level based on the selected compression type: • brotli – The valid range is level1-level11. • zstd – The valid range is level1-level20.	No default.
content-type "<content-type_name>"	Enter one of the following content types to compress it: • text/plain • text/html • application/xml(or)text/xml • application/soap+xml • application/x-javascript • text/css • application/javascript • text/javascript • application/json • application/rss+xml To compress multiple file types, add each file type in a separate table entry with its own <entry_index> on page 510. See Example on page 511.	No default.
exclude-url "<exclusion-rule_name>"	Enter the name of an exclusion to use with the rule, if any. For details, see waf exclude-url on page 507. The maximum length is 63 characters.	No default.

Example

This example configures a file compression rule that compresses CSS and HTML files, unless they match one of the URLs in the exception named “Compression Exclusion 1.”

```
config waf file-compress-rule
   edit "file-compress-rule_name"
      set compression-type gzip
      set compression-level level2
      set content-types
            edit 1
               set content-type text/css
            next
            edit 2
               set content-type text/html
            next
         end
      set exclude-url "Compression Exclusion 1"
   next
end
```

Related topics

- waf exclude-url on page 507

waf file-list

Use this command to configure a File List policy that allows FortiWeb to match uploaded files by MD5 or SHA256 hash. File List entries can be used to either trust or block specific files based on their cryptographic fingerprint. Enforcement actions are applied through the File Security module.

When a file is uploaded, FortiWeb computes both its MD5 and SHA256 digests and compares them to entries in the configured File List policy. Matching logic behaves as follows:

- If a **Block File** match is found, FortiWeb sets the internal `file_list_flag` to `BLOCK`, and enforcement is delegated to the **File Security** module. The action defined in the File List policy is applied, such as deny, block-period, or client-ID block. An attack log entry is generated with the type **Block File Using Hash**.
- If a **Trust File** match is found, FortiWeb sets the `file_list_flag` to `TRUST`, and the file bypasses checks from:
  - **File Security**
  - **Web Shell Detection**
  - **Data Loss Prevention (DLP)**

The File List module does not perform enforcement directly. To apply **block** actions, the File Security module must be enabled in the active **Web Protection Profile**. Trust File matches are honored across all three modules without additional configuration.

This module replaces the legacy File Exception feature, which only supported trusted MD5 hashes. File List introduces:

- Support for **SHA256**
- Support for **Block File** entries
- A shared matching backend to reduce redundant processing across modules

Configuration is available through both GUI and CLI. Existing File Exception entries are automatically migrated to Trust File entries in the File List module.

Syntax

```
config waf file-list
   edit <policy_name>
      set action {alert | alert_deny | deny_no_log | block-period | client-id-block-period}
      set block-period <1-3600>
      set severity {High | Medium | Low | Info}
      set trigger-policy <policy>
      config members
         edit <entry_index>
            set type {trust-file | block-file}
            set hash-type {md5 | sha256}
            set hash-value <hex_string>
            set filename <filename>
            set comment <optional_comment>
         next
      end
   next
end
```

Variable	Description	Default
<policy_name>	Creates or edits a File List policy identified by `policy_name`. Policy names can be up to 63 characters.	No default.
action {alert | alert_deny | deny_no_log | block-period | client-id-block-period}	Determines how FortiWeb responds to a **Block File** match: • **alert** – Accept the connection and generate an alert email and/or log message. • **alert_deny** – Block the request (or reset the connection) and generate an alert and/or log message. • **deny_no_log** – Block the request (or reset the connection). • **block-period** – Block subsequent requests from the client for a number of seconds. • **client-id-block-period** - Blocks the client's session or device fingerprint (if Client Identification is enabled).	alert
block-period <1-3600>	Required when **action** is **block-period** or **client-id-block-period**. Specify the number of seconds that you want to block subsequent requests from the client after the FortiWeb appliance detects that the client has violated the rule. The valid range is from 1 to 3,600 seconds (1 hour).	600
severity {High | Medium | Low | Info}	When rule violations are recorded in the attack log, each log message contains a **Severity Level** (`severity_level`) field. Select which severity level the FortiWeb appliance will use when it logs a violation of the rule: • High • Medium • Low • Info	Low
trigger-policy <policy>	Select which trigger, if any, that the FortiWeb appliance will use when it logs and/or sends an alert email about a violation of the rule.	No default.
config members		
<entry_index>	Creates or edits a hash entry by index.	No default.
type {trust-file | block-file}	Select the matching behavior: • **trust-file** - Files with matching hashes bypass inspection by File Security, Web Shell Detection, and DLP modules. • **block-file** - Files with matching hashes trigger the configured Action and are treated as threats.	trust-file
hash-type {md5 | sha256}	Select the hash algorithm used for matching: • **md5** - 128-bit hash, entered as a 32-character hex string. • **sha256** - 256-bit hash, entered as a 64-character hex string. Choose based on the format used by your threat intelligence or file analysis tools.	md5

Variable	Description	Default
hash-value <hex_string>	Enter the full MD5 or SHA256 hash string. This field is required and must match the selected **Hash Type**.	No default.
filename <filename>	Specify the name of the File List to import. This file should be plain text file with one hash per line (no headers or metadata).	No default.
comment <optional_comment>	Optional notes for internal use, such as source of the hash (e.g., "TI feed May 2025" or "manually reviewed").	No default.

waf file-upload-restriction-policy

Use this command to set file security policies that FortiWeb will use to manage the types of files that can be uploaded to your web servers.

The policies are composed of individual rules set using the config server-policy custom-application application-policy (page 1) command. Each rule identifies the host and/or URL to which the restriction applies and the types of files allowed. To apply a file security policy, select it within an inline or Offline Protection profile.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `wafgrp` area. For details, see Permissions on page 46.

Syntax

```
config waf file-upload-restriction-policy
   edit "<file-upload-restriction-policy_name>"
      set action {alert | alert_deny | block-period | deny_no_log}
      set block-period <seconds_int>
      set severity {High | Medium | Low | Info}
      set trigger <trigger-policy_name>
      set trojan-detection {enable | disable}
      set av-scan {enable | disable}
      set fortisandbox-check {enable | disable}
      set hold-session-while-scanning-file {enable | disable}
      set icap-server-check {enable | disable}
      set exchange-mail-detection {enable | disable}
      set owa-protocol {enable | disable}
      set activesync-protocol {enable | disable}
      set mapi-protocol {enable | disable}
      config rule
         edit <entry_index>
            set file-upload-restriction-rule <rule_name>
         next
      end
   next
end
```

Variable	Description	Default
"<file-upload-restriction-policy_name>"	Enter the name of an existing or new file security policy. The maximum length is 63 characters. To display the list of existing policies, enter: `edit ?`	No default.
action {alert | alert_deny | block-period | deny_no_log}	Enter the action you want FortiWeb to perform when the policy is violated: • `alert`–Accept the request and generate an alert and/or log message. • `alert_deny`–Block the request (or reset the connection) and generate an alert email and/or log message. You can customize the web page that FortiWeb returns to the client with the HTTP status code. For details, see "system replacemsg" on page 1 and the *FortiWeb Administration Guide*: http://docs.fortinet.com/fortiweb/admin-guides • `block-period`–Block subsequent requests from the client for a number of seconds. Also configure block-period <seconds_int> on page 515. • `deny_no_log`–Deny a request. Do not generate a log message. **Note:** If FortiWeb is deployed behind a NAT load balancer, when using this option, you **must** also define an X-header that indicates the original client's IP. Failure to do so may cause FortiWeb to block **all** connections when it detects a violation of this type. For details, see waf x-forwarded-for on page 746. **Caution:** This setting will be ignored if monitor-mode {enable | disable} on page 166 is enabled. **Note:** Logging and/or alert email will occur only if enabled and configured. For details, see log disk on page 66 and log alertMail on page 60. **Note:** If an auto-learning profile will be selected in the policy with Offline Protection profiles that use this rule, you should select `alert`. If the `action` is `alert_deny`, the FortiWeb appliance will reset the connection when it detects an attack, resulting in incomplete session information for the auto-learning feature. For details about auto-learning requirements, see "waf web-protection-profile autolearning-profile" on page 1.	`alert`
block-period <seconds_int>	If action {alert | alert_deny | block-period | deny_no_log} on page 515 is `block-period`, type the number of seconds that violating requests will be blocked. The valid range is 1-3,600 seconds.	`600`

Variable	Description	Default
severity {High | Medium | Low | Info}	Select the severity level to use in logs and reports generated when a violation of the rule occurs.	`Low`
trigger <trigger-policy_name>	Enter the name of the trigger to apply when this policy is violated. For details, see log trigger-policy on page 97. The maximum length is 63 characters. To display the list of existing triggers, enter: `set trigger ?`	No default.
trojan-detection {enable | disable}	Enter `enable` to scan for Trojans. Attackers may attempt to upload Trojan horse code (written in scripting languages such as PHP and ASP) to the back-end web servers. The Trojan then infects clients who access an infected web page.	`disable`
av-scan {enable | disable}	Enter `enable` to scan for viruses, malware, and greyware. Attackers often modify the HTTP header so that `Content-Type:` indicates an allowed file type even though the byte code contained in the body is actually a virus. This scan ensures that the request actually contains the file type specified by `Content-Type:` and is not infected. Attack log messages contain the file name and signature ID (for example, `filename [eicar.com] virus name [EICAR_TEST_FILE]: Waf anti-virus`) when this feature detects a possible virus. To configure which database of signatures to use, select either **Regular Virus Database** (page 1), **Extended Virus Database** or **Use FortiSandbox Malware Signature Database**. **Caution:** Files that exceed the **Maximum Antivirus Buffer Size** cannot be fully cached or decompressed. In previous versions, such files were bypassed entirely. As of **FortiWeb 8.0.0**, the system analyzes data up to the buffer limit and applies security checks to the available portion. This improves protection by enabling detection based on headers and initial content, even when full inspection is not possible. To enforce strict limits and block oversized uploads regardless of partial scanning, configure a **Body Length** constraint in the protection profile. **Caution:** To remain effective as new malware emerges, it is vital that your FortiWeb can connect to FortiGuard services to regularly update its engine and signatures. Failure to do so will cause this feature to become less effective over time, and may allow viruses to pass through your FortiWeb.	`disable`

Variable	Description	Default
fortisandbox-check {enable | disable}	Enter `enable` to send matching files to FortiSandbox for evaluation. Also specify the FortiSandbox settings for your FortiWeb. For details, see system fortisandbox on page 312. FortiSandbox evaluates the file and returns the results to FortiWeb. If trojan-detection {enable | disable} on page 516 is `enable` and FortiWeb detects a virus, it does not send the file to FortiSandbox.	`disable`
exchange-mail-detection {enable | disable}	Enter `enable` so that FortiWeb will scan email attachments in applications using OWA or ActiveSync protocols. If enabled, FortiWeb will perform Trojan detection, an antivirus scan, and will send the attachments to FortiSandbox. **Note**: To perform Trojan detection, an antivirus scan, and send attachments to FortiSandbox, you must enable trojan-detection {enable | disable} on page 516, trojan-detection {enable | disable} on page 516, and fortisandbox-check {enable | disable} on page 517, respectively, in the file security policy.	`disable`
owa-protocol {enable | disable}	Available only when exchange-mail-detection {enable | disable} on page 517 is set to `enable`. If enabled, FortiWeb will scan attachments in Exchange Email sent and received via a web browser login.	`disable`
activesync-protocol {enable | disable}	Available only when exchange-mail-detection {enable | disable} on page 517 is set to `enable`. If enabled, FortiWeb will scan attachments in Exchange Email sent and received via a mobile phone login.	`disable`
<entry_index>	Enter the index number of the individual entry in the table. The valid range is 1-9,999,999,999,999,999,999.	No default.
file-upload-restriction-rule <rule_name>	Enter the name of an upload restriction rule to use with the policy, if any. For details, see "server-policy custom-application application-policy" on page 1. The maximum length is 63 characters. To display the list of existing rules, enter: `set file-upload-restriction-rule ?`	No default.
`hold-session-while-scanning-file` {enable | disable}	Enable it, and FortiWeb waits for up to 30 minutes. If FortiWeb holds the session for over 30 minutes while FortiSandbox scans the file in the request, FortiWeb will forward the session without taking any other actions.	`disable`

Variable	Description	Default
	This option is available only when you enable Send files to FortiSandbox.	
`mapi-protocol {enable | disable}`	FortiWeb will scan attachments in Email sent and received via the Messaging Application Programming Interface (MAPI), a new transport protocol implemented in Microsoft Exchange Server 2013 Service Pack 1 (SP1). Available only when Scan attachments in Email is enabled.	`disable`
`icap-server-check {enable | disable}`	Enable so that FortiWeb sends files to ICAP server that matches the uploading or downloading direction.	`disable`

Related topics

- server-policy custom-application application-policy on page 1
- log trigger-policy on page 97
- system fortisandbox on page 312

waf file-upload-restriction-rule

Use this command to define the specific host and request URL for which file upload restrictions apply, and define the specific file types that can be uploaded to that host or URL.

To apply the rule, select it in a file security policy. For details, see waf file-upload-restriction-policy on page 514.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `wafgrp` area. For details, see Permissions on page 46.

Syntax

```
config waf file-upload-restriction-rule
   edit "<file-upload-restriction-rule_name>"
      set host-status {enable | disable}
      set host "<protected-host_name>"
      set request-file "<url_pattern>"
      set request-type {regular | plain}
      set file-size-limit <size_int>
      set type {Allow| Block}
      set octet-stream-filename-position {Default | Header |Parameter | Resource}
      set octet-stream-filename-string <Header or Parameter names>
      set enable_base64_decode {enable | disable}
      set json-file-support {enable | disable} on page 520
      set json-key-for-filename <filename> on page 520
      set json-key-field <FileContents> on page 520
      set file-uncompress {enable | disable}
      set uncompress-nest-limit <int>
```

```
      set uncompress-oversize-limit <int>
      config file-types
         edit <entry_index>
            set file-type-id "<id_str>"
            set file-type_name "<file-type-extension_str>"
         next
      config custom-file-types
         edit <entry_index>
            set file-type <custom-file-type-str>
         next
      end
   next
end
```

Variable	Description	Default
"<file-upload-restriction-rule_name>"	Enter the name of a new or existing rule. The maximum length is 63 characters. To display the list of existing rules, enter: `edit ?`	No default.
host-status {enable | disable}	Enable to apply this exception only to HTTP requests for specific web hosts. Disable to match the exception based upon the other criteria, such as the URL, but regardless of the `Host:` field.	`disable`
host "<protected-host_name>"	Enter the name of a protected host that the `Host:` field of an HTTP request must be in order to match the rule. The maximum length is 255 characters. This setting applies only if host-status {enable | disable} on page 519 is `enable`.	No default.
request-file "<url_pattern>"	Depending on your selection in request-type {regular | plain} on page 520, type either: • The literal URL, such as `/fileupload`, that the HTTP request must contain in order to match the signature exception. The URL must begin with a slash (/). • A regular expression, such as `^/*.php`, matching all and only the URLs to which the signature exception should apply. The pattern is **not** required to begin with a slash (/). However, it must at least match URLs that begin with a slash, such as `/index.cfm`. Do not include the name of the web host, such as `www.example.com`, which is configured separately in analyzer-policy "<fortianalyzer-policy_name>" on page 98. The maximum length is 255 characters. **Note:** Regular expressions beginning with an exclamation point (!) are not supported. For information on language and regular expression matching, see the *FortiWeb Administration Guide*: https://docs.fortinet.com/document/fortiweb	No default.

Variable	Description	Default
request-type {regular | plain}	Select whether analyzer-policy "<fortianalyzer-policy_name>" on page 98 will contain a literal URL (`plain`), or a regular expression designed to match multiple URLs (`regular`).	`plain`
file-size-limit <size_int>	Optionally, enter a number to represent the maximum size in kilobytes for any individual file. This places a size limit on allowed file types. The maximum acceptable values are: 102400 KB: FortiWeb 100D, 100E, 100F, 400C, 400D, 400E, 400F, 600D, 600E, 600F, 1000C, 3000CFsx, 4000C 204800 KB: FortiWeb 1000D, 2000D, 3000D, 3000DFsx, 4000D, 1000E, 2000E, 3010E, 1000F, 2000F 358400 KB: FortiWeb 3000E, 4000E, 3000F, 4000F	`0`
type {Allow| Block}	Select to Allow or Block file types and custom file types	Block
octet-stream-filename-position {Default | Header |Parameter | Resource}	Identify where to retrieve the filename of 'application/octet-stream' type file.	Default
octet-stream-filename-string <Header or Parameter names>	Specify the header or parameter names to get the file name of octet-stream. e.g. X-File-Name;X-Name.	No default.
json-file-support {enable | disable}	Enable **JSON File Support** if you want FortiWeb to further parse the file contained in JSON file.	`Disable`
json-key-for-filename <filename>	FortiWeb will parse the JSON file to find the value of the `filename` parameter, and compare it against the value you set for **json-key-for-filename**. This is optional.	No default.
json-key-field <FileContents>	FortiWeb will parse the JSON file to find the value of the `content` parameter, and compare it against the value you set for **json-key-field**. Both **json-key-for-filename** and **json-key-field** require exact match and are case sensitive. If both of them matches, FortiWeb will apply File Security policy to the file contained in JSON file. If only **json-key-field** matches, FortiWeb will apply File Security policy to the file contained in JSON file, and in the attack log the name of the file will be shown as "JSON File". If only **json-key-for-filename** matches, it equals to no match. FortiWeb will not execute further scan to the file contained in JSON file.	No default.

Variable	Description	Default
enable_base64_decode {enable | disable}	Enable to decode the file contained in the JSON file with base64.	`enable`
file-uncompress {enable | disable}	Enable file unzip in CLI to verify file type and size in the compressed files.	`disable`
uncompress-nest-limit <int>	Type the maximum number of allowed levels of compression (“nesting”) that FortiWeb will attempt to decompress. The valid range is 1-100.	12
uncompress-oversize-limit <int>	Type the maximum size in kilobytes (KB) of the memory buffer that FortiWeb will use to temporarily undo the compression. When the file has multiple compression levels and the size of the decompressed files reaches the maximum when FortiWeb decompresses to a certain level, then FortiWeb will only check the already-decompressed files. The files that are not decompressed will pass through FortiWeb without scanning.	5,000
<entry_index>	Enter the index number of the individual entry in the table. Each entry in the table can define one file type. The valid range is 1-9,999,999,999,999,999,999.	No default.
file-type-id "<id_str>"	Select the numeric type ID that corresponds to the file type. Recognized IDs are updated by FortiGuard services and may vary. For a list of available IDs, select all file types in the GUI, then use the CLI to view their corresponding IDs. Common IDs include: • 00001 (GIF) • 00002 (JPG) • 00003 (PDF) • 00004 (XML) • 00005 (MP3) • 00006 (MIDI) • 00007 (WAVE) • 00008 (FLV for a Macromedia Flash Video) • 00009 (RAR) • 00010 (ZIP) • 00011 (BMP) • 00012 (RM for RealMedia) • 00013 (MPEG for MPEG v) • 00014 (3GPP) • 00203 (MSI) • 00204 (BAT)	No default.

Variable	Description	Default
file-type_name "<file-type-extension_str>"	Enter the extension, such as `MP3`, of the file type to allow to be uploaded. Recognized file types are updated by FortiGuard services and may vary. For a list of available names, use the GUI. **Note:** Microsoft Office Open XML file types such as .docx, xlsx, .pptx, and .vsdx are a type of ZIP-compressed XML. If you specify restrictions for them, those signatures will take priority. However, if you do **not** select a MSOOX restriction but **do** have an XML or ZIP restriction, the XML and ZIP restrictions will still apply, and the files will still be restricted.	No default.
file-type <custom-file-type-str>	If the file type is not one of the Recognized file types, use this command to enter your custom file type.	No default.

Example

This example allows both MPEG and FLV files uploaded to the URL `/file-uploads` on the host `www.example.com`.

```
config waf file-upload-restriction-rule
   edit "file-upload-rule1"
      set host-status enable
      set host "www.example.com"
      set request-file "/file-uploads"
      config file-types
         edit 1
            set file-type-id "00013"
            set file-type-name "MPEG"
         next
         edit 2
            set file-type-id "00008"
            set file-type-name "FLV"
         next
      end
   next
end
```

Related topics

- server-policy custom-application application-policy on page 1

waf ftp-command-restriction-rule

Use this command to create FTP command restriction rules to specify acceptable FTP commands that clients can use to communicate with your server(s). Certain FTP commands can expose your server(s) to attack. For example, because

attackers can exploit the PORT command to carry out FTP bounce attacks, restricting the PORT command can harden your network's security if you're using FTP.

For details about applying an FTP command restriction rule to an FTP server policy, see waf ftp-protection-profile.

To use this command, your administrator account's access control profile must have either w or rw permission to the sysgrp area. For details, see Permissions on page 46.

If ftp-security isn't enabled in feature-visibility, you must enable it before you can create an FTP command restriction rule. To enable ftp-security, see system feature-visibility on page 295.

Syntax

```
config waf ftp-command-restriction-rule
   edit "<rule_name>"
      set action {alert | alert_deny | block-period | deny_no_log}
      set block-period <block_period_int>
      set severity {High | Info | Low | Medium}
      set trigger "<policy_name>"
         next
      end
      config command-types
         edit <entry_index>
            set command-type <ftp_command>

         next
      end
```

Variable	Description	Default
"<rule_name>"	Enter a unique name that can be referenced in other parts of the configuration. Don't use spaces or special characters. The maximum length is 63 characters.	No default.
<entry_index>	Enter an index number of the individual entry in the table. The valid range is 1-999,999,999,999,999,999. You must create an entry index for each FTP command that you plan to include in the rule.	No default.
command-type <ftp_command>	Enter an FTP command that you want to include in the rule. You can include these FTP commands in the rule: • **ABOR** • **ACCT** • **ALLO** • **APPE** • **AUTH** • **CDUP** • MLSD • MODE • NLST • OPTS • PASS • PASV • RNTO • SITE • SIZE • SMNT • STAT • STOR	No default.

Variable	Description	Default
	• **CWD** • **DELE** • **EPRT** • **EPSV** • **FEAT** • **HELP** • **LIST** • **MDTM** • **MKD** • PORT • PROT • PWD • QUIT • REIN • REST • RETR • RMD • RNFR • STOU • STRU • SYST • TYPE • USER • XCUP • XMKD • XPWD • XRMD	
action {alert | alert_deny | block-period | deny_no_log}	Select which action FortiWeb will take when it detects a violation of the rule: • `alert`–Accept the connection and generate an alert email and/or log message. • `alert_deny`–Block the request (or reset the connection) and generate an alert and/or log message. • `deny_no_log`–Block the request (or reset the connection). • `block-period`–Block subsequent requests from the client for a number of seconds. Also configure waf ftp-command-restriction-rule on page 522. **Note:** This setting will be ignored if monitor-mode {enable | disable} on page 166is enabled in a server policy.	alert
block-period <block_period_int>	Enter the number of seconds that you want to block subsequent requests from a client after FortiWeb detects that the client has violated the rule. The valid range is 1-3,600 seconds. This setting is available only if action {alert | alert_deny | block-period | deny_no_log} on page 524 is set to `block-period`.	`600`
severity {High | Info | Low | Medium}	When rule violations are recorded in the attack log, each log message contains a **Severity Level** (`severity_level`) field. Select which severity level FortiWeb will use when it logs a violation of the rule: • `Info` • `Low` • `Medium` • `High`	Medium
trigger "<policy_name>"	Enter the name of a trigger policy, if any, that FortiWeb will use when it logs and/or sends an alert email about a violation of the rule.	No default.

Related Topic

- waf ftp-protection-profile on page 527
- system feature-visibility on page 295
- waf ftp-file-security on page 525

waf ftp-file-security

Use this command to create FTP file check rules so that FortiWeb places restrictions on uploading or downloading files and scans files that clients attempt to upload to or download from your server(s). When configured, FortiWeb can also send files to FortiSandbox for analysis and perform an antivirus scan.

For details about applying an FTP file check rule to an FTP server policy, see waf ftp-protection-profile.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `sysgrp` area. For details, see Permissions on page 46.

If `ftp-security` isn't enabled in `feature-visibility`, you must enable it before you can create an FTP file check rule. To enable `ftp-security`, see system feature-visibility on page 295.

Syntax

```
config waf ftp-file security
   edit "<rule_name>"
      set action {alert | alert_deny | block-period | deny_no_log}
      set block-period <block_period_int>
      set severity {High | Info | Low | Medium}
      set trigger "<policy_name>"
      set check-dir {both | download | upload}
      set av-scan {enable | disable} on page 526
      set send-files-to-fortisandbox {enable | disable}
      set icap-server-check {enable | disable}

   next
end
```

Variable	Description	Default
"<rule_name>"	Enter a unique name that can be referenced in other parts of the configuration. Don't use spaces or special characters. The maximum length is 63 characters.	No default.

Variable	Description	Default
action {alert | alert_deny | block-period | deny_no_log}	Select which action FortiWeb will take when it detects a violation of the rule: • `alert`–Accept the connection and generate an alert email and/or log message. • `alert_deny`–Block the request (or reset the connection) and generate an alert and/or log message. • `deny_no_log`–Block the request (or reset the connection). • `block-period`–Block subsequent requests from the client for a number of seconds. Also configure waf ftp-file-security on page 525. **Note:** This setting will be ignored if monitor-mode {enable | disable} on page 166 is enabled in a server policy.	alert_deny
block-period <block_period_int>	Enter the number of seconds that you want to block subsequent requests from a client after FortiWeb detects that the client has violated the rule. The valid range is 1-3,600 seconds. This setting is available only if waf ftp-file-security on page 525 is set to `block-period`.	`600`
severity {High | Info | Low | Medium}	When rule violations are recorded in the attack log, each log message contains a **Severity Level** (`severity_level`) field. Select which severity level FortiWeb will use when it logs a violation of the rule: • `Info` • `Low` • `Medium` • `High`	Medium
trigger "<policy_name>"	Enter the name of a trigger policy, if any, that FortiWeb will use when it logs and/or sends an alert email about a violation of the rule.	No default.
check-dir {both | download | upload}	Select one of the following: • `both`–FortiWeb applies the rule to files being either downloaded from or uploaded to your server(s). • `download`–FortiWeb applies the rule to files being downloaded from your server(s). • `upload`–FortiWeb applies the rule to files being uploaded to your server(s).	upload
av-scan {enable | disable}	Enable so that FortiWeb performs an antivirus scan on files that match the waf ftp-file-security on page 525.	disable
send-files-to-fortisandbox {enable | disable}	Enable so that FortiWeb sends files to FortiSandbox that match the waf ftp-file-security on page 525.	disable

Variable	Description	Default
	Also specify the FortiSandbox settings for your FortiWeb. For details, see system fortisandbox on page 312. FortiSandbox evaluates the file and returns the results to FortiWeb. If waf ftp-file-security on page 525 is enabled and FortiWeb detects a virus, it does not send the file to FortiSandbox.	
icap-server-check {enable | disable}	Enable so that FortiWeb sends files to ICAP server that matches the uploading or downloading directions.	disable

Related Topic

- system feature-visibility on page 295
- waf ftp-command-restriction-rule on page 522
- waf ftp-protection-profile on page 527

waf ftp-protection-profile

Use this command to configure an FTP security inline profile.

FTP security inline profiles combine previously-configured rules, profiles, and policies in a comprehensive set that can be applied in an FTP server policy. Apply the profile in an FTP server policy. For details, see server-policy policy on page 151.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `traroutegrp` area. For details, see Permissions on page 46.

Before creating an FTP security inline profile

Prior to creating an FTP security inline profile, you should create and configure the rules, profiles, and policies that you plan to add to the FTP security inline profile. You can include the following:

- FTP Command Restriction rules (see waf ftp-command-restriction-rule on page 522)
- FTP File Check rules (see waf ftp-file-security on page 525)
- IP Reputation intelligence (see waf ip-intelligence-ignore-x-forwarded-for on page 574)
- Geo IP rules (see waf geo-block-list on page 529)
- IP List rules (see waf ip-list on page 575)

If `ftp-security` isn't enabled in `feature-visibility`, you must enable it before you can create an FTP security inline profile. To enable `ftp-security`, see system feature-visibility on page 295.

Syntax

```
config waf ftp-protection-profile
   edit "<policy_name>"
      set ftp-file-check "<rule_name>"
      set ftp-geo-ip "<rule_name>"
      set ftp-ip-check "<rule_name>"
      set ftp-ip-intelligence {enable | disable}
      set ftp-restriction-command-type "<rule_name>"
```

Variable	Description	Default
"<policy_name>"	Enter a unique name that can be referenced in other parts of the configuration. Don't use spaces or special characters. The maximum length is 63 characters.	No default.
ftp-file-check "<rule_name>"	Enter the name of an FTP file check rule that you previously created. If you haven't created an FTP file check rule to include in this profile yet, see waf ftp-file-security on page 525 for instructions about creating one.	No default.
ftp-geo-ip "<rule_name>"	Enter the name of a geo IP block policy that you previously created. If you haven't created a geo IP block policy to include in this profile yet, see waf geo-block-list on page 529 for instructions about creating one.	No default.
ftp-ip-check "<rule_name>"	Enter the name of an IP List that you previously created. If you haven't created an IP List rule to include in this profile yet, see waf ip-list on page 575 for instructions about creating one.	No default.
ftp-ip-intelligence {enable | disable}	Enable to include the active IP reputation policy in this profile. If you haven't created an IP reputation policy to include in this profile yet, see "To configure an IP reputation policy" on page 1 for instructions about creating one.	disable
ftp-restriction-command-type "<rule_name>"	Enter the name of an FTP command restriction rule that you previously created. If you haven't created an FTP command restriction rule to include in this profile yet, see waf ip-intelligence-ignore-x-forwarded-for on page 574 for instructions about creating one.	No default.

Related Topics

- server-policy policy on page 151
- waf ftp-command-restriction-rule on page 522
- waf ftp-file-security on page 525
- waf ip-intelligence-ignore-x-forwarded-for on page 574
- waf geo-block-list on page 529
- waf ip-list on page 575

waf geo-block-list

Use this command to define large sets of client IP addresses to block based upon their associated geographical location.

Because network mappings may change as networks grow and shrink, if you use this feature, be sure to periodically update the geography-to-IP mapping database. To download the file, go to the Fortinet Customer Service & Support website:

https://support.fortinet.com

Optionally, you can also specify a list of IP addresses or IP address ranges that are exempt from this blacklist. For details, see waf geo-ip-except on page 531.

Alternatively, you can block clients individually (see "server-policy custom-application application-policy" on page 1) or based upon their reputation (see waf ip-intelligence-ignore-x-forwarded-for on page 574).

To apply the rule, select it in a protection profile. For details, see waf web-protection-profile inline-protection on page 720 or waf web-protection-profile offline-protection on page 731.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `wafgrp` area. For details, see Permissions on page 46.

Syntax

```
config waf geo-block-list
   edit "<geography-to-ip_name>"
      set severity {High | Medium | Low | Info}
      set action { alert_deny | block-period | deny_no_log}
      set block-period <block_period_int>
      set trigger "<trigger-policy_name>"
      set ignore-x-forwarded-for {enable | disable}
      config country-list
         edit <entry_index>
            set country-name "<region_name>"
         next
      end
   next
end
```

Variable	Description	Default
"<geography-to-ip_name>"	Enter the name of a new or existing rule. The maximum length is 63 characters. To display the list of existing rules, enter: `edit ?`	No default.
severity {High | Medium | Low | Info}	Select the severity level to use in logs and reports generated when a violation of the rule occurs.	`Low`

Variable	Description	Default
action { alert_deny | block-period | deny_no_log}	Select which action FortiWeb will take when it detects a violation of the rule: • `alert_deny`–Block the request (or reset the connection) and generate an alert and/or log message. • `deny_no_log`–Block the request (or reset the connection). • `block-period`–Block subsequent requests from the client for a number of seconds. Also configure `block-period`. **Note:** This setting will be ignored if monitor-mode {enable | disable} on page 166 is enabled in a server policy.	block-period
block-period <block_period_int>	Enter the number of seconds that you want to block subsequent requests from a client after FortiWeb detects that the client has violated the rule. The valid range is 1-3,600 seconds. This setting is available only if `Action` is set to `block-period`.	`60`
trigger "<trigger-policy_name>"	Enter the name of the trigger to apply when this rule is violated. For details, see log trigger-policy on page 97. The maximum length is 63 characters. To display the list of existing trigger policies, enter: `set trigger ?`	No default.
ignore-x-forwarded-for {enable | disable}	By default, FortiWeb scans the IP addresses in the X-Forwarded-For header at the HTTP layer. This causes high resource consumption. To enhance the performance, you can enable **Ignore X-Forwarded-For** so that the IP addresses can be scanned at the TCP layer instead. This avoids HTTP packets being processed unnecessarily.	disable
<entry_index>	Enter the index number of the individual entry in the table. The valid range is 1-9,999,999,999,999,999,999.	No default.
country-name "<region_name>"	Enter the name of a region (`Antarctica` or `Bouvet Island`) or country (`U.S.`) as it is written in English. Surround names with multiple words or apostrophes in double quotes. The list of locations varies by the currently installed IP-to-geography mapping package. For a current list of locations, use the web UI.	No default.

Example

This example creates a set of North American IP addresses that a server policy can use to block clients with IP addresses belonging to Belize and Canada. FortiWeb does not block the IP addresses specified by the `allow-north-america` exception list.

```
config waf geo-block-list
   edit "north-america"
      set trigger "notification-servers1"
      set exception rule "allow-north-america"
      set severity Low
      config country-list
         edit 1
            set country-name "Belize"
         next
         edit 2
            set country-name "Canada"
         next
      end
   next
end
```

Related topics

- log trigger-policy on page 97
- waf geo-ip-except on page 531
- waf web-protection-profile inline-protection on page 720
- server-policy custom-application application-policy on page 1
- waf ip-intelligence-ignore-x-forwarded-for on page 574
- debug flow trace on page 789

waf geo-ip-except

Use this command to specify IP addresses or ranges of IP addresses that are exceptions to the list of client IP addresses that FortiWeb blocks based on their geographic location.

For details about creating the blocklist by country or region, see waf geo-block-list on page 529.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `wafgrp` area. For details, see Permissions on page 46.

Syntax

```
config waf geo-ip-except
   edit "<geo-ip-except_name>"
         edit <entry_index>
            set ip {"<address_ipv4>" | "<ip_range_ipv4>"}
         next
      end
   next
end
```

Variable	Description	Default
"<geo-ip-except_name>"	Enter the name of a new or existing list of exceptions. To display the list of existing rules, enter: `edit ?`	No default.
<entry_index>	Enter the index number of the individual entry in the table. The valid range is 1-9,999,999,999,999,999,999.	No default.
ip {"<address_ipv4>" | "<ip_range_ipv4>"}	Enter the IP address or IP address range that is exempt from blocking based on its geographic location.	No default.

Example

This example adds the IP address range 192.0.2.0 to 192.0.2.5 to the geo-location blocklist exception list `allow-north-america`.

```
config waf geo-ip-except
   edit "allow-north-america"
      set ip "92.0.2.0-192.0.2.5"
      end
   next
end
```

Related topics

- waf geo-block-list on page 529
- server-policy custom-application application-policy on page 1
- waf ip-intelligence-ignore-x-forwarded-for on page 574
- debug flow trace on page 789

waf graphql-validation rule

Use this command to create GraphQL protection rules and configure GraphQL protection policies.

Syntax

```
config waf graphql-validation rule
   edit "<graphql_rule_name>"
      set host-status {enable | disable}
      set host "<host_name_str>"
      set request-type {plain | regular}
      set request-url <string>
      set action {alert | alert_deny | block-period | redirect | send_403_forbidden | deny_no_log}
      set block-period <period_int>
```

```
      set severity {High  Low | Medium | Info}
      set trigger "<trigger_policy_name>"
      set enable-introspection {enable | disable}
      set enable-fragment {enable | disable}
      set graphql-data-size <integer>
      set field-number <integer>
      set value-size <integer>
      set object-depth <integer>
      set alias-batch-query {enable | disable}
      set alias-batch-query-number <integer>
      set array-batch-query {enable | disable}
      set array-batch-query-number <integer>
   next
end
config waf graphql-validation policy
   edit <graphql_policy_name>
      set enable-signature-detection {enable | disable}
      config input-rule-list
         edit <graphql-rule-list_id>
            set graphql_input_rule <graphql_input_rule_str>
         next
      end
   next
end
```

Variable	Description	Default
"<graphql_rule_name>"	Enter a name that can be referenced by other parts of the configuration. You will use the name to select the rule in a GraphQL protection policy.	No default.
`host-status {enable | disable}`	Enable to compare the GraphQL rule to the `Host: field` in the HTTP header. If enabled, also configure host "<host_name_str>" on page 533.	disable
`host "<host_name_str>"`	Enter the name of a protected host that the `Host:` field of an HTTP request must match in order for the rule to apply. For details, see server-policy allow-hosts on page 106.	No default.
request-type {plain | regular}	Select whether request-type {plain | regular} on page 533 must contain either: • `plain`–The field is a string that the request URL must match exactly. • `regular`–The field is a regular expression that defines a set of matching URLs.	No default.
request-url <string>	Depending on your selection for request-type {plain | regular} on page 533, enter either: • `plain`–The literal URL, such as `/index.php`, that the HTTP request must contain in order to match the rule. The URL must begin with a slash (/). • `regular`–A regular expression, such as `^/*.php`, matching the URLs to which the rule should apply. The	No default.

Variable	Description	Default
	pattern does not require a slash (/), but it must match URLs that begin with a slash, such as `/index.cfm`. Do not include the domain name, such as `www.example.com`, which is configured separately in host "<host_name_str>" on page 533.	
action {alert | alert_deny | block-period | redirect | send_403_forbidden | deny_no_log}	Select one of the following actions that FortiWeb performs when a request violates the rule: • `alert`–Accept the request and generate an alert email and/or log message. • `alert_deny`–Block the request (or reset the connection) and generate an alert email and/or log message. You can customize the web page that FortiWeb returns to the client with the HTTP status code. For details, see "system replacemsg" on page 1. • `block-period`–Block subsequent requests from the client for a number of seconds. Also configure block-period <period_int> on page 534. • `redirect`–Redirect the request to the URL that you specify in the protection profile and generate an alert email and/or log message. • `send_403_forbidden`–Reply to the client with an HTTP `403 Access Forbidden` error message and generate an alert email and/or log message. • `deny_no_log`–Deny a request. Do not generate a log message. **Caution:**FortiWeb ignores this setting when monitor-mode {enable | disable} on page 166 is enabled. **Note:** Logging and/or alert email will occur only if enabled and configured. For details, see log disk on page 66 and log alertMail on page 60.	alert
block-period <period_int>	Enter the amount of time (in seconds) that you want to block subsequent requests from a client after FortiWeb detects a rule violation. This setting is available only when action {alert | alert_deny | block-period | redirect | send_403_forbidden | deny_no_log} on page 534 is `block-period`. The valid range is 1-3,600 seconds.	`600`
severity {High Low | Medium | Info}	When rule violations are recorded in the attack log, each log message contains a **Severity Level** field. Select which severity level FortiWeb will use when it logs a violation of the rule: • `Low` • `Medium`	Low

Variable	Description	Default
	• `High` • `Info`	
trigger "<trigger_policy_name>"	Enter the name of the trigger, if any, to apply when the rule is violated. The maximum length is 63 characters. For details, see log trigger-policy on page 97. To display a list of existing triggers, enter: set trigger ?	No default.
enable-introspection {enable | disable}	Enable to allow introspection queries.	disable
enable-fragment {enable | disable}	Enable to allow fragments.	disable
graphql-data-size <integer>	It sets a limit on the size of the HTTP request body in the POST method or the size of URL parameters in the GET method.	1024
field-number <integer>	It limits the number of terminal fields within a query, thereby limiting the number of fields within objects.	256
value-size <integer>	It sets a maximum length on any user input value within a GraphQL query. • If the value is an array, each item in the array is evaluated against the specified value size. • If the value is an object, only the values contained within the object are compared to the value size, not the keys themselves.	256
object-depth <integer>	It limits the depth of a GraphQL query, which limits how deeply nested the query can be.	32
alias-batch-query {enable | disable}	Enable this option to allow alias batching.	disable
alias-batch-query-number <integer>	It sets a limit on the number of queries that can be found within an alias batch. Only available when **Alias Batching** is enabled.	8
array-batch-query {enable | disable}	Enable this option to allow array batching	disable
array-batch-query-number <integer>	It sets a limit on the number of queries that can be found within an array batch. Only available when **Array Batching** is enabled.	8
<graphql_policy_name>	Enter the name of a GraphQL protection policy. You will use the name to select the policy in other parts of the configuration.	No default.
<graphql-rule-list_id>	Enter the index number of an entry to create or modify a rule	No

Variable	Description	Default
	for the policy.	default.
enable-signature-detection {enable | disable}	Enable to scan for matches with signature attacks in GraphQL API requests.	disable
graphql_input_rule <graphql_input_rule_str>	Enter the sequence number of a GraphQL protection rule to add to the GraphQL protection policy.	No default.

Related topics

- waf json-schema on page 579
- waf web-protection-profile inline-protection on page 720

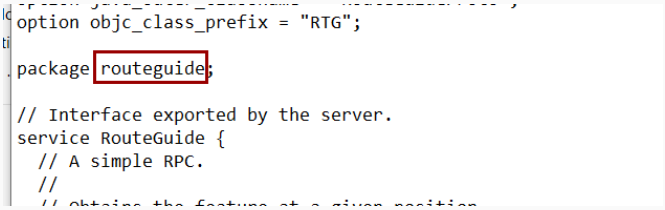
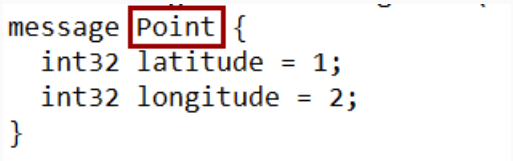
waf grpc-security rule

Use this command to configure gRPC related settings.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `wafgrp` area. For details, see Permissions on page 46.

Syntax

```
config waf grpc-security rule
   edit grpc-security_rule_name
      set host-status {enable | disable}
      set host <host_str>
      set url <url_str>
      set idl-file <file_name>
      set rate-limit <int>
      set size-limit <int>
      set req-message-name <string>
      set rsp-message-name <string>
      set action {alert | deny_no_log | alert_deny | block-period}
      set block-period <int>
      set severity {High | Medium | Low | Info}
      set replace-response {enable | disable}
      set trigger <trigger-policy_name>
   next
end
```

Variable	Description	Default
grpc-security_rule_name	Enter the WebSocket security rule name.	No default.
host-status {enable | disable}	Enable to compare the WebSocket security rule to the `Host:` field in the HTTP header.	No default.
host <host_str>	Select the IP address or fully qualified domain name (FQDN) of the protected host to which this rule applies. This option is available only if Host Status is enabled.	No default.
url <url_str>	The URL of the gPRC API request you want to protect. You can enter the literal URL, such as `/folder1/index.htm` that the HTTP request must contain in order to match the rule, or use wildcards to match multiple URLs, such as `/folder1/*` or `/folder1/*/index.htm`. The URL must begin with a slash (/).	No default.
idl-file <file_name>	Enter the name of the IDL file you have uploaded in the **gRPC IDL File** tab in **Web Protection > Protocol > gRPC**. FortiWeb will decode the traffic according to the IDL file.	No default.
rate-limit <int>	Specify the maximum number of messages within a gRPC API request.	20
size-limit <int>	Specify the maximum size of each message body in a gRPC API request.	4194303
req-message-name <string>	The name of message in the gRPC API request. FortiWeb will apply this gRPC security rule to the matched message. The format should be "*<package_name>.<message_name>*", for example `routeguide.Point`. It's case sensitive.   	No default.
rsp-message-name <string>	The name of message in the gRPC API response. FortiWeb will apply this gRPC security rule to the matched message. Refer to `req-message-name` for the format of the name.	No default.

Variable	Description	Default
action {alert | deny_no_log | alert_deny | block-period}	Select which action the FortiWeb appliance will take when it detects a violation. **Alert**–Accept the connection and generate an alert email and/or log message. **alert_deny**–Block the request (or reset the connection) and generate an alert and/or log message. **deny_no_log**–Block the request (or reset the connection). **block-period**–Block subsequent requests from the client for a number of seconds. Also configure waf grpc-security rule on page 536.	`Alert`
block-period <int>	If `action` is `block-period`, type the number of seconds that the client will be blocked.	600
severity {High | Medium | Low | Info}	Select the severity level to use in logs and reports generated when a violation of the rule occurs.	medium
replace-response {enable | disable}	For gRPC API traffic, FortiWeb now supports obscuring sensitive data in server's response if it matches the Information Disclosure and Personally Identifiable Information signatures. FortiWeb will detect any sensitive data in the back-end server's response and replace it with "xxx". Please note that to make this function work, ensure that the **Action** for **Information Disclosure** and **Personally Identifiable Information** has been set to **Erase** or **Erase & Alert** in **Web Protection > Known Attacks > Signatures**.	disable
trigger <trigger-policy_name>	Enter the name of the trigger to apply when this rule is violated (see log trigger-policy on page 97). The maximum length is 63 characters. To display the list of existing trigger policies, enter: `set trigger ?`	No default.

Related topics

waf grpc-security policy on page 538

waf grpc-security policy

Use this command to create gRPC policy.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `wafgrp` area. For details, see Permissions on page 46.

Syntax

```
config waf grpc-security policy
   edit "<"<policy_name>"
      config rule-list
         edit rule-list_id on page 539
            set rule "<rule_name>"
         next
      end
   next
end
```

Variable	Description	Default
"<policy_name>"	Enter the gPRC Security policy name.	No default.
rule-list_id	Enter the sequence number of the rule in the rule list.	
rule "<rule_name>"	Select the created gPRC security rule name.	No default.

Related topics

waf grpc-security rule on page 536

waf hidden-fields-protection

Use this command to configure groups of hidden field rules.

To apply hidden field rule groups, select them within an inline protection profile. For details, see waf web-protection-profile inline-protection on page 720.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `wafgrp` area. For details, see Permissions on page 46.

Syntax

```
config waf hidden-fields-protection
   edit "<hidden-field-group_name>"
      config hidden_fields_list
         edit <entry_index>
            set hidden-field-rule "<hidden-field-rule_name>"
         next
      end
   next
end
```

Variable	Description	Default
"<hidden-field-group_name>"	Enter the name of a new or existing hidden field rule group. The maximum length is 63 characters. To display the list of existing groups, enter: `edit ?`	No default.
<entry_index>	Enter the index number of the individual entry in the table. The valid range is 1-9,999,999,999,999,999,999.	No default.
hidden-field-rule "<hidden-field-rule_name>"	Enter the name of an existing hidden field rule to add to the group. The maximum length is 63 characters. To display the list of existing rules, enter: `set hidden-field-rule ?`	No default.

Related topics

- waf hidden-fields-rule on page 540
- waf web-protection-profile inline-protection on page 720

waf hidden-fields-rule

Use this command to configure hidden field rules.

Hidden form inputs, like other types of parameters and inputs, can be vulnerable to tampering and can be used as a vector for other attacks.

Unlike other inputs, they are often written into an HTML page by the web server when it serves that page to the client, and are not visible on the rendered web page. As such, they are difficult to for users to unintentionally modify, and are often incorrectly perceived as relatively safe by website owners.

Like other inputs, however, they are accessible through the JavaScript document object model (DOM), and as inputs, can be used to inject invalid data into your databases or attempt to tamper with the session state.

Hidden field rules prevent such tampering. The FortiWeb appliance caches the values of a session's hidden inputs as they pass to the HTTP client, and verifies that they remain unchanged when the HTTP client submits a form.

You apply hidden field constraints by first grouping them into a hidden field group. For details, see waf hidden-fields-protection on page 539.

Before you configure a hidden field rule, if you want to apply it only to HTTP requests for a specific real or virtual host, you must first define the web host in a protected hosts group. For details, see server-policy allow-hosts on page 106.

Alternatively, you can use the web UI to fetch the request URL from the server and scan it for hidden inputs, using the results to configure the hidden input rule. For details, see the *FortiWeb Administration Guide*:
https://docs.fortinet.com/document/fortiweb

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `wafgrp` area. For details, see Permissions on page 46.

Syntax

```
config waf hidden-fields-rule
   edit "<hidden-field-rule_name>"
      set action {alert | alert_deny | redirect | block-period | send_403_forbidden | deny_no_log}
      set block-period <seconds_int>
      set host "<protected-hosts_name>"
      set host-status {enable | disable}
      set request-file "<url_str>"
      set action-url0 "<url_str>"
      set action-url1 "<url_str>"
      set action-url2 "<url_str>"
      set action-url3 "<url_str>"
      set action-url4 "<url_str>"
      set action-url5 "<url_str>"
      set action-url6 "<url_str>"
      set action-url7 "<url_str>"
      set action-url8 "<url_str>"
      set action-url9 "<url_str>"
      set severity {High | Medium | Low | Info}
      set trigger "<trigger-policy_name>"
      config hidden-field-name
         edit <entry_index>
            set argument "<hidden-field_str>"
         next
      end
   next
end
```

Variable	Description	Default
"<hidden-field-rule_name>"	Enter the name of a new or existing rule. The maximum length is 63 characters. To display the list of existing rules, enter: `edit ?`	No default.
action {alert | alert_deny | redirect | block-period | send_403_forbidden | deny_no_log}	Select one of the following actions that the FortiWeb appliance will perform when an HTTP request violates one of the hidden field rules in the entry: • `alert`–Accept the request and generate an alert email and/or log message. • `alert_deny`–Block the request (or reset the connection) and generate an alert email and/or log message. You can customize the web page that FortiWeb returns to the client with the HTTP status code. For details, see "system replacemsg" on page 1.	`alert`

Variable	Description	Default
	• `block-period`–Block subsequent requests from the client for a number of seconds. Also configure block-period <seconds_int> on page 567. **Note:** If FortiWeb is deployed behind a NAT load balancer, when using this option, you **must** also define an X-header that indicates the original client's IP. Failure to do so may cause FortiWeb to block **all** connections when it detects a violation of this type. For details, see waf x-forwarded-for on page 746. • `redirect`–Redirect the request to the URL that you specify in the protection profile and generate an alert email and/or log message. Also configure redirect-url "<redirect_fqdn>" on page 728 and rdt-reason {enable | disable} on page 729. • `send_403_forbidden`–Reply to the client with an HTTP `403 Access Forbidden` error message and generate an alert email and/or log message. • `deny_no_log`–Deny a request. Do not generate a log message. • `block-period`–Block subsequent requests from the client for a number of seconds. **Caution:** This setting will be ignored if monitor-mode {enable | disable} on page 166 is enabled. **Note:** Logging and/or alert email will occur only if enabled and configured. For details, see log disk on page 66 and log alertMail on page 60. **Note:** If you select an auto-learning profile with this rule, you should select `alert`. If the `action` is `alert_deny`, for example, the FortiWeb appliance will block the request or reset the connection when it detects an attack, resulting in incomplete session information for the auto-learning feature. For details about auto-learning requirements, see "waf web-protection-profile autolearning-profile" on page 1.	
block-period <seconds_int>	If action {alert | alert_deny | redirect | block-period | send_403_forbidden | deny_no_log} on page 541 is `block-period`, enter the number of seconds that the connection will be blocked. The valid range is 1-3,600 seconds.	`600`
host "<protected-hosts_name>"	Enter the name of a protected host that the `Host:` field of an HTTP request must be in order to match the rule. The maximum length is 255 characters. This setting applies only if host-status {enable | disable} on page 543 is `enable`.	No default.

Variable	Description	Default
host-status {enable | disable}	Enable to apply this hidden field rule only to HTTP requests for specific web hosts. Also configure host "<protected-hosts_name>" on page 542. Disable to match the input rule based upon the other criteria, such as the URL, but regardless of the `Host:` field.	`disable`
request-file "<url_str>"	Enter the literal URL, such as `/login.jsp`, that contains the hidden form. The URL must begin with a slash (/). Do not include the name of the web host, such as `www.example.com`, which is configured separately in host "<protected-hosts_name>" on page 542. Regular expressions are not supported. The maximum length is 255 characters.	No default.
action-url0 "<url_str>" action-url1 "<url_str>" action-url2 "<url_str>" action-url3 "<url_str>" action-url4 "<url_str>" action-url5 "<url_str>" action-url6 "<url_str>" action-url7 "<url_str>" action-url8 "<url_str>" action-url9 "<url_str>"	Add up to 10 URLs that are valid to use with the HTTP `POST` method when the client submits the form containing the hidden fields in this rule.	No default.
severity {High | Medium | Low | Info}	Select the severity level to use in logs and reports generated when a violation of the rule occurs.	`High`
trigger "<trigger-policy_name>"	Enter the name of the trigger to apply when this rule is violated. For details, see log trigger-policy on page 97. The maximum length is 63 characters. To display the list of existing trigger policies, enter: `set trigger ?`	No default.
<entry_index>	Enter the index number of the individual entry in the table. The valid range is 1-9,999,999,999,999,999,999.	No default.
argument "<hidden-field_str>"	Enter the name of the hidden form input, such as `languagepref`. The maximum length is 63 characters.	No default.

Example

This example blocks and logs requests from search.jsp if its hidden form input, whose name is “languagepref”, is posted to any URL other than query.do.

```
config waf hidden-fields-rule
   edit "hidden_fields_rule1"
      set action alert_deny
      set request-file "/search.jsp"
      set action-url0 "/query.do"
      config hidden-field-name
         edit 1
            set argument "languagepref"
         next
      end
   next
end
```

Related topics

- server-policy allow-hosts on page 106
- waf hidden-fields-protection on page 539
- log trigger-policy on page 97

waf HTTP-connection-flood-check-rule

Use this command to limit the number of TCP connections per HTTP session. This can prevent TCP connection floods from clients operating behind a shared IP with innocent clients.

Excessive numbers of TCP connections per session can occur if a web application or client is malfunctioning, or if an attacker is attempting to waste socket resources to produce a DoS.

This command is similar to waf layer4-connection-flood-check-rule on page 601. However, this feature counts TCP connections per session cookie, while TCP flood prevention counts only TCP connections per IP address. Because it uses session cookies at the application layer instead of only TCP/IP connections at the network layer, this feature can differentiate multiple clients that may be behind the same source IP address, such as when the source IP address hides a subnet that uses network address translation (NAT). However, in order to work, the client must support cookies.

To apply this rule, include it in an application-layer DoS-prevention policy. For details, see waf application-layer-dos-prevention on page 446.

To use this command, your administrator account’s access control profile must have either `w` or `rw` permission to the `wafgrp` area. For details, see Permissions on page 46.

Syntax

```
config waf HTTP-connection-flood-check-rule
```

```
  edit "<rule_name>"
    set action {alert | alert_deny | block-period | deny_no_log}
    set block-period <seconds_int>
    set HTTP-connection-threshold <limit_int>
    set severity {High | Medium | Low | Info}
    set trigger-policy "<trigger-policy_name>"
  next
end
```

Variable	Description	Default
"<rule_name>"	Enter the name of a new or existing rule. The maximum length is 63 characters. To display the list of existing rules, enter: `edit ?`	No default.
action {alert | alert_deny | block-period | deny_no_log}	Select one of the following actions that the FortiWeb appliance will perform when the count exceeds the rate limit: • `alert`–Accept the connection and generate an alert email and/or log message. • `alert_deny`–Block the connection and generate an alert email and/or log message. • `block-period`–Block subsequent requests from the client for a number of seconds. Also configure block-period <seconds_int> on page 545. • `deny_no_log`–Deny a request. Do not generate a log message. **Caution:** This setting will be ignored if monitor-mode {enable | disable} on page 166 is enabled. **Note:** Logging and/or alert email will occur only if enabled and configured. For details, see log disk on page 66 and log alertMail on page 60. **Note:** If an auto-learning profile will be selected in the policy with Offline Protection profiles that use this rule, you should select `alert`. If the `action` is `alert_deny`, the FortiWeb appliance will reset the connection when it detects an attack, resulting in incomplete session information for the auto-learning feature. For details about auto-learning requirements, see "waf web-protection-profile autolearning-profile" on page 1.	alert
block-period <seconds_int>	Enter the length of time (in seconds) for which the FortiWeb appliance will block additional requests after a client exceeds the rate threshold. The valid range is 1-3,600 seconds.	`600`
HTTP-connection-threshold <limit_int>	Enter the maximum number of TCP connections allowed from the same client. The valid range is 1-1,024.	1

Variable	Description	Default
severity {High | Medium | Low | Info}	Select the severity level to use in logs and reports generated when a violation of the rule occurs.	Medium
trigger-policy "<trigger-policy_name>"	Enter the name of the trigger to apply when this rule is violated. For details, see log trigger-policy on page 97. The maximum length is 63 characters. To display the list of existing trigger policies, enter: `set trigger ?`	No default.

Related topics

- log trigger-policy on page 97
- waf application-layer-dos-prevention on page 446

waf HTTP-constraints-exceptions

Use set statements under this command to configure exceptions to existing HTTP protocol parameter constraints for specific hosts.

Exceptions may be useful if you know that some HTTP protocol constraints, during normal use, will cause false positives by matching an attack signature. Exceptions define HTTP constraints that will **not** be subject to HTTP protocol constraint policy.

For example, if you enable `max-HTTP-header-length` in a HTTP protocol constraint exception for a specific host, FortiWeb ignores the HTTP header length check when executing the web protection profile for that host.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `wafgrp` area. For details, see Permissions on page 46.

Syntax

```
config waf HTTP-constraints-exceptions
   edit "<HTTP-exception_name>"
      config HTTP_constraints-exception-list
         edit <entry_index>
            set request-file "<url_pattern>"
            set request-type {plain | regular}
            set host-status {enable | disable}
            set block-malformed-request {enable | disable}
            set Illegal-content-length-check {enable | disable}
            set Illegal-content-type-check {enable | disable}
            set Illegal-header-name-check {enable | disable}
            set Illegal-header-value-check {enable | disable}
            set Illegal-host-name-check {enable | disable}
            set Illegal-HTTP-request-method-check {enable | disable}
```

```
            set Internal-resource-limits-check {enable | disable} on page 549
            set max-cookie-in-request {enable | disable}
            set max-header-line-request {enable | disable}
            set max-HTTP-body-length {enable | disable}
            set max-HTTP-body-parameter-length {enable | disable}
            set max-HTTP-content-length {enable | disable}
            set max-HTTP-header-length {enable | disable}
            set max-HTTP-header-name-length {enable | disable}
            set max-HTTP-header-value-length {enable | disable}
            set max-HTTP-request-filename-length {enable | disable}
            set max-HTTP-request-length {enable | disable}
            set max-url-param-name-len {enable | disable}
            set max-url-param-value-len {enable | disable}
            set max-url-parameter {enable | disable}
            set max-url-parameter-length {enable | disable}
            set number-of-ranges-in-range-header {enable | disable}
            set http2-max-requests {enable | disable}
            set parameter-name-check {enable | disable}
            set parameter-value-check {enable | disable}
            set redundant-header-check {enable | disable}
            set source-ip-status {enable|disable}
            set source-ip "<ip_range>"
            set url-param-name-check {enable | disable}
            set url-param-value-check {enable | disable}
            set duplicate-parameter-check {enable | disable}
            set null-byte-in-url-check {enable | disable}
            set Illegal-byte-in-url-check {enable | disable}
            set web-socket-protocol-check {enable | disable}
            set odd-and-even-space-attack-check {enable | disable}
            set rpc-protocol-check {enable | disable} on page 551
            set Post-request-ctype-check {enable | disable}
            set h2-rst-stream-check {enable | disable} on page 551
            set h2-rst-stream-freq-check {enable | disable}
            set cl-te-coexist-check {enable | disable}
            set waf HTTP-constraints-exceptions
            set missing-host-check {enable | disable}
            set range-overlapping-check {enable | disable}
            set multipart-formdata-bad-request-check {enable | disable}
            set h3-bidir-concurrent-stream-check {enable | disable}
            set h3-unidir-concurrent-stream-check {enable | disable}
            move "<source-exception_id>" to {before | after | up | down} "<destination-exception_
                 id>"
        next
    end
  next
end
```

Variable	Description	Default
"<HTTP-exception_name>"	Enter the name of a new or existing HTTP protocol constraint exception. The maximum length is 63 characters. To display the list of existing exceptions, enter: `edit ?`	No default

Variable	Description	Default
<entry_index>	Enter the index number of the individual entry in the table. The valid range is 1-9,999,999,999,999,999,999.	No default
request-file "<url_pattern>"	Enter either: • The literal URL, such as `/index.php`, that the HTTP request must contain in order to match the input rule. The URL must begin with a slash (/). • A regular expression, such as `^/*.php`, matching all and only the URLs to which the input rule should apply. The pattern is **not** required to begin with a slash (/). However, it must at least match URLs that begin with a slash, such as `/index.cfm`. Do not include the name of the web host, such as `www.example.com`, which is configured separately in `host`. The maximum length is 255 characters.	No default
request-type {plain | regular}	Enter either `plain` or `regular` (for a regular expression) to match the string entered in request-file "<url_pattern>" on page 548.	No default
host-status {enable | disable}	Enable to apply this exception only to HTTP requests for specific web hosts. Also configure analyzer-policy "<fortianalyzer-policy_name>" on page 98. Disable to match the exception based upon the other criteria, such as the URL, but regardless of the `Host:` field.	`disable`
block-malformed-request {enable | disable}	Enable to omit the constraint on syntax and FortiWeb parsing errors. **Caution:** Some web applications require abnormal or very large HTTP POST requests. Since allowing such errors and excesses is generally bad practice and can lead to vulnerabilities, use this option to omit the malformed request scan only if absolutely necessary.	
Illegal-content-length-check {enable | disable}	Enable to omit the constraint on the maximum acceptable size in bytes of the request body.	`disable`
Illegal-content-type-check {enable | disable}	Enable to omit the constraint on whether the `Content Type:` value uses the format `<type>/<subtype>`.	`disable`
Illegal-header-name-check {enable | disable}	Enable to omit the constraint on whether the HTTP header name contains illegal characters.	`disable`
Illegal-header-value-check {enable | disable}	Enable to omit the constraint on whether the HTTP header value contains illegal characters.	`disable`
Illegal-host-name-check {enable | disable}	Enable to omit the constraint on host names with illegal characters.	`disable`

Variable	Description	Default
Illegal-HTTP-request-method-check {enable | disable}	Enable to omit the constraint on illegal HTTP request methods.	`disable`
Illegal-responese-code-check {enable | disable}	Enable to omit the constraint on whether the HTTP response code is a 3-digit number.	`disable`
Internal-resource-limits-check {enable | disable}	Enable to omit the constraint on the maximum number of limits allowed by HTTP parser.	`disable`
max-cookie-in-request {enable | disable}	Enable to omit the constraint on the maximum number of cookies per request.	`disable`
max-header-line-request {enable | disable}	Enable to omit the constraint on the maximum number of HTTP header lines.	`disable`
max-HTTP-body-length {enable | disable}	Enable to omit the constraint on the maximum HTTP body length.	`disable`
max-HTTP-body-parameter-length {enable | disable}	Enable to omit the constraint on the maximum acceptable size in bytes of all parameters in the HTTP body of HTTP POST requests.	`disable`
max-HTTP-content-length {enable | disable}	Enable to omit the constraint on the maximum HTTP content length.	`disable`
max-HTTP-header-length {enable | disable}	Enable to omit the constraint on the maximum HTTP header length.	`disable`
max-HTTP-header-name-length {enable | disable}	Enable to omit the constraint on the maximum acceptable size in bytes of a single HTTP header name.	`disable`
max-HTTP-header-value-length {enable | disable}	Enable to omit the constraint on the maximum acceptable size in bytes of a single HTTP header value.	`disable`
max-HTTP-request-filename-length {enable | disable}	Enable to omit the constraint on the maximum HTTP request filename length.	`disable`
max-HTTP-request-length {enable | disable}	Enable to omit the constraint on the maximum HTTP request length.	`disable`
max-url-param-name-len {enable | disable}	Enable to omit the constraint on the maximum acceptable length in bytes of the parameter name.	`disable`
max-url-param-value-len {enable | disable}	Enable to omit the constraint on the maximum acceptable length in bytes of the parameter value.	`disable`

Variable	Description	Default
max-url-parameter {enable | disable}	Enable to omit the constraint on the maximum number of parameters in the URL.	`disable`
max-url-parameter-length {enable | disable}	Enable to omit the constraint on the maximum length of parameters in the URL.	`disable`
number-of-ranges-in-range-header {enable | disable}	Enable to omit the constraint on the maximum acceptable number of `Range:` fields of an HTTP header.	`disable`
http2-max-requests {enable | disable}	Enable to omit the constraint on the maximum acceptable number of requests in an HTTP/2 connection	`disable`
parameter-name-check {enable | disable}	Enable to omit the constraint on null characters in parameter names.	`disable`
parameter-value-check {enable | disable}	Enable to omit the constraint on null characters in parameter values.	`disable`
Post-request-ctype-check {enable | disable}	Enable to omit the constraint on whether the `Content-Type:` header is available.	`disable`
source-ip-status {enable|disable}	Enable to check requests for matching the HTTP constraint exceptions rule by their source IP addresses.	`disable`
source-ip "<ip_range>"	Enter the source IP of the protected requests to which this exception applies. Only a single IPv4/IPv6 address, or a IPv4/IPv6 range is acceptable. For example: • `1.2.3.4` • `2001::1` • `1.2.3.4-1.2.3.40` • `2001::1-2001::100` Available only when source-ip-status {enable|disable} on page 550 is `enable`.	No default.
url-param-name-check {enable | disable}	Enable to omit the constraint on illegal characters in the parameter name.	`disable`
url-param-value-check {enable | disable}	Enable to omit the constraint on illegal characters in the parameter value.	`disable`
redundant-header-check {enable | disable}	Enable to omit the constraint on the redundant instances of `Content-Length, Content-Type` and `Host herder` fields.	`disable`
duplicate-parameter-check {enable | disable}	Enable to omit the constraint on duplicate parameter names.	`disable`

Variable	Description	Default
null-byte-in-url-check {enable | disable}	Enable to omit the constraint on null bytes in URL.	`disable`
Illegal-byte-in-url-check {enable | disable}	Enable to omit the constraint on illegal bytes in URL.	`disable`
web-socket-protocol-check {enable | disable}	Enable to omit detecting traffic that uses the WebSocket TCP-based protocol.	`disable`
odd-and-even-space-attack-check {enable | disable}	Enable to omit the constraint on detecting Odd and Even Space Attack.	`disable`
rpc-protocol-check {enable | disable}	Enable to omit detecting traffic that uses the PRC protocol.	`disable`
"<source-exception_id>" to {before | after | up | down} "<destination-exception_id>"	adjust the priority of the exception entries.	no `default`
h2-rst-stream-check {enable | disable}	Enable to omit the constraint on the maximum acceptable number of HTTP/2 RST Streams in an HTTP/2 connection.	`disable`
h2-rst-stream-freq-check {enable | disable}	Enable to omit the constraint on the maximum occurrences of the HTTP/2 RST Stream per second.	`disable`
cl-te-coexist-check {enable | disable}	Enable to omit the constraint on content-length and transfer-encoding coexist.	`disable`
inconsistent-cl-check {enable | disable}	Enable to omit the constraint on the response has redundant body than the content-length specified.	`disable`
missing-host-check {enable | disable}	Enable to omit the constraint on the Host header is missing.	`disable`
range-overlapping-check {enable | disable}	Enable to omit detecting RangeAmp Overlapping Byte Ranges (OBR) attacks.	`disable`
multipart-formdata-bad-request-check {enable | disable}	Enable to omit detecting whether the multipart request chunk contains the strings "Content-Disposition" and "Name".	`disable`
h3-bidir-concurrent-stream-check {enable | disable}	Enable to omit the constraint on the maximum number of bidirectional concurrent streams in an HTTP/3 connection.	`disable`

Variable	Description	Default
h3-unidir-concurrent-stream-check {enable | disable}	Enable to omit the constraint on the maximum number of unidirectional concurrent streams in an HTTP/3 connection.	`disable`

Example

This example omits header length limits for HTTP requests to `www.example.com` and `192.0.2.1` for `/login.asp`.

```
config waf HTTP-constraints-exceptions
   edit "exception1"
      config HTTP_constraints-exception-list
         edit 1
            set host "www.example.com"
            set host-status enable
            set max-HTTP-header-length enable
            set request-file "/login.asp"
            next
         edit 2
            set host "192.0.2.1"
            set host-status enable
            set max-HTTP-body-length enable
            set request-file "/login.asp"
            next
         end
   next
end
```

Related topics

- waf web-protection-profile inline-protection on page 720
- waf web-protection-profile offline-protection on page 731
- log trigger-policy on page 97
- waf HTTP-protocol-parameter-restriction on page 556

waf http-header-security

Use this command to insert special HTTP response headers to protect clients from certain attacks, including XSS, clickjacking, and MIME sniffing attacks. The special HTTP response headers define security policies to client browsers so that the browsers avoid exposure to known vulnerabilities when handling requests.

For more information on HTTP Header Security, see the *FortiWeb Administration Guide*:

https://docs.fortinet.com/document/fortiweb

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `admingrp` area. For details, see Permissions on page 46.

Syntax

```
config waf http-header-security
   edit "<HTTP-header-security_name>"
      config HTTP-header-security-list
         set name {x-frame-options | x-content-type-options | x-xss-protection | content-security-
              policy | feature-policy | permissions-policy | referrer-policy | cross-origin-
              resource-policy | cross-origin-embedder-policy | cross-origin-opener-policy | clear-
              site-data | timing-allow-origin | content-security-policy-report-only}
         set value {nosniff | allow-from | deny | sameorigin | sanitizing-mode | block-mode}
         set waf http-header-security
         set allow-from-source "<allow-from_str>"
         set request-type {plain | regular}
         set request-file "<request-file_str>"
         set request-status {enable | disable}
      next
   end
   next
end
```

Variable	Description	Default
"<HTTP-header-security_name>"	Enter of name of an HTTP header security policy. The maximum length is 63 characters.	No default.
request-status {enable | disable}	Enable to set a URL Filter.	`disable`
request-type {plain | regular}	Defines the Request URL Type as a simple string (plain) or a regular expression (regular) for the URL Filter. Available only if request-status {enable | disable} on page 553 is set to `enable`.	No default.
request-file "<request-file_str>"	Sets the Request URL for the URL Filter. Available only if request-status {enable | disable} on page 553 is set to `enable`.	No default.
<entry-index_int>	Creates or edits a Secure Header Rule in the selected HTTP Header Security Policy.	No default.
name {x-frame-options | x-content-type-options | x-xss-protection | content-security-policy | feature-policy | permissions-policy | referrer-policy | cross-origin-resource-policy | cross-origin-embedder-policy | cross-origin-opener-policy | clear-site-data | timing-allow-origin | content-security-policy-report-only}	Specifies the HTTP security header type to configure in this Secure Header Rule. The following types are supported: • **x-frame-options** - Prevents Clickjacking by restricting how your site can be embedded in frames. Supports values: `DENY`, `SAMEORIGIN`, and `ALLOW-FROM`. • **x-content-type-options** - Prevents MIME sniffing attacks by disabling the browser's content-type guessing. Use `nosniff`. • **x-xss-protection** - Enables the browser's built-	No default.

Variable	Description	Default
	in XSS filtering. Supports sanitizing or blocking modes. • **content-security-policy** - Adds a Content-Security-Policy header to control the sources of content that can be loaded, helping prevent XSS and injection attacks. • **feature-policy** - Allows or denies the use of browser features (e.g., camera, fullscreen, geolocation) in the page and embedded iframes. • **permissions-policy** - **Replaces feature-policy** and provides the same control over browser feature access. **Recommended for new configurations**. • **referrer-policy** - Controls how much referrer information is included in outbound requests. Supports values like `no-referrer`, `origin`, `same-origin`, and others. • **cross-origin-resource-policy** (CORP) - Restricts which origins can load resources, enforcing same-origin or same-site rules. • **cross-origin-embedder-policy** (COEP) - Requires embedded cross-origin resources to send valid CORS or CORP headers. Needed for features like SharedArrayBuffer. • **cross-origin-opener-policy** (COOP) - Isolates browsing context from popups or tabs to prevent cross-origin access and side-channel attacks. • **clear-site-data** - Instructs the browser to clear cookies, local storage, cache, or all data types. Supports values like `"cookies"`, `"storage"`, `"cache"`, `"*"`. • **timing-allow-origin** - Specifies which origins can access high-resolution performance timing data. Use a specific trusted origin. • **content-security-policy-report-only** - Adds a Content-Security-Policy header in report-only mode. Use this for testing policy enforcement without blocking violations.	
value {nosniff | allow-from | deny | sameorigin | sanitizing-mode | block-mode}	Defines the response according to the defined Secure Header Type. The `x-frame-options` header can be implemented with one of the following options:	No default.

Variable	Description	Default
	• `deny`—The browser will not allow any frame to be displayed. • `sameorigin`—The browser will not allow a frame to be displayed unless the page of the frame originated from the same site. • `allow-from`—The browser will not allow a frame to be displayed unless the page of the frame originated from the specified domain. The `x-content-type-options` header can be implemented with one option: • `nosniff`—The browser will not guess any content type that is not explicitly specified when downloading extensions. The `x-xss-protection` header can be implemented with one of the following options: • `sanitizing-mode`—The browser will sanitize the malicious scripts when a XSS attack is detected. • `block-mode`—The browser will block the page when a XSS attack is detected.	
allow-from-source "<allow-from_str>"	Sets the specified domain if the name {x-frame-options | x-content-type-options | x-xss-protection | content-security-policy | feature-policy | permissions-policy | referrer-policy | cross-origin-resource-policy | cross-origin-embedder-policy | cross-origin-opener-policy | clear-site-data | timing-allow-origin | content-security-policy-report-only} on page 553 is `x-frame-options` and the Header Value is set to `allow-from`.	No default.

Example

This example creates a HTTP header security policy.

```
config waf HTTP-header-security
   edit HTTP_header_security1
      set request-status enable
      set request-type plain
      set request-file "/bWAPP/clickjacking.php"
      config HTTP-header-security-list
         edit 1
            set name x-content-type-options
            set value nosniff
         next
         edit 2
            set name x-frame-options
            set value deny
         next
```

```
        edit 3
           set name x-xss-protection
           set value block-mode
        next
   next
end
```

waf HTTP-protocol-parameter-restriction

Use this command to configure HTTP protocol constraints.

HTTP constraints govern features such as the HTTP header fields in the protocol itself, as well as the length of the HTML, XML, or other documents or encapsulated protocols carried in the content payload.

Use protocol constraints to prevent attacks such as buffer overflows in web servers that do not restrict elements of the HTTP protocol to acceptable lengths, or mishandle malformed requests. Such errors can lead to security vulnerabilities.

You can also use protocol constraints to block requests that are too large for the memory size you have configured for FortiWeb's scan buffers. If your web applications do not require large HTTP `POST` requests, enable waf HTTP-protocol-parameter-restriction on page 556 to harden your configuration. To configure the buffer size, see system advanced on page 235.

You can configure each protocol parameter independently with a threat weight, action, severity, and trigger that determines how an attack on that parameter is handled. For example, you can set the action for header constraints to alert, the severity to high, and a trigger set to deliver an email each time FortiWeb detects a violation of these protocol parameters.

To apply HTTP protocol constraints, select them in an inline or Offline Protection profile. For details, see waf web-protection-profile inline-protection on page 720 and waf web-protection-profile offline-protection on page 731.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `wafgrp` area. For details, see Permissions on page 46.

Syntax

```
config waf HTTP-protocol-parameter-restriction
   edit "<HTTP-constraint_name>"
      set <constraint_name>-check {enable | disable}
      set <constraint_name>-action {alert | alert_deny | block-period | deny_no_log | client-id-
          block-period}
      set <constraint_name>-block-period <seconds_int>
      set <parameter_name>-threat-weight {low | critical | informational | moderate | substantial |
          severe}
      set <constraint_name>-severity {High | Medium | Low | Info}
      set <constraint_name>-trigger "<trigger-policy_name>"
      set Illegal-content-length-check-severity {High| Medium | Low | Info}
      set waf HTTP-protocol-parameter-restriction

   next
```

```
end
```

Variable	Description	Default
"<HTTP-constraint_name>"	Enter the name of a new or existing HTTP protocol constraint. The maximum length is 63 characters. To display the list of existing constraints, enter: `edit ?` For more information on the description of each constraints, refer to "HTTP/HTTPS protocol constraints" in FortiWeb Administration Guide.	No default.
Illegal-content-length-check-severity {High| Medium | Low | Info}	Set the threat severity in response to invalid `Content-Length:` header value.	`Medium`
<constraint_name>-check {enable | disable}	Specify whether FortiWeb includes the specified constraint when it applies this set of constraints.	The default values vary depending on different constraints.
<constraint_name>-action {alert | alert_deny | block-period | deny_no_log | client-id-block-period}	Select one of the following actions that the FortiWeb appliance will perform when an HTTP request violates one of the rules: • `alert`–Accept the request and generate an alert email and/or log message. • `alert_deny`–Block the request (or reset the connection) and generate an alert email and/or log message. • `deny_no_log`–Deny a request. Do not generate a log message. You can customize the web page that FortiWeb returns to the client with the HTTP status code. For details, see "system replacemsg" on page 1. • `block-period`–Block subsequent requests from the client's IP address for a number of seconds. Also configure <constraint_name>-block-period <seconds_int> on page 559. **Note:** If FortiWeb is deployed behind a NAT load balancer, when using this option, you **must** also define an X-header that indicates the original client's IP (see waf x-forwarded-for on page 746). Failure	`alert`

Variable	Description	Default
	to do so may cause FortiWeb to block **all** connections when it detects a violation of this type. • `client-id-block-period`—Block subsequent requests from the client id for a number of seconds. Also configure <constraint_name>-block-period <seconds_int> on page 559. **Note:** To use this option you must enable Client Management in the server policy. **Caution:** The action setting is ignored when the value of monitor-mode {enable | disable} on page 166 is `enable`. **Note:** Logging and/or alert email will occur only if enabled and configured. For details, see log disk on page 66 and log alertMail on page 60. **Note:** If you select an auto-learning profile with this rule, you should select `alert`. If the `action` is `alert_deny`, for example, the FortiWeb appliance will block the request or reset the connection when it detects an attack, resulting in incomplete session information for the auto-learning feature. For details about auto-learning requirements, see "waf web-protection-profile autolearning-profile" on page 1. **Note:** This is not a single setting. Configure the action setting for each violation type. The number of action settings equals the number of violation types. For example, for maximum HTTP header length violations, you might type the accompanying setting: `set max-HTTP-header-length-action alert` **Note:** Available actions vary depending on operating mode and protocol parameter.	
<constraint_name>-severity {High | Medium | Low | Info}	Select the severity level to use in logs and reports generated when a violation of the rule occurs. **Note:** This is not a single setting. Configure the severity setting for each violation type. The number of severity settings equals the number of violation types.	`Medium`

Variable	Description	Default
	For example, for maximum HTTP header length violations, you might type the accompanying setting: `set max-HTTP-header-length-severity High`	

<constraint_name>-trigger "<trigger-policy_name>"	Enter the name of the trigger to apply when this rule is violated (see log trigger-policy on page 97). The maximum length is 63 characters.
	To display the list of existing trigger policies, enter:
	`set trigger ?`
	Note: This is not a single setting. Configure the trigger setting for each violation type. The number of trigger settings equals the number of violation types.
	For example, for maximum HTTP header length violations, you might type accompanying setting:
	`set max-HTTP-header-length-trigger trigger-policy1`
		No default.

<constraint_name>-block-period <seconds_int>	If `action` is `block-period`, type the number of seconds that the connection will be blocked.	`600`
<parameter_name>-threat-weight {low | critical | informational | moderate | substantial | severe}	Set the threat weight for an event when FortiWeb detects a violation of a parameter restriction rule. For details, see the *FortiWeb Administration Guide*: https://docs.fortinet.com/document/fortiweb.	No default.

Example

This example limits the total size of the HTTP header, including all lines, to 2,048 bytes. If the HTTP header length exceeds 2,048 bytes, the FortiWeb appliance takes an action to create a log message (`alert`), identifying the violation as `medium` severity, and sends an email to the administrators defined within the trigger policy `email-admin`.

```
config waf HTTP-protocol-parameter-restriction
   edit "HTTP-constraint1"
      set max-HTTP-header-length 2048
      set max-HTTP-header-length-action alert
      set max-HTTP-header-length-severity Medium
      set max-HTTP-header-length-trigger email-admin
   next
end
```

Related topics

- waf web-protection-profile inline-protection on page 720
- waf web-protection-profile offline-protection on page 731
- log trigger-policy on page 97
- server-policy custom-application application-policy on page 1
- debug application HTTP on page 1
- debug flow trace on page 789

waf HTTP-request-flood-prevention-rule

Use this command to limit the maximum number of HTTP requests per second coming from any client to a specific URL on one of your protected servers.

The FortiWeb appliance tracks the requests using a session cookie. If the count exceeds the request limit, FortiWeb performs the specified action.

To apply this rule, include it in an application-layer DoS-prevention policy. This feature is effective only when client-management {enable | disable} on page 722 is enabled in the inline protection profile that uses the parent DoS-prevention policy.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `wafgrp` area. For details, see Permissions on page 46.

Syntax

```
config waf HTTP-request-flood-prevention-rule
   edit "<rule_name>"
      set access-limit-in-HTTP-session <limit_int>
      set action {alert | alert_deny | block-period | deny_no_log}
      set bot-recognition {captcha-enforcement | captcha-puzzle-enforcement | recaptcha-
           enforcement | recaptcha-v3-enforcement | real-browser-enforcement | disable}
      set recaptcha <recaptcha_server_name>
      set max-attempt-times <attempts_int>
      set validation-timeout <seconds_int>
      set block-period <seconds_int>
      set severity {High | Medium | Low | Info}
      set trigger-policy "<trigger-policy_name>"
      set mobile-app-identification {disabled | mobile-token-validation}
      set bot-confirmation {enable | disable}


   next
end
```

Variable	Description	Default
"<rule_name>"	Enter the name of a new or existing rule. The maximum length is 63 characters. To display the list of existing rules, enter: `edit ?`	No default.
access-limit-in-HTTP-session <limit_int>	Enter the maximum number of HTTP connections allowed per second from the same client. The valid range is 0–4,096. To disable the limit, enter `0`.	0
action {alert | alert_deny | block-period | deny_no_log}	Select one of the following actions that the FortiWeb appliance will perform when the count exceeds the limit: • `alert`–Accept the request and generate an alert email and/or log message. • `alert_deny`–Block the request (or reset the connection) and generate an alert email and/or log message. You can customize the web page that FortiWeb returns to the client with the HTTP status code. For details, see "system replacemsg" on page 1. • `block-period`–Block subsequent requests from the client for a number of seconds. Also configure block-period <seconds_int> on page 564. **Note:** If FortiWeb is deployed behind a NAT load balancer, when using this option, you **must** also define an X-header that indicates the original client's IP (see waf x-forwarded-for on page 746). Failure to do so may cause FortiWeb to block **all** connections when it detects a violation of this type. • `deny_no_log`–Deny a request. Do not generate a log message. **Caution:** This setting will be ignored if monitor-mode {enable | disable} on page 166 is enabled. **Note:** Logging and/or alert email will occur only if enabled and configured. For details, see log disk on page 66 and log alertMail on page 60.	`alert`

Variable	Description	Default
	Note: If you select an auto-learning profile with this rule, you should select `alert`. If the `action` is `alert_deny`, for example, the FortiWeb appliance will block the request or reset the connection when it detects an attack, resulting in incomplete session information for the auto-learning feature. For details about auto-learning requirements, see "waf web-protection-profile autolearning-profile" on page 1.	

bot-recognition {captcha-enforcement | captcha-puzzle-enforcement | recaptcha-enforcement | recaptcha-v3-enforcement | real-browser-enforcement | disable}	Select between:
	• `captcha-enforcement`—Requires the client to successfully fulfill a CAPTCHA request. If the client cannot successfully fulfill the request within the max-attempt-times <attempts_int> on page 563, or doesn't fulfill the request within the validation-timeout <seconds_int> on page 564, FortiWeb applies the `action` and sends the CAPTCHA block page.
	• `captcha-puzzle-enforcement`—Presents an interactive image-based puzzle challenge to the user. This method is resistant to headless browsers and scripted bots, and is suitable for high-security scenarios where traditional challenges are easily bypassed. If the client cannot successfully fulfill the request within the max-attempt-times <attempts_int> on page 563, or doesn't fulfill the request within the validation-timeout <seconds_int> on page 564, FortiWeb applies the `action`.
	When selected:
	  • FortiWeb intercepts the request and serves a visual CAPTCHA that requires drag-and-drop interaction before allowing access to the backend.
	  • The original backend response is cached by FortiWeb and only delivered after the user successfully completes the challenge.
	  • No customization of the puzzle or replacement message is currently supported.
	• `recaptcha-enforcement`—Requires the client to successfully fulfill a reCAPTCHA
		`disable`

Variable	Description	Default

	request. If the client cannot successfully fulfill the request within the validation-timeout <seconds_int> on page 564, FortiWeb applies the `action` and sends the CAPTCHA block page. CAPTCHA verification will not pop out for the bot confirmation again for the same user within 10 mins timeout.
	• `recaptcha-v3-enforcement`: Requires the client to successfully fulfill a reCAPTCHA v3 request. If the client cannot successfully fulfill the request within the Validation Timeout, FortiWeb applies the Action and sends the reCAPTCHA block page. For details, see "Customizing error and authentication pages (replacement messages)" in *FortiWeb Administration Guide*.
	You can set the threshold of the reCAPTCHA v3 score through CLI
	`config system recaptcha-api`
	`set recaptcha-v3-score-threshold <string> *The value range is 0 to 1`
	`end`
	• `real-browser-enforcement`—Enable to return a JavaScript to the client to test whether it is a web browser or automated tool when it violates the access rule. If the client either fails the test or does not return results before the timeout specified by validation-timeout <seconds_int> on page 564, FortiWeb applies the specified action. If the client appears to be a web browser, FortiWeb allows the client to violate the rule.
	• `disable`—Disable this option to simply apply the access rule.	

`recaptcha <recaptcha_server_name>`	Enter the reCAPTCHA server you have created through user recaptcha-user	No default.
max-attempt-times <attempts_int>	If `captcha-enforcement` or `captcha-puzzle-enforcement` is selected for bot-recognition {captcha-enforcement | captcha-puzzle-enforcement | recaptcha-enforcement | recaptcha-v3-enforcement | real-browser-enforcement | disable} on page 562, enter the maximum number of attempts that a client may attempt to fulfill a CAPTCHA/Puzzle CAPTCHA request. The valid range is 1-5.	3

Variable	Description	Default
	Available only when `captcha-enforcement` or `captcha-puzzle-enforcement` is selected for `bot-recognition`.	
validation-timeout <seconds_int>	Specify the maximum amount of time (in seconds) that FortiWeb waits for results from the client for Real Browser Enforcement. The valid range is 5-30.	20
block-period <seconds_int>	If `action` is `block-period`, type the number of seconds that the connection will be blocked. This setting applies only if `action` is `block-period`. The valid is from 1 to 10,000 seconds.	`600`
severity {High | Medium | Low | Info}	Select the severity level to use in logs and reports generated when a violation of the rule occurs.	Medium
trigger-policy "<trigger-policy_name>"	Enter the name of the trigger to apply when this rule is violated. For details, see log trigger-policy on page 97. The maximum length is 63 characters. To display the list of existing trigger policies, enter: `set trigger ?`	No default.
mobile-app-identification {disabled | mobile-token-validation}	**Disabled:** Disable not to carry out the mobile token verification. **Mobile Token Validation:** Requires the client to use mobile token for verification. To apply mobile token validation, you must enable Mobile App Identification in waf web-protection-profile inline-protection on page 720	`Disabled`
bot-confirmation {enable | disable}	Enable to choose how to verify users when the rules of bot detection are triggered.	`Disabled`

Example

This example illustrates a rule that imposes a two-minute blocking period on clients that exceed the set request limit.

```
config waf HTTP-request-flood-prevention-rule
   edit "Web Portal HTTP Request Limit"
      set access-limit-in-HTTP-session 10
      set action block-period
      set block-period 120
      set severity Medium
      set trigger-policy "Server_Policy_Trigger"
   next
end
```

Related topics

- log trigger-policy on page 97
- waf application-layer-dos-prevention on page 446

waf input-rule

Use this command to configure input rules.

Input rules define whether or not parameters are required, and sets their maximum allowed length, for HTTP requests matching the host and URL defined in the input rule.

Each input rule contains one or more individual rules. This enables you to define, within one input rule, all parameter restrictions that apply to HTTP requests matching that URL and host name.

For example, one web page might have multiple inputs: a user name, password, and a preference for whether or not to remember the login. Within the input rule for that web page, you could define separate rules for each parameter in the HTTP request: one rule for the user name parameter, one rule for the password parameter, and one rule for the preference parameter.

To apply input rules, select them within a parameter validation rule. For details, see waf parameter-validation-rule on page 626.

Before you configure an input rule, if you want to apply it only to HTTP requests for a specific real or virtual host, you must first define the web host in a protected hosts group. For details, see server-policy allow-hosts on page 106.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `wafgrp` area. For details, see Permissions on page 46.

Syntax

```
config waf input-rule
   edit "<input-rule_name>"
      set action {alert | alert_deny | redirect | send_403_forbidden | block-period | deny_no_
          log}
      set block-period <seconds_int>
      set host "<protected-host_name>"
      set host-status {enable | disable}
      set request-file "<url_str>"
      set request-type {plain | regular}
      set maximum-parameter-number <int>
      set json-parameter-support {enable | disable}
      set severity {High | Medium | Low | Info}
      set trigger "<trigger-policy_name>"
      set block_unknown_parameters {enable | disable}
      config rule-list
         edit <entry_index>
            set type-checked {enable | disable}
            set argument-type {custom-data-type | data-type | regular-expression}
            set argument-name-type {plain | regular}
```

```
            set argument-name "<input_name>"
            set argument-expression "<regex_pattern>"
            set custom-data-type "<custom-data-type_name>"
            set data-type "<predefined_name>"
            set is-essential {yes | no}
            set max-length <limit_int>
            set location {url | body}
            set from-json {yes | no}
        next
    end
  next
end
```

Variable	Description	Default
"<input-rule_name>"	Enter the name of a new or existing rule. The maximum length is 63 characters. To display the list of existing rules, enter: `edit ?`	No default.
action {alert | alert_deny | redirect | send_403_ forbidden | block-period | deny_no_log}	Select one of the following actions that the FortiWeb appliance will perform when an HTTP request violates one of the input rules in the entry: • `alert`–Accept the request and generate an alert email and/or log message. • `alert_deny`–Block the request (or reset the connection) and generate an alert email and/or log message. You can customize the web page that FortiWeb returns to the client with the HTTP status code. For details, see "system replacemsg" on page 1. • `block-period`–Block subsequent requests from the client for a number of seconds. Also configure block-period <seconds_int> on page 567. • `redirect`–Redirect the request to the URL that you specify in the protection profile and generate an alert email and/or log message. Also configure redirect-url "<redirect_fqdn>" on page 728 and rdt-reason {enable | disable} on page 729. • `send_403_forbidden`–Reply to the client with an HTTP `403 Access Forbidden` error message and generate an alert email and/or log message. **Caution:** This setting will be ignored if monitor-mode {enable | disable} on page 166 is enabled. **Note:** Logging and/or alert email will occur only if enabled and configured. For details, see log disk on page 66 and log alertMail on page 60.	`alert`

Variable	Description	Default
	Note: If you select an auto-learning profile with this rule, you should select `alert`. If the `action` is `alert_deny`, for example, the FortiWeb appliance will block the request or reset the connection when it detects an attack, resulting in incomplete session information for the auto-learning feature. For details about auto-learning requirements, see "waf web-protection-profile autolearning-profile" on page 1.	
block-period <seconds_int>	Enter the number of seconds to block the source IP. The valid range is 1-3,600 seconds. This setting applies only if action {alert | alert_deny | redirect | send_403_forbidden | block-period | deny_no_log} on page 566 is `block-period`.	`600`
host "<protected-host_name>"	Enter the name of a protected host that the `Host:` field of an HTTP request must be in order to match the rule. The maximum length is 255 characters. This setting applies only if host-status {enable | disable} on page 567 is `enable`.	No default.
host-status {enable | disable}	Enable to apply this input rule only to HTTP requests for specific web hosts. Also configure host "<protected-host_name>" on page 567. Disable to match the input rule based upon the other criteria, such as the URL, but regardless of the `Host:` field.	`disable`
request-file "<url_str>"	Depending on your selection in request-type {plain | regular} on page 567, enter either: • The literal URL, such as `/index.php`, that the HTTP request must contain in order to match the input rule. The URL must begin with a slash (/). • A regular expression, such as `^/*.php`, matching all and only the URLs to which the input rule should apply. The pattern is **not** required to begin with a slash (/). However, it must at least match URLs that begin with a slash, such as `/index.cfm`. Do not include the name of the web host, such as `www.example.com`, which is configured separately in host "<protected-host_name>" on page 567. The maximum length is 255 characters. **Note:** Regular expressions beginning with an exclamation point (!) are not supported. For information on language and regular expression matching, see the *FortiWeb Administration Guide*: https://docs.fortinet.com/document/fortiweb	No default.
request-type {plain | regular}	Select whether request-file "<url_str>" on page 567 will contain a literal URL (`plain`), or a regular expression	`plain`

Variable	Description	Default
	designed to match multiple URLs (`regular`).	
maximum-parameter-number <int>	Limit the maximum number of parameters in a request; The valid range is from 0 to 1024; When the value is 0, FortiWeb will not check the parameter number.	0
json-parameter-support {enable | disable}	Enabled to check the parameters in JSON or not. The JSON data could be in URL or Body. If enabled, the **maximum-parameter-number** will include JSON parameters.	`disable`
severity {High | Medium | Low | Info}	Select the severity level to use in logs and reports generated when a violation of the rule occurs.	`Low`
trigger "<trigger-policy_name>"	Enter the name of the trigger to apply when this rule is violated. For details, see log trigger-policy on page 97. The maximum length is 63 characters. To display the list of existing trigger policies, enter: `set trigger ?`	No default.
block_unknown_parameters {enable | disable}	By default, FortiWeb forwards parameters that are not in the configured input rule list to subsequent security modules for further inspection. If you prefer to directly block requests containing unlisted parameters, you can enable this setting.	`disable`
<entry_index>	Enter the index number of the individual entry in the table. The valid range is 1-9,999,999,999,999,999,999.	No default.
is-essential {yes | no}	Select `yes` if the parameter is required for HTTP requests to this combination of `Host:` field and URL. Otherwise, select `no`.	`no`
max-length <limit_int>	Enter the maximum allowed length of the parameter value. The valid range is 0-1,024. To disable the limit, enter `0`.	`0`
location {url | body}	Specify where this parameter is from. The parameter will only be checked when it's from the selected location. You can select both url and body, for example, `set location url body`.	url body
from-json {yes | no}	Specify whether this parameter is from JSON. You must also enable **json-parameter-support** for this option to function.	no
type-checked {enable | disable}	Enable to use predefined or configured data types when validating parameters. Also configure argument-type {custom-data-type | data-type | regular-expression} on page 569. Disable to ignore `data-type` and `custom-data-type` settings.	`disable`

Variable	Description	Default
argument-type {custom-data-type | data-type | regular-expression}	Specify the type of argument.	data-type
argument-name-type {plain | regular}	Specify one of the following options: • `plain`—`argument-name` is the name attribute of the parameter's input tag exactly as it appears in the form on the web page. • `regular`—`argument-name` is a regular expression designed to match the name attribute of the parameter's input tag.	plain
argument-name "<input_name>"	If argument-name-type {plain | regular} on page 569 is `plain`, specify the name of the input as it appears in the HTTP content, such as `username`. The maximum length is 63 characters. If `argument-name-type` is `regular`, specify a regular expression designed to match the name attribute of the parameter's input tag.	No default.
argument-expression "<regex_pattern>"	Enter a regular expression that matches all valid values, and no invalid values, for this input. The maximum length is 2,071 characters. **Note:** Regular expressions beginning with an exclamation point (`!`) are not supported.	
custom-data-type "<custom-data-type_name>"	Enter the name of a custom data type, if any. The maximum length is 63 characters. To display the list of custom data types, enter: `set custom-data-type ?` This setting applies only if type-checked {enable | disable} on page 568 is `enable`.	No default.
data-type "<predefined_name>"	Select one of the predefined data types, if the input matches one of them (available options vary by FortiGuard updates). To display available options, enter: `set data type ?` For match descriptions of each option, see "server-policy pattern data-type-group" on page 1. Alternatively, configure argument-type {custom-data-type | data-type | regular-expression} on page 569. This option is ignored if you configure `argument-type`, which also defines parameters to which the input rule applies, but supersedes this option.	No default.

Example

This example blocks and logs requests for the file named login.php that do not include a user name and password, both of which are required, or whose user name and password exceed the 64-character limit.

```
config waf input-rule
   edit "input_rule1"
      set action alert_deny
      set request-file "/login.php?*"
      request-type regular
      config rule-list
         edit 1
            set argument-name "username"
            set argument-type data-type
            set data-type Email
            set is-essential yes
            set max-length 64
         next
         edit 2
            set argument-name "password"
            set data-type String
            set is-essential yes
            set max-length 64
         next
      end
   next
end
```

Related topics

- server-policy allow-hosts on page 106
- waf parameter-validation-rule on page 626

waf ip-intelligence

Use this command to configure reputation-based source IP blacklisting.

Clients with suspicious behaviors or poor reputations include spammers, phishers, botnets, and anonymizing proxy users. If you have purchased a subscription for the FortiGuard IP Reputation service, your FortiWeb can periodically download an updated blacklist to keep your appliance current with changes in dynamic IPs, spreading virus infections, and spammers changing service providers.

IP intelligence settings apply globally, to all policies that use this feature.

Before or after using this command, use waf ip-intelligence-exception on page 573 to configure any exemptions that you want to apply. To apply IP reputation-based blocking, configuring these category settings first, then enable ip-intelligence {enable | disable} on page 727 in the server policy's protection profile.

Alternatively, you can block sets of many clients based upon their geographical origin (see waf geo-block-list on page 529) or manually by specific IPs (see "server-policy custom-application application-policy" on page 1).

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `wafgrp` area. For details, see Permissions on page 46.

Syntax

```
config waf ip-intelligence
   edit <entry_index>
      set action {alert | alert_deny | redirect | send_403_forbidden | block-period | deny_no_log}
      set block-period <seconds_int>
      set category "<category_name>"
      set severity {Low | Medium | High | Info}
      set status {enable | disable}
      set trigger "<trigger-policy_name>"
   next
end
```

Variable	Description	Default
<entry_index>	Enter the index number of the individual entry in the table entry in the table.	No default.
action {alert | alert_deny | redirect | send_403_ forbidden | block-period | deny_no_log}	Select one of the following actions that the FortiWeb appliance performs when a client's source IP matches the blacklist category: • `alert`–Accept the request and generate an alert email and/or log message. • `alert_deny`–Block the request (or reset the connection) and generate an alert email and/or log message. You can customize the web page that FortiWeb returns to the client with the HTTP status code. For details, see "system replacemsg" on page 1. • `block-period`–Block subsequent requests from the client for a number of seconds. Also configure block-period <seconds_int> on page 572. • `redirect`–Redirect the request to the URL that you specify in the protection profile and generate an alert email and/or log message. Also configure redirect-url "<redirect_fqdn>" on page 728 and rdt-reason {enable | disable} on page 729. • `send_403_forbidden`–Reply to the client with an HTTP `403 Access Forbidden` error message and generate an alert email and/or log message. • `deny_no_log`–Deny a request. Do not generate a log message.	block-period

Variable	Description	Default
	Caution: FortiWeb ignores this setting when monitor-mode {enable | disable} on page 166 is enabled. **Note:** Logging and/or alert email will occur only if enabled and configured. For details, see log disk on page 66 and log alertMail on page 60. **Note:** If you select an auto-learning profile with this rule, you should select `alert`. If the `action` is `alert_deny`, for example, the FortiWeb appliance will block the request or reset the connection when it detects an attack, resulting in incomplete session information for the auto-learning feature. For details about auto-learning requirements, see "waf web-protection-profile autolearning-profile" on page 1.	
block-period <seconds_int>	Enter the number of seconds to block the source IP. The valid range is 1-3,600 seconds. This setting applies only if action {alert | alert_deny | redirect | send_403_forbidden | block-period | deny_no_log} on page 571 is `block-period`.	`60`
category "<category_name>"	Enter the name of an existing IP intelligence category, such as `"Anonymous Proxy"` or `Botnet`. If the category name contains a space, you must surround the name in double quotes. The maximum length is 63 characters. Category names vary by the version number of your FortiGuard IRIS package.	No Default.
status {enable | disable}	Enable to block clients whose source IP belongs to this category according to the FortiGuard IRIS service.	`disable`
severity {Low | Medium | High | Info}	When rule violations are recorded in the attack log, each log message contains a **Severity Level** (`severity_level`) field. Select which severity level the FortiWeb appliance uses when a blacklisted IP address attempts to connect to your web servers: • `Low` • `Medium` • `High` • `Info`	`Low`
trigger "<trigger-policy_name>"	Select which trigger, if any, that the FortiWeb appliance uses when it logs and/or sends an alert email about a blacklisted IP address's attempt to connect to your web servers. For details, see log trigger-policy on page 97. The maximum length is 63 characters. To display the list of existing trigger policies, enter: `set trigger ?`	No default.

Example

The following command blacklists clients whose source IPs are currently known by Fortinet to be members of a botnet. In the FortiGuard IRIS package for this example, “Botnet” is the first item in the list of categories.

When a botnet member makes a request, FortiWeb blocks the connection and continues to block it without re-evaluating it for the next 6 minutes (360 seconds). FortiWeb logs the event with a high severity level and sends notifications to the Syslog and email servers specified in `notification-servers1`.

```
config waf ip-intelligence
   edit 1
      set status enable
      set action period_block
      set block-period 360
      set severity High
      set trigger-policy "notification-servers1"
      set ignore-x-forwarded-for disable
   next
end
```

Related topics

- waf ip-intelligence-exception on page 573
- log trigger-policy on page 97
- waf web-protection-profile inline-protection on page 720
- waf web-protection-profile offline-protection on page 731
- waf geo-block-list on page 529
- server-policy custom-application application-policy on page 1
- debug flow trace on page 789

waf ip-intelligence-exception

Use this command to exempt IP addresses from reputation-based blocking. The settings apply globally, to all policies that use this feature.

To use this command, your administrator account’s access control profile must have either `w` or `rw` permission to the `wafgrp` area. For details, see Permissions on page 46.

Syntax

```
config waf ip-intelligence-exception
   edit <entry_index>
      set status {enable | disable}
      set group-type {ip-string | ip-group}
      set ip-group <name>
      set ip "<client_ipv4>"
```

```
    next
end
```

Variable	Description	Default
<entry_index>	Enter the index number of the individual entry in the table entry in the table. The valid range is 1-9,999,999,999,999,999,999.	No default.
status {enable | disable}	Enable to exempt clients from IP reputation-based blocking.	`disable`
group-type {ip-string | ip-group}	Select **ip-string** to enter IP addresses or ranges, or **ip-group** to reference the IP groups you have created through `config server-policy ip-group`.	ip-string
ip "<client_ipv4>"	Enter the client's source IP address. Available only when the `group-type` is `ip-string`.	No default.
ip-group <name>	If you have selected **ip-group** for **group-type**, then specify the IP Group you have created through `config server-policy ip-group`. By using the IP group, you can save the effort to type the IP addresses every time you need to re-use them. Available only when the `group-type` is `ip-group`.	No default.

Example

See waf ip-intelligence-ignore-x-forwarded-for on page 574.

Related topics

- waf ip-intelligence-ignore-x-forwarded-for on page 574

waf ip-intelligence-ignore-x-forwarded-for

Use this command to configure ignoring x-forwarded-for in reputation-based source IP blacklisting.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `wafgrp` area. For details, see Permissions on page 46.

Syntax

```
config waf ip-intelligence-ignore-x-forwarded-for
```

```
    set ignore-x-forwarded-for {enable | disable}
end
```

Variable	Description	Default
ignore-x-forwarded-for {enable | disable}	By default, FortiWeb scans the IP addresses in the X-Forwarded-For header at the HTTP layer. This causes high resource consumption. To enhance the performance, you can enable **Ignore X-Forwarded-For** so that the IP addresses can be scanned at the TCP layer instead. This avoids HTTP packets being processed unnecessarily.	disable

Related topics

- waf ip-intelligence on page 570
- waf ip-intelligence-exception on page 573
- log trigger-policy on page 97
- waf web-protection-profile inline-protection on page 720
- waf web-protection-profile offline-protection on page 731
- waf geo-block-list on page 529
- server-policy custom-application application-policy on page 1
- debug flow trace on page 789

waf ip-list

Use this command to define which source IP addresses are trusted clients, undetermined, or distrusted.

- **Trusted IPs**–Almost always allowed to access to your protected web servers. Trusted IPs are exempt from many (but not all) of the restrictions that would otherwise be applied by a server policy. To determine skipped scans, see debug flow trace on page 789.
- **Neither**–If a source IP address **is neither** explicitly blacklisted or trusted by an IP list policy, the client can access your web servers, **unless** it is blocked by any of your other configured, subsequent web protection scan techniques. For details, see debug flow trace on page 789.
- **Blacklisted IPs**–Blocked and prevented from accessing your protected web servers. Requests from blacklisted IP addresses receive a warning message in response. The warning message page includes **ID: 70007**, which is the ID of all attack log messages about requests from blacklisted IPs.

Because FortiWeb evaluates trusted and blacklisted IP policies before many other techniques, defining these IP addresses can improve performance.

Alternatively, you can block sets of many clients based upon their reputation (see waf ip-intelligence-ignore-x-forwarded-for on page 574) or geographical origin (see waf geo-block-list on page 529).

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `wafgrp` area. For details, see Permissions on page 46.

Syntax

```
config waf ip-list
   edit "<ip-list_name>"
      set severity {Low | Medium | High | Info}
      set action { alert_deny | block-period | deny_no_log}
      set block-period <block_period_int>
      set ignore-x-forwarded-for {enable | disable}
      set trigger-policy "<trigger-policy_name>"
      config members
         edit waf ip-list
            set group-type {ip-string | ip-group | IP-external}
            set ip "<client_ip>"
            set ip-group <name>
            set type {trust-ip | black-ip | allow-only-ip }
         next
      end
   next
end
```

Variable	Description	Default
"<ip-list_name>"	Enter the name of a new or existing rule. The maximum length is 63 characters. To display the list of existing rules, enter: `edit ?`	No default.
action { alert_deny | block-period | deny_no_log}	Select which action FortiWeb will take when it detects a violation of the rule: • `alert_deny`–Block the request (or reset the connection) and generate an alert and/or log message. • `deny_no_log`–Block the request (or reset the connection). • `block-period`–Block subsequent requests from the client for a number of seconds. Also configure `block-period`. **Note:** This setting will be ignored if monitor-mode {enable | disable} on page 166 is enabled in a server policy.	block-period
block-period <block_period_int>	Enter the number of seconds that you want to block subsequent requests from a client after FortiWeb detects that the client has violated the rule. The valid range is 1-3,600 seconds. This setting is available only if `Action` is set to `block-period`.	`60`

Variable	Description	Default
severity {Low | Medium | High | Info}	When rule violations are recorded in the attack log, each log message contains a **Severity Level** (`severity_level`) field. Select which severity level the FortiWeb appliance will use when a blacklisted IP address attempts to connect to your web servers: • `Low` • `Medium` • `High` • `info`	low
trigger-policy "<trigger-policy_name>"	Select which trigger, if any, that the FortiWeb appliance will use when it logs and/or sends an alert email about a blacklisted IP address's attempt to connect to your web servers. The maximum length is 63 characters. For details, see log trigger-policy on page 97. To display the list of existing trigger policies, enter: `set trigger ?`	No default.
ignore-x-forwarded-for {enable | disable}	By default, FortiWeb scans the IP addresses in the X-Forwarded-For header at the HTTP layer. This causes high resource consumption. To enhance the performance, you can enable **Ignore X-Forwarded-For** so that the IP addresses can be scanned at the TCP layer instead. This avoids HTTP packets being processed unnecessarily.	disable
<entry_index>	Enter the index number of the individual entry in the table. The valid range is 1-9,999,999,999,999,999,999.	No default.
group-type {ip-string | ip-group | IP-external}	Select **ip-string** to enter IP addresses or ranges, or **ip-group** to reference the IP groups you have created through `config server-policy ip-group`, or **IP-external** to reference an external IP address resource you have created through `config system external-resource`.	ip-string
ip "<client_ip>"	If you have selected **ip-string** for **group-type**, then enter one of the following values: • A single IP address that a client source IP must match, such as a trusted private network IP address (e.g. an administrator's computer, `172.16.1.20`). Multiple addresses or ranges should be separated with comma ",". • A range or addresses (e.g. 1.2.3.4,2001::1,1.2.3.4-1.2.3.40,2001::1-2001::100).	No default.

Variable	Description	Default
ip-group <name>	If you have selected **ip-group** for **group-type**, then specify the IP Group you have created through `config server-policy ip-group`. By using the IP group, you can save the effort to type the IP addresses every time you need to re-use them.	No default.
type {trust-ip | black-ip | allow-only-ip }	Select either: • `black-ip`—The source IP address that is **dis**trusted, and is permanently blocked (blacklisted) from accessing your web servers, even if it would normally pass all other scans. **Note:** If multiple clients share the same source IP address, such as when a group of clients is behind a firewall or router performing network address translation (NAT), blacklisting the source IP address could block innocent clients that share the same source IP address with an offending client. • `trust-ip`—The source IP address is trusted and allowed to access your web servers, **unless** it fails a previous scan. For details, see "Sequence of scans" on page 1. By default, if the IP address of a request is neither in the Block IP nor Trust IP list, FortiWeb will pass this request to other scans to decide whether it is allowed to access your web servers. However, you can define the `allow-only-ip` IP addresses so that such requests can be screened against the Allow Only IPs before they are passed to other scans. • `allow-only-ip`—If the source IP address is a `allow-only-ip`, it will be passed to other scans to decide whether it's allowed to access your web servers. If not, FortiWeb will take actions according to the trigger policy. If the Allow Only range is empty, then the source IP addresses which are not in the Block IP and Trust IP list will be passed directly to other scans. Requests that are blocked according to the IP Lists will receive a warning message as the HTTP response. The warning message page includes **ID: 70007**, which is the ID of all attack log messages about requests from blocked IPs.	`trust-ip`

Example

The following shows the configuration for a trusted host of `192.0.2.0` followed by a blacklisted client of `192.0.2.1`.

```
config waf ip-list
   edit "IP-List-Policy1"
      config members
         edit 1
```

```
            set ip "192.0.2.0"
            next
         edit 2
            set type black-ip
            set ip "192.0.2.1"
            set severity Medium
            set trigger-policy "TriggerActionPolicy1"
         next
      end
   next
end
```

Related topics

- log trigger-policy on page 97
- waf web-protection-profile inline-protection on page 720
- waf web-protection-profile offline-protection on page 731
- waf geo-block-list on page 529
- waf ip-intelligence-ignore-x-forwarded-for on page 574
- debug flow trace on page 789

waf json-schema

Use this command to view JSON schema files that have already been uploaded to FortiWeb. You can upload JSON schema files only in the web UI.

You can reference the JSON schema file in a JSON protection rule, or add multiple JSON schema files in a group (`Config waf json-schema group`) then reference it in JSON protection rule.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `wafgrp` area. For details, see Permissions on page 46.

Syntax

```
config waf json-schema file
   edit "<json_schema_file_name>"
      set json-schema-version {Auto-identify | Draft-3| Draft-4| Draft-6| Draft-7| Draft-201909|
           Draft-202012}
   next
end
```

Variable	Description	Default
"<json_schema_file_name>"	To display a list of existing JSON schema files, enter: edit ?	No default.

Variable	Description	Default
json-schema-version {Auto-identify | Draft-3| Draft-4| Draft-6| Draft-7| Draft-201909| Draft-202012}	Select a JSON schema version. The system will check if schema file is valid against the specified version. If your select `Auto-identify`, FortiWeb will use the version stated by the '$schema' key in the JSON Schema file. If '$schema' is not found or incorrect, then all versions will be checked.	`Auto-identify`

Related topics

- waf json-validation rule on page 581
- waf json-schema group

waf json-schema group

Use this command to group multiple JSON Schemas together. The schema group can be referenced in a JSON Protection Rule. If a request does not match any of the schema in the group it will be considered as a violation.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `wafgrp` area. For details, see Permissions on page 46.

Syntax

```
Config waf json-schema group
   edit <json-schema-group-name>
      config members
         edit 1
            set member-name <schema-name1>
         next
         edit 2
            set member-name <schema-name2>
         next
      end
   end
end
```

Variable	Description	Default
<json-schema-group-name>	Enter a name for the JSON schema group.	No default.

Variable	Description	Default
member-name <schema-name>	select a **JSON Schema** you have created through `config waf json-schema file`.	No default.

Related topics

- waf json-schema
- waf json-validation rule on page 581

waf json-validation rule

Use this command to create JSON protection rules and configure JSON protection policies.

Syntax

```
config waf json-validation rule
   edit "<json_rule_name>"
      set host-status {enable | disable}
      set host "<host_name_str>"
      set request-type {plain | regular}
      set request-file "<file_str>"
      set Schema-type {single-schema|schema-group}
      set Schema-file <schema-file>
      set Schema-group <schema-group>
      set action {alert | alert_deny | block-period | redirect | send_403_forbidden | deny_no_log}
      set block-period <period_int>
      set severity {High  Low | Medium | Info}
      set trigger "<trigger_policy_name>"
      set waf json-validation rule
      set json-limits {enable | disable}
      set json-data-size "<json-data-size_int>"
      set key-size "<key-size_int>"
      set key-number "<key-number_int>"
      set value-size "<value-size_int>"
      set value-number-in-array "<value-number-in-array _int>"
      set object-depth "<object-depth_int>"
   next
end
config waf json-validation policy
   edit "<json_policy_name>"
      set enable-signature-detection {enable | disable}
      config input-rule-list
         edit "<input-rule-list_id>"
```

```
            set json_input_rule "<json_input_rule_str>"
        next
    end
  next
end
```

Variable	Description	Default
"<json_rule_name>"	Enter a name that can be referenced by other parts of the configuration. You will use the name to select the rule in a JSON protection policy.	No default.
`host-status {enable | disable}`	Enable to compare the JSON rule to the `Host: field` in the HTTP header. If enabled, also configure host "<host_name_str>" on page 582.	disable
`host "<host_name_str>"`	Enter the name of a protected host that the `Host:` field of an HTTP request must match in order for the rule to apply. For details, see server-policy allow-hosts on page 106.	No default.
request-type {plain | regular}	Select whether request-type {plain | regular} on page 582 must contain either: • `plain`–The field is a string that the request URL must match exactly. • `regular`–The field is a regular expression that defines a set of matching URLs.	No default.
request-file "<file_str>"	Depending on your selection for request-type {plain | regular} on page 582, enter either: • `plain`–The literal URL, such as `/index.php`, that the HTTP request must contain in order to match the rule. The URL must begin with a slash (/). • `regular`–A regular expression, such as `^/*.php`, matching the URLs to which the rule should apply. The pattern does not require a slash (/), but it must match URLs that begin with a slash, such as `/index.cfm`. Do not include the domain name, such as `www.example.com`, which is configured separately in host "<host_name_str>" on page 582.	No default.
Schema-type {single-schema|schema-group}	Select whether to use a single schema file or a schema group. If a request does not match the schema it will be considered as a violation.	single-schema
Schema-file <schema-file>	Select the schema file you have uploaded it through the **JSON Schema** tab in **API Protection > JSON Protection** in GUI. Please note the schema file can't be uploaded through CLI.	No default.
Schema-group <schema-group>	Select the schema group you have created through `config waf json-schema group`. For more information, see waf json-schema group on page 580.	No default.

Variable	Description	Default
action {alert | alert_deny | block-period | redirect | send_403_forbidden | deny_no_log}	Select one of the following actions that FortiWeb performs when a request violates the rule: • `alert`–Accept the request and generate an alert email and/or log message. • `alert_deny`–Block the request (or reset the connection) and generate an alert email and/or log message. You can customize the web page that FortiWeb returns to the client with the HTTP status code. For details, see "system replacemsg" on page 1. • `block-period`–Block subsequent requests from the client for a number of seconds. Also configure block-period <period_int> on page 583. • `redirect`–Redirect the request to the URL that you specify in the protection profile and generate an alert email and/or log message. • `send_403_forbidden`–Reply to the client with an HTTP `403 Access Forbidden` error message and generate an alert email and/or log message. • `deny_no_log`–Deny a request. Do not generate a log message. **Caution:**FortiWeb ignores this setting when monitor-mode {enable | disable} on page 166 is enabled. **Note:** Logging and/or alert email will occur only if enabled and configured. For details, see log disk on page 66 and log alertMail on page 60.	alert
block-period <period_int>	Enter the amount of time (in seconds) that you want to block subsequent requests from a client after FortiWeb detects a rule violation. This setting is available only when action {alert | alert_deny | block-period | redirect | send_403_forbidden | deny_no_log} on page 583 is `block-period`. The valid range is 1-3,600 seconds.	`600`
severity {High Low | Medium | Info}	When rule violations are recorded in the attack log, each log message contains a **Severity Level** field. Select which severity level FortiWeb will use when it logs a violation of the rule: • `Low` • `Medium` • `High` • `Info`	Low
trigger "<trigger_policy_name>"	Enter the name of the trigger, if any, to apply when the rule is violated. The maximum length is 63 characters. For details, see log trigger-policy on page 97.	No default.

Variable	Description	Default
	To display a list of existing triggers, enter: set trigger ?	
json-limits {enable | disable}	Enable to define limits for data size, key, and value, etc.	`disable`
json-data-size "<json-data-size_int>"	Enter the total size of JSON data in the JSON file. The valid range is 0–10240.	`1024`
key-size "<key-size_int>"	Enter the key size of each object. The valid range is 0-10240. The	`64`
key-number "<key-number_int>"	Enter the total key number of each JSON file. The valid range is 0-2147483647.	`256`
value-size "<value-size_int>"	Enter the value size of each key. The valid range is 0-10240.	`128`
value-number-in-array "<value-number-in-array _ int>"	Enter the total value number in an array. The valid range is 0-2147483647.	`256`
object-depth "<object-depth_int>"	Enter the number of the nested objects. The valid range is 0-2147483647.	`32`
`"<json_policy_name>"`	Enter the name of a JSON protection policy. You will use the name to select the policy in other parts of the configuration.	No default.
`"<input-rule-list_id>"`	Enter the index number of an entry to create or modify a rule for the policy.	No default.
`enable-signature-detection {enable | disable}`	Enable to scan for matches with attack and data leak signatures in JSON data submitted by clients in HTTP requests with Content-Type: `values application/json or text/json`.	`disable`
`json_input_rule "<json_input_rule_str>"`	Enter the sequence number of a JSON protection rule to add to the JSON protection policy.	No default.

Example

The below example creates a JSON protection rule and applies the rule to a new JSON protection policy.

```
config waf json-validation rule
   edit "example_rule_name_1"
      set action block-period
      set block-period 3000
      set severity Medium
      set trigger "example_trigger_policy_name"
      set host-status enable
      set host "example_host_name"
      set request-type plain
      set request-file "/index.php"
      set schema-file "example_schema_file_name"
```

```
      set json-limits enable
      set json-data-size 1030
      set key-size 100
      set key-number 300
      set value-size 200
      set object-depth 60
   next
end
config waf json-validation policy
   edit "example_policy_name"
      config input-rule-list
         edit "example_rule_1"
            set "example_rule_1"
         next
      end
   next
end
```

Related topics

- waf json-schema on page 579
- waf web-protection-profile inline-protection on page 720

waf known-bots

Known Bots protects your websites, mobile applications, and APIs from malicious bots such as DoS, Spam, and Crawler, etc, and known good bots such as known search engines without affecting the flow of critical traffic. This feature identifies and manages a wide range of attacks from automated tools no matter where these applications or APIs are deployed.

Use these commands to configure known bots prevention.

Syntax

```
config waf known-bots
   edit "known-bots_rule_name"
      set crawler-action {alert | redirect | deny_no_log | alert_deny | block_period | send_HTTP_
        response}
      set crawler-block-period <period_int>
      set crawler-severity {High | Medium | Low | Info}
      set crawler-status {enable | disable}
      set crawler-threat-weight {low | critical | informational | moderate | substantial | severe}
      set crawler-trigger <trigger_policy_name>
      set dos-action {alert | redirect | deny_no_log | alert_deny | block_period | send_HTTP_
        response}
      set dos-block-period <period_int>
      set dos-severity {High | Medium | Low | Info}
      set dos-status {enable | disable}
      set dos-threat-weight {low | critical | informational | moderate | substantial | severe}
      set dos-trigger <trigger_policy_name>
      set known-engines-action {alert | bypass | redirect | deny_no_log | alert_deny | block_period
        | send_HTTP_response}
      set known-engines-block-period <period_int>
      set known-engines-severity {High | Medium | Low | Info}
      set known-engines-status {enable | disable}
      set known-engines-threat-weight {low | critical | informational | moderate | substantial |
        severe}
      set known-engines-trigger <trigger_policy_name>
      set scanner-action {alert | redirect | deny_no_log | alert_deny | block_period | send_HTTP_
        response}
      set scanner-block-period <period_int>
      set scanner-severity {High | Medium | Low | Info}
      set scanner-status {enable | disable}
      set scanner-threat-weight {low | critical | informational | moderate | substantial | severe}
      set scanner-trigger <trigger_policy_name>
      set spam-action {alert | redirect | deny_no_log | alert_deny | block_period | send_HTTP_
        response}
      set spam-block-period <period_int>
      set spam-severity {High | Medium | Low | Info}
      set spam-status {enable | disable}
      set spam-threat-weight {low | critical | informational | moderate | substantial | severe}
      set spam-trigger <trigger_policy_name>
```

```
      set trojan-action {alert | redirect | deny_no_log | alert_deny | block_period | send_HTTP_
           response}
      set trojan-block-period <period_int>
      set trojan-severity {High | Medium | Low | Info}
      set trojan-status {enable | disable}
      set trojan-threat-weight {low | critical | informational | moderate | substantial | severe}
      set trojan-trigger <trigger_policy_name>
      config malicious-bot-disable-list
         edit "<malicious-bot-disable-list_name>"
         next
      end
      config known-good-bots-disable-list
         edit "<known-good-bots-disable-list_name>"
         next
      end
   next
end
```

Variable	Description	Default
"known-bots_rule_name"	Enter a name for the known bots rule name.	No default
crawler-action {alert | redirect | deny_no_log | alert_deny | block_period | send_HTTP_ response}	Select the action FortiWeb takes when this type attack is identified. • `alert`–Accept the request and generate an alert email and/or log message. • `alert_deny`–Block the request (or reset the connection) and generate an alert email and/or log message. You can customize the web page that FortiWeb returns to the client with the HTTP status code. For details, see system replacemsg-image on page 374. • `deny_no_log`–Block the request (or reset the connection). • `redirect`–Redirect the request to the URL that you specify in the protection profile and generate an alert email and/or log message. • `block_period`–Block subsequent requests from the client for a number of seconds. Also configure crawler-block-period <period_int> on page	`alert_deny`

Variable	Description	Default
	588. You can customize the web page that FortiWeb returns to the client with the HTTP status code. For details, see system replacemsg-image on page 374. • `send_HTTP_response`–Block and reply to the client with an HTTP error message and generate an alert email and/or log message. **Note:** Logging and/or alert email will occur only if enabled and configured. See log on page 815 and log alertMail on page 60.	
crawler-block-period <period_int>	Enter the number of seconds that you want to block subsequent requests from the client after the FortiWeb appliance detects this type attack.	`600`
crawler-severity {High | Medium | Low | Info}	When policy violations are recorded in the attack log, each log message contains a **Severity Level** (`severity_level`) field. Select which severity level FortiWeb will use when it logs an attack: • High • Medium • Low • Info	`High`
crawler-status {enable | disable}	Enable or disable the bot type detection for this rule.	`enable`
crawler-threat-weight {low | critical | informational | moderate | substantial | severe}	Set the threat weight for crawler bot attack.	`moderate`
crawler-trigger <trigger_policy_name>	Enter the name of the trigger to apply when this policy is violated. For details, see log trigger-policy on page 97. To display the list of existing triggers, enter: `set trigger ?`	No default

Variable	Description	Default
dos-action {alert | redirect | deny_no_log | alert_deny | block_period | send_HTTP_response}	Select the action FortiWeb takes when this type attack is identified. • `alert`–Accept the request and generate an alert email and/or log message. • `alert_deny`–Block the request (or reset the connection) and generate an alert email and/or log message. You can customize the web page that FortiWeb returns to the client with the HTTP status code. For details, see system replacemsg-image on page 374. • `deny_no_log`–Block the request (or reset the connection). • `redirect`–Redirect the request to the URL that you specify in the protection profile and generate an alert email and/or log message. • `block_period`–Block subsequent requests from the client for a number of seconds. Also configure dos-block-period <period_int> on page 589. You can customize the web page that FortiWeb returns to the client with the HTTP status code. For details, see system replacemsg-image on page 374. • `send_HTTP_response`–Block and reply to the client with an HTTP error message and generate an alert email and/or log message. **Note:** Logging and/or alert email will occur only if enabled and configured. See log on page 815 and log alertMail on page 60.	`alert_deny`
dos-block-period <period_int>	Enter the number of seconds that you want to block subsequent	`600`

Variable	Description	Default
	requests from the client after the FortiWeb appliance detects this type attack.	
dos-severity {High | Medium | Low | Info}	When policy violations are recorded in the attack log, each log message contains a **Severity Level** (`severity_level`) field. Select which severity level FortiWeb will use when it logs an attack: • High • Medium • Low • Info	`High`
dos-status {enable | disable}	Enable or disable the bot type detection for this rule.	`enable`
dos-threat-weight {low | critical | informational | moderate | substantial | severe}	Set the threat weight for DoS bot attack.	`critical`
dos-trigger <trigger_policy_name>	Enter the name of the trigger to apply when this policy is violated. For details, see log trigger-policy on page 97. To display the list of existing triggers, enter: `set trigger ?`	No default
known-engines-action {alert | bypass | redirect | deny_no_log | alert_deny | block_period | send_HTTP_response}	Select the action FortiWeb takes when this type attack is identified. • `alert`–Accept the request and generate an alert email and/or log message. • `bypass`–allow the request. • `alert_deny`–Block the request (or reset the connection) and generate an alert email and/or log message. You can customize the web page that FortiWeb returns to the client with the HTTP status code. For details, see system replacemsg-image on page 374. • `deny_no_log`–Block the request (or reset the connection).	`bypass`

Variable	Description	Default
	• `redirect`–Redirect the request to the URL that you specify in the protection profile and generate an alert email and/or log message. • `block_period`–Block subsequent requests from the client for a number of seconds. Also configure known-engines-block-period <period_int> on page 591. You can customize the web page that FortiWeb returns to the client with the HTTP status code. For details, see system replacemsg-image on page 374. • `send_HTTP_response`–Block and reply to the client with an HTTP error message and generate an alert email and/or log message. **Note:** Logging and/or alert email will occur only if enabled and configured. See log on page 815 and log alertMail on page 60.	
known-engines-block-period <period_int>	Enter the number of seconds that you want to block subsequent requests from the client after the FortiWeb appliance detects this type attack.	`600`
known-engines-severity {High | Medium | Low | Info}	When policy violations are recorded in the attack log, each log message contains a **Severity Level** (`severity_level`) field. Select which severity level FortiWeb will use when it logs an attack: • High • Medium • Low • Info	`Info`
known-engines-status {enable | disable}	Enable or disable the bot type detection for this rule.	`enable`

Variable	Description	Default
known-engines-threat-weight {low | critical | informational | moderate | substantial | severe}	Set the threat weight for known search engines attack.	`informational`
known-engines-trigger <trigger_policy_ name>	Enter the name of the trigger to apply when this policy is violated. For details, see log trigger-policy on page 97. To display the list of existing triggers, enter: `set trigger ?`	No default
scanner-action {alert | redirect | deny_no_log | alert_deny | block_period | send_HTTP_ response}	Select the action FortiWeb takes when this type attack is identified. • `alert`–Accept the request and generate an alert email and/or log message. • `alert_deny`–Block the request (or reset the connection) and generate an alert email and/or log message. You can customize the web page that FortiWeb returns to the client with the HTTP status code. For details, see system replacemsg-image on page 374. • `deny_no_log`–Block the request (or reset the connection). • `redirect`–Redirect the request to the URL that you specify in the protection profile and generate an alert email and/or log message. • `block_period`–Block subsequent requests from the client for a number of seconds. Also configure scanner-block-period <period_int> on page 593. You can customize the web page that FortiWeb returns to the client with the HTTP status code. For details, see system replacemsg-image on page 374.	`alert_deny`

Variable	Description	Default
	• `send_HTTP_response`—Block and reply to the client with an HTTP error message and generate an alert email and/or log message. **Note:** Logging and/or alert email will occur only if enabled and configured. See log on page 815 and log alertMail on page 60.	
scanner-block-period <period_int>	Enter the number of seconds that you want to block subsequent requests from the client after the FortiWeb appliance detects this type attack.	`600`
scanner-severity {High | Medium | Low | Info}	When policy violations are recorded in the attack log, each log message contains a **Severity Level** (`severity_level`) field. Select which severity level FortiWeb will use when it logs an attack: • High • Medium • Low • Info	`High`
scanner-status {enable | disable}	Enable or disable the bot type detection for this rule.	`enable`
scanner-threat-weight {low | critical | informational | moderate | substantial | severe}	Set the threat weight for scanner bot attack.	`critical`
scanner-trigger <trigger_policy_name>	Enter the name of the trigger to apply when this policy is violated. For details, see log trigger-policy on page 97. To display the list of existing triggers, enter: `set trigger ?`	No default
spam-action {alert | redirect | deny_no_log | alert_deny | block_period | send_HTTP_response}	Select the action FortiWeb takes when this type attack is identified. • `alert`—Accept the request and generate an alert email and/or log message. • `alert_deny`—Block the request	`alert_deny`

Variable	Description	Default
	(or reset the connection) and generate an alert email and/or log message. You can customize the web page that FortiWeb returns to the client with the HTTP status code. For details, see system replacemsg-image on page 374. • `deny_no_log`–Block the request (or reset the connection). • `redirect`–Redirect the request to the URL that you specify in the protection profile and generate an alert email and/or log message. • `block_period`–Block subsequent requests from the client for a number of seconds. Also configure spam-block-period <period_int> on page 594. You can customize the web page that FortiWeb returns to the client with the HTTP status code. For details, see system replacemsg-image on page 374. • `send_HTTP_response`–Block and reply to the client with an HTTP error message and generate an alert email and/or log message. **Note:** Logging and/or alert email will occur only if enabled and configured. See log on page 815 and log alertMail on page 60.	
spam-block-period <period_int>	Enter the number of seconds that you want to block subsequent requests from the client after the FortiWeb appliance detects this type attack.	`600`

Variable	Description	Default
spam-severity {High | Medium | Low | Info}	When policy violations are recorded in the attack log, each log message contains a **Severity Level** (`severity_level`) field. Select which severity level FortiWeb will use when it logs an attack: • High • Medium • Low • Info	`High`
spam-status {enable | disable}	Enable or disable the bot type detection for this rule.	`enable`
spam-threat-weight {low | critical | informational | moderate | substantial | severe}	Set the threat weight for scanner bot attack.	`critical`
spam-trigger <trigger_policy_name>	Enter the name of the trigger to apply when this policy is violated. For details, see log trigger-policy on page 97. To display the list of existing triggers, enter: `set trigger ?`	No default
trojan-action {alert | redirect | deny_no_log | alert_deny | block_period | send_HTTP_ response}	Select the action FortiWeb takes when this type attack is identified. • `alert`–Accept the request and generate an alert email and/or log message. • `alert_deny`–Block the request (or reset the connection) and generate an alert email and/or log message. You can customize the web page that FortiWeb returns to the client with the HTTP status code. For details, see system replacemsg-image on page 374. • `deny_no_log`–Block the request (or reset the connection). • `redirect`–Redirect the request to the URL that you specify in the protection profile	`alert_deny`

Variable	Description	Default
	and generate an alert email and/or log message. • `block_period`–Block subsequent requests from the client for a number of seconds. Also configure trojan-block-period <period_int> on page 596. You can customize the web page that FortiWeb returns to the client with the HTTP status code. For details, see system replacemsg-image on page 374. • `send_HTTP_response`–Block and reply to the client with an HTTP error message and generate an alert email and/or log message. **Note:** Logging and/or alert email will occur only if enabled and configured. See log on page 815 and log alertMail on page 60.	
trojan-block-period <period_int>	Enter the number of seconds that you want to block subsequent requests from the client after the FortiWeb appliance detects this type attack.	`600`
trojan-severity {High | Medium | Low | Info}	When policy violations are recorded in the attack log, each log message contains a **Severity Level** (`severity_level`) field. Select which severity level FortiWeb will use when it logs an attack: • High • Medium • Low • Info	`High`
trojan-status {enable | disable}	Enable or disable the bot type detection for this rule.	`enable`
trojan-threat-weight {low | critical | informational | moderate | substantial | severe}	Set the threat weight for Trojan bot attack.	`critical`

Variable	Description	Default
trojan-trigger <trigger_policy_name>	Enter the name of the trigger to apply when this policy is violated. For details, see log trigger-policy on page 97. To display the list of existing triggers, enter: `set trigger ?`	No default
"<malicious-bot-disable-list_name>"	Select the malicious bot list not to be scanned.	No default
"<known-good-bots-disable-list_name>"	Select the known good bots list not to be scanned.	No default

Related Topics

- waf web-protection-profile inline-protection on page 720

waf layer4-access-limit-rule

Use this command to limit the number of HTTP requests per second from any IP address to your web server. The FortiWeb appliance tracks the number of requests. If the count of HTTP `GET` or `POST` requests exceeds the request limit, FortiWeb performs the action you specified.

To apply this rule, include it in an application-layer DoS-prevention policy and include that policy in an inline protection profile. For details, see waf application-layer-dos-prevention on page 446.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `wafgrp` area. For details, see Permissions on page 46.

Syntax

```
config waf layer4-access-limit-rule
   edit "<rule_name>"
      set access-limit-standalone-ip <limit_int>
      set access-limit-share-ip <limit_int>
      set action {alert | alert_deny | block-period | deny_no_log}
      set bot-recognition {captcha-enforcement | captcha-puzzle-enforcement | recaptcha-
           enforcement | recaptcha-v3-enforcement | real-browser-enforcement | disable}
      set recaptcha <recaptcha_server_name>
      set max-attempt-times <attempts_int>
      set block-period <seconds_int>
      set severity {High | Medium | Low | Info}
      set trigger-policy "<trigger-policy_name>"
      set validation-timeout <seconds_int>
```

```
        set mobile-app-identification {disabled | mobile-token-validation}
        set bot-confirmation {enable | disable}
    next
end
```

Variable	Description	Default
"<rule_name>"	Enter the name of a new or existing rule. The maximum length is 63 characters. To display the list of existing rules, enter: `edit ?`	No default.
access-limit-standalone-ip <limit_int>	Enter the maximum number of HTTP requests allowed per second from any source IP address representing a single client. The valid range is 0-65,536. To disable the limit, enter `0`.	0
access-limit-share-ip <limit_int>	Enter the maximum number of HTTP requests allowed per second from any source IP address shared by multiple clients behind a network address translation (NAT) device, such as a firewall or router. The valid range is 0-65,536. To disable the limit, enter `0`.	0
action {alert | alert_deny | block-period | deny_no_log}	Select one of the following actions that the FortiWeb appliance will perform when the count exceeds either threshold limit: • `alert`–Accept the request and generate an alert email and/or log message. • `alert_deny`–Block the request (or reset the connection) and generate an alert email and/or log message. You can customize the web page that FortiWeb returns to the client with the HTTP status code. For details, see "system replacemsg" on page 1. • `block-period`–Block subsequent requests from the client for a number of seconds. Also configure block-period <seconds_int> on page 600. **Note:** If FortiWeb is deployed behind a NAT load balancer, when using this option, you **must** also define an X-header that indicates the original client's IP. Failure to do so may cause FortiWeb to block **all** connections when it detects a violation of this type. For details, see waf x-forwarded-for on page 746. • `deny_no_log`–Deny a request. Do not generate a log message. **Caution:** This setting will be ignored if monitor-mode {enable | disable} on page 166 is enabled.	`alert`

Variable	Description	Default
	Note: Logging and/or alert email will occur only if enabled and configured. For details, see log disk on page 66 and log alertMail on page 60. **Note:** If you select an auto-learning profile with this rule, you should select `alert`. If the `action` is `alert_deny`, for example, the FortiWeb appliance will block the request or reset the connection when it detects an attack, resulting in incomplete session information for the auto-learning feature. For details about auto-learning requirements, see "waf web-protection-profile autolearning-profile" on page 1.	

bot-recognition {captcha-enforcement | captcha-puzzle-enforcement | recaptcha-enforcement | recaptcha-v3-enforcement | real-browser-enforcement | disable}	Select between:
	• `captcha-enforcement`—Requires the client to successfully fulfill a CAPTCHA request. If the client cannot successfully fulfill the request within the max-attempt-times <attempts_int> on page 600, or doesn't fulfill the request within the validation-timeout <seconds_int> on page 600, FortiWeb applies the `action` and sends the CAPTCHA block page.
	• `captcha-puzzle-enforcement`—Presents an interactive image-based puzzle challenge to the user. This method is resistant to headless browsers and scripted bots, and is suitable for high-security scenarios where traditional challenges are easily bypassed. If the client cannot successfully fulfill the request within the max-attempt-times <attempts_int> on page 600, or doesn't fulfill the request within the validation-timeout <seconds_int> on page 600, FortiWeb applies the `action`.
	When selected:
	  • FortiWeb intercepts the request and serves a visual CAPTCHA that requires drag-and-drop interaction before allowing access to the backend.
	  • The original backend response is cached by FortiWeb and only delivered after the user successfully completes the challenge.
	  • No customization of the puzzle or replacement message is currently supported.
	• `recaptcha-enforcement`—Requires the client to successfully fulfill a reCAPTCHA request. If the client cannot successfully fulfill the request within the , FortiWeb applies the `action` and sends the reCAPTCHA block page.
	• `recaptcha-v3-enforcement`: Requires the client to successfully fulfill a reCAPTCHA v3 request. If the
		`disable`

Variable	Description	Default

	client cannot successfully fulfill the request within the Validation Timeout, FortiWeb applies the Action and sends the reCAPTCHA block page. For details, see "Customizing error and authentication pages (replacement messages)" in *FortiWeb Administration Guide*.
	You can set the threshold of the reCAPTCHA v3 score through CLI
	`config system recaptcha-api`
	`set recaptcha-v3-score-threshold <string>`
	`*The value range is 0 to 1`
	`end`
	• `real-browser-enforcement`–Enable to return a JavaScript to the client to test whether it is a web browser or automated tool when it violates the access rule. If the client either fails the test or does not return results before the timeout specified by `validation-timeout`, FortiWeb applies the specified action. If the client appears to be a web browser, FortiWeb allows the client to violate the rule.
	• `disable`–Not to carry out the real browser verification.	

`recaptcha <recaptcha_server_name>`	Enter the reCAPTCHA server you have created through user recaptcha-user	No default.
max-attempt-times <attempts_int>	If `captcha-enforcement` or `captcha-puzzle-enforcement` is selected for `bot-recognition`, enter the maximum number of attempts that a client may attempt to fulfill a CAPTCHA/Puzzle CAPTCHA request. The valid range is 1-5. Available only when `captcha-enforcement` or `captcha-puzzle-enforcement` is selected for `bot-recognition`.	3
block-period <seconds_int>	Enter the number of seconds to block access to the client. This applies only when the action {alert | alert_deny | block-period | deny_no_log} on page 598 setting is `block-period`. The valid range is 1-10,000 seconds.	600
severity {High | Medium | Low | Info}	Select the severity level to use in logs and reports generated when a violation of the rule occurs.	`Medium`
trigger-policy "<trigger-policy_name>"	Enter the name of the trigger to apply when this rule is violated. For details, see log trigger-policy on page 97. The maximum length is 63 characters. To display the list of existing trigger policies, enter: `set trigger ?`	No default.
validation-timeout <seconds_int>	Enter the maximum amount of time (in seconds) that FortiWeb waits for results from the client for bot-recognition. The valid range is 5-30.	20

Variable	Description	Default
mobile-app-identification {disabled | mobile-token-validation}	**Disabled:** Disable not to carry out the mobile token verification. **Mobile Token Validation:** Requires the client to use mobile token for verification. To apply mobile token validation, you must enable Mobile App Identification in waf web-protection-profile inline-protection on page 720	`Disabled`
bot-confirmation {enable | disable}	Enable to choose how to verify users when the rules of bot detection are triggered.	`Disabled`

Example

This examples includes two rules. One blocks connections for two minutes while the other creates an alert and denies the connection.

```
config waf layer4-access-limit-rule
   edit "Web Portal HTTP Request Limit"
      set access-limit-share-ip 10
      set access-limit-standalone-ip 10
      set action block-period
      set block-period 120
      set severity Medium
      set trigger-policy "Web_Protection_Trigger"
   next
   edit "Online Store HTTP Request Limit"
      set access-limit-share-ip 5
      set access-limit-standalone-ip 5
      set action alert_deny
      set severity High
      set trigger-policy "Web_Protection_Trigger"
   next
end
```

Related topics

- log trigger-policy on page 97
- waf application-layer-dos-prevention on page 446
- waf layer4-connection-flood-check-rule on page 601

waf layer4-connection-flood-check-rule

Use this command to limit the number of fully-formed TCP connections per source IP address. This effectively prevents TCP flood-style denial-of-service (DoS) attacks.

TCP flood attacks exploit the fact that servers must consume memory to maintain the state of the open connection until either the timeout, or the client or server closes the connection. This consumes some memory even if the client is not currently sending any HTTP requests.

Normally, a legitimate client forms a single TCP connection, through which they may make several HTTP requests. As a result, each client consumes a negligible amount of memory to track the state of the TCP connection. However, an attacker opens many connections with perhaps zero or one request each, until the server is exhausted and has no memory left to track the TCP states of new connections with legitimate clients.

This command is similar to waf HTTP-connection-flood-check-rule on page 544. However, this feature counts TCP connections per IP, while the other command counts TCP connections per session cookie.

It is also similar to `syncookie` in server-policy policy on page 151. However, this feature counts fully-formed TCP connections, while the anti-SYN flood feature counts partially-formed TCP connections.

To apply this rule, include it in an application-layer DoS-prevention policy and include that policy in an inline protection profile. For details, see waf application-layer-dos-prevention on page 446.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `wafgrp` area. For details, see Permissions on page 46.

Syntax

```
config waf layer4-connection-flood-check-rule
   edit "<rule_name>"
      set layer4-connection-threshold <limit_int>
      set action {alert | alert_deny | block-period | deny_no_log}
      set block-period <seconds_int>
      set severity {High | Medium | Low | Info}
      set trigger-policy "<trigger-policy_name>"
   next
end
```

Variable	Description	Default
"<rule_name>"	Enter the name of a new or existing rule. The maximum length is 63 characters. To display the list of existing rules, enter: `edit ?`	No default.
layer4-connection-threshold <limit_int>	Enter the maximum number of TCP connections allowed from the same IP address. The valid range is 0-65,536.	0
action {alert | alert_deny | block-period | deny_no_log}	Select one of the following actions that the FortiWeb appliance will perform when the count exceeds the rate limit: • `alert`–Accept the connection and generate an alert email and/or log message. • `alert_deny`–Block the connection and generate an alert email and/or log message. • `block-period`–Block subsequent requests from the client for a number of seconds. Also configure block-	`alert`

Variable	Description	Default
	period <seconds_int> on page 603. • deny_no_log–Deny a request. Do not generate a log message. **Caution:** This setting will be ignored if monitor-mode {enable | disable} on page 166 is enabled. **Note:** Logging and/or alert email will occur only if enabled and configured. For details, see log disk on page 66 and log alertMail on page 60. **Note:** If an auto-learning profile will be selected in the policy with Offline Protection profiles that use this rule, you should select `alert`. If the `action` is `alert_deny`, the FortiWeb appliance will reset the connection when it detects an attack, resulting in incomplete session information for the auto-learning feature. For details about auto-learning requirements, see "waf web-protection-profile autolearning-profile" on page 1.	
block-period <seconds_int>	Enter the length of time (in seconds) for which the FortiWeb appliance will block additional requests after a source IP address exceeds the rate threshold. The block period is shared by all clients whose traffic originates from the source IP address. The valid range is 1-3,600.	`600`
severity {High | Medium | Low | Info}	Select the severity level to use in logs and reports generated when a violation of the rule occurs.	Medium
trigger-policy "<trigger-policy_name>"	Enter the name of the trigger to apply when this rule is violated. For details, see log trigger-policy on page 97. The maximum length is 63 characters. To display the list of existing trigger policies, enter: `set trigger ?`	No default.

Example

This example illustrates a basic TCP flood check rule.

```
config waf layer4-connection-flood-check-rule
   edit "Web Portal Network Connect Limit"
      set action alert_deny
      set layer4-connection-threshold 10
      set severity Medium
      set trigger-policy "Server_Policy_Trigger"
   next
end
```

Related topics

- log trigger-policy on page 97
- waf application-layer-dos-prevention on page 446
- waf layer4-access-limit-rule on page 597

waf link-cloaking link-cloaking-rule

Use this command to prevent web pages in your application from being scanned by web crawlers and scanning software. Link cloaking transforms the fixed links to automatically generated links by JavaScript codes. For example, `<a href="https://example/login">` will be transformed to `href="https://jisc.waasonline.com/index/login"`, where the link tag `<a>` is cut off so that the crawlers can't recognize it. When the link is loaded in the client's browser, the lost code will be added back automatically.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `wafgrp` area. For details, see Permissions on page 46.

Syntax

```
config waf link-cloaking link-cloaking-rule
   edit <link_cloaking_name>
      set host-status {enable | disable}
      set host <name>
      set url-type {plain | regular}
      set url-pattern "<url_string>"
      config exceptions
         edit 1
            set url-type
            set url-pattern
         next
      end
   next
end
```

Variable	Description	Default
<link_cloaking_name>	Enter a name for the rule.	`no default`
host-status {enable | disable}	Enable to require that the `Host:` field of the HTTP request matches a protected host name entry in order to match the link cloaking rule.	`disable`
host <name>	Enter the protected host names entry (either a web host name or a IP address) that the `Host:` field of the HTTP request must be in to match the rule.	`no default`
url-type {plain | regular}	Enter to select between: • `plain`–A simple string; a string of text that	`plain`

Variable	Description	Default
	contains a literal URL. • `regular`–A regular expression; a string of text that defines a search pattern for a URL that may come in many variations.	
url-pattern "<url_string>"	Depending on the `url-type`, enter either: • **plain**–The literal URL, such as `/index.php`, that the HTTP request must contain in order to match the rule. The URL must begin with a slash (/). • **regular**–A regular expression, such as `^/*.php`, matching the URLs to which the rule should apply. The pattern does not require a slash (/), but it must match URLs that begin with a slash, such as `/index.cfm`. Do not include the domain name, such as `www.example.com`, which is configured separately in `[bot-detection-exception-list] <No.> host <string>`.	`no default`
exceptions	If you want to exclude certain links from Link Cloaking, type a literal URL or use regular expression to match multiple URLs.	`no default`

waf link-cloaking link-cloaking-policy

Use this command to add link cloaking rule to link cloaking policy.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `wafgrp` area. For details, see Permissions on page 46.

Syntax

```
config waf link-cloaking link-cloaking-policy
   edit <link_cloaking_policy_name>
      config rule-list
         edit <index>
            set rule <name> on page 606
         next
      end
   next
end
```

Variable	Description	Default
<link_cloaking_policy_	Enter a name for the policy.	`no default`

Variable	Description	Default
name>		
rule <name>	Enter the name of the link cloaking rule to be added in the policy.	`no default`

waf machine-learning url-replacer-rule/policy

Use this command to enable the machine learning feature and configure its settings.

Syntax

```
config waf machine-learning url-replacer-rule
   edit url-replacer-rule_name
      set type {pre-defined | custom-defined}
      set app-type {jsp | owa-2003}
      set url-replacer-policy_name
      set url "<url_str>"
      set new-url "<new-url_str>"
      set param "<param_str>"
      set new-param "<new-param_str>"
   next
end
config waf machine-learning url-replacer-policy
   edit url-replacer-policy_name
      config rule list
         edit rule-id "<rule_id>"
            set type URL_Replacer
            set plugin-name "<plugin-name_str>"
         next
      end
   next
end
```

Variable	Description	Default
url-replacer-rule_name	Specify a unique name that can be referenced by other parts of the configuration. The name can be up to 63 characters long with no space or special character.	No default.
type {pre-defined | custom-defined}	Select either of the following: • Predefined–Use one of the predefined URL replacers	No default.

Variable	Description	Default
	which can be selected from the Application Type below. • Custom-Defined–Define your own URL replacer by configuring the URL Path, New URL, Param Change, and New Param fields below.	
app-type {jsp | owa-2003}	If you have selected Predefined in the Type field above, then you must click the down arrow and select either of the following from the list menu: • JSP–Use the URL replacer designed for Java server pages (JSP) web applications, where parameters are often separated by semi-colon (;). • OWA 2003– Use the URL replacer designed for default URLs in Microsoft Outlook Web App (OWA), where user name and directory parameters are often embedded within the URL, as illustrated below: (^/public/)(.*) (^/exchange/)([^/]+)/* (([^/]+)/(.*))* These two application types are predefined URL interpreter plug-ins used by popular web applications.	No default.
url "<url_str>"	Enter a regular expression, such as (^/[^/]+)/(.*), matching all and only the URLs to which the URL replacer should apply. The URL path can be up to 255 characters long. The pattern does not require a	No default.

Variable	Description	Default
	backslash (/). However, it must at least match URLs that begin with a backslash as they appear in the HTTP header, such as /index.html. Do not include the domain name, such as www.example.com.	
new-url "<new-url_str>"	Enter either a literal URL, such as /index.html, or a regular expression with a back-reference (such as $1) defining how the URL will be interpreted. The new URL cab be up to 255 characters long.	No default.
param "<param_str>"	Enter either the parameter's literal value, such as user1, or a back-reference (such as $0) defining how the value will be interpreted.	No default.
new-param "<new-param_str>"	Type either the parameter's literal name, such as username, or a backreference (such as $2) defining how the parameter's name will be interpreted in the auto-learning report. You can use up to 255 characters.	No default.
url-replacer-policy_name	Specify a unique name that can be referenced by other parts of the configuration. The name can be up to 63 characters long with no space or special character.	No default.
rule-id "<rule_id>"	Select the sequence number of the URL Replacer Rules	No default.
type URL_Replacer	Select the type URL_Replacer.	No default.
plugin-name "<plugin-name_str>"	Enter the plugin name.	No default.

Related Topic

- waf machine-learning-policy

waf machine-learning-policy

How an anomaly detection model is built?

FortiWeb uses machine learning model to analyze the parameters in your domain and decide whether the value of the parameter is legitimate or not. The machine learning model is built upon vast amount of parameter value samples collected from the real requests to the domain.

When a sample is collected, the system generalized it into a pattern. For example, “abcd_123@abc.com” and “abcdefgecdf_12345678@efg.com” will both be generalized to the pattern “A_N@A.A”. The anomaly detection model is built based on the patterns, not the raw samples.

FortiWeb analyzes the characteristics of the patterns and builds an initial model when 400 samples are collected. The system runs the initial model to detect anomalies, while it keeps collecting more samples to refine it.

Once the number of samples accumulates to 1200, the system will evaluate whether the patterns vary largely since the initial model is built:

- If there are very few patterns generalized, it indicates the patterns are stable. The system will switch the initial model to a standard model.
- If a lot of new patterns keeps coming in, the system will continue collecting more samples to cover as much patterns as possible. It won't switch to standard model until the patterns become stable.

The standard model is much more reliable and accurate compared with the initial model. However, your domains may change as new URLs are added and existing parameters provide new functions. This means the mathematical model of the same parameter might be different from what FortiWeb originally observed. To keep the machine learning model up to date, FortiWeb continues collecting new samples to update it, where the outdated patterns are discarded and new patterns are introduced.

To use this command, your administrator account’s access control profile must have either `w` or `rw` permission to the `wafgrp` area. For details, see Permissions on page 46.

Syntax

```
config waf machine-learning-policy
   edit <machine-learning-policy_id>
      set start-min-count <start-min-count _int>
      set renovate-short-time <renovate-short-time_int>
      set waf machine-learning-policy
      set switch-min-count <switch-min-count_int>
      set switch-percent <switch-percent_int>
      set sliding-win-time <sliding-win-time_int>
      set sub-window-size <sub-window-size_int>
      set waf machine-learning-policy
      set denoise-percent <denoise-percent_int>
      set denoise-threshold <denoise-threshold_int>
      set sample-limit-by-ip <sample-limit-by-ip_int>
      set svm-model {xss | sql-injection | code-injection | command-injection | lfi-rfi | common-
           injection | remote-exploits}
      set svm-sensitivity-level {1 | 2| 3 | 4}
      set anomaly-detection-threshold <anomaly-detection-threshold_int>
      set waf machine-learning-policy
      set action-anomaly {alert | alert_deny | block-period}
```

```
      set block-period-anomaly <block-period_int>
      set severity-definitely {High | Info | Low | Medium}
      set trigger-definitely <policy_name>
      set status {enable | disable}
      set ip-expire-intval <int>
      set ip-expire-cnts <int>
      set ip-argcount-limit {enable | disable}
      set ip-list-type {Trust | Black}
      set url-replacer-policy <policy_name>
      set threat-model {enable | disable} on page 612
      set parameters-limit-per-conn {enable | disable}
      set anomaly-detection-threshold <anomaly-detection-threshold_int>
      config allow-domain-name
         edit <allow-domain-name_id>
            set domain-name <domain-name_str>
            set domain-index <domain-index_id>
            set hmm-probability-sample-length-check {enable | disable}
            set sample-length-threshold <int>
            set hmm-probability-threshold <int>
            set character-set {AUTO | ISO-8859-1 | ISO-8859-2 | ISO-8859-3 | ISO-8859-4 | ISO-8859-5
                  | ISO-8859-6 | ISO-8859-7 | ISO-8859-8 | ISO-8859-9 | ISO-8859-10 | ISO-8859-15 |
                  GB2312 | BIG5 | ISO-2022-JP | ISO-2022-JP-2 | Shift-JIS | ISO-2022-KR | UTF-8}
         next
      end
      config source-ip-list
         edit <source-ip-list_id>
            set <ip>
         next
      end
   next
end
```

Variable	Description	Default
<machine-learning-policy_id>	Enter the ID of the machine learning policy. It's the number displayed in the "**#**" column of the machine learning policy table on the **Machine Learning Policy** page. The valid range is 0-65535.	`No default`
start-min-count <start-min-count_int>	An initial model will be built if the sample count reaches `start-min-count`.	`400`
renovate-short-time <renovate-short-time_int>	The system keeps updating the initial model. `renovate-short-time` defines how frequently FortiWeb updates the model if new patterns keep coming in. The valid range is 15 to 1440.	`15 (minutes)`
renovate-long-time <renovate-long-time_int>	`renovate-long-time` defines how frequently FortiWeb updates the initial model even if no new pattern is generalized out of the samples collected in the past hours. For example, assuming you set the value to 8 (hours), and in the past 8 hours there isn't any new pattern, FortiWeb will update the model every 8 hours anyway. The valid range is 8 to 720.	`8 (hours)`

Variable	Description	Default
switch-min-count <switch-min-count_int>	When the number of samples reaches `switch-min-count`, FortiWeb will evaluate whether to build a standard model. The valid range is 800 to 3000.	`1200`
switch-percent <switch-percent_int>	`switch-percent` = the number of generalized patterns / the number of raw samples * 100 (%) When the `switch-percent` is smaller than the value you set, FortiWeb switches the initial model to the standard model. The valid range is 2 to 20.	`5(%)`
sliding-win-time <sliding-win-time_int>	After the standard model is built, FortiWeb keeps updating it according to the newest samples so that the model can be up to date even when your domain changes, such as when new URLs are added and existing parameters provide new functions. `sliding-win-time` defines how frequently FortiWeb updates the standard model. The valid range is 15-1440 in minutes.	`15 (minutes)`
sub-window-size <sub-window-size_int>	If there isn't any new pattern generalized during the `sliding-win-time`, the system will not update the standard model until the number of samples reaches the `sub-window-size`. The `sub-window-size` can be set as 50 or 100.	`50`
sub-window-count <sub-window-count_int>	Every time the standard model is updated, FortiWeb counts it as one `sub-window-count`. If a certain times of `sub-window-count` have passed and there isn't any sample coming in for a pattern, FortiWeb considers this pattern outdated, and will discard it. The `sub-window-count` can be set as 20, 40, or 80. For example, assuming the `sub-window-count` is 20, then FortiWeb will discard a pattern if there isn't any sample collected for it after the model has been updated for 20 times consecutively.	`40`
denoise-percent <denoise-percent_int>	It's important to reduce the noisy samples in order to build an accurate model. During the sample collecting period, the system ranks all the samples by their probabilities. The ones with the lowest probabilities will be selected as noisy reduction samples, and will be filtered further with `denoise-threshold` to determine whether it is a noise. For example, if you set `denoise-percent` to 3, then the 3% samples with the lowest probabilities will be selected as noisy reduction samples. The valid range is 1 to 10.	`3 (%)`
denoise-threshold <denoise-threshold_int>	The system uses the following formula to determine whether the noisy reduction samples are indeed noises: The probability of the sample > μ + `denoise-threshold` * σ.	`2`

Variable	Description	Default
	μ is the average probabilities of the noisy samples. σ is the denoise standard deviation. Assume there is a circle with most of the samples crowded in the center, and several samples scattered around the edge of the circle. If the probability of the sample is larger than the value of "μ + the strictness level * σ", it means this sample is scattered far away from the center cluster. It indicates this sample might be an anomaly, i.e. a noise. If you set the `denoise-threshold` larger, it means the system tolerates a longer distance that a sample is scattered from the center cluster. In this way, less samples will be treated as noises. If you want to identify more samples as noises, set the `denoise-threshold` smaller. The valid range is 1 to 10.	
threat-model {enable | disable}	Enable to scan anomalies to verify whether they are attacks. It provides a method to check whether an anomaly is a real attack by the trained Support Vector Machine Model.	`enable`
svm-model {xss | sql-injection | code-injection | command-injection | lfi-rfi | common-injection | remote-exploits}	Enable or disable threat models for different types of threats such as cross-site scripting, SQL injection and code injection. Currently, seven trained Support Vector Machine Model are provided for seven attack types.	`enable`
svm-sensitivity-level {1 | 2| 3 | 4}	Increasing the security level introduces more conditions that a request must meet to pass the scan. For example, a request that successfully passes at level 1 might be flagged as an anomaly at level 4 due to stricter criteria. While higher security levels enhance protection by enforcing more rigorous requirements, they also increase the risk of mistakenly blocking legitimate traffic. This command is a replacement of the old command `svm-type {standard | extended}` since 7.6.0. The 'standard' option in the old command now corresponds to sensitivity Level 1, and 'extended' maps to Level 4.	`1`
anomaly-detection-threshold <anomaly-detection-threshold_int>	The value of the anomaly-detection-threshold ranges from 1 to 10. The system uses the following formula to calculate the anomaly threshold: **The probability of the anomaly > μ + the strictness level * σ** If the probability of the sample is larger than the value of "μ + the strictness level * σ", this sample will be identified as anomaly.	`0.1`

Variable	Description	Default
	μ and σ are calculated based on the probabilities of all the samples collected during the sample collection period, where μ is the average value of all the parameters' probabilities, σ is the standard deviation. They are fixed values. So, the value of "μ + the strictness level * σ" varies with the strictness level you set. The smaller the value of the strictness level is, the more strict the anomaly detection model will be. This option sets a global value for all the parameters. If you want to adjust the strictness level for a specific parameter, See Manage anomaly-detecting settings.	
parameters-limit-per-conn {enable | disable}	Enable to avoid collecting samples solely for the parameters in the same connection. The anomaly detection will be more effective if the system builds machine learning models for parameters diversely distributed in different connections.	`enable`
action-anomaly {alert | alert_deny | block-period}	Choose the action FortiWeb takes when definite attack is verified. `alert`—Accepts the connection and generates an alert email and/or log message. `alert_deny`—Blocks the request (or resets the connection) and generates an alert and/or log message. `block-period`—Blocks the request for a certain period of time.	`alert_deny`
block-period-anomaly <block-period_int>	Enter the number of seconds that you want to block the requests. The valid range is 1-3,600 seconds. This option only takes effect when you choose **Period Block** in **Action**.	`600`
severity-definitely {High | Info | Low | Medium}	Select the severity level for this anomaly type. The severity level will be displayed in the alert email and/or log message.	`High`
trigger-definitely <policy_name>	Select a trigger policy that you have set in Log&Report > Log Policy > Trigger Policy. If definite anomaly is detected, it will trigger the system to send email and/or log messages according to the trigger policy.	No default.
status {enable | disable}	Enable to change the status to Running, while disable to change the status to Stopped.	`enable`
url-replacer-policy <policy_name>	Select the name of the URL Replacer Policy that you have created in Machine Learning Templates. If web applications have dynamic URLs or unusual parameter styles, you must adapt URL Replacer Policy to recognize them.	No default.
trigger-potential <policy_name>	Select a trigger policy that you have set in Log&Report > Log Policy > Trigger Policy. If potential anomaly is detected, it will trigger the system to send email and/or log messages according to the trigger policy.	
<allow-domain-name_id>	Enter the ID of the policy. The valid range is 1-65,535.	No default.

Variable	Description	Default
ip-list-type {Trust | Black}	Allow or deny sample collection from the Source IP list.	`Trust`
domain-name <domain-name_str>	Add full domain name or use wildcard '*' to cover multiple domains under one profile.	No default.
domain-index <domain-index_id>	The number automatically assigned by the system when the domain name is created.	No default.
hmm-probability-sample-length-check {enable | disable}	Enable to check whether the parameter value is in unexpected length or of high anomaly probability.	disable
sample-length-threshold <int>	If the length of the parameter value is larger than the specified threshold, the system will not send it to SVM model for further validation. Instead, it will be directly treated as an anomaly. The valid range is 0-1,024. 0 means not applicable.	0
hmm-probability-threshold <int>	If the anomaly probability of the parameter value is larger than the specified threshold, the system will not send it to SVM model for further validation. Instead, it will be directly treated as an anomaly. The valid range is 0-2,000. 0 means not applicable. If you are not sure how to set a proper probability value, there are two places where you can refer: • In **Parameter View**, beside the **Strictness Level for Anomaly** option, there is a **Test Sample** button. Click it and enter a parameter value to check its probability. Repeat the tests with different values until you get an idea on a reasonable probability threshold. • In **Attack Log**, find an Anomaly Detection attack. Click it to view the log details. You will find its probability.	0

Variable	Description	Default
character-set {AUTO | ISO-8859-1 | ISO-8859-2 | ISO-8859-3 | ISO-8859-4 | ISO-8859-5 | ISO-8859-6 | ISO-8859-7 | ISO-8859-8 | ISO-8859-9 | ISO-8859-10 | ISO-8859-15 | GB2312 | BIG5 | ISO-2022-JP | ISO-2022-JP-2 | Shift-JIS | ISO-2022-KR | UTF-8}	The corresponding character code when manually setting the domain.	No default.
<source-ip-list_id>	Enter the ID of the source IP. The valid range is 1-9,223,372,036,854,775,807	No default.
<ip>	Enter the IP range for the source IP list.	No default.
ip-expire-intval <int> ip-expire-cnts <int>	An parameter is in unconfirmed status initially, and it will be set to confirmed if the parameter is contained in the requests from **a certain number of different source IPs** within **the given time**. Otherwise, the parameter will be discarded. `ip-expire-cnts` defines the "the number of different source IPs", while the `ip-expire-intval` defines the given time period. The valid range for `ip-expire-intval` is 1-24 in hours, and the default value is 4. The valid range for `ip-expire-cnts` is 1-5, and the default value is 3.	4/3
ip-argcount-limit {enable | disable}	Enable it so that each source IP can create at most 20 new arguments in every 30 minutes.	disable
sample-limit-by-ip <sample-limit-by-ip_int>	The limitation number of samples collected from each IP. The valid range is 0-5000.	`30`

Related Topics

- waf machine-learning url-replacer-rule/policy on page 606

waf mitb-policy

Use this command to configure MiTB policies.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `wafgrp` area. For details, see Permissions on page 46.

Syntax

```
config waf mitb-policy
   edit "<mitb-rule_name>"
      config rule list
         edit "<rule-list_id>"
            set "<mitb-rule_name>"
         next
      end
   next
end
```

Variable	Description	Default
"<rule-list_id>"	Select the sequence number of the MiTB rules.	No default.
"<mitb-rule_name>"	Enter the name of a MiTB policy.	No default.

Related topics

- waf mitb-rule on page 616

waf mitb-rule

Use this command to configure MiTB rules.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `wafgrp` area. For details, see Permissions on page 46.

Syntax

```
config waf mitb-rule
   edit mitb-rule_name
      set action {alert| alert_deny}
      set severity {High | Medium | Low | Info}
      set trigger "<trigger-policy_name>"
```

```
set host-status {enable | disable}
set host "<host_str>"
set request-url "<request-url_str>"
set request-type {plain | regular}
set post-url "<post-url_str>"
set ajaxcheck {enable | disable}
set mid-proxy {enable | disable}
edit protected-parameter-list_name
      set type {regular-input | password-input}
      set obfuscate {enable | disable}
      set encrypt {enable | disable}
      set anti-keyLogger {enable | disable}
   next
end

config allowed-external-domains-list
   edit allowed-external-domains-list_id
      set domain "<domain_str>"
   next
end
```

Variable	Description	Default
mitb-rule_name	Enter a name that can be referenced by other parts of the configuration.	No default.
action {alert| alert_deny}	Select the action the FortiWeb appliance takes when it detects a violation of the rule: **Alert**–Accept the connection and generate an alert email and/or log message. **Alert & Deny**–Block the request (or reset the connection) and generate an alert and/or log message.	`Alert`
severity {High | Medium | Low | Info}	Select which severity level the FortiWeb appliance will use when it logs a violation of the rule.	`Low`
trigger "<trigger-policy_ name>"	Select which trigger, if any, that the FortiWeb appliance will use when it logs and/or sends an alert email about a violation of the rule.	No default.
host-status {enable | disable}	Enable to compare the MiTB rule to the `Host:` field in the HTTP header.	No default.
host "<host_str>"	Select the IP address or FQDN of a protected host.	No default.
request-url "<request-url_ str>"	The URL hosting the webpage which contains the parameters (field names or passwords) you want to protect.	No default.
request-type {plain | regular}	Select either of the URL types.	`plain`
post-url "<post-url_str>"	Enter the URL triggered after you submit your access request.	No default.

Variable	Description	Default
ajaxcheck {enable | disable}	Enable to validate AJAX requests against an allowlist of permitted external domains.	`disable`
mid-proxy {enable | disable}	Enable Middle Proxy to let FortiWeb detect SSL stripping by comparing client-reported security attributes–protocol, host, User-Agent (UA), and security headers–against stored data. For example, if the server response includes an HSTS header but the client reports its absence, FortiWeb flags a potential attack.	`disable`
protected-parameter-list_ name	Enter the protected parameter list name.	No default.
type {regular-input | password-input}	Select the input type to carry out the protection.	`regular-input`
obfuscate {enable | disable}	Enable to obfuscate the configured parameter name.	No default.
encrypt {enable | disable}	Enable to encrypt the parameter value.	No default.
anti-keyLogger {enable | disable}	Enable anti-keyLogger to prevent hackers from intercepting your password input.	No default.
allowed-external-domains-list_id	Enter the allowed external domain list ID.	No default.
domain "<domain_str>"	Set the domain, for example, www.alloweddomain.com.	No default.

Related topics

- waf mitb-policy

waf mobile-api-protection

When a client accesses a web server from a mobile application, the Mobile Application Identification module checks whether the request carries the JWT-token field and whether the token carried is valid, and sets flags for the following cases:

- The traffic doesn't carry the JWT-token header
- The traffic carries the JWT-token header and the token is valid
- The traffic carries the JWT-token header, while the token is invalid

The mobile API protection feature checks the flags. With the API protection policy and rule configured, actions set in the protection rule will be performed.

Syntax

```
config waf mobile-api-protection-rule
   edit <mobile-api-protection-rule_name>
      set host-status {enable | disable}
      set host <host_str>
      set action {alert | deny_no_log | alert_deny | block-period}
      set block-period <block-period_int>
      set severity {High | Medium | Low | Info}
      set trigger <trigger_policy_name>
      config url-list
         edit <url-list_id>
            set url-type {plain | regular}
            set url-pattern <url-pattern_str>
         next
      end
   next
end

config waf mobile-api-protection-policy
   edit <mobile-api-protection-policy_name>
   config rule-list
      edit <rule-list_id>
         set rule <rule_name>
         next
      end
   next
end
```

Variable	Description	Default
<mobile-api-protection-rule_name>	Enter the name for the mobile API protection rule.	No default.
host-status {enable | disable}	Enable to compare the mobile API protection rule to the `Host:` field in the HTTP header.	Disable
host <host_str>	Select the IP address or fully qualified domain name (FQDN) of the protected host to which this rule applies. This option is available only if host-status {enable | disable} is enable.	No default.
action {alert | deny_no_log | alert_deny | block-period}	Select which action the FortiWeb appliance will take when it detects a violation. **alert**–Accept the connection and generate an alert email and/or log message. **alert_deny**–Block the request (or reset the connection) and generate an alert and/or log message. **deny_no_log**–Block the request (or reset the connection). **block-period**–Blocks the request for a certain period of time.	`Alert`
block-period <block-period_int>	Enter the number of seconds that you want to block the requests. The valid range is 1-3,600 seconds.	600

Variable	Description	Default
	This option only takes effect when you choose **Period Block** in **action {alert | deny_no_log | alert_deny | block-period}**.	
severity {High | Medium | Low | Info}	When FortiWeb records rule violations in the attack log, each log message contains a **Severity Level** field. Select the severity level that FortiWeb will record when the rule is violated: • Low • Medium • High • Informative The default value is **High**.	High
trigger <trigger_policy_ name>	Select the trigger, if any, that FortiWeb carries out when it logs and/or sends an alert email about a rule violation. For details, see "Viewing log messages" on page 1.	No default.
<url-list_id>	Type the index number of the individual URL within the URL list, or keep the field's default value of auto to let the FortiWeb appliance automatically assign the next available index number.	No default.
url-type {plain | regular}	Select whether the URL Pattern field will contain a literal URL (plain), or a regular expression designed to match multiple URLs (regular).	`plain`
url-pattern <url-pattern_str>	Depending on the `url-type`, enter either: • **plain**–The literal URL, such as `/index.php`, that the HTTP request must contain in order to match the rule. The URL must begin with a slash (`/`). • **regular**–A regular expression, such as `^/*.php`, matching the URLs to which the rule should apply. The pattern does not require a slash (`/`), but it must match URLs that begin with a slash, such as `/index.cfm`. Do not include the domain name, such as `www.example.com`, which is configured separately in `[bot-detection-exception-list] <No.> host <string>`.	No default
<mobile-api-protection-policy_name>	Enter the name for the mobile API protection policy.	No default.
<rule-list_id>	Type the index number of the individual rule within the rule list, or keep the field's default value of auto to let the FortiWeb appliance automatically assign the next available index number.	No default.
rule <rule_name>	Select the mobile API protection rule from the drop-down list.	No default.

waf openapi-file

Use this command to create openapi file name.

Syntax

```
config waf openapi-file
   edit "<openapi-file_name>"
end
```

Variable	Description	Default
"<openapi-file_name>"	Enter the name of an openapi file.	No default.

Related topics

- waf openapi-validation-policy on page 621

waf openapi-validation-policy

Use this command to create new openapi validation policy and configure related settings.

Syntax

```
config waf openapi-validation-policy
   edit openapi-validation-policy_name
      set action {alert | alert_deny | block-period | redirect | send_403_forbidden | deny_no_
          log}
      set block-period "<seconds_int>"
      set inherit-action-for-non-JSON-media-types {enable|disable}
      set inherit-action-for-unlisted-media-types {enable|disable}
      set severity {Low | Medium | High | Info}
      set trigger "<trigger-policy>"
      config schema-file
         edit schema-file_id on page 622
            set openapi-file <datasource> on page 622
end
```

Variable	Description	Default
`openapi-validation-policy_name`	Enter the name for the OpenAPI validation policy.	No default
`action {alert | alert_deny | block-period | redirect | send_403_forbidden | deny_no_log}`	Select which action FortiWeb will take when it detects a violation of the policy.	`alert`
`block-period "<seconds_int>"`	Type the number of seconds that you want to block subsequent requests from the client after the FortiWeb appliance detects that the client has violated the rule. The valid range is 1-3600 seconds.	600
`inherit-action-for-non-JSON-media-types {enable|disable}`	When enabled, FortiWeb processes content as JSON if `x-is-json: true`, even when the media type does not explicitly match `application/json` or `text/json`.	enable
`inherit-action-for-unlisted-media-types {enable|disable}`	Controls whether to apply the default action for media types not listed in the OAS document.	enable
`severity {Low | Medium | High | Info}`	Select which severity level the FortiWeb appliance will use when it logs a violation of the rule.	Low
`trigger "<trigger-policy>"`	Select which trigger, if any, that the FortiWeb appliance will use when it logs and/or sends an alert email about a violation of the rule.	No default
schema-file_id	The scheme file by the sequence number.	No default.
openapi-file <datasource>	Select the created OpenAPI file.	No default.

Related topics

- waf openapi-file on page 621

waf padding-oracle

Use this command to create a policy that protects vulnerable block cipher implementations for web applications that selectively encrypt inputs without using HTTPS.

To apply this policy, include it in an inline web or Offline Protection profile. For details, see waf web-protection-profile inline-protection on page 720 and waf web-protection-profile offline-protection on page 731.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `wafgrp` area. For details, see Permissions on page 46.

Syntax

```
config waf padding-oracle
   edit "<padding-oracle_rule_name>"
      set action {alert | alert_deny | block-period | deny_no_log}
      set block-period <block-period_int>
      set severity {High | Medium | Low | Info}
      set trigger "<trigger-policy_name>"
      config protected-url-list
         edit <entry_index>
            set host-status {enable | disable}
            set host "<host_str>"
            set url-type {plain | regular}
            set protected-url "<protected-url_str>"
            set target "<cookie parameter url>"
      end
   next
end
```

Variable	Description	Default
"<padding-oracle_rule_name>"	Enter the name of a new or existing rule. The maximum length is 63 characters. To display the list of existing policies, enter: `edit ?`	No default.
action {alert | alert_deny | block-period | deny_no_log}	Specify the action that FortiWeb takes when a request violates the rule: • `alert`—Accept the request and generate an alert email and/or log message. • `alert_deny`—Block the request (or reset the connection) and generate an alert and/or log message. • `block-period`—Block subsequent requests from the client for a number of seconds. Also configure block-period <block-period_int> on page 624. • `deny_no_log`—Deny a request. Do not generate a log message. **Note:** If FortiWeb is deployed behind a NAT load balancer, when using this option, define an X-header that indicates the original client's IP. Failure to do so may cause FortiWeb to block all connections when it detects a violation of this type. For details, see waf x-forwarded-for on page 746.	`alert`

Variable	Description	Default
	Attack log messages contain `Padding Oracle Attack` when this feature detects a possible attack. Because this attack involves some repeated brute force, the attack log may not appear immediately, but should occur within 2 minutes, depending on your configured DoS alert interval. **Caution:** This setting will be ignored if monitor-mode {enable | disable} on page 166 is enabled. **Note:** Logging and/or alert email occur only when the these features are enabled and configured. For details, see log attack-log on page 61 and log alertMail on page 60. **Note:** To use this rule set with auto-learning, select `alert`. If `action` is `alert_deny` or any other option that causes the FortiWeb appliance to terminate or modify the request or reply when it detects an attack attempt, the session information for auto-learning will be incomplete.	
block-period <block-period_int>	Enter the number of seconds that FortiWeb blocks subsequent requests from the client after it detects that the client has violated the rule. This setting is available only if action {alert | alert_deny | block-period | deny_no_log} on page 623 is `block-period`. The valid range is 1-36,000 seconds.	600
severity {High | Medium | Low | Info}	When rule violations are recorded in the attack log, each log message contains a Severity Level (`severity_level`) field. Specify the severity level FortiWeb uses when it logs a violation of this rule.	`Medium`
trigger "<trigger-policy_name>"	Enter the name of the trigger policy, if any, that the FortiWeb appliance uses when it logs and/or sends an alert email about a violation of the rule. For details, see log trigger-policy on page 97. To display the list of existing triggers, enter: `set trigger ?`	No default.
<entry_index>	Enter the index number of the individual entry in the table. The valid range is 1-9,999,999,999,999,999,999.	No default.
host-status {enable | disable}	Specify `enable` to apply this rule only to HTTP requests for specific web hosts. Also specify host "<host_str>" on page 625. Specify `disable` to match the rule based on the other criteria, such as the URL, but regardless of the `Host:` field.	`disable`

Variable	Description	Default
host "<host_str>"	Specify which protected host names entry (either a web host name or IP address) that the `Host:` field of the HTTP request must be in to match the rule. This option is available only if the value of host-status {enable | disable} on page 624 is `enabled`. Maximum length is 255 characters.	No default.
url-type {plain | regular}	Enter to determine how the value of protected-url "<protected-url_str>" on page 625 is specified: • `plain`–A literal URL. • `regular`–A regular expression designed to match multiple URLs.	`plain`

protected-url "<protected-url_str>"	If the value of url-type {plain | regular} on page 625 is `plain`, enter the literal URL that HTTP requests that match the rule contain.
	For example:
	`/profile.jsp`
	The URL must begin with a backslash (/).
	If the value of `url-type` is `regular`, specify a regular expression matching all and only the URLs to which the rule should apply.
	For example:
	`^/*\.jsp\?uid\=(.*)`
	The pattern does not require a slash (/).; however, it must at least match URLs that begin with a slash, such as `/profile.cfm`.
	Do not include the domain name, such as `www.example.com`, which is specified by `host`.
	Regular expressions beginning with an exclamation point (!) are not supported. For information on language and regular expression matching, see the *FortiWeb Administration Guide*:
	https://docs.fortinet.com/document/fortiweb
		No default.

target "<cookie parameter url>"	Specify which parts of the client's requests FortiWeb examines for padding attack attempts: • `url`–A URL (for example, the parameter `/user/0000012FE03BC2` is embedded in the URL). • `parameter`–A parameter (for example, the parameter **/index.php?user=0000012FE03BC2** appended to a traditional GET or POST body). • `cookie`–A cookie.	`parameter`

Example

This example illustrates a padding oracle rule that blocks requests to the host `www.example.com` when a parameter appended in a traditional GET URL parameter or POST body matches the specified regular expression. When a request matches the expression, FortiWeb logs or sends a high-severity message as specified in the `notification-servers1` trigger policy.

```
config waf padding-oracle
   edit "padding-oracle1"
      set action block-period
      set block-period 3600
      set severity High
      set trigger "notification-servers1"
      config protected-url-list
         edit 1
            set host-status enable
            set host "www.example.com"
            set url-type regular
            set protected-url "\/profile\.jsp\?uid\=(.*)"
            set target parameter
            end
```

Related topics

- waf web-protection-profile inline-protection on page 720
- waf web-protection-profile offline-protection on page 731

waf parameter-validation-rule

Use this command to configure parameter validation rules, each of which is a group of input rule entries.

To apply parameter validation rules, select them within an inline or Offline Protection profile. For details, see waf web-protection-profile inline-protection on page 720 and waf web-protection-profile offline-protection on page 731.

Before you can configure parameter validation rules, you must first configure one or more input rules. For details, see waf input-rule on page 565.

You can use SNMP traps to notify you when a parameter validation rule is enforced. For details, see system snmp community on page 383.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `wafgrp` area. For details, see Permissions on page 46.

Syntax

```
config waf parameter-validation-rule
   edit "<rule_name>"
      set cache-mode {enable | disable}
```

```
        config input-rule-list
           edit <entry_index>
              set input-rule "<input-rule_name>"
           next
        end
     next
  end
```

Variable	Description	Default
cache-mode {enable | disable}	**Parameter Validation** processes and forwards incoming requests as soon as they are received, which helps maintain fast processing time. However, this approach can occasionally result in requests being interrupted midway if illegal parameters are detected in the later part of the request. To prevent FortiWeb from forwarding the partial requests mentioned above, you can enable `cache-mode`. When cache mode is enabled, the **Parameter Validation** module will store the entire request in a cache before performing validation and forwarding.	disable
"<rule_name>"	Enter the name of a new or existing rule. The maximum length is 63 characters. To display the list of existing rules, enter: `edit ?`	No default.
<entry_index>	Enter the index number of the individual entry in the table. The valid range is 1-9,999,999,999,999,999,999.	No default.
input-rule "<input-rule_name>"	Enter the name of an input rule to use in the parameter validation rule. The maximum length is 63 characters. To display the list of existing input rules, enter: `set input-rule ?`	No default.

Example

This example configures a parameter validation rule that applies two input rules.

```
config waf parameter-validation-rule
   edit "parameter_validator1"
      config input-rule-list
         edit 1
            set input-rule "input_rule1"
      next
         edit 2
            set input-rule "input_rule2"
         next
      end
   next
end
```

Related topics

- waf input-rule on page 565
- waf web-protection-profile inline-protection on page 720
- waf web-protection-profile offline-protection on page 731

waf signature

Use this command to configure web server protection rules.

There are several security features specifically designed to protect web servers from known attacks. You can configure defenses against:

- Cross-site scripting (XSS)
- SQL injection and many other code injection styles
- Remote file inclusion (RFI)
- Local file inclusion (LFI)
- OS commands
- Trojans/viruses
- Exploits
- Sensitive server information disclosure
- Credit card data leaks

To defend against known attacks, FortiWeb scans:

- Parameters in the URL of HTTP `GET` requests
- Parameters in the body of HTTP `POST` requests
- XML in the body of HTTP `POST` requests (if waf web-protection-profile inline-protection on page 720 is enabled)
- Cookies
- Headers
- JSON Protocol Detection
- Uploaded filename(MULTIPART_FORM_DATA_FILENAME)

In addition to scanning standard requests, signatures can also scan action message format 3.0 (AMF3) binary inputs used by Adobe Flash clients to communicate with server-side software and XML. For details, see amf3-protocol-detection {enable | disable} on page 724 and waf web-protection-profile inline-protection on page 720 (for inline protection profiles) or amf3-protocol-detection {enable | disable} on page 734 (for Offline Protection profiles).

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `wafgrp` area. For details, see Permissions on page 46.

Updating signatures

Known attack signatures can be updated. For details about uploading a new set of attack definitions, see the *FortiWeb Administration Guide*:

https://docs.fortinet.com/document/fortiweb

You can also create your own. For details, see waf custom-protection-rule on page 500.

Configuring signatures

Before configuring a server protection rule, if you want to configure your own attack or data leak signatures, you must also configure custom server protection rules. For details, see waf custom-protection-group on page 499.

Each server protection rule can be configured with the severity and notification settings ("trigger") that, in combination with the action, determines how FortiWeb handles each violation.

For example, attacks categorized as cross-site scripting and SQL injection could have the `action` set to `alert_deny`, the `severity` set to `High`, and a trigger set to deliver an alert email each time these rule violations are detected. Specific signatures in those categories, however, might be disabled, set to log/alert instead, or exempt requests to specific host names/URLs.

Alternatively, you can automatically configure a server protection rule that detects all attack types by generating a default auto-learning profile. For details, see the *FortiWeb Administration Guide*:

https://docs.fortinet.com/document/fortiweb

Overriding signature category configuration

To override category-wide actions for a specific signature, configure:

- config signature_disable_list on page 630—Disable a specific signature ID (e.g. 040000007), even if the category in general (e.g. **SQL Injection (Extended)**) is enabled.
- config sub_class_disable_list on page 630—Disable a subcategory of signatures (e.g. **Session Fixation**), even if the category in general (e.g. **General Attacks**) is enabled.
- config alert_only_list on page 630—Only log/alert when detecting the attack, even if the category in general is configured to block.
- config filter_list on page 630—Exempt specific host name and/or URL combinations from scanning with this signature.

Applying signature policies

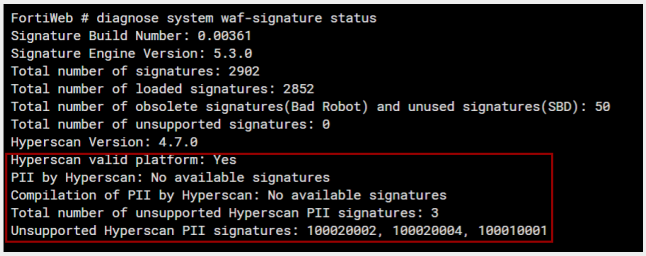
To apply server protection rules, select them within an inline or Offline Protection profile. For details, see waf web-protection-profile inline-protection on page 720 and waf web-protection-profile offline-protection on page 731.

You can use SNMP traps to notify you when an attack or data leak has been detected. For details, see system snmp community on page 383.

Syntax

```
config waf signature
   edit "<signature-set_name>"
      set credit-card-detection-threshold <instances_int>
      set custom-protection-group "<group_name>"
      set sensitivity-level {1|2|3|4}
      set personally-identifiable-information-hyperscan-mode {enable | disable}
      config main_class_list
```

```
            edit {010000000 | 020000000 | 030000000 | 040000000 | 050000000 | 060000000 | 070000000 |
                  080000000 | 090000000 | 100000000 | 110000000 | 120000000}
               set action {alert |alert_deny | block-period |only_erase | send_HTTP_response | alert_
                     erase | redirect | deny_no_log}
               set block-period <seconds_int>
               set severity {Low | Medium | High | Info}
               set trigger "trigger-policy_name>"
            next
         end
         config signature_disable_list
            edit "<signature-id_str>"
            next
         end
         config sub_class_disable_list
            edit {010000000 | 020000000 | 030000000 | 040000000 | 050000000 | 060000000 | 070000000 |
                  080000000 | 090000000 | 100000000 | 110000000 | 120000000}
            next
         end
         config alert_only_list
            edit "<alert-only-list_signature-id_str>"
            next
         end
         config fpm_disable_list
            edit "<fpm-disable-list_signature-id_str>"
            next
         end
         config scoring_override_disable_list
            edit "<scoring-override-disable-list_signature-id_str>"
            next
         end
         config score_grade_list
            edit "<score-grade-list_signature-id_str>"
               set scoring-grade {low | critical | informational | moderate | substantial | severe}
            next
         end
         config filter_list
            edit <entry_index>
               set signature_id "<signature-id_str>"
               set match-target {HTTP_METHOD | CLIENT_IP | HOST | URI | FULL_URL | PARAMETER | COOKIE |
                     HTTP_HEADER | JSON_ELEMENTS}
               set operator {STRING_MATCH | REGEXP_MATCH | EQ | NE| INCLUDE | EXCLUDE}
               set HTTP-method {get post head options trace connect delete put others patch}
               set ip {<ipv4> | <ipv6>}
               set name {"<name_str>" | "<name_pattern>"}
               set value-check {enable | disable}
               set value {"<value_str>" | "<value_pattern>"}
               set concatenate-type {AND | OR}
            next
            set comment "<comment_str>"
         end
      next
   end
```

Variable	Description	Default
"<signature-set_name>"	Enter the name of a new or existing rule. The maximum length is 63 characters. To display the list of existing rules, enter: `edit ?`	No default.
credit-card-detection-threshold <instances_int>	Enter the number of credit cards that triggers the credit card number detection feature. For example, to ignore web pages with only one credit card number, but to detect when a web page containing two or more credit cards, enter `2`. The valid range is 1-128.	`1`
custom-protection-group "<group_name>"	Enter the name of the custom signature group to be used, if any. The maximum length is 63 characters. To display the list of existing custom signature groups, enter: `set custom-protection-group ?`	No default.
sensitivity-level {1|2|3|4}	Increasing the level adds additional signatures but also adds the chance of blocking legitimate traffic.	4
personally-identifiable-information-hyperscan-mode {enable | disable}	Enable to use hyperscan to detect personally identifiable information in the response body. Run `diagnose system waf-signature status` to verify whether your FortiWeb model and the FDS support hyperscan. As shown in the following screenshot, the "Hyperscan valid platform" confirms that your FortiWeb model supports hyperscan. However, the remaining lines indicate that the current version of the FDS does not yet support hyperscan signatures.  FortiWeb # diagnose system waf-signature status Signature Build Number: 0.00361 Signature Engine Version: 5.3.0 Total number of signatures: 2902 Total number of loaded signatures: 2852 Total number of obsolete signatures(Bad Robot) and unused signatures(SBD): 50 Total number of unsupported signatures: 0 Hyperscan Version: 4.7.0 Hyperscan valid platform: Yes PII by Hyperscan: No available signatures Compilation of PII by Hyperscan: No available signatures Total number of unsupported Hyperscan PII signatures: 3 Unsupported Hyperscan PII signatures: 100020002, 100020004, 100010001	disable
{010000000 | 020000000 | 030000000 | 040000000 | 050000000 | 060000000 | 070000000 | 080000000 | 090000000 | 100000000 | 110000000 | 120000000}	Enter the ID of a signature class (or, for subclass overrides, the subclass ID). To display the list of signature classes, enter: `edit ?`	No default.

Variable	Description	Default
action {alert |alert_deny | block-period |only_erase | send_HTTP_response | alert_erase | redirect | deny_no_log}	Select which action the FortiWeb appliance will take when it detects a signature match. **Note:** This is not a single setting. Available actions may vary slightly, depending on what is possible for each specific type of attack/information disclosure. • `alert`–Accept the request and generate an alert email and/or log message. **Note:** Does **not** cloak, except for removing sensitive headers. (Sensitive information in the body remains unaltered.) • `alert_deny`–Block the request (or reset the connection) and generate an alert email and/or log message. You can customize the web page that FortiWeb returns to the client with the HTTP status code. For details, see "system replacemsg" on page 1. • `block-period`–Block subsequent requests from the client for a number of seconds. Also configure block-period <seconds_int> on page 633. **Note:** If FortiWeb is deployed behind a NAT load balancer, when using this option, you **must** also define an X-header that indicates the original client's IP. Failure to do so may cause FortiWeb to block **all** connections when it detects a violation of this type. For details, see waf x-forwarded-for on page 746. • `only_erase`–Hide sensitive information in replies from the web server (sometimes called "cloaking"). Block the request or remove the sensitive information, but do not generate an alert email and/or log message. **Caution:** This option is not supported in Offline Protection mode. • `send_HTTP_response`–Block and reply to the client with an HTTP error message, and generate an alert email, a log message, or both • `alert_erase`–Hide replies with sensitive information (sometimes called "cloaking"). Block the reply (or reset the connection) or remove the sensitive information, and generate an alert email and/or log message. • `deny_no_log`–Deny a request. Do not generate a log message. **Note:** This option is not fully supported in Offline Protection mode. Effects will be identical to `alert`; sensitive information will not be blocked or erased.	`alert`

Variable	Description	Default
	• `redirect`–Redirect the request to the URL that you specify in the protection profile and generate an alert email and/or log message. Also configure redirect-url "<redirect_fqdn>" on page 728 and rdt-reason {enable | disable} on page 729. **Caution:** FortiWeb ignores this setting if monitor-mode {enable | disable} on page 166 is enabled. **Note:** Actions that generate log messages alert email actions require the features to be enabled and configured. For details, see log disk on page 66 and log alertMail on page 60. **Note:** If you select an auto-learning profile in the policy with Offline Protection profiles that use this rule, select `alert`. If the `action` is `alert_deny`, the FortiWeb appliance resets the connection when it detects an attack and the session information for the auto-learning feature will be incomplete. For details about auto-learning requirements, see "waf web-protection-profile autolearning-profile" on page 1.	
block-period <seconds_int>	Enter the number of seconds that you want to block subsequent requests from the client after the FortiWeb appliance detects that the client has violated the rule. The valid range is 1-3,600 seconds. The setting is applicable only if `action` is `period-block`. **Note:** This is not a single setting. You can configure the block period separately for each signature category.	`600`
severity {Low | Medium | High | Info}	When rule violations are recorded in the attack log, each log message contains a **Severity Level** (`severity_level`) field. Select which severity level the FortiWeb appliance will use when it logs a violation of the rule: • `Low` • `Medium` • `High` **Note:** This is not a single setting. You can configure the severity separately for each signature category.	`Medium`
trigger "trigger-policy_name>"	Enter the name of the trigger, if any, to apply when a protection rule is violated. For details, see log trigger-policy on page 97. The maximum length is 63 characters. To display the list of existing triggers, enter: `set trigger ?` **Note:** This is not a single setting. You can configure a different trigger for each signature category.	No default.

Variable	Description	Default
"<signature-id_str>"	Enter the ID of a specific signature that you want to disable. Some signatures often cause false positives and are disabled by default. To display a list, enter: `edit ?`	No default.
"<alert-only-list_signature-id_str>"	Enter the ID of a specific signature that generates logs or alert email only and does not block matching requests.	No default.
"<fpm-disable-list_signature-id_str>"	Enter the ID of a specific signature for which false positive mitigation is disabled. The false positive mitigation feature performs additional lexical and syntax analysis after a SQL injection signature matches a request.	No default.
"<scoring-override-disable-list_signature-id_str>"	Enter the ID of a specific signature that will not be affected by the threat weight settings, if any. When traffic violates specified signature, FortiWeb takes the local action specified for that signature.	No default.
"<score-grade-list_signature-id_str>"	Enter the ID of a specific signature to configure its threat weight. Specify the `scoring-grade` to set the threat weight of the specified signature.	No default.
scoring-grade {low | critical | informational | moderate | substantial | severe}	Specify the threat weight that the signature adds to the combined threat weight. Global threat weight risk level values can be modified using server-policy pattern threat-weight on page 133.	No default.
<entry_index>	Enter the index number of the individual entry in the table. The valid range is 1-128. You can create up to 128 exceptions for each signature.	No default.
signature_id "<signature-id_str>"	Enter the ID of a specific signature that you want to disable when the request matches the specified object.	No default.
match-target {HTTP_METHOD | CLIENT_IP | HOST | URI | FULL_URL | PARAMETER | COOKIE | HTTP_HEADER | JSON_ELEMENTS}	Enter the type of object that FortiWeb examines for matching values: • `HTTP_METHOD`–One or more HTTP methods specified by HTTP-method {get post head options trace connect delete put others patch} on page 635. • `CLIENT_IP`–The IP address or IP range specified by `ip {<ipv4> | <ipv6>} on page 635`. • `HOST`–The `Host:` field value specified by value {"<value_str>" | "<value_pattern>"} on page 636. • `URI`–The URL value specified by `value`. The value does not include parameters.	

Variable	Description	Default
	• FULL_URL–The URL value specified by value. The value includes parameters to match. • PARAMETER–A parameter specified by name {"<name_str>" | "<name_pattern>"} on page 635. To match a specific parameter value, enable value-check {enable | disable} on page 636, and then specify value. • COOKIE–A cookie specified by name. To match a specific cookie value, enable value-check, and then specify value.	
operator {STRING_MATCH | REGEXP_MATCH | EQ | NE| INCLUDE | EXCLUDE}	Enter the type of values to match. The match-target value determines which types are available. • STRING_MATCH–value is a literal value (for example, a literal host name). • REGEXP_MATCH–value is a regular expression that matches the object the exception applies to. • EQ–When match-target is CLIENT_IP, FortiWeb only performs a signature scan for requests with a client IP address that matches the value of ip. • NE–When match-target is CLIENT_IP, FortiWeb does not perform a signature scan for requests with a client IP address that matches the value of ip. • INCLUDE–When match-target is HTTP_METHOD, FortiWeb does not perform a signature scan for requests that include the HTTP methods specified by HTTP-method. • EXCLUDE–When match-target is HTTP_METHOD, FortiWeb only performs a signature scan for requests that include the HTTP methods specified by HTTP-method.	
HTTP-method {get post head options trace connect delete put others patch}	When match-target {HTTP_METHOD | CLIENT_IP | HOST | URI | FULL_URL | PARAMETER | COOKIE | HTTP_HEADER | JSON_ELEMENTS} on page 634 is HTTP_METHOD, specifies one or more HTTP methods to match.	No default.
ip {<ipv4> | <ipv6>}	When match-target {HTTP_METHOD | CLIENT_IP | HOST | URI | FULL_URL | PARAMETER | COOKIE | HTTP_HEADER | JSON_ELEMENTS} on page 634 is CLIENT_IP, specifies the IP address or IP range to match.	No default.
name {"<name_str>" | "<name_pattern>"}	Enter the name of a parameter or cookie to match. Whether the value is a literal value or a regular expression is determined by the value of operator {STRING_MATCH | REGEXP_MATCH | EQ | NE| INCLUDE | EXCLUDE} on page 635.	No default.

Variable	Description	Default
	Available when match-target {HTTP_METHOD | CLIENT_IP | HOST | URI | FULL_URL | PARAMETER | COOKIE | HTTP_HEADER | JSON_ELEMENTS} on page 634 is PARAMETER or COOKIE.	
value-check {enable | disable}	Enable to specify whether matching requests match a specified parameter or cookie value as well as the specified parameter or cookie name.	disable
value {"<value_str>" | "<value_pattern>"}	Enter the value to match (for example, a Host: field value). Whether the value is a literal value or a regular expression is determined by the value of operator.	No default.
concatenate-type {AND | OR}	• AND–A matching request matches this entry in addition to other entries in the list. • OR–A matching request matches this entry or other entries in the list.	AND
comment "<comment_str>"	Enter a description or other comment.	No default.

Example

This example enables both the Trojans (070000000) and XSS (010000000) classes of signatures, setting them to result in attack logs with a severity_level field of High, and using the email and SNMP settings defined in notification-servers1. It also enables use of custom attack and data leak signatures in the set named custom-signature-group1.

This example disables by ID a signature that is known to cause false positives (080200001). It also makes an exception (config filter_list) by ID for a specific signature (070000001) for a URL (/virus-sample-upload) on a host (www.example.com) that is used by security researchers to receive virus samples.

```
config waf signature
   edit "attack-signatures1"
      set custom-protection-group "custom-signature-group1"
      config main_class_list
         edit "010000000"
            set severity High
            set trigger "notification-servers1"
         next
         edit "070000000"
            set severity High
            set trigger "notification-servers1"
         next
      end
      config signature_disable_list
         edit "080200001"
         next
      end
      config filter_list
         edit 1
            set signature_id "070000001"
            set match-target HOST
            set value "www.example.com"
```

```
        next
        edit 2
           set signature_id "070000001"
           set match-target URI
           set value "/virus-sample-upload"
        next
      end
   next
end
```

Related topics

- waf web-protection-profile inline-protection on page 720
- waf web-protection-profile offline-protection on page 731
- system snmp community on page 383
- waf custom-protection-group on page 499
- log trigger-policy on page 97

waf signature_update_policy

Use this command to deploy new signature updates in alert mode.

Syntax

```
config waf signature_update_policy
      set status {enable | disable}
end
```

Variable	Description	Default
status {enable | disable}	Enable to list new signatures from the FDS update.	`disable`

Example

This example shows how to enable the option to show the new signature list from the FDS update.

```
config waf signature_update_policy
      set status enable
end
```

Related topics

- waf signature on page 628

waf site-publish-helper authentication-server-pool

Use this command to create a pool of authentication server connections for use with a site publishing rule.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
config waf site-publish-helper authentication-server-pool
   edit "<authentication-server-pool_name>"
         edit <entry_index>
            set server-type {ldap | radius}
            set ldap-server "<ldap-query_name>"
            set radius-server "<radius-query_name>"
            set rsa-securid {enable | disable}
      end
   next
end
```

Variable	Description	Default
"<authentication-server-pool_name>"	Enter the name of a new or existing authentication server pool. The maximum length is 63 characters. To display the list of existing pools, enter: `edit ?`	No default.
<entry_index>	Enter the index number of a new or existing server entry in the authentication server pool.	No default.
server-type {ldap | radius}	Set the server type to the server entry `<entry_index>`. Enter `ldap` for a LDAP server or `radius` for a RADIUS server.	`ldap`
ldap-server "<ldap-query_name>"	Set the name of the LDAP query to the server entry `<entry_index>` if you set the server entry as LDAP. For details, see user ldap-user on page 405.	No default.
radius-server "<radius-query_name>"	Set the name of the RADIUS query to the server entry `<entry_index>` if you set the server entry as RADIUS. For details, see user radius-user on page 414.	No default.

Variable	Description	Default
rsa-securid {enable | disable}	Specify whether FortiWeb authenticates clients using a username and a RSA SecurID authentication code only. Users are not required to enter a password. When this option is enabled, the authentication delegation options in the site publish rule are not available. Available only if server-type {ldap | radius} on page 638 is `radius` and client-auth-method {html-form-auth | HTTP-auth | client-cert-auth | saml-auth | ntlm-auth} on page 646 is `html-form-auth`.	`disable`

Example

For an example, see waf site-publish-helper rule on page 643.

Related topics

- waf site-publish-helper rule on page 643

waf site-publish-helper form-based-delegation

Use this command to create a Form Based Delegation rule.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
config waf site-publish-helper form-based-delegation
   edit waf site-publish-helper form-based-delegation
      set url-type { plain | regular}
      set logon-url <URL>
      set form-action <URL>
      set additional-cookies
      set username-field
      set password-field
      set waf site-publish-helper form-based-delegation
   next
end
```

Variable	Description	Default
form-based-delegation_ name	Enter a name for the Form based Delegation rule.	No default.
url-type { plain | regular}	`plain`–Enter a literal URL, such as /folder1/index.htm that the HTTP request must contain in order to match the rule, or use wildcards to match multiple URLs, such as /folder1/* or /folder1/*/index.htm. The URL must begin with a slash (/). `regular`–A regular expression, such as ^/*.php, matching the URLs to which the rule should apply. The pattern does not require a slash (/).	plain
logon-url <URL>	Enter the logon URL in simple string or regular expression.	No default.
form-action <URL>	The URL of the form.	No default.
method { PUT | GET}	Select whether to use GET or POST method to initiate the authentication requests to the server.	POST
additional-cookies	Configure to add cookie in the authentication request.	`disable`
username-field	The keyword of the username field.	No default.
password-field	The keyword of the password field.	No default.
additional-field-list	Enter additional fields to add in the authentication request. `field-entry: field content` The format must be “key=value”	No default.

To use the **Form Based Delegation**, you need to create a **Site Publish** rule, select **HTML Form Authentication** for **Client Authentication Method**, select **Form Based Delegation** for **Authentication Delegation**, then choose the Form Based Delegation you have created. See waf site-publish-helper rule on page 643.

waf site-publish-helper policy

Use this command to group together web applications that you want to publish.

Before you configure site publishing policies, you must first define the individual sites that will be a part of the group. For details, see waf site-publish-helper rule on page 643.

To apply this policy, include it in an inline web protection profile. For details, see waf web-protection-profile inline-protection on page 720.

To use this command, your administrator account’s access control profile must have either `w` or `rw` permission to the `wafgrp` area. For details, see Permissions on page 46.

Syntax

```
config waf site-publish-helper policy
```

```
    edit "<site-publish-policy_name>"
       set account-lockout {enable | disable}
       set max-login-failures <failures_int>
       set account-block-period <account-block-period_int>
       set within <within_int>
       set limit-users {enable | disable}
       set maximum-users <integer>
       set session-idle-timeout <integer>
       set credential-stuffing-protection {enable | disable}
       set action {alert | alert_deny | block-period | deny_no_log}
       set block-period <block_period_int>
       set severity {high | medium | low | Info}
       set trigger "<trigger_policy>"
       config rule
          edit <entry_index>
             set rule-name "<site-publish-rule_name>"
          next
       end
    next
end
```

Variable	Description	Default
"<site-publish-policy_name>"	Enter the name of a new or existing policy. The maximum length is 63 characters. To display the list of existing policies, enter: `edit ?`	No default.
account-lockout {enable | disable}	Enable to prevent account cracking by locking an account out after several failures logging into FortiWeb.	`disable`
max-login-failures <failures_int>	Set the threshold of login failure. FortiWeb will trigger lockout to the account if number of login failure exceeds the threshold during the specified time period (`within <within_int>` on page 641).	`5`
account-block-period <account-block-period_int>	Set the time period (in minutes) that FortiWeb locks out an account for. No more login is accepted for the locked account during the period.	`60`
within <within_int>	Set the time period (in minutes) for FortiWeb counting the login failures and judging lockout to accounts. Count of login failure of an account will be reset when the time period is up.	`3`
limit-users {enable | disable}	Enable to limit the number of concurrent logins per account.	`disable`
maximum-users <integer>	Specify the maximum number of concurrent logins using the same account.	`1`
session-idle-timeout <integer>	When a session is idle for the specified period of time, the Concurrent Users count will be renewed. The user who is timed-out needs to re-log in.	`30`

Variable	Description	Default
credential-stuffing-protection {enable | disable}	Enable to use FortiGuard's Credential Stuffing Defense database to prevent against credential stuffing attacks.	`disable`
action {alert | alert_deny | block-period | deny_no_log}	Set the action. The options are: • `alert`–Accept the request and generate an alert email and/or log message. • `alert_deny`–Block the request (or reset the connection) and generate an alert email and/or log message • `block-period`–Block subsequent requests from the client for a number of seconds. • `deny_no_log`–Deny a request. Do not generate a log message. You can customize the web page that returns to the client with the HTTP status code.	No default.
block-period <block_period_int>	If the action {alert | alert_deny | block-period | deny_no_log} on page 642 is `block-period`, set amount of time (in seconds) FortiWeb will block subsequent requests from the client. The valid range is 1-3600 seconds.	600
severity {high | medium | low | Info}	Set the severity of credential stuffing attacks.	No default.
trigger "<trigger_policy>"	Select the trigger policy, if any, to apply in the Site Publish policy. For details, see log trigger-policy on page 97.	No default.
<entry_index>	Enter the index number of the individual entry in the table. The valid range is 1-9,999,999,999,999,999,999.	No default.
rule-name "<site-publish-rule_name>"	Enter the name of an existing rule.	No default.

Example

For an example, see waf site-publish-helper rule on page 643.

Related topics

- waf site-publish-helper rule on page 643
- waf web-protection-profile inline-protection on page 720

waf site-publish-helper rule

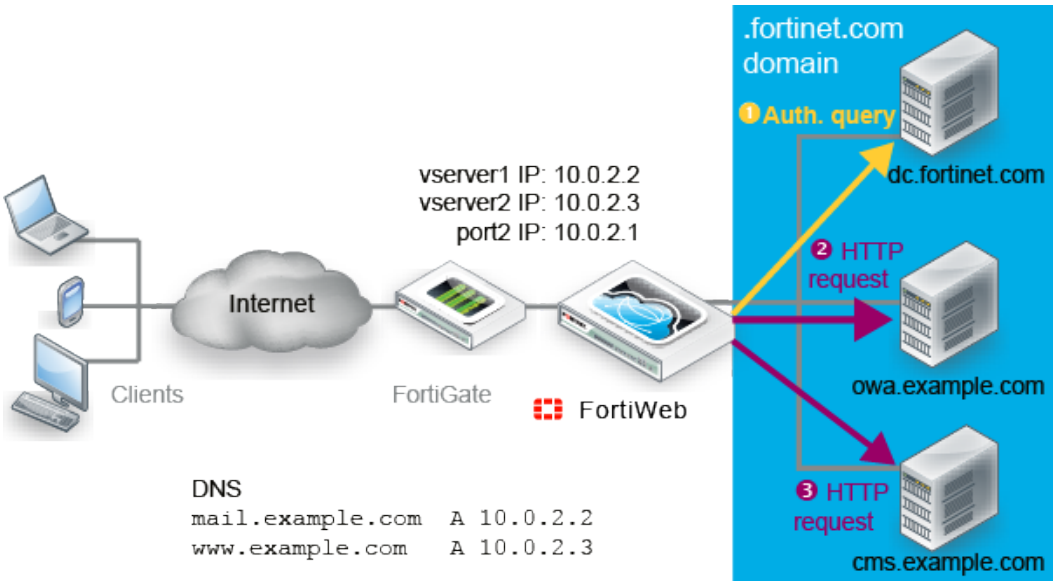
Use this command to configure access control, authentication, and, optionally, SSO for your web applications.

You may want to configure single sign-on (SSO) and combination access control and authentication (called “site publishing” in the GUI) instead of configuring simple HTTP authentication rules if:

- Your users access multiple web applications on your domain
- You have defined accounts centrally on an LDAP (such as Microsoft Active Directory) or RADIUS server

SSO provides a benefit over HTTP authentication rules: your users do not need to authenticate each time they access separate web applications in your domain. When FortiWeb receives the first request, it will return (depending on your configuration) an HTML authentication form or HTTP `WWW-Authenticate:` code to the client.

FortiWeb sends the client’s credentials in a query to the authentication server. Once the client is successfully authenticated, if the web application supports HTTP authentication and you have configured delegation, FortiWeb forwards the credentials to the web application. The server’s response is returned to the client. Until the session expires, subsequent requests from the client to the same or other web applications in the same domain do not require the client to authenticate..



For example, you may prefer SSO if you are using FortiWeb to replace your discontinued Microsoft Threat Management Gateway, using it as a portal for multiple applications such as SharePoint, Outlook Web Application, and/or IIS. Your users will only need to authenticate once while using those resources.

Before you configure site publishing, you must first define the queries to your authentication server. For details, see user ldap-user on page 405 and "server-policy custom-application application-policy" on page 1.

FortiWeb supports the following additional site publishing options:

- RADIUS authentication that requires users to provide a secondary password, PIN, or token code in addition to a username and password (two-factor authentication)
- RADIUS authentication that allows users to authenticate using their username and RSA SecurID token code only (no password)
- Regular Kerberos authentication delegation and Kerberos constrained delegation

For details about these options, see the descriptions of the individual site publishing rule settings and the *FortiWeb Administration Guide*:

https://docs.fortinet.com/document/fortiweb

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `wafgrp` area. For details, see Permissions on page 46.

Syntax

```
config waf site-publish-helper rule
   edit "<site-publish-rule_name>"
      set status {enable | disable}
      set req-type {plain | regular}
      set cookieless {enable | disable}
      set cookieless-cache <int>
      set saml-server "<server_name>"
      set service-principal-name-pool "<pool_name>"
      set published-site "<host_fqdn>"
      set path "<url_str>"
      set client-auth-method {html-form-auth | HTTP-auth | client-cert-auth | saml-auth | ntlm-
        auth}
      set logoff-path-type {plain | regular}
      set Published-Server-Logoff-Path "<url_str>"
      set cookie-timeout <timeout_int>
      set kerberos-type {krb5 | spnego} on page 652
      set auth-server-pool "<authentication-server-pool_name>"
      set auth-delegation {HTTP-basic | kerberos  | kerberos-constrained-delegation | radius-
        constrained-delegation |no-delegation | ntlm | form-based-delegation}
      set form-based-delegation <form-based-delegation_name>
      set field-name {subject | SAN}
      set attribution-name {email | UPN}
      set pass-failed-auth {enable | disable}
      set delegated-spn "<delegated-spn_str>"
      set keytab-file <keytab_file>
      set delegator-spn "<delegator-spn_str>"
      set upn-support {enable | disable}
      set default-domain-realm "<string>"
      set alert-type {all | fail | none | success}
      set sso-support {enable | disable}
      set sso-domain "<domain_str>"
      set cookieless {enable | disable}
      set append-custom-header {enable | disable}
      set custom-header-name <custom-header-name_str>
      set custom-header-value-format <custom-header-value-format_str>
      set pass-failed-auth {enable | disable}
      set cache-tgs-ticket {enable | disable}
   next
end
```

Variable	Description	Default
"<site-publish-rule_name>"	Enter the name of a new or existing rule. The maximum length is 63 characters. To display the list of existing rules, enter: `edit ?`	No default.
status {enable | disable}	Enable to activate this rule. This can be used to temporarily deactivate access to a single web application without removing it from a site publishing policy.	`enable`
req-type {plain | regular}	Select whether published-site "<host_fqdn>" on page 645 contains a literal FQDN (`plain`), or a regular expression designed to match multiple host names or fully qualified domain names (`regular`).	`plain`
cookieless {enable | disable}	Enable to authenticate clients without using cookies. For cookieless authentication, FortiWeb uses credential cache to avoid frequent requests to the authentication server.	`disable`
cookieless-cache <int>	You can set the cache timeout value for the cookieless authentication. The valid range is 0-86,400. When it's set to 0, FortiWeb will send authentication requests to the authentication server every time the user logs in.	`3600`
saml-server "<server_name>"	Select the SAML server that FortiWeb uses to authenticate clients. Available only when client-auth-method {html-form-auth | HTTP-auth | client-cert-auth | saml-auth | ntlm-auth} on page 646 is set to `saml-auth`.	No default.
service-principal-name-pool "<pool_name>"	Select the SPN pool for the application that clients access using this site publish rule. Available only when auth-delegation {HTTP-basic | kerberos | kerberos-constrained-delegation | radius-constrained-delegation |no-delegation | ntlm | form-based-delegation} on page 647 is `kerberos` or `kerberos-constrained-delegation`.	No default.
published-site "<host_fqdn>"	Depending on your selection in req-type {plain | regular} on page 645, enter either: • The literal `Host:` name, such as `sharepoint.example.com`, that the HTTP request must contain in order to match the rule. • A regular expression, such as `^*\.example\.edu`, matching only the host names to which the rule should apply.	No default.

Variable	Description	Default
	The maximum length is 255 characters. **Note:** Regular expressions beginning with an exclamation point (!) are not supported. For information on language and regular expression matching, see the *FortiWeb Administration Guide*: https://docs.fortinet.com/document/fortiweb	
path "<url_str>"	Enter the URL of the request for the web application, such as `/owa`. It must begin with a forward slash (/).	No default.
client-auth-method {html-form-auth | HTTP-auth | client-cert-auth | saml-auth | ntlm-auth}	Specify one of the following options: • `html-form-auth`—FortiWeb authenticates clients by presenting an HTML web page with an authentication form. When the authentication cookie expires, FortiWeb replies to the first request without a valid authentication cookie with a 200 (OK) status code and injects HTML into the response, showing the user the login page. • `HTTP-auth`—FortiWeb authenticates clients by replying to the request with a 401 (Unauthorized) status code, and the browser displays a traditional, browser-specific authentication prompt. • `client-cert-auth`—FortiWeb validates the HTTP client's personal certificate using the certificate verifier specified in the associated server policy or server pool configuration. • `saml-auth`—FortiWeb uses a SAML server to pass identity information to a service provider via a signed XML document for client authentication. When the authentication cookie expires, FortiWeb replies to the first request without a valid authentication cookie with a 301 (Moved Temporarily) status code, forcing the browser to direct to the authentication page. • `ntlm-auth`—FortiWeb uses a NTLM server for client authentication. FortiWeb replies to the first request from the client with a 401 (Unauthorized) status code, and the browser displays a traditional, browser-specific authentication prompt. If waf site-publish-helper rule on page 643 is `enable`, only `HTTP_auth` is allowed here.	`html-form-auth`
logoff-path-type {plain | regular}	Specify whether `Published-Server-Logoff-Path` contains a literal URL (`plain`), or a regular expression designed to match multiple URLs (`regular`).	
Published-Server-Logoff-Path "<url_str>"	This setting appears only if client-auth-method {html-form-auth | HTTP-auth | client-cert-auth | saml-auth | ntlm-auth} on page 646 is `html-form-auth`.	No default.

Variable	Description	Default
	Depending on the value of `logoff-path-type`, enter one of the following values: • The literal URL of the request that a client sends to log out of the application (for example, `/owa/auth/logoff.aspx` . • A regular expression that matches the request that a client sends to log out of the application. Ensure that the value is a sub-path of the `path` value. For example, if `path` is `/owa`, `/owa/auth/logoff.aspx` is a valid value. When a client logs out of the web application, FortiWeb redirects the client to its authentication dialog. **Note:**Regular expressions beginning with an exclamation point (`!`) are not supported. For information on language and regular expression matching, see the *FortiWeb Administration Guide*: https://docs.fortinet.com/document/fortiweb	
cookie-timeout <timeout_int>	Specify the length of time (in minutes) that passes before the cookie that the site publish rule adds expires and the client must re-authenticate. The valid range is 0-216,000. To disable the limit, enter `0`. If waf site-publish-helper rule on page 643 is `enable`, this must be `0`. If you enter a value of `0`, the browser only deletes the cookie when the user closes all browser windows.	0
auth-server-pool "<authentication-server-pool_name>"	Enter the name of the pool of servers that FortiWeb uses to authenticate clients. For details, see waf site-publish-helper authentication-server-pool on page 638.	No default.
auth-delegation {HTTP-basic | kerberos | kerberos-constrained-delegation | radius-constrained-delegation |no-delegation | ntlm | form-based-delegation}	Specify one of the following options: • `HTTP-basic`—Use HTTP `Authorization:` headers with Base64 encoding to forward the client's credentials to the web application. Typically, you should select this option if the web application supports HTTP **protocol**-based authentication. Available only if client-auth-method {html-form-auth | HTTP-auth | client-cert-auth | saml-auth | ntlm-auth} on page 646 is `html-form-auth` or `HTTP-auth`. • `kerberos`—After it authenticates the client via the HTTP form or HTTP basic method, FortiWeb obtains a Kerberos service ticket for the specified web application on behalf of the client. It adds the ticket to the HTTP `Authorization:` header of the client request with Base64 encoding.	`no-delegation`

Variable	Description	Default
	Available only if `client-auth-method` is `html-form-auth` or `HTTP-auth`. • `kerberos-constrained-delegation`—After it authenticates the client's certificate, FortiWeb obtains a Kerberos service ticket for the specified web application on behalf of the client. It adds the ticket to the HTTP `Authorization:` header of the client request with Base64 encoding. Available only if `client-auth-method` is `client-cert-auth`. • `radius-constrained-delegation`—After it authenticates the client's certificate, FortiWeb sends a RADIUS access-request to the RADIUS server, using the RFC822 name (email address) of the certificate's Subject Alternative Name. For some applications a prefix should be added to the mail address sent to the RADIUS server (example: "app1/forename.surname@org.com"). Use `field-name` to define the format of the extracted user name. Available only if `client-auth-method` is `client-cert-auth`. • `no-delegation`—FortiWeb does not send the client's credentials to the web application. Select this option when the web application has no authentication of its own or uses HTML form-based authentication. **Note:** If the web application uses HTML form-based authentication, the client is required to authenticate twice: once with FortiWeb and once with the web application's form. • `ntlm`—FortiWeb uses NT LAN Manager (NTLM) for authentication delegation. This is a challenge/response authentication protocol that FortiWeb uses to verify the identify of clients attempting to connect to the server(s). **Note**: If the `POST` method request triggers NTLM authentication, the request body cannot exceed 100M. • `form-based-delegation`—FortiWeb uses Form Based Delegation to forward the client's credentials to the server. Available only when `client-auth-method` is `html-form-auth`.	

Variable	Description	Default
	If waf site-publish-helper rule on page 643 is `enable`, only `no_delegation` or `HTTP-basic` is allowed here. Not available when rsa-securid {enable | disable} on page 639 is set to `enable`.	
field-name	Enter the username format that FortiWeb uses to send the user email address to the RADIUS server for authorization. For example, let's say the email address of the user account is example@abc.com. If the format is USERNAME, FortiWeb will send `example` to RADIUS server. If the format is RAWNAME, FortiWeb will send `example@abc.com` to RADIUS server. You can add any letter before or/and after USERNAME/RAWNAME. FortiWeb will combine them together and send it to RADIUS server. So, to send `app1/example@abc.com`, you can enter either `app1/USERNAME@abc.com` or `app1/RAWNAME`. **Note:** USERNAME and RAWNAME should be exactly as is, and in upper case. This option is available only when `auth-delegation` is `radius-constrained-delegation`.	No default.
form-based-delegation <form-based-delegation_name>	Select the Form Based Delegation you have created. See waf site-publish-helper form-based-delegation.	No default.
field-name {subject | SAN}	Specify one of the following options to specify the certificate information that FortiWeb uses to determines the client username: • `subject`–The email address value in the certificate's Subject information. For attribution-name {email | UPN} on page 650, select `email`. • `SAN`–The certificate's subjectAltName (Subject Alternative Name or SAN) and either the User Principal Name (UPN) or the email address value in the certificate's Subject information. For `attribution-name`, enter `UPN` or `email`. In certificates issued in a Windows environment, the certificate's SAN and UPN contain the username. For example: `username@domain`	SAN

Variable	Description	Default
	Available only when auth-delegation {HTTP-basic | kerberos | kerberos-constrained-delegation | radius-constrained-delegation |no-delegation | ntlm | form-based-delegation} on page 647 is `kerberos-constrained-delegation`.	
attribution-name {email | UPN}	Specify one of the following options to specify the certificate information that FortiWeb uses to determines the client username: • `email`—The email address value in the certificate's Subject information. For field-name {subject | SAN} on page 649, enter `subject` or `SAN`. • `UPN`—The User Principal Name (UPN) value. For `field-name`, enter `SAN`. **Note:** Because the email value can be an alias rather than the real DC (domain controller) domain, the most reliable method for determining the username is SAN and UPN. Available only when auth-delegation {HTTP-basic | kerberos | kerberos-constrained-delegation | radius-constrained-delegation |no-delegation | ntlm | form-based-delegation} on page 647 is `kerberos-constrained-delegation`.	UPN
delegated-spn "<delegated-spn_str>"	Specify the Service Principal Name (SPN) for the web application that clients access using this site publish rule. A service principal name uses the following format: `<service_type >/<instance_name>:<port_number>/<service_name>` For example, for an Exchange server that belongs to the domain `dc1.com` and has the hostname `USER-U3LOJFPLH1`, the SPN is `HTTP/USER-U3LOJFPLH1.dc1.com@DC1.COM`. Available only when auth-delegation {HTTP-basic | kerberos | kerberos-constrained-delegation | radius-constrained-delegation |no-delegation | ntlm | form-based-delegation} on page 647 is `kerberos` or `kerberos-constrained-delegation`.	No default.
keytab-file <keytab_file>	Specify the keytab file configuration for the AD user that FortiWeb uses to obtain Kerberos service tickets for clients. For details, see "waf site-publish-helper keytab_file" on page 1.	No default.

Variable	Description	Default
	Available only when auth-delegation {HTTP-basic | kerberos | kerberos-constrained-delegation | radius-constrained-delegation |no-delegation | ntlm | form-based-delegation} on page 647 is `kerberos-constrained-delegation`.	
delegator-spn "<delegator-spn_str>"	Specify the Service Principal Name (SPN) that you used to generate the keytab specified by keytab-file <keytab_file> on page 650. This is the SPN of the AD user that FortiWeb uses to obtain a Kerberos service tickets for clients. Available only when auth-delegation {HTTP-basic | kerberos | kerberos-constrained-delegation | radius-constrained-delegation |no-delegation | ntlm | form-based-delegation} on page 647 is `kerberos-constrained-delegation`.	No default.
upn-support {enable | disable}	Enable to allow FortiWeb to construct the Kerberos client identity using UPN format (e.g., `user@example.com`), encoded as an Enterprise Principal Name (EPN). This option is available only when **auth-delegation** is set to **kerberos-constrained-delegation**. When disabled, FortiWeb uses the standard Kerberos Principal Name (KPN) format (user@REALM).	`disable`
default-domain-realm "<string>"	Specify the default domain or realm to append to the client identity when the UPN does not explicitly include one. This value is used only when **auth-delegation** is set to **kerberos-constrained-delegation**.	No default.
sso-domain "<domain_str>"	Enter the domain suffix of `Host:` names that will be allowed to share this rule's authentication sessions, such as `.example.com`. Include the period (`.`) that precedes the host's name.	No default.
sso-support {enable | disable}	Enable for single sign-on support. For example, if this website is `www1.example.com` and the SSO domain is `.example.com`, once a client has authenticated with that site, it can access `www2.example.com` without authenticating a second time. Site publishing SSO sessions exist on FortiWeb only; they are not synchronized to the authentication and/or accounting server, and therefore SSO is not shared with non-web applications. For SSO with other protocols, consult the documentation for your FortiGate or other firewall.	`disable`

Variable	Description	Default
	If waf site-publish-helper rule on page 643 is `enable`, this must be `disable`.	
alert-type {all | fail | none | success}	Specify which site publishing-related authentication events the FortiWeb appliance will log and/or send an alert email about. • `all` • `fail` • `success` • `none` Event log messages contain the user name, authentication type, success or failure, and source address (for example, `User jdoe [Site Publish] login successful from 172.0.2.5`) when an end-user successfully authenticates. A similar message is recorded if the authentication fails (for example, `User hackers [Site Publish] login failed from 172.0.2.5`). **Note:** Logging and/or alert email occurs only if it is enabled and configured. For details, see log disk on page 66 and log alertMail on page 60.	`none`
cookieless {enable | disable}	Enable to allow Android clients to access to Microsoft Exchange servers through Exchange ActiveSync protocol. **Note:** If this is enabled, these are restrictions are put in place: • Only `HTTP_auth` is allowed for client-auth-method {html-form-auth | HTTP-auth | client-cert-auth | saml-auth | ntlm-auth} on page 646. • sso-support {enable | disable} on page 651 must be `disable`. • cookie-timeout <timeout_int> on page 647 must be `0`. • Only `no_delegation`, `HTTP-basic` or `kerberos` is allowed for auth-delegation {HTTP-basic | kerberos | kerberos-constrained-delegation | radius-constrained-delegation |no-delegation | ntlm | form-based-delegation} on page 647.	`disable`
`kerberos-type {krb5 | spnego}`	Two kinds of authorization mechanisms are available, which are used by web servers to retrieve the Kerberos tickets. Available only when Authentication Delegation is Kerberos.	`spnego`
`pass-failed-auth`	Enable it so that FortiWeb can be configured when Kerberos Constrained Delegation fails.	`disable`

Variable	Description	Default
`{enable | disable}`	Available only when client-auth-method {html-form-auth | HTTP-auth | client-cert-auth | saml-auth | ntlm-auth} on page 646 is `client-cert-auth`, and auth-delegation {HTTP-basic | kerberos | kerberos-constrained-delegation | radius-constrained-delegation |no-delegation | ntlm | form-based-delegation} on page 647 is `kerberos-constrained-delegation`.	
`append-custom-header {enable | disable}`	Enable this option to forward the username to the back-end server in HTTP header.	`disable`
`custom-header-name <custom-header-name_str>`	Enter a name for the HTTP header. You can change it to any name as you desire, e.g. X-FortiWeb-Uname, useraccount. Special characters are not supported.	`X-FortiWeb-Username`
`custom-header-value-format <custom-header-value-format_str>`	Enter the format for the value, such as aaa-USERNAME-bbb, xxx-USERNAME, or USERNAME. Special characters are not supported. It must contain "USERNAME" in the value format. FortiWeb replaces the "USERNAME" with the actual username when forwarding the HTTP header to the back-end server.	`xxx-USERNAME-XXX`
`pass-failed-auth {enable | disable}`	This option is enabled automatically when the Authentication Delegation is Kerberos Constrained Delegation. When it is disabled and Kerberos Constrained Delegation fails, 500 and Account Failed Authentication pages will be returned.	`enable`
`cache-tgs-ticket {enable | disable}`	This option is enabled automatically when the Authentication Delegation is Kerberos Constrained Delegation or Kerberos to control whether caching kerberos tgs ticket. When pass-failed-auth {enable | disable} on page 652 is disabled, this option will also be disabled.	`enable`

Example

This example configures a site publisher with SSO for both Outlook and Sharepoint on the `example.com` domain.

```
config waf site-publish-helper authentication-server-pool
   edit "LDAP server pool"
      edit 1
         set server-type ldap
         set ldap-server "LDAP query 1"
      end
   next
end
config waf site-publish-helper authentication-server-pool
   edit "RADIUS server pool"
      edit 1
```

```
        set server-type radius
        set ldap-server "RADIUS query 1"
      end
   next
end
config waf site-publish-helper rule
   edit "Outlook"
      set published-site "^*\.example\.edu"
      set auth-server-pool "LDAP server pool"
      set auth-delegation HTTP-basic
      set sso-support enable
      set sso-domain ".example.edu"
      set path "/owa"
      set alert-type fail
      set Published-Server-Logoff-Path /owa/auth/logoff.aspx?Cmd=logoff
   next
   edit "Sharepoint"
      set published-site ^*\\.example\\.edu
      set req-type regular
      set auth-server-pool "RADIUS server pool"
      set auth-delegation HTTP-basic
      set sso-support enable
      set sso-domain ".example.edu"
      set path "/sharepoint"
      set alert-type fail
   next
end
config waf site-publish-helper policy
   edit "example_com_apps"
      config rule
         edit 1
            set rule-name "Outlook"
         next
         edit 2
            set rule-name "Sharepoint"
         next
      end
   next
end
```

Related topics

- waf site-publish-helper policy on page 640
- waf site-publish-helper authentication-server-pool on page 638
- log trigger-policy on page 97
- server-policy allow-hosts on page 106
- waf web-protection-profile inline-protection on page 720

waf site-publish-helper saml-spool

Use this command to create a pool of SAML servers. For how to create a SAML server, see user saml-user on page 416

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
config waf site-publish-helper saml-spool
   edit "<saml-server-pool_name>"
         edit <entry_index>
            set server-name <string>
            set saml-server "<string>" on page 655
         next
      end
   next
end
```

Variable	Description	Default
"<saml-server-pool_name>"	Enter a name for the SAML server pool that can be referenced by other parts of the configuration. The maximum length is 63 characters. To display the list of existing pools, enter: `edit ?`	No default.
<entry_index>	Enter the index number of a new or existing server entry in the SAML server pool.	No default.
server-name <string>	Set a name for the SAML server. This name will be shown in the SAML server pool table.	No default.
saml-server "<string>"	Enter the name of the SAML server that you have created with `config user saml-user`.	No default.

Related topics

- waf site-publish-helper rule on page 643
- user saml-user

waf staged_signature_list

Use this command to update the status of the signatures.

Syntax

```
config waf staged_signature_list
   edit signature_id <signature_id_int>
      set status {unapplied | applied | disabled}
end
```

Variable	Description	Default
signature_id <signature_id_int>	Select the ID that corresponds to the signature.	No default.
status {unapplied | applied | disabled}	Enable to select an action for the signature. **disabled**: disable the signature across all the web protection policies. If this signature related rule brings multiple blocks, you can confirm the false positive and enable this option. **applied**: change the Alert mode of the signature to normal status, with the action as configured in signature protection policy. **Unapplied**: use this option to cancel the "Disable" and "Approve" operations for a signature.	No default.

Example

This example shows how to update the status of signatures from the FDS update.

```
config waf staged_signature_list
   edit 3
      set status applied
end
```

Related topics

- waf signature_update_policy on page 637

waf subresource-integrity-policy

Use this command to configure a Subresource Integrity Policy.

A Subresource Integrity (SRI) Policy defines a group of external resources that should be validated by the browser before execution. Each policy references one or more **SRI rules**, which specify the exact URL, integrity hash, and cross-origin behavior for protected resources. When the policy is applied to traffic, FortiWeb injects the required `integrity` and `crossorigin` attributes into matching resource tags (e.g., `<script>`, `<link>`) in the response.

SRI policies are configured under the **Client Side Security** module and must be referenced by a **Web Protection Profile** in order to take effect. The profile is then applied through a **Server Policy**, enabling precise control over which web applications enforce integrity validation.

Before you begin:

- Create one or more Subresource Integrity Rules. These rules define the target resource URLs and expected cryptographic hashes. For details, see waf subresource-integrity-rule on page 658.

Syntax

```
config waf subresource-integrity-policy
   edit <name> on page 657
      config rule
         edit <entry_index> on page 657
            set rule-name <datasource> on page 657
         next
      end
   next
end
```

Variable	Description	Default
<name>	A unique identifier for the policy. This name is used internally when associating the policy with a Web Protection Profile.	No default
<entry_index>	Enter the index number of the individual entry in the table.	No default
rule-name <datasource>	Specify a previously configured Subresource Integrity Rule. Each rule can be reused in multiple policies if needed. Each Subresource Integrity Policy supports a maximum of 64 rules.	No default

Example

```
config waf subresource-integrity-policy
  edit "default-sri-policy"
    config rule
      edit 1
        set rule-name "trusted-cdn-jquery"
      next
      edit 2
        set rule-name "trusted-cdn-bootstrap"
      next
    end
  next
end
```

waf subresource-integrity-rule

Use this command to configure a Subresource Integrity (SRI) Rule for use in a Subresource Integrity Policy.

A Subresource Integrity (SRI) Rule defines a single external resource that should be validated by the browser before execution. The rule specifies the resource's expected cryptographic hash and how cross-origin credentials should be handled during the load process. This is useful for JavaScript files, stylesheets, and other assets hosted on third-party CDNs or untrusted sources.

FortiWeb uses this rule to inject integrity and cross-origin attributes into the corresponding `<script>`, `<link>`, or other resource tags in server responses. This ensures that only untampered content is executed on the client side, protecting against risks such as supply chain compromise or JavaScript drift.

Each rule targets a specific URL and must be referenced by a Subresource Integrity Policy to be enforced.

Note: A Subresource Integrity Policy is also required to enable full enforcement capabilities in Client-Side Protection. When used together, SRI and Client-Side Protection provide comprehensive in-browser defense against content manipulation and unauthorized script execution.

Syntax

```
config waf subresource-integrity-rule
   edit <name>
      set url <string>
      set integrity-hash <string>
      set cross-origin {anonymous|use-credentials}
   next
end
```

Variable	Description	Default
`<name>`	A unique identifier for the rule. This name is used internally when associating the rule with a Subresource Integrity Policy.	No default
`url <string>`	The absolute URL of the external resource to be protected. This should match the exact resource reference used in the HTML content (e.g., `https://cdn.example.com/lib/app.js`). FortiWeb uses this URL to locate matching `<script>`, `<link>`, or other resource tags in server responses and apply the appropriate integrity attributes.	No default
`integrity-hash <string>`	The expected cryptographic hash of the resource, formatted as `<algorithm>-<base64-encoded hash>`, such as `sha384-abcd123...==`. The hash must match the actual content of the resource byte-for-byte. If the resource is modified or replaced, the browser will block it from execution. The total length of the integrity hash string must not exceed 1024 characters, including hash algorithms and separating spaces.	No default
`cross-origin {anonymous|use-credentials}`	Determines how the browser handles credentialed requests when fetching the resource:	`anonymous`

Variable	Description	Default
	• **anonymous** - Instructs the browser to fetch the resource without sending cookies, client certificates, or HTTP authentication headers. Recommended for public assets (e.g., third-party CDNs) to prevent credential leakage and reduce CSRF exposure. • **use-credentials** - Instructs the browser to include credentials in the request. Required when the resource is hosted behind authentication (e.g., user-specific content or private APIs). The default is **Anonymous**, which offers better isolation for shared resources.	

Example

```
config waf subresource-integrity-rule
  edit "trusted-jquery"
    set url https://cdn.example.com/js/jquery-3.6.0.min.js
    set integrity-hash sha384-oqVuAfXRKap7fdgcCY5uykM6+R9GqQ8K/uxEMn5Dj8WHz03a+0I4AfA+d+dXbYwK
    set cross-origin anonymous
  next
end
```

waf syntax-based-attack-detection

Using regular expression-based signatures to detect SQL/XSS injection attacks is core to a WAF solution. However, it is a continuous and tedious process to maintain and update the signatures to address new evasion techniques and to tune false positives and negatives for some attacks. To address this, syntax-based SQL/XSS injection detection is introduced.

Syntax

```
config waf syntax-based-attack-detection
   edit "<policy_name>"
      set sql-arithmetic-operation-action {alert | redirect | deny_no_log | alert_deny | block_
            period | send_HTTP_response}
      set detection-target-sql { ARGS_NAMES | ARGS_VALUE | REQUEST_COOKIES | REQUEST_USER_AGENT |
            REQUEST_REFERER | OTHER_REQUEST_HEADERS }
      set sql-arithmetic-operation-block-period <period_int>
      set sql-arithmetic-operation-severity {High | Medium | Low | Info}
      set sql-arithmetic-operation-status {enable | disable}
      set sql-arithmetic-operation-threat-weight {low | critical | informational | moderate |
            substantial | severe}
      set sql-arithmetic-operation-trigger <trigger_policy_name>
```

```
set sql-condition-based-action {alert | redirect | deny_no_log | alert_deny | block_period |
    send_HTTP_response}
set sql-condition-based-block-period <period_int>
set sql-condition-based-severity {High | Medium | Low | Info}
set sql-condition-based-status {enable | disable}
set sql-condition-based-threat-weight {low | critical | informational | moderate | substantial
    | severe}
set sql-condition-based-trigger <trigger_policy_name>
set sql-embeded-queries-action {alert | redirect | deny_no_log | alert_deny | block_period |
    send_HTTP_response}
set sql-embeded-queries-block-period <period_int>
set sql-embeded-queries-severity {High | Medium | Low | Info}
set sql-embeded-queries-status {enable | disable}
set sql-embeded-queries-threat-weight {low | critical | informational | moderate | substantial
    | severe}
set sql-embeded-queries-trigger <trigger_policy_name>
set sql-function-based-action {alert | redirect | deny_no_log | alert_deny | block_period |
    send_HTTP_response}
set sql-function-based-block-period <period_int>
set sql-function-based-severity {High | Medium | Low | Info}
set sql-function-based-status {enable | disable}
set sql-function-based-threat-weight {low | critical | informational | moderate | substantial
    | severe}
set sql-function-based-trigger <trigger_policy_name>
set sql-line-comments-action {alert | redirect | deny_no_log | alert_deny | block_period |
    send_HTTP_response}
set sql-line-comments-block-period <period_int>
set sql-line-comments-severity {High | Medium | Low | Info}
set sql-line-comments-status {enable | disable}
set sql-line-comments-threat-weight {low | critical | informational | moderate | substantial |
    severe}
set sql-line-comments-trigger <trigger_policy_name>
set sql-stacked-queries-action {alert | redirect | deny_no_log | alert_deny | block_period |
    send_HTTP_response}
set sql-stacked-queries-block-period <period_int>
set sql-stacked-queries-severity {High | Medium | Low | Info}
set sql-stacked-queries-status {enable | disable}
set sql-stacked-queries-threat-weight {low | critical | informational | moderate | substantial
    | severe}
set sql-stacked-queries-trigger <trigger_policy_name>
set xss-html-attribute-based-action {alert | redirect | deny_no_log | alert_deny | block_
    period | send_HTTP_response}
set detection-target-xss { ARGS_NAMES | ARGS_VALUE | REQUEST_COOKIES | REQUEST_USER_AGENT |
    REQUEST_REFERER | OTHER_REQUEST_HEADERS }
set xss-html-attribute-based-block-period <period_int>
set xss-html-attribute-based-severity {High | Medium | Low | Info}
set xss-html-attribute-based-status {enable | disable}
set xss-html-attribute-based-threat-weight {low | critical | informational | moderate |
    substantial | severe}
set xss-html-attribute-based-trigger <trigger_policy_name>
set xss-html-css-based-action {alert | redirect | deny_no_log | alert_deny | block_period |
    send_HTTP_response}
set xss-html-css-based-block-period <period_int>
set xss-html-css-based-severity {High | Medium | Low | Info}
set xss-html-css-based-status {enable | disable}
set xss-html-css-based-threat-weight {low | critical | informational | moderate | substantial
    | severe}
set xss-html-css-based-trigger <trigger_policy_name>
```

```
      set xss-html-tag-based-action {alert | redirect | deny_no_log | alert_deny | block_period |
        send_HTTP_response}
      set xss-html-tag-based-block-period <period_int>
      set xss-html-tag-based-check-level {strict | moderate}
      set xss-html-tag-based-severity {High | Medium | Low | Info}
      set xss-html-tag-based-status {enable | disable}
      set xss-html-tag-based-threat-weight {low | critical | informational | moderate | substantial
        | severe}
      set xss-html-tag-based-trigger <trigger_policy_name>
      set xss-javascript-function-based-action {alert | redirect | deny_no_log | alert_deny | block_
        period | send_HTTP_response}
      set xss-javascript-function-based-block-period <period_int>
      set xss-javascript-function-based-severity {High | Medium | Low | Info}
      set xss-javascript-function-based-status {enable | disable}
      set xss-javascript-function-based-threat-weight {low | critical | informational | moderate |
        substantial | severe}
      set xss-javascript-function-based-trigger <trigger_policy_name>
      set xss-javascript-variable-based-action {alert | redirect | deny_no_log | alert_deny | block_
        period | send_HTTP_response}
      set xss-javascript-variable-based-block-period <period_int>
      set xss-javascript-variable-based-severity {High | Medium | Low | Info}
      set xss-javascript-variable-based-status {enable | disable}
      set xss-javascript-variable-based-threat-weight {low | critical | informational | moderate |
        substantial | severe}
      set xss-javascript-variable-based-trigger <trigger_policy_name>
```

set detection-target-cmd {ARGS_NAMES | ARGS_VALUE | REQUEST_COOKIES | REQUEST_USER_AGENT | REQUEST_REFERER | OTHER_REQUEST_HEADERS}

```
      set cmd-shell-status {enable | disable}
      set cmd-shell-action {alert | redirect | deny_no_log | alert_deny | block_period | send_HTTP_
        response}
      set cmd-shell-block-period <period_int>
      set cmd-shell-severity {High | Medium | Low | Info}
      set cmd-shell-threat-weight {low | critical | informational | moderate | substantial | severe}
      set cmd-shell-trigger <trigger_policy_name>
      config exception-element-list
         edit "<list-id>"
            set match-target {HOST | URI | FULL-URL | PARAMETER | COOKIE}
            set operator {STRING_MATCH| REGEXP_MATCH}
            set value-name <name_str>
            set value-check {enable | disable}
            set value <value_str>
            set concatenate-type {AND | OR}
            set attack-type {arithmetic_operation_based_boolean_injection | cmd_shell_injection |
              condition_based_boolean_injection | embeded_queries_sql_injection | html_attr_
              based_xss_injection | html_css_based_xss_injection | html_tag_based_xss_injection |
              js_func_based_xss_injection | js_var_based_xss_injection | line_comments | invalid
              | sql_function_based_boolean_injection | stacked_queries_sql_injection}
         next
      end
   next
end
```

Variable	Description	Default
"<policy_name>"	Enter a name for the syntax based detection policy.	No default

Variable	Description	Default
sql-arithmetic-operation-action {alert | redirect | deny_no_log | alert_deny | block_period | send_HTTP_response}	Select the action FortiWeb takes when this injection type attack is identified. • `alert`–Accept the request and generate an alert email and/or log message. • `alert_deny`–Block the request (or reset the connection) and generate an alert email and/or log message. You can customize the web page that FortiWeb returns to the client with the HTTP status code. For details, see system replacemsg-image on page 374. • `deny_no_log`–Block the request (or reset the connection). • `redirect`–Redirect the request to the URL that you specify in the protection profile and generate an alert email and/or log message. • `block_period`–Block subsequent requests from the client for a number of seconds. Also configure sql-arithmetic-operation-block-period <period_int> on page 662. You can customize the web page that FortiWeb returns to the client with the HTTP status code. For details, see system replacemsg-image on page 374. • `send_HTTP_response`–Block and reply to the client with an HTTP error message and generate an alert email and/or log message. **Note:** Logging and/or alert email will occur only if enabled and configured. See log on page 815 and log alertMail on page 60.	`alert_deny`
detection-target-sql { ARGS_NAMES | ARGS_VALUE | REQUEST_COOKIES | REQUEST_USER_AGENT | REQUEST_REFERER | OTHER_REQUEST_HEADERS }	Select the elements in the request that you want FortiWeb to scan: • Parameter Name • Parameter Value • Request Cookie • Request User-Agent • Request Referer • Other Request Header You can select multiple elements, for example, `set detection-target-sql ARGS_NAMES REQUEST_COOKIES ARGS_VALUE`.	Parameter Name/Parameter Value/Request Cookie
sql-arithmetic-operation-block-period <period_int>	Enter the number of seconds that you want to block subsequent requests from the client after the FortiWeb appliance detects this injection type attack.	`600`

Variable	Description	Default
sql-arithmetic-operation-severity {High | Medium | Low | Info}	When policy violations are recorded in the attack log, each log message contains a **Severity Level** (`severity_level`) field. Select which severity level FortiWeb will use when it logs an injection attack: • High • Medium • Low • Info	`High`
sql-arithmetic-operation-status {enable | disable}	Enable or disable the attack type detection for this rule.	`enable`
sql-arithmetic-operation-threat-weight {low | critical | informational | moderate | substantial | severe}	Set the threat weight for Arithmetic Operation Based Boolean Injection attack.	`severe`
sql-arithmetic-operation-trigger <trigger_policy_name>	Enter the name of the trigger to apply when this policy is violated. For details, see log trigger-policy on page 97. To display the list of existing triggers, enter: `set trigger ?`	No default
sql-condition-based-action {alert | redirect | deny_no_log | alert_deny | block_period | send_HTTP_response}	Select the action FortiWeb takes when this injection type attack is identified. • `alert`–Accept the request and generate an alert email and/or log message. • `alert_deny`–Block the request (or reset the connection) and generate an alert email and/or log message. You can customize the web page that FortiWeb returns to the client with the HTTP status code. For details, see system replacemsg-image on page 374. • `deny_no_log`–Block the request (or reset the connection). • `redirect`–Redirect the request to the URL that you specify in the protection profile and generate an alert email and/or log message. • `block_period`–Block subsequent requests from the client for a number of seconds. Also configure sql-condition-based-block-period <period_int> on page 664. You can customize the web page that FortiWeb returns to the client with the HTTP status code. For details, see system replacemsg-image on page 374. • `send_HTTP_response`–Block and reply to the client	`alert_deny`

Variable	Description	Default
	with an HTTP error message and generate an alert email and/or log message. **Note:** Logging and/or alert email will occur only if enabled and configured. See log on page 815 and log alertMail on page 60.	
sql-condition-based-block-period <period_int>	Enter the number of seconds that you want to block subsequent requests from the client after the FortiWeb appliance detects this injection type attack.	`600`
sql-condition-based-severity {High | Medium | Low | Info}	When policy violations are recorded in the attack log, each log message contains a **Severity Level** (`severity_level`) field. Select which severity level FortiWeb will use when it logs an injection attack: • High • Medium • Low • Info	`High`
sql-condition-based-status {enable | disable}	Enable or disable the attack type detection for this rule.	`enable`
sql-condition-based-threat-weight {low | critical | informational | moderate | substantial | severe}	Set the threat weight for Arithmetic Operation Based Boolean Injection attack.	`severe`
sql-condition-based-trigger <trigger_policy_name>	Enter the name of the trigger to apply when this policy is violated. For details, see log trigger-policy on page 97. To display the list of existing triggers, enter: `set trigger ?`	No default
sql-embeded-queries-action {alert | redirect | deny_no_log | alert_deny | block_period | send_HTTP_response}	Select the action FortiWeb takes when this injection type attack is identified. • `alert`–Accept the request and generate an alert email and/or log message. • `alert_deny`–Block the request (or reset the connection) and generate an alert email and/or log message. You can customize the web page that FortiWeb returns to the client with the HTTP status code. For details, see system replacemsg-image on page 374. • `deny_no_log`–Block the request (or reset the connection). • `redirect`–Redirect the request to the URL that you specify in the protection profile and generate an alert	`alert_deny`

Variable	Description	Default
	email and/or log message. • `block_period`–Block subsequent requests from the client for a number of seconds. Also configure sql-embeded-queries-block-period <period_int> on page 665. You can customize the web page that FortiWeb returns to the client with the HTTP status code. For details, see system replacemsg-image on page 374. • `send_HTTP_response`–Block and reply to the client with an HTTP error message and generate an alert email and/or log message. **Note:** Logging and/or alert email will occur only if enabled and configured. See log on page 815 and log alertMail on page 60.	
sql-embeded-queries-block-period <period_int>	Enter the number of seconds that you want to block subsequent requests from the client after the FortiWeb appliance detects this injection type attack.	`600`
sql-embeded-queries-severity {High | Medium | Low | Info}	When policy violations are recorded in the attack log, each log message contains a **Severity Level** (`severity_level`) field. Select which severity level FortiWeb will use when it logs an injection attack: • High • Medium • Low • Info	`High`
sql-embeded-queries-status {enable | disable}	Enable or disable the attack type detection for this rule.	`enable`
sql-embeded-queries-threat-weight {low | critical | informational | moderate | substantial | severe}	Set the threat weight for Embedded Queries SQL Injection attack.	`severe`
sql-embeded-queries-trigger <trigger_policy_name>	Enter the name of the trigger to apply when this policy is violated. For details, see log trigger-policy on page 97. To display the list of existing triggers, enter: `set trigger ?`	No default

Variable	Description	Default
sql-function-based-action {alert | redirect | deny_no_log | alert_deny | block_period | send_HTTP_response}	Select the action FortiWeb takes when this injection type attack is identified. • `alert`–Accept the request and generate an alert email and/or log message. • `alert_deny`–Block the request (or reset the connection) and generate an alert email and/or log message. You can customize the web page that FortiWeb returns to the client with the HTTP status code. For details, see system replacemsg-image on page 374. • `deny_no_log`–Block the request (or reset the connection). • `redirect`–Redirect the request to the URL that you specify in the protection profile and generate an alert email and/or log message. • `block_period`–Block subsequent requests from the client for a number of seconds. Also configure sql-function-based-block-period <period_int> on page 666. You can customize the web page that FortiWeb returns to the client with the HTTP status code. For details, see system replacemsg-image on page 374. • `send_HTTP_response`–Block and reply to the client with an HTTP error message and generate an alert email and/or log message. **Note:** Logging and/or alert email will occur only if enabled and configured. See log on page 815 and log alertMail on page 60.	`alert_deny`
sql-function-based-block-period <period_int>	Enter the number of seconds that you want to block subsequent requests from the client after the FortiWeb appliance detects this injection type attack.	`600`
sql-function-based-severity {High | Medium | Low | Info}	When policy violations are recorded in the attack log, each log message contains a **Severity Level** (`severity_level`) field. Select which severity level FortiWeb will use when it logs an injection attack: • High • Medium • Low • Info	`High`
sql-function-based-status {enable | disable}	Enable or disable the attack type detection for this rule.	`enable`

Variable	Description	Default
sql-function-based-threat-weight {low | critical | informational | moderate | substantial | severe}	Set the threat weight for SQL Function Based Boolean Injection attack.	`severe`
sql-function-based-trigger <trigger_policy_name>	Enter the name of the trigger to apply when this policy is violated. For details, see log trigger-policy on page 97. To display the list of existing triggers, enter: `set trigger ?`	No default
sql-line-comments-action {alert | redirect | deny_no_log | alert_deny | block_period | send_HTTP_response}	Select the action FortiWeb takes when this injection type attack is identified. • `alert`–Accept the request and generate an alert email and/or log message. • `alert_deny`–Block the request (or reset the connection) and generate an alert email and/or log message. You can customize the web page that FortiWeb returns to the client with the HTTP status code. For details, see system replacemsg-image on page 374. • `deny_no_log`–Block the request (or reset the connection). • `redirect`–Redirect the request to the URL that you specify in the protection profile and generate an alert email and/or log message. • `block_period`–Block subsequent requests from the client for a number of seconds. Also configure sql-line-comments-block-period <period_int> on page 667. You can customize the web page that FortiWeb returns to the client with the HTTP status code. For details, see system replacemsg-image on page 374. • `send_HTTP_response`–Block and reply to the client with an HTTP error message and generate an alert email and/or log message. **Note:** Logging and/or alert email will occur only if enabled and configured. See log on page 815 and log alertMail on page 60.	`alert_deny`
sql-line-comments-block-period <period_int>	Enter the number of seconds that you want to block subsequent requests from the client after the FortiWeb appliance detects this injection type attack.	`600`

Variable	Description	Default
sql-line-comments-severity {High | Medium | Low | Info}	When policy violations are recorded in the attack log, each log message contains a **Severity Level** (`severity_level`) field. Select which severity level FortiWeb will use when it logs an injection attack: • High • Medium • Low • Info	`High`
sql-line-comments-status {enable | disable}	Enable or disable the attack type detection for this rule.	`enable`
sql-line-comments-threat-weight {low | critical | informational | moderate | substantial | severe}	Set the threat weight for Line Comments attack.	`severe`
sql-line-comments-trigger <trigger_policy_name>	Enter the name of the trigger to apply when this policy is violated. For details, see log trigger-policy on page 97. To display the list of existing triggers, enter: `set trigger ?`	No default
sql-stacked-queries-action {alert | redirect | deny_no_log | alert_deny | block_period | send_HTTP_response}	Select the action FortiWeb takes when this injection type attack is identified. • `alert`–Accept the request and generate an alert email and/or log message. • `alert_deny`–Block the request (or reset the connection) and generate an alert email and/or log message. You can customize the web page that FortiWeb returns to the client with the HTTP status code. For details, see system replacemsg-image on page 374. • `deny_no_log`–Block the request (or reset the connection). • `redirect`–Redirect the request to the URL that you specify in the protection profile and generate an alert email and/or log message. • `block_period`–Block subsequent requests from the client for a number of seconds. Also configure sql-stacked-queries-block-period <period_int> on page 669. You can customize the web page that FortiWeb returns to the client with the HTTP status code. For details, see system replacemsg-image on page 374. • `send_HTTP_response`–Block and reply to the client	`alert_deny`

Variable	Description	Default
	with an HTTP error message and generate an alert email and/or log message. **Note:** Logging and/or alert email will occur only if enabled and configured. See log on page 815 and log alertMail on page 60.	
sql-stacked-queries-block-period <period_int>	Enter the number of seconds that you want to block subsequent requests from the client after the FortiWeb appliance detects this injection type attack.	`600`
sql-stacked-queries-severity {High | Medium | Low | Info}	When policy violations are recorded in the attack log, each log message contains a **Severity Level** (`severity_level`) field. Select which severity level FortiWeb will use when it logs an injection attack: • High • Medium • Low • Info	`High`
sql-stacked-queries-status {enable | disable}	Enable or disable the attack type detection for this rule.	`enable`
sql-stacked-queries-threat-weight {low | critical | informational | moderate | substantial | severe}	Set the threat weight for Stacked Queries SQL Injection attack.	`severe`
sql-stacked-queries-trigger <trigger_policy_name>	Enter the name of the trigger to apply when this policy is violated. For details, see log trigger-policy on page 97. To display the list of existing triggers, enter: `set trigger ?`	No default
xss-html-attribute-based-action {alert | redirect | deny_no_log | alert_deny | block_period | send_HTTP_response}	Select the action FortiWeb takes when this injection type attack is identified. • `alert`–Accept the request and generate an alert email and/or log message. • `alert_deny`–Block the request (or reset the connection) and generate an alert email and/or log message. You can customize the web page that FortiWeb returns to the client with the HTTP status code. For details, see system replacemsg-image on page 374. • `deny_no_log`–Block the request (or reset the connection). • `redirect`–Redirect the request to the URL that you specify in the protection profile and generate an alert	`alert_deny`

Variable	Description	Default
	email and/or log message. • `block_period`–Block subsequent requests from the client for a number of seconds. Also configure xss-html-attribute-based-block-period <period_int> on page 670. You can customize the web page that FortiWeb returns to the client with the HTTP status code. For details, see system replacemsg-image on page 374. • `send_HTTP_response`–Block and reply to the client with an HTTP error message and generate an alert email and/or log message. **Note:** Logging and/or alert email will occur only if enabled and configured. See log on page 815 and log alertMail on page 60.	
detection-target-xss { ARGS_NAMES | ARGS_VALUE | REQUEST_ COOKIES | REQUEST_USER_ AGENT | REQUEST_ REFERER | OTHER_ REQUEST_ HEADERS }	Select the elements in the request that you want FortiWeb to scan: • Parameter Name • Parameter Value • Request Cookie • Request User-Agent • Request Referer • Other Request Header You can select multiple elements, for example, `set detection-target-xss ARGS_NAMES REQUEST_ COOKIES ARGS_VALUE`.	Parameter Name/Parameter Value/Request Cookie
xss-html-attribute-based-block-period <period_int>	Enter the number of seconds that you want to block subsequent requests from the client after the FortiWeb appliance detects this injection type attack.	`600`
xss-html-attribute-based-severity {High | Medium | Low | Info}	When policy violations are recorded in the attack log, each log message contains a **Severity Level** (`severity_ level`) field. Select which severity level FortiWeb will use when it logs an injection attack: • High • Medium • Low • Info	`High`
xss-html-attribute-based-status {enable | disable}	Enable or disable the attack type detection for this rule.	`enable`

Variable	Description	Default
xss-html-attribute-based-threat-weight {low | critical | informational | moderate | substantial | severe}	Set the threat weight for HTML Attribute Based XSS Injection attack.	`severe`
xss-html-attribute-based-trigger <trigger_policy_name>	Enter the name of the trigger to apply when this policy is violated. For details, see log trigger-policy on page 97. To display the list of existing triggers, enter: `set trigger ?`	No default
xss-html-css-based-action {alert | redirect | deny_no_log | alert_deny | block_period | send_HTTP_response}	Select the action FortiWeb takes when this injection type attack is identified. • `alert`—Accept the request and generate an alert email and/or log message. • `alert_deny`—Block the request (or reset the connection) and generate an alert email and/or log message. You can customize the web page that FortiWeb returns to the client with the HTTP status code. For details, see system replacemsg-image on page 374. • `deny_no_log`—Block the request (or reset the connection). • `redirect`—Redirect the request to the URL that you specify in the protection profile and generate an alert email and/or log message. • `block_period`—Block subsequent requests from the client for a number of seconds. Also configure xss-html-css-based-block-period <period_int> on page 671. You can customize the web page that FortiWeb returns to the client with the HTTP status code. For details, see system replacemsg-image on page 374. • `send_HTTP_response`—Block and reply to the client with an HTTP error message and generate an alert email and/or log message. **Note:** Logging and/or alert email will occur only if enabled and configured. See log on page 815 and log alertMail on page 60.	`alert_deny`
xss-html-css-based-block-period <period_int>	Enter the number of seconds that you want to block subsequent requests from the client after the FortiWeb appliance detects this injection type attack.	`600`

Variable	Description	Default
xss-html-css-based-severity {High | Medium | Low | Info}	When policy violations are recorded in the attack log, each log message contains a **Severity Level** (`severity_level`) field. Select which severity level FortiWeb will use when it logs an injection attack: • High • Medium • Low • Info	`High`
xss-html-css-based-status {enable | disable}	Enable or disable the attack type detection for this rule.	`enable`
xss-html-css-based-threat-weight {low | critical | informational | moderate | substantial | severe}	Set the threat weight for HTML CSS Based XSS Injection attack.	`severe`
xss-html-css-based-trigger <trigger_policy_name>	Enter the name of the trigger to apply when this policy is violated. For details, see log trigger-policy on page 97. To display the list of existing triggers, enter: `set trigger ?`	No default
xss-html-tag-based-action {alert | redirect | deny_no_log | alert_deny | block_period | send_HTTP_response}	Select the action FortiWeb takes when this injection type attack is identified. • `alert`–Accept the request and generate an alert email and/or log message. • `alert_deny`–Block the request (or reset the connection) and generate an alert email and/or log message. You can customize the web page that FortiWeb returns to the client with the HTTP status code. For details, see system replacemsg-image on page 374. • `deny_no_log`–Block the request (or reset the connection). • `redirect`–Redirect the request to the URL that you specify in the protection profile and generate an alert email and/or log message. • `block_period`–Block subsequent requests from the client for a number of seconds. Also configure xss-html-tag-based-block-period <period_int> on page 673. You can customize the web page that FortiWeb returns to the client with the HTTP status code. For details, see system replacemsg-image on page 374. • `send_HTTP_response`–Block and reply to the client	`alert_deny`

Variable	Description	Default
	with an HTTP error message and generate an alert email and/or log message. **Note:** Logging and/or alert email will occur only if enabled and configured. See log on page 815 and log alertMail on page 60.	
xss-html-tag-based-block-period <period_int>	Enter the number of seconds that you want to block subsequent requests from the client after the FortiWeb appliance detects this injection type attack.	`600`
xss-html-tag-based-check-level {strict | moderate}	• `moderate`–An injection attack will be reported when tags besides body/head/html are detected. • `strict`–No injection attack will be reported when tags besides body/head/html are detected. Note: It is not advised to set it as `moderate` as false positves may occur.	`strict`
xss-html-tag-based-severity {High | Medium | Low | Info}	When policy violations are recorded in the attack log, each log message contains a **Severity Level** (`severity_level`) field. Select which severity level FortiWeb will use when it logs an injection attack: • High • Medium • Low • Info	`High`
xss-html-tag-based-status {enable | disable}	Enable or disable the attack type detection for this rule.	`enable`
xss-html-tag-based-threat-weight {low | critical | informational | moderate | substantial | severe}	Set the threat weight for HTML Tag Based XSS Injection attack.	`severe`
xss-html-tag-based-trigger <trigger_policy_name>	Enter the name of the trigger to apply when this policy is violated. For details, see log trigger-policy on page 97. To display the list of existing triggers, enter: `set trigger ?`	No default
xss-javascript-function-based-action {alert | redirect | deny_no_log | alert_deny | block_period | send_HTTP_response}	Select the action FortiWeb takes when this injection type attack is identified. • `alert`–Accept the request and generate an alert email and/or log message. • `alert_deny`–Block the request (or reset the connection) and generate an alert email and/or log message.	`alert_deny`

Variable	Description	Default
	You can customize the web page that FortiWeb returns to the client with the HTTP status code. For details, see system replacemsg-image on page 374. • `deny_no_log`–Block the request (or reset the connection). • `redirect`–Redirect the request to the URL that you specify in the protection profile and generate an alert email and/or log message. • `block_period`–Block subsequent requests from the client for a number of seconds. Also configure xss-javascript-function-based-block-period <period_int> on page 674. You can customize the web page that FortiWeb returns to the client with the HTTP status code. For details, see system replacemsg-image on page 374. • `send_HTTP_response`–Block and reply to the client with an HTTP error message and generate an alert email and/or log message. **Note:** Logging and/or alert email will occur only if enabled and configured. See log on page 815 and log alertMail on page 60.	
xss-javascript-function-based-block-period <period_int>	Enter the number of seconds that you want to block subsequent requests from the client after the FortiWeb appliance detects this injection type attack.	`600`
xss-javascript-function-based-severity {High | Medium | Low | Info}	When policy violations are recorded in the attack log, each log message contains a **Severity Level** (`severity_level`) field. Select which severity level FortiWeb will use when it logs an injection attack: • High • Medium • Low • Info	`High`
xss-javascript-function-based-status {enable | disable}	Enable or disable the attack type detection for this rule.	`enable`
xss-javascript-function-based-threat-weight {low | critical | informational | moderate | substantial | severe}	Set the threat weight for Javascript Function Based XSS Injection attack.	`severe`

Variable	Description	Default
xss-javascript-function-based-trigger <trigger_policy_name>	Enter the name of the trigger to apply when this policy is violated. For details, see log trigger-policy on page 97. To display the list of existing triggers, enter: `set trigger ?`	No default
xss-javascript-variable-based-action {alert | redirect | deny_no_log | alert_deny | block_period | send_HTTP_response}	Select the action FortiWeb takes when this injection type attack is identified. • `alert`–Accept the request and generate an alert email and/or log message. • `alert_deny`–Block the request (or reset the connection) and generate an alert email and/or log message. You can customize the web page that FortiWeb returns to the client with the HTTP status code. For details, see system replacemsg-image on page 374. • `deny_no_log`–Block the request (or reset the connection). • `redirect`–Redirect the request to the URL that you specify in the protection profile and generate an alert email and/or log message. • `block_period`–Block subsequent requests from the client for a number of seconds. Also configure xss-javascript-variable-based-block-period <period_int> on page 675. You can customize the web page that FortiWeb returns to the client with the HTTP status code. For details, see system replacemsg-image on page 374. • `send_HTTP_response`–Block and reply to the client with an HTTP error message and generate an alert email and/or log message. **Note:** Logging and/or alert email will occur only if enabled and configured. See log on page 815 and log alertMail on page 60.	`alert_deny`
xss-javascript-variable-based-block-period <period_int>	Enter the number of seconds that you want to block subsequent requests from the client after the FortiWeb appliance detects this injection type attack.	`600`
xss-javascript-variable-based-severity {High | Medium | Low | Info}	When policy violations are recorded in the attack log, each log message contains a **Severity Level** (`severity_level`) field. Select which severity level FortiWeb will use when it logs an injection attack: • High • Medium • Low • Info	`High`

Variable	Description	Default
xss-javascript-variable-based-status {enable | disable}	Enable or disable the attack type detection for this rule.	`enable`
xss-javascript-variable-based-threat-weight {low | critical | informational | moderate | substantial | severe}	Set the threat weight for Javascript Variable Based XSS Injection attack.	`severe`
xss-javascript-variable-based-trigger <trigger_policy_name>	Enter the name of the trigger to apply when this policy is violated. For details, see log trigger-policy on page 97. To display the list of existing triggers, enter: `set trigger ?`	No default
detection-target-cmd {ARGS_NAMES | ARGS_VALUE | REQUEST_COOKIES | REQUEST_USER_AGENT | REQUEST_REFERER | OTHER_REQUEST_HEADERS}	Select the elements in the request that you want FortiWeb to scan: • Parameter Name • Parameter Value • Request Cookie • Request User-Agent • Request Referer • Other Request Header You can select multiple elements, for example, `set detection-target-xss ARGS_NAMES REQUEST_COOKIES ARGS_VALUE`.	Parameter Name/Parameter Value/Request Cookie
cmd-shell-status {enable | disable}	Enable or disable CMD Syntax-Based Detection for this rule. When enabled, FortiWeb scans specified request fields for shell command injection using shell grammar parsing and token analysis.	`enable`
cmd-shell-action {alert | redirect | deny_no_log | alert_deny | block_period | send_HTTP_response}	Select the action FortiWeb takes when a CMD injection is detected. `alert`–Accept the request and generate an alert email and/or log message. • `alert_deny`–Block the request (or reset the connection) and generate an alert email and/or log message. You can customize the web page that FortiWeb returns to the client with the HTTP status code. For details, see system replacemsg-image on page 374. • `deny_no_log`–Block the request (or reset the connection). • `redirect`–Redirect the request to the URL that you	`alert_deny`

Variable	Description	Default
	specify in the protection profile and generate an alert email and/or log message. • `block_period`–Block subsequent requests from the client for a number of seconds. Also configure xss-javascript-variable-based-block-period <period_int> on page 675. You can customize the web page that FortiWeb returns to the client with the HTTP status code. For details, see system replacemsg-image on page 374. • `send_HTTP_response`–Block and reply to the client with an HTTP error message and generate an alert email and/or log message. **Note:** Logging and/or alert email will occur only if enabled and configured. See log on page 815 and log alertMail on page 60.	
cmd-shell-block-period <period_int>	Enter the number of seconds that you want to block subsequent requests from the client after the FortiWeb appliance detects a CMD Injection attack.	`600`
cmd-shell-severity {High | Medium | Low | Info}	Severity level assigned to attack logs generated by this rule.	`Medium`
cmd-shell-threat-weight {low | critical | informational | moderate | substantial | severe}	Set the threat weight for CMD Injection attacks.	`moderate`
cmd-shell-trigger <trigger_policy_name>	Enter the name of the trigger to apply when this policy is violated. For details, see log trigger-policy on page 97. To display the list of existing triggers, enter: `set trigger ?`	No default
"<list-id>"	Enter an ID for the exception list.	No default
match-target {HOST | URI | FULL-URL | PARAMETER | COOKIE}	Select the type of request element to exempt from this rule.	`URI`
operator {STRING_MATCH | REGEXP_MATCH}	• STRING_MATCH–Name is the literal name of a parameter. • REGEXP_MATCH– Name is a regular expression that matches all and only the name of the parameter that the exception applies to.	`REGEXP_MATCH`

Variable	Description	Default
value-name <name_str>	Specify the name of the parameter to match.	
value-check {enable | disable}	Enable to specify a parameter value to match in addition to the parameter name.	`disable`
value <value_str>	Specify a HOST/URI/FULL-URL/PARAMETER/COOKIE value to match.	No default
concatenate-type {AND | OR}	• AND–A matching request matches this entry in addition to other entries in the exemption list. • OR–A matching request matches this entry instead of other entries in the exemption list. Later, you can use the exception list options to adjust the matching sequence for entries.	`AND`
attack-type {arithmetic_operation_based_boolean_injection | cmd_shell_injection | condition_based_boolean_injection | embeded_queries_sql_injection | html_attr_based_xss_injection | html_css_based_xss_injection | html_tag_based_xss_injection | js_func_based_xss_injection | js_var_based_xss_injection | line_comments | invalid | sql_function_based_boolean_injection | stacked_queries_sql_injection}	Select the attack type you want to create the exception for.	No default

Related topics

- waf web-protection-profile inline-protection on page 720

waf threshold-based-detection

Use this command to configure threshold based detection rules to define occurrence, time period, severity, and trigger policy, etc of the following suspicious behaviors, and thus FortiWeb judges whether the request comes from a human or a bot.

- **Crawler**

  Detects automated web crawlers that systematically scan and index web content. FortiWeb identifies repeated access patterns characteristic of bots, such as excessive page traversal within a short timeframe.
- **Vulnerability Scanning**

  Detects behavior that matches known patterns of security scanners (e.g., SQLMap, Acunetix). These tools typically probe for common vulnerabilities across multiple endpoints, often using unusual headers, query strings, or access frequencies.
- **Slow Attack**

  Detects Layer 7 denial-of-service (DoS) attempts where an attacker sends HTTP requests very slowly to tie up server-side resources. FortiWeb supports detection of both:
  - **Slow Body Attacks**: The attacker sends the request body at a very slow rate to prolong the session and exhaust server resources.
  - **Slow Header Attacks**: The attacker delays transmission of HTTP headers, preventing the server from completing request parsing. FortiWeb uses TCP-layer packet interval analysis to identify such behavior.

  Both types share the same configuration parameters in the detection profile. When detection is triggered, FortiWeb applies the configured action (e.g., Deny, Period Block). Note that header-based detection is performed at the TCP layer and does not support features that require complete HTTP context, such as Real Browser Enforcement or Tracking by Client ID.
- **Content Scraping**

  Detects bots that systematically copy web page content, often for competitive or malicious purposes. FortiWeb monitors request frequency and depth across similar URLs to identify scraping behavior.
- **Illegal User Scan**

  Identifies repeated attempts to enumerate users or discover valid accounts, typically through brute-force or enumeration techniques.

Syntax

```
config waf threshold-based-detection
   edit "<policy_name>"
      set tracking-type {client-ip | client-id}
      set bot-recognition {disabled | real-browser-enforcement | captcha-enforcement | captcha-
           puzzle-enforcement | recaptcha-enforcement | recaptcha-v3-enforcement }
      set recaptcha <recaptcha_server_name>
      set mobile-app-identification {disabled | mobile-token-validation}
      set bot-confirmation {enable | disable}
      set validation-timeout <validation-timeout_int>
      set set set max-attempt-times <max-attempt-times_int>
      set crawler-detection {enable | disable}
      set crawler-action {alert | deny_no_log | alert_deny | block-period | client-id-block-period}
      set crawler-severity {High | Medium | Low | Info}
      set crawler-trigger <crawler-trigger-policy_name>
```

```
    set crawler-occurrence-num <crawler-occurrence-num_int>
    set crawler-within <crawler-within_int>
    set crawler-block-period <crawler-block-period_int>
    set scanner-detection {enable | disable}
    set scanner-action {alert | deny_no_log | alert_deny | block-period | client-id-block-period}
    set scanner-severity {High | Medium | Low | Info}
    set crawler-trigger <crawler-trigger-policy_name>
    set scanner-occurrence-num <scanner-occurrence-num_int>
    set scanner-within <scanner-within_int>
    set scanner-block-period <scanner-block-period_int>
    set slow-attack-detection {enable | disable}
    set slow-attack-action {alert | deny_no_log | alert_deny | block-period | client-id-block-
      period}
    set slow-attack-severity {High | Medium | Low | Info}
    set slow-attack-trigger <slow-attack-trigger-policy_name>
    set slow-attack-occurrence-num <slow-attack-occurrence-num_int>
    set slow-attack-within <slow-attack-within_int>
    set slow-attack-HTTP-transaction-timeout <slow-attack-HTTP-transaction-timeout_int>
    set slow-attack-packet-interval-timeout <slow-attack-packet-interval-timeout_int>
    set slow-attack-block-period <slow-attack-block-period_int>
    set content-scraping-detection {enable | disable}
    set content-scraping-action {alert | deny_no_log | alert_deny | block-period | client-id-
      block-period}
    set content-scraping-severity {High | Medium | Low | Info}
    set content-scraping-trigger <content-scraping-trigger-policy_name>
    set content-scraping-occurrence-num <content-scraping-occurrence-num_int>
    set content-scraping-within <content-scraping-within_int>
    set content-scraping-block-period <content-scraping-block-period_int>
    set keep-occurrence-count {enable | disable}
  next
end
```

Variable	Description	Default
"<policy_name>"	Enter a name for the threshold based detection rule that can be referenced in bot mitigation policy.	No default.
tracking-type {client-ip | client-id}	Specifies the method FortiWeb uses to track request occurrences for each threshold-based detection module. **Options:** • `client-ip` – Tracks occurrences based on the source IP address. • `client-id` – Tracks occurrences using cookies issued by the Client Management feature, allowing consistent client identification across sessions and IP changes. **Behavior and Requirements:** • `client-id` tracking mode requires **Client Management** to be enabled in the associated protection profile. • When `client-id` is selected: • The **Client ID Block Period** action becomes	client-ip

Variable	Description	Default
	available. • The standard **Block Period** option is hidden from action settings. • When `client-ip` is selected: • Only the standard **Block Period** action is available. • **Client ID Block Period** option is hidden. **Note**: When a **Slow Header Attack** is detected, FortiWeb always falls back to IP-based tracking, even if `client-id` tracking is selected. This is because HTTP-layer information (such as the Client Management cookie) is not yet available during early-stage header processing. In such cases, any action configured as **Client ID Block Period** is automatically treated as **IP-based Period Block**.	
bot-recognition {disabled | real-browser-enforcement | captcha-enforcement | captcha-puzzle-enforcement | recaptcha-enforcement | recaptcha-v3-enforcement }	Select between: • `captcha-enforcement`—Requires the client to successfully fulfill a CAPTCHA request. If the client cannot successfully fulfill the request within the , or doesn't fulfill the request within the validation-timeout <validation-timeout_int>, FortiWeb applies the action and sends the CAPTCHA block page. • `captcha-puzzle-enforcement`—Presents an interactive image-based puzzle challenge to the user. This method is resistant to headless browsers and scripted bots, and is suitable for high-security scenarios where traditional challenges are easily bypassed. If the client doesn't fulfill the request within the validation-timeout <validation-timeout_int> on page 683, FortiWeb applies the `action`. When selected: • FortiWeb intercepts the request and serves a visual CAPTCHA that requires drag-and-drop interaction before allowing access to the backend. • The original backend response is cached by FortiWeb and only delivered after the user successfully completes the challenge. • No customization of the puzzle or replacement message is currently supported. • `real-browser-enforcement`—Enable to return a JavaScript to the client to test whether it is a web browser or automated tool when it violates the access rule. If the client either fails the test or does not return results before the timeout specified by the validation-timeout <validation-timeout_int> on page 683, FortiWeb	disable

Variable	Description	Default

	applies the specified action. If the client appears to be a web browser, FortiWeb allows the client to violate the rule.
	• `recaptcha-enforcement`–Requires the client to successfully fulfill a reCAPTCHA request. If the client doesn't fulfill the request within the validation-timeout <validation-timeout_int>, FortiWeb applies the action and sends the CAPTCHA block page.
	• `recaptcha-v3-enforcement`: Requires the client to successfully fulfill a reCAPTCHA v3 request. If the client cannot successfully fulfill the request within the Validation Timeout, FortiWeb applies the Action and sends the reCAPTCHA block page. For details, see "Customizing error and authentication pages (replacement messages)" in *FortiWeb Administration Guide*.
	You can set the threshold of the reCAPTCHA v3 score through CLI
	`config system recaptcha-api`
	`set recaptcha-v3-score-threshold <string>`
	`*The value range is 0 to 1`
	`end`
	• `disable`–Not to carry out the bot verification.
	Note: When a **Slow Header Attack** is detected, FortiWeb automatically disables Real Browser Enforcement, regardless of this setting. Because slow header attacks involve incomplete or malformed requests, they are not compatible with browser validation.	

`recaptcha <recaptcha_server_name>`	Enter the reCAPTCHA server you have created through user recaptcha-user	No default.
mobile-app-identification {disabled | mobile-token-validation}	• `disabled`–Not to carry out the mobile token verification. **Note**: When a **Slow Header Attack** is detected, FortiWeb automatically disables Real Browser Enforcement, regardless of this setting. Because slow header attacks involve incomplete or malformed requests, they are not compatible with browser validation. • `mobile-token-validation`–Requires the client to use mobile token to verify whether the traffic is from mobile devices. To apply mobile token validation, you must enable mobile-app-identification in waf web-protection-profile inline-protection.	disable

Variable	Description	Default
bot-confirmation {enable | disable}	Enable to confirm if the client is indeed a bot. The system sends RBE (Real Browser Enforcement) JavaScript or CAPTCHA to the client to double check if it's a bot.	disable
validation-timeout <validation-timeout_int>	Enter the maximum amount of time (in seconds) that FortiWeb waits for results from the client. Available only when the bot-recognition {disabled | real-browser-enforcement | captcha-enforcement | captcha-puzzle-enforcement | recaptcha-enforcement | recaptcha-v3-enforcement } is browser-enforcement, captcha-enforcement, or captcha-puzzle-enforcement.	20
crawler-detection {enable | disable}	Enable to detect tools that browse your web site for indexing purposes.	enable
crawler-action {alert | deny_no_log | alert_deny | block-period | client-id-block-period}	Select which action FortiWeb will take when it detects a crawler: • `alert`—Accept the connection and generate an alert email and/or log message. • `alert_deny`—Block the request (or reset the connection) and generate an alert and/or log message. • `deny_no_log`—Block the request (or reset the connection). • `block-period`—Block subsequent requests from the client for a number of seconds. Also configure crawler-block-period <crawler-block-period_int>. • `client-id-block-period`—Block a malicious or suspicious client based on the FortiWeb generated client ID. This is useful when the source IP of a certain client keeps changing. This option takes effect only when you enable **Client Management** in the **Server Policy**. Also configure crawler-block-period <crawler-block-period_int>.	alert
crawler-severity {High | Medium | Low | Info}	When policy violations are recorded in the attack log, each log message contains a **Severity Level** (`severity_level`) field. Select which severity level FortiWeb will use when it logs a crawler: • Informative • Low • Medium • High	Medium
crawler-trigger <crawler-trigger-policy_name>	Select the trigger, if any, that FortiWeb will use when it logs and/or sends an alert email about a crawler. For details, see "Viewing log messages" on page 1.	No default.

Variable	Description	Default
crawler-occurrence-num <crawler-occurrence-num_int>	Define the frequency that FortiWeb detects 403 and 404 response codes returned by the web server.	100
crawler-within <crawler-within_int>	Specify the time period, in seconds, during which FortiWeb detects the 403 and 404 response codes.	10
crawler-block-period <crawler-block-period_int>	Enter the number of seconds that you want to block subsequent requests from a client after FortiWeb detects a crawler. The valid range is 1-3,600 seconds. Available only if crawler-action {alert | deny_no_log | alert_deny | block-period | client-id-block-period} is set to `block-period` or `client-id-block-period`.	600
scanner-detection {enable | disable}	Enable to detect tools that scan your web site for vulnerabilities.	disable
scanner-action {alert | deny_no_log | alert_deny | block-period | client-id-block-period}	Select which action FortiWeb will take when it detects attack signatures: • `alert`—Accept the connection and generate an alert email and/or log message. • `alert_deny`—Block the request (or reset the connection) and generate an alert and/or log message. • `deny_no_log`—Block the request (or reset the connection). • `block-period`—Block subsequent requests from the client for a number of seconds. Also configure scanner-block-period <scanner-block-period_int>. • `client-id-block-period`—Block a malicious or suspicious client based on the FortiWeb generated client ID. This is useful when the source IP of a certain client keeps changing. This option takes effect only when you enable **Client Management** in the **Server Policy**. Also configure scanner-block-period <scanner-block-period_int>.	alert
scanner-severity {High | Medium | Low | Info}	When policy violations are recorded in the attack log, each log message contains a **Severity Level** (`severity_level`) field. Select which severity level FortiWeb will use when it logs attack signatures: • Informative • Low • Medium • High	Medium
scanner-trigger <scanner-trigger-policy_name>	Select the trigger, if any, that FortiWeb will use when it logs and/or sends an alert email about attack signatures. For details, see "Viewing log messages" on page 1.	No default.

Variable	Description	Default
scanner-occurrence-num <scanner-occurrence-num_int>	Define the frequency that FortiWeb detects attack signatures.	100
scanner-within <scanner-within_int>	Specify the time period, in seconds, during which FortiWeb monitors the attack signatures.	10
scanner-block-period <scanner-block-period_int>	Enter the number of seconds that you want to block subsequent requests from a client after FortiWeb detects attack signatures. The valid range is 1-3,600 seconds. Available only if scanner-action {alert | deny_no_log | alert_deny | block-period | client-id-block-period} is set to `block-period` or `client-id-block-period`.	600
slow-attack-detection {enable | disable}	Enable to detect Denial of Service tools that try to go undetected by generating a small stream of traffic.	disable
slow-attack-action {alert | deny_no_log | alert_deny | block-period | client-id-block-period}	Select which action FortiWeb will take when it detects slow attack activities: • `alert`—Accept the connection and generate an alert email and/or log message. • `alert_deny`—Block the request (or reset the connection) and generate an alert and/or log message. • `deny_no_log`—Block the request (or reset the connection). • `block-period`—Block subsequent requests from the client for a number of seconds. Also configure slow-attack-block-period <slow-attack-block-period_int>. • `client-id-block-period`—Block a malicious or suspicious client based on the FortiWeb generated client ID. This is useful when the source IP of a certain client keeps changing. This option takes effect only when you enable **Client Management** in the **Server Policy**. Also configure slow-attack-block-period <slow-attack-block-period_int>. When a **Slow Header Attack** is detected, FortiWeb automatically falls back to **Client IP** for occurrence tracking. If the configured action is **Client ID Block Period**, it will be enforced as an **IP-based Period Block** instead.	alert
slow-attack-severity {High | Medium | Low | Info}	When policy violations are recorded in the attack log, each log message contains a **Severity Level** (`severity_level`) field. Select which severity level FortiWeb will use when it logs slow attack activities: • Informative • Low • Medium	Medium

Variable	Description	Default
	• High	
slow-attack-trigger <slow-attack-trigger-policy_name>	Select the trigger, if any, that FortiWeb will use when it logs and/or sends an alert email about slow attack activities. For details, see "Viewing log messages" on page 1.	No default.
slow-attack-occurrence-num <slow-attack-occurrence-num_int>	Define the frequency that FortiWeb detects slow attack activities.	5
slow-attack-within <slow-attack-within_int>	Specify the time period, in seconds, during which FortiWeb detects slow attack activities.	100
slow-attack-HTTP-transaction-timeout <slow-attack-HTTP-transaction-timeout_int>	Specify a timeout value, in seconds, for the HTTP transaction.	60
slow-attack-packet-interval-timeout <slow-attack-packet-interval-timeout_int>	Specify the timeout value, in seconds, for interval between packets arriving from either the client or server (request or response packets).	10
slow-attack-block-period <slow-attack-block-period_int>	Enter the number of seconds that you want to block subsequent requests from a client after FortiWeb detects slow attack activities. The valid range is 1-3,600 seconds. Available only if slow-attack-action {alert | deny_no_log | alert_deny | block-period | client-id-block-period} is set to `block-period` or `client-id-block-period`.	600
content-scraping-detection {enable | disable}	Enable to detect bots that illegally copy contents from your web site.	disable
content-scraping-action {alert | deny_no_log | alert_deny | block-period | client-id-block-period}	Select which action FortiWeb will take when it detects content scraping activities: • `alert`—Accept the connection and generate an alert email and/or log message. • `alert_deny`—Block the request (or reset the connection) and generate an alert and/or log message. • `deny_no_log`—Block the request (or reset the connection). • `block-period`—Block subsequent requests from the client for a number of seconds. Also configure content-scraping-block-period <content-scraping-block-period_int>. • `client-id-block-period`—Block a malicious or suspicious client based on the FortiWeb generated client ID. This is useful when the source IP of a certain client keeps changing. This option takes effect only when you enable **Client Management** in the **Server Policy**. Also configure content-scraping-block-period	alert

Variable	Description	Default
	<content-scraping-block-period_int>.	
content-scraping-severity {High | Medium | Low | Info}	When policy violations are recorded in the attack log, each log message contains a **Severity Level** (`severity_level`) field. Select which severity level FortiWeb will use when it logs content scraping activities: • Informative • Low • Medium • High	Medium
content-scraping-trigger <content-scraping-trigger-policy_name>	Select the trigger, if any, that FortiWeb will use when it logs and/or sends an alert email about content scraping activities. For details, see "Viewing log messages" on page 1.	No default.
content-scraping-occurrence-num <content-scraping-occurrence-num_int>	Define the frequency that FortiWeb detects content scraping activities.	100
content-scraping-within <content-scraping-within_int>	Specify the time period, in seconds, during which FortiWeb detects content scraping activities.	30
content-scraping-block-period <content-scraping-block-period_int>	Enter the number of seconds that you want to block subsequent requests from a client after FortiWeb detects content scraping activities. The valid range is 1-3,600 seconds. Available only if content-scraping-action {alert | deny_no_log | alert_deny | block-period | client-id-block-period} is set to `block-period` or `client-id-block-period`.	600
keep-occurrence-count {enable | disable}	Enable this option so that the threshold counter will not be reset throughout the Within (Seconds) timeframe. FortiWeb can continue denying or period-blocking the client as long as it has ever reached the threshold within the "Within (Seconds)" timeframe.	disable

Related Topics

- waf bot-mitigation-policy on page 468
- waf biometrics-based-detection on page 449
- waf bot-deception on page 1

waf url-access url-access-policy

Use this command to configure a set of URL access rules that define HTTP requests that are allowed or denied.

Before using this command, you must first define your URL access rules. For details, see waf url-access url-access-rule on page 693.

To apply URL access policies, select them within an inline or Offline Protection profile. For details, see waf web-protection-profile inline-protection on page 720 or waf web-protection-profile offline-protection on page 731.

You can use SNMP traps to notify you when a URL access rule is enforced. For details, see system snmp community on page 383.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `wafgrp` area. For details, see Permissions on page 46.

Syntax

```
config waf url-access url-access-policy
   edit "<url-access-policy_name>"
      config rule
         edit <entry_index>
            set url-access-rule-name "<url-access-rule_name>"
         next
      end
   next
end
```

Variable	Description	Default
"<url-access-policy_name>"	Enter the name of the new or existing URL access policy. The maximum length is 63 characters. To display the list of existing policies, enter: `edit ?`	No default.
<entry_index>	Enter the index number of the individual entry in the table. The valid range is 1-9,999,999,999,999,999,999.	No default.
url-access-rule-name "<url-access-rule_name>"	Enter the name of the existing URL access rule to add to the policy. The maximum length is 63 characters.	No default.

Example

This example adds two rules to the policy, with the first one set to priority level 0, and the second one set to priority level 1. The rule with priority 0 would be applied first.

```
config waf url-access url-access-policy
   edit "URL-access-set2"
      config rule
```

```
        edit 1
           set url-access-rule-name "URL Access Rule 1"
        next
        edit 2
           set url-access-rule-name "Blocked URL"
        next
     next
  end
```

Related topics

- waf url-access url-access-rule on page 693
- waf web-protection-profile inline-protection on page 720
- waf web-protection-profile offline-protection on page 731

waf url-encryption

To prevent users from forceful browsing, you can now encrypt the URLs, which can ensure that the internal directory structure of the web application is not revealed to users.

Use this command to create URL encryption rules and policies.

Syntax

```
config waf url-encryption url-encryption-rule
   edit "<encryption-rule_name>"
      set host-status {enable | disable}
      set host <host_str>
      set allow-unencrypted {enable | disable}
      set action {alert | deny_no_log | alert_deny | block-period}
      set block-period <block-period_int>
      set severity {High | Medium | Low | Info}
      set trigger <trigger_str>
      config url-list
         edit "<url-list_id>"
            set url-type {plain | regular}
            set url-pattern <url-pattern_str>
      end
      config exceptions
         edit "<exceptions-item_id>"
            set url-type {plain | regular}
            set url-pattern <url-pattern_str>
      end
   next
end

config waf url-encryption url-encryption-policy
   edit "<url-encryption-policy_name>"
```

```
      set full-mode {enable | disable}
      config rule-list
         edit "<rule-list_id>"
            set rule <rule_str>
      end
   next
end
```

Variable	Description	Default
"<encryption-rule_name>"	Enter a name for the encryption rule.	No default.
host-status {enable | disable}	Enable to require that the `Host: field` of the HTTP request match a protected host names entry in order to match the URL acceleration rule. Also configure host <host_str>.	`disable`
host <host_str>	Select which protected host names entry (either a web host name or IP address) that the `Host:` field of the HTTP request must be in to match the URL acceleration rule.	No default.
allow-unencrypted {enable | disable}	When enabled, unencrypted URL requests will be allowed. Unencrypted URL requests are the valid requests from the client that FortiWeb failed to decrypt. When disabled, if the URL can match the rule, and FortiWeb detects unencrypted URLs, the action will be triggered.	`enable`
action {alert | deny_no_log | alert_deny | block-period}	Select which action the FortiWeb appliance will take when it detects a violation. **alert**–Accept the connection and generate an alert email and/or log message. **alert_deny**–Block the request (or reset the connection) and generate an alert and/or log message. **deny_no_log**–Block the request (or reset the connection). **block-period–**Blocks the request for a certain period of time.	Alert
block-period <block-period_int>	Enter the number of seconds that you want to block the requests. The valid range is 1-3,600 seconds. This option only takes effect when you choose **Period Block** in action {alert | deny_no_log | alert_deny | block-period}.	60
severity {High | Medium | Low | Info}	When FortiWeb records rule violations in the attack log, each log message contains a **Severity Level** field. Select the severity level that FortiWeb will record when the rule is violated: • Low • Medium • High • Informative	High

Variable	Description	Default
	The default value is **High**.	
trigger <trigger_str>	Select the trigger, if any, that FortiWeb carries out when it logs and/or sends an alert email about a rule violation. For details, see "Viewing log messages" on page 1.	No default.
"<url-list_id>"	Enter the ID for the URL request.	No default.
url-type {plain | regular}	Select whether the URL Pattern field will contain a literal URL (plain), or a regular expression designed to match multiple URLs (regular).	`plain`
url-pattern <url-pattern_str>	Depending on the `url-type`, enter either: • **plain**–The literal URL, such as `/index.php`, that the HTTP request must contain in order to match the rule. The URL must begin with a slash (/). • **regular**–A regular expression, such as `^/*.php`, matching the URLs to which the rule should apply. The pattern does not require a slash (/), but it must match URLs that begin with a slash, such as `/index.cfm`.	No default.
"<exceptions-item_id>"	Enter the exception URL ID.	No default.
url-type {plain | regular}	Select whether the URL Pattern field will contain a literal URL (plain), or a regular expression designed to match multiple URLs (regular).	`plain`
url-pattern <url-pattern_str>	Depending on the `url-type`, enter either: • **plain**–The literal URL, such as `/index.php`, that the HTTP request must contain in order to match the rule. The URL must begin with a slash (/). • **regular**–A regular expression, such as `^/*.php`, matching the URLs to which the rule should apply. The pattern does not require a slash (/), but it must match URLs that begin with a slash, such as `/index.cfm`.	No default.
"<url-encryption-policy_ name>"	Enter an encryption policy name.	No default.
full-mode {enable | disable}	When enabled, Script Events, Embedded non-HTML content - scripts, js files, and Embedded non-HTML content - stylesheets that match the rule will be encrypted.	`enable`
"<rule-list_id>"	Enter the URL encryption rule ID.	No default.
rule <rule_str>	Select the URL encryption rule name.	No default.

Related topics

- waf web-protection-profile inline-protection on page 720

waf url-access-parameter

Use this command to add URL access parameter rules. It should be referred in an URL access rule.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `wafgrp` area. For details, see Permissions on page 46.

Syntax

```
config waf url-access-parameter
   edit waf url-access-parameter
      config waf url-access-parameter-list
         edit <index>
            set argument-name <string>
            set data-type
         next
      end
   next
end
```

Variable	Description	Default
"<url-access-parameter-rule_name>"	Enter the name of a new or existing rule. The maximum length is 63 characters. To display the list of existing rules, enter: `edit ?`	No default.
argument-name <string>	Depending on your selection in **Type**, enter either: • The literal name that the HTTP request must contain in order to match the rule. • A regular expression. To create and test a regular expression, click the **>>** (test) icon. This opens the **Regular Expression Validator** window where you can fine-tune the expression. For details, see "Regular expression syntax" on page 1.	No default.
data-type	Specify the data type of the parameter value.	No default.

waf url-access url-access-rule

Use this command to configure URL access rules that define the HTTP requests that are allowed or denied based on their host name and URL.

Typically, for example, access to administrative panels for your web application should **only** be allowed if the client's source IP address is an administrator's computer on your private management network. Unauthenticated access from unknown locations increases risk of compromise. Best practice dictates that such risk should be minimized.

To apply URL access rules, first group them within a URL access policy. For details see, waf url-access url-access-policy on page 688.

You can use SNMP traps to notify you when a URL access rule is enforced. For details, see system snmp community on page 383.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `wafgrp` area. For details, see Permissions on page 46.

Syntax

```
config waf url-access url-access-rule
   edit "<url-access-rule_name>"
      set action {alert_deny | continue | pass | deny_no_log}
      set host "<protected-hosts_name>"
      set host-status {enable | disable}
      set severity {Informative | Low | Medium | High | Info}
      set trigger "<trigger-policy_name>"
      config match-condition
         edit <entry_index>
            set sip-address-check {enable | disable}
            set sip-address-type {sip | sdomain | source-domain}
            set sip-address-value "<client_ip>"
            set sdomain-type {"<ipv4>" | "<ipv6>"}
            set sip-address-domain "<fqdn_str>"
            set source-domain-type {simple-string | regex-expression}
            set source-domain "<source-domain_str>"
            set reverse-dns-timeout <int>
            set type {regex-expression | simple-string}
            set reg-exp "<object_pattern>"
            set url-access-parameter
            set only-method {get | post | head | options | trace | connect | delete | put | patch |
                 webdav | rpc | others}
            set only-protocol {http | https | ws | wss}
            set reverse-match {yes | no}
         next
      end
   next
end
```

Variable	Description	Default
"<url-access-rule_name>"	Enter the name of a new or existing rule. The maximum length is 63 characters. To display the list of existing rules, enter: `edit ?`	No default.
action {alert_deny | continue | pass | deny_no_log}	Select which action the FortiWeb appliance will take when a request matches the URL access rule. • `alert_deny`–Block the request (or reset the connection) and generate an alert email and/or log message. You can customize the web page that FortiWeb returns to the client with the HTTP status code. For details, see "system replacemsg" on page 1. • `continue`–Generate an alert and/or log message, then continue by evaluating any subsequent rules defined in the web protection profile. If no other rules are violated, allow the request. If multiple rules are violated, a single request will generate multiple attack log messages. For details, see debug flow trace on page 789. • `pass`–Allow the request. Do **not** generate an alert and/or log message. • `deny_no_log`–Deny a request. Do **not** generate a log message. **Caution:** This setting will be ignored if monitor-mode {enable | disable} on page 166 is enabled. **Note:** Logging and/or alert email will occur only if enabled and configured. For details, see log disk on page 66 and log alertMail on page 60. **Note:** If an auto-learning profile will be selected in the policy with Offline Protection profiles that use this rule, you should select `pass`. If the `action` is `alert_deny`, the FortiWeb appliance will reset the connection when it detects an attack, resulting in incomplete session information for the auto-learning feature. For details about auto-learning requirements, see "waf web-protection-profile autolearning-profile" on page 1.	`pass`
host "<protected-hosts_name>"	Enter the name of a protected host that the `Host:` field of an HTTP request must be in order to match the rule. The maximum length is 255 characters. This setting is used only if host-status {enable | disable} on page 694 is `enable`.	No default.
host-status {enable | disable}	Enable to require that the `Host:` field of the HTTP request match a protected hosts entry in order to match the rule. Also configure host "<protected-hosts_name>" on page	`disable`

Variable	Description	Default
	694.	
severity {Informative | Low | Medium | High | Info}	When rule violations are recorded in the attack log, each log message contains a **Severity Level** (`severity_level`) field. Select which severity level the FortiWeb appliance will use when a blocklisted IP address attempts to connect to your web servers: • Informative • Low • Medium • High • Info	Low
trigger "<trigger-policy_name>"	Select which trigger, if any, that the FortiWeb appliance will use when it logs and/or sends an alert email about a blocklisted IP address's attempt to connect to your web servers. The maximum length is 63 characters. For details, see log trigger-policy on page 97. To display the list of existing trigger policies, enter: `set trigger ?`	No default.
<entry_index>	Enter the index number of the individual entry in the table. The valid range is 1-9,999,999,999,999,999,999.	No default.
sip-address-check {enable | disable}	Enable to add the client's source IP address as a criteria for matching the URL access rule. Also configure sip-address-type {sip | sdomain | source-domain} on page 695 and the specific settings for each source address type.	`disable`
sip-address-type {sip | sdomain | source-domain}	• `sip`—Configure sip-address-value "<client_ip>" on page 695. • `sdomain`—Configure sdomain-type {"<ipv4>" | "<ipv6>"} on page 696 and sip-address-domain "<fqdn_str>" on page 696. • `source-domain`—Configure source-domain-type {simple-string | regex-expression} on page 696 and source-domain "<source-domain_str>" on page 696.	`sip`
sip-address-value "<client_ip>"	Enter one of the following values: • A single IP address that a client source IP must match, such as a trusted private network IP address (e.g. an administrator's computer, `172.16.1.20`). • A range or addresses (e.g. 1.2.3.4,2001::1,1.2.3.4-1.2.3.40,2001::1-2001::100). Available only if sip-address-type {sip | sdomain | source-domain} on page 695 is `sip`.	`0.0.0.0`

Variable	Description	Default
sdomain-type {"<ipv4>" | "<ipv6>"}	Specifies the type of IP address FortiWeb retrieves from the DNS lookup of the domain specified by sip-address-domain "<fqdn_str>" on page 696. Available only if sip-address-type {sip | sdomain | source-domain} on page 695 is `sdomain`.	No default.
sip-address-domain "<fqdn_str>"	Specifies the domain to match the client source IP after DNS lookup. Available only if sip-address-type {sip | sdomain | source-domain} on page 695 is `sdomain`.	No default.
source-domain-type {simple-string | regex-expression}	• `simple-string`—`source-domain` specifies a literal domain. • `regex-expression`—`source-domain` specifies a regular expression that is designed to match multiple URLs. Available only if sip-address-type {sip | sdomain | source-domain} on page 695 is `source-domain`.	`simple-string`
source-domain "<source-domain_str>"	Enter a literal domain or a regular expression that is designed to match multiple URLs. Available only if sip-address-type {sip | sdomain | source-domain} on page 695 is `sdomain`.	No default.
reverse-dns-timeout <int>	To avoid the process hanging for a long time, you can set this option to limit the time (in millisecond) when FortiWeb performs the reverse DNS lookup for an IP address. The unit is 0.01 second. For example, if you set the value to 10, it means 0.1 second. The valid value range is 0-600. 0 means the process will not be blocked by reverse dns lookup. This option is available only when **sip-address-check** is enabled and the **sip-address-type** is **source-domain**.	10
type {regex-expression | simple-string}	Select how to use the text in reg-exp "<object_pattern>" on page 696 to determine whether or not a request URL meets the conditions for this rule. • `simple-string`—The text is a string that request URLs must match exactly. • `regular-expression`—The text is a regular expression that defines a set of matching URLs.	No default.
reg-exp "<object_pattern>"	Depending on your selection in type {regex-expression | simple-string} on page 696 and reverse-match {yes | no} on page 697, type a regular expression that defines either all matching or all non-matching URLs. Then, also configure reverse-match {yes | no} on page 697.	No default.

Variable	Description	Default
	For example, for the URL access rule to match all URLs that begin with `/wordpress`, you could enter `^/wordpress`, then, for `reverse-match`, enter `no`. The pattern is **not** required to begin with a slash (`/`). The maximum length is 255 characters. **Note:** Regular expressions beginning with an exclamation point (`!`) are not supported. Instead, use `reverse-match {yes | no}`.	
url-access-parameter	Enter the URL Access Parameter rule you have created by `config waf url-access-parameter`.	No default.
only-method {get | post | head | options | trace | connect | delete | put | patch | webdav | rpc | others}	Select the HTTP methods. Only the requests with the specified HTTP methods will match.	No default.
only-protocol {http | https | ws | wss}	Select the HTTP protocols. Only the requests with the specified HTTP protocols will match.	No default.
reverse-match {yes | no}	Indicate how to use reg-exp "<object_pattern>" on page 696 when determining whether or not this rule's condition has been met. • `no`–If the simple string or regular expression **does** match the request URL, the condition is met. • `yes`–If the simple string or regular expression does **not** match the request URL, the condition is met. The effect is equivalent to preceding a regular expression with an exclamation point (`!`).	`no`

Example

This example defines two sets of URL access rules.

The first set, `Blocked URL`, defines two URL match conditions: one uses a simple string to match an administrative page, and the other uses a regular expression to match a set of dynamic URLs for statistics pages.

The second set, `Allowed URL`, defines a single match condition that uses a regular expression to match all dynamic forms of the index page.

Actual blocking or allowing of the URLs, however, would not occur until a policy applies these URL access rules, and sets an action that the FortiWeb appliance will perform when an HTTP request matches either rule set.

```
config waf url-access url-access-rule
   edit "Blocked URL"
      config match-condition
         edit 1
            set type simple-string
            set reg-exp "/admin.php"
         next
         edit 2
```

```
            set type regular-expression
            set reverse-match no
            set reg-exp "statistics.php*"
         next
      end
   next
   edit "Allowed URL"
      config match-condition
         edit 1
            set type regular-expression
            set reverse-match no
            set reg-exp "index.php*"
         next
      end
   next
end
```

Related topics

- waf web-protection-profile inline-protection on page 720
- waf web-protection-profile offline-protection on page 731
- waf url-access url-access-policy on page 688

waf url-rewrite url-rewrite-policy

Use this command to group URL rewrite rules.

Before you can configure a URL rewrite group, you must first configure any URL rewriting rules that you want to include. For details, see waf url-rewrite url-rewrite-rule on page 699.

To apply a URL rewriting group, select it in an inline protection profile. For details, see waf web-protection-profile inline-protection on page 720.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `wafgrp` area. For details, see Permissions on page 46.

Syntax

```
config waf url-rewrite url-rewrite-policy
   edit "<url-rewrite-group_name>"
      config rule
         edit <entry_index>
            set url-rewrite-rule-name "<url-rewrite-rule_name>"

            next
      end
   next
end
```

Variable	Description	Default
"<url-rewrite-group_name>"	Enter the name of the URL rewriting rule group. The maximum length is 63 characters. To display the list of existing group, enter: `edit ?`	No default.
<entry_index>	Enter the index number of the individual entry in the table. The valid range is 1-9,999,999,999,999,999,999.	No default.
url-rewrite-rule-name "<url-rewrite-rule_name>"	Enter the name of an existing URL rewriting rule that you want to include in the group. The maximum length is 63 characters.	No default.
continue-execution {enable | disable}	Enable to run this rule together with the next rule, for instance, inserting a custom header together with rewriting a header. If disabled, only the first matched rule in the table will be executed.	disable

Related topics

- waf url-rewrite url-rewrite-rule on page 699
- waf web-protection-profile inline-protection on page 720

waf url-rewrite url-rewrite-rule

Use this command to configure URL rewrite rules or to redirect requests.

Rewriting or redirecting HTTP requests and responses is popular, and can be done for many reasons.

Similar to error message cloaking, URL rewriting can prevent the disclosure of underlying technology or website structures to HTTP clients.

For example, when visiting a blog web page, its URL might be:

```
http://www.example.com/wordpress/?feed=rss2
```

Simply knowing the file name, that the blog uses PHP, its compatible database types, and the names of parameters via the URL could help an attacker to craft an appropriate attack for that platform. By rewriting the URL to something more human-readable and less platform-specific, the details can be hidden:

```
http://www.example.com/rss2
```

Aside from for security, rewriting and redirects can be for aesthetics or business reasons. Financial institutions can transparently redirect customers that accidentally request HTTP:

```
http://bank.example.com/login
```

to authenticate and do transactions on their secured HTTPS site:

`HTTPs://bank.example.com/login`

Additional uses could include:

- During maintenance windows, requests can be redirected to a read-only server.
- International customers can use global URLs, with no need to configure the back-end web servers to respond to additional HTTP virtual host names.
- Shorter URLs with easy-to-remember phrases and formatting are easier for customers to understand, remember, and return to.

Much more than their name implies, “URL rewriting rules” can do all of those things, and more:

- Redirect HTTP requests to HTTPS
- Rewrite the URL line in the header of an HTTP request
- Rewrite the `Host:` field in the header of an HTTP request
- Rewrite the `Referer:` field in the header of an HTTP request
- Redirect requests to another website
- Send a `403 Forbidden` response to a matching HTTP requests
- Rewrite the HTTP location line in the header of a matching redirect response from the web server
- Rewrite the body of an HTTP response from the web server

Rewrites/redirects are not supported in all modes. For details, see the *FortiWeb Administration Guide*:

https://docs.fortinet.com/document/fortiweb

To use a URL rewriting rule, add it to a policy. For details, see waf url-rewrite url-rewrite-policy on page 698.

To use this command, your administrator account’s access control profile must have either `w` or `rw` permission to the `wafgrp` area. For details, see Permissions on page 46.

Syntax

```
config waf url-rewrite url-rewrite-rule
   edit "<url-rewrite-rule_name>"
      set action {403-forbidden | redirect | redirect-301 | HTTP-request-body-rewrite | HTTP-
            response-body-rewrite | HTTP-header-rewrite | HTTP-response-header-rewrite}
      set host {<server_fqdn> | <server_ipv4> | <host_pattern>}
      set host-status {enable | disable}
      set host-use-pserver {enable | disable}
      set url "<replacement-url_str>"
      set url-status {enable | disable}
      set referer-status {enable | disable}
      set referer "<referer-url_str>"
      set referer-use-pserver {enable | disable}
      set http-method-status {enable | disable}
      set http-method <string>
      set status-code-status {enable | disable}
      set status-code <int>
      set request-replace-existing-headers {enable | disable}
      set response-replace-existing-headers {enable | disable}
      set request-remove-duplicate-headers {enable | disable}
      set response-remove-duplicate-headers {enable | disable}
```

```
        config header-insert
           edit <entry_index>
              set header-name "<header-name_str>"
              set header-value "<header-value_str>"
           next
        end
        config header-removal
           edit <entry_index>
              set waf url-rewrite url-rewrite-rule
           next
        end
        set http-request-body-rewrite <string>
        set waf url-rewrite url-rewrite-rule
        set location "<location_str>"
        set location-status {enable | disable}
        set location_replace "<location_str>"
        set header-response-status {enable | disable}
        config response-header-removal
           edit <entry_index>
              set response-removel-header-name <string>
           next
        end
        config response-header-insert
           edit <entry_index>
              set response-header-name <string>
              set response-header-value <string>
           next
        end
        config match-condition
           edit <entry_index>
              set object {HTTP-host | HTTP-reference | HTTP-url}
              set protocol-filter {enable | disable}
              set protocol {HTTP | HTTPS}
              set reg-exp "<object_pattern>"
              set reverse-match {yes | no}
              set content-filter {enable | disable}
              set content-type-set {text/html text/plain text/javascript application/xml(or)text/xml
                   application/javascript application/soap+xml application/x-javascript}
              set is-essential {yes | no}
           next
        end
           next
        end
     next
end
```

Variable	Description	Default
"<url-rewrite-rule_name>"	Enter the name of a new or existing rule. The maximum length is 63 characters. To display the list of existing rules, enter: `edit ?`	No default.

Variable	Description	Default
action {403-forbidden | redirect | redirect-301 | HTTP-request-body-rewrite | HTTP-response-body-rewrite | HTTP-header-rewrite | HTTP-response-header-rewrite}	Specify one of the following values: • `403-forbidden`–Send a 403 (Forbidden) response to the client. • `redirect`–Send a `302 (Moved Temporarily)` response to the client, with a new `Location:` field in the HTTP header. • `redirect-301`–Send a `301 (Moved Permanently)` response to the client, with a new `Location:` field in the HTTP header. • `HTTP-request-body-rewrite`–Replace the specific HTTP content in the body of requests. • `HTTP-response-body-rewrite`–Replace the specific HTTP content in the body of responses. • `HTTP-header-rewrite`–Rewrite the host, referer and request URL fields in HTTP header. • `HTTP-response-header-rewrite`–Rewrite the HTTP header or body in the response packet. The following rows list the configurations when different actions are selected.	`HTTP-header-rewrite`
	HTTP-header-rewrite	
header-name "<header-name_str>"	Enter the name of the header field that you want to insert to a request, such as "`Myheader`." The maximum length is 1023 characters. You can add up to 10 headers in the insertion list.	No default.
header-value "<header-value_str>"	Enter the value of the header field that you specified in `header-name "<header-name_str>"`, such as "`123`." Then, the customized header `Myheader: 123` will be inserted to the matched HTTP requests. The maximum length is 1023 characters.	No default.
header-name "<header-name_str>"	Enter the name of the header field that you want to remove, such as "`Myheader`." The maximum length is 1023 characters. You can add up to 10 headers in the removal list.	No default.
host {<server_fqdn> | <server_ipv4> | <host_pattern>}	Type the FQDN of the host, such as `store.example.com`, to which the request will be redirected. The maximum length is 255 characters. This option is available only when host-status {enable | disable} on page 703 is enabled.	No default.

Variable	Description	Default

	This field supports back references such as `$0` to the parts of the original request that matched any capture groups that you entered in reg-exp "<object_pattern>" on page 706 for each object in the condition table. (A capture group is a regular expression, or part of one, surrounded in parentheses.)
	Use **$n** (0 <= **n** <= 9) to invoke a substring, where **n** is the order of appearance of the regular expression, from left to right, from outside to inside, then from top to bottom.
	For example, regular expressions in the condition table in this order:
	`(a)(b)(c(d))(e)`
	`(f)`
	would result in invokable variables with the following values:
	• `$0`–a
	• `$1`–b
	• `$2`–cd
	• `$3`–d
	• `$4`–e
	• `$5`–f	

host-status {enable | disable}	Enable to rewrite the `Host:` field or host name part of the `Referer:` field. When disabled, the FortiWeb appliance preserves the value from the client's request when rewriting it.	`disable`
host-use-pserver {enable | disable}	Enable this when you have a server farm for server balance or content routing. In this case you do not know which server in the server farm the FortiWeb appliance will use. When FortiWeb processes the request, it sets the value for the actual host. This option is available only when host-status {enable | disable} on page 703 is enabled. Any setting you make for `host` is ignored.	`disable`
url "<replacement-url_str>"	Enter the string, such as `/catalog/item1`, that will replace the request URL. The maximum length is 255 characters. This option is available only when url-status {enable | disable} on page 704 is enabled. Do not include the name of the web host, such as `www.example.com`, nor the protocol, which are configured separately in host {<server_fqdn> | <server_ipv4> | <host_pattern>} on page 702. Like `host`, this field supports back references such as `$0` to the parts reg-exp "<object_pattern>" on page 706 for each object in the condition table.	No default.

Variable	Description	Default
	For an example, see the *FortiWeb Administration Guide*: https://docs.fortinet.com/document/fortiweb	
url-status {enable | disable}	Enable to rewrite the URL part of the request URL. If you disable this option, the FortiWeb appliance preserves the value from the client's request when it rewrites it.	`disable`
referer-status {enable | disable}	Enable to rewrite the `Referer:` field in the HTML header. Also configure referer "<referer-url_str>" on page 704 and referer-use-pserver {enable | disable} on page 704.	`disable`
referer-use-pserver {enable | disable}	Enable this when you have a server farm for server balance or content routing. In this case you do not know which server in the server farm the FortiWeb appliance will use. When FortiWeb processes the request, it sets the value for the actual referrer. This option is available only when referer-status {enable | disable} on page 704 is enabled. Any setting you make for referer "<referer-url_str>" on page 704 is ignored.	`disable`
referer "<referer-url_str>"	Enter the replacement value for the `Referer:` field in the HTML header. The maximum length is 255 characters. This option is available only when referer-status {enable | disable} on page 704 is enabled.	No default.
http-method-status {enable | disable}	Enable to replace the original HTTP methods in a request with the specified method.	disable
http-method <string>	Specify the HTTP method to replace the original one. Please avoid changing the method on the fly unless absolutely necessary. It is important to consider the potential implications and ensure that the server can handle the new method correctly.	get
status-code-status {enable | disable}	Enable to replace the original status code in a response with the specified code.	disable
status-code <int>	Enter a status code to replace the original one in HTTP response.	404
request-replace-existing-headers {enable | disable}	If there is already a header with the same name existing in the request, enabling this option will overwrite the value of the existing header with your specified header value. On the other hand, if this option is disabled, the system will insert the header directly without checking if there is an existing header with the same header name.	enable

Variable	Description	Default
response-replace-existing-headers {enable | disable}	If there is already a header with the same name existing in the response, enabling this option will overwrite the value of the existing header with your specified header value. On the other hand, if this option is disabled, the system will insert the header directly without checking if there is an existing header with the same header name.	enable
request-remove-duplicate-headers {enable | disable}	If the system finds multiple items in the HTTP request that match your specified header name, enabling this option will remove all of them. However, if this option is disabled, only the first matching item will be removed.	enable
response-remove-duplicate-headers {enable | disable}	If the system finds multiple items in the HTTP response that match your specified header name, enabling this option will remove all of them. However, if this option is disabled, only the first matching item will be removed.	enable
redirect | redirect-301		
location "<location_str>"	Enter the URL string that provides a location for use in a 301 or 302 HTTP redirection when the HTTP request matches. The maximum length is 255 characters.	No default.
HTTP-response-header-rewrite		
location-status {enable | disable}	Enable to configure the `location_replace`.	`disable`
location_replace "<location_str>"	Enter the replacement value for the `Location:` field in the HTTP header for the response. The maximum length is 255 characters.	No default.
header-response-status {enable | disable}	Enable to configure HTTP header insertion when the HTTP response matches.	`disable`
response-header-name <string>	Type the Header name that you want to insert into the HTTP response. You can add up to 10 headers in the insertion list. The maximum length is 1023 characters.	No default.
response-header-value <string>	Type the value of the Header field. The maximum length is 1023 characters.	No default.
<entry_index>	The index number of the header removal item.	No default.
response-removel-header-name <string>	The name of the header that you want to remove. Up to 10 header names can be added in the removal list. The maximum length is 1023 characters.	No default.

Variable	Description	Default
	HTTP-resquest-body-rewrite	
http-request-body-rewrite <string>	Enter the value that will replace matching HTTP content in the body of requests. The maximum is 255 characters.	No default.
	HTTP-request-body-rewrite	
http-response-body-rewrite <string>	Enter the value that will replace matching HTTP content in the body of responses. The maximum is 255 characters.	No default.
	Match Conditions	
<entry_index>	Enter the index number of the individual entry in the table. The valid range is 1-9,999,999,999,999,999,999.	No default.
object {HTTP-host | HTTP-reference | HTTP-url}	Select which part of the HTTP request to test for a match: • `HTTP-host` • `HTTP-url` • `HTTP-reference` (the `Referer:` field) If the request must match multiple conditions (for example, it must contain both a matching `Host:` field and a matching URL), add each object match condition to the condition table separately.	`HTTP-host`
protocol-filter {enable | disable}	Enable if you want to match this condition only for either HTTP or HTTPS. Also configure waf url-rewrite url-rewrite-rule on page 699. For example, you could redirect clients that accidentally request the login page by HTTP to a more secure HTTPS channel—but the redirect is not necessary for HTTPS requests. As another example, if URLs in HTTPS requests should be exempt from rewriting, you could configure the rewriting rule to apply only to HTTP requests.	`disable`
protocol {HTTP | HTTPS}	Select the protocol to use.	`HTTP`
reg-exp "<object_pattern>"	Depending on your selection in object {HTTP-host | HTTP-reference | HTTP-url} on page 706 and reverse-match {yes | no} on page 707, type a regular expression that defines either all matching or all non-matching `Host:` fields, URLs, or `Referer:` fields. Then, also configure `reverse-match {yes | no}`. For example, for the URL rewriting rule to match all URLs that begin with `/wordpress`, you could enter `^/wordpress`, then, in `reverse-match {yes | no}`, select `no`.	No default.

Variable	Description	Default
	The pattern is **not** required to begin with a slash (/). The maximum length is 255 characters. **Note:** Regular expressions beginning with an exclamation point (!) are not supported. Instead, use `reverse-match {yes | no}`.	
reverse-match {yes | no}	Indicate how to use reg-exp "<object_pattern>" on page 706when determining whether or not this URL rewriting condition has been met. • no–If the regular expression **does** match the request object, the condition is met. • yes–If the regular expression does **not** match the request object, the condition is met. The effect is equivalent to preceding a regular expression with an exclamation point (!). If all conditions are met, the FortiWeb appliance will do your selected action {403-forbidden | redirect | redirect-301 | HTTP-request-body-rewrite | HTTP-response-body-rewrite | HTTP-header-rewrite | HTTP-response-header-rewrite}.	no
content-filter {enable | disable}	Enable if you want to match this condition only for specific HTTP content types (also called Internet or MIME file types) such as `text/html`, as indicated in the `Content-Type:` HTTP header. Also configure content-type-set {text/html | text/plain | text/javascript | application/xml(or)text/xml | application/javascript | application/soap+xml | application/x-javascript | application/json | application/rss+xml | multipart/form-data | application/x-www-form-urlencoded} on page 707.	`disable`
content-type-set {text/html | text/plain | text/javascript | application/xml(or)text/xml | application/javascript | application/soap+xml | application/x-javascript | application/json | application/rss+xml | multipart/form-data | application/x-www-form-urlencoded}	Enter the HTTP content types that you want to match in a space-delimited list, such as: `set content-type-set text/html text/plain`	No default.
is-essential {yes | no}	Select what to do if there is no `Referer:` field, either: • no–Meet this condition. • yes–Do not meet this condition.	`yes`

Variable	Description	Default
	Requests can lack a `Referer:` field for several reasons, such as if the user manually types the URL, and the request does not result from a hyperlink from another website, or if the URL resulted from an HTTPS connection. In those cases, the field cannot be tested for a matching value. For details, see the RFC 2616 section on the `Referer:` field (http://www.w3.org/Protocols/rfc2616/rfc2616-sec14.html). This option appears only if object {HTTP-host | HTTP-reference | HTTP-url} on page 706 is `HTTP-reference`.	

Related topics

- waf url-rewrite url-rewrite-policy on page 698

waf user-tracking policy

Use this command to group user tracking rules, which track sessions by user and capture a username to reference in traffic and attack log messages.

Before you configure a user-tracking policy, define the rules to add. For details, see waf user-tracking rule on page 709.

To apply a user tracking policy, you select it in an inline or Offline Protection profile. For details, see waf web-protection-profile inline-protection on page 720 and waf web-protection-profile offline-protection on page 731.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `wafgrp` area. For details, see Permissions on page 46.

Syntax

```
config waf user-tracking policy
   edit "<user-tracking-policy_name>"
      config input-rule-list
         edit <entry_index>
            set input-rule "<input-rule_name>"
         next
      end
   next
end
```

Variable	Description	Default
"<user-tracking-policy_name>"	Enter the name of a new or existing policy. The maximum length is 63 characters.	No default.

Variable	Description	Default
	To display the list of existing policies, enter: `edit ?`	
<entry_index>	Enter the index number of the individual entry in the table. The valid range is 1-9,999,999,999,999,999,999.	No default.
input-rule "<input-rule_name>"	Enter the name of an existing rule.	No default.

waf user-tracking rule

Use this command to configure FortiWeb to track sessions by user and capture a username to reference in traffic and attack log messages.

When FortiWeb detects users that match the criteria that you specify in a user tracking policy, it stores the session ID and username.

To apply a user tracking rule, add it to a user tracking policy that you can select in an inline or Offline Protection profile. For details, see waf user-tracking policy on page 708.

You can apply a user tracking policy using either an inline or Offline Protection profile. However, Session Fixation Protection, Session Timeout, Limit Concurrent Users per Account, and Credential Stuffing Defense are not supported in Offline Protection mode.

You can also use the user tracking feature to create a filter in a custom rule that matches specific users. This type of custom rule requires you to create a user tracking policy and apply it to the protection profile that uses the custom rule. For details, see waf custom-access rule on page 480.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `wafgrp` area. For details, see Permissions on page 46.

Syntax

```
config waf user-tracking rule
   edit "<rule_name>"
      set hostname-ip "<hostname-ip_str>"
      set host-status { enable | disable}
      set authentication-url "<url_str>"
      set username-parameter "<username_str>"
      set password-parameter "<password_str>"
      set session-id-name "<session-id_str>"
      set logoff-path "<logoff_str>"
      set session-fixation-protection {enable | disable}
      set limit-users {enable | disable}
      set maximum-users <maximum-users_int>
      set session-idle-timeout <session-idle-timeout_int>
      set session-timeout-enable {enable | disable}
      set session-timeout-enforcement {enable | disable}
      set session-timeout <timeout_int>
```

```
      set session-frozen-time <frozen-time_int>
      set session-frozen-action {alert | alert_deny | redirect | block-period | deny_no_log}
      set session-frozen-block-period <block-period_int>
      set session-frozen-severity {High | Medium | Low | Info}
      set session-frozen-trigger "<trigger-policy_name>"
      set default-action {failed | success}
      set credential-stuffing-protection {enable | disable}
         config match-condition
            edit <entry_index>
               set authentication-result-type {failed | success}
               set HTTP-match-target {return-code | response-body | redirect-url}
               set value-type {plain | regular}
               set value "<value-str>"
            next
         end
   next
end
```

Variable	Description	Default
"<rule_name>"	Enter a name that identifies the rule. You will use this name to reference the rule in other parts of the configuration. The maximum length is 63 characters.	No default.
hostname-ip "<hostname-ip_str>"	Select which protected host names entry (either a web host name or IP address) that the `Host: field` of the HTTP request must be in to match the rule. Available only when host-status { enable | disable} is enable.	No default.
host-status { enable | disable}	Enable to require that the `Host: field` of the HTTP request match a protected host names entry in order to match the URL access rule. Also configure hostname-ip "<hostname-ip_str>".	`disable`
authentication-url "<url_str>"	Enter the URL to match in authorization requests. Ensure that the value begins with a forward slash (/).	No default.
username-parameter "<username_str>"	Enter the username field value to match in authorization requests.	No default.
password-parameter "<password_str>"	Enter the password field value to match in authorization requests.	No default.
session-id-name "<session-id_str>"	Enter the name of the session ID that is used to identify each session. Examples of session ID names are `sid`, `PHPSESSID`, and `JSESSIONID`. To track users with JSON format login credentials, here you need to type the API token in response data that users will use to access server resource in API queries.	No default.
logoff-path "<logoff_str>"	Optionally, enter the URL of the request that a client sends to log out of the application.	No default.

Variable	Description	Default
	When the client sends this URL, FortiWeb stops tracking the user session. Ensure that the value begins with a forward slash (/).	
session-fixation-protection {enable | disable}	Enter `enable` to configure FortiWeb to erase session IDs from the cookie and argument fields of a matching login request. FortiWeb erases the IDs for non-authenticated sessions only. For web applications that do not renew the session cookie when a user logs in, it is possible for an attacker to trick a user into authenticating with a session ID that the attacker acquired earlier. This feature prevents the attacker from accessing the web app in an authenticated session. When this feature removes session IDs, FortiWeb does not generate a log message because it is very common for a legitimate user to access a web application using an existing cookie. For example, a client who leaves his or her web browser open between sessions presents the cookie from an earlier session. **Caution:** This option is not supported in Offline Protection mode.	`disable`
limit-users {enable | disable}	Enable to limit the number of concurrent logins per account.	`disable`
maximum-users <maximum-users_int>	Specify the maximum number of concurrent logins using the same account.	1
session-idle-timeout <session-idle-timeout_int>	When a session is idled for the specified period of time, the Concurrent Users count will be renewed. The user who is timed-out needs to re-log in. The valid range is 1-1440.	30
session-timeout-enable {enable | disable}	Enable to set the time in minutes that FortiWeb waits before it stops tracking an inactive user session.	`disable`
session-timeout-enforcement {enable | disable}	Enter `enable` to configure FortiWeb to remove the session ID for user sessions that are idle for longer than the length of time specified by `session-timeout`. When a session is reset, the client has to log in again to access the back-end server. If a session exceeds the timeout threshold, instead of tracking subsequent matching sessions by user, FortiWeb takes the specified action, for a length of time specified by `session-frozen-time`.	`disable`
session-timeout <timeout_int>	Enter the length of time in minutes that FortiWeb waits before it stops tracking an inactive user session. The valid range is 1-60.	`30`

Variable	Description	Default
session-frozen-time <frozen-time_int>	Enter the length of time after a session exceeds the timeout threshold that FortiWeb takes the specified action against requests with the ID of the timed-out session. After the freeze time has elapsed, FortiWeb removes the session ID for idle sessions but no longer takes the specified action. Available only when session-timeout-enforcement {enable | disable} on page 711 is `enable`.	`30`
session-frozen-action {alert | alert_deny | redirect | block-period | deny_no_log}	When session-timeout-enforcement {enable | disable} on page 711 is `enable`, enter the action that FortiWeb takes against requests with the ID of a timed-out session during the specified time period, or when credential-stuffing-protection {enable | disable} on page 713 is enabled enter the action that FortiWeb takes against spilled username/password pairs: • `alert`–Accept the request and generate an alert email and/or log message. • `alert_deny`–Block the request and generate an alert email and/or log message. You can customize the web page that FortiWeb returns to the client with the HTTP status code. For details, see "system replacemsg" on page 1. **Note:** In Offline Protection mode, because the deny action is not supported, this option has the same effect as `alert`. • `redirect` – Redirect the request to the URL that you specify in the protection profile and generate an alert and/or log message. Also configure `redirect-url <redirect_fqdn>` and `rdt-reason {enable | disable}`. **Caution:** This option is not supported in Offline Protection mode • `block-period`–Block subsequent requests from the client for a specified number of seconds. `deny_no_log`–Deny a request. Do not generate a log message. You can customize the web page that FortiWeb returns to the client with the HTTP status code. For details, see "system replacemsg" on page 1. **Caution:** This option is not supported in Offline Protection mode When the action generates a log message, the message field value is `Session Timeout Enforcement: triggered by user <username>`.	`alert`

Variable	Description	Default
	Available only when session-timeout-enforcement {enable | disable} on page 711 or credential-stuffing-protection {enable | disable} on page 713 is set to `enable`.	
session-frozen-block-period <block-period_int>	Enter the number of seconds to block requests with the ID of a timed-out session or when credential-stuffing-protection {enable | disable} on page 713 is enabled and detects spilled username/password pairs. This setting is available only if session-frozen-action {alert | alert_deny | redirect | block-period | deny_no_log} on page 712 is `block-period`. The valid range is 1-3,600 seconds.	`600`
session-frozen-severity {High | Medium | Low | Info}	When the session timeout settings generate an attack log, each log message contains a **Severity Level** (`severity_level`) field. Select which severity level FortiWeb uses when it takes the specified action: • `Low` • `Medium` • `High` Available only when session-timeout-enforcement {enable | disable} on page 711 or credential-stuffing-protection {enable | disable} on page 713 is set to `enable`.	`Low`
session-frozen-trigger "<trigger-policy_name>"	Enter the name of the trigger, if any, to apply when FortiWeb detects requests with the ID of a timed-out session or when `credential-stuffing-protection` is enabled and FortiWeb detects spilled username/password pairs. The maximum length is 63 characters. For details, see log trigger-policy on page 97. To display the list of existing triggers, enter: `set trigger ?`	No default.
default-action {failed | success}	Enter the authentication result that FortiWeb associates with requests that match the criteria but do not match an entry in the Authentication Result Condition Table. When the login result is successful, FortiWeb tracks the session using the session ID and username values.	`failed`
credential-stuffing-protection {enable | disable}	Enable to use FortiGuard's Credential Stuffing Defense database to prevent against Credential Stuffing attacks. For details, see the *FortiWeb Administration Guide*: https://docs.fortinet.com/document/fortiweb	`disable`
<entry_index>	Enter the index number of the individual entry in the table.	No default.
authentication-result-type {failed | success}	Specify the status FortiWeb assigns to user logins that match this table item: `failed` or `successful`. FortiWeb tracks sessions by user only when the status is `successful`.	`success`

Variable	Description	Default
	If the request does not match any rules in this table, FortiWeb uses the value specified by default-action {failed | success} on page 713.	
HTTP-match-target {return-code | response-body | redirect-url}	Select the location of the value to match with the string or regular expression specified in this table item: `return-code`, `response-body`, `redirect-url`.	`return-code`
value-type {plain | regular}	Indicate whether `value` is a simple string (`plain`) or a regular expression (`regular`).	`plain`
value "<value-str>"	Enter the value to match.	No default.

Example

This example matches requests from clients using the URL `/login2` with the parameters `user` and `pass` and a session ID specified by `jsessionid`. FortiWeb tracks matching sessions by user and stops tracking if the client logs out using the URL `/logout2`.

FortiWeb tracks only requests with the return code 200, which it classifies as successful. It does not track requests with a response body that matches the regular expression `deny`. In addition, because the rule uses the default value for the default authentication result, it does not track requests that do not match an item in the list of match conditions.

The rule enables both session fixation protection and session timeout enforcement for tracked sessions. If a session is idle longer than the default session timeout, FortiWeb blocks requests from clients that use the session ID that has timed out for the default period block time. It performs this action for 30 minutes after the session times out (the default session freeze time).

```
config waf user-tracking
   edit "rule1"
      set authentication-url "/login2"
      set username-parameter user
      set password-parameter pass
      set session-id-name "jsessionid"
      set logoff-path "/logout2"
      set session-fixation-protection enable
      set timeout-enforcement enable
      set session-frozen-action period-block
      set session-frozen-severity High
      set session-frozen-trigger "trigger1"
      config match-condition
         edit 1
            set authentication-result-type success
            set HTTP-match-target return-code
            set value-type plain
            set value 200
         next
         edit 2
            set authentication-result-type failed
            set HTTP-match-target return
            set value-type regular
            set value deny
         next
```

```
      end
   next
end
```

Related topics

- server-policy allow-hosts on page 106
- waf web-protection-profile inline-protection on page 720
- waf web-protection-profile offline-protection on page 731

waf waiting-room policy

You can use Waiting Room to manage visitor traffic and avoid server overload delays, you can enable a virtual holding space and queuing system, allowing new users to enter a Waiting Room where they can view estimated wait times before accessing your application.

This feature may be configured for your entire website, or specific URL paths.

Use this command to create waiting room policies.

Syntax

```
config waf waiting-room-policy
   edit <waiting-room-policy_name>
      set path-type {plain | regular}
      set path <string>
      set total-active-users <integer>
      set new-users-per-min <integer>
      set session-duration <integer>
      set description <string>
      config bypass-rules
         edit <bypass-rules_id>
            set type source-ip
            set value <string>
         next
      end
   next
end
```

Variable	Description	Default
<waiting-room-policy_ name>	Enter a 40-character string for the name, for example `e1947036-a1fa-489e-8434-c8a401a75f78`.	No default
path-type {plain | regular}	Select whether to use a Simple String or a Regular Expression to specify the URLs for the Waiting Room. When users access the URL, FortiWeb will queue their	plain

Variable	Description	Default
	requests according to the Waiting Room policy.	
path <string>	The waiting room will only be enabled for the configured URL. Use /.* to match all. • If Path Type is **Simple String**, enter the literal URL. • If Path Type is **Regular Expression**, enter a regular expression to match the URLs. This value cannot be empty.	No default
total-active-users <integer>	Control the size of traffic accessing your application. If the number of active users reaches the configured value, additional users will enter the Waiting Room.	0
new-users-per-min <integer>	Prevent your application from being flooded by new users in a short time span. If the number of new users per minute reaches the configured value, additional users will enter the Waiting Room. At least specify one of `total-active-users` and `new-users-per-min`. If you choose to configure both, make sure that `total-active-users` is set to a value greater than or equal to `new-users-per-min`.	0
session-duration <integer>	Users who have remained idle for the configured time will be considered as a new user. Users who have ended and restarted the session will also be considered as a new user. This value cannot be empty.	5
description <string>	Enter a brief description for the Waiting Room Policy.	No default
<bypass-rules_id>	Add bypass rules to allow users with certain IP addresses to access your application directly, even if they trigger the above limiting conditions.	No default
value <string>	Enter an IP address or range in the **Value** field to configure a new Bypass rule.	No default

Related topics

- server-policy policy on page 151

waf web-cache-rule/policy

To improve performance of your back-end network and servers by reducing their traffic and processing load, you can configure FortiWeb to cache responses from your servers.

To configure the web caching, you must enable it in system feature-visibility.

Syntax

```
config waf web-cache-policy
   edit "<server_policy_id>"
   next
end
```

Variable	Description	Default
<web-cache-policy_name>	Enter the ID of the server policy that has enabled this web cache.	No default.

```
config waf web-cache-rule
   edit "<rule-name_entry>"
      set host-status {enable | disable}
      set host <host_str>
      set path <path_str>
      set modified {enable | disable}
      set HTTP-method {get-head | get-head-options | all-methods}
      set request-file-type {text | picture | media | binary | other}
      set allow-return-code {allow-200 | allow-200-206 | allow-200-206-301-302}
      set cache-inactive-time <cache-inactive-time_int>
      set inactive-time-type {minutes | hours}
      set client-cache-expire <client-cache-expire_int>
      set client-cache-expire-type {minutes | hours}
      set key-factor {method | protocol | host | url | arguments | cookies}
      set enable-client-expire {enable | disable}
      set policy-id <entry_index>
      config cookie-name-list
         edit <cookie-name-list_id>
            set cookie-name "<cookie-name_str>"
      end
      config bypass-sub-url
         edit "<bypass-sub-url_id>"
            set HTTP-method {get | post | head | options | trace | connect | delete | put | patch |
                  any}
            set type {plain | regular}
            set url-expression <url-expression_str>
            set enable-bypass-args {enable | disable}
            set bypass-args <bypass-args_str>
```

```
            set enable-bypass-cookies {enable | disable}
            set bypass-cookies <bypass-cookies_str>
            set block-return-code {block-none|block-200|block-206|block-301|block-302}
        next
    end
  next
end
```

Variable	Description	Default
"<rule-name_entry>"	Enter a 40-character string for the name, for example `e1947036-a1fa-489e-8434-c8a401a75f78`.	No default.
host-status {enable | disable}	Enable to require that the `Host: field` of the HTTP request match a protected host names entry in order to match the web cache rule. Also configure host <host_str>.	No default.
host <host_str>	Select which protected host names entry (either a web host name or IP address) that the `Host:` field of the HTTP request must be in to match the web cache rule.	No default.
path <path_str>	Enter a path for your web pages, for example `/test`, a prefix of a set of URLs.	No default.
modified {enable | disable}	Enables synchronous interaction with supported WAF modules. When enabled, the Web Cache stores HTTP responses after they have been processed by modules that support synchronous modification (e.g., Acceleration), rather than caching raw server responses. This improves performance by avoiding duplicate processing and ensures that cached content reflects the output of active WAF logic.	disable
HTTP-method {get-head | get-head-options | all-methods}	Select whether to cache the response contents according to the HTTP method you use.	`get-head`
request-file-type {text | picture | media | binary | other}	Select whether to cache the response contents according to the content type.	All values
allow-return-code {allow-200 | allow-200-206 | allow-200-206-301-302}	Select whether to cache the response contents according to the response code.	`200`
cache-inactive-time <cache-inactive-time_int>	Specify a timeout threshold that the cache becomes invalid and needs to be refreshed. After the timeout, the cached web contents will be removed automatically.	60 minutes
inactive-time-type {minutes | hours}	Select the time unit for the cache inactive time.	minutes
client-cache-expire <client-cache-expire_int>	Enter a period specified by max-age so that if the client requests the same contents again in the period, the client can obtain the web content from local cache directly.	10 minutes

Variable	Description	Default
client-cache-expire-type {minutes | hours}	Select the time unit for the cache expiration time.	minutes
key-factor {method | protocol | host | url | arguments | cookies}	Select the protocol variable that you want to use to generate the cache key.	All values except `cookies`.
enable-client-expire {enable | disable}	Enable to clear the cache based on the specified period.	`disable`
policy-id <server-policy_name>	Enter the ID of the server policy that has enabled this web cache.	No default.
"<cookie-name-list_id>"	Enter the cookie name ID if you specify cookie in key-factor {method | protocol | host | url | arguments | cookies}	No default.
cookie-name "<cookie-name_str>"	Enter a cookie name related to the ID.	No default.
"<bypass-sub-url_id>"	Enter the bypass sub URL list ID.	No default.
HTTP-method {get | post | head | options | trace | connect | delete | put | patch | any}	Select the HTTP method in which the request sub URL is included.	any
type {plain | regular}	Select whether the url-expression <url-expression_str> field must contain either: • plain–The field is a string that the request sub URLmust match exactly. • regular–The field is a regular expression that defines a set of matching sub URLs.	`plain`
url-expression <url-expression_str>	Depending on your selection in type {plain | regular}, enter either: • The literal URL, such as `/index.php`, that the HTTP request must contain in order to match the web cache rule. The URL must begin with a slash (/). • A regular expression, such as `^/*.php`, matching all and only the URLs to which the web cache rule should apply. The pattern is **not** required to begin with a slash (/). However, it must at least match URLs that begin with a slash, such as `/index.cfm`. **Note:** Regular expressions beginning with an exclamation point (!) are not supported. For information on language and regular expression matching, see the *FortiWeb Administration Guide*: https://docs.fortinet.com/document/fortiweb	No default.
enable-bypass-args {enable | disable}	Enable this option so that the request matches the bypass URL only when the request brings the specific arguments.	disable

Variable	Description	Default
bypass-args <bypass-args_str>	Enter the bypass arguments.	No default.
enable-bypass-cookies {enable | disable}	Enable this option so that the request matches the bypass URL only when the request brings the specific cookies.	`disable`
bypass-cookies <bypass-cookies_str>	Enter the bypass arguments.	No default.
block-return-code {block-none|block-200|block-206|block-301|block-302}	Select the HTTP return code so that the request matches the bypass URL only when the request triggers one of the selected return codes.	block-none

Related topics

- server-policy policy on page 151

waf web-protection-profile inline-protection

Use this command to configure inline protection profiles.

Inline protection profiles are a set of attack protection settings. The FortiWeb appliance applies the profile when a connection matches a server policy that includes the protection profile. You can use inline protection profiles in server policies for any mode except Offline Protection.

To apply protection profiles, select them within a server policy. For details, see server-policy policy on page 151.

Before configuring an inline protection profile, first configure any of the following that you want to include in the profile:

- Parameter validation rule (see waf parameter-validation-rule on page 626)
- URL access policy (see waf url-access url-access-policy on page 688
- Hidden field rule group (see waf hidden-fields-protection on page 539)
- Parameter restriction constraint (see waf HTTP-protocol-parameter-restriction on page 556)
- Site publisher (see waf site-publish-helper policy on page 640)
- Allowed method exception (see waf allow-method-exceptions on page 429)
- List of manually trusted and block-listed IPs, FortiGuard IP reputation category-based blocklisted IPs, and/or a geographically-based IP blocklist (see waf ip-intelligence-ignore-x-forwarded-for on page 574, "server-policy custom-application application-policy" on page 1, and waf geo-block-list on page 529)
- Attack signatures (see waf signature on page 628)
- File security policy (see "server-policy custom-application application-policy" on page 1)
- Web Shell Detection (see waf webshell-detection-policy on page 738)
- URL rewriting policy (see waf url-rewrite url-rewrite-policy on page 698)
- XML protection policy (waf xml-validation on page 754)
- DoS protection policy (see waf application-layer-dos-prevention on page 446)
- Compression rules (see waf file-compress-rule on page 509)

- Policy that protects vulnerable block cipher implementations for web applications that selectively encrypt inputs without using HTTPS (waf padding-oracle on page 622)
- FortiGate that provides a list of quarantined source IPs (system fortigate-integration on page 311)
- Cross-site request forgery (CSRF) protection rule (see waf csrf-protection on page 475)
- Cookie security policy (see waf cookie-security on page 469)
- User tracking policy (see waf user-tracking policy on page 708)
- JSON protection policy (see waf json-validation rule on page 581)
- OpenAPI Validation (see waf openapi-validation-policy on page 621)
- Mobile API protection policy (see waf mobile-api-protection on page 618)
- Bot mitigation policy (see waf bot-detection-policy on page 453)
- API gateway policy (see waf api-rules on page 438)
- Syntax-based attack detection policy (see waf syntax-based-attack-detection on page 659)

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `wafgrp` area. For details, see Permissions on page 46.

Syntax

```
config waf web-protection-profile inline-protection
   edit "<inline-protection-profile_name>"
      set client-management {enable | disable}
      set threat-score-profile <name>
      set http-session-cookie {enable | disable}
      set http-session-timeout <days_int>
      set x-forwarded-for-rule "<x-forwarded-for_name>"
      set signature-rule {"High Level Security" | "Medium Level Security" | "Alert Only" |
          <signature-set_name>}
      set amf3-protocol-detection {enable | disable}
      set custom-access-policy "<combo-access_name>"
      set padding-oracle "<rule_name>"
      set csrf-protection "<rule_name>"
      set cookie-security-policy "<cookie-security_name>"
      set parameter-validation-rule "<rule_name>"
      set hidden-fields-protection "<group_name>"
      set file-upload-policy "<policy_name>"
      set HTTP-protocol-parameter-restriction "<constraint_name>"
      set url-access-policy "<policy_name>"
      set allow-method-policy "<policy_name>"
      set ip-list-policy "<policy_name>"
      set geo-block-list-policy "<policy_name>"
      set application-layer-dos-prevention "<policy_name>"
      set ip-intelligence {enable | disable}
      set fortigate-quarantined-ips {enable | disable}
      set quarantined-ip-action {alert | alert_deny}
      set quarantined-ip-severity {High | Medium | Low}
      set quarantined-ip-trigger "<trigger-policy_name>"
      set url-rewrite-policy "<group_name>"
      set HTTP-header-security "<policy_name>"
      set site-publisher-helper "<policy_name>"
      set file-compress-rule "<rule_name>"
      set user-tracking-policy "<user-tracking-policy_name>"
      set redirect-url "<redirect_fqdn>"
```

```
        set rdt-reason {enable | disable}
        set data-analysis {enable | disable}
        set comment "<comment_str>"
        set profile-id "<profile-id_str>"
        set mitb-protection "<mitb-protection_name>"
        set openapi-validation-policy "<openapi-validation-policy_name>"
        set websocket-security-policy "<websocket-security-policy_name>"
        set json-validation-policy "<json-validation-policy_name>"
        set cors-protection-policy "<cors-protection-policy>"
        set mobile-app-identification {jwks-endpoint | jwt-public-key | jwt-token-secret}
        set jwks-endpoint <JWKS_endpoint>
        set jwt-public-key <JWT_public_key>
        set jwt-token-secret <JWT_secret>
        set token-header <token-header_str>
        set mobile-api-protection <mobile-api-protection_name>
        set bot-mitigate-policy <bot-mitigate-policy_name>
        set api-management-policy <api-management-policy_name>
        set url-encryption-policy <url-encryption-policy_str>
        set syntax-based-attack-detection <detection_name>
        set advanced-bot-protection <policy_name>
        set owasp_api_top10_log_field {enable/disable}
        set client-side-protection-policy <datasource>
        set subresource-integrity-policy <datasource>
        set file-list-policy <datasource>
    next
end
```

Variable	Description	Default
"<inline-protection-profile_name>"	Enter the name of the inline protection profile. The maximum length is 63 characters. To display the list of existing profiles, enter: `edit ?`	No default.
client-management {enable | disable}	Enable to add an implementation of HTTP sessions, and track their states, using a cookie such as `cookiesession1`. Also configure http-session-timeout <days_int> on page 723. Although HTTP has no inherent support for sessions, a notion of individual HTTP client sessions, rather than simply the source IP address and/or timestamp, is required by some features. For example, you might want to require that a client's first HTTP request always be a login page: the rest of the web pages should be inaccessible if they have not authenticated. Out-of-order requests could represent an attempt to bypass the web application's native authentication mechanism. How can FortiWeb know if a request is the client's first HTTP request?	`enable`

Variable	Description	Default
	Therefore FortiWeb must keep some record of the first request from that client (the session initiation). It also must record their previous HTTP request(s), until a span of time (the session timeout) has elapsed during which there were no more subsequent requests, after which it would require that the session be initiated again. The session management feature provides such FortiWeb session support. This feature requires that the client support cookies. **Note:** You **must** enable this option: • If you want to include this profile's traffic in the traffic log, in addition to enabling traffic logs in general. For details, see log attack-log on page 61.	
threat-score-profile <name>	Select the Threat Score Profile so that FortiWeb can take action on IPs or clients when their threat score accumulates to a certain value. The threat score profile is configured in `config server-policy pattern threat-score-profile`. If you have enabled client-management, but does not configure `threat-score-profile`, the system will by default applies the configurations in `config server-policy pattern threat-weight`. This option is available only when **client-management** is enabled.	
http-session-cookie {enable | disable}	If enabled, `cookiesession1` will expire upon the termination of the user's session. If disabled, `cookiesession1` will not expire upon the termination of the session. In this case, you can specify its expiration time through `http-session-timeout <days_int>`. The default expiration time is 365 days. **Note**: FortiWeb uses `cookiesession1` for user tracking, ensuring consistent user identification as long as the `cookiesession1` remains unexpired. For more information, see this FAQ in Troubleshooting part: Why is the cookiesession1 generated by Client Management persistent cookie?	disable
http-session-timeout <days_int>	Specify the expiration time for `cookiesession1`. The valid range is 1-365. This setting is available only if `http-session-management` is enabled and `http-session-cookie` is disabled.	`365`

Variable	Description	Default
x-forwarded-for-rule "<x-forwarded-for_name>"	Specify the name of a rule that configures FortiWeb's use of X-Forwarded-For: and X-Real-IP. The maximum length is 63 characters. For details, see waf x-forwarded-for on page 746. To display the list of existing rules, enter: `set x-forwarded-for-rule ?`	No default.
signature-rule {"High Level Security" | "Medium Level Security" | "Alert Only" | <signature-set_name>}	Specify a signature policy to include in the profile. The maximum length is 63 characters. For details, see waf signature on page 628. To display the list of existing rules, enter: `set server-protection-rule ?` The type of attack that FortiWeb detects determines the attack log messages for this feature. For a list, see waf signature on page 628.	No default.
amf3-protocol-detection {enable | disable}	Enable to scan requests that use action message format 3.0 (AMF3) for these attacks if you have enabled those in the signature set specified by signature-rule {"High Level Security" | "Medium Level Security" | "Alert Only" | <signature-set_name>} on page 724: • Cross-site scripting (XSS) attacks • SQL injection attacks • Common exploits AMF3 is a binary format that Adobe Flash clients can use to send input to server-side software. **Caution:** To scan for attacks or enforce input rules on AMF3, you **must** enable this option. Failure to enable the option will make the FortiWeb appliance unable to scan AMF3 requests for attacks.	`disable`
json-validation-policy "<json-validation-policy_name>"	Enter the JSON protection policy name.	No default.
cors-protection-policy "<cors-protection-policy>"	Enter the CORS protection policy name.	No default.
mobile-app-identification {jwks-endpoint | jwt-public-key | jwt-token-secret}	Select the JWT verification method FortiWeb uses to authenticate mobile application requests. This setting determines how FortiWeb validates the authenticity of JWTs (JSON Web Tokens) provided by mobile clients, typically in the HTTP request headers. Available options: • **jwt-token-secret**: Verifies the token signature using a symmetric key (HMAC). You must specify a shared secret (JWT Secret) known to both the token issuer and FortiWeb.	No default.

Variable	Description	Default
	• **jwt-public-key**: Verifies the token signature using an RSA public key. You must provide the public key in PEM format (JWT Public Key) for asymmetric verification. • **jwks-endpoint**: Retrieves public keys dynamically from a remote JWKS (JSON Web Key Set) endpoint. You must configure the URI (JWKS Endpoint) pointing to the JWKS source. FortiWeb will periodically cache and refresh these keys for validation. This setting is essential for enabling secure, token-based client identification in mobile API workflows.	
jwks-endpoint <JWKS_endpoint>	Applicable if **mobile-app-identification** is **jwks-endpoint**. Specify the URI of a remote JSON Web Key Set (JWKS) endpoint. FortiWeb uses this URL to retrieve public keys dynamically for JWT verification. • Keys are cached locally for 24 hours and refreshed every hour. • If retrieval fails, the error is cached to avoid repeated lookup attempts.	No default
jwt-public-key <JWT_public_key>	Applicable if **mobile-app-identification** is **jwt-public-key**. Paste or upload the RSA public key used to verify incoming JWTs. The key must be in PEM format.	No default
jwt-token-secret <JWT_secret>	Applicable if **mobile-app-identification** is **jwt-token-secret**. Enter the shared secret string used to verify JWTs signed using HMAC-based algorithms (e.g., HS256). FortiWeb uses this symmetric key to validate the signature of incoming tokens.	No default
token-header <token-header_str>	Specify the header where the token is carried. Available only when **mobile-app-identification** is applied.	No default
mobile-api-protection <mobile-api-protection_name>	Select the name of an existing API protection policy. For details, see waf mobile-api-protection.	No default
bot-mitigate-policy <bot-mitigate-policy_name>	Select the name of a bot mitigation policy. For details, see waf mobile-api-protection.	No default.
api-management-policy <api-management-policy_name>	Select the name of an API gateway policy. For details, see waf api-rules.	No default.
custom-access-policy "<combo-access_name>"	Select the name of a custom access policy. The maximum length is 63 characters. For details, see waf custom-access policy on page 478. To display the list of existing policies, enter:	No default.

Variable	Description	Default
	`set custom-access-policy ?`	
padding-oracle "<rule_name>"	Select the name of a padding oracle protection rule. The maximum length is 63 characters. For details, see waf padding-oracle on page 622. To display the list of existing rules, enter: `set padding-oracle ?`	No default.
csrf-protection "<rule_name>"	Select the name of cross-site request forgery protection rule, if any, to apply to matching requests. For details, see waf csrf-protection on page 475. Available only when client-management {enable | disable} on page 722 is `enabled`.	No default.
cookie-security-policy "<cookie-security_name>"	Select the name of a cookie security policy. For details, see waf cookie-security on page 469. To display the list of existing policies, enter: `set cookie-security-policy ?`	
parameter-validation-rule "<rule_name>"	Select the name of a parameter validation rule. The maximum length is 63 characters. For details, see waf parameter-validation-rule on page 626. To display the list of existing rules, enter: `set parameter-validation-rule ?`	No default.
hidden-fields-protection "<group_name>"	Select the name of a hidden field rule group that you want to apply, if any. The maximum length is 63 characters. For details, see waf hidden-fields-protection on page 539. To display the list of existing groups, enter: `set hidden-fields-protection ?`	No default.
file-upload-policy "<policy_name>"	Select the name of a file upload security policy to use, if any. The maximum length is 63 characters. For details, see "server-policy custom-application application-policy" on page 1. To display the list of existing policies, enter: `set file-upload-policy ?`	No default.
HTTP-protocol-parameter-restriction "<constraint_name>"	Select the name of an HTTP protocol constraint that you want to apply, if any. The maximum length is 63 characters. For details, see waf HTTP-protocol-parameter-restriction on page 556. To display the list of existing profiles, enter: `set HTTP-protocol-parameter-restriction ?`	No default.

Variable	Description	Default
url-access-policy "<policy_name>"	Select the name of a URL access policy. The maximum length is 63 characters. For details, see waf url-access url-access-policy on page 688. To display the list of existing policies, enter: `set url-access-policy ?`	No default.
allow-method-policy "<policy_name>"	Select the name of an allowed method policy. The maximum length is 63 characters. For details, see "server-policy custom-application application-policy" on page 1. To display the list of existing policies, enter: `set allow-method-policy ?`	No default.
ip-list-policy "<policy_name>"	Select the name of a trusted IP or blocklisted IP policy. The maximum length is 63 characters. For details, see "server-policy custom-application application-policy" on page 1. To display the list of existing policies, enter: `set ip-list-policy ?`	No default.
geo-block-list-policy "<policy_name>"	Select the name of a geographically-based client IP block list that you want to apply, if any. The maximum length is 63 characters. For details, see waf geo-block-list on page 529. To display the list of existing groups, enter: `set geo-block-list-policy ?`	No default.
application-layer-dos-prevention "<policy_name>"	Select the name of an existing DoS protection policy to use with this profile, if any. The maximum length is 63 characters. For details, see waf application-layer-dos-prevention on page 446. To display the list of existing profiles, enter: `set application-layer-dos-prevention ?`	No default.
ip-intelligence {enable | disable}	Enable to apply intelligence about the reputation of the client's source IP. Blocking and logging behavior is configured in waf ip-intelligence-ignore-x-forwarded-for on page 574.	`disable`
fortigate-quarantined-ips {enable | disable}	Enable to detect source IP addresses that a FortiGate unit is currently preventing from interacting with the network and protected systems. To configure communication between the FortiOS and FortiWeb, see system fortigate-integration on page 311.	`disable`
quarantined-ip-action {alert | alert_deny}	Specify the action that FortiWeb takes if it detects a quarantined IP address: • `alert`–Accept the request and generate an alert email, log message, or both. • `alert_deny`–Block the request and generate an alert, log message, or both.	`alert`

Variable	Description	Default
quarantined-ip-severity {High | Medium | Low}	Specify the severity that FortiWeb assigns to quarantined IP log messages.	`High`
quarantined-ip-trigger "<trigger-policy_name>"	Select the name of the trigger to apply when FortiWeb detects a quarantined IP. For deails, see log trigger-policy on page 97. To display the list of existing trigger policies, enter: `set trigger ?`	No default.
url-rewrite-policy "<group_name>"	Select the name of a URL rewriting rule set, if any, that will be applied to matching HTTP requests. The maximum length is 63 characters. To display the list of existing policies, enter: `set url-rewrite-policy ?` For details, see waf url-access url-access-policy on page 688.	No default.
HTTP-header-security "<policy_name>"	Select the name of an HTTP Header Security Policy, if any. For details, see waf http-header-security on page 552. To display the list of existing policies, enter: `set HTTP-header-security ?`	No default.
site-publisher-helper "<policy_name>"	Select the name of a site publishing policy, if any, that will be applied to matching HTTP requests. The maximum length is 63 characters. For details, see waf site-publish-helper policy on page 640. To display the list of existing profiles, enter: `set site-publisher-policy ?` If the HTTP client fails to authenticate, it will receive an HTTP 403 (Access Forbidden) error message.	No default.
file-compress-rule "<rule_name>"	Select the name of an existing file compression rule to use with this profile, if any. The maximum length is 63 characters. For details, see waf file-compress-rule on page 509. To display the list of existing rules, enter: `set file-compress-rule ?`	No default.
user-tracking-policy "<user-tracking-policy_name>"	Select the name of a user tracking policy. The maximum length is 63 characters. For details, see waf user-tracking policy on page 708. To display the list of existing policies, enter: `set user-tracking-policy ?`	No default.
redirect-url "<redirect_fqdn>"	Enter a URL, including the FQDN/IP and path, if any, to which an HTTP client will be redirected if their HTTP request violates any of the rules in this profile.	No default.

Variable	Description	Default
	For example, you could enter `www.example.com/products/`. If you do **not** enter a URL, depending on the type of violation and the configuration, the FortiWeb appliance will log the violation, may attempt to remove the offending parts, and could either reset the connection or return an HTTP 403 (Access Forbidden) or 404 (File Not Found) error message. The maximum length is 255 characters.	
rdt-reason {enable | disable}	Enable to include the reason for URL redirection as a parameter in the URL, such as `reason=DETECT_PARAM_RULE_FAILED`, when traffic has been redirected using redirect-url "<redirect_fqdn>" on page 728. The FortiWeb appliance also adds `fortiwaf=1` to the URL to detect and cancel a redirect loop when the redirect action recursively triggers an attack event. **Caution**: If you specify a redirect URL that is protected by the FortiWeb appliance, you should enable this option to prevent infinite redirect loops.	No default.
data-analysis {enable | disable}	Enable this to collect data for servers covered by this profile.	`disable`
comment "<comment_str>"	Enter a description or other comment. If the comment contains more than one word or contains an apostrophe, surround the comment in double quotes ("). The maximum length is 199 characters.	No default.
xml-validation-policy "<xml_policy_name>"	Select the name of an XML protection policy, if any. The maximum length is 63 characters. For details, see waf xml-validation on page 754. To display the list of existing policies, enter: `set xml-validation-policy ?`	No default.
profile-id "<profile-id_str>"	Enter the inline profile ID.	No default.
mitb-protection "<mitb-protection_name>"	Select the MiTB protection policy name. For details, see waf mitb-policy on page 616.	No default.
openapi-validation-policy "<openapi-validation-policy_name>"	Select the openapi validation policy name. For details, see waf openapi-validation-policy on page 621.	No default.
websocket-security-policy "<websocket-security-policy_name>"	Select the websocket security policy name. For details, see waf websocket-security policy on page 743.	No default.
grpc-security-policy <grpc-security-policy_name>	Select the grpc security policy name. For details, see waf grpc-security policy.	No default.

Variable	Description	Default
url-encryption-policy <url-encryption-policy_str>	Select the URL encryption policy name. For details, see waf url-encryption on page 689.	No default.
syntax-based-attack-detection <detection_name>	Select the name of an existing SQL/XSS syntax based detection policy. For details, see waf syntax-based-attack-detection.	No default.
advanced-bot-protection <policy_name>	Select the name of an existing Advanced Bot Protection policy. For details, see waf advanced-bot-protection on page 426.	No default.
owasp_api_top10_log_field {enable/disable}	Enable to record the OWASP API Top10 attack categories in attack logs so that you can filter the attack logs by OWASP API Top10.	enable
`client-side-protection-policy <datasource>`	This option appears only when a valid **Client-Side Protection license** is present. Select the name of a Client-Side Protection policy. For details, see waf client-side-protection-policy on page 473. **Note**: To activate this policy, both an **HTTP Header Security** policy and a **Subresource Integrity Policy** must also be configured in the same Web Protection Profile.	No default.
`subresource-integrity-policy <datasource>`	Select the name of an SRI policy to enforce integrity on external resources. For details, waf subresource-integrity-policy on page 656.	No default.
file-list-policy <datasource>	Select a File List configuration, if any, that will be applied to matching requests for Data Loss Prevention, File Security, and Web Shell Detection.	No default.

Related topics

- log trigger-policy on page 97
- server-policy pattern custom-global-white-list-group on page 127
- server-policy policy on page 151
- waf signature on page 628
- waf padding-oracle on page 622
- waf parameter-validation-rule on page 626
- waf HTTP-protocol-parameter-restriction on page 556
- waf url-access url-access-policy on page 688
- waf allow-method-exceptions on page 429
- waf application-layer-dos-prevention on page 446
- waf file-compress-rule on page 509
- waf geo-block-list on page 529
- waf hidden-fields-protection on page 539
- waf HTTP-protocol-parameter-restriction on page 556

- waf ip-intelligence-ignore-x-forwarded-for on page 574
- "server-policy custom-application application-policy" on page 1
- waf syntax-based-attack-detection on page 659

waf web-protection-profile offline-protection

Use this command to configure Offline Protection profiles.

Detection profiles are useful when you want to preview the effects of some web protection features without affecting traffic, or without affecting your network topology.

Unlike protection profiles, a detection profile is designed for use in Offline Protection mode. Detection profiles cannot be guaranteed to block attacks. They attempt to reset the connection, but due to variable speeds of different routing paths, the reset request may arrive after the attack has been completed. Their primary purpose is to detect attacks, especially for use in conjunction with auto-learning profiles. In fact, if used in conjunction with auto-learning profiles, you **should** configure the detection profile to log only and not block attacks in order to gather complete session statistics for the auto-learning feature. As a result, detection profiles can only be selected in policies whose `deployment-mode` is `offline-detection`, and those policies will only be used by the FortiWeb appliance when its operation mode is `offline-detection`.

Unlike inline protection profiles, Offline Protection profiles do not support HTTP conversion, or cookie poisoning detection.

To apply detection profiles, select them within a server policy. For details, see server-policy policy on page 151.

Before configuring an Offline Protection profile, first configure any of the following that you want to include in the profile:

- File security policy (see "server-policy custom-application application-policy" on page 1)
- Web Shell Detection policy (see waf webshell-detection-policy on page 738)
- Server protection rule (see waf signature on page 628)
- List of manually trusted and block-listed IPs, FortiGuard IRIS category-based blocklisted IPs, and/or a geographically-based IP blocklist (see waf ip-intelligence-ignore-x-forwarded-for on page 574, "server-policy custom-application application-policy" on page 1 and waf geo-block-list on page 529)
- Parameter validation rule (see waf parameter-validation-rule on page 626)
- URL access policy (see waf url-access url-access-policy on page 688
- Allowed method exception (see waf allow-method-exceptions on page 429)
- Hidden field rule group (see waf hidden-fields-protection on page 539)
- Parameter restriction constraint (see waf HTTP-protocol-parameter-restriction on page 556)
- Policy that protects vulnerable block cipher implementations for web applications that selectively encrypt inputs without using HTTPS (waf padding-oracle on page 622)
- User tracking policy (see waf user-tracking policy on page 708)
- XML protection policy (see waf xml-validation on page 754)
- JSON protection policy (see waf json-validation rule on page 581)
- OpenAPI Validation (see waf openapi-validation-policy on page 621)
- Mobile API protection policy (see waf mobile-api-protection on page 618)
- Syntax-based attack detection policy (see waf syntax-based-attack-detection on page 659)

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `wafgrp` area. For details, see Permissions on page 46.

Syntax

```
config waf web-protection-profile offline-protection
   edit "<offline-protection-profile_name>"
      set client-management {enable | disable}
      set threat-score-profile <name>
      set waf web-protection-profile offline-protection
      set x-forwarded-for-rule "<x-forwarded-for_name>"
      set HTTP-session-keyword "<key_str>"
      set signature-rule {"High Level Security" | "Medium Level Security" | "Alert Only" |
        "<signature-set_name>"}
      set amf3-protocol-detection {enable | disable}
      set custom-access-policy "<combo-access_name>"
      set padding-oracle "<rule_name>"
      set parameter-validation-rule "<rule_name>"
      set hidden-fields-protection "<group_name>"
      set file-upload-policy "<policy_name>"
      set HTTP-protocol-parameter-restriction "<constraint_name>"
      set url-access-policy "<policy_name>"
      set allow-method-policy "<policy_name>"
      set ip-list-policy "<policy_name>"
      set geo-block-list-policy "<policy_name>"
      set ip-intelligence {enable | disable}
      set csrf-protection "<rule_name>"
      set user-tracking-policy "<user-tracking-policy_name>"
      set data-analysis {enable | disable}
      set comment "<comment_str>"
      set openapi-validation-policy "<openapi-validation-policy_name>"
      set json-validation-policy "<json-validation-policy_name>"
      set mobile-app-identification {jwks-endpoint | jwt-public-key | jwt-token-secret} on page
        736
      set jwks-endpoint <JWKS_endpoint>
      set jwt-public-key <JWT_public_key>
      set jwt-token-secret <JWT_secret>
      set token-header <token-header_str>
      set mobile-api-protection <mobile-api-protection_name>
      set syntax-based-attack-detection <detection_name>
      set owasp_api_top10_log_field {enable/disable}
      set file-list-policy <datasource>
   next
end
```

Variable	Description	Default
"<offline-protection-profile_name>"	Enter the name of the Offline Protection profile. The maximum length is 63 characters. To display the list of existing profiles, enter: `edit ?`	No default.
client-management {enable | disable}	Enable to track the states of HTTP sessions. Also configure waf web-protection-profile offline-protection on page 731.	`disable`

Variable	Description	Default
	Although HTTP has no inherent support for sessions, a notion of individual HTTP client sessions, rather than simply the source IP address and/or timestamp, is required by some features. For example, you might want to require that a client's first HTTP request always be a login page: the rest of the web pages should be inaccessible if they have not authenticated. Out-of-order requests could represent an attempt to bypass the web application's native authentication mechanism. How can FortiWeb know if a request is the client's first HTTP request? If FortiWeb were to treat each request independently, without knowledge of anything previous, it could not, by definition, enforce page order. Therefore FortiWeb must keep some record of the first request from that client (the session initiation). It also must record their previous HTTP request(s), until a span of time (the session timeout) has elapsed during which there were no more subsequent requests, after which it would require that the session be initiated again. The session management feature provides such FortiWeb session support. **Note:** This feature requires that the client support cookies. **Note:** You **must** enable this option if you want to include this profile's traffic in the traffic log, in addition to enabling traffic logs in general. For details, see log attack-log on page 61.	
threat-score-profile <name>	Select the Threat Score Profile so that FortiWeb can take action on IPs or clients when their threat score accumulates to a certain value. The threat score profile is configured in `config server-policy pattern threat-score-profile`. If you have enabled client-management, but does not configure `threat-score-profile`, the system will by default applies the configurations in `config server-policy pattern threat-weight`. This option is available only when **client-management** is enabled.	
x-forwarded-for-rule "<x-forwarded-for_name>"	Specify the name of a rule that configures FortiWeb's use of X-Forwarded-For: and X-Real-IP. For details, see waf x-forwarded-for on page 746. To display a list of existing rules, enter: `set forwarded-for-rule ?`	No default.

Variable	Description	Default
HTTP-session-keyword "<key_str>"	If you want to use an HTTP header other than `Session-Id:` to track separate HTTP sessions, enter the key portion of the HTTP header that you want to use, such as `Session-Num`. The maximum length is 63 characters.	No default.
signature-rule {"High Level Security" | "Medium Level Security" | "Alert Only" | "<signature-set_name>"}	Specify a signature policy to include in the profile. The maximum length is 63 characters. For details, see waf signature on page 628. To display the list of existing rules, enter: `set server-protection-rule ?` The type of attack that FortiWeb detects determines the attack log messages for this feature. For a list, see waf signature on page 628.	No default.
amf3-protocol-detection {enable | disable}	Enable to scan requests that use the action message format 3.0 (AMF3) for these attacks if you have enabled those in the set of signatures specified by signature-rule {"High Level Security" | "Medium Level Security" | "Alert Only" | "<signature-set_name>"} on page 734: • Cross-site scripting (XSS) attacks • SQL injection attacks • Common exploits AMF3 is a binary format that can be used by Adobe Flash clients to send input to server-side software. **Caution:** To scan for attacks or enforce input rules on AMF3, you **must** enable this option. Failure to enable the option makes the FortiWeb appliance unable to scan AMF3 requests for attacks.	`disable`
custom-access-policy "<combo-access_name>"	Enter the name of a custom access policy. The maximum length is 63 characters. For details, see waf custom-access policy on page 478. To display the list of existing policies, enter: `set custom-access-policy ?`	No default.
padding-oracle "<rule_name>"	Enter the name of a padding oracle protection rule. The maximum length is 63 characters. For details, see waf padding-oracle on page 622. To display the list of existing rules, enter: `set padding-oracle ?`	No default.
parameter-validation-rule "<rule_name>"	Enter the name of a parameter validation rule. The maximum length is 63 characters. For details, see waf parameter-validation-rule on page 626. To display the list of existing rules, enter: `set parameter-validation-rule ?`	No default.

Variable	Description	Default
hidden-fields-protection "<group_name>"	Enter the name of a hidden field rule group that you want to apply, if any. The maximum length is 63 characters. For details, see waf hidden-fields-protection on page 539. To display the list of existing groups, enter: `set hidden-fields-protection ?`	No default.
file-upload-policy "<policy_name>"	Enter the name of a file security policy. The maximum length is 63 characters. For details, see "server-policy custom-application application-policy" on page 1. To display the list of existing policies, enter: `set file-upload-policy ?`	No default.
HTTP-protocol-parameter-restriction "<constraint_name>"	Enter the name of an HTTP protocol constraint that you want to apply, if any. The maximum length is 63 characters. For details, see waf HTTP-protocol-parameter-restriction on page 556. To display the list of existing constraints, enter: `set HTTP-protocol-parameter-restriction ?`	No default.
url-access-policy "<policy_name>"	Enter the name of a URL access policy. The maximum length is 63 characters. For details, see waf url-access url-access-policy on page 688. To display the list of existing policies, enter: `set url-access-policy ?`	No default.
allow-method-policy "<policy_name>"	Enter the name of an allowed method policy. The maximum length is 63 characters. For details, see "server-policy custom-application application-policy" on page 1. To display the list of existing policies, enter: `set allow-method-policy ?`	No default.
ip-list-policy "<policy_name>"	Enter the name of a trusted IP or blocklisted IP policy. The maximum length is 63 characters. For details, see "server-policy custom-application application-policy" on page 1. To display the list of existing policies, enter: `set ip-list-policy ?`	No default.
geo-block-list-policy "<policy_name>"	Enter the name of a geographically-based client IP block list that you want to apply, if any. The maximum length is 63 characters. For details, see waf geo-block-list on page 529. To display the list of existing policies, enter: `set geo-block-list-policy ?`	No default.
ip-intelligence {enable | disable}	Enable to apply intelligence about the reputation of the client's source IP. Blocking and logging behavior is configured in waf ip-intelligence-ignore-x-forwarded-for on page 574.	`disable`

Variable	Description	Default
csrf-protection "<rule_name>"	Select the name of cross-site request forgery protection rule, if any, to apply to matching requests. See waf csrf-protection on page 475. To display the list of existing rules, enter: `set csrf-protection ?` Available only when client-management {enable | disable} on page 732 is `enabled`.	
user-tracking-policy "<user-tracking-policy_name>"	Select the name of a user tracking policy. The maximum length is 63 characters. For details, see waf user-tracking policy on page 708. To display the list of existing policies, enter: `set user-tracking-policy ?`	No default.
data-analysis {enable | disable}	Enable this to collect data for servers covered by this profile.	`disable`
comment "<comment_str>"	Enter a description or other comment. If the comment contains more than one word or contains an apostrophe, surround the comment in double quotes ("). The maximum length is 199 characters.	No default.
openapi-validation-policy "<openapi-validation-policy_name>"	Select the openapi validation policy name.	No default.
json-validation-policy "<json-validation-policy_name>"	Select the JSON protection policy name.	No default.
mobile-app-identification {jwks-endpoint | jwt-public-key | jwt-token-secret}	Select the JWT verification method FortiWeb uses to authenticate mobile application requests. This setting determines how FortiWeb validates the authenticity of JWTs (JSON Web Tokens) provided by mobile clients, typically in the HTTP request headers. Available options: • **jwt-token-secret**: Verifies the token signature using a symmetric key (HMAC). You must specify a shared secret (JWT Secret) known to both the token issuer and FortiWeb. • **jwt-public-key**: Verifies the token signature using an RSA public key. You must provide the public key in PEM format (JWT Public Key) for asymmetric verification. • **jwks-endpoint**: Retrieves public keys dynamically from a remote JWKS (JSON Web Key Set) endpoint. You must configure the URI (JWKS Endpoint) pointing to the JWKS source. FortiWeb will periodically cache and refresh these keys for validation.	No default.

Variable	Description	Default
	This setting is essential for enabling secure, token-based client identification in mobile API workflows.	
jwks-endpoint <JWKS_endpoint>	Applicable if **mobile-app-identification** is **jwks-endpoint**. Specify the URI of a remote JSON Web Key Set (JWKS) endpoint. FortiWeb uses this URL to retrieve public keys dynamically for JWT verification. • Keys are cached locally for 24 hours and refreshed every hour. • If retrieval fails, the error is cached to avoid repeated lookup attempts.	No default
jwt-public-key <JWT_public_key>	Applicable if **mobile-app-identification** is **jwt-public-key**. Paste or upload the RSA public key used to verify incoming JWTs. The key must be in PEM format.	No default
jwt-token-secret <JWT_secret>	Applicable if **mobile-app-identification** is **jwt-token-secret**. Enter the shared secret string used to verify JWTs signed using HMAC-based algorithms (e.g., HS256). FortiWeb uses this symmetric key to validate the signature of incoming tokens.	No default
token-header <token-header_str>	Specify the header where the token is carried. Available only when **mobile-app-identification** is applied.	No default
mobile-api-protection <mobile-api-protection_name>	Select the name of an existing API protection policy. For details, see waf mobile-api-protection.	No default
syntax-based-attack-detection <detection_name>	Select the name of an existing SQL/XSS syntax based detection policy. For details, see waf syntax-based-attack-detection.	No default
owasp_api_top10_log_field {enable/disable}	Enable to record the OWASP API Top10 attack categories in attack logs so that you can filter the attack logs by OWASP API Top10.	enable
file-list-policy <datasource>	Select a File List configuration, if any, that will be applied to matching requests for Data Loss Prevention, File Security, and Web Shell Detection.	No default.

Related topics

- server-policy policy on page 151
- waf signature on page 628
- waf padding-oracle on page 622
- waf parameter-validation-rule on page 626
- waf url-access url-access-rule on page 693
- waf allow-method-exceptions on page 429

- system settings on page 380
- waf geo-block-list on page 529
- waf hidden-fields-protection on page 539
- waf HTTP-protocol-parameter-restriction on page 556
- waf ip-intelligence-ignore-x-forwarded-for on page 574
- "server-policy custom-application application-policy" on page 1
- waf syntax-based-attack-detection on page 659

waf webshell-detection-policy

Use this command to set Web Shell Detection policies that FortiWeb will use to Trojans in the files that can be uploaded to your web servers.

Attackers may attempt to upload Trojan horse code (written in scripting languages such as PHP and ASP) to the back-end web servers. The Trojan then infects clients who access an infected web page.

Web Shell Detection detects Trojan in the uploaded files. In addition to the traditional method which detects Trojan based on tags and keywords, Web Shell Detection can perform fuzzy hash based detection as well, where it determines the similarity by comparing the hash value of the file and the Trojan sample library. In this way, no matter how the attacker modifies the script, as long as the similarity meets the threshold, it can be identified as a Trojan.

Web Shell Detection is divided into two categories: Fuzzy Hash Based Detection and Known Web Shells. And each category is divided into five categories according to the type, namely PHP, ASP, JSP, Perl, and Python.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `wafgrp` area. For details, see Permissions on page 46.

Syntax

```
config waf webshell-detection-policy
   edit "<file-upload-restriction-policy_name>"
      set action {alert | alert_deny | block-period | deny_no_log}
      set block-period <seconds_int>
      set severity {High | Medium | Low | Info}
      set trigger <trigger-policy_name>
      set fuzzy-similarity-threshold <threshold>
      set fuzzy-asp-status {enable | disable} on page 740
      set fuzzy-jsp-status {enable | disable}
      set fuzzy-php-status {enable | disable}
      set fuzzy-perl-status {enable | disable}
      set fuzzy-python-status {enable | disable}
      set known-asp-status {enable | disable}
      set known-jsp-status {enable | disable}
      set known-php-status {enable | disable}
      set known-php-short-open-tag {enable | disable}
      set known-perl-status {enable | disable}
      set known-python-status {enable | disable}
      config fuzzy-disable-list
         edit edit <webshell-name>
      end
```

```
    end
end
```

Variable	Description	Default
"<file-upload-restriction-policy_name>"	Enter the name of an existing or new Web Shell Detection policy. The maximum length is 63 characters. To display the list of existing policies, enter: `edit ?`	`No default.`
action {alert | alert_deny | block-period | deny_no_log}	Enter the action you want FortiWeb to perform when the policy is violated: • `alert`—Accept the request and generate an alert and/or log message. • `alert_deny`—Block the request (or reset the connection) and generate an alert email and/or log message. You can customize the web page that FortiWeb returns to the client with the HTTP status code. For details, see "system replacemsg" on page 1 and the *FortiWeb Administration Guide*: http://docs.fortinet.com/fortiweb/admin-guides • `block-period`—Block subsequent requests from the client for a number of seconds. Also configure block-period <seconds_int> on page 739. • `deny_no_log`—Deny a request. Do not generate a log message. **Note:** If FortiWeb is deployed behind a NAT load balancer, when using this option, you **must** also define an X-header that indicates the original client's IP. Failure to do so may cause FortiWeb to block **all** connections when it detects a violation of this type. For details, see waf x-forwarded-for on page 746. **Caution:** This setting will be ignored if monitor-mode {enable | disable} on page 166 is enabled. **Note:** Logging and/or alert email will occur only if enabled and configured. For details, see log disk on page 66 and log alertMail on page 60. **Note:** If an auto-learning profile will be selected in the policy with Offline Protection profiles that use this rule, you should select `alert`. If the `action` is `alert_deny`, the FortiWeb appliance will reset the connection when it detects an attack, resulting in incomplete session information for the auto-learning feature. For details about auto-learning requirements, see "waf web-protection-profile autolearning-profile" on page 1.	`alert_deny`
block-period <seconds_int>	If action {alert | alert_deny | block-period | deny_no_log} on page 739 is `block-period`, type the number of seconds that violating requests will be blocked. The valid range is 1-3,600 seconds.	`600`
severity {High | Medium | Low | Info}	Select the severity level to use in logs and reports generated when a violation of the rule occurs.	`medium`

Variable	Description	Default
trigger <trigger-policy_name>	Enter the name of the trigger to apply when this policy is violated. For details, see log trigger-policy on page 97. The maximum length is 63 characters. To display the list of existing triggers, enter: `set trigger ?`	`No default`
fuzzy-similarity-threshold <threshold>	Web Shell Detection can perform fuzzy hash based detection to determines the similarity by comparing the hash value of the file and the Trojan sample library. In this way, no matter how the attacker modifies the script, as long as the similarity meets the threshold, it can be identified as a Trojan. Specify the Fuzzy Similarity Threshold. A file will be identified as a Trojan when it resembles the Trojan sample library by the specified percentage. The valid range is 1-100 (%).	`80`
fuzzy-asp-status {enable | disable}	Enable or disable fuzzy hash based detection for ASP script type.	`enable`
fuzzy-jsp-status {enable | disable}	Enable or disable fuzzy hash based detection for JSP script type.	`enable`
fuzzy-php-status {enable | disable}	Enable or disable fuzzy hash based detection for PHP script type.	`enable`
fuzzy-perl-status {enable | disable}	Enable or disable fuzzy hash based detection for Perl script type.	`enable`
fuzzy-python-status {enable | disable}	Enable or disable fuzzy hash based detection for Python script type.	`enable`
known-asp-status {enable | disable}	Enable or disable FortiWeb to detect ASP script type according to known signatures.	`enable`
known-jsp-status {enable | disable}	Enable or disable FortiWeb to detect JSP script type according to known signatures.	`enable`
known-php-status {enable | disable}	Enable or disable FortiWeb to detect PHP script type according to known signatures.	`enable`
known-php-short-open-tag {enable | disable}	By default, FortiWeb uses both the `<?ph` and `<?` tags to identify the start of a PHP file.	`enable`

Variable	Description	Default
	However, if you find that the short open tag <? does not consistently indicate the beginning of a PHP file in your specific files (for instance, a PDF file begins with <?), you can disable this option to ensure that <? is not considered, and only <?ph will be recognized as the indication of a PHP file beginning.	
known-perl-status {enable | disable}	Enable or disable FortiWeb to detect Perl script type according to known signatures.	enable
known-python-status {enable | disable}	Enable or disable FortiWeb to detect Python script type according to known signatures.	enable
edit <webshell-name>	Enter the web shell name to exclude it. The uploaded file containing the specified script will not be identified as an attack.	No default

Related topics

- server-policy custom-application application-policy on page 1
- log trigger-policy on page 97
- system fortisandbox on page 312

waf websocket-security rule

Use this command to configure WebSocket rule related settings.

To use this command, your administrator account's access control profile must have either w or rw permission to the wafgrp area. For details, see Permissions on page 46.

Syntax

```
config waf websocket-security rule
   edit websocket-security_rule_name
      set host-status {enable | disable}
      set host <host_str>
      set url-type {plain | regular}
      set url <url_str>
      set block-websocket-traffic {enable | disable}
      set action {alert | deny_no_log | alert_deny}
      set max-frame-size <max-frame-size_int>
      set max-message-size <max-message-size_int>
      set block-extensions {enable | disable}
```

```
      set enable-attack-signatures {enable | disable}
      set allow-plain-text {enable | disable}
      set allow-binary-text {enable | disable}
      config allowed-origin-list
         edit allowed-origin-list <allowed-origin-list_id> on page 743
            set origin <origin_str> on page 743
         next
      end
   next
end
```

Variable	Description	Default
websocket-security_rule_name	Enter the WebSocket security rule name.	No default.
host-status {enable | disable}	Enable to compare the WebSocket security rule to the `Host:` field in the HTTP header.	No default.
host <host_str>	Select the IP address or fully qualified domain name (FQDN) of the protected host to which this rule applies. This option is available only if Host Status is enabled.	No default.
url-type {plain | regular}	Select whether the URL Pattern field will contain a literal URL (Simple String), or a regular expression designed to match multiple URLs (Regular Expression).	`Plain`
url <url_str>	The URL which hosts the web page containing the user input fields you want to protect.	No default.
block-websocket-traffic {enable | disable}	Enable to deny the WebSocket traffic, and FortiWeb will not check any WebSocket related traffic. This option is disabled by default.	`Disable`
action {alert | deny_no_log | alert_deny}	Select which action the FortiWeb appliance will take when it detects a violation. **Alert**–Accept the connection and generate an alert email and/or log message. **Alert & Deny**–Block the request (or reset the connection) and generate an alert and/or log message. **Deny (no log)**–Block the request (or reset the connection).	`Alert`
max-frame-size <max-frame-size_int>	Specifies the maximum acceptable frame header and body size in bytes. The valid range is 0-2147483647 bytes.	`64`
max-message-size <max-message-size_int>	Specifies the maximum acceptable message header and body size in bytes. The valid range is 0-2147483647 bytes.	`1024`
block-extensions {enable | disable}	Enable to not check the extension header in WebSocket handshake packet. By default, this option is disabled.	`Disable`
enable-attack-signatures {enable | disable}	Enable to detect attack in WebSocket message body. But if WebSocket traffic has extension header and allow extension header in WebSocket security rule, FortiWeb can not detect attack signatures. When attack signature is	`Disable`

Variable	Description	Default
	detected, the actions FortiWeb will take follow those of related signatures.	
allow-plain-text {enable | disable}	Enable to allow detecting the plain text.	`Enable`
allow-binary-text {enable | disable}	Enable to allow detecting the binary text.	`Enable`
allowed-origin-list <allowed-origin-list_id>	Enter the origin list ID in WebSocket handshake packet.	No default.
origin <origin_str>	Enter the allowed origin.	No default.

Related topics

- waf HTTP-constraints-exceptions on page 546
- waf HTTP-protocol-parameter-restriction on page 556

waf websocket-security policy

Use this command to create WebSocket policy.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `wafgrp` area. For details, see Permissions on page 46.

Syntax

```
config waf websocket-security policy
   edit "<"<policy_name>"
      config rule-list
         edit rule-list_id on page 743
            set rule "<rule_name>"
         next
      end
   next
end
```

Variable	Description	Default
"<policy_name>"	Enter the WebSocket Security policy name.	No default.
rule-list_id	Enter the sequence number of the rule in the rule list.	
rule "<rule_name>"	Select the created WebSocket security rule name.	No default.

Related topics

- waf websocket-security rule on page 741

waf ws security

Use this command to create WS-security rules.

You can use WS-Security rules to do the following:

- Encrypt and decrypt parts of SOAP messages
- Digitally sign parts of SOAP messages
- Verify parts of SOAP messages using digital signatures

Syntax

```
config waf ws-security rule
   edit "<ws-security_rule_name>"
      set encryption-algorithm {3EDS | AES-128 | AES-256}
      set encryption-part {Element Value | Element Markup}
      set key-transport-algorithm {RSA-15 | RSA-OAEP}
      set request-operation {Sign Verify & Decrypt | Decrypt | Sign Verify}
      set request-security-status {enable | disable}
      set response-operation {Sign | Encrypt | Sign & Encrypt | Encrypt & Sign}
      set response-security-status {enable | disable}
      set signature-algorithm {RSA-SHA-1 | HMAC-SHA-1}
      set xml-client-certificate-group <xml-client-certificate_group_str>
      set xml-server-certificate <xml-server-certificate_str>
      config namespace-mapping
         edit waf ws security
            set prefix <prefix _str>
            set namespace <namespace_str>
         next
      end
      config element-list
         edit waf ws security
            set xpath <xpath_str>
            set direction {request | response}
      next
   end
next
end
```

Variable	Description	Default
"<ws-security_rule_name>"	Enter a name that can be referenced by other parts of the configuration.	No default.

Variable	Description	Default
encryption-algorithm {3EDS | AES-128 | AES-256}	Select the encryption algorithm. • 3EDS • AES-128 • AES-256 Available only when response-security-status {enable | disable} is `enable`, and response-operation {Sign | Encrypt | Sign & Encrypt | Encrypt & Sign} is Encrypt, Sign & Encrypt, or Encrypt & Sign.	`3EDS`
encryption-part {Element Value | Element Markup}	Select which part of the SOAP messages to encrypt. • Element Value • Element Markup	`Element Value`
key-transport-algorithm {RSA-15 | RSA-OAEP}	Select the key transport algorithm. • RSA-15 • RSA-OAEP	`RSA-15`
request-operation {Sign Verify & Decrypt | Decrypt | Sign Verify}	Select the operation that FortiWeb performs for the encryped SOAP messages from the client. • Sign Verify & Decrypt • Decrypt • Sign Verify	`Sign Verify`
request-security-status {enable | disable}	Enable to configure FortiWeb to decrypt, sign and verify the encryped SOAP messages from the client.	`disable`
response-operation {Sign | Encrypt | Sign & Encrypt | Encrypt & Sign}	Select the operation that FortiWeb performs for the SOAP messages returned from the server. • Sign • Encrypt • Sign & Encrypt • Encrypt & Sign	`Sign`
response-security-status {enable | disable}	Enable to configure FortiWeb to encrypt , and sign the SOAP messages returned from the server.	`disable`
signature-algorithm {RSA-SHA-1 | HMAC-SHA-1}	Select the signature algorithm. • RSA-SHA-1 • HMAC-SHA-1	`RSA-SHA-1`
xml-client-certificate-group <xml-client-certificate_ group_str>	Select the XML client certificate group created from XML Certificate > Client Certifcate Group. Available only when request-operation {Sign Verify & Decrypt | Decrypt | Sign Verify} is `enable`, and the request-operation {Sign Verify & Decrypt | Decrypt | Sign Verify} is Sign Verify & Decrypt or Sign Verify. Or	No default.

Variable	Description	Default
	Available only when response-security-status {enable | disable} is `enable`, and the response-operation {Sign | Encrypt | Sign & Encrypt | Encrypt & Sign} is Encrypt, Sign & Encrypt or Encrypt & Sign.	
xml-server-certificate <xml-server-certificate_str>	Select the XML server certificate uploaded from XML Certificate> Server Certifcate. Available only when request-security-status {enable | disable} is `enable`, and the request-operation {Sign Verify & Decrypt | Decrypt | Sign Verify} is Sign Verify & Decrypt or Decrypt . Or Available only when response-security-status {enable | disable} is `enable`, and the response-operation {Sign | Encrypt | Sign & Encrypt | Encrypt & Sign} is Sign, Sign & Encrypt, or Encrypt & Sign.	No default.
"<namespace-mapping_name_id>"	Enter the index number of an entry to create a namespace mapping.	No default.
namespace <namespace_str>	Enter the namespace.	No default.
prefix <prefix _str>	Enter a prefix for the namaspace.	No default.
"<element-list_name_id>"	Enter the index number of an entry to create an element list.	No default.
xpath <xpath_str>	Enter an XPath to specify which part of the XML file to process.	No default.
direction {request | response}	Select either Request or Response to define in which direction the XPath applies to.	`request`

Related topics

- Configuring XML protection on page 1
- system certificate xml-client-certificate on page 272
- system certificate xml-client-certificate-group on page 276
- system certificate xml-server-certificate on page 401

waf x-forwarded-for

Use this command to configure FortiWeb's use of `X-Forwarded-For:` and `X-Real-IP:`.

For behavior of this feature and requirements, see "Defining your proxies, clients, & X-headers" in *FortiWeb Administration Guide*:

https://docs.fortinet.com/document/fortiweb/7.6

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `wafgrp` area. For details, see Permissions on page 46.

Syntax

```
config waf x-forwarded-for
   edit "<x-forwarded-for_name>"
      set block-based-on-original-ip {enable | disable}
      set ip-location {left | right}
      set original-ip-header "<HTTP-header-key_str>"
      set tracing-original-ip {enable | disable}
      set x-forwarded-proto {enable | disable}
      set merge-headers {enable | disable}
      set delete-headers {enable | disable}
      set x-forwarded-for-support {enable | disable}
      set ip-location-add {left | right}
      set x-real-ip {enable | disable}
      set skip-private-original-ip {enable | disable}
      set add-source-port {enable | disable}
      set x-forwarded-port {enable | disable}
      set duplicate-headers {enable | disable}
      set duplicate-headers-name <custom_header_name>
      config ip-list
         edit <entry_index>
            set ip "<load-balancer_ip>"
         next
      end
   next
end
```

Variable	Description	Default
"<x-forwarded-for_name>"	Enter the name of the new or existing group. The maximum length is 63 characters. To display the list of existing groups, enter: `edit ?`	No default.
block-based-on-original-ip {enable | disable}	Enable to be able to block requests that violate your policies by using the original client's IP derived from this HTTP X-header. When disabled, only attack logs and reports will use the original client's IP.	`disable`
ip-location {left | right}	Select whether to extract the original client's IP from either the left or right end of the HTTP X-header line.	`right`

Variable	Description	Default
	If there are multiple X-headers, "left" is the left location of the first x-header, and "right" is the right location of the last x-header. Most proxies put the request's origin at the left end, which is the default setting. Some proxies, however, place it on the right end.	
original-ip-header "<HTTP-header-key_str>"	Enter the key of the X-header, such as `X-Forwarded-For` `X-Real-IP`, **without** the colon (:), that contains the original source IP address of the client. Also configure tracing-original-ip {enable | disable} on page 748 and, for security reasons, ip "<load-balancer_ip>" on page 750. Maximum length is 255 characters.	No default.
tracing-original-ip {enable | disable}	If FortiWeb is deployed behind a device that applies NAT, enable this option to derive the original client's source IP address from an HTTP X-header, **instead of** the `SRC` field in the IP layer. Also configure original-ip-header "<HTTP-header-key_str>" on page 748 and, for security reasons, ip "<load-balancer_ip>" on page 750. This HTTP header is often `X-Forwarded-For:` when traveling through a web proxy, but can vary. For example, the Akamai service uses `True-Client-IP:`. For deployment guidelines and mechanism details, see the *FortiWeb Administration Guide*: https://docs.fortinet.com/document/fortiweb **Caution:** To combat forgery, configure the IP addresses of load balancers and proxies that are trusted providers of this header. Also configure those proxies/load balancers to reject fraudulent headers, rather than passing them to FortiWeb.	`disable`
merge-headers {enable | disable}	Enable to merge all the previous `X-Forward-For` headers into one header to create an IP list. Headers are merged based on their location in the request, which means the IPs of the first header will be at the beginning of the new list followed by the IPs of the next header. The **Delete Previous XFF Headers** is executed before **Merge Previous XFF Headers**. If these two options are both enabled, **Merge Previous XFF Headers** actually takes no effect because all the previous XFF Headers have already been deleted.	`disable`

Variable	Description	Default
delete-headers {enable | disable}	Enable to delete all the previous `X-Forward-For` headers. If `x-forwarded-for-support` is enabled, the request will only have one header and one IP which is created by FortiWeb.	`disable`
x-forwarded-for-support {enable | disable}	Enable to include the `X-Forwarded-For:` HTTP header on requests forwarded to your web servers. Behavior varies by the header already provided by the HTTP client or web proxy, if any: • **Header absent**–Add the header, using the source IP address of the connection. • **Header present**–Verify that the source IP address of the connection is present in this header's list of IP addresses. If it is not, append it. This option can be useful for web servers that log or analyze clients' IP addresses, and support the `X-Forwarded-For:` header. When this option is disabled, from the web server's perspective, all connections appear to be coming from the FortiWeb appliance, which performs network address translation (NAT). But when enabled, the web server can instead analyze this header to determine the source and path of the original client connection. This option applies only when FortiWeb is operating in Reverse Proxy mode or True Transparent Proxy.	`disable`
ip-location-add {left | right}	`Left:` Add IP address at the leftmost position of the first header. `Right:` Add IP address at the rightmost position of the last header. Available only when `x-forwarded-for-support` is enabled.	left
x-real-ip {enable | disable}	Enable to include the `X-Real-IP:` HTTP header on requests forwarded to your web servers. Behavior varies by the header already provided by the HTTP client or web proxy, if any. For details, see x-forwarded-for-support {enable | disable} on page 749). Like `X-Forwarded-For:`, this header is also used by some proxies and web servers to trace the path, log, or analyze based upon the packet's original source IP address. This option applies only when FortiWeb is operating in Reverse Proxy or True Transparent Proxy mode.	`disable`
skip-private-original-ip {enable | disable}	Enable to skip the private original IP that indicates the service used in the client's original request.	`enable`

Variable	Description	Default
x-forwarded-proto {enable | disable}	Enable to add an HTTP header that indicates the service used in the client's original request. Usually if your FortiWeb is receiving HTTPS requests from clients, and it is operating in Reverse Proxy mode, SSL/TLS is being offloaded. FortiWeb has terminated the SSL/TLS connection and the second segment of the request, where it forwards to the back-end servers, is clear text HTTP. In some cases, your back-end server may need to know that the original request was, in fact, encrypted HTTPS, **not** HTTP.	`disable`
<entry_index>	Enter the index number of the individual entry in the table. The valid range is 1-9,223,372,036,854,775,807. Each list can contain a maximum of 256 IP addresses.	No default.
ip "<load-balancer_ip>"	Type the IP address of a load balancer or proxy that is in front of the FortiWeb appliance (between the client and FortiWeb). To apply anti-spoofing measures and improve security, FortiWeb trusts the contents of the HTTP header that you specify in original-ip-header "<HTTP-header-key_str>" on page 748 **only** if the packet arrived from one of the IP addresses you specify here. It regards original-ip-header "<HTTP-header-key_str>" on page 748 from other IP addresses as potentially spoofed. For packets from other IP addresses, FortiWeb ignores the `X-Forwarded-For:` header and uses the source IP address in the IP header as the client source address. This IP address is displayed in the attack log message.	No default.
add-source-port {enable | disable}	Enable to add an `X-Forwarded-For: header` with the connection's source IP. If this field is enabled, the source port of the request will be added as well. Available only when FortiWeb operates in Reverse Proxy, True Transparent Proxy, or WCCP mode.	`disable`
x-forwarded-port {enable | disable}	Enable to add an `X-Forwarded-Port: header` with the connection's destination port. Available only when FortiWeb operates in Reverse Proxy, True Transparent Proxy, or WCCP mode.	`disable`
duplicate-headers {enable | disable}	Enables or disables duplication of the X-Forwarded-For (XFF) header to a custom header. This option is useful for preserving route traceability when downstream devices may remove or alter the original XFF header. When **enabled**, FortiWeb appends an additional HTTP header to outbound requests: • The name is defined by `duplicate-headers-name`.	`disable`

Variable	Description	Default
	• The value matches the final XFF value after FortiWeb processing (including `delete-headers`, `merge-headers`, `x-forwarded-for-support`, `ip-location-add`, `add-source-port`). If multiple XFF headers exist and `merge-headers` is **disabled**, each is duplicated into its own custom header. The duplicate header is **not added** if: • XFF is missing from the request • `delete-headers` is **enabled** If XFF is present but empty, the duplicate header will also be empty.	
duplicate-headers-name <custom_header_name>	Specifies the name of the custom header used to carry the duplicated XFF value. The header name must be non-empty and must not exceed 127 characters. The value of this custom header reflects the final XFF value after all applicable processing, including merge, deletion, IP insertion, and port tagging options.	No default.

Example

The following example defines a X-Forwarded-For rule that adds `X-Forwarded-For:`, `X-Real-IP:`, and `X-Forwarded-Proto:` headers to traffic that FortiWeb forwards to a back-end server. It enables FortiWeb to use the HTTP X-Header to identify and block the original client's IP. To protect against XFF spoofing, it also specifies the trusted load-balancer `192.0.2.105` in the X-Forwarded-For IP list.

```
config waf x-forwarded-for
   edit "load-balancer1"
      set x-forwarded-for-support enable
      set tracing-original-ip enable
      set original-ip-header X-FORWARDED-FOR
      set x-real-ip enable
      set x-forwarded-proto enable
      config ip-list
         edit 1
            set ip "192.0.2.105"
         next
      end
      set block-based-on-original-ip enable
   next
end
```

waf xml-dtd

Use this command to view DTD files that have already been uploaded to FortiWeb. You can upload DTD files only in the web UI through the **XML DTD** tab in **Web Protection > XML Protection**.

A Document Type Definition (DTD) is a specification that defines the structure, legal elements, and attributes of an XML document. By importing a DTD file, you can validate an XML request to ensure it adheres to the specified rules and constraints outlined in the DTD.

XML DTD files are included in XML protection rules. XML protection rules define acceptable parameters for XML content in HTTP requests. Groups of XML protection rules are grouped into XML protection policies. For details, see waf xml-validation on page 754.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `wafgrp` area. For details, see Permissions on page 46.

Syntax

```
config waf xml-dtd file
   edit waf xml-dtd
end
```

Variable	Description	Default
"<xml_dtd_file_name>"	To display a list of existing XML DTD files, enter: edit ?	No default.

Related topics

- waf xml-validation on page 754

waf xml-exempted-urls

When you configure schema location to forbid using location field to perform malicious requests, you can use this command to exempt specific URLs from XML protection.

Syntax

```
config waf xml-exempted-urls
   edit "<xml-exempted-urls_name>"
      config exempted-url-list
         edit exempted-url-list <exempted-url-list_str>
```

```
            set url-type {plain | regular}
            set exempted-url <exempted-url_str>
        next
    end
  next
end
```

Variable	Description	Default
"<xml-exempted-urls_ name>"	Enter the name for the Exempted URLs list.	No default.
exempted-url-list <exempted-url-list_str>	Enter the ID for the he Exempted URLs list.	No default.
url-type {plain | regular}	Select whether the exempted-url <exempted-url_str> on page 753field must contain either • `plain` –The field is a string that the request URL must match exactly. • `regular`–The field is a regular expression that defines a set of matching URLs.	No default.
exempted-url <exempted-url_str>	Depending on your selection in url-type {plain | regular} on page 753, enter either: • `plain` –The literal URL, such as `/index.php`, that the HTTP request must contain in order to match the rule. The URL must begin with s slash (`/`). • `regular`–A regular expression, such as `^/*.php`, matching the URLs to which the rule should apply. The pattern does not require a slash (`/`), but it must match URLs that begin with a slash, such as `/index.cfm`.	No default.

Related topics

- waf xml-validation on page 754
- waf xml-wsdl on page 762

waf xml-schema

Use this command to view XML schema files that have already been uploaded to FortiWeb. You can upload XML schema files only in the web UI.

XML schema files specify the acceptable structure of an elements in an XML document. When you use XML schema files to check XML content in HTTP requests, FortiWeb can determine whether content is allowed and validate that content is well-formed.

XML schema files are included in XML protection rules. XML protection rules define acceptable parameters for XML content in HTTP requests. Groups of XML protection rules are grouped into XML protection policies. For details, see waf xml-validation on page 754.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `wafgrp` area. For details, see Permissions on page 46.

Syntax

```
config waf xml-schema file
   edit "<xml_schema_file_name>"
end
```

Variable	Description	Default
"<xml_schema_file_name>"	To display a list of existing XML schema files, enter: edit ?	No default.

Related topics

- waf xml-validation on page 754

waf xml-validation

Use this command to create XML protection rules and configure XML protection policies. You can create up to 256 rules per policy.

XML is commonly used for data exchange, and hackers sometimes try to exploit security holes in XML to attack web servers. Using this command, you can configure FortiWeb to examine lcient requests for anomalies in XML. Configuring XML protection can help ensure that the content of HTTP requests containing XML does not contain any potential attacks.

XML protection is available in Reverse Proxy, True Transparent Proxy, and WCCP operating modes.

Syntax

```
config waf xml-validation rule
   edit "<xml_rule_name>"
      set action {alert | alert_deny | block-period | redirect | send_403_forbidden | deny_no_log}
      set block-period <period_int>
      set expansion-entity-check {enable | disable}
      set external-entity-check {enable | disable}
      set host "<host_name_str>"
      set host-status {enable | disable}
```

```
      set request-file "<file_str>"
      set request-type {plain | regular}
      set dtd-file <dtd_file_name>
      set schema-file "<schema_file_name>"
      set severity {High  Low | Medium | Info}
      set trigger "<trigger_policy_name>"
      set xml-attributes-check {enable | disable}
      set xml-limit-attr-num <limit_int>
      set xml-limit-attrname-len <limit_int>
      set xml-limit-attrvalue-len <limit_int>
      set xml-limit-cdata-len <limit_int>
      set xml-limit-check {enable | disable}
      set xml-limit-element-depth <limit_int>
      set xml-limit-element-name-len <limit_int>
      set data-format {xml | soap}
      set wsdl-ip-port-override {enable | disable}
      set wsdl-file <wsdl-file_name>
      set ws-security <string>
      set xsw <string>
      set validate-soapaction {enable | disable}
      set validate-soap-headers {enable | disable}
      set allow-additional-soap-headers {enable | disable}
      set validate-soap-body {enable | disable}
      set x-include-check {enable | disable}
      set schema-location-check {enable | disable}
      set schema-location-exempted-urls <schema-location-exempted-urls_str>
      set soap-attachment {allow | disallow} on page 760
      set ws-i-basic-profile-assertion {WSI1001 | WSI1002 | WSI1003 | WSI1004 | WSI1006 | WSI1007 |
           WSI1032 | WSI1033 | WSI1109 | WSI1110 | WSI1111 | WSI1201 | WSI1202 | WSI1204 | WSI1208 |
           WSI1301 | WSI1307 | WSI1308 | WSI1309 | WSI1318 | WSI1601 | WSI1701} on page 760
      set ws-i-basic-profile-wsdl-assertion {WSI1008 | WSI1116 | WSI1211} on page 761
   next
end
config waf xml-validation policy
   edit "<xml_policy_name>"
      set enable-signature-detection {enable | disable}
      config input-rule-list
         edit <entry_index>
            set "<xml_rule_1>"
         next
      end
   next
end
```

Variable	Description	Default
"<xml_rule_name>"	Enter a name that can be referenced by other parts of the configuration. You will use the name to select the rule in an XML protection policy. The maximum length is 63 characters.	No default.

Variable	Description	Default
action {alert | alert_deny | block-period | redirect | send_403_forbidden | deny_no_log}	Select one of the following actions that FortiWeb performs when a request violates the rule: • `alert`–Accept the request and generate an alert email and/or log message. • `alert_deny`–Block the request (or reset the connection) and generate an alert email and/or log message. You can customize the web page that FortiWeb returns to the client with the HTTP status code. For details, see "system replacemsg" on page 1. • `block-period`–Block subsequent requests from the client for a number of seconds. Also configure waf xml-validation on page 754. • `redirect`–Redirect the request to the URL that you specify in the protection profile and generate an alert email and/or log message. Also configure redirect-url "<redirect_fqdn>" on page 728 and rdt-reason {enable | disable} on page 729. • `send_403_forbidden`–Reply to the client with an HTTP `403 Access Forbidden` error message and generate an alert email and/or log message. • `deny_no_log`–Deny a request. Do not generate a log message. **Caution:**FortiWeb ignores this setting when monitor-mode {enable | disable} on page 166 is enabled. **Note:** Logging and/or alert email will occur only if enabled and configured. For details, see log disk on page 66 and log alertMail on page 60.	alert
block-period <period_int>	Enter the amount of time (in seconds) that you want to block subsequent requests from a client after FortiWeb detects a rule violation. This setting is available only when waf xml-validation on page 754 is `block-period`. The valid range is 1-3,600 seconds.	600
expansion-entity-check {enable | disable}	Enable to trigger the waf xml-validation on page 754 if an HTTP request contains an XML recursive entity expansion. To enable this option, you must first enable waf xml-validation on page 754.	disable
external-entity-check {enable | disable}	Enable to trigger the waf xml-validation on page 754 if an HTTP request contains an external entity in XML. To enable this option, you must first enable waf xml-validation on page 754.	disable
host "<host_name_str>"	Enter the name of a protected host that the `Host:` field of an HTTP request must match in order for the rule to apply. For details, see server-policy allow-hosts on page 106.	No default.
host-status {enable | disable}	Enable to compare the XML rule to the Host: field in the HTTP header. If enabled, also configure waf xml-validation on page 754.	disable

Variable	Description	Default
request-file "<file_str>"	Depending on your selection for waf xml-validation on page 754, enter either: • `plain`—The literal URL, such as `/index.php`, that the HTTP request must contain in order to match the rule. The URL must begin with a slash (/). • `regular`—A regular expression, such as `^/*.php`, matching the URLs to which the rule should apply. The pattern does not require a slash (/), but it must match URLs that begin with a slash, such as `/index.cfm`. Do not include the domain name, such as `www.example.com`, which is configured separately in waf xml-validation on page 754.	No default.
request-type {plain | regular}	Select whether waf xml-validation on page 754 must contain either: • **Simple String**—The field is a string that the request URL must match exactly. • **Regular Expression**—The field is a regular expression that defines a set of matching URLs.	No default.
dtd-file <dtd_file_name>	Select the DTD file uploaded in the web UI through the **XML DTD** tab in **Web Protection > XML Protection**. Available only when the data-format is **XML**. **Note**: If you upload an XML DTD file that refers to other DTD schema files, the other DTD files must also be uploaded to FortiWeb.	No default.
schema-file "<schema_file_name>"	Select an XML schema file. To display a list of existing XML schema files, enter: set schema-file ? Note, if you select an XML schema file that references other XML schema files, the other XML schema files must also be uploaded to FortiWeb.	No default.
severity {High Low | Medium | Info}	When rule violations are recorded in the attack log, each log message contains a **Severity Level** field. Select which severity level FortiWeb will use when it logs a violation of the rule: • `Low` • `Medium` • `High` • `Info`	Low
trigger "<trigger_policy_name>"	Enter the name of the trigger, if any, to apply when the rule is violated. The maximum length is 63 characters. For details, see log trigger-policy on page 97. To display a list of existing triggers, enter: set trigger ?	No default.

Variable	Description	Default
xml-attributes-check {enable | disable}	Enable to configure waf xml-validation on page 754 and waf xml-validation on page 754.	disable
xml-limit-attr-num <limit_int>	Enter the maximum number of attributes for each element. The valid range is 1-256. To configure this option, you must first enable waf xml-validation on page 754.	20
xml-limit-attrname-len <limit_int>	Enter the maximum attribute name length (in bytes) of each element. The valid range is 1-1,024. To configure this option, you must first enable waf xml-validation on page 754.	64
xml-limit-attrvalue-len <limit_int>	Enter the maximum attribute value length (in bytes) of each element. The valid range is 1-2,048. To configure this option, you must first enable waf xml-validation on page 754.	1,024
xml-limit-cdata-len <limit_int>	Enter the maximum Character Data (CDATA) length (in bytes) in XML. The valid range is 1-4,096. To configure this option, you must first enable waf xml-validation on page 754.	4,096
xml-limit-check {enable | disable}	Enable to configure XML limits.	disable
xml-limit-element-depth <limit_int>	Enter the maximum element depth in XML. The valid range is 1-256. To configure this option, you must first enable waf xml-validation on page 754.	20
xml-limit-element-name-len <limit_int>	Enter the maximum element name length (in bytes) in XML. The valid range is 1-1,024. To configure this option, you must first enable waf xml-validation on page 754.	64
"<xml_policy_name>"	Enter the name of an XML protection policy. You will use the name to select the policy in other parts of the configuration. The maximum length is 63 characters.	No default.
<entry_index>	Enter the index number of an entry to create or modify a rule for the policy. The valid range is 1-9,999,999,999,999,999,999.	No default.
"<xml_rule_1>"	Enter the sequence number of an XML protection rule to add to the XML protection policy. The maximum length is 63 characters.	No default.

Variable	Description	Default
data-format {xml | soap}	Select the XML protection rule format.	No default.
wsdl-ip-port-override {enable | disable}	When enabled, only the URL will be used to match the service in WSDL. If a URL corresponds to multiple services, the first service will be matched.	disable
wsdl-file <wsdl-file_name>	This field applies when the Data Format is SOAP. Enter a name for the WSDL file.	No default.
ws-security <string>	Select the WS-Security rule created with `config waf ws-security rule`. Available only when the `data-format` is `SOAP`.	
xsw <string>	Select the XSW Detection rule created with `config waf xsw-detection rule`.	No default.
validate-soapaction {enable | disable}	Enable to validate whether the soapAction in SOAP protocol complies with that in WSDL file.	No default.
validate-soap-headers {enable | disable}	Enable to validate whether the header elements in SOAP protocol comply with those in WSDL file.	No default.
allow-additional-soap-headers {enable | disable}	Enable not to validate additional header elements.	No default.
validate-soap-body {enable | disable}	Enable to validate whether the body elements in SOAP protocol comply with those in WSDL file.	No default.
x-include-check {enable | disable}	Enable to trigger the action {alert | alert_deny | block-period | redirect | send_403_forbidden | deny_no_log} on page 756 if other XML contents are included in XML.	No default.
schema-location-check {enable | disable}	Enable to forbid using location field to perform malicious requests.	No default.
schema-	Select the exempted URL you have created to configure allowed location URLs.	No default.

Variable	Description	Default
location-exempted-urls <schema-location-exempted-urls_str>	Available only when schema-location-check {enable | disable} on page 759 is enabled.	
enable-signature-detection {enable | disable}	Enable to scan for matches with attack and data leak signatures in Web 2.0 (XML AJAX), SOAP, and other XML submitted by clients in the bodies of HTTP POST requests.	disable
soap-attachment {allow | disallow}	Specify whether the SOAP message can carry attachments. Available only when the data-format {xml | soap} on page 759 is **SOAP**.	Allow
ws-i-basic-profile-assertion {WSI1001 | WSI1002 | WSI1003 | WSI1004 | WSI1006 | WSI1007 | WSI1032 | WSI1033 | WSI1109 | WSI1110 | WSI1111 | WSI1201 | WSI1202 | WSI1204 | WSI1208 | WSI1301 | WSI1307 | WSI1308 | WSI1309 | WSI1318 | WSI1601 | WSI1701}	Select WSI rules that SOAP messages will adhere to. Available only when the data-format {xml | soap} on page 759 is **SOAP**.	No default

Variable	Description	Default
ws-i-basic-profile-wsdl-assertion {WSI1008 | WSI1116 | WSI1211}	If you select these three rules, configure WSDL files first. Available only when the data-format {xml | soap} on page 759 is **SOAP**.	No default

Example

The below example creates an XML protection rule and applies the rule to a new XML protection policy.

```
config waf xml-validation rule
   edit "example_rule_name_1"
      set action block-period
      set block-period 3000
      set severity Medium
      set trigger "example_trigger_policy_name"
      set host-status enable
      set host "example_host_name"
      set request-type plain
      set request-file "/index.php"
      set schema-file "example_schema_file_name"
      set xml-limit-check enable
      set xml-limit-attr-num 64
      set xml-limit-attrname-len 256
      set xml-limit-attrvalue-len 1024
      set xml-limit-cdata-len 2096
      set xml-limit-element-depth 128
      set xml-limit-element-name-len 128
      set xml-entity-check enable
      set expansion-entity-check enable
      set external-entity-check enable
   next
end
config waf xml-validation policy
   edit "example_policy_name"
      config input-rule-list
         edit "example_rule_1"
            set "example_rule_1"
         next
      end
   next
end
```

Related topics

- waf xml-schema on page 753
- waf xml-wsdl on page 762

- waf web-protection-profile inline-protection on page 720

waf xml-wsdl

Use this command to view XML wsdl files that have already been uploaded to FortiWeb. You can upload XML wsdl files only in the web UI.

WSDL files are XML files that describe how to use SOAP to invoke web service. To configure FortiWeb to verify legality of WSDL files and check the SOAP message against WSDL and SOAP protocol, create an XML protection rule and select a WSDL file for that rule. You can select only one WSDL file for each XML protection rule, but you can configure FortiWeb to enforce multiple rules in XML protection policies.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `wafgrp` area. For details, see Permissions on page 46.

Syntax

```
config waf xml-wsdl file
   edit "<xml_wsdl_file_name>"
end
```

Variable	Description	Default
"<xml_wsdl_file_name>"	To display a list of existing XML WSDL files, enter: edit ?	No default.

Related topics

- waf xml-validation on page 754

waf xsw-detection rule

Use this command to create XSW Detection rules.

XML Signature Wrapping (XSW) allows a malicious client to modify or forge a digitally signed document without breaking the included signature. This attack is accomplished by moving the original nodeset to another location within the document and replacing the contents.

To counter XSW attacks, FortiWeb will locates the signed node within the XML file and execute verification specifically at that location. Consequently, if a forged node is positioned at the original node's location or the original node is moved to another location, FortiWeb will be able to detect it. In the XSW Detection rule, XPath is employed to specify the correct location of the signed node, while a certificate is used to verify whether the content of the signed node is legitimate.

Syntax

```
config waf xsw-detection rule
   set xml-client-certificate-group
   config namespace-mapping
      edit "<namespace-mapping_name>"
         set prefix <string>
         set namespace <string>
      next
   end
   config element-list
      edit "<element-list_name>"
         set xpath <xpath_str>
         set id-attr-name <string>
      next
   end
end
```

For more information on how to define namespace, XPath, and ID attribute name, please refer to "Creating XSW Detection rules" in *FortiWeb Administration Guide*.

Variable	Description	Default
"<xsw-detection_rule_name>"	Enter a name that can be referenced by other parts of the configuration.	No default.
xml-client-certificate-group <xml-client-certificate_group_str>	Select the XML client certificate group created from XML Certificate > Client Certificate Group.	No default.
"<namespace-mapping_name_id>"	Enter the index number of an entry to create a namespace mapping.	No default.
namespace <string>	Enter the namespace.	No default.
prefix <string>	Enter a prefix for the namespace.	No default.
"<element-list_name_id>"	Enter the index number of an entry to create an element list.	No default.
xpath <xpath_str>	Enter an XPath to specify which part of the XML file to process.	No default.
id-attr-name <string>	Enter the name of the attribute to be protected.	No default.

Related topics

- Configuring XML protection on page 1
- system certificate xml-client-certificate on page 272
- system certificate xml-client-certificate-group on page 276
- system certificate xml-server-certificate on page 401

wvs limit

Use this command to limit scanning related settings, such as the scanning report size, request interval, etc.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `wvsgrp` area. For details, see Permissions on page 46.

Syntax

```
config wvs limit
   set report-path-size <report-path-size_int>
   set request-interval <request-interval_int>
   set scan-cpu-usage <scan-cpu-usage_int>
   set scan-memory-usage <scan-memory-usage_int>
   set single-report-size <single-report-size_int>
   set verbose-output {enable | disable}
end
```

Variable	Description	Default
report-path-size <report-path-size_int>	Type the size of the folders that store all scanning reports of all policies (1024~51200 M)	`10240`
request-interval <request-interval_int>	Type the number of seconds between each request (1~1000 ms).	`1`
scan-cpu-usage <scan-cpu-usage_int>	Set the CPU limit. When the CPU of all scanning processes exceeds certain parentage of the total CPU, the scanning will be killed (10~80 percent).	`70`
scan-memory-usage <scan-memory-usage_int>	Set the memory limit. When the memory of all scanning processes exceeds certain parentage of the total memory , the scanning will be killed (10~80 percent).	`40`
single-report-size <single-report-size_int>	The size of the scanning report file for the first scanning in a single policy (1~5120 M).	`512`
verbose-output {enable | disable}	Control the `output.txt` contents. Enable to output detailed debug information, which causes large `output.txt` file.	`disable`

Example

This example shows how to configure scanning related limitations.

```
config wvs limit
   set report-path-size 10500
   set request-interval 3
   set scan-cpu-usage 60
   set single-report-size 700
   set verbose-output disable
end
```

Related topics

- wvs policy on page 765
- wvs schedule on page 771
- wvs profile on page 767
- wvs template on page 772

wvs policy

Use this command to define a web vulnerability scan policy. The policy enables you to set the frequency of the vulnerability scan, schedule the scan, and choose a format for the scan report. The policy also enables you to select an email policy that determines who receives the scan report.

Before you can complete a web vulnerability scan policy, you must first configure a scan profile using the FortiWeb web UI and a scan schedule using either the web UI or the command wvs schedule on page 771.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `wvsgrp` area. For details, see Permissions on page 46.

Syntax

```
config wvs policy
   edit "<wvs-policy_name>"
      set type {runonce | schedule}
      set schedule "<wvs-schedule_name>"
      set profile "<wvs-profile_name>"
      set email "<email-policy_name>"
      set report_format {html pdf xml}
      set runtime <count_int>
   next
end
```

Variable	Description	Default
"<wvs-policy_name>"	Enter the name of a new or existing web vulnerability scan policy. The maximum length is 63 characters. To display the list of existing policies, enter: `edit ?`	No default.
type {runonce | schedule}	Select either: • `runonce`–Run the scan immediately after you complete the policy. • `schedule`–Run the scan on a schedule. Also configure analyzer-policy "<fortianalyzer-policy_name>" on page 98.	`runonce`
schedule "<wvs-schedule_name>"	Enter the name of an existing web vulnerability scan schedule. The maximum length is 63 characters. For details, see wvs schedule on page 771. To display the list of existing schedules, enter: `set schedule ?` This setting is applicable only if type {runonce | schedule} on page 766 is `schedule`.	No default.
profile "<wvs-profile_name>"	Enter the name of an existing web vulnerability scan profile. The maximum length is 63 characters. To display a list of the existing profiles, enter: `set profile ?`	No default.
email "<email-policy_name>"	Enter the name of an existing email policy. When the scan completes, the FortiWeb appliance will send email in the specified format to the email addresses in the policy. The maximum length is 63 characters. For details, see log email-policy on page 68. To display the list of existing policy, enter: `set email ?`	No default.
report_format {html pdf xml}	Select one or more file formats of the report to attach when emailing it.	`html`
runtime <count_int>	Not configurable. To reset the value to zero, enter: `set runtime 0`	No default.

Example

The following example defines a recurring vulnerability scan with email report output in RTF and text format.

```
config wvs policy
   edit "wvs-policy1"
      set type schedule
      set schedule "wvs-schedule1"
      set report_format xml
```

```
      set profile "wvs-profile1"
      set email "EmailPolicy1"
   next
end
```

Related topics

- wvs profile on page 767
- wvs schedule on page 771

wvs profile

Use this command to configure web vulnerability scan profiles.

A web vulnerability scan (WVS) profile defines the web server to scan, as well as the specific vulnerabilities to scan for. The WVS profiles are associated with WVS policies, which determine when to perform the scan and how to publish the results of the scan defined by the profile.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `wvsgrp` area. For details, see Permissions on page 46.

Syntax

```
config wvs profile
   edit "<wvs_profile_name>"
      set scan-target <scan-target_str>
      set scan-template <scan-template_id>
      set request-timeout <request-timeout_int>
      set ignore-session-cookies {enable | disable}
      set user-agent-type {custom | random}
      set custom-user-agent <custom-user-agent_str>
      set custom-header0 <custom-header0_str>
      set custom-header1 <custom-header1_str>
      set custom-header2 <custom-header2_str>
      set custom-header3 <custom-header3_str>
      set custom-header4 <custom-header4_str>
      set custom-header5 <custom-header5_str>
      set custom-header6 <custom-header6_str>
      set custom-header7 <custom-header7_str>
      set custom-header8 <custom-header8_str>
      set custom-header9 <custom-header9_str>
      set sub-path-limit <sub-path-limit_int>
      set max-scan-time <max-scan-time_int>
      set max-crawl-time <max-crawl-time_int>
      set max-params-limit <max-params-limit_int>
      set max-file-size <max-file-size_int>
      set max-HTTP-retries <max-HTTP-retries_int>
      set specify-urls-for-scanning {enable | disable}
      set follow-regex <follow-regex_int>
```

```
        set ignore-regex <ignore-regex_int>
        set HTTP-basic-authentication {enable | disable}
        set basic-username <basic-username_str>
        set basic-password <basic-password_str>
        set form-based-authentication {enable | disable}
        set form-based-username <form-based-username_str>
        set form-based-password <form-based-password_str>
        set form-based-auth-url <form-based-auth-url_str>
        set username-field <username-field_str>
        set password-field <password-field_str>
        set cookie-jar-file <cookie-jar-file_str>
        set session-check-url <session-check-url_str>
        set session-check-str <session-check-url_str> on page 770
        set data-format <data-format_str>

end
```

Variable	Description	Default
"<wvs_profile_name>"	Type a unique name for the profile name. The maximum length is 63 characters.	No default.
scan-target <scan-target_str>	Enter the URL that you want to scan, such as `www.mytestwvs.com`.	No default.
scan-template <scan-template_id>	Select an existing scan template that you want to use in the profile.	No default.
request-timeout <request-timeout_int>	Type the number of seconds for the vulnerability scanner to wait for a response from the website before it assumes that the request will not successfully complete, and continues with the next request in the scan. It will not retry timeout requests.	0
ignore-session-cookies {enable | disable}	If enabled, the scanner will ignore all session cookies sent by the target web application.	`disable`
user-agent-type {custom | random}	`Custom`: when there is no user-agent in custom headers, the actual user-agent sent is FortiWeb WVS; when user-agent is set in custom headers, the actual user-agent sent is the value set in custom-user-agent <custom-user-agent_str> on page 768. `random`: When the user-agent-type is random, and there is no user-agent in custom headers, the actual user-agent sent is random; when user-agent is set in custom headers, the actual user-agent sent is random.	`custom`
custom-user-agent <custom-user-agent_str>	Enter the custom user-agent value.	No default.
custom-header0 <custom-header0_str>	You can define the host, user agent, and other common headers in the request.	No default.
custom-header1 <custom-header1_str>	You can define the host, user agent, and other common headers in the request.	No default.

Variable	Description	Default
custom-header2 <custom-header2_str>	You can define the host, user agent, and other common headers in the request.	No default.
custom-header3 <custom-header3_str>	You can define the host, user agent, and other common headers in the request.	No default.
custom-header4 <custom-header4_str>	You can define the host, user agent, and other common headers in the request.	No default.
custom-header5 <custom-header5_str>	You can define the host, user agent, and other common headers in the request.	No default.
custom-header6 <custom-header6_str>	You can define the host, user agent, and other common headers in the request.	No default.
custom-header7 <custom-header7_str>	You can define the host, user agent, and other common headers in the request.	No default.
custom-header8 <custom-header8_str>	You can define the host, user agent, and other common headers in the request.	No default.
custom-header9 <custom-header9_str>	You can define the host, user agent, and other common headers in the request.	No default.
sub-path-limit <sub-path-limit_int>	Enter the maximum number of requests for sub path of each URL.	75
max-scan-time <max-scan-time_int>	Enter the maximum scanning time.	120
max-crawl-time <max-crawl-time_int>	Enter the maximum crawling time (minutes).	60
max-params-limit <max-params-limit_int>	Enter the maximum number of requests for each URL, and parameter set.	25
max-file-size <max-file-size_int>	Indicate the maximum file size (in bytes) that the scanner will retrieve from the remote server.	400,000
max-HTTP-retries <max-HTTP-retries_int>	Indicate the maximum number of retries when requesting an URL. The valid value range is 1-10.	2
specify-urls-for-scanning {enable | disable}	Enable to specify the URL to be scanned.	`disable`
follow-regex <follow-regex_int>	`follow-regex` is `.*`. When crawling, do not follow links that match this regular expression.	No default.
ignore-regex <ignore-regex_int>	An empty string (nothing to be ignored), when crawling, only follow that matches this regular expression. `ignore-regex` has precedence over `follow-regex`.	No default.
HTTP-basic-authentication {enable | disable}	Enable the HTTP basic authentication.	`disable`

Variable	Description	Default
basic-username <basic-username_str>	Enter the username of the web application.	No default.
basic-password <basic-password_str>	Enter the password for the username.	No default.
form-based-authentication {enable | disable}	Enable the form based authentication.	`disable`
form-based-username <form-based-username_str>	The username parameter name, for example, "uname" if the HTML looks like `<input type="text" name="uname">...`	No default.
form-based-password <form-based-password_str>	The password parameter name, for example, "pwd" if the HTML looks like `<input type="password" name="pwd">...`	No default.
form-based-auth-url <form-based-auth-url_str>	Enter the target URL for security auditing, and the URL shall include `HTTP` or `HTTPS` tag.	No default.
username-field <username-field_str>	Enter the username for using in the authentication process.	No default.
password-field <password-field_str>	Enter the password for the username.	No default.
cookie-jar-file <cookie-jar-file_str>	Designate a cookie jar file. The cookie jar file must be in mozilla format.	No default.
session-check-url <session-check-url_str>	Enter the URL where the packets are sent to.	No default.
session-check-str <session-check-url_str>	Enter the string in the response message. If the string can be checked, the authentication succeeds; otherwise, the authentication will be re-launched.	No default.
data-format <data-format_str>	Add extra parameters here for authentication as required by some websites, for example, `%u=%U&%p=%P&security_level- 0&form-submit. The default value %u=%U&%p=%P` includes the values for Username Field and Password Field.	No default.

Related topics

- wvs policy on page 765
- wvs schedule on page 771
- wvs template on page 772

wvs schedule

Use this command to schedule a web vulnerability scan.

Vulnerability scanning can detect known vulnerabilities on your web servers and web applications, helping you to design protection profiles. Vulnerability scans start from an initial directory, then scan for vulnerabilities in web pages located in the same directory or subdirectory as the initial URL.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `wvsgrp` area. For details, see Permissions on page 46.

Syntax

```
config wvs schedule
   edit "<schedule_name>"
      set type {recurring | onetime}
      set date "<time_str>" "<date_str>"
      set time "<time_str>"
      set wday {Sunday Monday Tuesday Wednesday Thursday Friday Saturday}
   next
end
```

Variable	Description	Default
"<schedule_name>"	Enter the name of new or existing WVS schedule. The maximum length is 63 characters. To display the list of existing schedule, enter: `edit ?`	No default.
type {recurring | onetime}	Select either: • `onetime`–Run the scan only when an administrator manually initiates it. Also configure date "<time_str>" "<date_str>" on page 771. • `recurring`–Run the scan periodically, on a schedule. Also configure time "<time_str>" on page 772 and wday {Sunday Monday Tuesday Wednesday Thursday Friday Saturday} on page 772.	`onetime`
date "<time_str>" "<date_str>"	For a one-time web vulnerability scan, enter the time and date for the scan to run. The time format is `hh:mm` and the date format is `yyyy/mm/dd`, where: • `hh` is the hour according to a 24-hour clock • `mm` is the minute • `yyyy` is the year • `mm` is the month • `dd` is the day	No default.

Variable	Description	Default
	The yyyy range is 2001-2050. This only applies if type {recurring | onetime} on page 771 is `onetime`.	
time "<time_str>"	Enter the time the vulnerability scan is to be performed. The time format is `hh:mm`, where: • `hh` is the hour according to a 24-hour clock • `mm` is the minute This only applies if type {recurring | onetime} on page 771 is `recurring`.	No default.
wday {Sunday Monday Tuesday Wednesday Thursday Friday Saturday}	For a recurring scan only, enter one or more days of the week the scan is to be performed. This setting only applies if type {recurring | onetime} on page 771 is `recurring`.	No default.

Example

The following example schedules a recurring vulnerability scan to run every Sunday and Thursday at 1:00 AM.

```
config wvs schedule
   edit "WVS-schedule1"
      set type recurring
      set time 01:00
      set wday Sunday Thursday
   next
end
```

Related topics

- wvs profile on page 767
- wvs policy on page 765

wvs template

Use this command to pre-define the scan profile.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `wvsgrp` area. For details, see Permissions on page 46.

Syntax

```
config wvs template
```

```
    edit "<wvs_template_name>"
       set audit {BLIND_SQLI | BUFFER_OVERFLOW | CORS_ORIGIN...}
       set bruteforce {BASIC_AUTH | FORM_AUTH}
       set crawl {ARCHIVE_DOT_ORG | BING_SPIDER | CONTENT_NEGOTIATION...}
       set grep {ANALYZE_COOKIES | BLANK_BODY | CACHE_CONTROL...}
       set infrastructure {AFD | ALLOWED_METHODS | DETECT_REVERSE_PROXY...}
  end
```

Variable	Description	Default
"<wvs_template_name>"	Enter a name for the scan template.	No default.
audit {BLIND_SQLI | BUFFER_OVERFLOW | CORS_ORIGIN...}	Configure the plugins for a scan template.	No default.
bruteforce {BASIC_AUTH | FORM_AUTH}		
crawl {ARCHIVE_DOT_ORG | BING_SPIDER | CONTENT_NEGOTIATION...}		
grep {ANALYZE_COOKIES | BLANK_BODY | CACHE_CONTROL...}		
infrastructure {AFD | ALLOWED_METHODS | DETECT_REVERSE_PROXY...}		

Example

This example shows how to configure a wvs template.

```
config wvs template1
   edit template1
      set audit BLIND_SQLI
      set bruteforce BASIC_AUTH
      set crawl CONTENT_NEGOTIATION
      set infrastructure AFD
      set grep CACHE_CONTROL
end
```

Related topics

- wvs policy on page 765
- wvs schedule on page 771
- wvs profile on page 767

diagnose

The `diagnose` commands display diagnostic information that help you troubleshoot problems. These commands do not have an equivalent in the web UI.

debug

Use this command to turn debug log output on or off.

Debug logging can be very resource intensive. To minimize the performance impact on your FortiWeb appliance, use packet capture only during periods of minimal traffic, with a local console CLI connection rather than a Telnet or SSH CLI connection, and be sure to stop the command when you are finished.

By default, the most verbose logging that is available from the web UI for any log type is the **Information** severity level. Due to their usually unnecessary nature, logs at the severity level of **Debug** are disabled and hidden. They can only be enabled and viewed from the CLI. Typically this is done only if your configuration seems to be correct, you cannot diagnose the problem without more information, and possibly suspect that you may have found either a hardware failure or software bug.

To generate debug logs, you must:

Set the verbosity level for the specific module whose debugging information you want to view, via a debug log command such as:

```
debug application hasync [{-1 | 0 | 1 | 2 | 4 | 8}]
```

If necessary configure any filters specific to the module whose debugging information you are viewing, such as:

```
debug flow filter server-ip "10.0.0.10"
```

If necessary start debugging specific to the module, such as:

```
debug flow trace start
```

Enable debug logs overall. To do this, enter:

```
debug enable
```

View the debug logs. For convenience, debugging logs are immediately outputted to your local console display or terminal emulator, but debug log files can also be uploaded to a server.

To do this, use the command:

```
debug upload
```

For more complex issues or bugs, this may be required in order to send debug information to Fortinet Customer Service & Support (https://support.fortinet.com).

Debug logs will be generated only if the application is running. To verify this, use system top on page 848. Otherwise, use debug crashlog on page 782 instead.

The CLI will display debug logs as they occur until you either:

- Disable it by either typing:
  `diagnose debug disable`
  or setting all modules' debug log verbosity back to `0`. To reset all verbosity levels simultaneously, you can use the command:
  `diagnose debug reset`
- Close your terminal emulator, thereby ending your administrative session.
- Send a termination signal to the console by pressing Ctrl+C.
- Reboot the appliance. To do this, you can use the command:
  `execute reboot`
  To use this command, your administrator account's access control profile requires only `r` permission in any profile area.

Syntax

```
diagnose debug {enable | disable}
```

Variable	Description	Default
debug {enable | disable}	Select whether to enable or disable recording of logs at the debug severity level.	`disable`

Related topics

- debug application
- log

debug application

Use this command to view and set the verbosity level of debug logs for each module.

Before you can see any debug logs, you must first enable debug log output using the command debug.

To use this command, your administrator account's access control profile requires only `r` permission in any profile area. For details, see Permissions on page 46.

Syntax

```
diagnose debug application <module_name> <verbosity-level_int>
```

Variable	Description	Default
<module_name>	The name of the module that you want to set the debug log verbosity level for. Enter `diagnose debug application ?` to display all the available module names if you don't know the exact name of the module.	`no default`
<verbosity-level_int>	Specify the verbosity level to output to the CLI display after the command executes. The valid range is 0-7, where 0 disables debug logs for the module and 7 generates the most verbose logging. If you omit the number, the CLI displays the current verbosity level. For example: `autosync debug level is 0`	`0`

Related topics

- debug on page 775
- debug console timestamp on page 781
- debug info on page 793
- debug reset on page 800
- debug upload on page 802

debug asan

Use this command to collect memory violation events.

To use this command, your administrator account's access control profile requires `r` permission to the `mntgrp` area. For details, see Permissions on page 46.

Syntax

```
diagnose debug asan <program> {enable | disable}
```

Variable	Description	Default
<program>	Enter the name of program for which you want to collect the memory violation events. You can run `diagnose debug asan show` to check all the programs that support ASAN and their corresponding enable/disable state.	`no default`
{enable | disable}	**enable** When enabled, the system will perform the following actions (using proxyd as an example): 1. Backup "/bin/proxyd" to "/bin/proxyd.bak" 2. Create symbolic link between "/bin/proxyd" and "/var/log/debug/symbol/asan/bin/proxyd" 3. Kill proxyd This causes the proxyd daemon to respawn with the ASAN version. You leave the system in its state and let the ASAN version of proxyd daemon run and collect memory violation events. For more info on troubleshooting the memory violation issues, see Diagnose memory violation issues. Please note the changes above is not persistent across reboot. If the system is reloaded, the normal version of daemon will be running. **disable** Once the data is collected, you use `disable` to revert back to the normal daemon. The system will perform the following actions (using proxyd as an example): 1. Rename "/bin/proxyd.bak" to "/bin/proxyd" 2. Kill proxyd This causes the daemon to respawn with the original executable. Please note that respawning will cause traffic interruption.	`disable`

debug cli

Use this command to set the debug level for the command line interface (CLI).

Before you will be able to see any debug logs, you must first enable debug log output using the command debug on page 775.

To use this command, your administrator account's access control profile requires only `r` permission in any profile area. For details, see Permissions on page 46.

Syntax

```
diagnose debug cli <cli_int>
```

Variable	Description	Default
cli <cli_int>	Specify the verbosity level to output to the CLI display after the command executes. The valid range is 0-7, where 0 disables debug logs for the CLI and 7 generates the most verbose logging. If you omit the number, the CLI displays the current verbosity level. For example: `cli debug level is 0`	`3`

Related topics

- debug on page 775
- debug console timestamp on page 781
- debug info on page 793
- debug reset on page 800
- debug upload on page 802

debug cmdb

Use this command to enable the debug log for the configuration management database (CMDB).

Before you will be able to see any debug logs, you must first enable debug log output using the command debug on page 775.

To use this command, your administrator account's access control profile requires only `r` permission in any profile area. For details, see Permissions on page 46.

Syntax

```
diagnose debug cmdb <cmdb_int>
```

Variable	Description	Default
cmdb <cmdb_int>	Specify the verbosity level to output to the CLI display after the command executes.	`0`

Variable	Description	Default
	The valid range is 0-7, where 0 disables SNMP debugging and 7 generates the most verbose logging. If you omit the number, the CLI displays the current verbosity level: `cmdb debug level is 0`	

Related topics

- debug on page 775
- debug console timestamp on page 781
- debug info on page 793
- debug reset on page 800
- debug upload on page 802

debug comlog

Use this command for the comlog related operations.

To use this command, your administrator account's access control profile requires only `r` permission in any profile area. For details, see Permissions on page 46.

Syntax

```
diagnose debug comlog {info|read|clear|disable|enable}
```

Variable	Description	Default
{info|read|clear|disable|enable}	**Enable:** Enable to record COMlog. **Disable:** Disable the recording of the COMlog. **info:** View the COMlog status including status (enable or disable), log space, and log size. **read:** Record the console log to /var/log/gui_upload/console.log. You can download the console.log from **System > Maintaince > Backup&Restore > GUI File Download**. **dump:** print the console log to command line interface(CLI). **clear:** Dump the console log.	Enable

It also can be enabled or disabled by this command:

```
config system global
   set console-log {disable|enable}
```

```
end
```

debug console timestamp

Use this command to enable or disable the timestamp in debug logs.

Before you will be able to see any debug logs, you must first enable debug log output using the command debug on page 775.

To use this command, your administrator account's access control profile requires only `r` permission in any profile area. For details, see Permissions on page 46.

Syntax

```
diagnose debug console timestamp {enable | disable}
```

Variable	Description	Default
timestamp {enable | disable}	Enable to add timestamps to debug output. If you omit the selection, the CLI displays the current timestamp status: `console timestamp is disabled.`	`disable`

Related topics

- debug reset on page 800
- debug info on page 793

debug coredumplog

Use this command to record the stack information in the core file of the proxyd program.

Before you will be able to see any debug logs, you must first enable debug log output using the command enable-debug-log {enable | disable} on page 382.

To use this command, your administrator account's access control profile requires only `r` permission in any profile area. For details, see Permissions on page 46.

Syntax

```
diagnose debug coredumplog show
```

```
diagnose debug coredumplog clear
```

Related Topic

- debug on page 775

debug crashlog

Use this command to show crash logs from application proxies that have call back traces, segmentation faults, or memory register dumps, or to delete the crash log.

Before you will be able to see any debug logs, you must first enable debug log output using the command enable-debug-log {enable | disable} on page 382.

To use this command, your administrator account's access control profile requires only `r` permission in any profile area. For details, see Permissions on page 46.

Syntax

```
diagnose debug crashlog show
diagnose debug crashlog clear
```

Example

```
diagnose debug crashlog show
```

Output similar to the following appears in the CLI:

```
2011-02-08 06:20:46 <18632> firmware FortiWeb-1000B 4.20,build0403,110131
2011-02-08 06:20:46 <18632> application proxy
2011-02-08 06:20:46 <18632> *** signal 11 (Segmentation fault) received ***
2011-02-08 06:20:46 <18632> Register dump:
2011-02-08 06:20:46 <18632> RAX: 00000000 RBX: 00000001 RCX: 00000001 RDX: 00000001
2011-02-08 06:20:46 <18632> RSI: 008d91a4 RDI: 00000000 RBP: 2b8f90ee2b10 RSP: 0072af60
2011-02-08 06:20:46 <18632> RIP: 008d8660 EFLAGS: 2b8f9aaa0010
2011-02-08 06:20:46 <18632> CS: 86b0 FS: 0000 GS: 008d
2011-02-08 06:20:46 <18632> Trap: 7fff26859ee0 Error: 008d8710 OldMask: 00440f90
2011-02-08 06:20:46 <18632> CR2: 00010202
2011-02-08 06:20:46 <18632> Backtrace:
2011-02-08 06:20:46 <18632> [0x008d8660] => /bin/xmlproxy (g_proxy+0x00000000)
2011-02-08 06:20:46 proxy received SEGV signal - 11
```

debug daemonlog

Use this command to process call information on specific interface records.

Before you will be able to see any debug logs, you must first enable debug log output using the command enable-debug-log {enable | disable} on page 382.

To use this command, your administrator account's access control profile requires only `r` permission in any profile area. For details, see Permissions on page 46.

Syntax

```
diagnose debug daemonlog show
diagnose debug daemonlog clear
```

Related Topic

- debug on page 775

debug dnsproxy list

Use this command to display the DNS cache that stores the results of resolving all fully qualified domain names in the server pools. The update time and update interval information will also be listed in the output.

To use this command, your administrator account's access control profile requires only `r` permission in any profile area. For details, see Permissions on page 46.

Syntax

```
diagnose debug dnsproxy list
```

Example

If the domain specified for the server pool member is `www.example.org` and has resolved to `123.126.104.68`, output similar to the following is displayed:

```
diagnose debug dnsproxy list
Domain Name: www.example.org
IPv4 Last Update:2019-08-12 01:23:58
IPv4 Update Interval (TTL):109 seconds
Domain IPv4 Addresses:123.126.104.68
```

```
IPv6 Last Update:2019-08-12 01:23:30
IPv6 Update Interval(TTL):119 seconds
Domain IPv6 Addresses:2408:80f0:4100:4007::4 2408:80f0:4100:4007::5
```

Related topics

- system dns on page 286

debug duration

Use this command to set or view the duration (in minutes) for which debug output remains enabled. When a duration is set and `diagnose debug enable` is issued, the system automatically disables debug output after the specified time has elapsed. This helps prevent performance degradation caused by long-running or forgotten debug sessions. If no duration is set, debug output remains active indefinitely until explicitly disabled.

Reissuing `diagnose debug enable` resets the timer using the most recently set duration. Existing debug filters remain configured but are inactive until debug is re-enabled. To fully clear debug settings, use `diagnose debug disable` or `diagnose debug reset`.

This command applies to all debug output, including flow trace and module-specific logs.

Syntax

```
diagnose debug duration <minutes>
```

<minutes>	Specify the number of minutes to keep debug output enabled. If omitted, the debug duration is set to unlimited.

Example

```
FortiWeb # diagnose debug duration
diagnose debug duration is unlimited

FortiWeb # diagnose debug duration 60
duration is set to 60 minutes

FortiWeb # diagnose debug duration
The current duration is 60 minutes

FortiWeb # diagnose debug enable

FortiWeb # diagnose debug duration
The current duration is 60 minutes, 0 minutes and 2 seconds have passed

FortiWeb # diagnose debug duration 120
```

```
duration is set to 120 minutes

FortiWeb # diagnose debug duration
The current duration is 120 minutes, 0 minutes and 14 seconds have passed
```

debug emerglog

Use this command to view or erase disk read-only error logs.

Before you will be able to see any debug logs, you must first enable debug log output using the command debug on page 775.

To use this command, your administrator account's access control profile requires only `r` permission in any profile area. For details, see Permissions on page 46.

Syntax

```
diagnose debug emerglog {show | clear}
```

Variable	Description	Default
{show | clear}	Enter `show` to view disk read-only error logs. Enter `clear` to delete error logs.	No default

debug flow filter

Use this command to apply filter conditions that limit flow trace debug output to relevant traffic only. This reduces debug noise and improves troubleshooting efficiency, especially in high-traffic or multi-tenant environments.

Before you will be able to see any debug logs, you must first enable debug log output using the command debug on page 775.

You can filter flow trace output based on:

- Source or destination IP address
- Server policy name
- Content routing policy name (Reverse Proxy mode only)
- Flow detail, HTTP detail, or module detail level

Multiple filters can be combined; all conditions are evaluated in logical AND.

To use this command, your administrator account's access control profile requires only `r` permission in any profile area. For details, see Permissions on page 46.

Syntax

```
diagnose debug enable
diagnose debug flow trace start
diagnose debug flow filter flow-detail <verbosity-level_int>
diagnose debug flow filter debug flow filter
diagnose debug flow filter module-detail {x-forworded-for | ip-list | ip-reputation | quarant-ip |
      known-engine | geo-block | ...| url-rewriting} <verbosity-level_int>
diagnose debug flow filter debug flow filter
diagnose debug flow filter debug flow filter
diagnose debug flow filter policy <policy_name>
diagnose debug flow filter content-routing-policy <policy_name>
diagnose debug flow trace stop
```

Variable	Description	Default
flow-detail <verbosity-level_int>	Specify the verbosity level to output to the CLI display after the command executes. The valid range is 0-7, where 0 disables debug logs and 7 generates the most verbose logging. If you omit the number, the CLI displays the current verbosity level. The default verbosity-level value for `flow-detail` is 1.	1
http-detail <verbosity-level_int>	Specify the verbosity level to output to the CLI display after the command executes. The valid range is 0-7, where 0 disables debug logs and 7 generates the most verbose logging. If you omit the number, the CLI displays the current verbosity level. The default verbosity-level value for `http-detail` is 0, which means "disabled".	0
module-detail {x-forworded-for | ip-list | ip-reputation | quarant-ip | known-engine | geo-block | ...| url-rewriting} <verbosity-level_int>	Select the name of module that needs to be traced (separated by space). Enter `diagnose debug flow filter module-detail ?` to display all the available module names if you don't know the exact name of the module. The default verbosity-level value for `module-detail` is 0, which means "disabled".	No default.
client-ip <source_ipv4 | source_ipv6>	Enter the source (`SRC`) IP address of connections. This will generate only packet flow debug log messages involving that source IP address. **Note:** This filter operates at the IP layer, **not** the HTTP layer. If a load balancer or other web proxy is deployed in front of FortiWeb, and therefore all connections for HTTP requests appear to originate from this IP address, configuring this filter will have no effect.	No default.

Variable	Description	Default
	Similarly, if multiple clients share an Internet connection via NAT or explicit web proxy, configuring this filter will only isolate connections that share this IP address. It will **not** be able to filter out a single client based on individual HTTP sessions from that IP.	
server-ip <destination_ipv4 | destination_ipv6>	Enter the destination (DST) IP address of the connection, either the: • Virtual server on FortiWeb (if FortiWeb is operating in Reverse Proxy mode) • Protected web server on the back end (all other operation modes) This will generate only packet flow debug log messages involving that server IP address.	No default.
policy <policy_name>	Enter the name of the server policy to filter out the connections that match the Network Configuration in the policy.	No default.
content-routing-policy <policy_name>	Filters flows by content routing policy name. Available in Reverse Proxy mode. Matching occurs during the first HTTP request of the session. Once matched, the entire session is marked for debug output.	No default.

Examples

Flow trace with IP filters and flow detail level:

```
diagnose debug enable
diagnose debug flow filter flow-detail 2
diagnose debug flow filter client-ip 192.0.2.10
diagnose debug flow filter server-ip 203.0.113.5
diagnose debug flow trace start
```

HTTP flow trace by server policy:

```
diagnose debug enable
diagnose debug flow filter policy policy_1
diagnose debug flow filter http-detail 3
diagnose debug flow trace start
```

Trace flows matching a specific content routing policy:

```
diagnose debug enable
diagnose debug flow filter content-routing-policy root.policy
diagnose debug flow trace start
```

Related topics

- debug flow trace on page 789

debug flow filter module-bypass-info

If a certain security module doesn't block the request as expected, it might be due to the request being allowed by a precedent module, causing it to skip all the following modules. To check which modules might have such an effect, allowing a request to pass before reaching the current one, you can use this command.

To use this command, your administrator account's access control profile requires only `r` permission in any profile area. For details, see Permissions on page 46.

Syntax

```
diagnose debug flow filter module-bypass-info <module name>
```

Below is an example of the command and its printout:

```
FortiWeb # dia deb flow filter module-bypass-info IP-Reputation
<Enter>

Note:
The reference information below details which modules may be bypassed by IP-Reputation and which modules may bypass IP-Reputation.
[Bypasses Modules]:
   --> IP-Reputation

[Bypassed By]:
   --> Global-Allow-List
   --> IP-List
   --> IP-Reputation
```

Related topics

- debug info
- debug console timestamp
- debug application
- debug cli

debug flow reset

Use this command to reset the configuration of packet flow debug log messages.

To use this command, your administrator account's access control profile requires only `r` permission in any profile area. For details, see Permissions on page 46.

Syntax

```
diagnose debug flow reset
```

Related topics

- debug flow filter on page 785
- "debug flow filter module-detail" on page 1

debug flow trace

Use this command to trace the flow of packets through the FortiWeb appliance's processing modules and network stack.

Before you will be able to see any debug logs, you must first enable debug log output using the command debug on page 775.

To use this command, your administrator account's access control profile requires only `r` permission in any profile area. For details, see Permissions on page 46.

Syntax

```
diagnose debug flow trace {start | stop}
```

Variable	Description	Default
trace {start | stop}	Select whether to enable (`start`) or disable (`stop`) the recording of packet flow trace debug log messages.	No default.

Example

This example configures a filter based on the packet destination IP `192.0.2.48`, enables messages from each packet processing module, enables packet flow traces, then finally begins generating the debug logs that are enabled for output (in this case, only packet trace debug logs).

Because the filters are configured **before** debug logging is enabled, the administrator can type the filter without being interrupted by debug log output to the CLI.

```
diagnose debug flow filter server-ip 192.0.2.48
diagnose debug flow trace start
diagnose debug enable
```

Output:

```
FortiWeb # session_id=251 packet_id=0 policy_name=policy1 msg="Receive packet from client
      172.20.120.225:49428"
session_id=251 packet_id=0 msg="HTTP parsing client packet success"
session_id=251 packet_id=0 policy_name="policy1" msg="
Module name:WAF_IP_LIST_CHECK, Execution:3, Process error:0, Action:ACCEPT
Module name:WAF_X_FORWARD_FOR_PROCESS, Execution:3, Process error:0, Action:ACCEPT
Module name:WAF_GEO_BLOCK_LIST, Execution:3, Process error:0, Action:ACCEPT
Module name:WAF_PROTECTED_SERVER_CHECK, Execution:3, Process error:0, Action:ACCEPT
Module name:WAF_ALLOW_METHOD_PROCESS, Execution:3, Process error:0, Action:ACCEPT
Module name:WAF_HTTP_ACTIVE_SCRIPT, Execution:3, Process error:0, Action:ACCEPT
Module name:WAF_HTTP_SESSION_MANAGEMENT, Execution:4, Process error:1, Action:ACCEPT
Module name:WAF_HTTP_DOS_PREVENTION, Execution:3, Process error:0, Action:ACCEPT
Module name:WAF_LAYER4_DOS_PREVENTION, Execution:3, Process error:0, Action:ACCEPT
Module name:WAF_HTTP_AUTHENTICATION, Execution:3, Process error:0, Action:ACCEPT
Module name:WAF_GLOBAL_ALLOW_LIST, Execution:4, Process error:0, Action:ACCEPT
Module name:WAF_URL_ACCESS_POLICY, Execution:3, Process error:0, Action:ACCEPT
Module name:WAF_BRUCE_FORCE_LOGIN, Execution:3, Process error:0, Action:ACCEPT
Module name:HTTP_CONSTRAINTS, Execution:3, Process error:0, Action:ACCEPT
Module name:WAF_COOKIE_POISON, Execution:3, Process error:0, Action:ACCEPT
Module name:WAF_FILE_UPLOAD_RESTRICTION_POLICY, Execution:3, Process error:0, Action:ACCEPT
Module name:ROBOT_CONTROL_PROCESS, Execution:3, Process error:0, Action:ACCEPT
Module name:WAF_PARAMETWER_VALIDATION_PROCESS, Execution:3, Process error:0, Action:ACCEPT
Module name:WAF_CHUNK_DECODE, Execution:3, Process error:2, Action:ACCEPT
Module name:WAF_FILE_UNCOMPRESS, Execution:3, Process error:0, Action:ACCEPT
Module name:WAF_SIG_DETECT_PROCESS, Execution:4, Process error:1, Action:ACCEPT
Module name:WAF_HIDDEN_FIELD_PROCESS, Execution:3, Process error:0, Action:ACCEPT
Module name:WAF_URL_REWRITING, Execution:3, Process error:0, Action:ACCEPT
Module name:WAF_FILE_COMPRESS, Execution:3, Process error:0, Action:ACCEPT
Module name:WAF_CERTIFICATE_FORWARD, Execution:3, Process error:0, Action:ACCEPT
Module name:WAF_AUTOLEARN, Execution:4, Process error:0, Action:ACCEPT
Module name:WAF_HTTP_STATISTIC, Execution:3, Process error:0, Action:ACCEPT
"
session_id=502 packet_id=0 policy_name=policy1 msg="Receive packet from client 172.20.120.225:49429"
session_id=502 packet_id=0 msg="HTTP parsing client packet success"
session_id=502 packet_id=0 policy_name="policy1" msg="
Module name:WAF_IP_LIST_CHECK, Execution:3, Process error:0, Action:ACCEPT
Module name:WAF_X_FORWARD_FOR_PROCESS, Execution:3, Process error:0, Action:ACCEPT
Module name:WAF_GEO_BLOCK_LIST, Execution:3, Process error:0, Action:ACCEPT
Module name:WAF_PROTECTED_SERVER_CHECK, Execution:3, Process error:0, Action:ACCEPT
Module name:WAF_ALLOW_METHOD_PROCESS, Execution:3, Process error:0, Action:ACCEPT
Module name:WAF_HTTP_ACTIVE_SCRIPT, Execution:3, Process error:0, Action:ACCEPT
Module name:WAF_HTTP_SESSION_MANAGEMENT, Execution:4, Process error:1, Action:ACCEPT
Module name:WAF_HTTP_DOS_PREVENTION, Execution:3, Process error:0, Action:ACCEPT
Module name:WAF_LAYER4_DOS_PREVENTION, Execution:3, Process error:0, Action:ACCEPT
Module name:WAF_HTTP_AUTHENTICATION, Execution:3, Process error:0, Action:ACCEPT
Module name:WAF_GLOBAL_ALLOW_LIST, Execution:4, Process error:1, Action:ACCEPT
Module name:WAF_URL_ACCESS_POLICY, Execution:3, Process error:0, Action:ACCEPT
Module name:WAF_BRUCE_FORCE_LOGIN, Execution:1, Process error:0, Action:ACCEPT
Module name:HTTP_CONSTRAINTS, Execution:1, Process error:0, Action:ACCEPT
Module name:WAF_COOKIE_POISON, Execution:3, Process error:0, Action:ACCEPT
Module name:WAF_FILE_UPLOAD_RESTRICTION_POLICY, Execution:3, Process error:0, Action:ACCEPT
Module name:ROBOT_CONTROL_PROCESS, Execution:1, Process error:0, Action:ACCEPT
Module name:WAF_PARAMETWER_VALIDATION_PROCESS, Execution:1, Process error:0, Action:ACCEPT
Module name:WAF_CHUNK_DECODE, Execution:3, Process error:2, Action:ACCEPT
Module name:WAF_FILE_UNCOMPRESS, Execution:3, Process error:0, Action:ACCEPT
Module name:WAF_SIG_DETECT_PROCESS, Execution:1, Process error:0, Action:ACCEPT
Module name:WAF_HIDDEN_FIELD_PROCESS, Execution:3, Process error:0, Action:ACCEPT
```

```
Module name:WAF_URL_REWRITING, Execution:3, Process error:0, Action:ACCEPT
Module name:WAF_FILE_COMPRESS, Execution:3, Process error:0, Action:ACCEPT
Module name:WAF_CERTIFICATE_FORWARD, Execution:3, Process error:0, Action:ACCEPT
Module name:WAF_AUTOLEARN, Execution:4, Process error:0, Action:ACCEPT
Module name:WAF_HTTP_STATISTIC, Execution:3, Process error:0, Action:ACCEPT
"
session_id=0 packet_id=0 policy_name=policy1 msg="Receive packet from client 192.0.2.48:47368"
session_id=1 packet_id=0 policy_name=policy1 msg="Receive packet from client 192.0.2.48:59682"
session_id=252 packet_id=0 policy_name=policy1 msg="Receive packet from client 192.0.2.48:47376"
session_id=503 packet_id=0 policy_name=policy1 msg="Receive packet from client 192.0.2.48:59687"
session_id=754 packet_id=0 policy_name=policy1 msg="Receive packet from client 192.0.2.48:47382"
session_id=2 packet_id=0 policy_name=policy1 msg="Receive packet from client 192.0.2.48:47385"
session_id=253 packet_id=0 policy_name=policy1 msg="Receive packet from client 192.0.2.48:47387"
diag debug disable

FortiWeb #
```

Session lines contain the name of the matching server policy (`policy_name`), the packet identifier (`packet_ID`), and TCP session ID (`session_id`), as well as a log message (`msg`) indicating one or more of the following:

- The source IP address and port number of the packet (e.g. `Receive packet from client 192.0.2.225:49428`)
- The success or failure of FortiWeb's HTTP parser's attempt to analyze the HTTP headers and payload of the packet into pieces that can be scanned or modified by modules (e.g. `HTTP parsing client packet success` or `Packet dropped by detection module,and module number=11`)

If the debug logs indicate that the HTTP protocol parser may be encountering an error condition, you can temporarily disable it and allow packets to bypass it to verify if this is the case. For details, see noparse {enable | disable} on page 166.

If enabled, module lines contain messages from each FortiWeb feature module as it processes the packet (e.g. `Module name:WAF_PROTECTED_SERVER_CHECK` for the feature that tests for an allowed `Host:` name in the request). The module logs are displayed in their order of execution; for details, see the *FortiWeb Administration Guide*:

https://docs.fortinet.com/document/fortiweb

These messages indicate:

- Whether or not the module executed, and if not, the reason (e.g. `Execution:1`)
- Processing errors, if any (e.g. `Process error:0`)
- Whether a module has allowed or blocked the packet (e.g. `Action:ACCEPT` or `Action:FOLLOWUP_ACCEP`)

For non-execution reasons, possible status codes are:

- `Execution:1`–The module is disabled, and therefore is being skipped.
- `Execution:2`–The module is not supported in the current deployment mode, and therefore is being skipped.
- `Execution:3`–The client IP address is allowlisted, and therefore the module is being skipped.
- `Execution:4`–URL access policy has caused the module to be skipped.

Related topics

- server-policy policy on page 151
- server-policy server-pool on page 184
- server-policy custom-application application-policy on page 1
- waf url-access url-access-rule on page 693
- policy on page 828
- debug flow filter on page 785
- "debug flow filter module-detail" on page 1
- debug on page 775

debug ha

Use this command debug HA related issues.

Syntax

```
diagnose debug ha
```

- `all {enable | disable}`
  Enable to track all debugs.
- `arp {enable | disable}`
  Enable to track HA ARP.
- `basic {enable | disable}`
  Enable to debug basic issues. The output including configuration, upgrade, file, and messages.
- `cloud {enable | disable}`
  Enable to debug for public cloud platform HA AP switching.
- `configuration {enable | disable}`
  Enable to track HA configuration synchronization.
- `errors {enable | disable}`
  Enable to track HA errors during synchronization.
- `file {enable | disable}`
  Enable to track any file in HA synchronization.
- `heartbeat {enable | disable}`
  Enable to track HA heartbeat packets.
- `list`
  List all debug settings.
- `message {enable | disable}`
  Enable to track HA sync messages, such as GEODB/Licenses.
- `state {enable | disable}`
  Enable to track HA state changes and monitor ports state changes.
- `udp-tunnel {enable | disable}`
  Enable to track HA unicast.

- `upgrade {enable | disable}`
  Enable to track firmware upgrade.
- `write-to-debugfile {enable | disable}`
  Enable to write HA console debug output to file.

debug info

Use this command to display the current global debug state, active debug filters, and debug levels for CLI and selected modules. This provides visibility into the FortiWeb debug environment, including all flow-level and module-level settings.

To use this command, your administrator account's access control profile requires only `r` permission in any profile area. For details, see Permissions on page 46.

Syntax

```
diagnose debug info
```

Example

```
diagnose debug application ssl 8
diagnose debug application dssl 8
diagnose debug application ustack 8
diagnose debug enable
diagnose debug duration 60
diagnose debug flow filter client-ip 192.0.2.10
diagnose debug flow filter content-routing-policy root.policy1
diagnose debug info
```

Output similar to the following appears:

```
global debug state:             enable
debug output:                   disable
console output:                 disable
serial output:                  disable
debug timestamp:                disable
sysinit output:                 disabled
writedisk:                      0
CLI debug level:                3
Modules disabled status:        disabled
Modules disabled:               None
flow-filter:
    flow trace: 1
    filter: client_ip 192.0.2.10
    filter: content-routing-policy root.policy1
    filter: flow-detail 1
```

```
    filter: http-detail 0
    filter: session-detail:     0
    filter: url condition not set.
```

If no debug levels or filters have been configured, only default values appear:

```
FortiWeb # diagnose debug info
global debug state:             disable
debug output:                   disable
console output:                 disable
debug timestamp:                disable
CLI debug level:                3
```

Related topics

- debug reset
- debug
- debug application
- debug console timestamp
- debug cli

debug init

Use this command to record packet flow trace log messages.

Before you will be able to see any debug logs, you must first enable debug log output using the command debug on page 775.

To use this command, your administrator account's access control profile requires only `r` permission in any profile area. For details, see Permissions on page 46.

Syntax

```
diagnose debug init {enable | disable}
```

Variable	Description	Default
init {enable | disable}	Select whether to enable (`start`) or disable (`stop`) the recording of packet flow trace debug log messages. If you omit the selection, the CLI displays the current timestamp status: `init output: disabled`	No default.

debug jemalloc-heap

If the jemallc profile is activated and the memory usage exceeds the configured threshold, the heap file will be generated in directory /var/log/gui_upload.

You can use this command to show or clear the heap files. At most 10 heap files are kept on device.

Syntax

```
diagnose debug jemalloc-heap {show | clear}
```

Related commands

To activate or deactivate jemallc profile:

```
diagnose system kill 43 <pid_of_proxyd>
```

To parse the heap file via jeprof tool:

```
diagnose system jeprof
```

diagnose debug jemalloc proxyd

The `diagnose debug jemalloc proxyd` command provides debugging tools for analyzing memory allocation and detecting potential leaks in proxyd. It offers options for generating memory dump files, inspecting object pools, and identifying long-lived objects that may indicate memory retention issues.

Specifically, the `diagnose debug jemalloc proxyd pdump-leaks` command dumps objects that have existed for a specified duration, helping to identify potential memory leaks by listing persistent objects in `proxyd`'s object pools. Each object pool allocates fixed-size memory chunks for tasks such as packet handling, session tracking, and connection management. By monitoring object lifespan, FortiWeb detects abnormal memory retention that may indicate a leak.

To maintain efficiency and prevent excessive output, the command limits the number of dumped entries to 100 per object pool per working thread.

Syntax

```
diagnose debug jemalloc proxyd dump
diagnose debug jemalloc proxyd pdump
diagnose debug jemalloc proxyd pdump-leaks <minutes>
```

`dump`	Generates a memory dump file for `proxyd` using the jemalloc allocator.
`pdump`	Dumps object pool details, including active allocations.
`pdump-leaks <minutes>`	Identifies and logs object pool entries that have persisted beyond the expected lifespan, aiding in memory leak detection. If `<minutes>` is not provided, the default is 30 minutes.

Examples

```
/var/log/gui_upload# cat proxyd-objpool-3488-1732325050.txt
                    objpool name:            total  incsize  objsize nodesize lock     nalloced
   nfreed
            worker_run-1-packet_t:          4136000      500     4096     4136   no         1000
      963
Total age > 2 min: 37
          worker_run-1-session_t:           188000      500      336      376   no          500
      499
session age 3 min, policy server_policy1
Total age > 2 min: 1
           worker_run-1-pt_stream_t:        280000      500      520      560   no          500
      498
stream age 3 min, dir 1, policy server_policy1
stream age 3 min, dir 0, policy server_policy1
Total age > 2 min: 2
            worker_run-0-packet_t:          2068000      500     4096     4136   no          500
      500
Total age > 2 min: 0
          worker_run-0-session_t:           188000      500      336      376   no          500
      500
Total age > 2 min: 0
           worker_run-1-connection_t:       536000     1000      496      536   no         1000
      998
connection age 3 min, (192.168.2.1:14162->192.168.2.2:80)
connection age 3 min, (10.159.28.221:56012->10.159.28.226:443)
Total age > 2 min: 2
           worker_run-0-pt_stream_t:        280000      500      520      560   no          500
      500
Total age > 2 min: 0
           worker_run-1-pt_service_t:       948000      500     1856     1896   no          500
      498
service age 3, type 0, policy server_policy1
service age 3, type 0, policy server_policy1
Total age > 2 min: 2
           worker_run-1-pt_substream:       320000      500      600      640   no          500
      498
substream 321e0528 age 3 min, status 0, peer 321e07a8, policy server_policy1
substream 321e07a8 age 3 min, status 0, peer 321e0528, policy server_policy1
Total age > 2 min: 2
           worker_run-0-connection_t:       536000     1000      496      536   no         1000
     1000
```

```
Total age > 2 min: 0
       worker_run-0-pt_service_t:           948000      500     1856     1896   no          500
      500
Total age > 2 min: 0
       worker_run-0-pt_substream:           320000      500      600      640   no          500
      500
Total age > 2 min: 0
```

debug netstatlog

Use this command to record the print information of the `netstat -anlt` when the proxyd program is overloaded.

Before you will be able to see any debug logs, you must first enable debug log output using the command enable-debug-log {enable | disable} on page 382.

To use this command, your administrator account's access control profile requires only `r` permission in any profile area. For details, see Permissions on page 46.

Syntax

```
diagnose debug netstatlog show
diagnose debug netstatlog clear
```

Related Topic

- debug on page 775

debug nowaf

Use this command to disable all or some of security modules in a policy to narrow down the root cause.

To use this command, your administrator account's access control profile requires only `r` permission in any profile area. For details, see Permissions on page 46.

Syntax

```
diagnose debug nowaf enable
diagnose debug nowaf set <adom name>.< policy name> <module name1> <module name2> … <module nameN>
```

```
FortiWeb # diagnose debug nowaf set root.FWB_Policy_Default_AutoTest
active-script                       active script module
custom-page                         custom page and ajax block module
module-ctrl                         module control
url-record                          url record module
recaptcha                           recpatcha module
allow-hosts                         protected hostnames module
allow-method                        allow method module
anomaly-detection                   anomaly detection module
api-gateway                         api gateway module
authentication                      authentication module
biometrics-based-bot-detection      biometrics based bot detection module
bot-deception                       bot deception module
bot-detection                       bot detection module
bot-mitigation                      bot mitigation module
brute-force-login                   brute force login module
chunk-decode                        chunk decode module
chunk-encode                        chunk_encode module
client-cert-forward                 client cert forward module
client-management                   client management module
clientid-block-period               client id block period
cookie-security                     cookie security module
cors-protection                     cors protection module
csrf-protection                     csrf protection module
```

Related topics

- debug info
- debug console timestamp
- debug application
- debug cli

debug pkcs11providerlog

Use this command to view debug logs for PKCS#11 provider operations, including key access and cryptographic function calls.

Syntax

```
diagnose debug pkcs11providerlog show
diagnose debug pkcs11providerlog clear
```

Variable	Description	Default
show	Displays debug logs for PKCS#11 provider operations, including key access and cryptographic function calls.	No default.
clear	Clears the debug logs for PKCS#11 provider operations, including key access and cryptographic function calls.	No default.

Related topics:

- system nethsm on page 360
- debug primuslog on page 799

debug proxy log

Use this command to print the logs generated by proxyd.

Syntax

```
diagnose debug proxy log {1 | 2 | 3}
```

1: Print error messages.

2: Print error messages and warnings.

3: Print error messages, warnings, and other logs.

Related Topic

- debug on page 775

debug primuslog

Use this command to view debug logs related to the Primus HSM integration.

Syntax

```
diagnose debug primuslog show
```

```
diagnose debug primuslog clear
```

Variable	Description	Default
show	Displays debug logs related to the Primus HSM integration.	No default.
clear	Clears the debug logs related to the Primus HSM integration.	No default.

Related topics:

- system nethsm on page 360
- debug pkcs11providerlog on page 798

debug reset

Use this command to reset all debug log settings to default settings for the currently installed firmware version. If you have not upgraded or downgraded the firmware, this restores the factory default settings.

To use this command, your administrator account's access control profile requires only `r` permission in any profile area. For details, see Permissions on page 46.

Syntax

```
diagnose debug reset
```

Related topics

- debug info
- debug console timestamp
- debug application
- debug cli

debug shell-access history show

Use this command to show the history of commands executed in Shell.

To use this command, your administrator account's access control profile must have `rw` or `w` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
diagnose debug shell-access history show
```

Please note that to view the history you must have enabled shell-access in `config system global`.

Run the following commands to enable shell access and specify trusted hosts.

```
config system global
   set shell-access enable
   set shell-history-size <int>
   set shell-trusthostv4 <IPv4_address_range>
   set shell-trusthostv6 <IPv6_address_range>
end
```

For more information, see config system global.

debug trace report

Use this command to start or stop collecting debug logs.

Only administrators or users with the `prof_admin` access file have permission to this command.

Syntax

```
diagnose trace report {start | stop} on page 801
```

Variable	Description	Default
trace report {start | stop}	Select whether to enable (`start`) or disable (`stop`) collecting debug logs.	No default

Related topics

- debug on page 775

debug trace tcpdump

Use this demand to trace packets with tcpdump.

Syntax

```
diagnose trace tcpdump "<filter_str>" {any | "<interface_str>"} "<max-packet-count_int>" {reset}
```

Variable	Description	Default
"<filter_str>"	Specify which protocols and port numbers that you do or do not want to capture, such as `'tcp and port 80 and host IP1 and ( IP2 or IP3 )'`, or leave this field blank for no filters. **Note** that please use the same filter expression as `tcpdump` for this filter, you can refer to the Linux main page of TCPDUMP (http://www.tcpdump.org/manpages/tcpdump.1.html).	No default
{any | "<interface_str>"}	Select the network interface on which you want to capture packets, such as `port1`, or `any` for all interfaces.	`any`
"<max-packet-count_int>"	Specify the maximum packets you want to capture for the policy. Capture will stop automatically if the total captured packets hit the count.	`4000`
{reset}	Reset all the settings to default.	No default

Related topics

- debug on page 775

debug upload

Use this command to upload debug logs to an FTP server. This can be used if you want to view logs outside of the CLI, or if you need to provide debug log files to Fortinet Customer Service & Support:

https://support.fortinet.com

To use this command, your administrator account's access control profile requires only `r` permission in any profile area. For details, see Permissions on page 46.

Syntax

```
diagnose debug upload <ftp_ipv4> <user_str> <password_str> <upload-dir_str>
```

Variable	Description	Default
<ftp_ipv4>	Enter the IP address or domain name of the FTP server.	No default.

Variable	Description	Default
<user_str>	Enter a valid user account name to log in to the FTP server.	No default.
<password_str>	Enter the password for the user account.	No default.
<upload-dir_str>	Enter the directory path on the FTP server where FortiWeb will upload files.	No default.

Example

```
diagnose debug upload 192.0.2.5 user1 1passw0Rd C:/uploads
```

Related topics

- debug on page 775
- db rebuild on page 866

ha synchronize health-check

For FortiWeb appliances in Active-Passive and Active-Active-Standard modes, use this command to immediately synchronize the back-end servers' health check status from the primary to the secondary FortiWeb nodes. This ensures that when an HA fail-over occurs, the new primary FortiWeb appliance can immediately know the health status of the back-end servers, ensuring seamless traffic continuity during fail-over.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
execute ha synchronize health-check
```

Please note that by default the health check status is synchronized when there are changes in the back-end server health check status. Use this command only when you want to synchronize health check status immediately.

hardware bypass info

Use this command to display bypass firmware version information.

To use this command, your administrator account's access control profile must have at least `r` permission to the `sysgrp` area. For details, see Permissions on page 46.

Please note this command is only supported on FortiWeb 2000F, 3000F and 4000F.

Syntax

```
diagnose hardware bypass info
```

hardware check

Use this command to check the appliance hardware for errors. In the case of FortiWeb, this command checks virtual hardware–the vCPUs.

For example, to troubleshoot a logging problem, use the following command to check the log disk for errors:

```
diagnose hardware check logdisk
```

If the disk does not pass the check, it is likely the source of the problem.

Syntax

```
diagnose hardware check {all | psu | sslcard | cpu |logdisk | memory |nic}
```

Variable	Description	Default
{all | psu | sslcard | cpu |logdisk | memory |nic}	Enter the type of hardware to check, or enter `all` to check all hardware. For FortiWeb-VM versions, the `sslcard` option is not available. **Note:** • `sslcard` is only supported on FortiWeb 600D, 1000D, 3000D, 3000DFSX, 4000D, 1000E, 2000E, 3000E, 3010E, 4000E, 2000F, 3000F, and 4000F. • `psu` is only supported on FortiWeb2000E, 3000E, 3010E, 4000E, 2000F, 3000F and 4000F.	No default.

Example

The following command checks the log disk:

```
diagnose hardware check logdisk
```

Output similar to the following appears in the CLI:

```
logdisk check Pass
size Pass 1952
disk-number Pass 2
raid-level Pass raid1
```

hardware cpld info

Use this command to display the cpld firmware version information.

To use this command, your administrator account's access control profile must have at least `r` permission to the `sysgrp` area. For details, see Permissions on page 46.

Please note this command is only supported on FortiWeb 2000F, 3000F and 4000F.

Syntax

```
diagnose hardware cpld info
```

hardware cpu

Use this command to display a list of hardware specifications on the FortiWeb appliance for CPUs. In the case of FortiWeb-VM, this command displays virtual hardware information–the vCPUs.

To use this command, your administrator account's access control profile must have at least `r` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
diagnose hardware cpu [list]
```

Example

```
diagnose hardware cpu list
```

Output similar to the following appears in the CLI:

```
processor : 0
vendor_id : GenuineIntel
cpu family : 6
model : 23
model name : Intel(R) Xeon(R) CPU E5405 @ 2.00GHz
```

```
stepping : 10
cpu MHz : 1995.056
cache size : 6144 KB
physical id : 0
siblings : 4
core id : 0
cpu cores : 4
fpu : yes
fpu_exception : yes
cpuid level : 13
wp : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov pat pse36 clflush
      dts acpi mmx fxsr sse sse2 ss ht tm syscall nx lm constant_tsc pni monitor ds_cpl vmx tm2 cx16
      xtpr lahf_lm
bogomips : 3994.51
clflush size : 64
cache_alignment : 64
address sizes : 38 bits physical, 48 bits virtual
power management:
```

Related topics

- system top on page 848
- hardware mem on page 809
- system performance on page 903

hardware fail-open

Fail-to-wire/bypass behavior is available for specific models only. For details, see system fail-open on page 292.

hardware harddisk

Use this command to display a list of hard disks and their capacity in megabytes (MB) in the FortiWeb appliance. In the case of FortiWeb-VM, this will instead be for virtual hardware.

To use this command, your administrator account's access control profile must have at least `r` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
diagnose hardware harddisk [list]
```

Example

```
diagnose hardware harddisk list
```

Output similar to the following appears in the CLI:

```
name size(M)
sda 625.56
sdb 32212.25
```

On a FortiWeb 1000C with a single properly functioning internal hard disk plus its internal flash disk, this command should show two file systems:

```
name size(M)
sda 1000204.89
sdb 1971.32
```

where `sda`, the larger file system, is from the hard disk used to store non-configuration/firmware data. If it does not appear, you can reboot and attempt to run a file system check to fix the file system and mount it.

Similarly FortiWeb 3000D shows:

```
name size(M)
sda 1999844.15
sdb 2055.21
```

Related topics

- hardware logdisk info on page 808
- hardware raid list on page 813
- system flash on page 832
- system mount on page 847
- system performance on page 903

hardware interrupts

Use this command to display input/output (I/O) interrupt requests (IRQs) on the FortiWeb appliance. (In the case of FortiWeb-VM, this will instead be for virtual hardware.)

To use this command, your administrator account's access control profile must have at least `r` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
diagnose hardware interrupts list
```

Example

```
diagnose hardware interrupts list
```

Output similar to the following appears in the CLI:

```
CPU0
0: 225 IO-APIC-edge timer
1: 597 IO-APIC-edge i8042
2: 0 XT-PIC-XT-PIC cascade
12: 6 IO-APIC-edge i8042
14: 0 IO-APIC-edge ide0
15: 0 IO-APIC-edge ide1
16: 151462 IO-APIC-fasteoi vmxnet ether
17: 1080446 IO-APIC-fasteoi ioc0, vmxnet ether
18: 357613 IO-APIC-fasteoi vmxnet ether
19: 150107 IO-APIC-fasteoi vmxnet ether
NMI: 0 Non-maskable interrupts
LOC: 103791489 Local timer interrupts
SPU: 0 Spurious interrupts
PMI: 0 Performance monitoring interrupts
IWI: 0 IRQ work interrupts
RES: 0 Rescheduling interrupts
CAL: 0 Function call interrupts
TLB: 0 TLB shootdowns
MCE: 0 Machine check exceptions
MCP: 346 Machine check polls
ERR: 0
MIS: 0
```

Related topics

- system performance on page 903

hardware logdisk info

Use this command to display the capacity, partitions, mount status, and RAID level (if any) of the hard disk FortiWeb uses to store logs and other data. For FortiWeb-VM, information for virtual hardware (the vDisk) is displayed.

To use this command, your administrator account's access control profile must have at least `r` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
diagnose hardware logdisk info
```

Example

This example shows normal output for a FortiWeb-VM installation: there is no RAID, and it has been allocated a 40 GB vDisk. If the disk were mounted as read-only, this would indicate that the disk had failed to mount normally, and would be the cause if no new log messages were being recorded.

```
diagnose hardware logdisk info
```

The CLI displays output that is similar to the following:

```
disk number: 1
disk[0] size: 31.46GB
raid level: no raid exists
partition number: 1
mount status: read-write
```

Related topics

- hardware harddisk on page 806
- log on page 815
- system mount on page 847
- system performance on page 903

hardware mem

Use this command to display the usage statistics of ephemeral memory (RAM), including swap pages and shared memory (`Shmem`), on the FortiWeb appliance. In the case of FortiWeb-VM, this will instead be for virtual hardware—the vRAM.

To use this command, your administrator account's access control profile must have at least `r` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
diagnose hardware mem list
```

Example

```
diagnose hardware mem list
```

Output similar to the following appears in the CLI:

```
MemTotal: 1026808 kB
MemFree: 397056 kB
```

```
Buffers: 121248 kB
Cached: 86112 kB
SwapCached: 0 kB
Active: 324664 kB
Inactive: 66608 kB
Active(anon): 186544 kB
Inactive(anon): 8856 kB
Active(file): 138120 kB
Inactive(file): 57752 kB
Unevictable: 46008 kB
Mlocked: 46008 kB
SwapTotal: 0 kB
SwapFree: 0 kB
Dirty: 1564 kB
Writeback: 0 kB
AnonPages: 229920 kB
Mapped: 12632 kB
Shmem: 11488 kB
Slab: 36564 kB
SReclaimable: 6552 kB
SUnreclaim: 30012 kB
KernelStack: 640 kB
PageTables: 8820 kB
NFS_Unstable: 0 kB
Bounce: 0 kB
WritebackTmp: 0 kB
CommitLimit: 513404 kB
Committed_AS: 1216900 kB
VmallocTotal: 34359738367 kB
VmallocUsed: 38960 kB
VmallocChunk: 34359682723 kB
DirectMap4k: 8192 kB
DirectMap2M: 1040384 kB
```

Related topics

- policy on page 828
- system flash on page 832
- system top on page 848
- system performance on page 903

hardware nic

Use this command to display a list of hardware specifications for the network interface card (NIC) physical ports on the FortiWeb appliance. (In the case of FortiWeb-VM, this will instead be for virtual hardware–the vNICs–and therefore the driver will be a virtual driver such as `vmxnet`, and the interrupt will be a virtual IRQ address.)

If the FortiWeb's network hardware has failed, this command can help to detect it. For example, if you know that the network cable is good and the configuration is correct, but this command displays `Link detected: no`), the physical network port may be broken.

To use this command, your administrator account's access control profile must have at least `r` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
diagnose hardware nic list [<interface_name>]
```

Variable	Description	Default

list [<interface_name>]	Optionally, enter the name of a physical network interface, such as `port1`, to display its link status, configuration, hardware information, status, and connectivity statistics such as collision errors.
	If you omit the name of a NIC port, the CLI returns a list of all physical network interfaces, as well as the loopback interface (`lo`):
	`lo`
	`port1`
	`port2`
	`port3`
	`port4`
	
	Note: The detected physical link status from this command is **not** the same as its configured administrative status.
	For example, even though you have used config system interface on page 352 to configure port1 with `set status down`, if the cable is physically plugged in, `diagnose hardware nic list port1` will indicate correctly that the link is up (`Link detected: yes`).
		No default.

Example

```
diagnose hardware nic list
```

Output similar to the following appears in the CLI:

```
driver vmxnet
version 2.0.9.0
firmware-version N/A
bus-info 0000:00:11.0

Supported ports TP
Supported link modes 1000baseT/Full
Supports auto-negotiation: No
Advertised link modes: Not reported
```

```
Advertised auto-negotiation: No

Speed: 1000Mb/s
Duplex: Full
Port: Twisted Pair
PHYAD 0
Transceiver: internal
Auto-negotiation off
Link detected yes

Link encap Ethernet
HWaddr 00:0C:29:FE:2B:47
INET addr 10.1.1.221
Bcast 10.1.1.221
Mask 255.255.255.255
FLAG UP BROADCAST RUNNING MULTICAST
MTU 1500
MEtric 1
Outfill 0
Keepalive 6846704

Interrupt 18
Base address 0x1400

RX packets 171487
RX errors 167784
RX dropped 0
RX overruns 0
RX frame 0
TX packets 202724
TX errors 0
TX dropped 0
TX overruns 0
TX carrier 0
TX collisions 0
TX queuelen 1000
RX bytes 72772373 (69.4 Mb)
TX bytes 32288070 (30.7 Mb)
```

Related topics

- system interface on page 351
- hardware interrupts on page 807
- network ip on page 817
- network sniffer on page 821
- network tcp list on page 826
- network udp list on page 827
- system ha mac on page 839
- traceroute on page 898
- system performance on page 903

hardware raid list

Use this command to run a diagnostic test of each hard disk in the RAID array that FortiWeb has. It also displays the capacity and RAID level. Because FortiWeb-VM has no RAID, this command is not applicable to it.

To use this command, your administrator account's access control profile must have at least `r` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
diagnose hardware raid list
```

Example

```
diagnose hardware raid list
```

Output similar to the following (from a FortiWeb 3000D) appears in the CLI window:

```
disk-number size(M) level
0(OK),1(OK), 1877274 raid1
```

Related topics

- system raid on page 372
- hardware harddisk on page 806
- system mount on page 847
- create-raid level on page 861
- create-raid rebuild on page 864
- system performance on page 903

hardware raid-card info

Use this command to display raid-card firmware version information.

To use this command, your administrator account's access control profile must have at least `r` permission to the `sysgrp` area. For details, see Permissions on page 46.

Please note this command is only supported on FortiWeb 2000F, 3000F and 4000F.

Syntax

```
diagnose hardware raid-card info
```

index

Use this command to view (`list`) or clear logs, or to examine (`show`) or configure logs.

To use this command, your administrator account's access control profile must have `rw` or `w` permission to the `loggrp` area. For details, see Permissions on page 46.

Syntax

```
diagnose index all show
diagnose index all clear
diagnose index {alog | dlog | elog | tlog} clear
diagnose index {alog | dlog | elog | tlog} list <index_int>
diagnose index {alog | dlog | elog | tlog} set <queue_int>
diagnose index {alog | dlog | elog | tlog} show
```

Variable	Description	Default
index {alog | dlog | elog | tlog}	Select which log files to view or affect: • `alog`–Attack logs. • `dlog`–Debug logs. • `elog`–Event logs. • `tlog`–Traffic logs.	No default.
list <index_int>	Enter the number of most recent logs to display.	No default.
set <queue_int>	Enter the maximum length of the log before it is flushed and written to disk. The valid range is 0-32,768.	No default.

Example

This example displays a list of logs processed.

```
diagnose index all show
```

Related topics

- log attack-log on page 61
- log event-log on page 71
- log traffic-log on page 95
- debug on page 775
- hardware logdisk info on page 808

log

Use this command to view (`list`) or clear log messages, or to examine (`show`) or configure logging queues.

To use this command, your administrator account's access control profile must have `rw` or `w` permission to the `loggrp` area. For details, see Permissions on page 46.

Syntax

```
diagnose log {all | alog | dlog | elog | tlog} [show | start | stop]
```

Variable	Description	Default
log {all | alog | dlog | elog | tlog}	Select which log files to view: • `all`–All logs • `alog`–Attack logs • `dlog`–Debug logs • `elog`–Event logs • `tlog`–Traffic logs	No default.
[show | start | stop]	Displays the log messages or specifies a time to start or stop logging.	

Example

This example sets a time to start the display of log messages, displays log information starting at that time, and stops the display of log messages. The appliance's responses are displayed in **bold**.

```
FortiWeb # dia log all start
start tracking log
FortiWeb # dia log all show
      time span starts from 2014-07-31 18:31:53.000000
          Total time span is 10.754097 seconds
          Time spent on waiting is 10.527346 seconds
         Time spent on preprocessing is 0.000000 seconds
         event log processed: 0
```

```
        traffic log processed: 0
        attack log processed: 0
FortiWeb # dia log all stop
stop tracking log
```

Related topics

- log attack-log on page 61
- log event-log on page 71
- log traffic-log on page 95
- debug on page 775
- hardware logdisk info on page 808

network arp

Use this command to add or delete an address resolution protocol (ARP) table entry, or to display the ARP table. The ARP table is used to resolve the IP addresses that correspond to a network interface card's physical MAC address, thereby determining which IP addresses can be reached directly through a link.

To use this command, your administrator account's access control profile must have `rw` or `w` permission to the `sysgrp` area. For details, see "Permissions" on page 1.

Syntax

```
diagnose network arp add <interface_name> {<interface_ipv4> | interface_ipv6>} <mac-address_hex>
diagnose network arp delete <interface_name> {<interface_ipv4> | interface_ipv6>}
diagnose network arp list
diagnose network arp flush
```

Variable	Description	Default
<interface_name>	Enter the name of the interface to add or delete from the ARP table.	No default.
{<interface_ipv4> | interface_ipv6>}	Enter the IP address of the interface.	No default.
<mac-address_hex>	Enter the MAC address of the interface.	No default.

Example

This example displays a list of ARP table entries.

```
FortiWeb # diagnose network arp list
port_ha: 169.254.0.2 fc:aa:14:75:c0:e0 reachable
port1: 10.0.0.1 00:09:0f:77:11:1d stale
port2: 10.65.13.3 00:0c:29:02:f1:bb reachable
lo: 10::13:101 0: 0: 0: 0: 0: 0 noarp
port2: ff02::16 33:33: 0: 0: 0:16 noarp
vlan66: ff02::16 33:33: 0: 0: 0:16 noarp
port7: ff02::2 33:33: 0: 0: 0: 2 noarp
port_ha: ff02::2 33:33: 0: 0: 0: 2 noarp
port_tn: ff02::16 33:33: 0: 0: 0:16 noarp
port7: ff02::16 33:33: 0: 0: 0:16 noarp
port_ha: ff02::16 33:33: 0: 0: 0:16 noarp
gretap0: ff02::16 33:33: 0: 0: 0:16 noarp
```

Related topics

- network route on page 818
- network ip on page 817
- router static on page 102
- system interface on page 351

network ip

Use these commands to add or delete a network interface, loopback interface, or virtual server (which functions somewhat like a virtual network interface) IP address, or to list the table of network interface IPs.

Back up the configuration before deleting a network interface table entry. FortiWeb presents no confirmation message, and in some cases such as the loopback interface, provides no undelete mechanism.

To use this command, your administrator account's access control profile must have `rw` or `w` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
diagnose network ip add <interface_name> {<interface_ipv4> | interface_ipv6} {<interface_
      ipv4mask> |<interface_v6mask>}
diagnose network ip delete <interface_name> {<interface_ipv4> | interface_ipv6}
diagnose network ip list
```

Variable	Description	Default
<interface_name>	Enter the name of the interface to add or delete from the network interface table.	No default.

Variable	Description	Default
{<interface_ipv4> | interface_ipv6}	Enter the IP address of the network interface.	No default.
{<interface_ ipv4mask> |<interface_ v6mask>}	Enter the subnet mask.	No default.

Example

This example displays a list of enabled network interfaces, including the loopback (`lo`).

```
FortiWeb # diagnose network ip list
lo: 127.0.0.1/24
port1: 10.200.123.2/16
lo: ::1/128
port1: fe80::20c:29ff:fec3:34a6/64
port5: fe80::20c:29ff:fec3:34ce/64
port9: fe80::20c:29ff:fec3:34f6/64
port2: fe80::20c:29ff:fec3:34b0/64
port6: fe80::20c:29ff:fec3:34d8/64
port10: fe80::20c:29ff:fec3:3400/64
port3: fe80::20c:29ff:fec3:34ba/64
port7: fe80::20c:29ff:fec3:34e2/64
port4: fe80::20c:29ff:fec3:34c4/64
port8: fe80::20c:29ff:fec3:34ec/64
port_tn: fe80::1854:64ff:fe68:fd55/64
```

Example

This example deletes the IP of a virtual server on port2.

```
diagnose network ip delete port1 192.0.2.221
```

Related topics

- network route on page 818
- network arp on page 816
- system interface on page 351

network route

Use this command to add or delete a route in the routing table, or to list the routing table.

This command displays **all** individual entries, including automatically configured routes for the loopback interface and VLANs, and also displays each route's priority. Unlike network rtcache on page 820, it displays all known routes, regardless of whether they have been recently used.

Do not delete routes unless you are sure. FortiWeb does not ask you to confirm the deletion, and there is no undelete mechanism. For example, if you accidentally delete a loopback interface route, you must recreate it manually.

To use this command, your administrator account's access control profile must have `rw` or `w` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
diagnose network route add {<source_ipv4mask> | <source_ipv6mask>} <delay_int> {<destination_
    ipv4mask> | <destination_ipv6mask>} <delay_int> <delay_int><priority_int>
diagnose network route delete {<source_ipv4mask> | <source_ipv6mask>} <delay_int> {<destination_
    ipv4mask> | <destination_ipv6mask>} <delay_int> <delay_int> <priority_int>
diagnose network route list
```

Variable	Description	Default
{<source_ipv4mask> | <source_ipv6mask>}	Enter the IP address and network mask of the source, separated by a space.	No default.
<interface_name>	Enter the name of the interface to add or delete from the routing table.	No default.
{<destination_ipv4mask> | <destination_ipv6mask>}	Enter the IP address and network mask of the source, separated by a space.	No default.
{<gateway_ipv4> | <gateway_ipv6>}	Enter the IP address of the next hop router (sometimes called a gateway) to which this route sends packets.	No default.
<priority_int>	Enter the priority of the route in the routing table. The lower the number, the higher the priority. The valid range is 1-256.	`0`

Example

This example displays the routing table.

```
FortiWeb # diagnose network route list
0.0.0.0/0(none)->10.200.0.0/16(port1) via 0.0.0.0, pri 0 prot 2 scope 253
::/0(none)->fe80::/64(port1) via ::, pri 256 prot 2 scope 0
::/0(none)->fe80::/64(port2) via ::, pri 256 prot 2 scope 0
::/0(none)->fe80::/64(port3) via ::, pri 256 prot 2 scope 0
::/0(none)->fe80::/64(port4) via ::, pri 256 prot 2 scope 0
::/0(none)->fe80::/64(port5) via ::, pri 256 prot 2 scope 0
::/0(none)->fe80::/64(port6) via ::, pri 256 prot 2 scope 0
::/0(none)->fe80::/64(port7) via ::, pri 256 prot 2 scope 0
::/0(none)->fe80::/64(port8) via ::, pri 256 prot 2 scope 0
::/0(none)->fe80::/64(port9) via ::, pri 256 prot 2 scope 0
::/0(none)->fe80::/64(port10) via ::, pri 256 prot 2 scope 0
```

```
::/0(none)->fe80::/64(port_tn) via ::, pri 256 prot 2 scope 0
```

Example

This example adds a route to the routing table.

```
diagnose network route add 10::/64 port1 10:200::1/64 port1 10::1 0
```

Related topics

- router all on page 1
- ping on page 878
- ping6 on page 880
- traceroute on page 898
- network rtcache on page 820
- router static on page 102

network rtcache

Use this command to display the routing cache.

Unlike network route on page 818, this command displays the cache of the most recently used routes, **not** necessarily the entire configuration. (You may have configured many routes, and these configurations will be saved to disk and appear in network route on page 818, but rarely used ones will **not** usually appear in the route cache, which keeps recently used routes in RAM for performance reasons.)

To use this command, your administrator account's access control profile must have `rw` or `w` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
diagnose network rtcache list
```

Example

This example displays the ARP cache.

```
172.20.120.52(port1)->255.255.255.255(lo) via 0.0.0.0, pri 0 prot 0 scope 0, ref 0 lastuse 3181
      expires 0 error 0 used 855
172.20.120.100(port3)->172.20.120.255(lo) via 0.0.0.0, pri 0 prot 0 scope 0, ref 0 lastuse 434
      expires 0 error 0 used 0
172.20.120.230(port1)->255.255.255.255(lo) via 0.0.0.0, pri 0 prot 0 scope 0, ref 0 lastuse 47386
      expires 0 error 0 used 7
```

```
10.0.1.1(none)->10.0.1.1(lo) via 0.0.0.0, pri 0 prot 0 scope 0, ref 0 lastuse 223 expires 0 error 0
      used 29551
0.0.0.0(none)->10.0.1.1(lo) via 0.0.0.0, pri 0 prot 0 scope 0, ref 0 lastuse 223 expires 0 error 0
      used 7387
::(none)->::1(lo) via ::, pri 0 prot 0 scope 0 ref 1 lastuse 155845 expires 0 error 0 used 417
::(none)->2607:f0b0:f:420:20c:29ff:fe4d:3ad3(lo) via ::, pri 0 prot 0 scope 0 ref 1 lastuse 354923
      expires 0 error 0 used 1
::(none)->2607:f0b0:f:420:20c:29ff:fe4d:3ae7(lo) via ::, pri 0 prot 0 scope 0 ref 1 lastuse 2590615
      expires 0 error 0 used 0
::(none)->2607:f0b0:f:420:20c:29ff:fe4d:3af1(lo) via ::, pri 0 prot 0 scope 0 ref 1 lastuse 2590615
      expires 0 error 0 used 0
::(none)->2607:f0b0:f:420::(port1) via ::, pri 256 prot 0 scope 0 ref 0 lastuse 2590616 expires
      214715722 error 0 used 0
::(none)->ff00::(port4) via ::, pri 256 prot 0 scope 0 ref 0 lastuse 2590615 expires 0 error 0 used
      0
::(none)->ff00::(lo) via ::, pri -1 prot 0 scope 0 ref 1 lastuse 449431651 expires 0 error -101 used
      1
```

Example

This example adds a route to the routing table.

```
diagnose network route add vlan2 160.1.12.0 255.0.0.0 172.20.01.169 32 3 verify
```

Related topics

- router all on page 1
- ping on page 878
- ping6 on page 880
- traceroute on page 898
- network route on page 818
- router static on page 102

network sniffer

Use this command to perform a packet trace on one or more network interfaces.

Packet capture, also known as sniffing or packet analysis, records some or all of the packets seen by a network interface (that is, the network interface is used in promiscuous mode). By recording packets, you can trace connection states to the exact point at which they fail, which may help you to diagnose some types of problems that are otherwise difficult to detect.

FortiWeb appliances have a built-in sniffer. Packet capture on FortiWeb appliances is similar to that of FortiGate appliances. Packet capture output appears on your CLI display until you stop it by pressing Ctrl+C, or until it reaches the number of packets that you have specified to capture.

Packet capture can be very resource intensive. To minimize the performance impact on your FortiWeb appliance, use packet capture only during periods of minimal traffic, with a local console CLI connection rather than a Telnet or SSH CLI connection, and be sure to stop the command when you are finished.

If your FortiWeb model uses Data Plane Development Kit (DPDK) for packet processing (for example, models 3000E, 3010E and 4000E) and is operating in Offline Protection mode, you cannot use this command with ports that are configured as data capture ports. To use the command with this type of port, disable the corresponding server policy or configure the policy with a different data capture port.

To use this command, your administrator account's access control profile must have at least `r` permission to the `prof_admin` area. For details, see Permissions on page 46.

Syntax

```
diagnose network sniffer [{any | "<interface_name>"} [{none | "<filter_str>"} [{1 | 2 | 3}
      [<packets_int>]]]]
```

Variable	Description	Default
{any | "<interface_name>"}	Enter the name of a network interface whose packets you want to capture, such as `port1`, or type `any` to capture packets on all network interfaces. If you omit this and the following parameters for the command, the command captures all packets on all network interfaces.	No default.
{none | "<filter_str>"}	Enter either `none` to capture all packets, or type a filter that specifies which protocols and port numbers that you do or do not want to capture, such as `"tcp port 25"`. Filters use tcpdump (http://www.tcpdump.org) syntax: `"[[src|dst] host {<host1_fqdn> | <host1_ipv4>}] [and|or] [[src|dst] host {<host2_fqdn> | <host2_ipv4>}] [and|or] [[arp|ip|gre|esp|udp|tcp] port <port1_int>] [and|or] [[arp|ip|gre|esp|udp|tcp] port <port2_int>]"` To display only the traffic between two hosts, specify the IP addresses of both hosts. To display only forward or reply packets, indicate which host is the source, and which is the destination. For example, to display UDP `port 1812` traffic between `1.example.com` and either `2.example.com` or `3.example.com`, you would enter:	`none`

Variable	Description	Default
	`"udp and port 1812 and src host 1.example.com and dst \( 2.example.com or 2.example.com \)"`	
{1 | 2 | 3}	Type one of the following integers indicating the depth of packet headers and payloads to capture: • 1–Display the packet capture timestamp, plus basic fields of the IP header: the source IP address, the destination IP address, protocol name, and destination port number. Does **not** display all fields of the IP header; it omits: • IP version number bits • Internet header length (`ihl`) • type of service/differentiated services code point (`tos`) • explicit congestion notification • total packet or fragment length • packet ID • IP header checksum • time to live (`TTL`) • fragment offset • options bits • 2–All of the output from 1, plus the packet payload in both hexadecimal and ASCII. • 3–All of the output from 2, plus the link layer (Ethernet) header. For troubleshooting purposes, Fortinet Technical Support may request the most verbose level (3).	1
<packets_int>	Enter the number of packets to capture before stopping. If you do not specify a number, the command will continue to capture packets until you press Ctrl+C.	Packet capture continues until you press Ctrl + C.

Example

The following example captures three packets of traffic from any port number or protocol and between any source and destination (a filter of `none`), which passes through the network interface named `port1`. The capture uses a low level of verbosity (indicated by `1`).

Commands that you would type are highlighted in bold; responses from the FortiWeb appliance are not bolded.

```
FortiWeb# diagnose network sniffer port1 none 1 3
filters=[none]
0.918957 192.168.0.1.36701 -> 192.168.0.2.22: ack 2598697710
0.919024 192.168.0.2.22 -> 192.168.0.1.36701: psh 2598697710 ack 2587945850
```

```
0.919061 192.168.0.2.22 -> 192.168.0.1.36701: psh 2598697826 ack 2587945850
```

If you are familiar with the TCP protocol, you may notice that the packets are from the middle of a TCP connection. Because `port 22` is used (highlighted above in bold), which is the standard port number for SSH, the packets might be from an SSH session.

Example

The following example captures packets traffic on TCP `port 80` (typically HTTP) between two hosts, `192.168.0.1` and `192.168.0.2`. The capture uses a low level of verbosity (indicated by `1`). Because the filter does not specify either host as the source or destination in the IP header (`src` or `dst`), the sniffer captures both forward and reply traffic.

Commands that you would type are highlighted in bold; responses from the FortiWeb appliance are not bolded.

```
FortiWeb# diagnose network sniffer packet port1 'host 192.168.0.2 or host 192.168.0.1 and tcp port
      80' 1
```

A specific number of packets to capture is not specified. As a result, the packet capture continues until the administrator presses Ctrl+C. The sniffer then confirms that five packets were seen by that network interface. Below is a sample output.

```
192.168.0.2.3625 -> 192.168.0.1.80: syn 2057246590
192.168.0.1.80 -> 192.168.0.2.3625: syn 3291168205 ack 2057246591
192.168.0.2.3625 -> 192.168.0.1.80: ack 3291168206
192.168.0.2.3625 -> 192.168.0.1.80: psh 2057246591 ack 3291168206
192.168.0.1.80 -> 192.168.0.2.3625: ack 2057247265
5 packets received by filter
0 packets dropped by kernel
```

Example

The following example captures TCP `port 443` (typically HTTPS) traffic occurring through port1, regardless of its source or destination IP address. The capture uses a high level of verbosity (indicated by `3`).

The number of packets to capture is not specified, so the packet capture continues until the administrator presses Ctrl+C. The sniffer then states how many packets were seen by that network interface.

Verbose output can be very long. As a result, output shown below is truncated after only one packet.

Commands that you would type are highlighted in bold; responses from the FortiWeb appliance are not bolded.

```
FortiWeb# diagnose network sniffer packet port1 'tcp port 443' 3
interfaces=[port1]
filters=[tcp port 443]
10.651905 192.168.0.1.50242 -> 192.168.0.2.443: syn 761714898
0x0000 0009 0f09 0001 0009 0f89 2914 0800 4500 ..........)...E.
0x0010 003c 73d1 4000 4006 3bc6 d157 fede ac16 .<s.@.@.;..W....
0x0020 0ed8 c442 01bb 2d66 d8d2 0000 0000 a002 ...B..-f........
0x0030 16d0 4f72 0000 0204 05b4 0402 080a 03ab ..Or............
```

Instead of reading packet capture output directly in your CLI display, you usually should save the output to a plain text file using your CLI client. Saving the output provides several advantages. Packets can arrive more rapidly than you may

be able to read them in the buffer of your CLI display, and many protocols transfer data using encodings other than US-ASCII. It is often, but not always, preferable to analyze the output by loading it into in a network protocol analyzer application such as Wireshark (http://www.wireshark.org/).

For example, you could use PuTTY or Microsoft HyperTerminal to save the sniffer output to a file. Methods may vary. See the documentation for your CLI client.

Requirements

- Terminal emulation software such as PuTTY (http://www.chiark.greenend.org.uk/~sgtatham/putty/download.html)
- A plain text editor such as Notepad
- A Perl interpreter
- Network protocol analyzer software such as Wireshark (http://www.wireshark.org)

To view packet capture output using PuTTY and Wireshark

On your management computer, start PuTTY.

Use PuTTY to connect to the FortiWeb appliance using either a local console, SSH, or Telnet connection. For details, see Connecting to the CLI on page 33.

Type the packet capture command, such as:

```
diag network sniffer packet port1 'tcp port 443' 3 100
```

but do **not** press Enter yet.

In the upper left corner of the window, click the PuTTY icon to open its drop-down menu, then select **Change Settings**.

In the **Category** tree on the left, go to **Session > Logging.**

Select **Printable output**.

In **Log file name**, click the **Browse** button, then choose a directory path and file name such as `C:\Users\MyAccount\packet_capture.txt` to save the packet capture to a plain text file. You do not need to save it with the `.log` file extension.

Click **Apply**.

Press Enter to send the CLI command to the FortiMail appliance, beginning packet capture.

If you have not specified a number of packets to capture, when you have captured all packets that you want to analyze, press Ctrl + C to stop the capture.

Close the PuTTY window.

Open the packet capture file using a plain text editor such as Notepad.

Delete the first and last lines, which look like this:

```
=~=~=~=~=~=~=~=~=~=~=~=~=~= PuTTY log 10/27/2025.07.25 11:34:40 =~=~=~=~=~=~=~=~=~=~=~=~=~=
FortiWeb-2000 #
```

These lines are a PuTTY timestamp and a command prompt, which are not part of the packet capture. If you do not delete them, they could interfere with the script in the next step.

Convert the plain text file to a format recognizable by your network protocol analyzer application.

You can convert the plain text file to a format recognizable by Wireshark (`.pcap`) using the `fgt2eth.pl` Perl script. To download `fgt2eth.pl`, see the Fortinet Knowledge Base article "Using the FortiOS built-in packet sniffer:"

http://kb.fortinet.com/kb/documentLink.do?externalId=11186

The `fgt2eth.pl` script is provided as-is, without any implied warranty or technical support, and requires that you first install a Perl module compatible with your operating system.

To use fgt2eth.pl, open a command prompt, then enter a command such as the following:

```
fgt2eth.pl -in packet_capture.txt -out packet_capture.pcap
```

where:

- `fgt2eth.pl` is the name of the conversion script; include the path relative to the current directory, which is indicated by the command prompt
- `packet_capture.txt` is the name of the packet capture's output file; include the directory path relative to your current directory
- `packet_capture.pcap` is the name of the conversion script's output file; include the directory path relative to your current directory where you want the converted output to be saved

Methods to open a command prompt vary by operating system.
On Windows XP, go to **Start > Run** and enter `cmd`.
On Windows 7, click the Start (Windows logo) menu to open it, then enter `cmd`.

Open the converted file in your network protocol analyzer application. For further instructions, see the documentation for that application.

network tcp list

Use this command to view a list of TCP raw socket details, including:

- `sl`–Kernel socket hash slot.
- `local_address`–IP address and port number pair of the local FortiWeb network interface in hexadecimal, such as `DD01010A:0050`.
- `rem_address`–Remote host's network interface and port number pair. If not connected, this will contain `00000000:0000`.
- `st`–TCP state code (e.g. `0A` for listening, `01` for established, or `06` for timeout wait)
- `tx_queue`–Kernel memory usage by the transmission queue.
- `rx_queue`–Kernel memory usage by the retransmission queues.
- `tr`, `tm-> when`, `retrnsmt`–Kernel socket state debugging information.
- `uid`–User ID of the socket's creator (on FortiWeb, always `0`).
- `timeout`–Connection timeout.
- `inode`–Pseudo-file system i-node of the process.

To use this command, your administrator account's access control profile must have at least `r` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
diagnose network tcp list
```

Example

```
diagnose network tcp list
sl local_address rem_address st tx_queue rx_queue tr tm->when retrnsmt uid timeout inode
0: DD01010A:0050 00000000:0000 0A 00000000:00000000 00:00000000 00000000 0 0 333597 1
      ffff88003b825880 299 0 0 2 -1
1: 2F7814AC:0050 00000000:0000 0A 00000000:00000000 00:00000000 00000000 0 0 228018 1
      ffff88003b824680 299 0 0 2 -1
2: 1B01A8C0:0050 00000000:0000 0A 00000000:00000000 00:00000000 00000000 0 0 2692 1 ffff88003b6ec6c0
      299 0 0 2 -1
3: 0100007F:0050 00000000:0000 0A 00000000:00000000 00:00000000 00000000 0 0 2691 1 ffff88003b6eccc0
      299 0 0 2 -1
4: 00000000:0016 00000000:0000 0A 00000000:00000000 00:00000000 00000000 0 0 2433 1 ffff88003b489280
      299 0 0 2 -1
5: 00000000:0017 00000000:0000 0A 00000000:00000000 00:00000000 00000000 0 0 2400 1 ffff88003b489880
      299 0 0 2 -1
6: 0100007F:22B8 00000000:0000 0A 00000000:00000000 00:00000000 00000000 0 0 2687 1 ffff88003b488680
      299 0 0 2 -1
7: DD01010A:01BB 00000000:0000 0A 00000000:00000000 00:00000000 00000000 0 0 333598 1
      ffff88003bbf3940 299 0 0 2 -1
8: 2F7814AC:01BB 00000000:0000 0A 00000000:00000000 00:00000000 00000000 0 0 228017 1
      ffff88003b824080 299 0 0 2 -1
9: 1B01A8C0:01BB 00000000:0000 0A 00000000:00000000 00:00000000 00000000 0 0 2689 1 ffff88003b6ed8c0
      299 0 0 2 -1
10: 0100007F:01BB 00000000:0000 0A 00000000:00000000 00:00000000 00000000 0 0 2688 1
      ffff88003b488080 299 0 0 2 -1
11: 00000000:208D 00000000:0000 0A 00000000:00000000 00:00000000 00000000 0 0 2441 1
      ffff88003b488c80 299 0 0 2 -1
12: 2F7814AC:0016 E17814AC:FEF2 01 00000000:00000000 02:000909FE 00000000 0 0 272209 4
      ffff88003bbf2d40 20 3 1 5 -1
```

Related topics

- network arp on page 816
- network ip on page 817

network udp list

Use this command to view a list of UDP raw socket details, including:

- `sl`–Kernel socket hash slot.
- `local_address`–IP address and port number pair of the local FortiWeb network interface in hexadecimal, such as `DD01010A:0050`.
- `rem_address`–Remote host's network interface and port number pair. If not connected, this will contain `00000000:0000`.
- `st`–TCP state code in hexadecimal (e.g. `0A` for listening, `01` for connection established, or `06` for waiting for data)
- `tx_queue`–Kernel memory usage by the transmission (Tx) queue.
- `rx_queue`–Kernel memory usage by the retransmission (Rx) queues. This is not used by UDP, since the protocol itself does not support retransmission.
- `tr`, `tm-> when`, `retrnsmt`–Kernel socket state debugging information. These are not used by UDP, since the protocol itself does not support retransmission.
- `uid`–User ID of the socket's creator (on FortiWeb, always `0`).
- `timeout`–Connection timeout.
- `inode`–Pseudo-file system inode of the process.
- `ref`, `pointer`–Pseudo-file system references.

To use this command, your administrator account's access control profile must have at least `r` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
diagnose network udp list
```

Example

```
diagnose network udp list
sl local_address rem_address st tx_queue rx_queue tr tm->when retrnsmt uid timeout inode ref pointer
      drops
307: 00000000:00A1 00000000:0000 07 00000000:00000000 00:00000000 00000000 0 0 2498 2
      ffff88003acba080 0
447: 00000000:3F2D 00000000:0000 07 00000000:00000000 00:00000000 00000000 0 0 2874 2
      ffff88003acbac80 0
```

Related topics

- network arp on page 816
- network ip on page 817

policy

Use this command to view the process ID, live sessions, and traffic statistics associated with a server policy.

To use this command, your administrator account's access control profile must have at least `r` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
diagnose policy pserver [list "<policy_name>"]
diagnose policy session [list "<policy_name>"]
diagnose policy traffic [list "<policy_name>"]
diagnose policy period-blockip [list "<policy_name>"]
diagnose policy period-blockip [delete "<policy_name>"]{ipv4 | ipv6}
diagnose policy total-session [list "<session_number>"]
diagnose policy total-traffic http [list "<session_number>"]
diagnose policy "<policy_name>"
diagnose policy jwks-cache {list | delete}
diagnose policy shared-waf-instance-on-non-CR-dmodeWAF_SERVER_PROTECTION_RULE <adom-name> <profile-
      name>
diagnose policy set shared-waf-instance-mode-on-non-CR-dmode {enable | disable}
```

Variable	Description	Default
pserver [list "<policy_ name>"]	Displays the status of physical servers covered by the policy.	No default.
session [list "<policy_ name>"]	Displays IP session information for TCP and UDP connections.	No default.
traffic [list "<policy_name>"]	Displays traffic throughput (bandwidth usage) information.	No default.
period-blockip [list "<policy_ name>"]	Displays client IP addresses whose requests are temporarily blocked because the client violated a rule in the specified policy with an **Action** value of **Period Block**.	No default.
period-blockip [delete "<policy_name>"]{ipv4 | ipv6}	Unblocks the specified client IP address that FortiWeb has blocked because it violated a rule in the specified policy with an **Action** value of **Period Block**. (FortiWeb can still block the address because it violates a rule in a different policy.)	No default.
total-session [list "<session_ number>"]	Displays the total number of the current connections.	No default.
total-traffic http [list "<session_number>"]	Displays the total throughput in HTTP level. This statistics from CLI only includes HTTP payload, does not include L2 & L3 headers	No default.
"<policy_name>"	Enter the name of an existing server policy.	No default.
jwks-cache {list | delete}	Use the `diagnose policy jwks-cache` command to inspect or clear the local cache of public keys retrieved from JWKS (JSON Web Key Set) endpoints. This cache enables FortiWeb to perform efficient JWT signature verification for mobile API clients using dynamically fetched keys. • **list** - Displays the current JWKS certificate cache. Shows JWKS URIs, their status and referenced	No default.

Variable	Description	Default
	number. Useful for verifying which keys FortiWeb is using for JWT validation. • **delete** - Deletes a JWKS endpoint that is not referenced, to reduce repeated checks and updates. Useful for troubleshooting or testing key rotation.	
shared-waf-instance-on-non-CR-dmodeWAF_SERVER_PROTECTION_RULE <adom-name> <profile-name>	Displays internal state and reference counters for the specified WAF module profile. Use this command to check whether the profile is operating in shared-instance mode and how many policies are currently referencing it. **Parameters:** • WAF_SERVER_PROTECTION_RULE: Currently, obnly the WAF_SERVER_PROTECTION_RULE module is supported. Support for more WAF modules may be added in the future. • `<adom-name>`: The name of the ADOM where the profile is defined (e.g., root). • `<profile-name>`: The name of the WAF module profile.	No default.
set shared-waf-instance-mode-on-non-CR-dmode {enable | disable}	Enables or disables shared-instance mode globally for eligible WAF modules on non-CR (non-centralized rule) deployments. When enabled, FortiWeb instantiates only one copy of a given signature profile and tracks references from each policy that uses it. **Options:** • **enable**: Turn on shared-instance optimization. • **disable**: Revert to instantiating separate copies for each use.	`disable`

Example

This example shows the output of the `pserver list` command. The `alive` value indicates the status of the server health check:

Integer	Health check status	Health Check Status icon in Policy Status dashboard
0	Failed	Red
1	Passed	Green
2	Disabled	Grey

```
diagnose policy pserver list Policy1
```

```
policy(Policy1)
server-pool(FortiWeb_server_pool):
total = 1
server[0]
id: 1
ip: 10.20.1.22
port: 80
alive: 2
session: 0
status: 1
```

Related topics

- server-policy policy on page 151
- network ip on page 817
- debug flow filter on page 785
- system performance on page 903

system endpoint-control

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

To check client information such as IP address, MAC address, FortiClient SN, run:

```
diagnose system endpoint-control clients
```

To check EMS tags, run:

```
diagnose system endpoint-control tags
```

To check the EMS server connection status, run:

```
diagnose system endpoint-control test
```

system flash

Use this command to change the currently active firmware partition or to display partition information stored on the flash drive.

FortiWeb appliances have 2 partitions that each contain a firmware image: one is the primary and one is the backup. If the FortiWeb appliance is unable to successfully boot using the primary firmware partition, it may boot using the alternative firmware partition. The second partition can contain another version of the firmware.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `mntgrp` area. For details, see Permissions on page 46.

Syntax

```
diagnose system flash default <partition_int>
diagnose system flash list
```

Variable	Description	Default
<partition_int>	Enter the number of the partition that will be used as the primary firmware partition during the **next** reboot or startup. The other partition will become the backup firmware partition.	No default.

Example

This example lists the partition settings.

```
diagnose system flash list
```

Below is a sample output.

```
Image# Version TotalSize(KB) Used(KB) Use% Active
1 FV-1KB-4.30-FW-build0521-110120 38733 33125 86% No
2 FV-1KB-4.30-FW-build0522-110112 38733 33125 86% Yes
3 836612 16980 2 % No
```

Related topics

- restore image on page 890
- system status on page 904

system ha backup-config

Use this command to export the configuration file of the HA nodes. It only backs up the configurations synchronized between HA nodes. The most common scenario for using this command is to compare the configuration files between the HA nodes and check which part of the configuration is not synchronized as expected.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
diagnose system ha backup-config <node-id>
```

Example

```
diagnose system ha backup-config 1
```

system ha confd_status

Use this command to display the HA information.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
diagnose system ha confd_status
```

Example

The following is an example of the output.

```
HA information

Model=FortiWeb-1000E 6.37,build1102(GA),200911, Mode=active-active-high-volume Group=2

HA group member information: is_manage_primary=1.
LocalSN:  FV-1KE44179XXXXX     confd
member cnt:  2
msg_queue:0 file_queue:0 md5_rep_ignore:0 do_md5sum:14030
FV-1KE4417900091: primary
pending:0        update:0        time:0        sync:0
SYS: 1C5663E93F5FEE916C06CF9F383999CB
CLI: FA6AD08C032E3DB66954E6B33D848CB3
FV-1KE4417900092: secondary
pending:2773937  update:2773937  time:2773937  sync:0
SYS: 1C5663E93F5FEE916C06CF9F383999CB
CLI: FA6AD08C032E3DB66954E6B33D848CB3
```

system ha dev-info

Use this command to display the network interface information of the HA nodes, including port name, index number, Mac addresses.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
diagnose system ha dev-info
```

Example

The following is an example of the output.

```
SN: FV-1KE44XXXXXX91
Name    Phyindex                Mac
port7          3          00:0b:ab:f5:3e:94
port8          4          00:0b:ab:f5:3e:95
port9          5          00:0b:ab:f5:3e:96
port10         6          00:0b:ab:f5:3e:97
port1          7          74:fe:48:20:4f:5f
port2          8          74:fe:48:20:4f:60
port3          9          74:fe:48:20:4f:61
port4         10          74:fe:48:20:4f:62
port5         11          74:fe:48:20:4f:61
port6         12          74:fe:48:20:4f:62
mgmt1         13          74:fe:48:20:4f:65
mgmt2         14          74:fe:48:20:4f:66
port11        18          00:0b:ab:f5:4f:72
port12        19          00:0b:ab:f5:4f:73
SN: FV-1KE44XXXXXX92
Name    Phyindex                Mac
port7          3          00:0b:ab:f5:3e:2c
port8          4          00:0b:ab:f5:3e:2d
port9          5          00:0b:ab:f5:3e:2e
port10         6          00:0b:ab:f5:3e:2f
```

```
port1          7          74:fe:48:20:38:8c
port2          8          74:fe:48:20:38:8d
port3          9          74:fe:48:20:38:8e
port4         10          74:fe:48:20:38:8f
port5         11          74:fe:48:20:38:8e
port6         12          74:fe:48:20:38:8f
mgmt1         13          74:fe:48:20:38:92
mgmt2         14          74:fe:48:20:38:93
port11        18          00:0b:ab:f5:50:ca
port12        19          00:0b:ab:f5:50:cb
```

system ha export-eventlog

Use this command to export event logs of the secondary node in the HA cluster. This command should be run on the primary node.

To download the logs, first run the following command to enable file upload:

```
config system settings
   set enable-file-upload enable
end
```

Then, go to **System > Maintenance > Backup&Restore** to download the logs.

Syntax

```
diagnose system ha export-eventlog <node-index> <start-time> <end-time>
```

Example

```
diagnose system ha export-eventlog 2 29/12/2019:00:00:00 31/12/2019:00:00:00
```

system ha file-log

Use this command to manage the HA event logs.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
diagnose system ha file-log {clear | disable | enable | show | status}
```

enable	Enable the system to generate HA event log and store it in var/log/gui_upload/ha_event_log.
disable	Disable generating HA event logs.
clear	Clear the HA log files in var/log/gui_upload/ha_event_log.
show	Display HA event logs in console.
status	Show the status of the HA event log, whether it is enabled or not.

system ha file-stat

Use this command to display the current status of FortiGuard subscription services files and the MD5 checksum for system and configuration files.

Syntax

```
diagnose system ha file-stat
```

Example

Below is a sample output.

```
FortiWeb Security Service:
   2021-01-03
   Last Update Time: 2017-02-17 Method: Scheduled
   Signature Build Number-0.00177
FortiWeb Antivirus Service:
```

```
   2021-01-03
   Last Update Time: 2017-02-17 Method: Scheduled
   Regular Virus Database Version-42.00885
   Extended Virus Database Version-42.00814
FortiWeb IP Reputation Service:
   2021-01-03
   Last Update Time: 2017-02-17 Method: Scheduled
   Signature Build Number-3.00315
System files MD5SUM: 5660BD9FA1F6C86E8A31B2A139045F17
CLI files MD5SUM: 71BF206315679018536D9E19B37CBEAE
```

Related topics

- ha disconnect on page 871
- ha manage on page 875
- system ha status on page 842
- system status on page 904

system ha interface-macinfo

Use this command to display the virtual MAC addresses of the HA node.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
diagnose system ha interface-macinfo
```

Example

Below is a sample output.

```
mgmt1 origin mac 74:fe:48:20:4f:65
```

```
mgmt2 origin mac 74:fe:48:20:4f:66
```

```
port1 origin mac 74:fe:48:20:4f:5f
```

```
port2 origin mac 74:fe:48:20:4f:60
```

```
port3 origin mac 74:fe:48:20:4f:61
```

```
port4 origin mac 74:fe:48:20:4f:62
```

```
port5 origin mac 74:fe:48:20:4f:61
port6 origin mac 74:fe:48:20:4f:62
port7 origin mac 0:b:ab:f5:3e:94
port8 origin mac 0:b:ab:f5:3e:95
port9 origin mac 0:b:ab:f5:3e:96
port10 origin mac 0:b:ab:f5:3e:97
port11 origin mac 0:b:ab:f5:4f:72
port12 origin mac 0:b:ab:f5:4f:73
```

Related topics

- system ha mac on page 839
- ha manage on page 875
- system ha status on page 842
- system status on page 904

system ha mac

Use this command to display the virtual MAC addresses and link statuses of each network interface of appliances in the HA group.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
diagnose system ha mac
```

Example

This example indicates that the links are "up" (`linkfail=0`) for port1 and port3 on the currently active appliance in the HA pair. While operating in HA, the network interfaces are using a Layer 1 data link (MAC) address that begins with the

hexadecimal string `00:09:0F:09:00:`.

```
diagnose system ha mac
```

Below is a sample output.

```
HA mac msg
name=port1, phyindex=0, 00:09:0F:09:00:01, linkfail=0
name=port2, phyindex=1, 00:09:0F:09:00:02, linkfail=1
name=port3, phyindex=2, 00:09:0F:09:00:03, linkfail=0
name=port4, phyindex=3, 00:09:0F:09:00:04, linkfail=1
```

Related topics

- ha disconnect on page 871
- ha manage on page 875
- system ha status on page 842
- system status on page 904
- system ha on page 326

system ha md5fixed

This command will interfere the functioning of HA features. Do not use this command unless you are instructed by FortiWeb's support engineers or developers.

system ha md5sum-gen

This command will interfere the functioning of HA features. Do not use this command unless you are instructed by FortiWeb's support engineers or developers.

system ha nodes

Use this command to display the HA node information.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
diagnose system ha nodes
```

Example

Below is a sample output.

```
SN               Local  Used    State   Count
FV-1KE44XXXXXX91     1  1       0       3
FV-1KE44XXXXXX92     0  1       0       2
```

system ha sessions_stat

Use this command to display the HA session status.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
diagnose system ha sessions_stat
```

Example

Below is a sample output.

```
count:          0
searched:       0
new:            0
new_expect:     0
new_fail:       0
new_cancel:     0
new_unknown:    0
```

```
confirmed:        0
confirmed_fail:   0
select:           0
select_fail:      0
tuple_fail:       0
nat_request:      0
nat_done:         0
expectation:      0
sync_tx:          0
sync_tx_full:     0
sync_tx_schedule: 0
sync_tx_error:    0
```

system ha status

Use this command to display the HA group ID, as well as the serial number, role (active or standby), and device priority of each appliance belonging to the HA cluster.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
diagnose system ha status
```

Example

This example lists the HA group ID, serial numbers, and device priorities.

```
diagnose system ha status
```

Below is a sample output.

```
HA information
```

```
Model=FV-1KD-5.30-FW-build0431, Mode=a-p Group=2

HA group member information: is_manage_primary=1.
FV-1KD3A13800012, primary, 4, 0, 196417
FV-1KD3A13800091, secondary, 6, 0, 185787
```

In this example, in the information for `FV-1KD3A13800012`, `4` is the priority of the appliance and `0` is the number of ports that have been down.

If the value of the priority or ports down is 100, the parameter is “invalid.” For example, if the appliance has not yet joined the HA cluster.

Related topics

- ha disconnect on page 871
- ha manage on page 875
- system ha status on page 842
- system status on page 904

system ha sync-config

Use this command to display or change the enable/disable status of the HA synchronization

To use this command, your administrator account’s access control profile must have either `w` or `rw` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

Use the following command to show whether the HA synchronization is enabled or not.

```
diagnose system ha sync-config get-status
```

Use the following command to enable or disable HA synchronization.

```
diagnose system ha sync-config set-status {enable | disable}
```

system ha sync-stat

Use this command to display the status of the high availability (HA) synchronization process.

Syntax

```
diagnose system ha sync-stat
```

Status	Description
INIT	Initiation. Last synchronization completed and system is ready and waiting for next synchronization.
SENDING	Synchronization is in process; data is sending.
SUCCESS	Success in data sending; synchronization is complete.
SEND_TIMEOUT	Data sending timeout; synchronization is incomplete.

Example

This example lists the HA synchronization status.

```
diagnose system ha sync-stat
```

Below is a sample output.

```
Image INIT
Config INIT
System INIT
CLI INIT
Signature SUCCESS
GeoDB SUCCESS
AV SUCCESS
IpReputation SUCCESS
HarvestCredentials SUCCESS
```

Related topics

- ha disconnect on page 871
- ha manage on page 875
- system ha status on page 842
- system status on page 904

system ha traffic-distribution

Use this command to display the traffic distribution information of the HA group.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
diagnose system ha traffic-distribution
```

Example

Below is a sample output.

```
Traffic group information:

Name     :Auto_Cluster_Group_1

Work   Sn:FV-1KE4417900091

Vip  List:name     index    ip4                  ip6

        FortiWeb_Vserver_Vip1 10.51.1.240/16 10:51::1:240/64

Node List:id  sn

             1 FV-1KE4417900091
             2 FV-1KE4417900092

Name     :Auto_Cluster_Group_2

Work   Sn:FV-1KE4417900091

Vip  List:name     index    ip4                  ip6

        FortiWeb_Vserver_Vip22 10.51.1.241/16 10:51::1:241/64

Node List:id  sn

             1 FV-1KE4417900091
             2 FV-1KE4417900092
```

system jeprof

If the jemallc profile is activated and the memory usage exceeds the configured threshold, the heap file will be generated in directory /var/log/gui_upload.

You can use this command to parse the heap file via jeprof tool. At most 10 heap files are kept on device.

Syntax

```
diagnose system jeprof
```

Related commands

To activate or deactivate jemallc profile:

```
diagnose system kill 43 <pid_of_proxyd>
```

To check the generated heap file:

```
diagnose debug jemalloc-heap show
```

To clear generated heap file:

```
diagnose debug jemalloc-heap clear
```

system kill

Use this command to terminate a process currently running on FortiWeb, or send another signal from the FortiWeb OS to the process.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `mntgrp` area. For details, see Permissions on page 46.

Syntax

```
diagnose system kill <signal_int> <pid_int>
```

Variable	Description	Default
<signal_int>	Enter the ID of the signal to send to the process. This in an integer between 1 and 32. Some common signals are: • 1–Varies by the process's interpretation, such as re-read configuration files or re-initialize (hang up; `SIGHUP`). For example, the FortiWeb web UI verifies its configuration files, then restarts gracefully. • 2–Request termination by simulating the pressing of the interrupt keys, such as Ctrl + C (interrupt; `SIGINT`). • 3–Force termination immediately and do a core dump (quit; `SIGQUIT`). • 9–Force termination immediately (kill; `SIGKILL`). • 15–Request termination by inter-process communication (terminate; `SIGTERM`).	No default.

Variable	Description	Default
	• 43–Request to activate or deactivate the jemallc profile. If you run it the first time, jemallc profile is activated. Running the same command again will deactivate the jemallc profile. The following <pid_int> should be defined with the pid of the proxyd. Considering jemalloc profile has a big impact on the system performance, it's recommended to deactivate it after jemalloc profile debug.	
<pid_int>	Enter the process ID where the signal is sent to. To list all current process IDs, use system top on page 848.	No default.

Related topics

- system top on page 848
- hardware cpu on page 805
- hardware mem on page 809
- system performance on page 903

system mount

Use this command to display a list of mounted file systems, including their available disk space, disk usage, and mount locations.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `mntgrp` area. For details, see Permissions on page 46.

Syntax

```
diagnose system mount list
```

Example

```
diagnose system mount list
```

Output from a FortiWeb 3000D:

```
Filesystem 1M-blocks Used Available Use% Mounted on
/dev/ram0 97 87 10 89% /
none 4823 0 4823 0% /tmp
none 16077 0 16077 0% /dev/shm
/dev/sdb1 189 45 134 25% /data
```

```
/dev/sdb3 961 17 895 1% /home
/dev/sda1 1877275 271 1781644 0% /var/log
```

Related topics

- hardware logdisk info on page 808
- hardware raid list on page 813

system top

Use this command to view a list of the most system-intensive processes and to change the refresh rate.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `mntgrp` area. For details, see Permissions on page 46.

Syntax

```
diagnose system top [<delay_int> [<delay_int>]]
```

Variable	Description	Default
<delay_int>	Enter the process list refresh interval in seconds.	5
<max-lines>	Set the maximum number of top processes to display.	All processes are shown.

Once you execute this command, it continues to run and display in the CLI window until you enter `q` (quit).

While the command is running, you can press `Shift + P` to sort the five columns of data by CPU usage (the default) or `Shift + M` to sort by memory usage.

Example

This example displays a list of the top FortiWeb processes and sets the update interval at 10 seconds.

```
diagnose system top 10
```

Below is a sample output.

```
Run Time: 0 days, 0 hours and 48 minutes
0U, 0S, 100I; 1002T, 496F
xmlproxy 152 S 1.3 4.7
updated 54 S 0.1 0.3
monitord 57 S 0.1 0.3
sys_monito 58 S 0.1 0.3
```

```
xmlproxy 56 S 0.0 8.2
alertmail 76 S 0.0 4.6
cli 396 S 0.0 1.2
cli 301 S 0.0 1.2
cmdbsvr 43 S 0.0 1.0
HTTPSd 147 S 0.0 1.0
cli 403 R 0.0 0.9
data_analy 60 S 0.0 0.6
HTTPSd 308 S 0.0 0.6
cli 379 S 0.0 0.5
hasync 63 S 0.0 0.4
hatalk 62 S 0.0 0.4
synconf 64 S 0.0 0.4
al_daemon 59 S 0.0 0.3
miglogd 53 S 0.0 0.3
```

The first line indicates the up time. The second line lists the processor and memory usage, where the parameters from left to right mean:

- U–Percent of user CPU usage (in this case 0%)
- S–Percent of system CPU usage (in this case 0%)
- I–Percentage of CPU idle (in this case 100%)
- T–Total memory in kilobytes (in this case 2008 KB)
- F–Available memory in kilobytes (in this case 445 KB)

The five columns of data provide the process name (such as `updated`), the process ID (`pid`), the running status, the CPU usage, and the memory usage. The status values are:

- S–Sleeping (idle)
- R–Running
- Z–Zombie (crashed)
- <–High priority
- N–Low priority

Related topics

- system kill on page 846
- hardware cpu on page 805
- hardware mem on page 809
- system performance on page 903

system update info

Use this command to display recent error messages and the following information about FortiGuard signatures, IP lists, and engine packages and the geography-to-IP mapping database:

- Current version
- Time of last update

- Next scheduled update time
- Previous version history

Syntax

```
diagnose system update info
```

Example

FortiWeb signature

Version: 0.00146

Expiry Date: Thu Jan 01 1970

Last Update Date: Sat Dec 05 11:00:46 2015

Next Update Date: Wed Jan 13 11:00:00 2016

Historical versions

0.00146

0.00144

0.00144

0.00144

0.00139

FortiWeb GEODB

Version: GEO-533LITE 20141104

Expiry Date: N/A

Last Update Date: Tue Dec 01 10:53:35 2015

Next Update Date: N/A

Historical versions

GEO-533LITE 20141007

N/A

Regular Antivirus

Version: 30.00946

Expiry Date: Thu Mar 13 2014

Last Update Date: Sat Dec 05 11:03:30 2015

Next Update Date: Wed Jan 13 11:00:00 2016

Historical versions

30.00859

30.00785

30.00698

29.00326

29.00302

29.00279

29.00256

14.00922

Extended Antivirus

Version: 30.00871

Expiry Date: Thu Mar 13 2014

Last Update Date: Sat Dec 05 11:03:30 2015

Next Update Date: Wed Jan 13 11:00:00 2016

Historical versions

30.00708

30.00540

29.00219

14.00922

IP Reputation

Version: 2.00649

Expiry Date: Thu Jan 01 1970

Last Update Date: Sat Dec 05 11:00:46 2015

Next Update Date: Wed Jan 13 11:00:00 2016

Historical versions

2.00642

2.00635

2.00628

2.00596

2.00594

2.00592

2.00590

1.00020

Latest errors

Wed Jan 13 10:04:02 2016 Failed to establish connection with 192.168.100.205:443 when install anti-virus packages.

Wed Jan 13 10:03:02 2016 Failed to establish connection with 192.168.100.205:443 when install essential packages.

Wed Jan 13 10:02:00 2016 Failed to establish connection with 192.168.100.205:443 when install anti-virus packages.

Wed Jan 13 10:01:00 2016 Failed to establish connection with 192.168.100.205:443 when install essential packages.

Wed Jan 13 09:04:06 2016 Failed to establish connection with 192.168.100.205:443 when install anti-virus packages.

Wed Jan 13 09:03:06 2016 Failed to establish connection with 192.168.100.205:443 when install essential packages.

Wed Jan 13 09:02:04 2016 Failed to establish connection with 192.168.100.205:443 when install anti-virus packages.

Wed Jan 13 09:01:04 2016 Failed to establish connection with 192.168.100.205:443 when install essential packages.

Wed Jan 13 08:04:07 2016 Failed to establish connection with 192.168.100.205:443 when install anti-virus packages.

Wed Jan 13 08:03:07 2016 Failed to establish connection with 192.168.100.205:443 when install essential packages.

system waf-signature pcre-high-cpu-cost

In some cases, certain PCRE (Perl Compatible Regular Expression) patterns may result in inefficient matching processes that consume significant CPU resources. This can lead to performance issues such as "CPU stuck" scenarios, where FortiWeb may appear unresponsive, and the client's website may temporarily become inaccessible.

To address this, timing thresholds are used to identify high-CPU-cost PCRE matches for further analysis:

- Threshold for inbound traffic (Client-to-FortiWeb): **2** seconds
- Threshold for outbound traffic (FortiWeb-to-Client): **5** seconds

If a PCRE match exceeds the designated threshold, FortiWeb automatically records detailed information about the match. This information can be later dumped or stored in nonvolatile storage for further review and optimization.

Relevant CLI commands for monitoring and managing high CPU usage by PCRE

Starting from 7.6.1, the following commands are added for troubleshooting the high CPU usage caused by PCRE.

- Enable/disable pcre high CPU cost monitoring:

```
diagnose system waf-signature pcre-high-cpu-cost { enable | disable } //default: enable
```

- View high CPU cost configuration and summary:

```
diagnose system waf-signature pcre-high-cpu-cost show { config | briefing }
```

- Dump recorded high CPU cost pcre data:

```
diagnose system waf-signature pcre-high-cpu-cost dump
```

- Clear high CPU cost pcre records:

```
diagnose system waf-signature pcre-high-cpu-cost cleanup
```

- Set timing thresholds for high CPU cost pcre matching:

```
diagnose system waf-signature pcre-high-cpu-cost config threshold { request | response } <threshold>
      // (1~600) in deci-seconds
```

- Set extra delay for debugging purposes (available in debug versions only):

```
diagnose system waf-signature pcre-high-cpu-cost set extra-delay <extra-delay> // (0~6000) in deci-
      seconds
```

These commands allow you to monitor and manage high CPU usage caused by inefficient PCRE pattern matching, helping to improve FortiWeb's performance by identifying and addressing patterns that may require optimization.

Related topics

- debug on page 775
- debug console timestamp on page 781
- debug info on page 793
- debug reset on page 800
- debug upload on page 802

test application

Use this command to check if an IP address is in irdb (IP reputation database) and geodb databse.

To use this command, your administrator account's access control profile requires only `r` permission in any profile area. For details, see Permissions on page 46.

Syntax

```
diagnose test application irdb <IP_address>
```

```
diagnose test application geodb <IP_address>
```

execute

The `execute` command has an immediate and decisive effect on your FortiWeb appliance and, for that reason, should be used with care. Unlike `config` commands, most `execute` commands do not result in any configuration change.

backup cert-config

Use this command to back up certificates of a FortiWeb appliance to a TFTP server.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `mntgrp` area. For details, see Permissions on page 46.

Syntax

```
execute backup cer-config <filename_str>  <tftp_ipv4> [<password_str>]
```

Variable	Description	Default
<filename_str>	Enter the name of the file to be used for the backup file, such as `FortiWeb_backup.zip`.	No default.
<tftp_ipv4>	Enter the IP address of the TFTP server.	No default.
[<password_str>]	Enter a password to be used when decompressing the backup file. **Caution:** Remember the password or keep it in a secure location. You will be required to enter the same password when restoring an encrypted backup file. If you forget or lose the password, you won't be able to use that encrypted backup file.	No default.

Example

This example backs up certificates of the FortiWeb appliance on a TFTP server at IP address `192.0.2.23`. The file is encrypted with the password `P@ssword1`.

```
execute backup cert-config tftp FortiWeb_backup.zip 192.0.2.23 P@ssword1
```

Related topics

- backup cli-config on page 856
- backup full-config on page 857
- system backup on page 248

backup cli-config

Use this command to manually back up the configuration file to a TFTP server.

This method does **not** include uploaded files such as:
- Error pages
- WSDL files
- W3C Schema
- Vulnerability scan settings

If your configuration has these files, use either a full TFTP or FTP/SFTP backup instead. For details, see backup full-config on page 857 or system backup on page 248.

This command also does **not** include settings that remain at their default values for the currently installed version of the firmware. If you require a backup that includes those settings, instead use backup full-config on page 857.

Alternatively, you can back up the configuration to an FTP or SFTP server. For details, see system backup on page 248.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `mntgrp` area. For details, see Permissions on page 46.

Syntax

```
execute backup cli-config tftp <filename_str>  <tftp_ipv4> [<password_str>]
```

Variable	Description	Default
<filename_str>	Enter the name of the file to be used for the backup file, such as `FortiWeb_backup.conf`.	No default.
<tftp_ipv4>	Enter the IP address of the TFTP server.	No default.
[<password_str>]	Enter a password to be used when encrypting the backup file to a `.zip` extension file. If you don't provide a password, the backup file will be stored as a clear file with a `.zip` extension.	No default.

Variable	Description	Default
	Caution: Remember the password or keep it in a secure location. You will be required to enter the same password when restoring an encrypted backup file. If you forget or lose the password, you won't be able to use that encrypted backup file.	

Example

This example uploads the FortiWeb appliance's system configuration to a file named `fweb.zip` on a TFTP server at IP address `192.0.2.23`. The file will not be password-encrypted.

```
execute backup cli-config tftp fweb.zip 192.0.2.23
```

Related topics

- backup full-config on page 857
- restore config on page 889
- system backup on page 248

backup full-config

Use this command to manually back up the entire configuration file, **including** those settings that remain at their default values, to a TFTP server.

We strongly recommend that you password-encrypt this backup and store it in a secure location. This backup method includes sensitive data such as your HTTPS certificates' private keys. Unauthorized access to private keys compromises the security of all HTTPS requests using those certificates.

Alternatively, you can back up the configuration to an FTP or SFTP server. For details, see system backup on page 248.

This backup includes settings that remain at their default values increases the file size of the backup, but may be useful in some cases, such as when you want to compare the default settings with settings that you have configured.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `mntgrp` area. For details, see Permissions on page 46.

Syntax

```
execute backup full-config tftp <filename_str>  <tftp_ipv4> [<password_str>]
```

Variable	Description	Default
<filename_str>	Enter the name of the file to be used for the backup file, such as `FortiWeb_backup.conf`.	No default.
<tftp_ipv4>	Enter the IP address of the TFTP server.	No default.
[<password_str>]	Enter a password to be used when encrypting the backup file to a `.zip` extension file. If you don't provide a password, the backup file will be stored as a clear file with a `.zip` extension. **Caution:** Remember the password or keep it in a secure location. You will be required to enter the same password when restoring an encrypted backup file. If you forget or lose the password, you will not be able to use that encrypted backup file.	No default.

Example

This example uploads the FortiWeb appliance's entire configuration, including uploaded error page and HTTPS certificate files, to a file named `fweb.zip` on a TFTP server at IP address `192.0.2.23`. The file is encrypted with the password `P@ssword1`.

```
execute backup full-config tftp fweb.zip 192.0.2.23 P@ssword1
```

Related topics

- backup cli-config on page 856
- system backup on page 248

backup full-config-with-ML-data

Use this command to manually back up the entire configuration file with machine learning data, **including** those settings that remain at their default values, to a TFTP server.

We strongly recommend that you password-encrypt this backup and store it in a secure location. This backup method includes sensitive data such as your HTTPS certificates' private keys. Unauthorized access to private keys compromises the security of all HTTPS requests using those certificates.

Alternatively, you can back up the configuration to an FTP or SFTP server. For details, see system backup on page 248.

This backup includes settings that remain at their default values increases the file size of the backup, but may be useful in some cases, such as when you want to compare the default settings with settings that you have configured.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `mntgrp` area. For details, see Permissions on page 46.

Syntax

```
execute backup full-config-with-ML-data tftp <filename_str>  <tftp_ipv4> [<password_str>]
```

Variable	Description	Default
<filename_str>	Enter the name of the file to be used for the backup file, such as `FortiWeb_backup.conf`.	No default.
<tftp_ipv4>	Enter the IP address of the TFTP server.	No default.
[<password_str>]	Enter a password to be used when encrypting the backup file to a `.zip` extension file. If you don't provide a password, the backup file will be stored as a clear file with a `.zip` extension. **Caution:** Remember the password or keep it in a secure location. You will be required to enter the same password when restoring an encrypted backup file. If you forget or lose the password, you will not be able to use that encrypted backup file.	No default.

Example

This example uploads the FortiWeb appliance's entire configuration with machine learning data, including uploaded error page and HTTPS certificate files, to a file named `fweb.zip` on a TFTP server at IP address `192.0.2.23`. The file is encrypted with the password `P@ssword1`.

```
execute backup full-config-with-ML-data tftp fweb.zip 192.0.2.23 P@ssword1
```

Related topics

- backup full-config on page 857
- backup cli-config on page 856
- system backup on page 248

backup web-protection-profile

Use this command to back up web protection profiles of a FortiWeb appliance to a TFTP server.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `mntgrp` area. For details, see Permissions on page 46.

Syntax

```
execute backup web-protection-profile <filename_str> <tftp_ipv4>[<password_str>]
```

Variable	Description	Default
<filename_str>	Enter the name of the backup file, such as `config.zip`.	No default.
<tftp_ipv4>	Enter the IP address of the TFTP server.	No default.
[<password_str>]	Enter a password to be used when encrypting the backup `.zip` extension file. This is optional. If you don't provide a password, the backup file will be stored as a clear file with a `.zip` extension. **Caution:** Remember the password or keep it in a secure location. You will be required to enter the same password when restoring an encrypted backup file. If you forget or lose the password, you won't be able to use that encrypted backup file.	No default.

Example

This example backs up web protection profiles of the FortiWeb appliance on a TFTP server at IP address `192.0.2.23`. The file is encrypted with the password `P@ssword1`.

```
execute backup web-protection-profile tftp config.zip 192.0.2.23 P@ssword1
```

Related topics

- system backup on page 248

batch

Use this command to execute commands in a group. If a command in the group fails or an operation cannot be completed, every command in the group can be rolled back, whether they were successful or not.

To use this command, your administrator account's access control profile must have at least `r` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
execute batch start
execute batch status
execute batch lastlog
execute batch recover
execute batch end
```

Variable	Description	Default
start	Enter to initiate batch mode. Every subsequent command will be grouped until you enter the `execute batch end` command.	No default.

status	Enter to determine whether batch mode is running. If batch mode is running, you will see this message:
	`Batch mode is running...`
	
	If batch mode is not running, you will see this command:
	`Batch mode is stopped...`
		No default.

lastlog	Enter to view the executed commands in the current batch mode.	No default.
recover	Enter to rollback every command that has been executed in the current batch mode.	No default.
end	Enter to turn off batch mode.	No default.

create-raid level

Use the this command to initialize the RAID.

Currently, only RAID level 1 is supported, and only on FortiWeb 1000B/C/D/E, 2000E, 3000C/CFsx, 3000E, and 4000E shipped with FortiWeb 4.0 MR1 or later.

On older appliances that have been upgraded to FortiWeb 4.0 MR1, RAID cannot be activated.

Back up any data before initializing the array.

Back up the data regularly. RAID is not a substitute for regular backups. RAID 1 (mirroring) is designed to improve hardware fault tolerance, but cannot negate all risks.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
execute create-raid level {raid1}
```

Variable	Description	Default
level {raid1}	Enter the RAID level. Currently, only RAID level 1 is supported.	`raid1`

Related topics

- system raid on page 372
- hardware raid list on page 813
- create-raid rebuild on page 864

cpugroup

Use this command to enable or disable CPU resource isolation for internal system daemons. When enabled, FortiWeb enforces CPU usage limits across predefined daemon groups using Linux control groups (cgroups). This helps ensure that critical services remain responsive under high system load.

```
execute cpugroup {enable | disable}
execute cpugroup_status
```

Variable	Description	Default
cpugroup {enable | disable}	Enables or disables CPU resource isolation. When enabled, FortiWeb assigns internal daemons to CPU groups with fixed share values.	disable
cpugroup_status	Displays the current CPU group status, including which daemons are assigned to each group and their respective CPU share values.	No default

create-raid rebuild

Use the this command to rebuild the RAID.

Currently, only RAID level 1 is supported, and only on the following models shipped with FortiWeb 4.0 MR1 or later:

- FortiWeb-1000B
- FortiWeb-1000C
- FortiWeb-1000D
- FortiWeb-1000E
- FortiWeb-1000F
- FortiWeb-2000E
- FortiWeb-3000C
- FortiWeb-3000D
- FortiWeb-3000E
- FortiWeb-4000C
- FortiWeb-4000D
- FortiWeb-4000E

Note: All supported platforms use hardware RAID, except for the FortiWeb-1000E and 1000F models, which implement software RAID.

On FortiWeb-1000E and 1000F (software RAID), executing this command displays a “data will be clearing” prompt before proceeding. On all other supported hardware RAID platforms, no such prompt is shown.

RAID cannot be activated on older appliances that were upgraded to FortiWeb 4.0 MR1.

Back up the data regularly. RAID is not a substitute for regular backups. RAID 1 (mirroring) is designed to improve hardware fault tolerance, but cannot negate all risks.

Rebuilding the array due to disk failure may result in some loss of packet log data.

To use this command, your administrator account’s access control profile must have either `w` or `rw` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
execute create-raid rebuild
```

Example

This example rebuilds the RAID array.

```
execute create-raid rebuild
```

The CLI displays the following:

```
This operation will clear all data on disk :0!
Do you want to continue? (y/n)
```

After you enter `y` (yes), the CLI displays additional messages.

Related topics

- system raid on page 372
- hardware raid list on page 813

date

Use this command to display or set the system date.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
execute date <date_str>
```

Variable	Description	Default
date <date_str>	Enter the current date for the FortiWeb appliance's time zone, using the format `yyyy-mm-dd`, where: • `yyyy` is the year. Valid years are `2001` to `2037`. • `mm` is the month. Valid months are `01` to `12`. • `dd` is the day of the month. Valid days are `01` to `31`. If you do not specify a date, the command returns the current system date. Shortened values, such as `06` instead of `2006` for the year or `1` instead of `01` for the month or day, are not valid.	No default.

Example

This example sets the date to September 23, 2017:

```
execute date 2017-09-23
```

Related topics

- time on page 897

db rebuild

Use this command to clean and rebuild the FortiWeb appliance's database for disklog. Please note in HA mode, running `execute db rebuild` on master appliance will take effect on all slaves simultaneously.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `mntgrp` area. For details, see Permissions on page 46.

For some cases, it would take a long time to complete database rebuild depending on how many logs the system has. While the database is rebuilding, new generated logs are postponed to be written to the database so the newly generated logs are not available immediately on GUI. The logs are all saved in log files. No logs would be lost.

Syntax

```
execute db rebuild
```

Related topics

- formatlogdisk on page 869
- debug upload on page 802

dnscache-cleanup

Use this command to clean up all the DNS proxy cache information.

Syntax

```
execute dnscache-cleanup
This operation will clean up all the dnsproxy cache information!
Do you want to continue? (y/n)
```

erase-disk

Use this command to erase the hard disk or flash memory.

This command requires a console connection to the appliance and is available only when Federal Information Processing Standards (FIPS) and Common Criteria (CC) compliant mode is enabled. For details, see system fips-cc on page 298.

Syntax

```
execute erase-disk { flash | disk } [<erase-times> ]
```

Variable	Description	Default
{ flash | disk }	Specify whether to erase the flash memory or the hard disk.	No default.
<erase-times>	Enter the number of times to overwrite the specified memory with random data. The valid range is 1-35.	1

factoryreset

Use this command to reset the FortiWeb appliance to its default settings for the currently installed firmware version. If you have not upgraded or downgraded the firmware, this restores factory default settings.

Back up your configuration first. This command resets all changes that you have made to the FortiWeb appliance's configuration file and reverts the system to the default values for the firmware version. Depending on the firmware version, this could include factory default settings for the IP addresses of network interfaces. For details about creating a backup, see backup cli-config on page 856.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `mntgrp` area. For details, see Permissions on page 46.

Syntax

```
execute factoryreset
```

Related topics

- backup cli-config on page 856
- backup full-config on page 857
- restore config on page 889

fctems

Use this command to verify or unverify the EMS server, or show the verification status.

Syntax

To verify the certificate of an EMS server , run:

```
execute fctems verify <ems_name>
```

To disconnect from an EMS server , run:

```
execute fctems unverify <ems_name>
```

To check whether an EMS server is verified, run:

```
execute fctems is-verified <ems_name>
```

Related topics

- system endpoint-control on page 288
- fctems on page 868
- server-policy ztna-profile on page 219
- server-policy ztna-rule on page 220

fdnserver delete

Use this command to delete all FDS servers. FortiWeb will update the FDS servers during the next update.

Syntax

```
execute fdnserver delete
```

Related topics

fdnserver show on page 869

fdnserver show

Use this command to show the list of all current FDS servers.

Syntax

```
execute fdnserver show
```

Example

```
execute fdnserver show
SerialNumber=FPT-FDS-DELL0002|Address=173.243.138.80:443|FDNListener=173.243.138.80:8889|TimeZone=9
SerialNumber=FPT-FDS-DELL0004|Address=173.243.138.66:443|FDNListener=173.243.138.66:8889|TimeZone=-8
```

Related topics

fdnserver delete on page 868

formatlogdisk

Use this command to clear the logs from the FortiWeb appliance's hard disk and reformat the disk.

- This operation deletes all locally stored log files.
- The system will reboot after this command is executed.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `sysgrp` area. For details, see Permissions on page 46.

When you execute this command, the FortiWeb appliance displays the following message:

```
This operation will clear all data on the log disk and take a few minutes according to the disk
      size!!
Do you want to continue? (y/n)
```

Syntax

```
execute formatlogdisk
```

Related topics

- db rebuild on page 866

forticloud-sandbox

These commands allow administrators to manage FortiCloud Sandbox connectivity. The **update** command refreshes the contract information to ensure the device has the latest service entitlement, while the **show** command retrieves the current FortiCloud Sandbox IP address for verification and troubleshooting.

Syntax

```
execute forticloud-sandbox update
execute forticloud-sandbox show
```

Variable	Description	Default
update	Updates the FortiCloud Sandbox contract information.	No default.
show	Displays the IP address of the FortiCloud Sandbox service.	No default.

Example

```
FortiWeb # execute forticloud-sandbox update
Region: Europe
connectivity status: Connected
```

```
FortiWeb # execute forticloud-sandbox show
Region: Europe
Server ip addr: 83.231.212.151
Server port: 514
```

```
Alternate server ip addr: 83.231.212.157
Alternate server port: 514
```

ha disconnect

Use this command to manually force a FortiWeb appliance to leave the HA group, **without** unplugging any cables. This can be useful, for example, if you need to remove a standby appliance from the HA cluster in order to configure it for standalone operation, and want to do so **without** disrupting traffic, and without unplugging cables.

Behavior varies by which appliance you eject:

- **Active**–Failover occurs. The standby remains as a member of the HA group, and will elect itself as the new active appliance, assuming all of the HA cluster's configured IP addresses and traffic processing duties.
- **Standby**–No failover occurs. The active appliance remains actively processing traffic.

To ensure that you can re-connect to the ejected appliance's GUI or CLI via a remote network connection (not only via its local console), this command requires that you specify an IP address and port name that will become its new management interface. By default, it will be accessible via HTTP, HTTPS, SSH, and telnet.

All other network interfaces on the ejected appliance will be brought down and reset to 0.0.0.0/0.0.0.0. To configure them, you must connect to the ejected appliance's GUI or CLI.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
execute ha disconnect <serial-number_str> <interface_name> <interface_ipv4mask/ipv6mask>
```

Variable	Description	Default
disconnect <serial-number_str>	Enter the serial number of the FortiWeb appliance that you want to disconnect from the cluster. To display the serial number of each appliance in the HA group, enter: `execute ha disconnect ?`	No default.
<interface_name>	Enter the name of the network interface, such as `port1`, that will be configured as the ejected appliance's management interface.	No default.
<interface_ipv4mask/ipv6mask>	Enter the IP address and netmask that will be configured as the ejected appliance's management interface.	No default.

Example

This example ejects the standby appliance whose serial number is FV-1KC3R11111111, assigning its port1 to be the web UI interface, reachable at `192.0.2.123`.

```
execute ha disconnect FV-1KC3R11111111 port1 192.0.2.123/24 192::2:123/64
```

After the command completes, to reconfigure the ejected appliance, you could then use either a web browser or SSH client to connect to `192.0.2.123` in order to reconfigure it for standalone operation.

Related topics

- ha disconnect on page 871
- ha manage on page 875
- ha md5sum on page 876
- system ha status on page 842
- system ha mac on page 839
- system status on page 904

ha failover

Use the `execute ha failover` command group to manually trigger or clear a forced HA failover on a FortiWeb device. This mechanism overrides standard HA election behavior, allowing administrators to shift the current node to standby mode without requiring a failure condition.

This command is intended for controlled scenarios such as testing, troubleshooting, or temporary administrative operations. It is supported only in Active-Passive (AP), Active-Active-Standard (AAS), and Active-Active-High-Volume (AAH) HA modes.

The failover state does not persist across device reboots or HA mode changes. When cleared, the device resumes normal HA primary election based on link status, uptime, priority, and serial number.

Syntax

```
execute ha failover {set | unset | status}
```

`set`	Forces the current node to relinquish the primary role and enter standby.
`unset`	Clears the manual failover state and returns the node to standard HA election behavior.
`status`	Displays the current manual failover state of the node.

Operational Behavior

Scope and Availability

- Supported only in HA AP, AAS, or AAH modes.
- Not available in Standalone or Manager modes, including public cloud deployments.

Failover Control and Reset Conditions

- The manual failover state is automatically cleared under the following conditions:
  - The system reboots.
  - The HA mode is changed to Standalone.

HA Election Logic (when failover is cleared)

- The device resumes standard HA election based on:
  - Link status of monitor interfaces
  - HA uptime
  - HA priority
  - Serial number (used as a tie-breaker)
- If override is enabled, HA priority takes precedence.

Command Visibility and Logging

- Failover operations (`set` and `unset`) generate entries in the event log.
- The current manual failover state appears in the outputs of:
  - `get system status`
  - `get system ha-status`

Cluster Behavior

- If a new node joins a cluster where manual failover is enabled, the original HA election state is preserved.
- After full synchronization, member nodes retain their failover status unless explicitly reconfigured.

ha manage

Use this command to log in to another appliance in the HA group via the HA link. In most cases, you log into a standby appliance (also called the secondary) from the main (primary) appliance, but you can also use a standby appliance to access the main appliance.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
execute ha manage <cluster-index>
```

Variable	Description	Default
<cluster-index>	Enter an index value that the FortiWeb HA feature assigns to a cluster member based on its serial number. The cluster member with the highest serial number has a cluster index of 0, the one with the second-highest serial number has a cluster index of 1, and so on. To display the index numbers of the cluster members, enter: `execute ha manage ?`	No default.

Example

In this example, you are logged in to the main appliance.

```
execute ha manage ?
<id>    please input peer box index.
<2>     Subsidary unit FV-1KD3A12345678
<3>     Subsidary unit FV-1KD3A11345678
```

The cluster index and serial number of the appliance you are currently logged in to is not displayed.

Enter `3` to connect to the standby appliance with serial number FV-1KD3A11345678. The CLI prompt changes to the host name of this unit and the login prompt is displayed.

To return to the primary unit, enter `exit`.

Related topics

- ha disconnect on page 871
- ha md5sum on page 876
- ha synchronize on page 876
- system ha status on page 842
- system ha mac on page 839

ha md5sum

Use this command to retrieve the CLI system configuration MD5 from the appliances in an HA cluster.

This information allows you to confirm whether the HA configuration is synchronized.

Syntax

```
execute ha md5sum
```

Example

Below is a sample output.

```
FortiWeb # execute ha md5sum
FV-1KD3A15800048<Primary>
   SYS: A4BA318B0762E202B4CAE44173F08CB5
   CLI: 408268C68309651DC4C9D8C094B1EF0F
FV-1KD3A14800059<Secondary>
   SYS: A4BA318B0762E202B4CAE44173F08CB5
   CLI: 408268C68309651DC4C9D8C094B1EF0F
```

Related topics

- ha disconnect on page 871
- ha manage on page 875

ha synchronize

Use this command to manually control the synchronization of configuration files and FortiGuard service-related packages from the active HA appliance to the standby appliance.

Typically, most HA synchronization happens automatically, whenever changes are made. However, in some cases, you may want to use this command to manually initiate full or partial HA synchronization, including to

- Delay synchronization to a more convenient time if you are planning to make large batch changes, and therefore delayed synchronization is preferable for network performance reasons
- Manually force synchronization of files that are not automatically synchronized
- Trigger automatic synchronization if it has been interrupted due to HA link failure, daemon crashes, etc.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
execute ha synchronize {all | avupd | cli | geodb | sys}
```

Variable	Description	Default
synchronize {all | avupd | cli | geodb | sys}	Select which part of the configuration and/or FortiGuard service-related packages to synchronize. • `all`–Entire configuration, including CLI configuration, system files, and signature databases. • `avupd`–Only the FortiGuard Antivirus service package, including the virus signatures, scan engine, and proxy. • `cli`–Only the core CLI configuration file (FortiWeb_system.conf). You can use the `show` command to view the contents of the configuration file. • `geodb`–Only the geography-to-IP address mappings. Similar to firmware, these can be downloaded from the Fortinet Customer Service & Support website: https://support.fortinet.com • `sys`–Only the IP Reputation Database (IRDB) and system files such as X.509 certificates. **Note:** This command has no effect if you use the command `execute ha synchronize stop` to pause it manually.	No default.

Example

This example shows how to manually synchronize the virus signature and engine package to the standby appliance.

```
FortiWeb # execute ha synchronize avupd
starting synchronize with HA primary...
```

Related topics

- ha disconnect on page 871
- ha manage on page 875

- ha md5sum on page 876

icap-cache-clear

ICAP server receives files from FortiWeb to verify whether the files pose a threat and returns the results to FortiWeb. The results are stored in FortiWeb cache for a certain period so that during then FortiWeb does not re-submit the file to ICAP server.

Use this command to clear ICAP cache. You can specify the hash value of the file to clear the cached results for specific files, or clear all cache.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
execute icap-cache-clear sha256 <sha256 strings of file1> <sha256 strings of file2> ...
execute icap-cache-clear all
```

Variable	Description	Default
<sha256 strings of file1> <sha256 strings of file2> ...	Enter the sha256 strings of the files to be cleared. Up to 32 hash value strings are allowed.	No default.
all	Clear all cache.	No default.

Example

```
FortiWeb # execute icap-cache-clear sha256 XXXXXXXXXXXXX XXXXXXXXXXXXXX
FortiWeb # execute icap-cache-clear all
```

ping

Use this command to perform an ICMP `ECHO` request (also called a ping) to a host by specifying its fully qualified domain name (FQDN) or IPv4 address, using the options configured by ping-options.

Pings are often used to test IP-layer connectivity during troubleshooting.

To use this command, your administrator account's access control profile must have at least `r` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
execute ping {<host_fqdn> | <host_ipv4>}
```

Variable	Description	Default
ping {<host_fqdn> | <host_ipv4>}	Type either the IPv4 address or fully qualified domain name (FQDN) of the host.	No default.

Example

This example pings a host with the IP address `192.0.2.10`.

```
execute ping 192.0.2.10
```

The CLI displays the following:

```
PING 192.0.2.10 (192.0.2.10): 56 data bytes
      64 bytes from 192.0.2.10: icmp_seq=0 ttl=128 time=0.5 ms
      64 bytes from 192.0.2.10: icmp_seq=1 ttl=128 time=0.2 ms
      64 bytes from 192.0.2.10: icmp_seq=2 ttl=128 time=0.2 ms
      64 bytes from 192.0.2.10: icmp_seq=3 ttl=128 time=0.2 ms
      64 bytes from 192.0.2.10: icmp_seq=4 ttl=128 time=0.2 ms
--- 192.0.2.10 ping statistics ---
      5 packets transmitted, 5 packets received, 0% packet loss
      round-trip min/avg/max = 0.2/0.2/0.5 ms
```

The results indicate that a route exists between the FortiWeb appliance and `192.0.2.10`. It also indicates that during the sample period, there was no packet loss, and the average response time was 0.2 milliseconds.

Example

This example pings a host with the IP address `192.0.2.78`.

```
execute ping 192.0.2.78
```

The CLI displays the following:

```
PING 192.0.2.78 (192.0.2.78): 56 data bytes
```

After several seconds, no output appears. The administrator halts the ping by pressing Ctrl+C. The CLI displays the following:

```
--- 192.0.2.78 ping statistics ---
5 packets transmitted, 0 packets received, 100% packet loss
```

The results indicate the host may be down, or there is no route between the FortiWeb appliance and `192.0.2.78`. To determine the point of failure along the route, further diagnostic tests are required, such as traceroute on page 898.

Related topics

- system interface on page 351
- server-policy vserver on page 217
- ping-options on page 881
- ping6 on page 880
- telnettest on page 896
- traceroute on page 898
- network ip on page 817
- hardware nic on page 810
- network sniffer on page 821

ping6

Use this command to perform an ICMP ECHO request (also called a ping) to a host by specifying its IPv6 address, using the options configured in ping-options on page 881.

Pings are often used to test IP-layer connectivity during troubleshooting.

To use this command, your administrator account's access control profile must have at least `r` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
execute ping6 {<host_fqdn> | <host_ipv6>}
```

Variable	Description	Default
ping6 {<host_fqdn> | <host_ipv6>}	Enter either the IP address or fully qualified domain name (FQDN) of the host.	No default.

Example

This example pings a host with the IP address `2001:0db8:85a3:::8a2e:0370:7334`.

```
execute ping6 2607:f0b0:f:420::
```

The CLI displays the following:

```
PING 2607:f0b0:f:420:: (2607:f0b0:f:420::): 56 data bytes
```

After several seconds, no output appears. The administrator halts the ping by pressing Ctrl+C. The CLI displays the following:

```
--- 2607:f0b0:f:420:: ping statistics ---
5 packets transmitted, 0 packets received, 100% packet loss
```

The results indicate the host may be down, or there is no route between the FortiWeb appliance and `2607:f0b0:f:420::`. To determine the point of failure along the route, further diagnostic tests are required, such as traceroute on page 898.

Related topics

- system interface on page 351
- server-policy vserver on page 217
- ping6-options on page 883
- telnettest on page 896
- traceroute on page 898
- network ip on page 817
- hardware nic on page 810
- network route on page 818
- network sniffer on page 821

ping-options

Use these commands to configure the behavior of the ping on page 878 command.

To use this command, your administrator account's access control profile must have at least `r` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
execute ping-options data-size <bytes_int>
execute ping-options df-bit {yes | no}
execute ping-options pattern <bufferpattern_hex>
execute ping-options repeat-count <repeat_int>
execute ping-options source {auto | <interface_ipv4>}
execute ping-options timeout <seconds_int>
execute ping-options tos {<service_type>}
execute ping-options ttl <hops_int>
execute ping-options validate-reply {yes | no}
execute ping-options view-settings
```

Variable	Description	Default
data-size <bytes_int>	Enter datagram size in bytes.This allows you to send out packets of different sizes for testing the effect of packet size on the connection. If you want to configure the pattern that will be used to buffer small datagrams to reach this size, also configure pattern <bufferpattern_hex> on page 882.	56
df-bit {yes | no}	Enter either `yes` to set the DF bit in the IP header to prevent the ICMP packet from being fragmented, or enter `no` to allow the ICMP packet to be fragmented.	no
pattern <bufferpattern_hex>	Enter a hexadecimal pattern, such as `00ffaabb`, to fill the optional data buffer at the end of the ICMP packet. The size of the buffer is determined by data-size <bytes_int> on page 882.	No default.
repeat-count <repeat_int>	Enter the number of times to repeat the ping.	5
source {auto | <interface_ipv4>}	Select the network interface from which the ping is sent. Enter either `auto` or a FortiWeb network interface IP address.	auto
timeout <seconds_int>	Enter the ping response timeout in seconds.	2
tos {<service_type>}	Enter the IP type-of-service option value, either: • `default`–Do not indicate. That is, set the TOS byte to 0. • `lowcost`–Minimize cost. • `lowdelay`–Minimize delay. • `reliability`–Maximize reliability. • `throughput`–Maximize throughput.	`default`
ttl <hops_int>	Enter the time-to-live (TTL) value.	64
validate-reply {yes | no}	Select whether or not to validate ping replies.	no
view-settings	Display the current ping option settings.	No default.

Example

This example sets the number of pings to three and the source IP address to `192.0.2.1`, then views the ping options to verify their configuration.

```
execute ping-option repeat-count 3
execute ping-option source 192.0.2.1
execute ping-option view-settings
```

The CLI would display the following:

```
Ping Options:
Repeat Count: 3
Data Size: 56
Timeout: 2
```

```
TTL: 64
TOS: 0
DF bit: unset
Source Address: 192.0.2.1
Pattern:
Pattern Size in Bytes: 0
Validate Reply: no
```

Related topics

- ping on page 878
- traceroute on page 898

ping6-options

Use these commands to configure the behavior of the ping6 on page 880 command.

To use this command, your administrator account's access control profile must have at least `r` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
execute ping6-options data-size <bytes_int>
execute ping6-options pattern <bufferpattern_hex>
execute ping6-options repeat-count <repeat_int>
execute ping6-options source {auto | <interface_ipv6>}
execute ping6-options timeout <seconds_int>
execute ping6-options tos {<service_type>}
execute ping6-options ttl <hops_int>
execute ping6-options validate-reply {yes | no}
execute ping6-options view-settings
```

Variable	Description	Default
data-size <bytes_int>	Enter datagram size in bytes. This allows you to send out packets of different sizes for testing the effect of packet size on the connection. If you want to configure the pattern that will be used to buffer small datagrams to reach this size, also configure pattern <bufferpattern_hex> on page 882.	56
pattern <bufferpattern_hex>	Enter a hexadecimal pattern, such as `00ffaabb`, to fill the optional data buffer at the end of the ICMP packet. The size of the buffer is determined by data-size <bytes_int> on page 882.	No default.

Variable	Description	Default
repeat-count <repeat_int>	Enter the number of times to repeat the ping.	5
source {auto | <interface_ ipv6>}	Select the network interface from which the ping is sent. Enter either `auto` or a FortiWeb network interface IP address.	`auto`
timeout <seconds_int>	Enter the ping response timeout in seconds.	2
tos {<service_type>}	Enter the IP type-of-service option value, either: • `default`–Do not indicate. That is, set the TOS byte to 0. • `lowcost`–Minimize cost. • `lowdelay`–Minimize delay. • `reliability`–Maximize reliability. • `throughput`–Maximize throughput.	`default`
ttl <hops_int>	Enter the time-to-live (TTL) value.	64
validate-reply {yes | no}	Select whether or not to validate ping replies.	no
view-settings	Display the current ping option settings.	No default.

Example

This example sets the number of pings to 3, then views the ping options to verify their configuration.

```
execute ping6-option repeat-count 3
execute ping6-option view-settings
```

The CLI would display the following:

```
IPV6 Ping Options:
Repeat Count: 3
Data Size: 56
Timeout: 2
Interval: 1
TTL: 64
TOS: 0
Source Address: auto
Pattern:
Pattern Size in Bytes: 0
Validate Reply: no
```

Related topics

- ping6 on page 880
- traceroute on page 898

private-encryption-key

When private encryption is enabled (see system encryption-method on page 287), FortiWeb generates a private key to secure sensitive configurations. If private encryption is disabled and later re-enabled, a new private key is generated, which can cause backup configurations encrypted with the previous key to become unusable.

To troubleshoot such scenarios, use the `execute private-encryption-key sample` command to generate a base64-encoded clear text string and its HMAC signature encrypted with the current private key. Before any private key changes, users should generate and record this sample for future verification.

If a backup configuration fails to restore, the `execute private-encryption-key verify` command can be used to check whether the stored sample still matches the current private key. A failed verification indicates that a new private key was generated, confirming that the original key is no longer in use. If the verification passes, the private key remains unchanged.

Syntax

```
execute private-encryption-key sample
execute private-encryption-key verify <sample>
```

Variable	Description	Default
sample	Generate a base64-encoded clear text string and its HMAC signature encrypted using the private key.	No default.
verify <sample>	Verify the HMAC signature of the provided base64-encoded clear text using the private key. Use the sample generated by `execute private-encryption-key sample`.	No default.

Example

```
# execute private-encryption-key sample
B64TEXT: ec1d9EtAaX7ZHl6CBihdb4/8QdqgjWZwkrEqqJYswbk=
B64HMAC: hDYGL62rIeg4NuspIAt2Pd8thrE=
```

```
# execute private-encryption-key verify ec1d9EtAaX7ZHl6CBihdb4/8QdqgjWZwkrEqqJYswbk=
hDYGL62rIeg4NuspIAt2Pd8thrEa
Verification failed.
```

Related topics

system encryption-method on page 287

reboot

Use this command to restart the FortiWeb appliance.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `mntgrp` area. For details, see Permissions on page 46.

Syntax

```
execute reboot
```

Example

This example shows the reboot command in action.

```
execute reboot
```

The CLI displays the following:

```
This operation will reboot the system !
Do you want to continue? (y/n)
```

After you enter `y` (yes), the CLI displays the following:

```
System is rebooting...
```

If you are connected to the CLI through a local console, the CLI displays messages while the reboot is occurring.

If you are connected to the CLI through the network, the CLI will not display any notification while the reboot is occurring, as this occurs after the network interfaces have been shut down. Instead, you may notice that the connection is terminated. Time required by the reboot varies by many factors, such as whether or not hard disk verification is required, but may be several minutes.

Related topics

- shutdown on page 894
- system performance on page 903

redis rebuild

Use this command to clean and rebuild the database for ML and Client Management. Please note in HA mode, running `execute db rebuild` on master appliance will take effect on all slaves simultaneously. It will reboot the system.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `mntgrp` area. For details, see Permissions on page 46.

Syntax

```
execute redis rebuild
```

Related topics

- formatlogdisk on page 869
- debug upload on page 802

remove vmlicense

Use this command to remove a FortiWeb-VM license.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `mntgrp` area. For details, see Permissions on page 46.

For more information on FortiWeb-VM licenses, see the *FortiWeb-VM Install Guide*:

https://docs.fortinet.com/fortiweb/hardware

Syntax

```
execute remove vmlicense
```

Example

This example shows the remove command in action.

```
execute remove vmlicense
```

The CLI displays the following:

```
This operation will remove existing license!
Do you want to continue? (y/n)
```

After you enter y (yes), the CLI displays the following:

```
removing license ......
```

Related Topics

- restore vmlicense on page 892

restore cert-config

Use this command to restore certificates of a FortiWeb appliance from a TFTP, SFTP, or FTP server.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `mntgrp` area. For details, see Permissions on page 46.

Syntax

```
execute restore cer-config <sftp/ftp/tftp> <filename_str><ipv4>[<password_str>]
```

Variable	Description	Default
<filename_str>	Enter the name of the file to be used for the backup file, such as `FortiWeb_backup.zip`.	No default.
<ipv4>	Enter the IP address of the TFTP, SFTP, or FTP server.	No default.
[<password_str>]	Enter a password to be used when decompressing the backup file. **Caution:** Remember the password or keep it in a secure location. You will be required to enter the same password when restoring an encrypted backup file. If you forget or lose the password, you won't be able to use that encrypted backup file.	No default.

Example

This example restores certificates of the FortiWeb appliance on a TFTP server at IP address `192.0.2.23`. The file is encrypted with the password `P@ssword1`.

```
execute restore cert-config tftp FortiWeb_backup.zip 192.0.2.23 P@ssword1
```

Related topics

- restore config on page 889

restore config

Use this command to restore the configuration from a configuration backup file on a TFTP, SFTP, or FTP server, or to install primary or backup firmware.

Back up the configuration before restoring the configuration. This command restores configuration changes only, and does not affect settings that remain at their default values. Default values may vary by firmware version. For backup commands, see backup cli-config on page 856 and backup full-config on page 857.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `mntgrp` area. For details, see Permissions on page 46.

Syntax

```
execute restore config <sftp/ftp/tftp> <filename_str>  <ipv4> [<password_str>]
```

Variable	Description	Default
<filename_str>	Enter the name of the backup or firmware image file.	No default.
<ipv4>	Enter the IP address of the TFTP, SFTP, or FTP servers.	No default.
[<password_str>]	Enter the password that was used to encrypt the backup file, if any. If you do not provide a password, the backup file must have been stored as a clear file with a `.zip` extension.	No default.

Example

This example downloads a configuration file named `backup.zip` from the TFTP server, `192.0.2.23`, to the FortiWeb appliance. The backup file was encrypted with the password `P@ssword1`.

```
execute restore config tftp backup.zip 192.0.2.23 P@ssword1
```

The FortiWeb appliance then applies the configuration backup and reboots.

Related topics

- backup full-config on page 857
- restore config on page 889
- restore image on page 890

- restore secondary-image on page 891

restore image

Use this command to install firmware on the primary partition and reboot.

Back up the configuration before installing new firmware. Installing new firmware can change default settings and reset settings that are incompatible with the new version. For backup commands, see backup full-config on page 857 and backup cli-config on page 856.

Unlike installing firmware via TFTP during a boot interrupt, installing firmware using this command will attempt to preserve settings and files, and not necessarily restore the FortiWeb appliance to its firmware/factory default configuration.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `mntgrp` area. For details, see Permissions on page 46.

Syntax

```
execute restore image ftp <filename_str>  <ftp_ipv4>
execute restore image tftp <filename_str>  <tftp_ipv4>
```

Variable	Description	Default
<filename_str>	Enter the name of the firmware image file.	No default.
<ftp_ipv4>	Enter the IP address of the TFTP server.	No default.
<tftp_ipv4>	Enter the IP address of the FTP server.	No default.

Example

This example installs a firmware file named `firmware.out` from the TFTP server, `192.0.2.23`, to the FortiWeb appliance.

```
execute restore image tftp firmware.out 192.0.2.23
```

The FortiWeb appliance downloads the firmware file, installs it, and reboots.

Related topics

- backup cli-config on page 856
- backup full-config on page 857
- restore config on page 889
- restore secondary-image on page 891
- system flash on page 832
- system status on page 904

restore secondary-image

Use this command to install backup firmware on the secondary partition and reboot.

Back up the configuration before installing new firmware. Installing new firmware can change default settings and reset settings that are incompatible with the new version. For backup commands, see backup full-config on page 857 and backup cli-config on page 856.

Unlike installing firmware via TFTP during a boot interrupt, installing firmware using this command will attempt to preserve settings and files, and not necessarily restore the FortiWeb appliance to its firmware/factory default configuration.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `mntgrp` area. For details, see Permissions on page 46.

Syntax

```
execute restore secondary-image ftp <filename_str>  <ftp_ipv4>
execute restore secondary-image tftp <filename_str>  <tftp_ipv4>
```

Variable	Description	Default
<filename_str>	Enter the name of the firmware image file.	No default.
<ftp_ipv4>	Enter the IP address of the FTP server.	No default.
<tftp_ipv4>	Enter the IP address of the TFTP server.	No default.

Example

This example installs a firmware file named `firmware.out` from the TFTP server, `192.0.2.23`, to the FortiWeb appliance.

```
execute restore secondary-image tftp firmware.out 192.0.2.23
```

The FortiWeb appliance downloads the firmware file, installs it, and reboots.

Related topics

- backup cli-config on page 856
- backup full-config on page 857
- restore config on page 889
- restore image on page 890
- system flash on page 832
- system status on page 904

restore vmlicense

Use this command to upload a FortiWeb-VM license file from an FTP or TFTP server.

After you enter the command, FortiWeb prompts you to confirm the upload.

After the license is authenticated successfully, the following message is displayed:

"*ATTENTION*: license registration status changed to 'VALID', please logout and re-login"

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `mntgrp` area. For details, see Permissions on page 46.

For more information on FortiWeb-VM licenses, see the *FortiWeb-VM Install Guide*:

https://docs.fortinet.com/fortiweb/hardware

Syntax

```
execute restore vmlicense {ftp | tftp} "<license-file_str>" {"<ftp_ipv4>" | "<user_
    str>":"<password_str>"@"<ftp_ipv4>" | "<tftp_ipv4>"}
```

Variable	Description	Default
{ftp | tftp}	Specify whether to connect to the server using file transfer protocol (FTP) or trivial file transfer protocol (TFTP).	No default.
"<license-file_str>"	Enter the name of the license file.	No default.
"<ftp_ipv4>"	Enter the IP address of the FTP server.	No default.
"<user_str>"	Enter the user name that FortiWeb uses to authenticate with the server.	No default.

Variable	Description	Default
"<password_str>"	Enter the password for the account specified by <user_str>.	No default.
"<tftp_ipv4>"	Enter the IP address of the TFTP server.	No default.

Example

This example uploads the license file `FVVM040000010871.lic` from the TFTP server `192.0.2.23` to the FortiWeb appliance.

```
execute restore vmlicense tftp FVVM040000010871.lic 192.0.2.23
```

The FortiWeb appliance uploads the file, and then prompts you to log out and log in again.

sandbox-cache-clear

Use this command to clear Sandbox cache. You can specify the hash value of the file to clear the cached results for specific files, or clear all cache.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
execute sandbox-cache-clear sha256 <sha256 strings of file1> <sha256 strings of file2> ...
execute sandbox-cache-clear all
```

Variable	Description	Default
<sha256 strings of file1> <sha256 strings of file2> ...	Enter the sha256 strings of the files to be cleared. Up to 32 hash value strings are allowed.	No default.
all	Clear all cache.	No default.

Example

```
FortiWeb # execute sandbox-cache-clear sha256 XXXXXXXXXXXXX XXXXXXXXXXXXXX
FortiWeb # execute sandbox-cache-clear all
```

session-cleanup

Use this command to immediately clean up all sessions.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `mntgrp` area. For details, see Permissions on page 46.

Syntax

```
execute session-cleanup
```

shutdown

Use this command to prepare the FortiWeb appliance to be powered down by halting the software, clearing all buffers, and writing all cached data to disk.

Power off the FortiWeb appliance only after issuing this command. Unplugging or switching off the FortiWeb appliance without issuing this command could result in data loss.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `mntgrp` area. For details, see Permissions on page 46.

Syntax

```
execute shutdown
```

Example

This example shows the reboot command in action.

```
execute shutdown
```

The CLI displays the following:

```
This operation will halt the system
(power-cycle needed to restart)!Do you want to continue? (y/n)
```

After you enter `y` (yes), the CLI displays the following:

```
System is shutting down...(power-cycle needed to restart)
```

If you are connected to the CLI through a local console, the CLI displays a message when the shutdown is complete.

If you are connected to the CLI through the network, the CLI will not display any notification when the shutdown is complete, as this occurs after the network interfaces have been shut down. Instead, you may notice that the connection times out.

Related topics

- reboot on page 886

telnet

Use this command to open a Telnet connection to a server using IPv4 to port 23.

Telnet connections are not secure. Eavesdroppers could easily obtain your administrator password. Only use telnet over a trusted, physically secured network, such as a direct connection between your computer and the appliance.

To use this command, your administrator account's access control profile must have at least `r` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
execute telnet "<host_ipv4>"
```

Variable	Description	Default
telnet "<host_ipv4>"	Enter the IP address of the host.	No default.

Example

This example Telnets to a host with the IP address `192.0.2.10`.

```
execute telnet 192.0.2.10
login: admin
Password: *******
```

Related topics

- telnettest on page 896
- ping on page 878

- ping6 on page 880

telnettest

Use this command to open a Telnet connection to a server using an IPv4 or IPv6 address or fully qualified domain name (FQDN). This command can be useful for troubleshooting. For example, when the server does not support the HTTP versions, methods, headers, and so on, that the client uses.

Telnet connections are not secure. Eavesdroppers could easily obtain your administrator password. Only use Telnet over a trusted, physically secured network, such as a direct connection between your computer and the appliance, and from the appliance to the server.

To use this command, your administrator account's access control profile must have at least `r` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
execute telnettest {"<host_ipv4>" | "<host_ipv6>" | "<host_fqdn>"}
```

Variable	Description	Default
telnettest {"<host_ipv4>" | "<host_ipv6>" | "<host_fqdn>"}	Enter the IP address or fully qualified domain name (FQDN) of the host.	No default.

Example

This example Telnets to a host with the IPv4 address `192.0.2.10` on port 80, the IANA standard port for HTTP.

```
FortiWeb# exec telnettest 192.0.2.10:80
Connected

GET /

Entering interactive mode. Type CTRL-D to exit.
<!DOCTYPE HTML PUBLIC "-//IETF//DTD HTML 2.0//EN">
<html><head>
<title>501 Method Not Implemented</title>
</head><body>
<h1>Method Not Implemented</h1>
<p>Get to /index.html not supported.<br />
</p>
<hr>
<address>Apache/2.2.22 (Unix) DAV/2 mod_ssl/2.2.22 OpenSSL/0.9.8x Server at irene.local Port
      80</address>
```

```
</body></html>
Connection closed.

Connection status to 192.0.2.10 port 80:
Connecting to remote host succeeded.
```

Related topics

- telnet on page 895
- ping on page 878
- ping6 on page 880

time

Use this command to display or set the system time.

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
execute time [<time_str>]
```

Variable	Description	Default
time [<time_str>]	Enter the current date for the FortiWeb appliance's time zone, using the format `hh:mm:ss`, where: • `hh` is the hour. Valid hours are 00-23 • `mm` is the minute. Valid minutes are 00-59. • `ss` is the second. Valid seconds are 00-59. If you do not specify a time, the command returns the current system time. Shortened values, such as `1` instead of `01` for the hour, are valid. For example, you could enter either `01:01:01` or `1:1:1`.	No default.

Example

This example sets the system time to 15:31:03:

```
execute time 15:31:03
```

Related topics

- date on page 865

traceroute

Use this command to use ICMP to test the connection between the FortiWeb appliance and another network device, and display information about the time required for network hops between the device and the FortiWeb appliance.

To use this command, your administrator account's access control profile must have at least `r` permission to the `sysgrp` area. For details, see Permissions on page 46.

Syntax

```
execute traceroute {"<host_fqdn>" | "<host_ipv4>"}
```

Variable	Description	Default
traceroute {"<host_fqdn>" | "<host_ipv4>"}	Enter either the IP address or fully qualified domain name (FQDN) of the host.	No default.

Example

This example tests connectivity between the FortiWeb appliance and docs.fortinet.com. In this example, the trace times out after the first hop, indicating a possible connectivity problem at that point in the network.

```
FortiWeb# execute traceroute docs.fortinet.com
traceroute to docs.fortinet.com (65.39.139.196), 30 hops max, 38 byte packets
1  192.0.2.200 (192.0.2.200) 0.324 ms 0.427 ms 0.360 ms
 2  * * *
```

Example

This example tests the availability of a network route to the server example.com.

```
execute traceroute example.com
```

The CLI displays the following:

```
traceroute to example.com (192.168.1.10), 32 hops max, 72 byte packets
1 172.16.1.2  0 ms 0 ms 0 ms
2  10.10.10.1  <static.isp.example.net> 2 ms 1 ms 2 ms
3  10.20.20.1   1 ms  5 ms 1 ms
4  10.10.10.2  <core.isp.example.net> 171 ms 186 ms 14 ms
```

```
5  10.30.30.1  <isp2.example.net> 10 ms 11 ms 10 ms
6  10.40.40.1  73 ms 74 ms 75 ms
7 192.168.1.1  79 ms 77 ms 79 ms
8 192.168.1.2 73 ms 73 ms 79 ms
9 192.168.1.10 73 ms 73 ms 79 ms
10 192.168.1.10 73 ms 73 ms 79 ms
```

Example

This example attempts to test connectivity between the FortiWeb appliance and example.com. However, the FortiWeb appliance could not trace the route, because the primary or secondary DNS server that the FortiWeb appliance is configured to query could not resolve the FQDN `example.com` into an IP address, and it therefore did not know to which IP address it should connect. As a result, an error message is displayed.

```
FortiWeb# execute traceroute example.com
traceroute: unknown host example.com
Command fail. Return code 1
```

To resolve the error message in order to perform connectivity testing, the administrator would first configure the FortiWeb appliance with the IP addresses of DNS servers that can resolve the FQDN `example.com`. For details, see system dns on page 286.

Related topics

- ping on page 878
- ping-options on page 881
- network ip on page 817
- hardware nic on page 810
- network sniffer on page 821

update-now

Use this command to initiate an update of the predefined robots, data types, suspicious URLS, and attack signatures used by your FortiWeb appliance.

FortiWeb appliances receive updates from the FortiGuard Distribution Network (FDN). The FDN is a world-wide network of FortiGuard Distribution Servers (FDS). FortiWeb appliances connect to the FDN by connecting to the FDS nearest to the FortiWeb appliance by its configured time zone.

The time required for the update varies with the availability of the updates, the size of the updates, and the speed of the FortiWeb appliance's network connection. If event logging is enabled, and the FortiWeb appliance cannot connect successfully, it will log the message `update failed, failed to connect any fds servers!` or `FortiWeb is unauthorized`

To use this command, your administrator account's access control profile must have either `w` or `rw` permission to the `mntgrp` area. For details, see Permissions on page 46.

Syntax

```
execute update-now
```

get

The `get` command displays parts of your FortiWeb appliance's configuration in the form of a list of settings and their values.

Unlike `show`, `get` displays **all** settings, even if they are still in their default state.

For example, you might get the current DNS settings:

```
get system dns
primary : 192.0.2.19
secondary : 0.0.0.0
domain : example.com
```

Notice that the command displays the setting for the secondary DNS server, even though it has not been configured, or has reverted to its default value.

Also unlike `show`, unless used from within an object or table, `get` requires that you specify the object or table whose settings you want to display.

For example, at the root prompt, this command would be valid:

```
get system dns
```

and this command would **not** be valid:

```
get
```

Like `show`, depending on whether or not you have specified an object, `get` may display one of two different outputs, either the configuration that you have just entered but not yet saved, or as it currently exists on the flash disk.

For example, immediately after configuring the secondary DNS server setting but **before** saving it, `get` displays two different outputs (differences highlighted in bold):

```
FortiWeb# config system dns
FortiWeb (dns)# set secondary 192.0.2.10
FortiWeb (dns)# get
primary : 192.0.2.19
secondary : 192.0.2.10
domain : example.com
FortiWeb (dns)# get system dns
primary : 192.0.2.19
secondary : 0.0.0.0
domain : example.com
```

The first output from `get` indicates the value that you have configured but not yet saved; the second output from `get` indicates the value that was last saved to disk.

If you were to now enter `end`, saving your setting to disk, `get` output for both syntactical forms would again match. However, if you were to enter `abort` at this point and discard your recently entered secondary DNS setting instead of saving it to disk, the FortiWeb appliance's configuration would therefore match the second output, not the first.

If you have entered settings but cannot remember how they differ from the existing configuration, the two different forms of `get`, with and without the object name, can be a useful way to remind yourself.

Most `get` commands, such as `get system dns`, are used to display configured settings. You can find relevant information about such commands in the corresponding config commands in the `config` chapter.

Other `get` commands, such as system performance on page 903, are used to display system information that is **not** configurable. This chapter describes this type of `get` command.

The get commands require at least read (r) permission to applicable administrator profile groups.

Although not explicitly shown in this section, for all config on page 60commands, there are related `get` and show on page 907 commands which display that part of the configuration. `get` and `show` commands use the same syntax as their related `config` command, unless otherwise mentioned. For syntax examples and descriptions of each configuration object, field, and option, see config on page 60.

When ADOMs are enabled, if you log in as `admin`, the top level of the shell changes: the two top level items are `get global` and `get vdom`:

- `get global` displays settings that only `admin` or other accounts with the **prof_admin** access profile can change.
- `get vdom` displays each ADOM and its respective settings.

This menu and CLI structure change is not visible to non-global accounts; ADOM administrators' navigation menus continue to appear similar to when ADOMs are disabled, except that global settings such as network interfaces, HA, and other global settings do not appear.

system fortisandbox-statistics

Use this command to display a count of uploaded files that FortiSandbox has evaluated in the past seven days, by evaluation result.

FortiWeb organizes the statistics using the following categories:

- Detected (total malicious files detected)
- Clean
- Risk-low (total low-risk malicious files detected)
- Risk-medium (total medium-risk malicious files detected)
- Risk-high (total high-risk malicious files detected)

Syntax

```
get system fortisandbox-statistics
```

Example

```
FortiWeb # get system fortisandbox-statistics
detected : 0
clean : 0
risk-low : 0
risk-medium : 0
risk-high : 0
```

Related topics

- system fortisandbox on page 312
- waf file-upload-restriction-policy on page 514
- log reports on page 77

system performance

Displays the FortiWeb appliance's CPU usage, memory usage, average system load, and up time.

Normal idle load varies by hardware platform, firmware, and configured features. To determine your specific baseline for idle, configure your system completely, reboot, then view the system load. After at least 1 week of uptime with typical traffic volume, view the system load again to determine the normal non-idle baseline.

System load is the average of percentages relative to the maximum possible capability of this FortiWeb appliance's hardware. It includes:

- Average system load
- Number of HTTP daemon/proxy processes or children
- Memory usage
- Disk swap usage

Syntax

```
get system performance
```

Example

```
FortiWeb # get system performance
CPU states: 4% used, 96% idle
Memory states: 18% used
System Load: 1
Up: 28 days, 11 hours, 38 minutes
```

Related topics

- system status on page 904
- hardware cpu on page 805
- hardware mem on page 809
- hardware raid list on page 813
- system kill on page 846
- system top on page 848
- policy on page 828
- reboot on page 886

system status

Use this command to display system status information, including:

- FortiWeb firmware version, build number and date
- FortiWeb appliance serial number and boot loader (“Bios”) version
- Log hard disk availability
- Host name
- Operation mode, such as Reverse Proxy or Transparent Inspection
- Current HA status for all appliances in the HA cluster (if HA is enabled)

Syntax

```
get system status
```

Example

```
get system status
International Version:FortiWeb-1000C 5.01,build0039,130726
Serial-Number:FV-1KC3R11700094
Bios version:04000002
Log hard disk:Available
Hostname:FortiWeb
Operation Mode:Reverse Proxy
Current HA mode=active-passive, Status=main
HA member :
Serial-Number Priority HA-Role
FV-1KC3R11700136 5 standby
FV-1KC3R11700094 1 main
```

Related topics

- system performance on page 903
- system ha status on page 842

waf predefined-global-allow-list

Use this command to get the global object allow list. This feature reduces false positives and improves performance.

Syntax

get waf predefined-global-allow-list

waf signature-rules

Use this command to list the IDs, names, and descriptions of signature rules.

You specify signatures in the `config waf signature` command using the signature ID only. This command allows you to view the names and descriptions of the IDs.

Syntax

```
get waf signature-rules
```

Example

```
get waf signature-rules
```

This example output is the first four entries that the CLI displays when FortiWeb is configured with the default signatures only.

```
rule id : 110000009
main class id : 110000000
main class name : Bad Robot
sub class id : 000000000
sub class name : Bad Robot
rule description : This signature prevents Google Skipfish scanner from exploiting a vulnerability
      to include an arbitrary remote file with malicious PHP code and executing it in the context of
      the webserver process.
This attack can be achieved in HTTP request arguments.
```

```
rule id : 110000010
main class id : 110000000
main class name : Bad Robot
sub class id : 000000000
sub class name : Bad Robot
rule description : This signature checks whether the request came from Google Skipfish Web scanner.
The signature check region: user-agent field in HTTP request header.


rule id : 110000011
main class id : 110000000
main class name : Bad Robot
sub class id : 000000000
sub class name : Bad Robot
rule description : This signature checks whether the request contains a string of a content scraper,
      which could be a part of virus.
The signature check region: user-agent field in HTTP request header.


rule id : 110000012
main class id : 110000000
main class name : Bad Robot
sub class id : 000000000
sub class name : Bad Robot
rule description : This signature checks whether the request came from Acunetix Web Vulnerability
      Scanner.
The signature check region: HTTP request url.
```

Related topics

- waf signature on page 628

show

The `show` command displays parts of your FortiWeb appliance's configuration in the form of commands that are required to achieve that configuration from the firmware's default state.

The `show` commands require at least read (r) permission to applicable administrator profile groups.

Although not explicitly shown in this section, for all config on page 60 commands, there are related get on page 901 and `show` commands which display that part of the configuration. `get` and `show` commands use the same syntax as their related `config` command, unless otherwise mentioned. For syntax examples and descriptions of each configuration object, field, and option, see config on page 60.

Unlike `get`, `show` does **not** display settings that are assumed to remain in their default state.

For example, you might show the current DNS settings:

```
FortiWeb# show system dns
config system dns
   set primary 172.16.1.10
   set domain "example.com"
end
```

Notice that the command does **not** display the setting for the secondary DNS server. This indicates that it has not been configured, or has reverted to its default value.

Like `get`, depending on whether or not you have specified an object, `show` may display one of two different outputs, either the configuration:

- that you have just entered but not yet saved, or
- as it currently exists on the flash disk, respectively.

For example, immediately after configuring the secondary DNS server setting but **before** saving it, `show` displays two different outputs (differences highlighted in bold):

```
FortiWeb# config system dns
FortiWeb (dns)# set secondary 192.168.1.10
FortiWeb (dns)# show
config system dns
   set primary 172.16.1.10
   set secondary 192.168.1.10
   set domain "example.com"
end
FortiWeb (end)# show system dns
config system dns
   set primary 172.16.1.10
   set domain "example.com"
end
```

The first output from `show` indicates the value that you have configured but not yet saved; the second output from `show` indicates the value that was last saved to disk.

Append `grep -f <keyword>` to the `show` or `show full-configuration` command to display configurations related to the search keywords. This command will not only show the lines containing the keywords but also the entire upper-level

command structure associated with them. For example, if you want to view the context of the SNMP command, run the following:

```
show full-configuration | grep -f snmp
```

The system will display the configurations which contain the keyword "snmp":

```
[redacted]show full-configuration | grep -f snmp
config global
  config system interface
    edit "mgmt1"
      set type physical
      set ip [redacted]
      set ip6 ::/0
      set allowaccess ping ssh snmp http https FWB-manager  <---
      set status up
      set mode static
      set ip6-mode static
      unset description
      unset ip6-allowaccess
      unset adom
      set wccp disable
      set mtu 1500
      unset dynamic_gateway
      unset dynamic_dns1
      unset dynamic_dns2
    next
  end
  config system snmp sysinfo <---
    set status disable
    unset engine-id
    unset description
    unset contact-info
    unset location
  end
  config system snmp community <---
  end
  config system snmp user <---
  end
end
```

If you have entered settings but cannot remember how they differ from the existing configuration, the two different forms of `show`, with and without the object name, can be a useful way to remind yourself.

If you were to now enter `end`, saving your setting to disk, `show` output for both syntactical forms would again match. However, if you were to enter `abort` at this point and discard your recently entered secondary DNS setting instead of saving it to disk, the FortiWeb appliance's configuration would therefore match the second output, not the first.

When ADOMs are enabled, and if you log in as `admin`, the top level of the shell changes: the two top level items are `show global` and `show vdom`.

- `show global` displays settings that only `admin` or other accounts with the **prof_admin** access profile can change.
- `show vdom` displays each ADOM and its respective settings.

This menu and CLI structure change is not visible to non-global accounts; ADOM administrators' navigation menus continue to appear similar to when ADOMs are disabled, except that global settings such as network interfaces, HA, and other global settings do not appear.

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