

# FortiOS - Release Notes

**VERSION 5.0.13**

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FortiOS 5.0.13 Release Notes

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## Change Log

Date	Change Description
2016-03-11	Initial release.
2016-03-15	Added the following supported models: FG-70D-POE, FG-98D-POE, FG-1000D, FG-1200D, and FGR-90D.
2016-03-31	Updated SSL VPN installer number to 2325.
2016-05-25	Added FortiOS Carrier firmware information to the <i>Introduction &gt; FortiOS Carrier</i> section.
2017-08-03	Added 233419 to Resolved Issues.

# Introduction

This document provides the following information for FortiOS version 5.0.13 build 0322:

- [Supported models](#)
- [Special Notices](#)
- [Upgrade Information](#)
- [Product Integration and Support](#)
- [Resolved Issues](#)
- [Known Issues](#)
- [Limitations](#)

See the [Fortinet Document Library](#) for FortiOS documentation.

## Supported models

FortiOS version 5.0.13 supports the following models:

<b>FortiGate</b>	FG-20C, FG-20C-ADSL-A, FG-30D, FG-30D-POE, FG-40C, FG-60C, FG-60C-POE, FG-60C-SFP, FG-60D, FG-60D-POE, FG-70D, FG_70D-POE, FG-80C, FG-80CM, FG-80D, FG-90D, FG-90D-POE, FG-92D, FG-94D-POE, FG-98D-POE, FG-100D, FG-110C, FG-111C, FG-140D, FG-140D-POE, FG-140D-POE-T1, FG-200B, FG-200B-POE, FG-200D, FG-240D, FG-280D-POE, FG-300C, FG-300D, FG-310B, FG-310B-DC, FG-311B, FG-500D, FG-600C, FG-620B, FG-620B-DC, FG-621B, FG-800C, FG-900D, FG-1000C, FG-1000D, FG-1200D, FG-1240B, FG-1500D, FG-3016B, FG-3040B, FG-3100D, FG-3140B, FG-3200D, FG-3240C, FG-3600C, FG-3700D, FG-3810A, FG-3950B, FG-3951B, FG-5001A, FG-5001B, FG-5001C, FG-5001D, FG-5101C
<b>FortiWiFi</b>	FWF-20C, FWF-20C-ADSL-A, FWF-30D, FWF-30D-POE, FWF-40C, FWF-60C, FWF-60CM, FWF-60CX-ADSL-A, FWF-60D, FWF-60D-POE, FWF-80CM, FWF-81CM, FWF-90D, FWF-90D-POE, FWF-92D
<b>FortiGate Rugged</b>	FGR-60D, FGR-90D, FGR-100C
<b>FortiGate VM</b>	FG-VM32, FG-VM64, FG-VM64-AWS, FG-VM64-AWSONDEMAND, FG-VM64-HV, FG-VM64-KVM, FG-VM64-XEN
<b>FortiGate Voice</b>	FGV-40D2, FGV-70D4
<b>FortiSwitch</b>	FS-5203B

**FortiOS Carrier**

FCR-3810A, FCR-3950B, FCR-5001A-DW, and FCR-5001B

FortiOS Carrier version 5.0.13 images are delivered upon request and are not available on the customer support firmware download page.

FortiOS Carrier firmware image file names begin with FK.

The following models are released on a special branch based off of FortiOS 5.0.13. As such, the *System > Dashboard > Status* page and the output from the `get system status` CLI command displays the build number.

<b>FG-70D-POE</b>	is released on build 5251.
<b>FG-98D-POE</b>	is released on build 5253.
<b>FG-900D</b>	is released on build 5240.
<b>FG-1000D</b>	is released on build 5252.
<b>FG-1200D</b>	is released on build 5249.
<b>FG-3000D</b>	is released on build 5245.
<b>FG-3100D</b>	is released on build 5245.
<b>FG-3200D</b>	is released on build 5245.
<b>FG-VM64-AWS</b>	is released on build 8967.
<b>FG-VM64-AWSONDEMAND</b>	is released on build 8967.
<b>FGV-40D2</b>	is released on build 5247.
<b>FGV-70D4</b>	is released on build 5246.
<b>FGR-90D</b>	is released on build 5250.



To confirm that you are running the proper build, the output from the `get system status` CLI command has a **branch point field** that should read 0322.

# Special Notices

## Default log setting change

For FortiGate 2U and 3U models (FG-3600, FG-3700, FG-3800, and FG-3900 series devices) and 5000 series blades, the log disk is disabled by default. It can only be enabled via the Command Line Interface (CLI). For all 1U and desktop models that support SATA disk, the log disk is enabled by default.

## FG-300D and FG-500D nTurbo support

The FG-300D and FG-500D do not support nTurbo for IPS acceleration. The option for this feature has been disabled by default. Enabling it may result in a performance degradation. The CLI commands are shown below.

```
config ips global
    set np-accel-mode {basic | none}
end
```

If `np-accel-mode` is set to `none`, then nTurbo IPS acceleration is disabled.

## FG-3600C hardware compatibility

FortiOS version 5.0.6 contains a compatibility issue with certain FG-3600C units. Units that are affected have a system part number of P12090-03 and later. You can view the system part number on the bottom of the unit or from the `get system status` CLI command.

FG-3600C units with part number P12090-03 and later must run FortiOS version 5.0.6 or later and cannot be downgraded to FortiOS version 5.0.5 or earlier.

## SCTP firewall support

LTE networks require support for the SCTP protocol to transfer control plane data between evolved NodeBs (eNBs) and the Mobility Management Entity (MME), as well as between the MME and the Home Subscriber Server (HSS). SCTP firewall support is included in FortiOS version 5.0 and FortiOS Carrier version 5.0. SCTP traffic is accepted by FortiOS and FortiOS Carrier and you can create SCTP services and security policies that use these services. All other security features can also be added as required to security policies for SCTP services.



## New FortiOS Carrier features

### Changes to licensing

Prior to FortiOS version 5.0, only FortiCarrier-specific hardware could run FortiOS Carrier version 4.0. Starting with FortiOS version 5.0.2, the FortiOS Carrier Upgrade License can be applied to selected FortiGate models to activate FortiOS Carrier features. There is no support for FortiOS Carrier features in FortiOS versions 5.0.0 and 5.0.1.

At this time the FortiOS Carrier Upgrade License is supported by FortiGate models FG-3240C, FG-3950B, FG-5001B, FG-5001C, and FG-5101C. Future 3000 and 5000 series models are also expected to support FortiOS Carrier.

You can obtain a FortiOS Carrier license from your Fortinet distributor. On a FortiGate model that supports FortiOS Carrier and that is running FortiOS version 5.0.2 or later you can use the following command to activate FortiOS Carrier features:

```
execute forticarrier-license <license-key>
```

The license key is case-sensitive and includes dashes. When you enter this command, FortiOS attempts to verify the license with the FortiGuard network. Once the license is verified the FortiGate unit reboots. When it restarts it will be running FortiOS Carrier with a factory default configuration.

You can also request that Fortinet apply the FortiOS Carrier Upgrade license prior to shipping a new unit, as part of Professional Services. The new unit will arrive with the applied license included.

### Licensing and RMAs

When you RMA a FortiGate unit that is licensed for FortiOS Carrier, make sure that the FortiCare support representative handling the RMA knows about the FortiOS Carrier license. This way a new FortiOS Carrier license will be provided with the replacement unit.

### Licensing and firmware upgrades, downgrades and resetting to factory defaults

After a firmware upgrade from FortiOS version 5.0.2 or later you should not have to re-apply the FortiOS Carrier license. However, the FortiOS Carrier license may be lost after a firmware downgrade or after resetting to factory defaults. If this happens, use the same command to re-apply the FortiOS Carrier license. FortiGuard will re-verify the license key and re-validate the license.

### Upgrading older FortiCarrier specific hardware

You must use FortiCarrier specific firmware to upgrade your FortiCarrier hardware. Please work with your Fortinet representative to ensure a smooth upgrade of these FortiCarrier models.

### Changes to GPRS Tunneling Protocol (GTP) support

FortiOS Carrier version 5.0 supports GTP-C v2, which is the control plane messaging protocol used over 4G-LTE 3GPP R8 software interfaces, as well as between LTE networks and older 2G/3G networks with general packet radio service (GPRS) cores.

## Changes to MMS scanning

MMS scanning now includes data leak prevention (DLP) to detect fingerprinted and/or watermarked files transferred via MMS, as well as data pattern matching for data such as credit cards and social security numbers.

## Using wildcard characters when filtering log messages

While using filtering in the log message viewer you may need to add \* wildcard characters to get the search results that you expect. For example, if you go to *Log & Report > Event Log > System* to view all messages with the word “logged” in them you can select the Filter icon for the *Message* list and enter the following:

```
*logged*
```

Including both \* wildcard characters will find all messages with “logged” in them. “logged” can be at the start or the end of the message or inside the message.

If you only want to find messages that begin with the search term you should remove the leading \*. If you only want to find messages that end with the search term you need to remove the trailing \*.

It does not work to add a \* wildcard character inside the search term. So searching for \*lo\*ed\* will not return any results.

## IPS algorithms

For optimal performance on your FortiGate unit, the IPS algorithm can be configured via the CLI. Select one of the following modes:

- engine-pick: The IPS engine picks the best algorithm to use.
- high: This algorithm fits most FortiGate models
- low: This algorithm works best on FortiGate units with less memory (512MB or less)
- super: This algorithm works best on FortiGate models with more memory (more than 4GB)

To configure the algorithm, use the following CLI commands:

```
config ips global
    set algorithm [engine-pick | high | low | super]
end
```

## Disk logging disabled by default on some models

For the following FortiGate and FortiWiFi models, disk logging is disabled by default and Fortinet recommends logging to FortiCloud instead of logging to disk:

<b>FortiGate</b>	FG-20C, FG-20C-ADSL-A, FG-40C, FG-60C, FG-60C-POE, FG-60D, FG-60D-POE, FG-80C, FG-80CM, FG-100D (PN: P09340-04 or earlier), FG-300C (PN: P09616-04 or earlier), FG-200B, FG-200B-POE (if flash is used as storage)
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**FortiWiFi** FWF-20C, FWF-20C-ADSL-A, FWF-40C, FWF-60C, FWF-60CM, FWF-60CX-ADSL-A, FWF-60D, FWF-60DM, FWF-60DX-ADSL-A, FWF-80C, FWF-80CM,

If you were logging to FortiCloud prior to upgrading to FortiOS version 5.0.13, the settings are retained and logging to FortiCloud continues to operate normally. If you were logging to disk prior to upgrading, logging to disk may be disabled during the upgrade process.

If required, you can enable disk logging from the CLI using the following command:

```
config log disk setting
    set status enable
end
```

If you enable disk logging on the models listed above, the CLI displays a message reminding you that enabling disk logging impacts overall performance and reduces the lifetime of the unit.

A code limitation specific to the FG-80C, FG-80CM, FWF-80C, and FWF-80CM models prevents the warning message from being displayed.

### FG-60D/FWF-60D logging to disk

If you enable logging to disk for FG-60D and FWF-60D models, Fortinet recommends that you format the log disk using the following CLI command:

```
execute formatlogdisk
Log disk is /dev/sda1.
Formatting this storage will erase all data on it, including logs, quarantine files;
WanOpt caches; and require the unit to reboot.
Do you want to continue? (y/n) [Enter y to continue]
```

## WAN Optimization

In FortiOS version 5.0, WAN Optimization is enabled in security policies and WAN Optimization rules are no longer required. Instead of adding a security policy that accepts traffic to be optimized and then creating WAN Optimization rules to apply WAN Optimization, in FortiOS version 5.0 you create security policies that accept traffic to be optimized and enable WAN Optimization in those policies. WAN Optimization is applied by WAN Optimization profiles which are created separately and added to WAN Optimization security policies.

## MAC address filter list

The `mac-filter` CLI command under the `config wireless-controller vap` setting is not retained after upgrading to FortiOS version 5.0.13. It is migrated into both `config user device` and `config user device-access-list` setting.

## Spam filter profile

The spam filter profile has been changed in FortiOS version 5.0.13. The `spam-emaddr-table` and `spam-ipbwl-table` have been merged into the `spam-bwl-table`. The `spam-bwl-table` exists in the spam filter profile.

## Spam filter black/white list

The `config spamfilter emailbwl` and `config spamfilter ipbwl` commands are combined into `config spamfilter bwl`.

## DLP rule settings

The `config dlp rule` command is removed in FortiOS version 5.0.13. The DLP rule settings have been moved inside the DLP sensor.

## Limiting access for unauthenticated users

When configuring User Identity policies, if you select the option *Skip this policy for unauthenticated user* the policy will only apply to users who have already authenticated with the FortiGate unit. This feature is intended for networks with two kinds of users:

Single sign-on users who have authenticated when their devices connected to their network

Other users who do not authenticate with the network so are “unauthenticated”

Sessions from authenticated users can match this policy and sessions from unauthenticated users will skip this policy and potentially be matched with policies further down the policy list. Typically, you would arrange a policy with *Skip this policy for unauthenticated user* at the top of a policy list.

You can also use the following CLI command to enable skipping policies for unauthenticated users:

```
config firewall policy
  edit <id>
    set identity-based enable
    set fall-through-unauthenticated enable
  next
end
```

### Use case - allowing limited access for unauthenticated users

Consider an office with open use PCs in common areas. Staff and customers do not have to log in to these PCs and can use them for limited access to the Internet. From their desks, employees of this office log into PCs which are logged into the office network. The FortiGate unit on the office network uses single sign-on to get user credentials from the network authentication server.

The open use PCs have limited access to the Internet. Employee PCs can access internal resources and have unlimited access to the Internet.

To support these different levels of access you can add a user identity policy to the top of the policy list that allows authenticated users to access internal resources and to have unlimited access to the Internet. In this policy, select *Skip this policy for unauthenticated user*.

Add a normal firewall policy below this policy that allows limited access to the Internet.

Sessions from authenticated PCs will be accepted by the User Identity policy. Sessions from unauthenticated PCs will skip the User Identity policy and be accepted by the normal firewall policy.

### Use case - multiple levels of authentication

As a variation of the above use case, Policy 2 could be a User Identity policy and *Skip this policy for unauthenticated user* would not be selected. Sessions from unauthenticated users that are accepted by Policy2 would now require users to authenticate before traffic can connect through the FortiGate unit. The result is different levels of authentication: Single sign on for some users and firewall authentication for others.

## FG-100D upgrade and downgrade limitations

The following limitations affect the FG-100D model when upgrading from FortiOS version 4.3 to FortiOS version 5.0.0 or later.

### 32-bit to 64-bit version of FortiOS

With the release of FortiOS version 5.0.0 or later, the FG-100D will run a 64-bit version of FortiOS. This has introduced certain limitations on upgrading firmware in a high availability (HA) environment and downgrading.

When performing an upgrade from a 32-bit FortiOS version to a 64-bit FortiOS version and the FG-100Ds are running in a HA environment with the uninterruptable-upgrade option enabled, the upgrade process may fail on the primary device after the subordinate devices have been successfully upgraded. To work around this situation, users may disable the uninterruptable-upgrade option to allow all HA members to be successfully upgraded. Without the uninterruptable-upgrade feature enabled, several minutes of service unavailability are to be expected.

Downgrading a FG-100D from FortiOS version 5.0.0 or later is not supported due to technical limitations between 64-bit and 32-bit versions of FortiOS. The only procedure to downgrade firmware is by using the TFTP server and BIOS menu to perform the downgrade. In this case the configuration will need to be restored from a previously backed up version.

### Internal interface name/type change

In FortiOS version 5.0.0 or later the internal interface has been renamed `lan` and the type of the interface has changed to `hard-switch`. In order to create an HA cluster between a FG-100D shipped with FortiOS version 5.0.0 or later with a FG-100D upgraded from FortiOS version 4.3, you must first remove the `lan` interface and re-generate the `internal` interface to match the interface on the upgraded device.

Use the following CLI commands to remove the `lan` interface and re-generate the `internal` interface.

```
# config firewall policy
(policy) # purge
    This operation will clear all table!
    Do you want to continue? (y/n)y
(policy) # end
```

```
# config system dhcp server
(server) # purge
    This operation will clear all table!
    Do you want to continue? (y/n)y
(server) # end

# config system virtual-switch
(virtual-switch) # purge
    This operation will clear all table!
    Do you want to continue? (y/n)y
(virtual-switch) # end

# config system global
(global) # set internal-switch-mode switch
(global) # end
    Changing switch mode will reboot the system!
    Do you want to continue? (y/n)y
```

## FG-100D hardware compatibility

FortiOS versions 5.0.0 to 5.0.7, inclusive contains a compatibility issue with FG-100D units that have a system part number of P11510-04 and later. You can view the system part number on the bottom of the unit or with the get system status CLI command. Units with this system part number must run FortiOS version 5.0.8 or later.

# Upgrade Information

## Upgrading from FortiOS version 5.0.10 or later

FortiOS version 5.0.13 supports upgrading from version 5.0.10 or later.



When upgrading from a firmware version beyond those mentioned in the Release Notes, a recommended guide for navigating the upgrade path can be found on the Fortinet documentation site.

There is separate version of the guide describing the safest upgrade path to the latest patch of each of the supported versions of the firmware. To upgrade to this build, go to [FortiOS 5.0 Supported Upgrade Paths](#)



HA Virtual MAC addresses are created for each FortiGate interface based on the interface index number. Between FortiOS 5.0.9 and 5.0.10 interface indexing changed. After upgrading a cluster to FortiOS 5.0.0, the Virtual MAC addresses assigned to individual FortiGate interfaces may be different. You can use the `get hardware nic <interface name>` CLI command to view the Virtual Mac address of each FortiGate Interface



When upgrading from releases prior to 5.0.11, if the source version is 5.0.10 with a configured HA cluster, you must schedule a down time; disable an uninterruptible upgrade; perform the upgrade; then, enable it back.

## Upgrading from FortiOS version 4.3.16 or later

FortiOS version 5.0.13 supports upgrading from version 4.3.16 or later.

### Tablesize limits

FortiOS 5.0 has changed the maximum allowable limits on some objects. As a result, the configuration for some objects may be lost. These include:

- Application list
- DLP sensor
- DLP sensor filter
- Firewall VIP
- IPS sensor

For more information, see the *Maximum Values Table* for FortiOS 5.0 on the [Fortinet Document Library](#) website.



FortiOS 5.0 changed how users configure their FortiGate to obtain FortiGuard services from FortiManager.

In FortiOS 4.3, users added FortiManagers as FortiGuard override servers. When upgrading from FortiOS 4.3.x to 5.0.x, the FortiGuard override settings are lost and users have to add a FortiManager to the Central Management configuration and select the option to use the FortiManager for FortiGuard communications.

The CLI syntax is:

```
config system central-management
set fortimanager-fds-override enable/disable
end
```

## Downgrading to previous firmware versions

Downgrading to previous FortiOS versions results in configuration loss on all models. Only the following settings are retained:

- operation modes
- interface IP/management IP
- route static table
- DNS settings
- VDOM parameters/settings
- admin user account
- session helpers
- system access profiles.

## FortiGate VM firmware

Fortinet provides FortiGate VM firmware images for the following VM environments.

### Citrix XenServer and Open Source XenServer

- `.out`: Download the 64-bit firmware image to upgrade your existing FortiGate VM installation.
- `.out.OpenXen.zip`: Download the 64-bit package for a new FortiGate VM installation. This package contains the QCOW2 file for Open Source XenServer.
- `.out.CitrixXen.zip`: Download the 64-bit package for a new FortiGate VM installation. This package contains the Citrix XenServer Virtual Appliance (XVA), Virtual Hard Disk (VHD), and OVF files.

### Linux KVM

- `.out`: Download the 64-bit firmware image to upgrade your existing FortiGate VM installation.
- `.out.kvm.zip`: Download the 64-bit package for a new FortiGate VM installation. This package contains QCOW2 that can be used by qemu.



### Microsoft Hyper-V

- `.out`: Download the 64-bit firmware image to upgrade your existing FortiGate VM installation.
- `.out.hyperv.zip`: Download the 64-bit package for a new FortiGate VM installation. This package contains three folders that can be imported by Hyper-V Manager on Hyper-V 2012. It also contains the file `fortios.vhd` in the Virtual Hard Disks folder that can be manually added to the Hyper-V Manager.

### VMware ESX and ESXi

- `.out`: Download either the 32-bit or 64-bit firmware image to upgrade your existing FortiGate VM installation.
- `.ovf.zip`: Download either the 32-bit or 64-bit package for a new FortiGate VM installation. This package contains Open Virtualization Format (OVF) files for VMware and two Virtual Machine Disk Format (VMDK) files used by the OVF file during deployment.

## Firmware image checksums

The MD5 checksums for all Fortinet software and firmware releases are available at the Customer Service & Support portal, <https://support.fortinet.com>. To verify the integrity of the download, select the *Checksum* link next to the *HTTPS* download link. A dialog box will be displayed with the image file name and checksum code. Compare this checksum with the checksum of the firmware image.

# Product Integration and Support

## FortiOS version 5.0.13 support

The following table lists FortiOS version 5.0.13 product integration and support information.

<b>Web Browsers</b>	<ul style="list-style-type: none"><li>• Microsoft Internet Explorer version 11</li><li>• Mozilla Firefox version 37</li><li>• Google Chrome version 42</li><li>• Apple Safari version 7.1 (For Mac OS X)</li></ul> <p>Other web browsers may function correctly, but are not supported by Fortinet.</p>
<b>Explicit Web Proxy Browser</b>	<ul style="list-style-type: none"><li>• Microsoft Internet Explorer versions 8, 9, 10, and 11</li><li>• Mozilla Firefox version 27</li><li>• Apple Safari version 6.0 (For Mac OS X)</li><li>• Google Chrome version 34</li></ul> <p>Other web browsers may function correctly, but are not supported by Fortinet.</p>
<b>FortiManager</b>	<p>FortiOS 5.0.13 expects to support the following versions:</p> <ul style="list-style-type: none"><li>• 5.0.7 and later</li><li>• 5.2.0 and later</li><li>• 5.4.0</li></ul> <p>For the latest information, see <a href="#">FortiOS and FortiManager Compatibility</a>.</p> <p>You should upgrade your FortiManager prior to upgrading the FortiGate.</p>
<b>FortiAnalyzer</b>	<p>FortiOS 5.0.13 expects to support the following versions:</p> <ul style="list-style-type: none"><li>• 5.0.7 and later</li><li>• 5.2.0 and later</li><li>• 5.4.0</li></ul> <p>For the latest information, see <a href="#">FortiOS and FortiAnalyzer Compatibility</a>.</p> <p>You should upgrade your FortiAnalyzer prior to upgrading the FortiGate.</p>

<b>FortiClient Microsoft Windows and FortiClient Mac OS X</b>	<ul style="list-style-type: none"> <li>• 5.2.3 and later</li> </ul>
<b>FortiClient iOS</b>	<ul style="list-style-type: none"> <li>• 5.2.2 build 037</li> </ul>
<b>FortiClient Android and FortiClient VPN Android</b>	<ul style="list-style-type: none"> <li>• 5.2.5 build 103</li> </ul>
<b>FortiAP</b>	<ul style="list-style-type: none"> <li>• 5.0.9</li> </ul> <p>You should verify what the current recommended FortiAP version is for your FortiAP prior to upgrading the FortiAP units. You can do this by going to the <i>WiFi Controller &gt; Managed Access Points &gt; Managed FortiAP</i> page in the GUI. Under the <i>OS Version</i> column you will see a message reading <i>A recommended update is available</i> for any FortiAP that is running an earlier version than what is recommended.</p>
<b>FortiSwitch OS (FortiLink support)</b>	<ul style="list-style-type: none"> <li>• 2.0.3</li> </ul> <p>Supported models: FS-28C, FS-324B-POE, FS-348B, FS-448B</p>
<b>FortiSwitch ATCA</b>	<ul style="list-style-type: none"> <li>• 5.0.3 and later</li> </ul> <p>Supported models: FS-5003A, FS-5003B</p>
<b>FortiController</b>	<ul style="list-style-type: none"> <li>• 5.0.3 and later</li> </ul> <p>Supported model: FCTL-5103B</p> <ul style="list-style-type: none"> <li>• 5.2.0</li> </ul> <p>Supported models: FTCL-5103B, FTCL-5903C</p>

<p><b>Fortinet Single Sign-On (FSSO)</b></p>	<ul style="list-style-type: none"> <li>• 4.3 build 0161</li> </ul> <p>The following operating systems are supported:</p> <ul style="list-style-type: none"> <li>• Microsoft Windows Server 2003 R2 (32-bit and 64-bit)</li> <li>• Microsoft Windows Server 2008 (32-bit and 64-bit)</li> <li>• Microsoft Windows Server 2008 R2 64-bit</li> <li>• Microsoft Windows Server 2012 Standard Edition</li> <li>• Microsoft Windows Server 2012 R2</li> <li>• Novell eDirectory 8.8</li> </ul> <ul style="list-style-type: none"> <li>• 5.0 build 0239</li> </ul> <p>The following operating systems are supported:</p> <ul style="list-style-type: none"> <li>• Windows Server 2008 64-bit</li> <li>• Windows Server 2008 R2 64-bit</li> <li>• Windows Server 2012 Standard</li> <li>• Windows Server 2012 R2 Standard</li> </ul> <p>FSSO does not currently support IPv6.</p> <p>The FSSO agent supports OU in group filters. This feature has been added for FortiOS 5.2. (OU in group filters is not supported by FortiOS 5.0.)</p>
<p><b>FortiExplorer</b></p>	<ul style="list-style-type: none"> <li>• 2.6 build 1083 and later</li> </ul> <p>Some FortiGate models may be supported on specific FortiExplorer versions.</p>
<p><b>FortiExplorer iOS</b></p>	<ul style="list-style-type: none"> <li>• 1.0.6 build 0130 and later</li> </ul> <p>Some FortiGate models may be supported on specific FortiExplorer iOS versions.</p>
<p><b>AV Engine</b></p>	<ul style="list-style-type: none"> <li>• 5.163</li> </ul>
<p><b>IPS Engine</b></p>	<ul style="list-style-type: none"> <li>• 2.199</li> </ul>
<p><b>Virtualization Environments</b></p>	
<p><b>Citrix</b></p>	<ul style="list-style-type: none"> <li>• XenServer version 5.6 Service Pack 2</li> <li>• XenServer version 6.0 and later</li> </ul>
<p><b>Linux KVM</b></p>	<ul style="list-style-type: none"> <li>• CentOS 6.4 (qemu 0.12.1) and later</li> </ul>
<p><b>Microsoft</b></p>	<ul style="list-style-type: none"> <li>• Hyper-V Server 2008 R2</li> <li>• Hyper-V Server 2012 and 2012 R2</li> </ul>

<b>Open Source</b>	<ul style="list-style-type: none"> <li>• XenServer version 3.4.3</li> <li>• XenServer version 4.1 and later</li> </ul>
<b>VMware</b>	<ul style="list-style-type: none"> <li>• ESX versions 4.0 and 4.1</li> <li>• ESXi versions 4.0, 4.1, 5.0, 5.1, 5.5, and 6.0</li> </ul>



Always review the Release Notes of the supported platform firmware version before upgrading your FortiGate device.

## Language support

The following table lists language support information.

Language	GUI	Documentation
English	✓	✓
Chinese (Simplified)	✓	-
Chinese (Traditional)	✓	-
French	✓	-
Japanese	✓	-
Korean	✓	-
Portuguese (Brazil)	✓	-
Spanish (Spain)	✓	-

To change the FortiGate language setting, go to *System > Admin > Settings*, in *View Settings > Language* select the desired language from the drop-down menu.

## Module support

FortiOS version 5.0.13 supports Advanced Mezzanine Card (AMC), Fortinet Mezzanine Card (FMC), Rear Transition Module (RTM), and Fortinet Storage Module (FSM) removable modules. These modules are not hot swappable. The FortiGate unit must be turned off before a module is inserted or removed.

Module	FortiGate Model
Module: ASM-S08 Type: Storage	FG-310B, FG-620B, FG-621B, FG-3016B, FG-3810A, FG-5001A
Module: FSM-064 Type: Storage	FG-200B, FG-311B, FG-1240B, FG-3040B, FG-3140B, FG-3951B
Module: ASM-FB4 Type: Accelerated interface	FG-310B, FG-311B, FG-620B, FG-621B, FG-1240B, FG-3016B, FG-3810A, FG-5001A
Module: ADM-XB2 Type: Accelerated interface	FG-3810A, FG-5001A
Module: ADM-FB8 Type: Accelerated interface	FG-3810A, FG-5001A
Module: ASM-FX2 Type: Bypass	FG-310B, FG-311B, FG-620B, FG-621B, FG-1240B, FG-3016B, FG-3810A, FG-5001A
Module: ASM-CX4 Type: Bypass	FG-310B, FG-311B, FG-620B, FG-621B, FG-1240B, FG-3016B, FG-3810A, FG-5001A
Module: ASM-CE4 Type: Security processing	FG-1240B, FG-3810A, FG-3016B, FG-5001A
Module: ADM-XE2 Type: Security processing	FG-3810A, FG-5001A
Module: ADM-XD4 Type: Security processing	FG-3810A, FG-5001A
Module: ADM-FE8 Type: Security processing	FG-3810A
Module: RTM-XD2 Type: Rear transition	FG-5001A
Module: ASM-ET4 Type: Security processing	FG-310B, FG-311B
Module: RTM-XB2 Type: Rear transition	FG-5001A
Module: FMC-XG2 Type: Security processing	FG-3950B, FG-3951B
Module: FMC-XD2 Type: Accelerated interface	FG-3950B, FG-3951B

Module	FortiGate Model
Module: FMC-F20 Type: Accelerated interface	FG-3950B, FG-3951B
Module: FMC-C20 Type: Accelerated interface	FG-3950B, FG-3951B
Module: FMC-XH0 Type: Security processing	FG-3950B

## SSL VPN support

### SSL VPN standalone client

The following table lists SSL VPN tunnel client standalone installer for the following operating systems.

Operating System	Installer
Microsoft Windows XP Service Pack 3(32-bit) Microsoft Windows 7 (32-bit & 64-bit) Microsoft Windows 8 (32-bit & 64-bit) Microsoft Windows 8.1 (32-bit & 64-bit)	2325
Linux CentOS 6.5 (32-bit & 64-bit) Linux Ubuntu 12.0.4 (32-bit & 64-bit)	2325
Virtual Desktop for Microsoft Windows 7 Service Pack 1 (32-bit)	2325

Other operating systems may function correctly, but are not supported by Fortinet.

### SSL VPN web mode

The following table lists the operating systems and web browsers supported by SSL VPN web mode.

Operating System	Web Browser
Microsoft Windows 7 32-bit SP1	Microsoft Internet Explorer versions 8, 9, 10 and 11 Mozilla Firefox version 33
Microsoft Windows 7 64-bit SP1	Microsoft Internet Explorer versions 8, 9, 10, and 11 Mozilla Firefox version 33
Linux CentOS version 5.6	Mozilla Firefox version 5.6
Linux Ubuntu version 12.0.4	Mozilla Firefox version 5.6

Other operating systems and web browsers may function correctly, but are not supported by Fortinet.

## SSL VPN host compatibility list

The following table lists the antivirus and firewall client software packages that are supported.

### Supported Microsoft Windows XP antivirus and firewall software

Product	Antivirus	Firewall
Symantec Endpoint Protection v11	✓	✓
Kaspersky Antivirus 2009	✓	
McAfee Security Center v8.1	✓	✓
Trend Micro Internet Security Pro	✓	✓
F-Secure Internet Security 2009	✓	✓

### Supported Microsoft Windows 7 32-bit and 64-bit antivirus and firewall software

Product	Antivirus	Firewall
CA Internet Security Suite Plus Software	✓	✓
AVG Internet Security 2011		
F-Secure Internet Security 2011	✓	✓
Kaspersky Internet Security 2011	✓	✓
McAfee Internet Security 2011	✓	✓
Norton 360™ Version 4.0	✓	✓
Norton™ Internet Security 2011	✓	✓
Panda Internet Security 2011	✓	✓
Sophos Security Suite	✓	✓
Trend Micro Titanium Internet Security	✓	✓
ZoneAlarm Security Suite	✓	✓
Symantec Endpoint Protection Small Business Edition 12.0	✓	✓



# Resolved Issues

The following issues have been fixed in FortiOS version 5.0.13. For inquiries about a particular bug, please contact [Customer Service & Support](#).

## Firewall

Bug ID	Description
276066	Cache the session based on user credentials to avoid repeating the query with the remote server.
284891	Users cannot upgrade to 5.0.12 because VIPs no longer working when making requests internally to external IP addresses.
280440	GREv1 key is changed when crossing the FortiGate performing DNAT.
292794	CISCO GRE keep alive packets are not going through FortiGate.

## GUI

Bug ID	Description
280598	The network interface list is displayed when <code>npu-vlink</code> interface is up.

## HA

Bug ID	Description
254388	Increase higher priority for HA packets.
289516	RTP sessions are deleted on HA slave when the SIP session expires.
285561	HA loses neighbor info and a failover occurs after 497 days caused by a <code>glibc</code> error.

## IPSEC

Bug ID	Description
279758	Fix for memory leak when reassembling fragmented IKE messages

## Logging & Report

Bug ID	Description
279004	Change the default option of local-in-allow and local-in-deny to be disable

## System

Bug ID	Description
233419	The <code>initXXX</code> daemon may cause high CPU usage.
246417	FortiGate becomes unresponsive caused by idle routine.
277939	ARP request sent even there is a Static ARP entry.
279223	When sflow is enabled, it can cause the kernel to stop working in some cases.
281350	NPU offload occurs when IPsec decryption is found the wrong slot after indexing the overflow. This causes the packet to go to the wrong vlan interface after decryption
298411	VIP to the kernel installation does not work as expected.

## WANopt & Webproxy

Bug ID	Description
271529	WAD stops working when the HTTPS traffic is enabled with webfilter and deepscan.

## Upgrade

Bug ID	Description
262460	After upgrading FortiGate-80C, the device does not boot up.

# Known Issues

There are no known issues that have been identified in FortiOS version 5.0.13. For inquiries about a particular bug or to report a bug, please contact [Customer Service & Support](#).

# Limitations

This section outlines the limitations in FortiOS version 5.0.13.

## Add device access list

If the `device-access-list` has the action set as `deny`, you will need to explicitly define a device in order to allow it to work.

For instance,

```
config user device
  edit "win"
    set mac 01:02:03:04:05:06
  next
end

config user device-access-list
  edit "wifi"
    set default-action deny
    config device-list
      edit 1
        set action accept
        set device "windows-pc" <-the predefined device-category
      next
      edit 2
        set action accept
        set device "win" <-the custom device
      next
    end
  next
end
```

As a result, the predefined `device-category` entry 1 will not have network access. Only the custom device entry 2 would be able to get network access.

## Citrix XenServer limitations

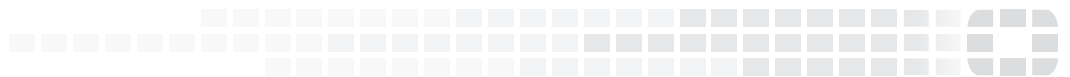
The following limitations apply to Citrix XenServer installations:

- XenTools installation is not supported.
- FortiGate VM can be imported or deployed in only the following three formats:
  - XVA (recommended)
  - VHD
  - OVF

- The XVA format comes pre-configured with default configurations for VM name, virtual CPU, memory, and virtual NIC. Other formats will require manual configuration before the first power on process.

## Open Source XenServer limitations

When using Linux Ubuntu version 11.10, XenServer version 4.1.0, and libvir version 0.9.2, importing issues may arise when using the QCOW2 format and existing HDA issues.



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