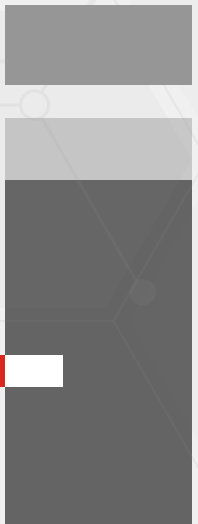
Examples

FortiManager 8.0



FORTINET DOCUMENT LIBRARY
https://docs.fortinet.com

FORTINET VIDEO LIBRARY
https://video.fortinet.com

FORTINET BLOG
https://blog.fortinet.com

CUSTOMER SERVICE & SUPPORT
https://support.fortinet.com

FORTINET TRAINING & CERTIFICATION PROGRAM
https://www.fortinet.com/training-certification

FORTINET TRAINING INSTITUTE
https://training.fortinet.com

FORTIGUARD LABS
https://www.fortiguard.com

END USER LICENSE AGREEMENT
https://www.fortinet.com/doc/legal/EULA.pdf

FEEDBACK
Email: techdoc@fortinet.com

April 21, 2026
FortiManager 8.0 Examples
02-800-1281557-20260421

TABLE OF CONTENTS

Change Log

Date	Change Description
2026-04-21	Initial release.

Introduction

This document serves as a reference guide to common FortiManager 8.0 configuration and deployment scenarios. The scope of this document is to explain specific examples and include information required for those examples to work. The examples rely on the other documents to provide full product information.

> For further FortiManager information, refer to the FortiManager Administration Guides available on the Fortinet Docs Library.

This section includes configuration examples for FortiManager 8.0:

Device Manager

This section contains the following topics:

Exporting a policy package from one FortiManager to another

In this example, you will learn how to export a policy package from one FortiManager to another FortiManager.

To export a policy package from one FortiManager to another FortiManager:

1. Select a FortiManager policy package and installation target you want to export:
   a. Select a FortiManager policy package and its installation target.
      For example,
      Policy Package: PP_001
      Installation Target: Device1
2. Download the latest revision:
   a. Go to *Device Manager* > *Device & Groups* > and double-click the installation target device (Device1 in this example).
   b. Go to *Dashboard* > *Configuration and Installation* > *Total Revisions*.
   c. Download the latest revision (for example, Revision 1).
3. Add the device to the second FortiManager:
   a. Go to your second FortiManager.
   b. Go to *Device Manager* > *Device & Groups* > and click *Add Device*. The Add Device wizard displays.
      Its SN must be similar to the one you got the revision from. It can be the same as the original SN, or you can take the SN prefix (the first six characters) and append 10 digits to it.
      For example, FG200D12345985242 is the original SN.
      Prefix: FG200D
      Appended 10 Digits: 0000000001
      The new SN will be: FG200D0000000001.
   c. Select *Add Model Device* and complete the wizard.
4. Import the revision to the second FortiManager:
   a. On your second FortiManager device, go to *Device Manager* > *Device & Groups* and double-click the model device. The Device Dashboard displays.
   b. Go to *Dashboard* > *Configuration and Installation* > *Total Revisions*.
   c. Right-click the empty revision list and select *Import Revision* > *Revision 1*.
   d. Go to *Device Manager* > *Device & Groups*.

e. Right-click your model device and select *Import Policy*. The wizard displays.
f. Complete the wizard.
g. Go to *Policy & Objects*. The policy package and its used objects are displayed.

> For further FortiManager information, refer to the FortiManager Administration Guides available on the Fortinet Document Library.

Intrusion prevention

This section contains the following topics:

Managing IPS signature updates as an IPS administrator

FortiGate receives IPS signature package updates from the FortiGuard Distribution Server (FDS).

The FDS can either be the Fortinet Global FDS service or a FortiManager acting as the FDS. In this example, the FortiManager is acting as the FDS. For information on configuring FortiManager as the FDS, see the Configuring Devices to use the Built in FDS.

The following example also assumes that an IPS restricted administrator is logged in and completing the steps. For more information on restricted administrators, see Intrusion prevention restricted administrator.

This example provides a methodology for managing the release of IPS signature package updates to managed FortiGate devices based on the following steps:

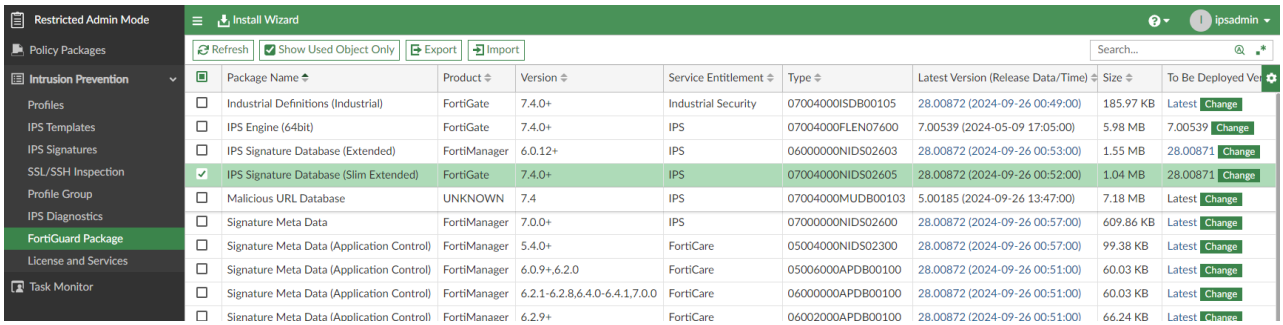
1. View signature details on FortiGuard on page 9
2. Configure and install signature overrides on page 12
3. Monitor logs for hits to signatures on page 16

This example does not present a definitive method, but instead outlines an approach that can be used to build one that aligns with your requirements

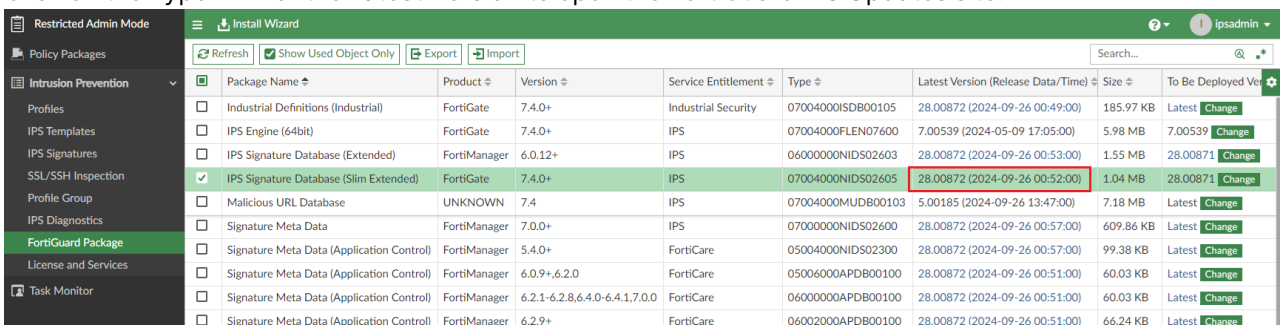
View signature details on FortiGuard

To view signature information on FortiGuard:

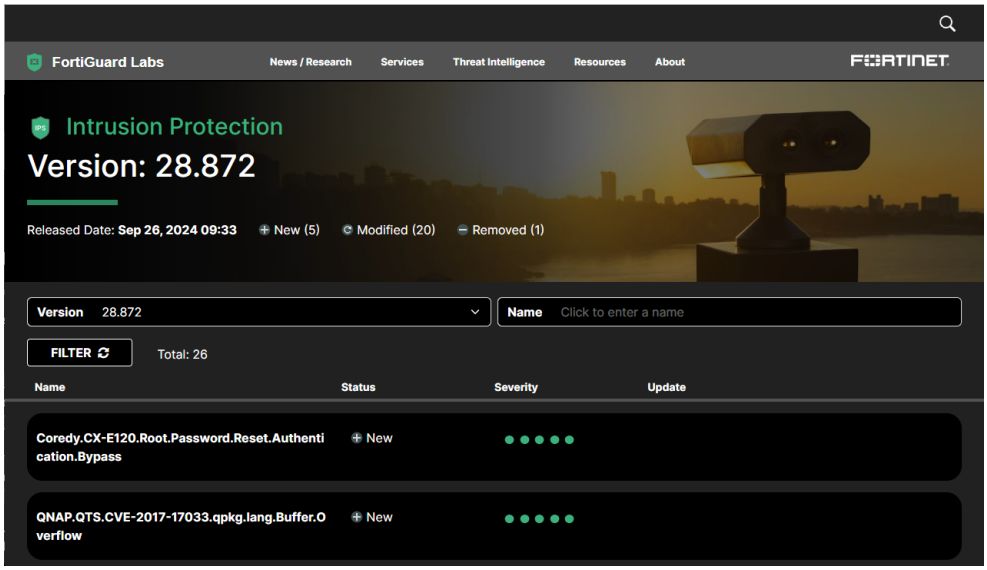
1. Log in to FortiManager as a restricted IPS administrator.
2. Go to *Intrusion Prevention* > *FortiGuard Package*.
3. Confirm that the initial *To Be Deployed Version* has been specified for the relevant IPS Signature Database. In this example, the initial version is set to `28.00871`, but the *Latest Version* available from FortiGuard is `28.00872`.



4. Click on the hyperlink for the *Latest Version* to open the FortiGuard IPS Updates site.

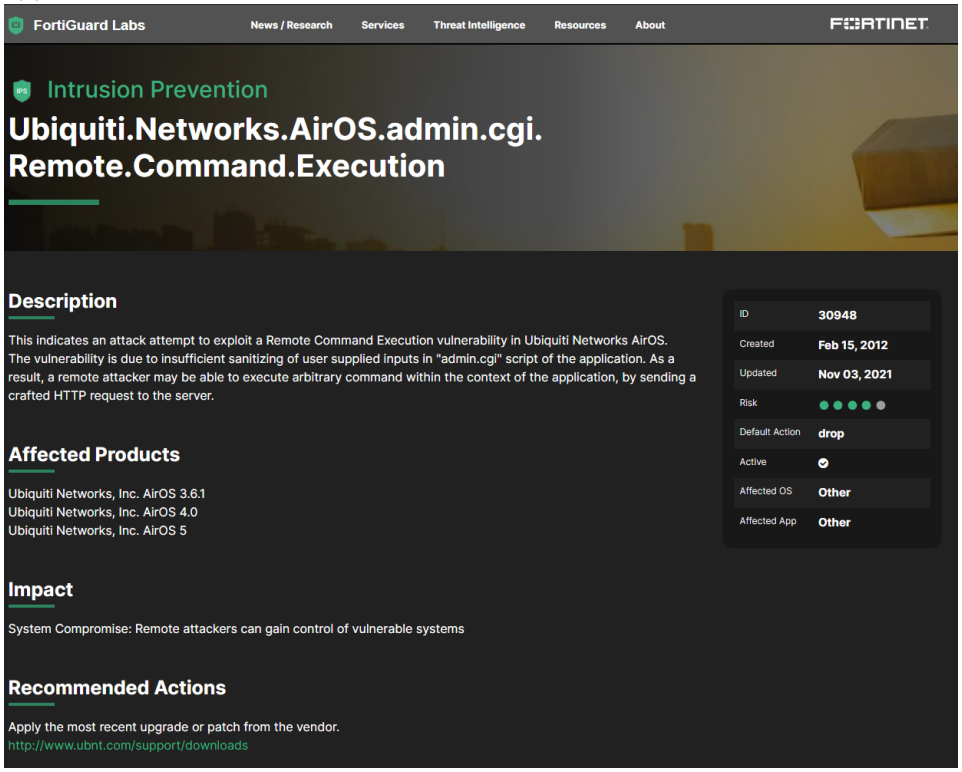


5. Select the chosen version from the dropdown list, and click *FILTER*. This displays all of the changes and additions that were made since the last package.
   - This assumes that a regular release schedule is maintained and that the *Latest Version* is only 1 version ahead of the *To Be Deployed Version*.



6. Review the signatures that are tagged as *New*, *Modified*, or *Removed*, and evaluate how these signatures may affected protected services.
   a. Individual signatures can be clicked to view additional details about the signature.
   b. Review the *Affected OS*, *Affected App*, and *Default Action* fields, and whether the signature is *Active* or not to determine whether it will be applicable to protected services.
   c. If the signature is applicable, review the *Description*, *Risk* score and *CVE* information where available.

d. An alternative approach is to use an override for all newly added signatures in order to monitor their behavior in production for a specified number of days before removing the override and using the default settings applicable to their signatures. The processes defined here are the same for this approach.



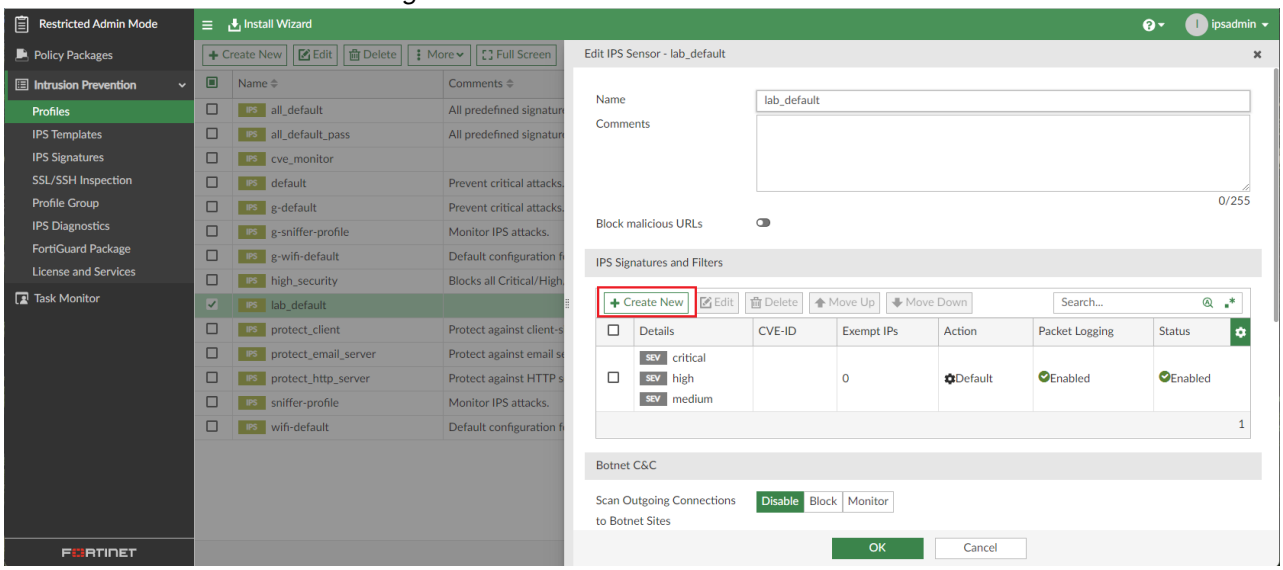
7. After completing the review of the signature package changes, return to the FortiManager and if required, create overrides for specific signatures in the new package.

> The new IPS signatures are available to view in FortiManager even though they have not been released to the FortiGates. This allows for administrators to specify overrides before releasing the signatures.

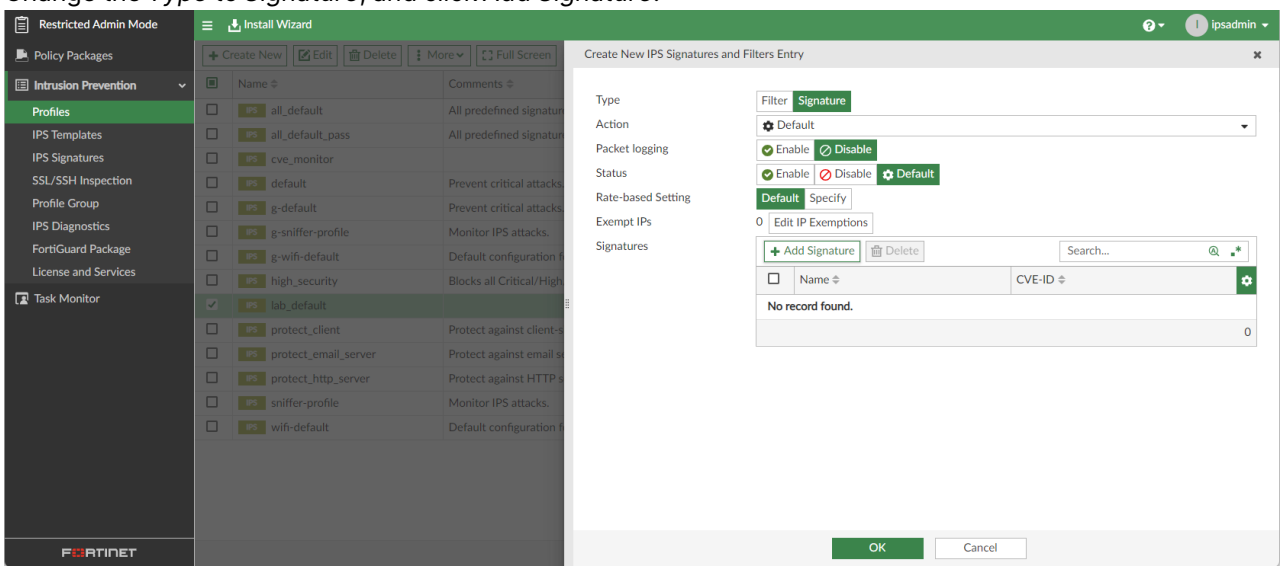
Configure and install signature overrides

To configure signatures on FortiManager:

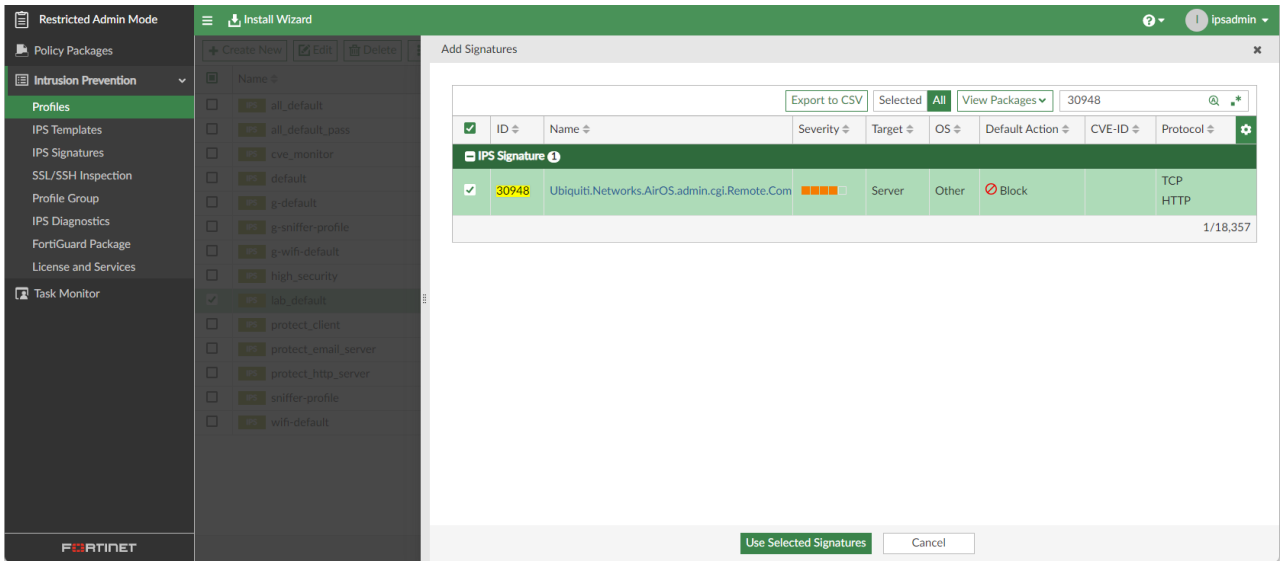
1. Go to *Intrusion Prevention* > *Profiles* and edit the appropriate IPS Profile(s).
2. Click *Create New* under the *IPS Signatures and Filters* section.



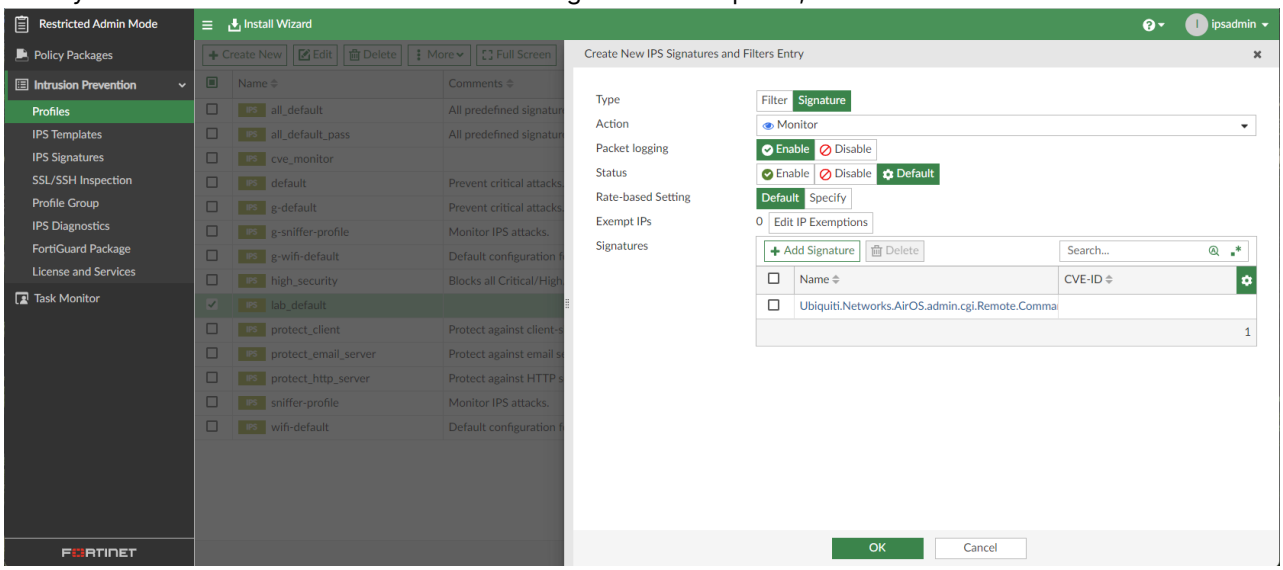
3. Change the *Type* to *Signature*, and click *Add Signature*.



4. Find the required signature(s) by *Name* or *ID*, available from the FortiGuard IPS website. Check the box(es) and click *Use Selected Signature*.



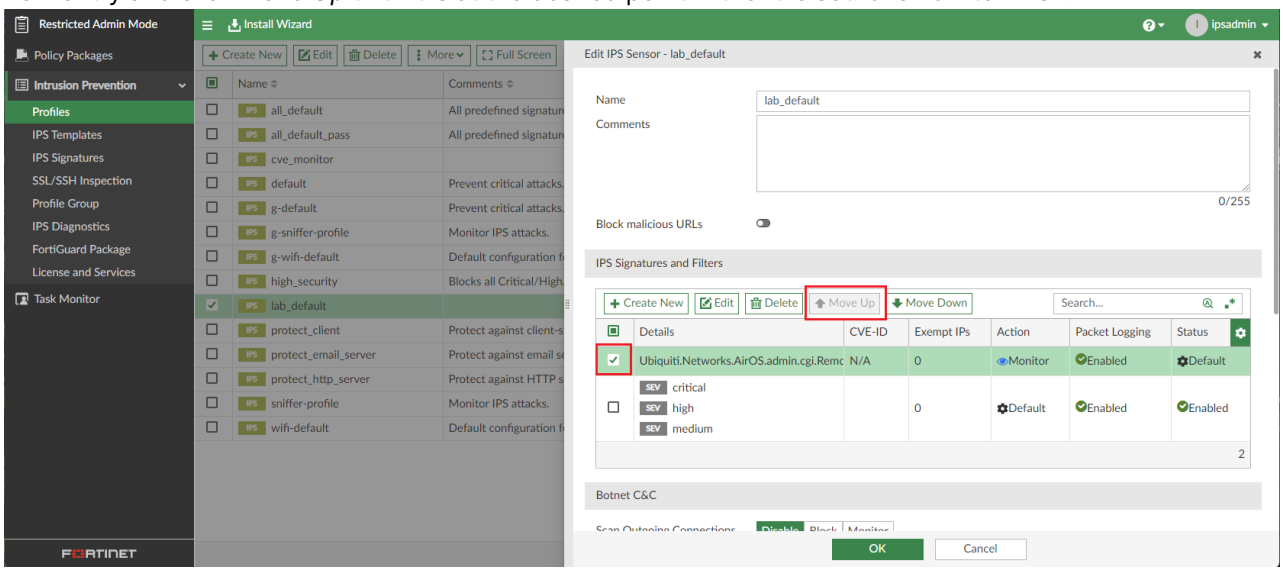
5. Modify the behavior of the FortiGate with this signature as required, and click *OK*.



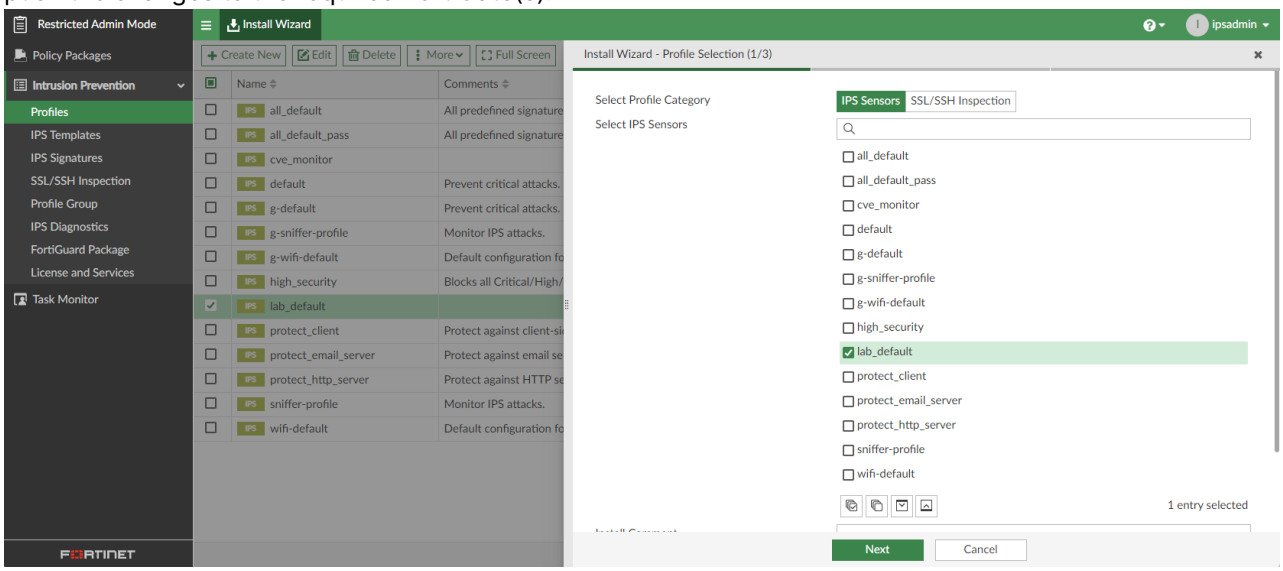
Action	The default action is available on FortiGuard. If the desired approach is to monitor the impact of this signature on production traffic, set this to *Monitor*.
Packet Logging	Determines whether the FortiGate should packet capture the traffic triggering this signature. This is recommended when using IPS as it provides context as to what triggered the event that pure traffic logs do not.
Status	The default status of the signature is available on FortiGuard. If the signature is set to *Disable* by default, then an override such as described here would only be beneficial if admins wanted to enable a wider range of signatures for an OS/application/protocol/etc. than the defaults but want to monitor the behavior.

	In that instance, the *Status* should be set to *Enable*, otherwise *Default* is acceptable as the signature is already enabled.
Exempt IPs	This is where administrators can exclude client or server IPs from triggering a signature. This is useful for handling false positive behavior.

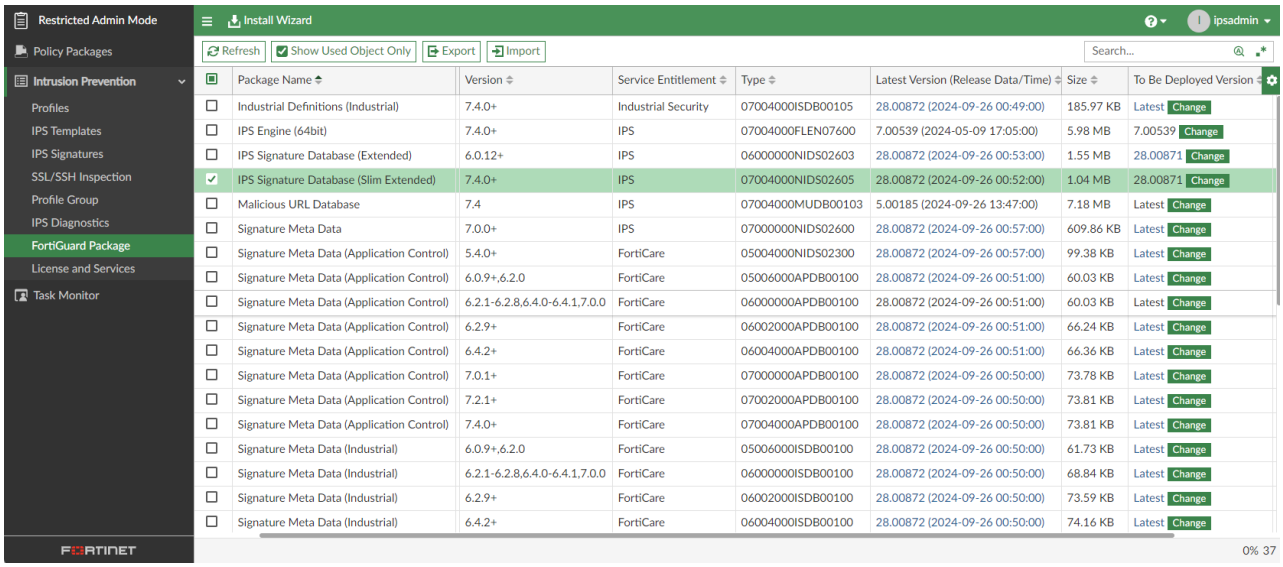
6. By default, the new profile entries are added to the bottom of the list. As profiles use a top-down/first match approach, the override needs to be located above the general IPS rules in the list. Select the box next to the new entry and click *Move Up* until it is at the desired point in the rule set. Click *OK* to finish.



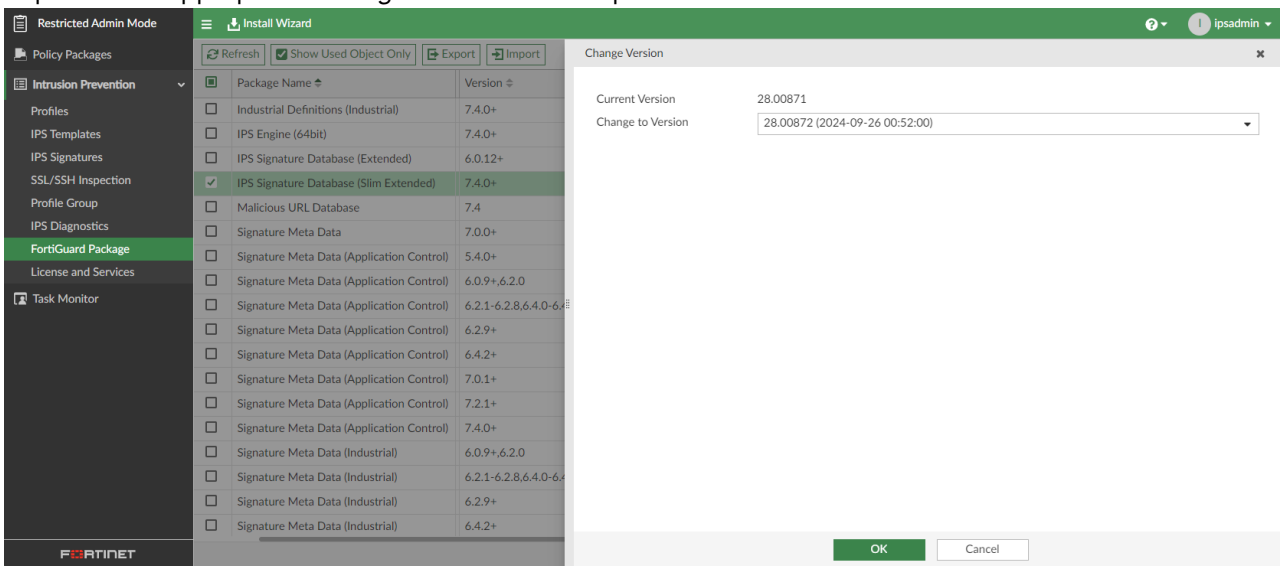
7. This change will need to be installed on the target FortiGates before the IPS package is released. Click *Install Wizard*, select only the profile(s) with the override applied, and complete the install wizard process to push the changes to the required FortiGate(s).



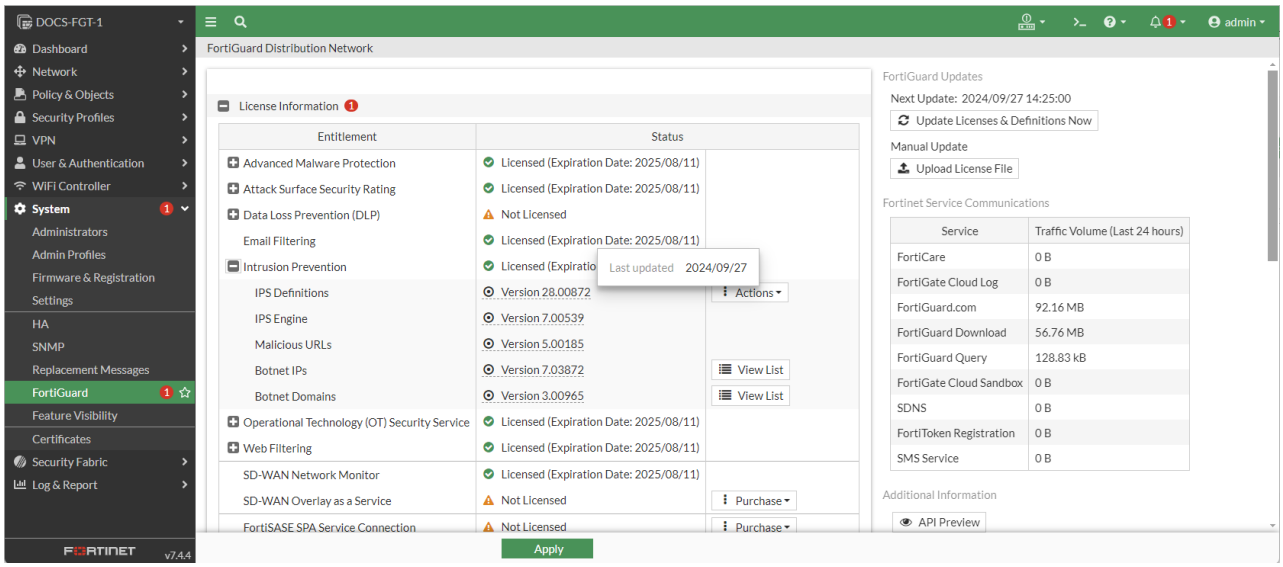
8. With the overrides installed, it is time to modify the *To Be Deployed Version* in the *FortiGuard Package* menu. Select the IPS Signature Database appropriate to the deployment and click the *Change* button.



9. Select the reviewed version from the dropdown list for *Change to Version*, then click *OK*. Repeat for all appropriate *IPS Signature Database* options.



10. At this point, the FortiGates being serviced by the FortiManager FDS service will be able to download the approved IPS package from FortiManager. This will occur on the schedule based on the defined settings on the FortiGate.

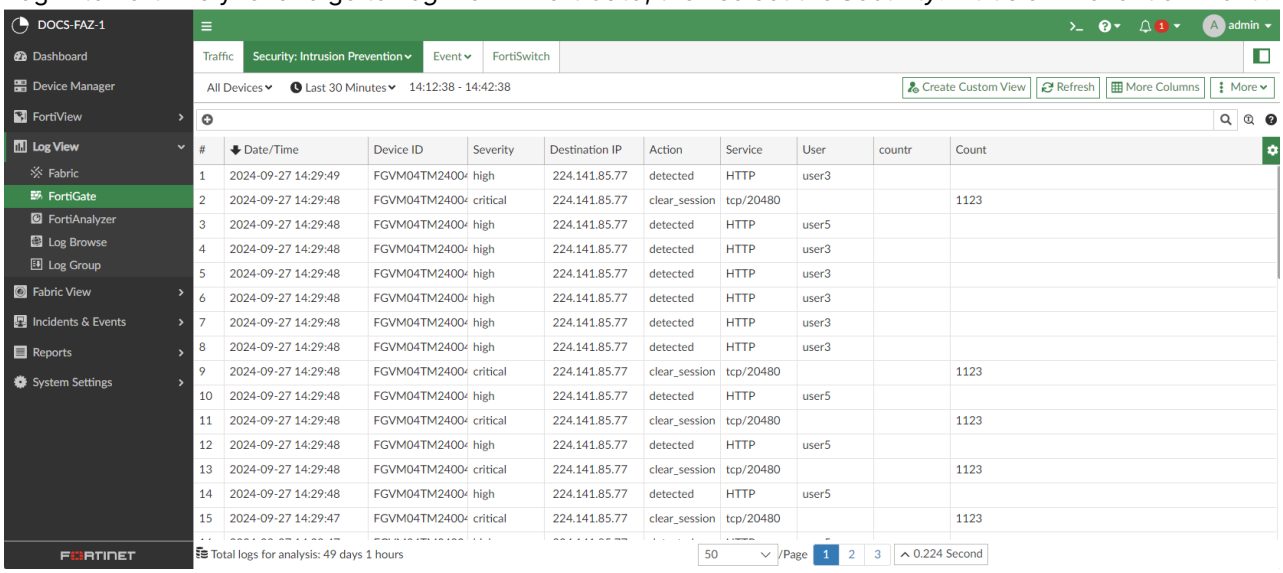


11. Once the profile changes have been installed and the IPS packages released, it is recommended to monitor the FortiGate logs to identify any hits against the overridden signatures.

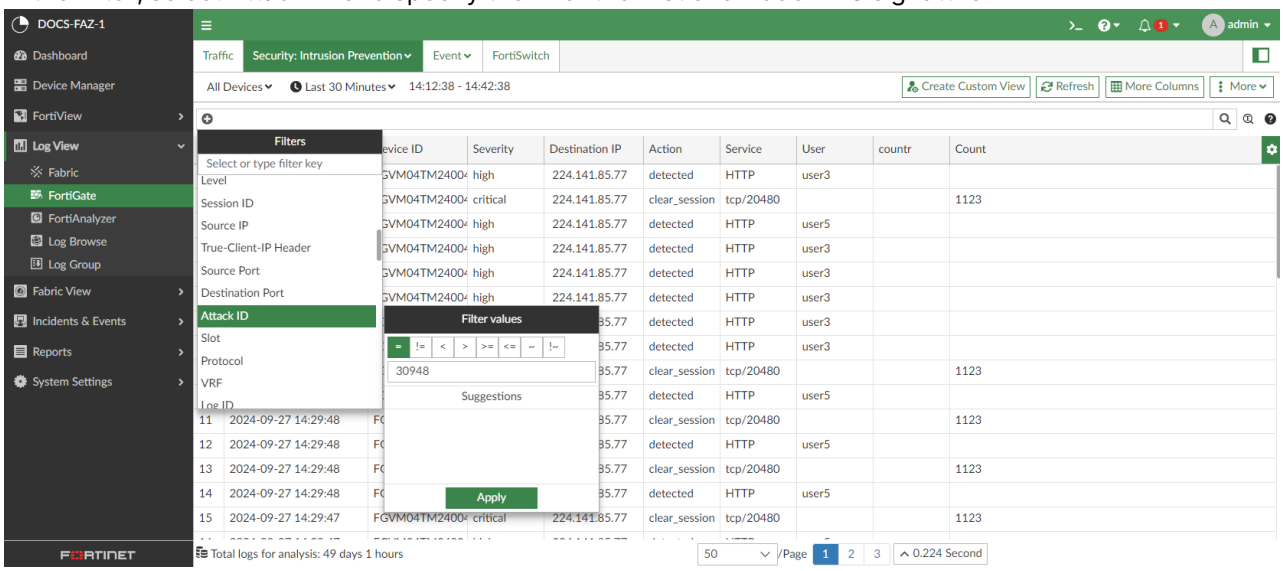
Monitor logs for hits to signatures

To monitor FortiGate logs for hits to overridden signatures:

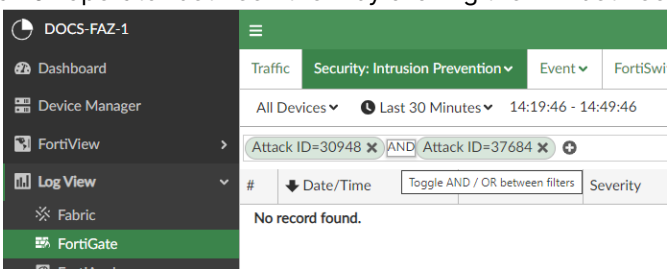
1. Log in to FortiAnalyzer and go to *Log View* > *FortiGate*, then select the *Security: Intrusion Prevention* menu.



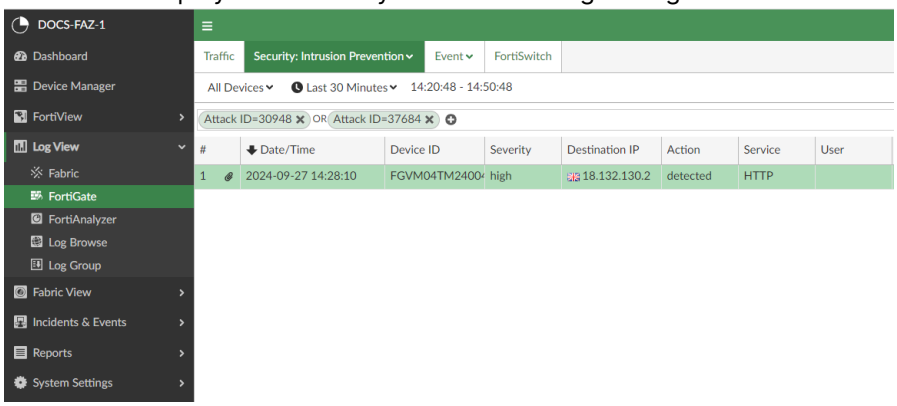
2. In the *Filter*, select *Attack ID* and specify the *ID* of the first overridden IPS signature.



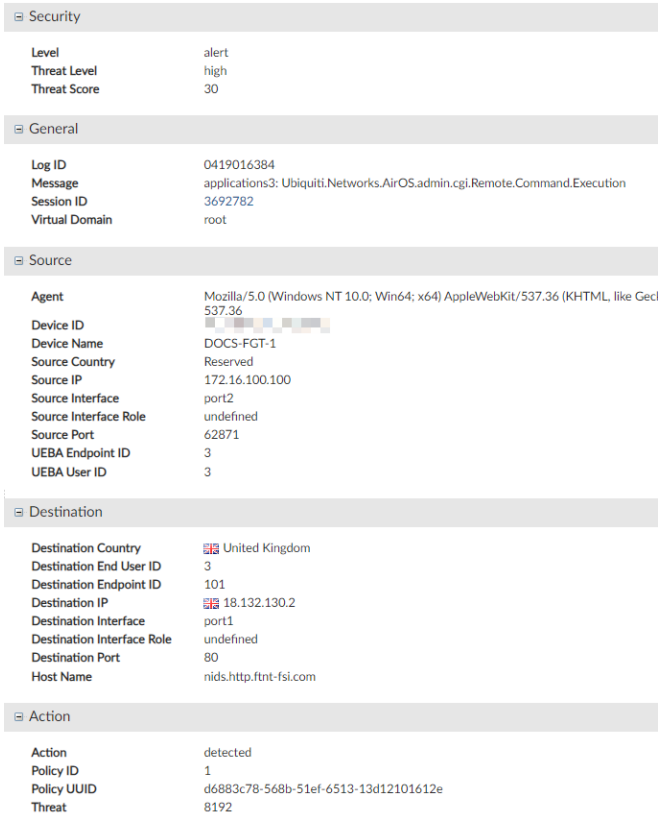
3. Repeat these steps adding relevant Attack IDs into the filter based on the override signatures and specify an `OR` operator between them by clicking the `AND` between the filters.

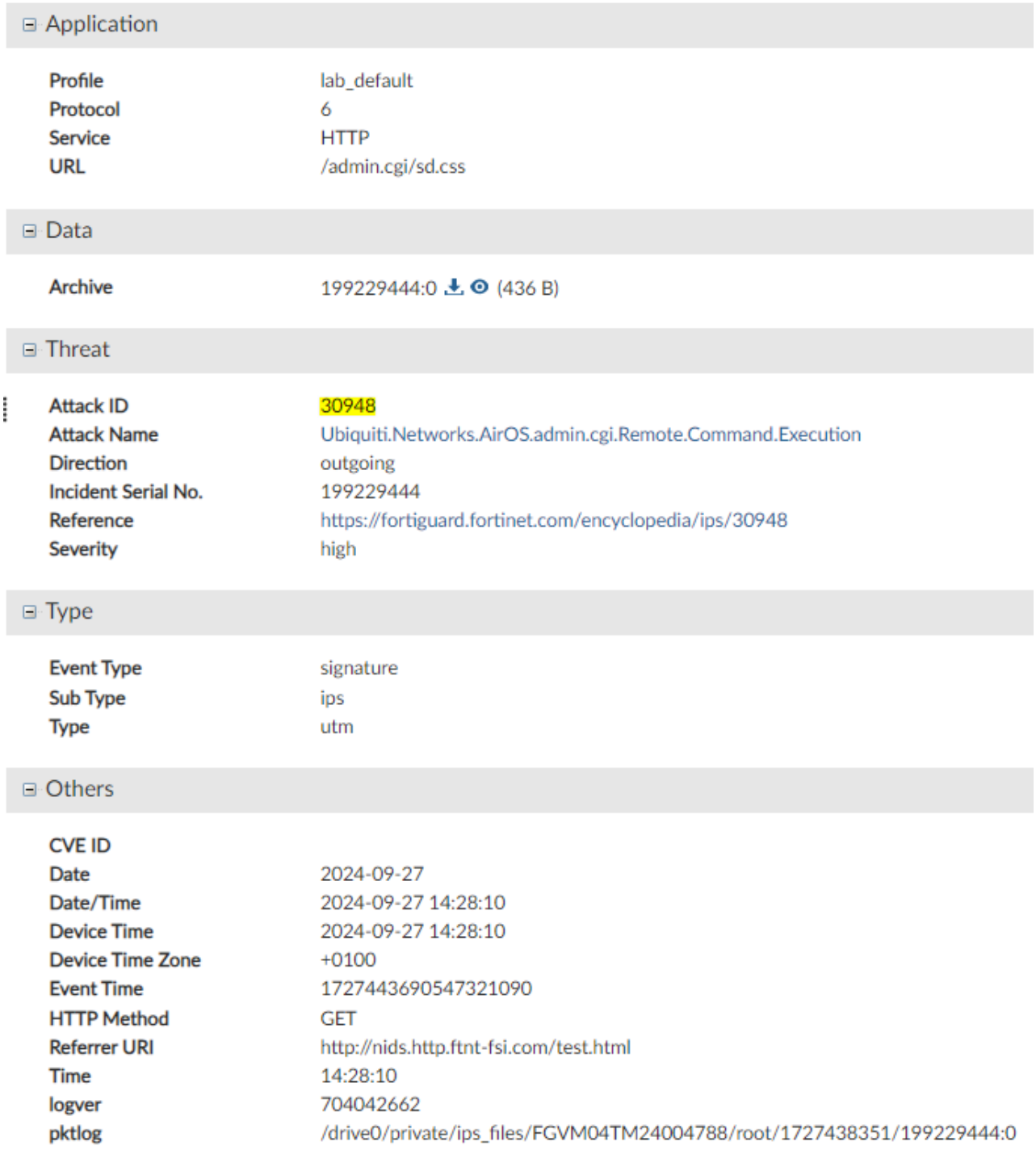


4. Review the results to evaluate whether any matches are genuine or potential false positives.
The results displayed are for any events matching the signature's attack ID included in the filter.



5. Double-clicking the result(s) will provide a more detailed log.





Application

Profile	lab_default
Protocol	6
Service	HTTP
URL	/admin.cgi/sd.css

Data

Archive	199229444:0 (436 B)

Threat

Attack ID	30948
Attack Name	Ubiquiti.Networks.AirOS.admin.cgi.Remote.Command.Execution
Direction	outgoing
Incident Serial No.	199229444
Reference	https://fortiguard.fortinet.com/encyclopedia/ips/30948
Severity	high

Type

Event Type	signature
Sub Type	ips
Type	utm

Others

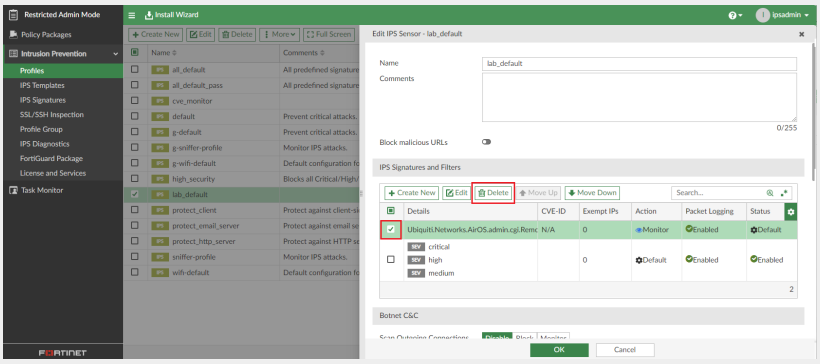
CVE ID	
Date	2024-09-27
Date/Time	2024-09-27 14:28:10
Device Time	2024-09-27 14:28:10
Device Time Zone	+0100
Event Time	1727443690547321090
HTTP Method	GET
Referrer URI	http://nids.http.ftnt-fsi.com/test.html
Time	14:28:10
logver	704042662
pktlog	/drive0/private/ips_files/FGVM04TM24004788/root/1727438351/199229444:0

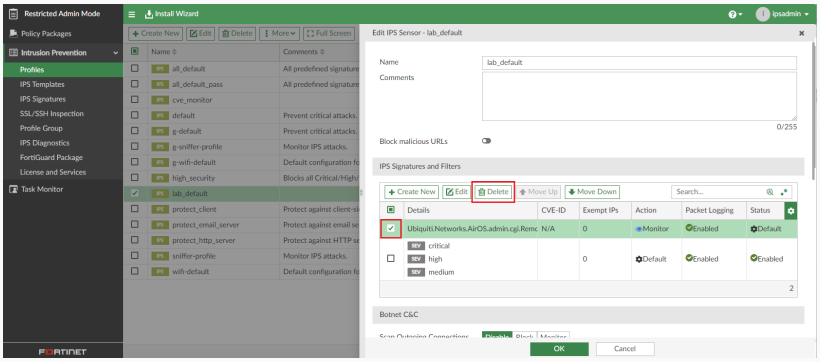
The following is a non-exhaustive list of considerations:

Attack Name & Attack ID	Use the hyperlink(s) to open the FortiGuard page(s) related to the signature and review the attack information.
Source & Destination	Evaluate where the traffic is coming from and going to.
Data Archive	This is the packet capture of the traffic that triggered the signature.

6. By combining the details of the attack from FortiGuard and the PCAP with knowledge of the destination service/application, administrators can determine whether the event is a false positive or not. In this example:
   a. The PCAP file shows a GET request where the URI includes "`/admin.cgi/sd.css`".
   b. The *Destination IP* is known Apache web server.
   c. The FortiGuard site provides insight into the exploit as being "*The Vulnerability is due to insufficient sanitizing of user supplied inputs in "admin.cgi" script of the application*".

   In this example, the Apache web server is known to store the files related to the website in "/var/www/html", with a subdirectory "/admin.cgi" used to store the site's CSS file "sd.css" (“/var/www/html/admin.cgi/sd.css"). This is how the web application has been designed by the administrator and is not a vulnerability, therefore this event represents a false-positive and the server will need to be added to the exemption list.
7. Depending on the review of the log events, there are different options of what to do next:

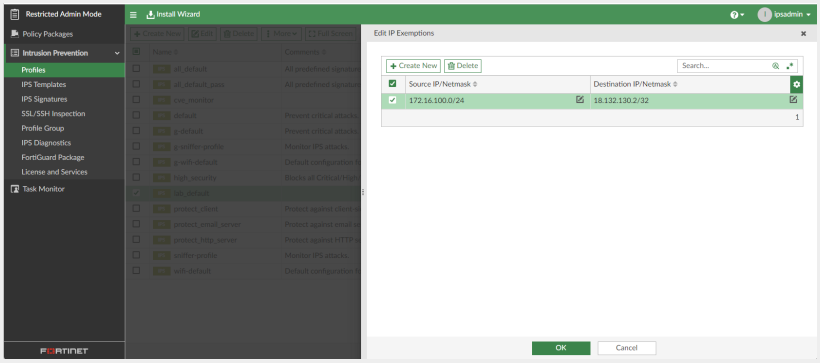
No log events related to any of the overridden signature	Delete the overrides from the IPS Profile(s) and install the profile changes: 1. Go to *Intrusion Prevention* > *Profiles*, 2. Edit the profile(s), and select the overridden signatures in the rule list. 3. Click *Delete*, then click *OK*. 4. Use the *Install Wizard* to push the profile changes to the required FortiGates. 
Events detected that have been identified as true positive matches	Delete the overrides from the IPS Profile(s) and install the profile changes: 1. Go to *Intrusion Prevention* > *Profiles*, 2. Edit the profile(s), and select the overridden signatures in the rule list. 3. Click *Delete*, then click *OK*. 4. Use the *Install Wizard* to push the profile changes to the required FortiGates.



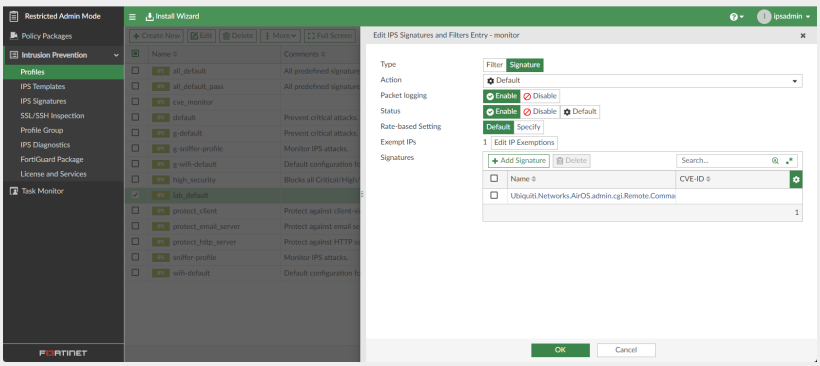
c. Events detected that have been identified as false positive matches

Modify the override to set match the *Action*, *Packet Logging* and *Status* defined in the main IPS rule:

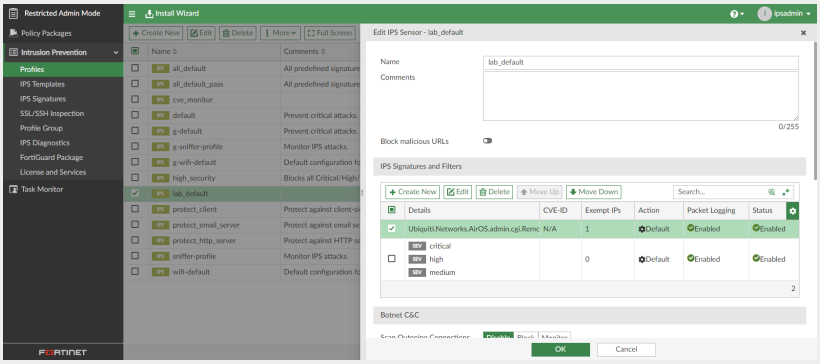
1. Review the main IPS rule settings, in this example they are: *Action – Default*, *Packet Logging – Enabled*, *Status – Enabled*.
2. Select the required overridden signature that has triggered false positives, and click *Edit*.
3. Configure the settings to match the main IPS rule, in this example it will be *Action – Default*, *Packet Logging – Enabled*, *Status – Enabled*.
4. Click *Edit IP Exemption*, then click *Create New*.
5. Specify appropriate *Source IP/Netmask* and *Destination IP/Netmask* – in this example it would require the LAN IP range for *Source IP/Netmask* and the Apache web server IP for *Destination IP/Netmask*, then click *OK*.



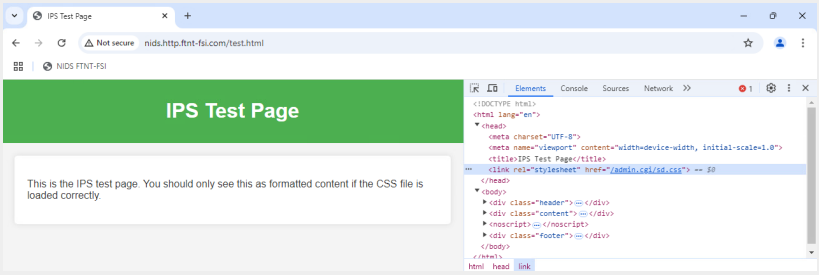
6. Review the configuration for the signature override and if all is correct click *OK*.



7. Modify/remove any additional override signatures as required and click *OK*.



8. Use the *Install Wizard* to push the profile changes to the required FortiGates.
9. Clients connecting to that Apache web server will no longer trigger the Ubiquiti vulnerability as the site is not vulnerable it just so happens the directory structure aligns with triggering the signature.



System Settings

This section contains the following topics:

Configuring and debugging FortiManager HA clusters

You can configure two or more FortiManager units in a high availability (HA) cluster. You can also generate and download a debug log for each unit in a FortiManager HA cluster.

The following is an overview of configuring FortiManager units in an HA cluster:

1. Configure the primary FortiManager unit. See Configuring the primary FortiManager unit in an HA cluster on page 23
2. Configure one or more backup FortiManager units. See Configuring backup FortiManager units in an HA cluster on page 24
3. If you encounter problems, review the debug log for each unit in an HA cluster. See Generating and downloading HA debug logs on page 24.

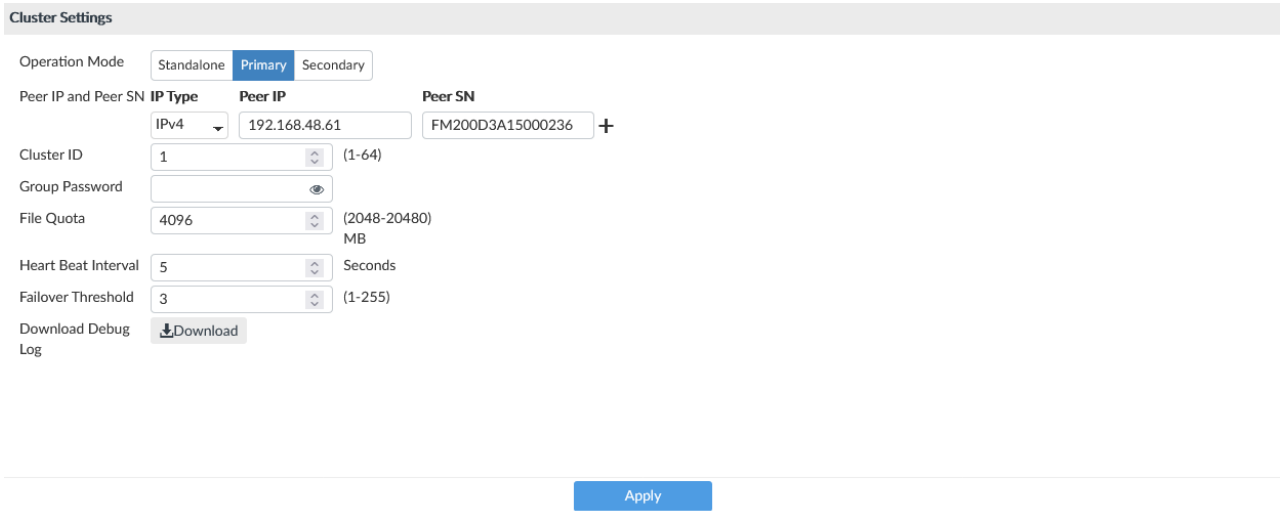
Configuring the primary FortiManager unit in an HA cluster

You can configure one FortiManager unit to be the primary unit in a high availability (HA) cluster. You must know the IP address and serial number of the FortiManager units that will be configured as backup (also called secondary or peer) units in the HA cluster to complete this procedure.

To configure the primary FortiManager unit:

1. Go to *System Settings* > *HA*.
2. Set *Operation Mode* to *Primary*.
3. In the *Peer IP* box, enter the IP address of the backup FortiManager unit.
4. In the *Peer SN* box, enter the serial number of the backup (secondary or peer) FortiManager unit.

5. Click + to add additional backup FortiManager units to the HA cluster.



6. Click *Apply*.

Configuring backup FortiManager units in an HA cluster

You can configure up to four FortiManager units as backup (also called secondary or peer) units in an HA cluster. You must know the IP address and serial number of the primary FortiManager unit in the HA cluster to complete this procedure.

To configure the backup FortiManager unit:

1. Go to *System Settings* > *HA*.
2. Beside *Operation Mode*, select *Secondary*.
3. In the *Peer IP* box, enter the IP address of the primary FortiManager unit.
4. In the *Peer SN* box, enter the serial number of the primary FortiManager unit.
5. Click *Apply*.

Generating and downloading HA debug logs

You can run a command to generate a debug log for each FortiManager unit in an HA cluster, and then you can download the logs using the GUI.

To generate a debug log:

1. On the primary or backup (secondary) FortiManager unit in an HA cluster, enter the following command:
   `diagnose debug application ha 255`

To download a debug log:

1. Go to *System Settings* > *HA*.
2. Next to *Download Debug Log*, click *Download*.
3. Save the log file (`ha-<date>.log`) to your local computer. It can be opened in a text editor.

Creating administrator accounts with restricted access

When you create an administrator account in FortiManager, by default the account grants access to all ADOMs and all policy packages. However, you can configure administrator accounts with restricted access to the following items:

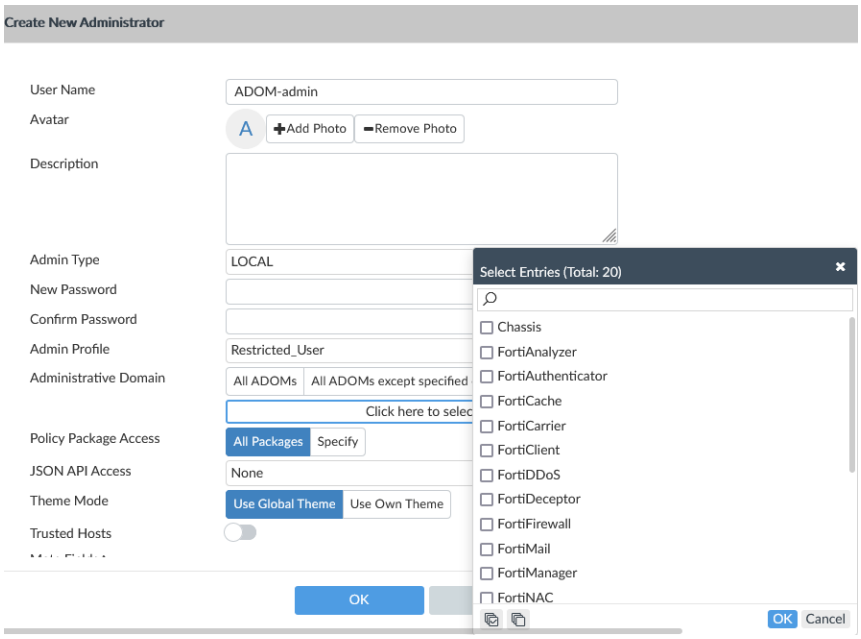
- ADOMs - see Restricting administrator access to ADOMs on page 25
- Device groups - see Restricting administrator access to device groups on page 27
- Policy packages - see Restricting administrator access to policy packages on page 29

Restricting administrator access to ADOMs

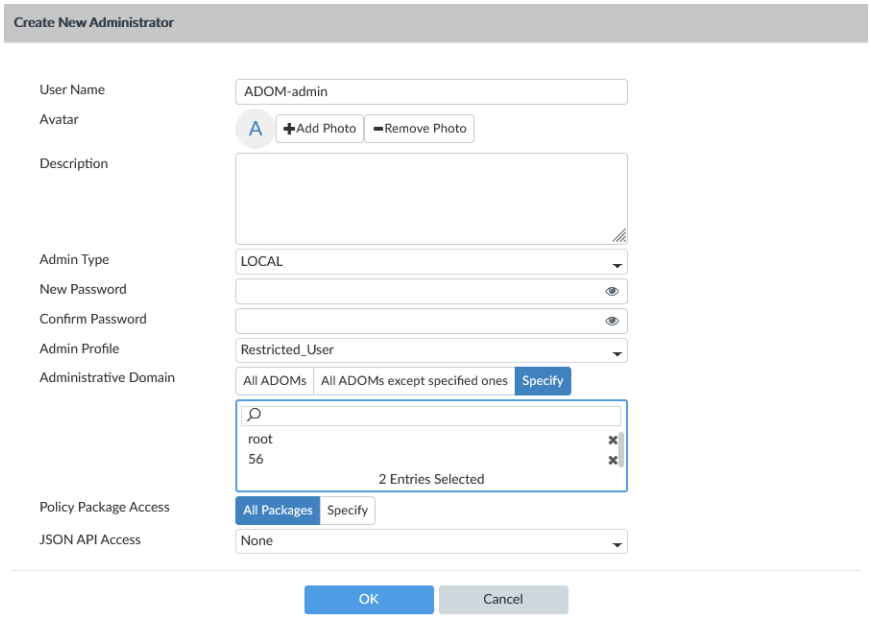
When you create an administrator account, you can specify which ADOMs that users of the account can access. This topic describes the different methods you can use to restrict access.

To create an administrator account and specify ADOM access:

1. Go to *System Settings* > *Administrators*.
2. Click *Create New*.
3. Beside *Administrative Domain*, click *Specify*, and then select the ADOMs that the administrator account can access.



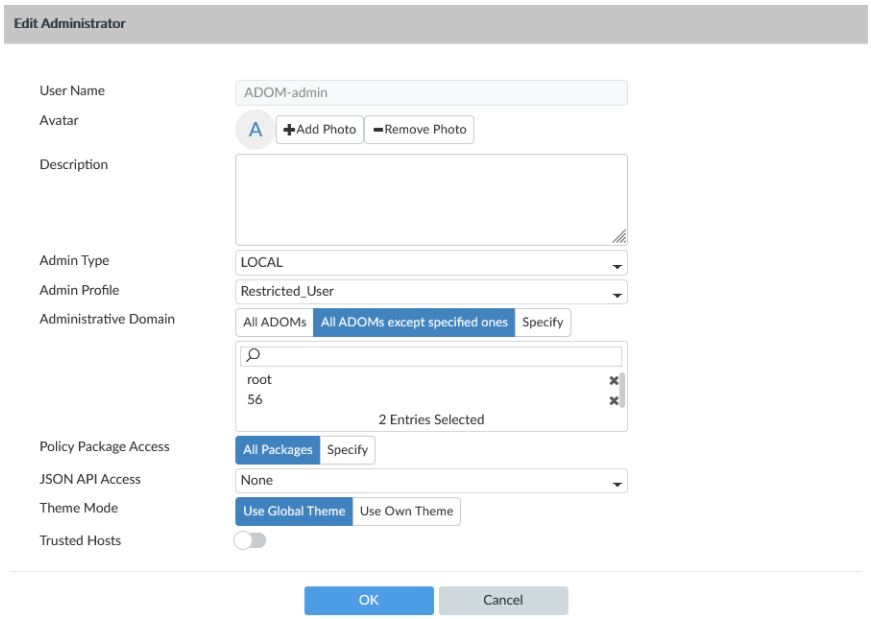
For example, select only the *root* and *56* ADOMs.



4. Set the remaining options, and click *OK*.
   When the administrator logs in to FortiManager, they can only access the specified ADOMs. In this example, the specified ADOMs are *root* and *56*.

To create an administrator account and exclude access to specific ADOMs:

1. Go to *System Settings* > *Administrators*.
2. Click *Create New*.
3. Beside *Administrative Domain*, click *All ADOMs except specified ones*, and then select the ADOMs that you do not want the administrator account to access.
   In this example, the *root* and *56* ADOMs are excluded from access.



4. Set the remaining options, and click *OK*.
   When the administrator logs in to FortiManager, they can access all ADOMs except for the ones specified. In this example, they can access all ADOMs except *root* and *56*.

Restricting administrator access to device groups

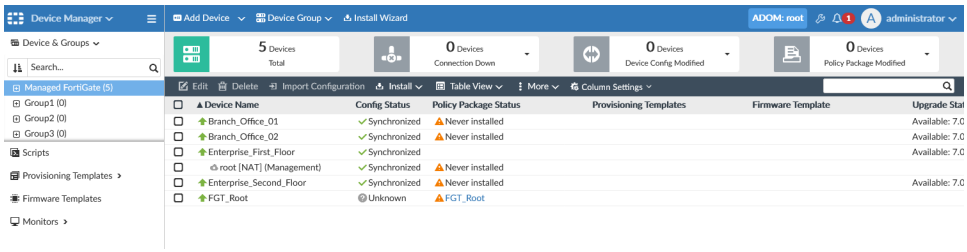
On the *Device Manager* pane, you can create device groups and add devices to the different groups. If you are using ADOMs, select the ADOM, and then create the device group.

When you create an administrator account, you can specify which ADOMs the account can access, and which device groups can be accessed in those ADOMs.

This topic describes how to create a device group and how to restrict administrator access to device groups.

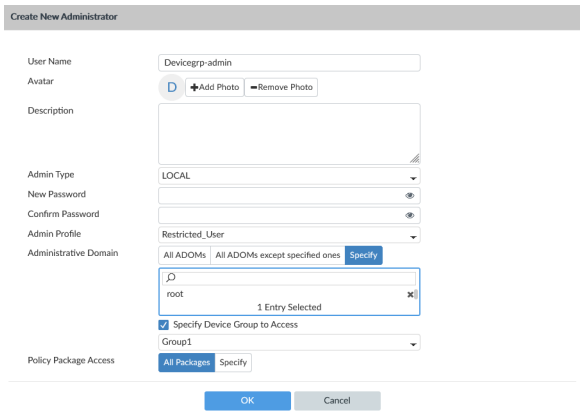
To create a device group:

1. Go to *Device Manager* > *Device & Groups*.
2. If you are using ADOMs, select the ADOM that you are creating a device group in. Otherwise skip this step.
3. In the *Device Group* dropdown menu, click *Create New Group*.
4. Enter a name for the group and add devices to it, then click *OK*.
   In this example, the root ADOM contains *group1*, *group2*, and *group3*.

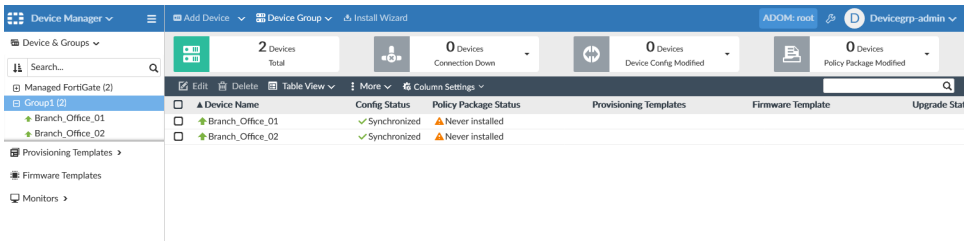


To specify admin access to device groups:

1. Go to *System Settings* > *Administrators*.
2. Click *Create New*.
3. Beside *Administrative Domain*, click *Specify*.
4. Select the ADOM that contains the device group. Select only one ADOM.
5. Select *Specify Device Group to Access*, and then select the device group.
   In this example, *group1* is specified.



6. Click *OK*.
   When the administrator logs in to FortiManager, they can only access the specified device group on the *Device Manager* pane. In this example, they can only access *group1*.

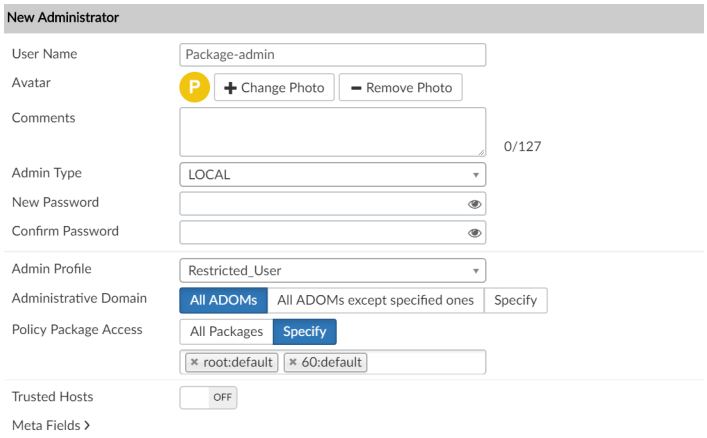


Restricting administrator access to policy packages

When you create an administrator account, you can specify which policy packages that administrator can access.

To specify admin access to policy packages:

1. Go to *System Settings* > *Administrators*.
2. Click *Create New*.
3. Beside *Policy Package Access*, click *Specify*, and specify which policy packages can be accessed.
   In the following example, administrators can access the *root* and *60* policy packages.



4. Set the remaining options, and click *OK*.
   When the administrator logs in to FortiManager, they can only access the specified policy packages. In this example, the specified policy packages are *root:default* and *60:default*.

Certificate deployment

This section includes the following topics:

Configuring FortiManager to deploy certificates for admin GUI access

The steps for deploying an end-entity certificate for admin GUI access are as follows:

Creating the certificate for administrator web access

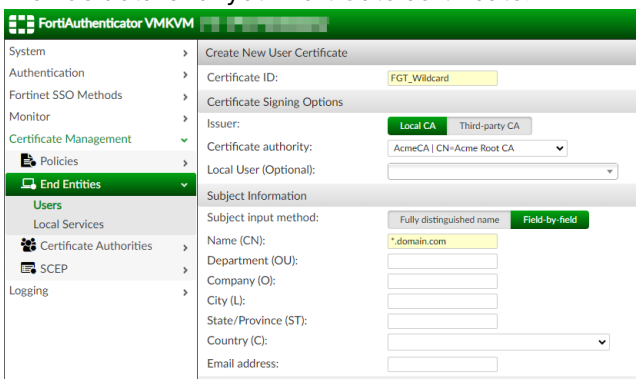
When selecting a certificate to secure HTTPS access, there are a few options you may consider. This example utilizes a wildcard certificate so that it may be applied to several FortiGates in the same domain, such as *FGT1.domain.com*, *FGT2.domain.com*, etc.

This wildcard certificate is signed by the same CA used to sign the intermediate CA used by SSL/SSH inspection.

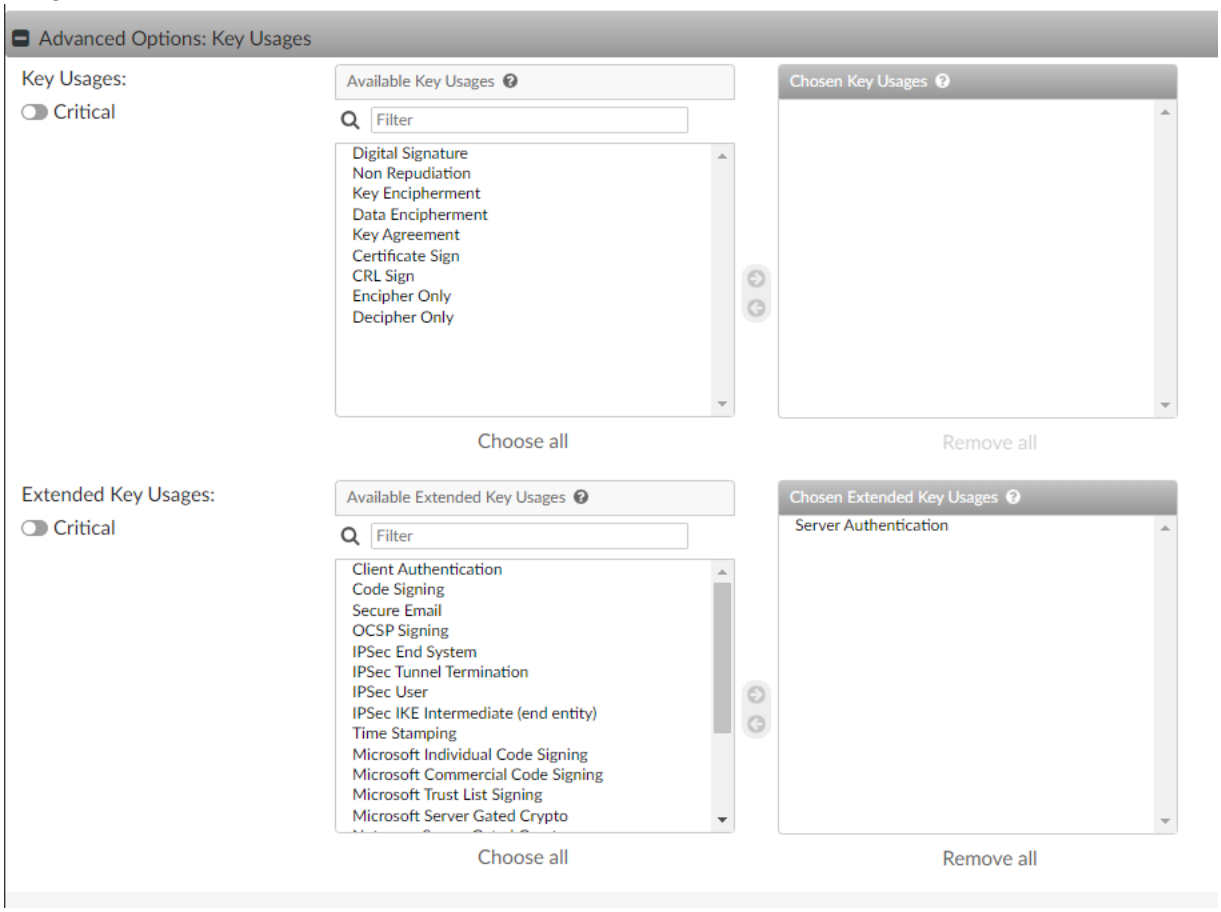
To create the certificate on FortiAuthenticator:

1. Navigate to *Certificate Management* > *End Entities* > *Users*.
2. Select *+ Create New*.

3. Provide details for your FortiGate certificate.



4. Expand *Advanced Options: Key Usages* and add *Server Authentication* to the *Chosen Extended Key Usages*.



5. Select *OK* to save the certificate.
6. Select the generated certificate using the checkbox, and click *Export Key and Cert*.
7. Provide a passphrase and click *OK*.
8. Click *Download PKCS#12 file* to download the certificate.

Uploading the certificate to FortiManager

To upload the certificate to FortiManager:

1. Navigate to *Policy & Objects* > *Advanced*.
2. From the top menu bar, select *Tools* > *Feature Visibility*, and under *Advanced* enable *Dynamic Local Certificate*.
3. Select *Dynamic Local Certificate* from the top.
4. Select *+Create New* in the top left.
5. Specify a name for the certificate.
6. Expand *Per-Device Mapping* and select *Create New* to create a new mapping.
7. Select the target FortiGate for *Mapped device*.
8. Select *Import* next to *Import Certificate*.
9. Select *Local Certificate* for *Type*.
10. Upload the file by browsing or drag-and-dropping the certificate.
11. Specify the name for the certificate.
12. Select *OK*.

> If the newly uploaded certificate does not appear in the dropdown for *Local Certificate*, select *OK*, then select the mapped device and edit once more.

13. Use the *Local Certificate* dropdown to select the newly uploaded certificate.
14. Select *OK* to save the per-device mapping.
15. Provide a change note and select *OK* to save the dynamic local certificate.

Apply the certificate to the FortiGate in FortiManager

To apply the certificate to the FortiGate in FortiManager:

1. Navigate to *Device & Groups*, and select the FortiGate you wish to install the certificate on.
2. Select *System: Settings* from the top menu bar.
3. Under *Administration Settings*, use the dropdown next to *HTTPS Server Certificate* to select the certificate you uploaded in the previous step.
4. Select *Apply*.

Install the certificate

To install the certificate on the FortiGate:

1. Select *Install Wizard* from the top menu bar
2. Select *Install Device Settings (only)* and click *Next*.
3. Select the device you wish to install the certificate on, and click *Next*.

4. If the connection is up, proceed by clicking *Install*.
   - You may wish to review the *Install Preview* to ensure all changes are as expected prior to installing.
5. Select *Finish* when the installer completes.

Verify the certificate was installed correctly

To verify the certificate was successfully installed on FortiGate:

1. Navigate to the FortiGate's GUI web page. This should match the *SAN* field of the certificate.
2. Notice how the connection is secure, and the certificate used to secure the connection is the same certificate you configured in the previous steps.

Configuring FortiManager to deploy certificates for deep inspection

FortiManager can be used to deploy certificates to FortiGate devices. These certificates can include Certificate Authority (CA) certificates, commonly used for deep inspection.

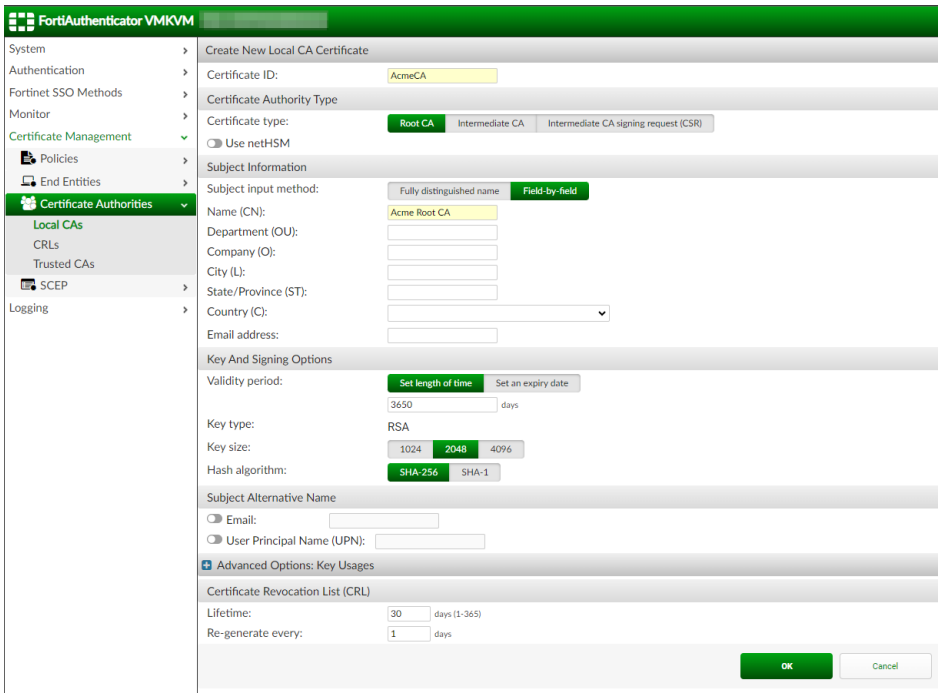
The steps for deploying a CA certificate for deep inspection are as follows:

1. Generate a CA certificate on FortiAuthenticator on page 33
2. Generate an intermediate CA certificate on page 34
3. Upload the intermediate CA certificate to FortiManager on page 34
4. Use the certificate in a policy and install the Policy Package on page 35
5. Verify on an endpoint on page 35

Generate a CA certificate on FortiAuthenticator

To generate a CA certificate on FortiAuthenticator:

1. On the FortiAuthenticator, go to *Certificate Management* > *Certificate Authorities* > *Local CAs*, and select *+Create New*.
2. Specify a *Certificate ID*, leave the *Certificate type* as *Root CA*, and specify a *Name (CN)*.
3. You may provide additional fields as desired.
4. Select *OK*.



Generate an intermediate CA certificate

To generate an intermediate CA certificate:

1. From *Certificate Management* > *Certificate Authorities* > *Local CAs*, and select *+Create New*.
2. Provide a name for the certificate as *Certificate ID*.
3. For *Certificate type*, select *Intermediate CA*.
4. Use the dropdown for *Certificate authority* to select the certificate created in the previous step.
5. For *CN*, provide a name for the intermediate CA certificate.
6. Click *OK* to save.
7. Use the checkbox to select the generated intermediate CA certificate, then click *Export Key and Cert* in the top navigation bar.
8. Provide a passphrase to secure the private key.
9. Select *Download PKCS#12 file*, then select *Finish*.

Upload the intermediate CA certificate to FortiManager

To upload the intermediate CA certificate to FortiManager:

1. Navigate to *Policy & Objects* > *Advanced*.
2. From the top menu bar, select *Tools* > *Feature Visibility*.
3. Under *Advanced*, enable *Dynamic Local Certificate*.
4. Select *Dynamic Local Certificate* from the top.

5. Select *+Create New* in the top left.
6. Specify a name for the certificate.
7. Expand *Per-Device Mapping* and select *Create New* to create a new mapping.
8. Select the target FortiGate for *Mapped device*.
9. Select *Import* next to *Import Certificate*.
10. Select *PKCS#12 Certificate* for *Type*.
11. Upload the file by browsing or drag-and-dropping the certificate.
12. Provide the password used to secure the private key.
13. Specify the name for the certificate.
14. Select *OK*.

> If the newly uploaded certificate does not appear in the dropdown for *Local Certificate*, select *OK*, then select the mapped device and edit once more.

15. Use the *Local Certificate* dropdown to select the newly uploaded certificate.
16. Select *OK* to save the per-device mapping.
17. Provide a change note and select *OK* to save the dynamic local certificate.

Use the certificate in a policy and install the Policy Package

To update SSL/SSH inspection to use the uploaded certificate:

1. Navigate to *Policy & Objects > Security Profiles*, and select *SSL/SSH Inspection* from the top menu.
2. Edit *custom-deep-inspection*.
3. For *CA Certificate*, use the dropdown to select the uploaded intermediate CA certificate.
4. Provide a change note and select *OK* to save.
5. Use this security profile, along with a web filtering profile, in a policy assigned to the FortiGate with the certificate mapping.
6. Install the Policy Package.

For more information, see *Deep Inspection* in the FortiGate Administration Guide on the Fortinet Document Library, as you need to install this intermediate CA on endpoints/browsers to enable the certificate rewriting to be trusted.

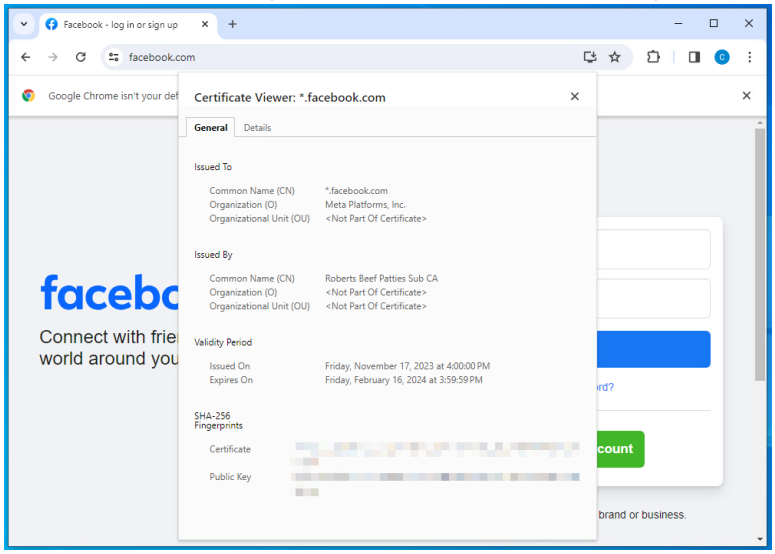
Verify on an endpoint

This guide assumes the certificate used in the deep inspection profile is trusted by the endpoint.

To verify on an endpoint:

1. Navigate to an HTTPS site on an endpoint which would send traffic through the policy you applied the SSL/SSH custom-deep-inspection profile to.

2. When the site loads, inspect the certificate that is being used.
   - Note how the certificate is valid.
   - Note how the *Issued By* section reflects the certificate you selected for your deep inspection.



Configuring FortiManager to deploy SAML certificates

This topic provides the steps required to generate certificates used for SAML authentication using FortiAuthenticator (version 6.6.0).

These certificates are then used manually to configure SAML authentication using FortiAuthenticator as the Identity Provider (IdP) and a FortiManager (version 7.4.2) as the Service Provider (SP). Then, FortiManager is used to configure a FortiGate (version 7.4.2) to use the FortiAuthenticator as an IdP.

In this example, FortiAuthenticator is used to create two certificates:

- *Root CA certificate*: Used to sign all additional certificates.
- *IdP certificate*: Used in SAML.

More information can also be found in the following guides on the Fortinet Document Library:

- FortiAuthenticator Administration Guide
- SAML Interoperability Guide

Create a local CA on the FortiAuthenticator

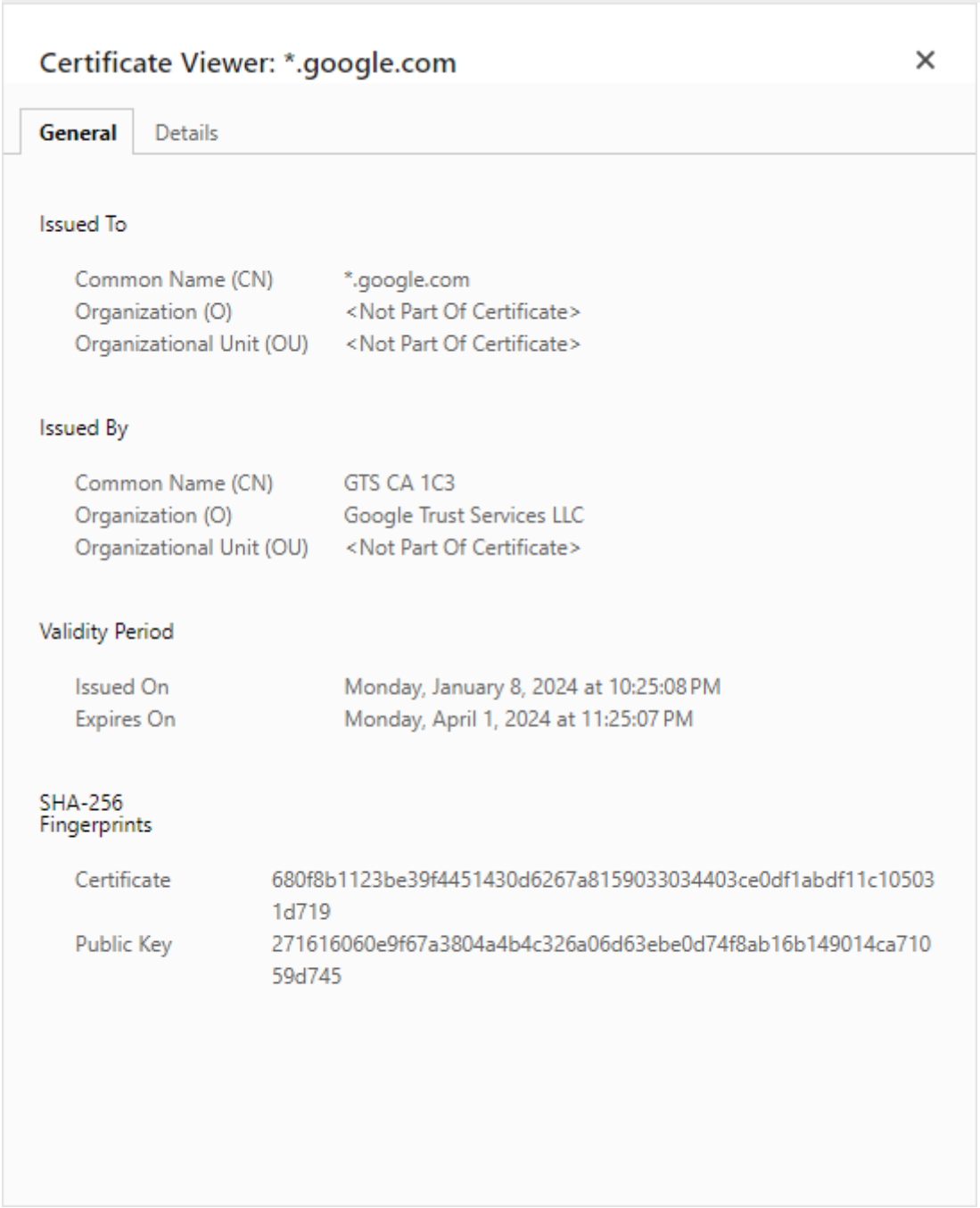
This certificate will be used to create further certificates used to verify identity between IdP and Service Providers (SP).

To create a local CA on the FortiAuthenticator:

1. Navigate to *Certificate Management* > *Certificate Authorities* > *Local CAs*.
2. Select *Create New*.

3. Provide the following info. Optional fields are not specified.

Field	Value	Note
Certificate ID	FAC_ROOT_CA	This is the name of the certificate.
Certificate Type	Root CA	No other certificate may sign this certificate.
CN	FAC ROOT CA	This should reflect the certificate's usage.



4. Click *Save*.

Create the Identity Provider (IdP) certificate used in SAML

This certificate will be signed by the CA created in the previous step. Therefore it is also necessary that the SPs trust this CA. This involves installing the root CA on the SPs to create the needed trust.

To create a local certificate on FortiAuthenticator to be used by the IdP:

1. Navigate to *Certificate Management > End Entities > Local Services*.
2. Select *Create New*.
3. Provide the following info. Optional fields are not specified.

Field	Value	Note
Certificate ID	IDP_certificate.	This is the name of the certificate.
Issuer	Local CA	
Certificate Authority	FAC_ROOT_ CA | CN=FAC ROOT CA	This is the certificate created in the previous step.
Name (CN)	fac.robertsbp.com	This should match the identity provider's name.

4. At the bottom, expand *Advanced Options: Key Usages*.
5. Add all *Key Usages* and *Extended Key Usages*.
6. Click *OK* when finished.

Export the certificate so that it can be installed on the SP (and IdP when necessary).

To export the certificate:

1. From the same menu as before, select the created certificate using the checkbox on the left.
2. Select *Export Certificate* from the top navigation bar.
3. The certificate will download locally. In this example, the certificate is downloaded as *IDP_certificate.cer*.

Create the IdP portal on FortiAuthenticator

These steps cover the IdP settings which determine whose identity it may verify, as well as the eligible service providers. This example uses FortiAuthenticator as the IdP. As a result, the IdP already has access to the certificate that will be used. If you are using another IdP, you will need to upload the certificate first.

To configure IdP settings:

1. Navigate to *Authentication > SAML IdP > General*.
2. Enable the *SAML Identity Provider Portal*.
3. Provide the following information:

   a. *Server address*: *fac.robertsbp.com*.
   b. *Realms*: *local | Local users*
   c. *Default IdP certificate*: *IDP_certificate | CN=fac.robertsbp.com*
4. Select *Save*.

For this example, FortiManager is added as a service provider within the IdP.

To configure SP settings:

1. Navigate to *Authentication > SAML IdP > Service Providers*.
2. Select *Create New* and provide the following:

Field	Value	Note
SP name	FMG_SP	
Create an identifier for this IdP	fac	Use the + icon to provide this value.

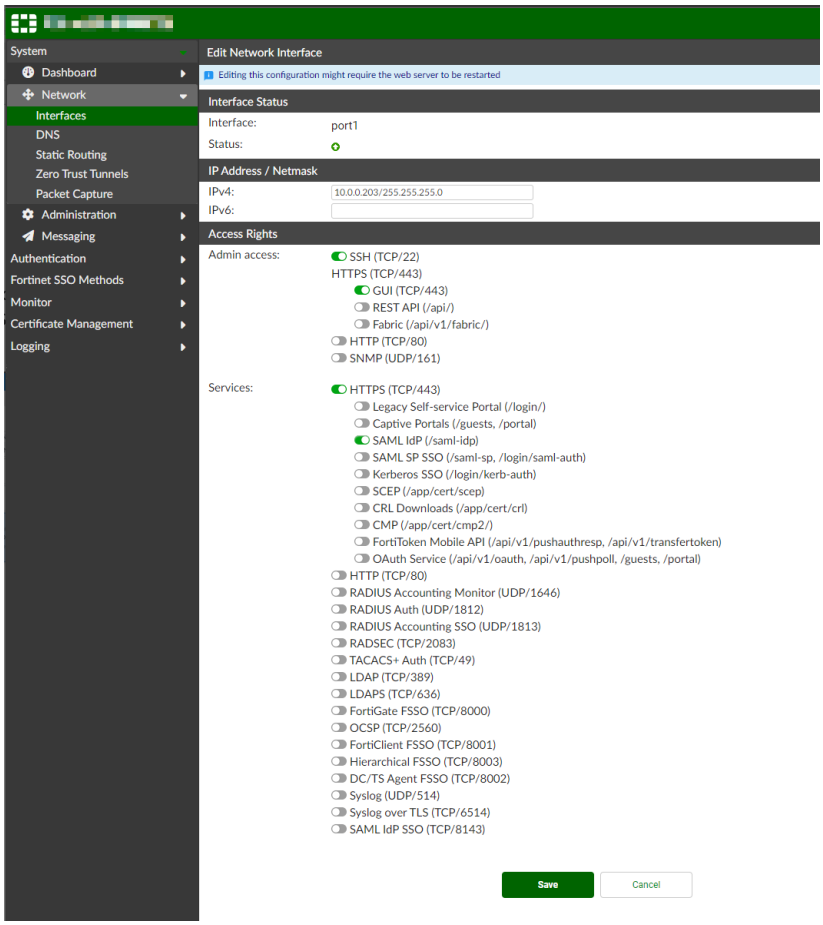
3. Click *Save*, and notice how the *SP Metadata* field appears.
4. Remain in this menu. To complete the SP settings on the IdP, we need to provide the *SP entity ID*, *SP ACS (login) URL*, and the *SP SLS (logout) URL*. These are generated in the upcoming *Defining SAML SP Settings on FortiManager* section, and added in the *IdP portal SP settings continued* section.

Allowing IdP service on FortiAuthenticator

To allow connections to make the SAML request, FortiAuthenticator must be configured to receive these requests.

To allow IdP service on FortiAuthenticator:

1. Navigate to *System > Network > Interfaces*, and edit the interface that will be used for SAML authentication requests.
2. *Enable Services > HTTPS*, then enable *SAML IdP (/saml-idp)*.
3. Click *Save*.



Defining a local user on the FortiAuthenticator

In order to validate the SAML configuration, we need to define a local user on the FortiAuthenticator, as that is the realm type we specified earlier.

To define a local user on the FortiAuthenticator:

1. Navigate to *Authentication > User Management > Local Users*.
2. Select *Create New* at the top.
3. Provide a username, such as Robert, and specify a password.
4. Click *Save*.

Defining SAML SP settings on FortiManager

Similarly to how we defined the IdP portal on the FortiAuthenticator, we must provide the matching settings on the Service Provider. The following configuration is done on the FortiManager.

To define SAML SP settings on FortiManager:

1. Navigate to *System Settings* > *SAML SSL*.
2. Specify the Server Address, such as `fmg.example.com`.
3. Select *Service Provider (SP)*.
4. Copy the three generated URLs to a notepad: *SP Entity ID*, *SP ACS (Login) URL*, *SP SLS (Logout) URL*.
5. Enable *Auto Create Admin*. This will create an account after a successful SAML authentication.
6. Specify a *Default Admin Profile* for the accounts created through SAML authentication.
7. Leave the *IdP Type* as *Fortinet*.
8. For *IdP Address*, enter `fac.robertsbp.com`.
9. Enter the *Prefix* which you created on the FAC (fac).
10. Next to IdP Certificate, select Import to upload the IDP_certificate.cer generated on the FAC, then use the dropdown to select this certificate.
11. Select *Apply* to save.

Hover your mouse over the (i) next to IdP Settings. Note that it mentions “IdP must send the “username” assertion attribute. This will be important later.

IdP portal SP settings continued

After generating the SP settings, you can provide them to the IdP (FortiAuthenticator in this example) to complete the configuration. Switch back to FortiAuthenticator to resume the IdP portal configuration.

To provide the IdP with the SP settings:

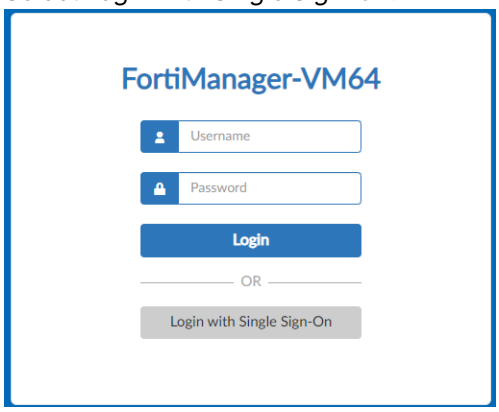
1. In the SP Metadata section, provide the three fields copied from the FortiManager:
   - *SP entity ID*
   - *SP ACS (login) URL*
   - *SP SLS (logout) URL*
2. Find the *Assertion Attributes Configuration* section. Notice what configuration already exists.
   - In other products, you will need to ensure that username is provided here.
3. Select *Save*.

Testing the configuration

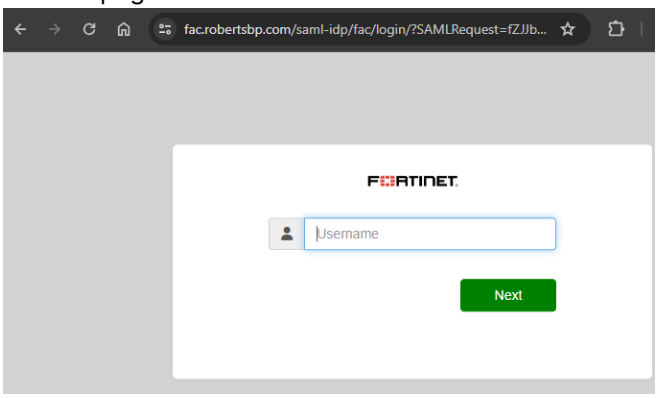
To verify the SAML configuration, attempt to log in to the FortiManager using the local account created on the FortiAuthenticator.

To test the configuration:

1. Navigate to the FortiManager login page.
2. Select *Login with Single Sign-On*.



The webpage redirects to the FortiAuthenticator address and presents the FortiAuthenticator login menu.



3. Authenticate with the local user you created on FortiAuthenticator.
4. Once successful, the username in the top right shows SSO in the user avatar.

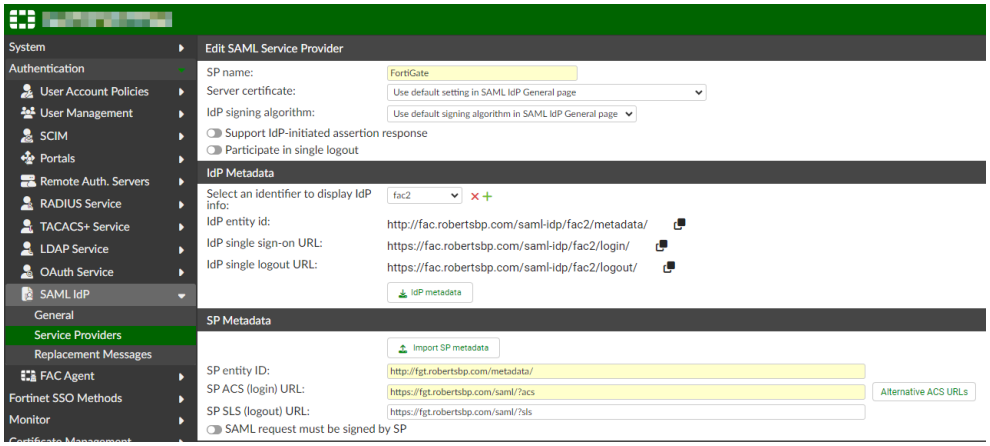
Using FortiManager to provision the SAML certificates to FortiGates

Now that we have a good understanding of the certificates used by the IdP and SP in SAML authentication, we will use FortiManager to configure FortiGates to support SAML. These steps assume you have a managed FortiGate which is synchronized with FortiManager.

To add FortiGate as a Service Provider in the IdP (FortiAuthenticator)

1. Navigate to *Authentication > SAML IdP > Service Providers*, and select *Create New*.
2. Provide a SP name, such as *FortiGate*.
3. Create an identifier for this IdP: *fac2*.
4. Select *Save*.

5. Add the *SP entity ID*, *SP ACS (login) URL*, and *SP SLS (logout) URL* for the FortiGate. These will be similar to the following:
   - `entity-id http://<IP-or-FQDN>:<port*>/saml/metadata/`
   - `single-sign-on-url https://<IP-or-FQDN>:<port*>/saml/?acs`
   - `single-logout-url https://<IP-or-FQDN>:<port*>/saml/?sls`
6. Make sure to specify the port if you are using non-standard HTTP/S ports.
7. Use the dropdown next to *Select an identifier* to display IdP info to select *fac2*.
8. Copy the three IdP URLs provided to a text editor.
9. Select *Save*.



Configure FortiManager to install SAML configuration on the FortiGate

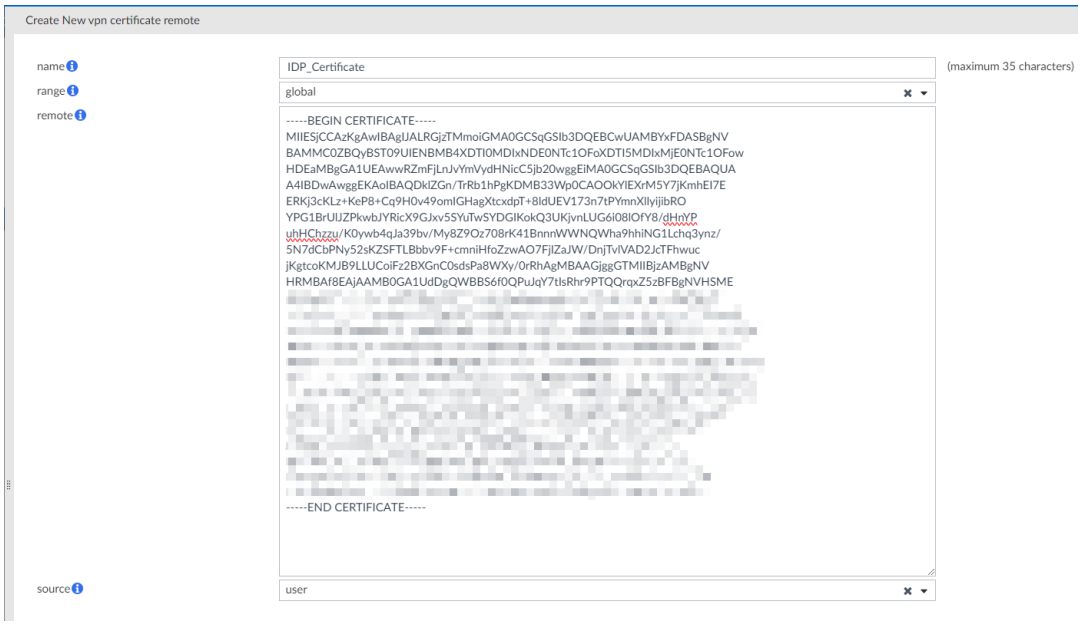
Here we will add the configuration to the FortiManager so it may be pushed to the FortiGate.

To upload the IdP Certificate to FortiManager:

1. On the FortiManager, navigate to *Policy & Objects* > *Advanced* > *CLI Configurations* > *VPN* > *Certificate* > *Remote*.

   If the *CLI Only Objects* are not visible under the current view, enable the option *Tools* > *Feature Visibility*.

2. Select *Create New*.
3. Provide a name, such as *IDP_Certificate*.
4. Change the *range* to *global*.
5. Open the certificate file *IDP_certificate.cer* downloaded from FortiAuthenticator earlier, and open it with a text editor.
6. Copy the contents of the certificate into the remote field on the FortiManager.



7. Click *OK*.

To configure the managed FortiGate to use SAML for admin sign-on:

1. Navigate to *Device Manager* > *Device & Groups*, and select the FortiGate you will be adding SAML authentication to.
2. Select *CLI Configurations* from the top menu bar.
3. Use the search bar and enter "`saml`" to select *system* > *saml*, and provide the following:

default-profile	super_admin (or your choice)
entity-id	http://fgt.robertsbp.com/metadata/
idp-cert	IDP_Certificate
idp-entity-id	http://fac.robertsbp.com/saml-idp/fac2/metadata/
idp-single-logout-url	https://fac.robertsbp.com/saml-idp/fac2/login/
idp-single-sign-on-url	https://fac.robertsbp.com/saml-idp/fac2/login/
role	service-provider
server-address	fgt.robertsbp.com

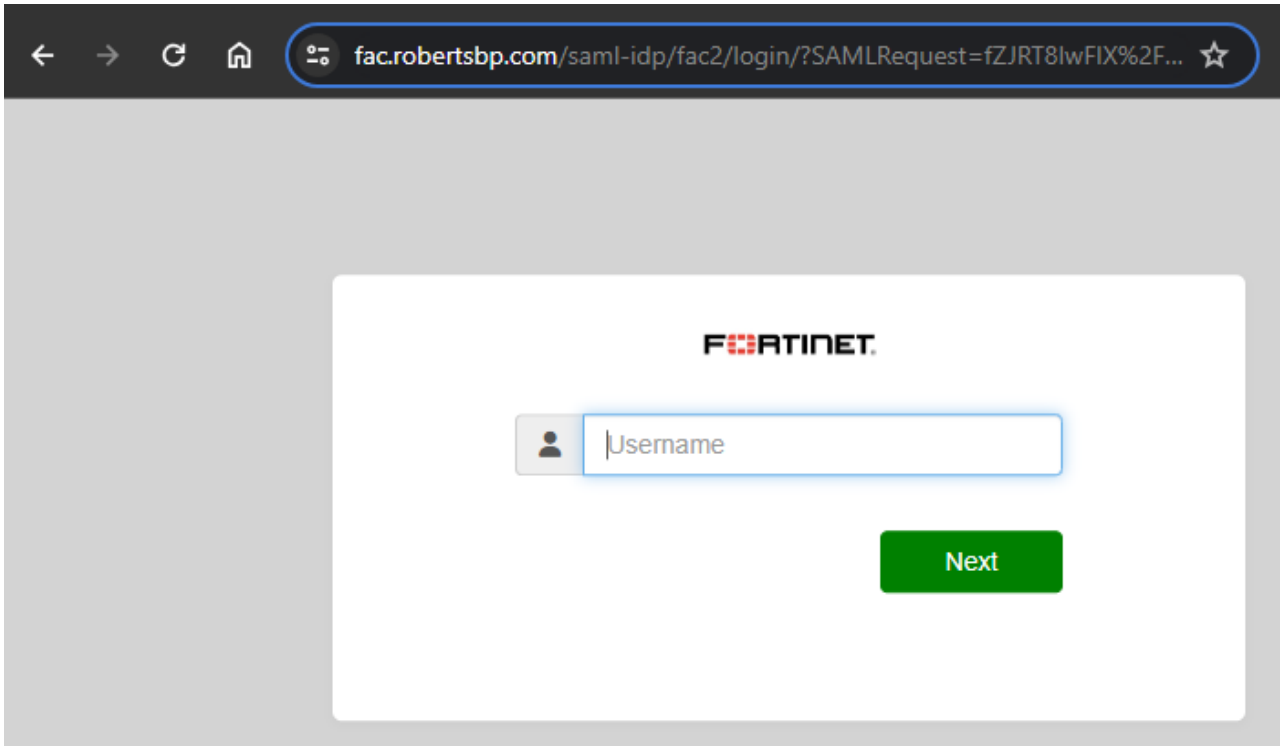
4. Select *Apply*.
5. Select *Install Wizard* from the top of the screen.
6. Install the changes to the FortiGate.

Testing the configuration

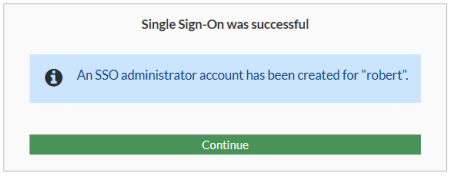
To verify the configuration:

1. To verify the configuration, navigate to the FortiGate's GUI admin page.

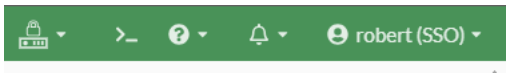
2. Select *Sign in with Security Fabric*.
Your browser redirects you to a new login page, and the URL of this login page is the FortiAuthenticator.



3. Provide the username and password of the local user that was created on the FortiAuthenticator earlier.
4. A window is displayed confirming that an account with the same username was created on the FortiGate.
Click *Continue*.



5. Select *Login Read-Only*, as the FortiGate is managed by FortiManager.
The username in the top right shows (SSO) next to the username.



Configuring FortiManager and FortiAuthenticator for SCEP certificate deployment

Simple Certificate Enrollment Protocol (SCEP) is an open source protocol that allows for organizations to manage and deploy certificates in a scalable and secure fashion. This guide covers how to configure FortiAuthenticator as a Certificate Authority (CA) to conditionally sign certificates for FortiGates. These FortiGates will be managed by FortiManager and handles SCEP configuration as well as certificate usage for the FortiGates.

This section includes the following topics:

Configuring FortiAuthenticator

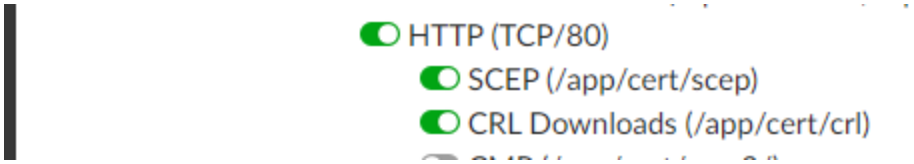
The FortiAuthenticator has two roles in this guide: create and act as a Certificate Authority, and participate in the SCEP process as the SCEP server.

There are three configuration sections for FortiAuthenticator:

Enable SCEP communications

To enable FortiAuthenticator for SCEP communications, you must enable the service as follows:

1. Navigate to *System > Network > Interfaces*.
2. Double click on the interface that FortiManager will communicate with the FortiAuthenticator on.
3. In the *Access Rights > Services* section, enable *HTTP*, and then *SCEP* and *CRL Downloads*.



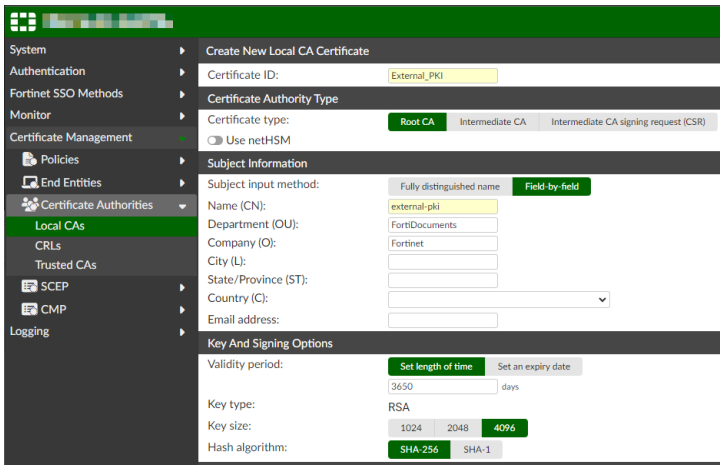
Select or create a CA certificate

Certificate enrollment involves end entities, FortiGates in this example, receiving signed certificates. We will use FortiAuthenticator to generate the CA certificate that will be used to sign these certificates. If you already have a CA on FortiAuthenticator, you may skip this step.

To create a CA certificate on FortiAuthenticator:

1. Navigate to *Certificate Management* > *Certificate Authorities* > *Local CAs*.
2. Click *Create New*.
3. Provide the following details to create your CA. You may elect to add more details as you see fit.

Certificate ID	External_PKI
Certificate type	Root CA
Subject input method	Field-by-field
Name (CN)	external_pki
Department	FortiDocuments
Company	Fortinet
Key size	4096
Hash algorithm	SHA-256



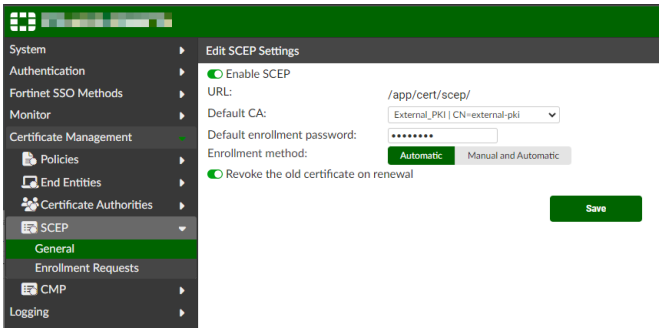
4. Click *Save*.
5. Use the checkbox on the left side to select the newly created CA.
6. Select *Export Certificates* at the top to export the CA.

> This certificate will need to be uploaded to any device which needs to verify the certificates signed by it. That might mean end user desktops for GUI admin access or deep inspection, or to FortiGates for site-to-site VPN.

SCEP configuration

To enable SCEP:

1. Navigate to *Certificate Management* > *SCEP* > *General*.
2. Enable *SCEP*.
3. Ensure *External_PKI* is selected for *Default CA*.
4. Set the *Default enrollment password*.
5. *Leave Enrollment* method on *Automatic*.
6. Leave *Revoke the old certificate on renewal* enabled.
7. Select *Save*.



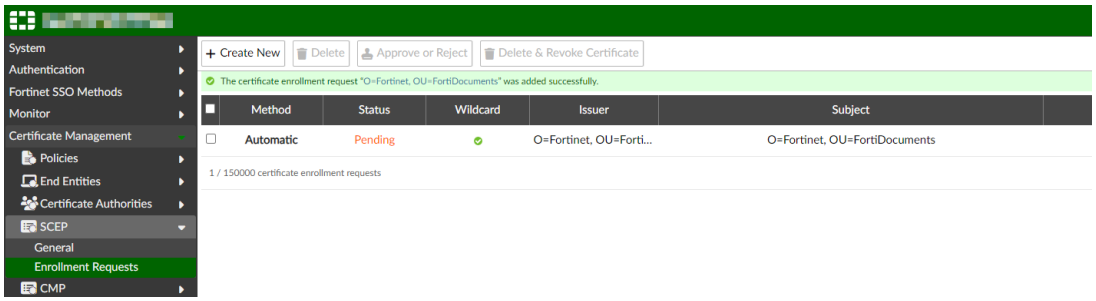
To configure enrollment requests:

1. Select *Certificate Management* > *SCEP* > *Enrollment Requests*.
2. Click *Create New*.
3. Provide the following details:

Automatic request type	Wildcard
Certificate authority	External_PKI | CN=external-pki
Subject input method	Field-by-field
Department	FortiDocuments
Company	Fortinet
Hash algorithm	SHA-256
Password generation	Default
Allow renewal ___ days before certificate is expired	Enabled, 7
Allow renewal if revoked	Enabled
Allow renewal if expired	Enabled
Add CRL Distribution Points extension	Enabled
Add OSCP Responder URL	Enabled

The wildcard request type allows you to create a single enrollment request to match all requests coming from FortiManager. Hover over the Wildcard option on FortiAuthenticator to learn more about the requirements and caveats.

4. Click *Save*.



Configuring FortiManager

There are four configuration sections for FortiManager:

1. Creating a certificate template on page 50
2. Import the External_PKI CA certificate on page 51
3. Use the certificate in FortiManager on page 51
4. Install the certificate to FortiGate on page 52

Creating a certificate template

The certificate template is used to define a certificate object for one or more FortiGates. Like most objects in FortiManager, this object can be mapped to many FortiGates so that a common configuration can apply a unique certificate to each managed FortiGate.

To create a certificate template:

1. Navigate to *Device Manager* > *Provisioning Templates*.
2. Select *Certificate* from the top menu bar.
3. Select *Create New*.
4. Provide the following details:

Type	External
Certificate Name	external_pki
Organization Unit	FortiDocuments
Organization	Fortinet
Key Type	RSA
Key Size	4096

Hash Algorithm	SHA-256
CA Server URL	`http://<FAC_IP>/app/cert/scep`
Challenge Password	<The enrollment password created on the FAC>

The CA Server URL is the URL that the FortiManager can reach FortiAuthenticator on plus the directory that was given after enabling SCEP.

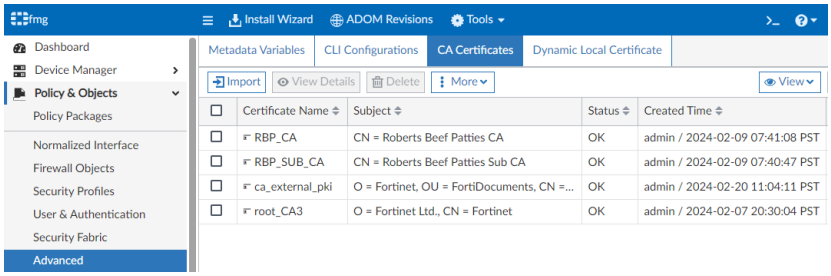
5. Click *OK*.
6. Navigate to *Policy & Objects* > *Advanced* > *Dynamic Local Certificate*. Note how there is a new certificate created named *external_pki*. If you edit this certificate, you will notice that there are no per-device mappings. This is expected as the certificate has not yet been requested from FortiAuthenticator, therefore there are no mappings.

Import the External_PKI CA certificate

This certificate will be used by FortiGates to help validate any certificates that this CA certificate has signed. After importing the CA certificate here, it will be included in the next install for FortiGates in the VDOM.

To import the External_PKI CA certificate:

1. Navigate to *Policy & Objects* > *Advanced*, and select *Tools* > *Feature Visibility* at the top to enable *Advanced* > *CA Certificates*.
2. Select *OK* to save the feature visibility.
3. Select *CA Certificates* from the top menu bar.
4. Select Import in the top left to provide the following details:
   a. *Certificate Name*: ca_external_pki.
   b. *Import CA Certificate*: Upload the certificate exported from FortiAuthenticator in an earlier step.
5. Click *OK* to save.



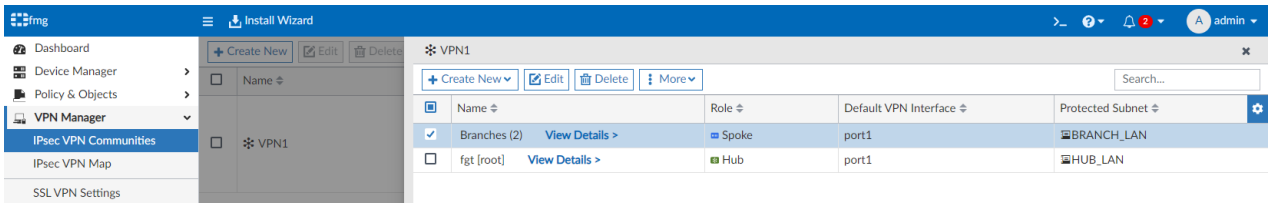
Use the certificate in FortiManager

You can now use the certificate in a FortiGate configuration so it will be downloaded and installed to the FortiGate. The certificate may be used in several ways. This example demonstrates how it may be used for IPsec tunnel authentication.

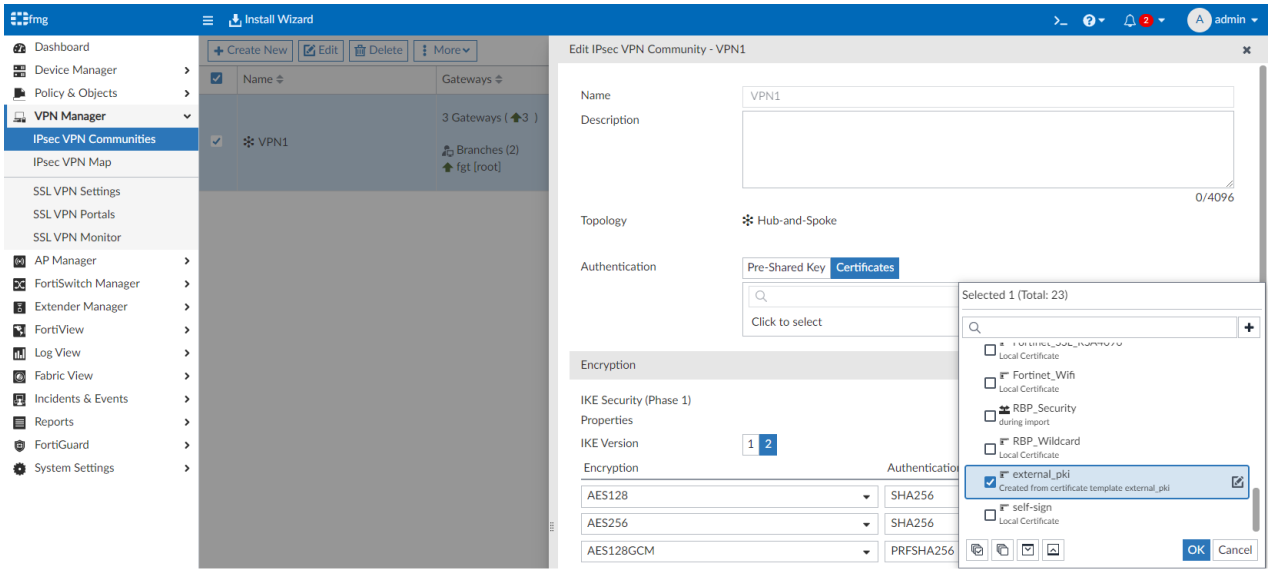
This guide edits an existing hub and spoke VPN set up that is using a PSK for authentication.

To use the certificate in FortiManager:

1. Navigate to *VPN Manager > IPsec VPN Communities*.
2. Select the VPN community you want to update to use automatic certificate enrollment. In this example, the VPN community is *VPN1* and there are three FortiGates in this community: 1 HUB (fgt) and 2 spokes (contained in the *Branches* group: fgt1, fgt2).



3. Edit the community to adjust *Authentication from Pre-Shared Key* to *Certificates*, and select the *external_pki* certificate created from the certificate template, and select *OK* to save the selected certificate.

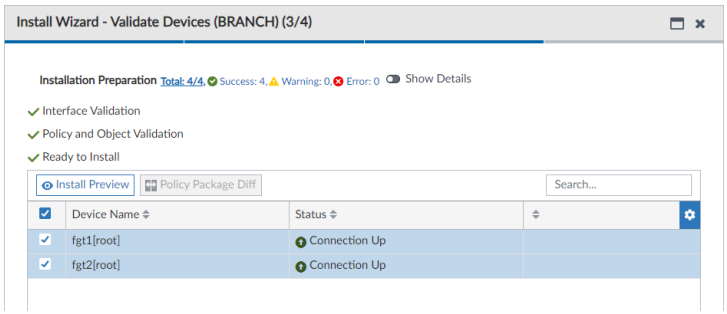


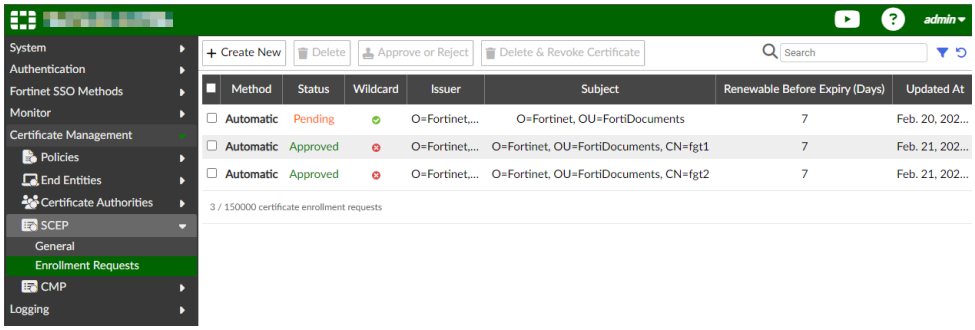
4. Select *OK* to save the community.

Install the certificate to FortiGate

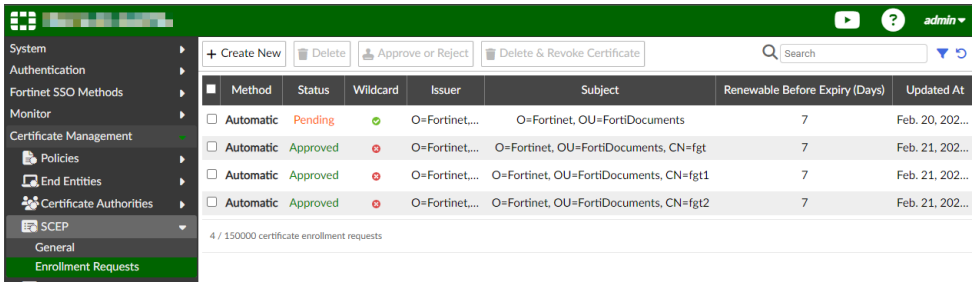
To install the certificate to a FortiGate:

1. Select *Install Wizard* from the top menu bar.
2. Select the Policy Package for the spoke FortiGates, and select *Next*.
3. Ensure the FortiGates are selected and select *Next*.
4. Once the wizard has completed *Installation Preparation (Validate Devices, step 3/4)*, check the enrollment status on the FortiAuthenticator.





5. Select *Install on FortiManager* to complete the *Install Wizard* and certificate deployment.
6. Repeat the above steps for the HUB FortiGate.



Verification of certificate deployment

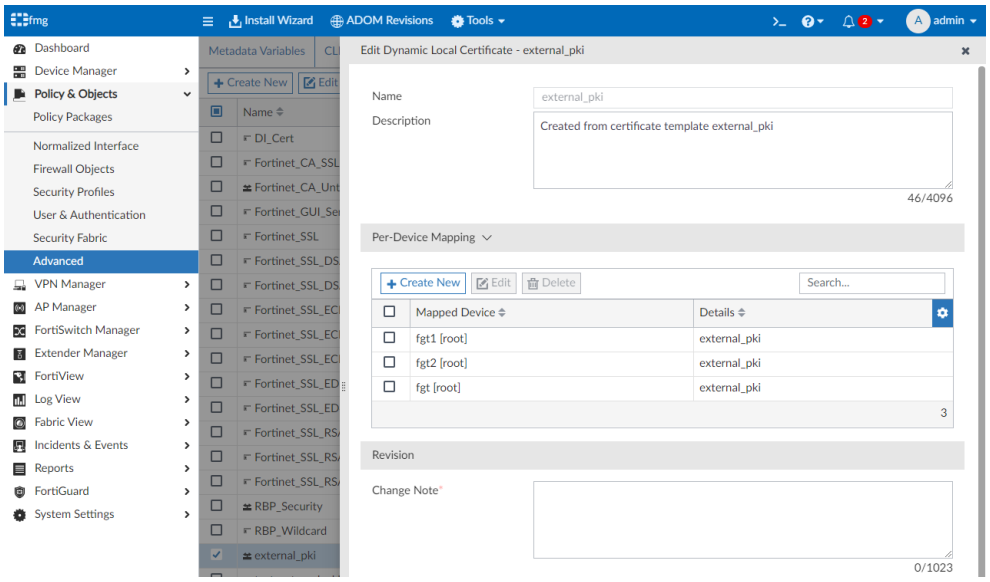
Several certificates will now have been successfully deployed using SCEP. To verify the work, examine the FortiManager and FortiGate configuration.

Verification on FortiManager

On the FortiManager, review the dynamic certificate object, and some VPN monitors.

Dynamic certificate object

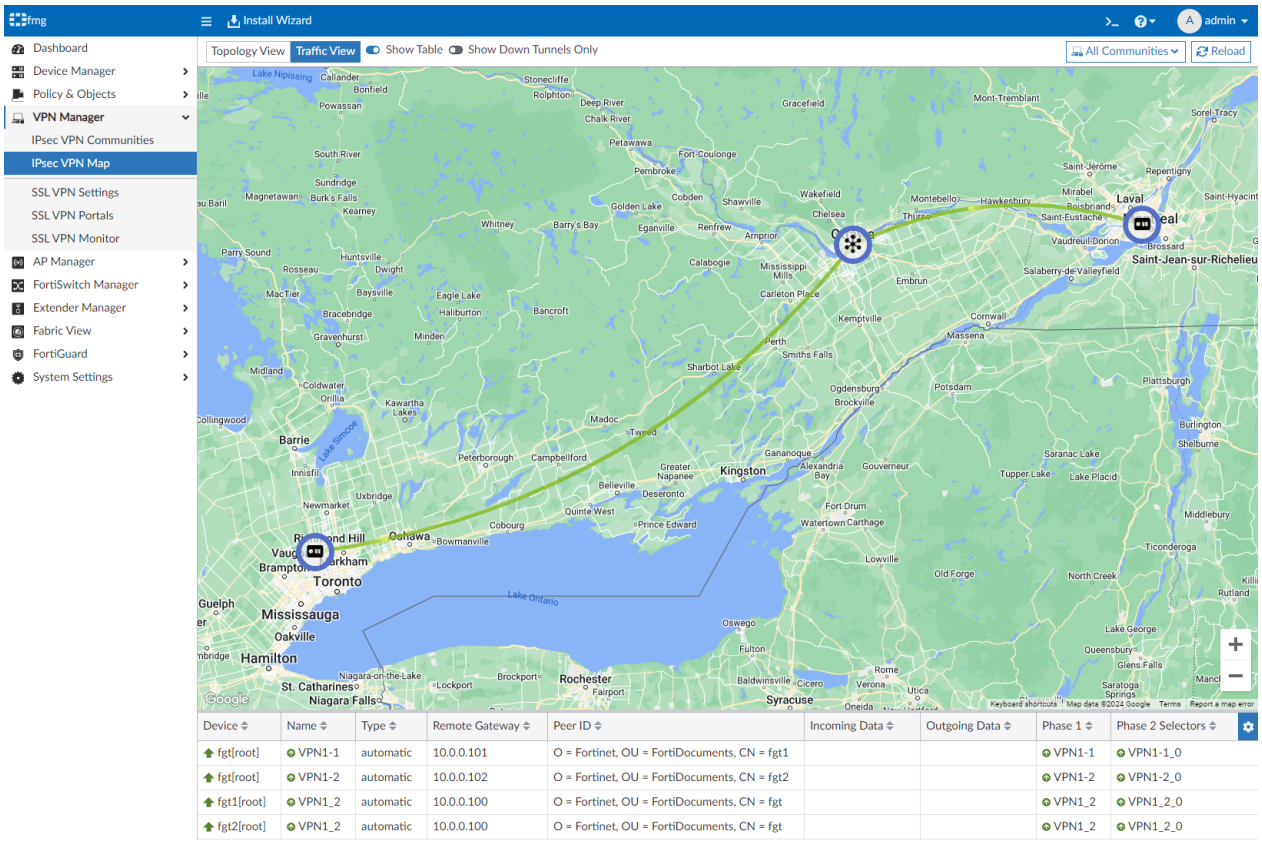
Navigate to *Policy & Objects > Advanced > Dynamic Local Certificate* to examine the *external_pki* certificate. Notice that there are three mappings for the HUB and two branch FortiGates.



You can assign this dynamic certificate to FortiGates without mappings and the SCEP process will automatically generate and deploy a certificate matching the assigned FortiGate.

IPsec VPN map

Review the *VPN Manager > IPsec VPN Map > Topology View* and *Traffic View*. Try enabling *Show Table* on *Traffic View*, and notice the *Peer ID* column. This can be easily used to authenticate.

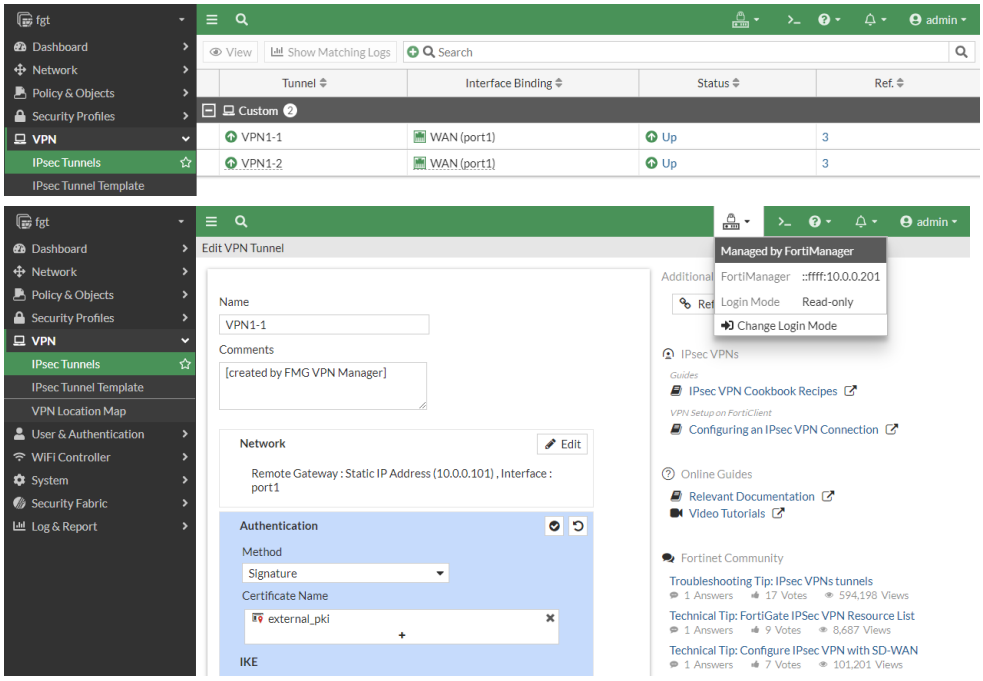


Verification on FortiGate

Review the certificate and configuration on the FortiGate.

Certificate usage

You can verify the certificate on the FortiGate by navigating to *VPN > IPsec Tunnels*, then double clicking on a tunnel. This shows that a certificate named *external_pki* was used for authentication.

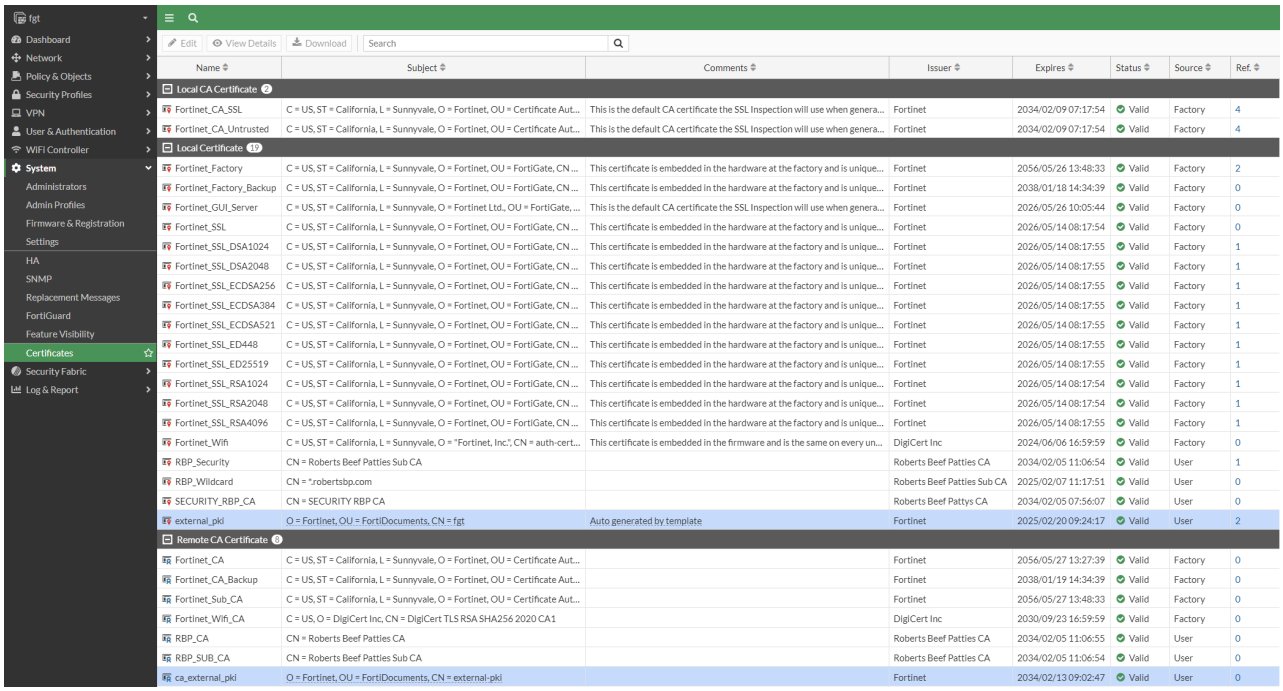


Certificate details

Review the *external_pki* certificate being used in the VPN tunnel.

1. Navigate to *System > Certificates* (enable *Certificates* in *Feature Visibility* if necessary).
2. Notice that the *external_pki* exists in the *Local Certificates* section.

3. Notice that *ca_external_pki* exists in the *Remote CA Certificate* section.



4. Double-click either or both certificates to review their details.

Others

This section contains the following topics:

Managing FortiAnalyzer from FortiManager

This section contains the following topics:

Adding FortiAnalyzer to FortiManager

You can add a FortiAnalyzer unit to FortiManager and use FortiManager to manage FortiAnalyzer, but you must add the FortiAnalyzer unit to an ADOM used for central management, which is similar to adding FortiGate units to FortiManager for central management.

You can use the following methods to add FortiAnalyzer units to FortiManager:

- In FortiManager, use the *Add FortiAnalyzer* wizard in the *Device Manager* pane.
- In FortiAnalyzer, enable central management, and then go to FortiManager to authorize the device for central management.

This topic includes the following sections:

Preparing to add FortiAnalyzer to FortiManager

When using FortiManager to manage FortiAnalyzer, it is recommended to use a FortiAnalyzer unit with factory settings or a FortiAnalyzer unit that has been reset to the factory settings (`factory-reset`). A FortiAnalyzer unit with factory settings helps avoid conflicts when FortiManager synchronizes the device database to FortiAnalyzer.

To prepare FortiAnalyzer for management by FortiManager:

1. On the FortiAnalyzer unit, enable fgfm access on the interface used to connect to FortiManager.

```
config system interface
    edit "port1"
        set ip 10.3.121.142 255.255.0.0
        set allowaccess fgfm
    next
end
```

2. Create an ADOM with the same name as the ADOM in FortiManager, such as *manage_remote_faz*. FortiAnalyzer and FortiManager must have an ADOM of the same name. When you add FortiAnalyzer to FortiManager, add it to the ADOM of the same name.
3. Set storage settings for the ADOM.

Using the wizard to add FortiAnalyzer to FortiManager

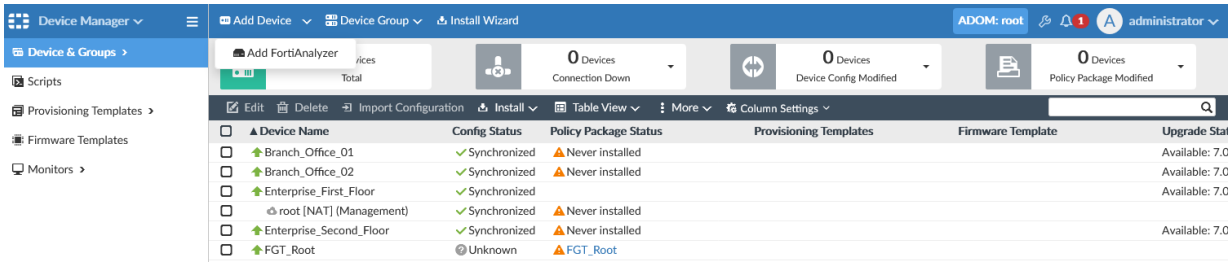
This section describes how to use the *Add FortiAnalyzer* wizard to add FortiAnalyzer to FortiManager.

To add FortiAnalyzer to FortiManager:

1. On FortiManager, ensure that FortiAnalyzer Features are disabled.
   a. Go to *System Settings* > *Dashboard*.
   b. In the *System Information* widget, ensure that *FortiAnalyzer Features* are toggled *Off*.
2. Ensure that the ADOM mode is set to normal by using the following CLI command:

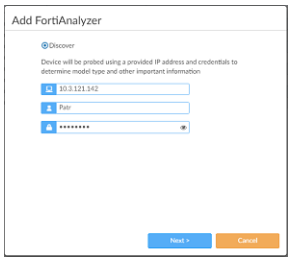
```
config system global
    set adom-mode normal
end
```

3. Go to *Device Manager*, and select a central management ADOM, such as *manage_remote_faz*. The FortiAnalyzer unit should contain an ADOM of the same name. In this example, both FortiAnalyzer and FortiManager have an ADOM named *manage_remote_faz*.
4. On the *Device & Groups* tab, add the FortiAnalyzer unit.
   a. From the *Add Device* menu, select *Add FortiAnalyzer*.

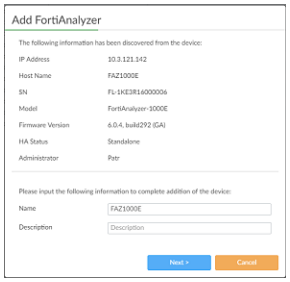


   The *Add FortiAnalyzer* wizard is displayed.

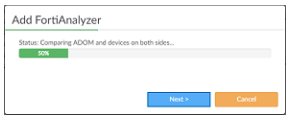
b. Type the FortiAnalyzer IP address, username, password, and click *Next*.



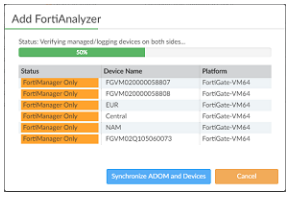
After FortiManager discovers the device, device information is displayed.



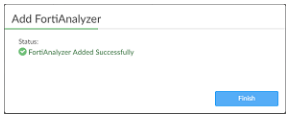
c. Click *Next* to continue.



FortiManager automatically compares ADOMs and devices on both FortiAnalyzer and FortiManager and provides the comparison and verification results.



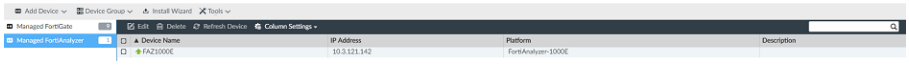
d. Click *Synchronize ADOM and Devices* to continue.
Devices are synchronized between FortiAnalyzer and FortiManager, and FortiAnalyzer is added to FortiManager.The synchronized devices are added to FortiAnalyzer as logging-mode FortiGates.



FortiAnalyzer is added to FortiManager.

e. Click *Finish*.

5. Go to *Device Manager* > *Device & Groups* to view FortiAnalyzer in the *Managed FortiAnalyzer* group.



Additional information

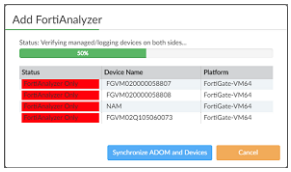
This section describes some of the other scenarios you might encounter when adding FortiAnalyzer units to FortiManager.

Missing ADOM

If the current ADOM in FortiManager does not exist on FortiAnalyzer, FortiManager automatically creates an ADOM with same name and version on FortiAnalyzer before starting to synchronize the device list.

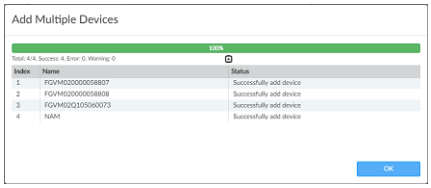
Unknown or mismatched FortiGate devices

If FortiAnalyzer is receiving logs from FortiGate devices that do not exist on FortiManager, FortiManager identifies the devices.



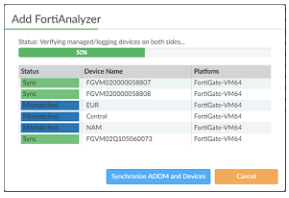
FortiManager automatically attempts to discover the FortiGates.

FortiManager can add the FortiGates and retrieve configurations for the FortiGates when adding the FortiAnalyzer unit.

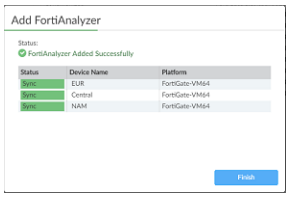


If one device fails to add or retrieve, FortiManager fails to add FortiAnalyzer.

If the same FortiGate device exists on both FortiManager and FortiAnalyzer, but with differences, FortiManager considers the device to be *Mismatched*.



FortiManager tries to synchronize the device settings to FortiAnalyzer.



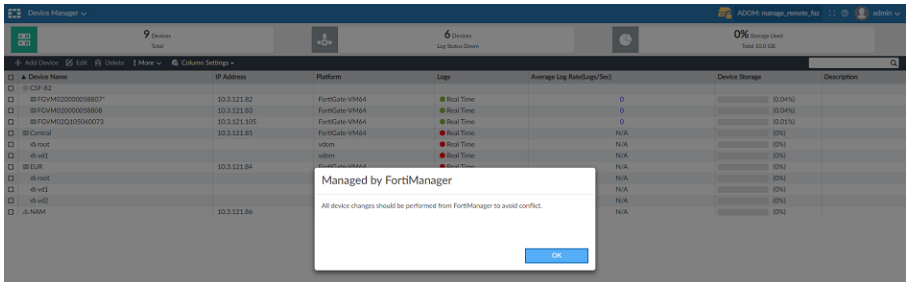
If any errors occur during the synchronization step, FortiManager fails to add FortiAnalyzer.

Viewing managed FortiAnalyzer behavior

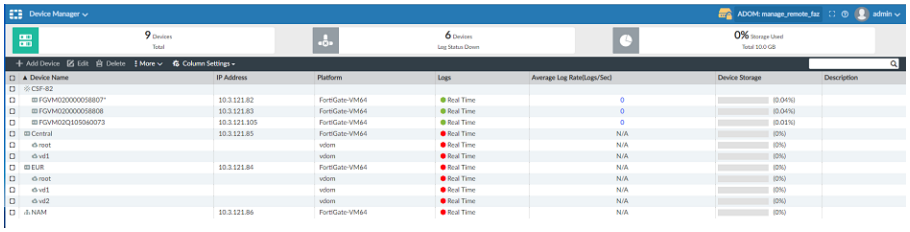
After FortiManager manages the ADOM with FortiAnalyzer in it, you should use FortiManager to perform changes on all devices in the ADOM. This topic describes the behavior you will view in the GUI for a FortiAnalyzer unit that is managed by FortiManager.

To view managed FortiAnalyzer behavior:

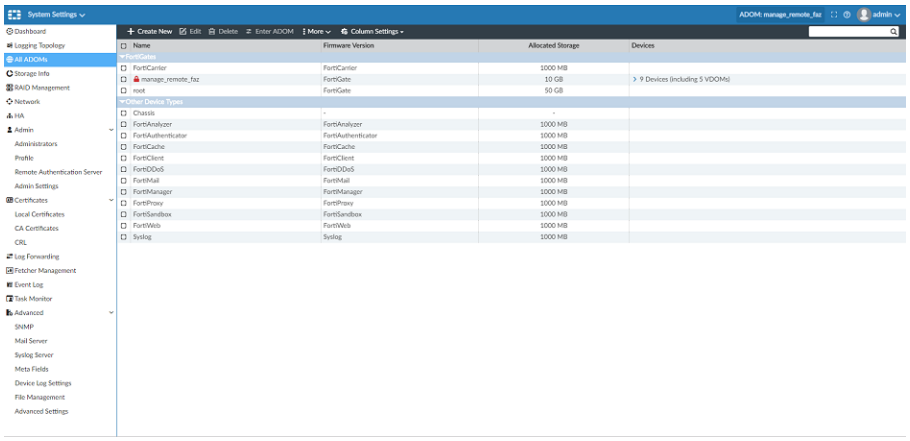
1. Log in to the FortiAnalyzer unit.
2. Go to the *Device Manager* pane.
   The *Managed by FortiManager* message is displayed.



3. Click *OK*.
   Notice the *Lock* icon displayed on top bar, and notice that the *Add Device*, *Edit*, and *Delete* buttons are unavailable.



4. Go to *System Settings* > *All ADOMs*.
   Notice the lock icon beside the ADOM that is managed by FortiManager. You can no longer edit devices in the ADOM.

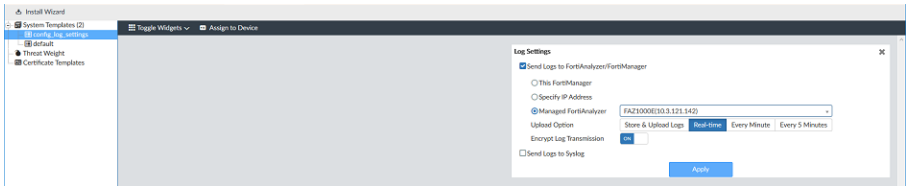


Centrally configuring FortiGate to send logs to managed FortiAnalyzer

After adding FortiAnalyzer to FortiManager, the device list is also synchronized to FortiAnalyzer. To make these FortiGate devices send log to FortiAnalyzer, you can use provisioning templates to centrally configure the log settings for FortiGates.

To centrally configure logging:

1. In FortiManager, go to *Device Manager* > *Provisioning templates*.
2. Create a new blank system template.
   a. In the content pane, click *Create New*.
   b. Type a name for the system template, and click *OK*.
   The system template is created.
   c. Select the system template, and click *Edit*.
   The template opens for editing. You can enable the *Log Settings* widget by selecting it from the *Toggle Widgets* dropdown.



   d. In the *Log Settings* widget, select *Send Logs to FortiAnalyzer/FortiManager*.
   e. Select *Managed FortiAnalyzer*, and select the unit from the drop-down list.
   f. Click *Apply*.
3. Assign the system template to FortiGates.
4. Install the system template to FortiGates.

Viewing logs and reports for managed FortiAnalyzer units

After you add FortiAnalyzer to the ADOM in FortiManager, the following FortiAnalyzer panes are available in FortiManager:

- FortiView
- Log View
- FortiSoC
- Reports

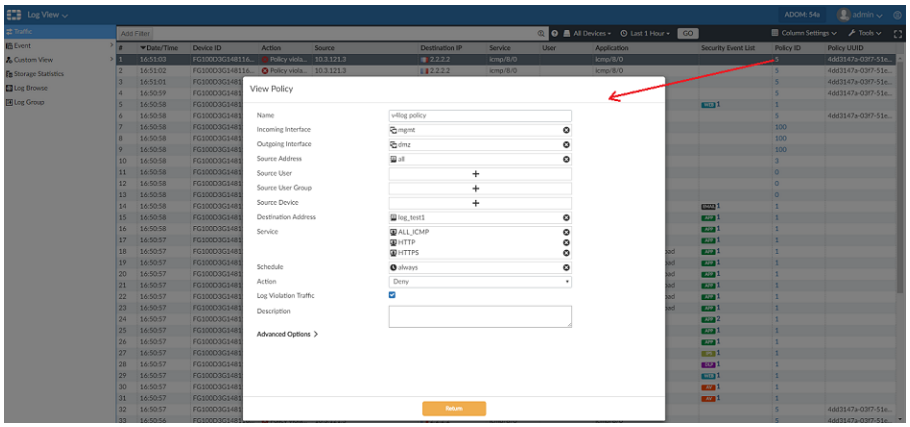
All FortiAnalyzer functionality is available, except for the following:

- Importing and exporting a report template
- Importing and exporting a chart
- Importing and downloading a log file

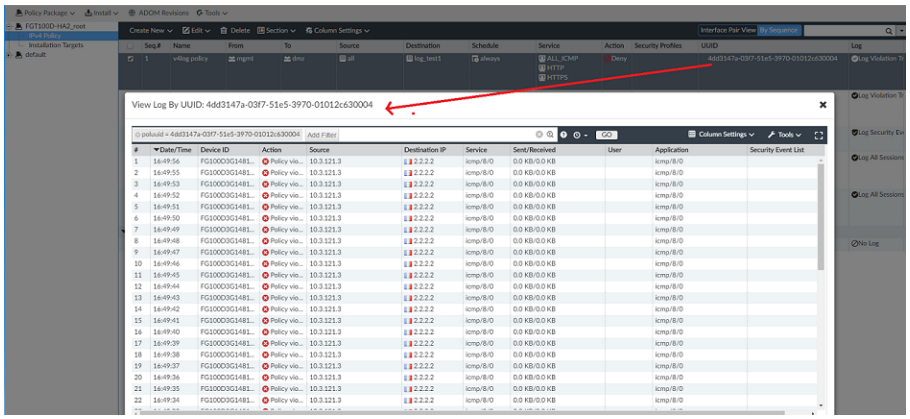
In FortiManager, when you create a report and run it, and the same report is generated in the managed FortiAnalyzer.

To view logs and reports:

1. On FortiManager, go to *Log View*.
   You can view all logs received and stored on FortiAnalyzer.
2. Click the *Policy ID*.
   The policy rule opens.
   If the policy rule doesn't open, ensure that you have imported the policy rules to the ADOM.



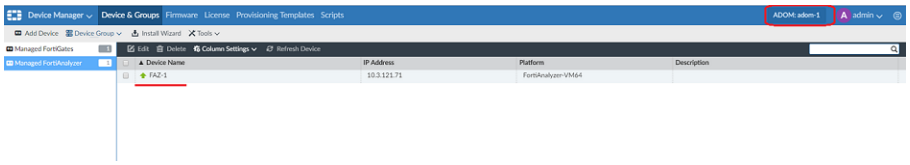
3. Go to *Policy & Objects* > *Policy Packages*, and right-click the policy UUID to search the related policy logs.



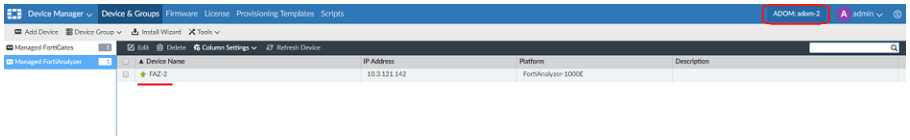
Managing multiple FortiAnalyzer units

FortiManager can manage multiple FortiAnalyzer units, but each FortiAnalyzer must be in its own ADOM. You cannot add a second FortiAnalyzer unit to an ADOM.

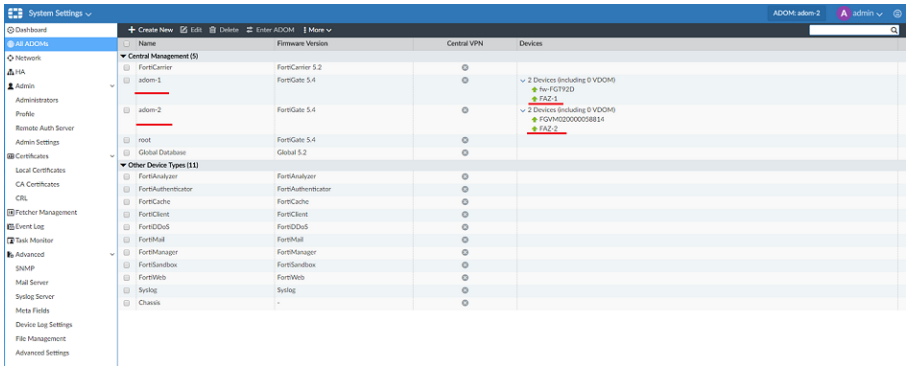
For example, FortiManager can contain the following ADOMs: *adom-1* and *adom-2*, and *adom-1* manages FAZ-1:



The other ADOM, *adom-2*, manages FAZ-2:



Following is another view of the ADOMs with FortiAnalyzer units:



Troubleshooting managed FortiAnalyzer units

This topic describes how to troubleshoot several situations.

Adding FortiAnalyzer failed

If adding FortiAnalyzer failed, enable the following debug command, which will provide error or information in a debug log, and then try adding FortiAnalyzer again.

```
diagnose debug application depmanager 255
diagnose debug enable
```

example: `add_faz_dep_debug.txt`

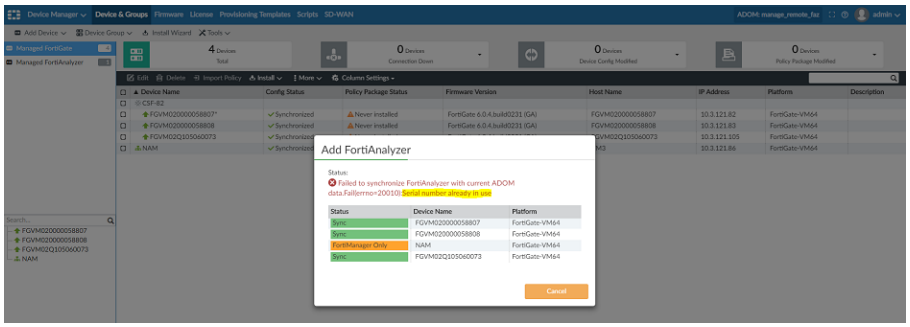
ADOM remains locked on FortiAnalyzer

When you delete FortiAnalyzer from FortiManager, the ADOM on FortiAnalyzer should be unlocked. If the ADOM remains locked, you can use the following command on the FortiAnalyzer unit to unlock the ADOM:

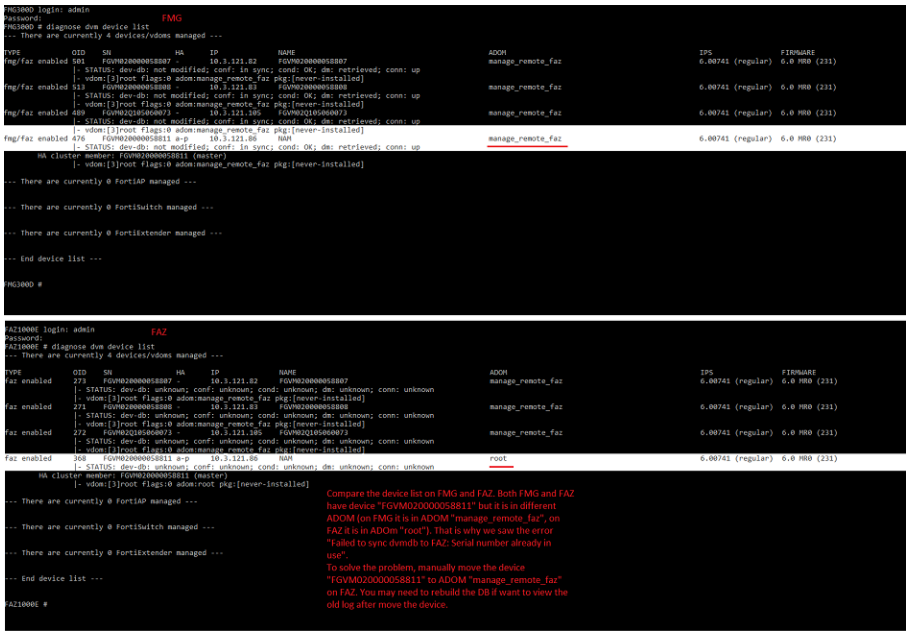
```
diagnose dvm adom unlock <adom ADOM name>

diagnose dvm adom unlock remote-faz
---Deleting DVM lock by remote FortiManager succeeded---
```

Serial number already in use

The Alert console might display the *Serial number already in use* message. FortiManager might also display the *Serial number already in use* message after failing to add FortiAnalyzer.



You can use the `diagnose dvm device list` command on the FortiAnalyzer unit and on the FortiManager unit to see if the same FortiGate unit already exists on the FortiAnalyzer unit, but in different ADOM.



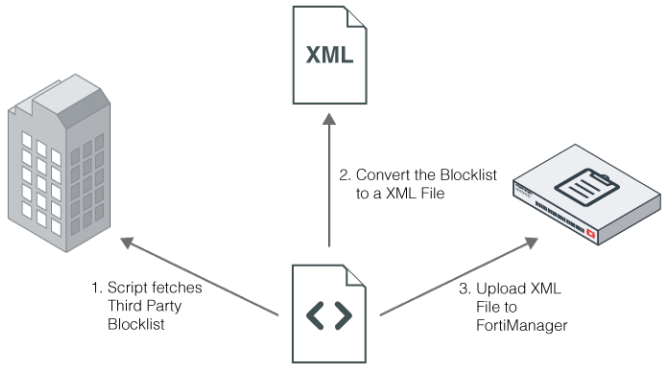
Creating a third party blocklist provider workflow

In this example, you will learn how to use your FortiManager to create a third party blocklist provider workflow.

Overview

You must create a script that will handle the entire workflow. Make sure the script can convert the third party blocklist into a FortiManager XML file.

From an external server, you must schedule the periodic execution of that script. Using the communication tools provided by the third party blocklist provider, the script will fetch the blocklist from the third party.



To create a script to handle a third party blocklist provider workflow:

1. Convert the blocklist to a FortiManager XML file:
   The script will convert the blocklist to a FortiManager XML file. This XML file allows you to assign a category to each URL in the list, in addition to a default category. The default category is used as the return value when there is no match.
   Example of the FortiManager XML file format:

```
<custom_url_list version="1.0">
 <head>
 <default_cate>142</default_cate>
 <description>the description</description>
 </head>
 <body>
 <url_entry>
 <url>http://www.url-0000001.com</url>
 <cate>79</cate>
 </url_entry>
 <url_entry>
 <url>http://www.url-0000001.com</url>
 <cate>28</cate>
 </url_entry>
 </body>
</custom_url_list>
```

   The category value in *<cate></cate>* could be either a normal web filter category or a local category.
2. Upload the XML file into FortiManager:
   The script uses SSH to connect to FortiManager and upload the XML file.
   CLI command:

```
execute fmupdate {ftp | scp | tftp} import <type> <filename> <server> <port> <directory>
<username> <password>
```

   For example:

```
execute fmupdate scp import custom-url 20M-custom-url.xml 000.000.000.000 00 tmp/FORTIGUARD
my_login my_password

This operation will replace the current <custom-url> package!
Do you want to continue? (y/n)y

Start getting file from remote SCP Host...
SCP transfer successful.
Packing installation is in process...This could take some time.
lccclient command result:Response=202|

Update successfully
```

   In this example, FortiManager will upload the file from the following file:

```
scp://my_login:my_password@000.000.000.000:00/temp/FORTIGUARD/20M-custom-url.xml
```

3. Configure FortiManager to only use its local FortiGuard database or local blocklist database:
   a. Select one of the following:
      - Local FortiGuard database
      - Local blocklist database
      - Or both

```
config fmupdate custom-url-list
    set db_selection {fortiguard-db | custom-url | both}
end
```

4. Test custom URLs managed by FortiManager:
   a. Use the CLI in FortiManager to send categorization requests for custom URLs managed by FortiManager.
   Example of the CLI command set:

```
diagnose fmupdate fgd-url-rating FGT SN 1 www.foo.com
    url rating flags: 0x2 (2:EXACT_MATCH, 1:PREFIX_MATCH)
    rates according to url: 0x37 0x00 0x00 0x00
    rates according to ip: 0x00 0x00 0x00 0x00
    num_dots:-1, num_slash:-1
    database version: 16.45562
        0 ms
```

   The *FGT SN* can be any FortiGate SN.
   The returned category is in a hexadecimal output: *0x37*.
   In decimal format, the category is *56* or *Web Hosting*.

   
   The memory capacity of the unit determines the number of URLs FortiManager can manage.

5. Specify FortiManager as the FortiGuard server in FortiGate
   a. Go to your FortiGate CLI console and execute the following commands:

```
config system centralmanagement
    set type fortimanager
    set {<IP_address> | <FQDN_address>}
    config serverlist
        edit 1
            set servertype
            update rating
            set serveraddress {<IP_address> | <FQDN_address>}
        next
    end
    set includedefaultservers disable
end
```


For further FortiManager information, refer to the FortiManager Administration Guides available on the Fortinet Document Library.

www.fortinet.com