FortiNAC

License
Upgrade Guide

Version: 8.x, 9.1

Date: December 29, 2023

Rev: M

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http://docs.fortinet.com

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http://www.fortinet.com/doc/legal/EULA.pdf

Contents

Overview

This document provides instruction for updating and replacing license keys for existing appliances when a change in any of the following license components are required:

- Number of concurrent endpoint licenses
- License type (e.g. upgrading from Plus to Pro)
- UUID or MAC address due to a FortiNAC appliance migration

These instructions apply for appliances using Perpetual Licenses, Subscription Licenses or a combination of both. For details on these license types, see section **Perpetual and Subscription Licenses** in the [Deployment Guide](#) in the Fortinet Document Library.

For new deployments, refer to the Deployment Guide.

Determining License Type

There are two types of Endpoint Licenses: Perpetual and Subscription.   To confirm which type is in use, login to the Customer Portal (https://support.fortinet.com) and review the **Entitlements** section.

Perpetual License Support Type = License Support Entitlements are provided by installing an Endpoint License key on the FortiNAC server.	✓ Telephone Support ✓ Enhanced Support ✓ License Support ✓ Firmware & General Updates
Subscription License Support Type = FortiNAC VM Entitlements are retrieved from FortiCloud over TCP port 443.	✓ Telephone Support ✓ Enhanced Support ✓ Firmware & General Updates ✓ FortiNAC VM
Perpetual + Subscription Licenses A combination of both Perpetual and Subscription Licenses can be purchased to apply to the same appliance.	✓ FortiNAC VM ✓ Telephone Support ✓ Enhanced Support ✓ License Support ✓ Firmware & General Updates

Requirements

- Multiple appliance deployments (High Availability or managed by Control Manager): FortiNAC version 8.3.3 or higher in order for licenses to be distributed properly. If below this version, license will not be copied to the other appliances. If the system is below this version, upgrade to a more recent version prior to installing license key. Release Information is available in the Fortinet Document Library.

- Subscription licenses require access to Forticloud over TCP 443 (eth0: Outbound to internet) in order to pull the entitlements.

Considerations

For older systems with separate Control and Application Servers

- Application Server will always show concurrent count of 0. This is normal. For details see KB article 202173.

- License keys will not contain certificates. For details, see KB article 192245.

Update Keys Due to UUID/MAC Change

If either the eth0 MAC address or UUID has changed, it will no longer match the MAC and UUID encoded in the installed license key.   This prevents FortiNAC processes from starting. **Note**: This process does not change entitlements.

Step 1: Record New UUID and eth0 MAC Address

Version 9.x

1. Log in to the appliance CLI as `root`.
2. View the UUID by typing

   `getUUID`
3. View the eth0 MAC address by typing

   `getMAC`
4. After recording the information, logout of CLI by typing

   `logout`

Version 8.x

1. Log in to the appliance CLI as `root`.
2. View the UUID by typing

   `sysinfo -v | grep -i uuid`

3. View the eth0 MAC address by typing

   `ifconfig eth0`

   Example output

   `eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500`

   `inet 10.254.0.1  netmask 255.255.0.0  broadcast 10.254.255.255`

   `   ether `**`70:4C:A5:ff:00:01`**`  txqueuelen 1000  (Ethernet)`

4. After recording the information, logout of CLI by typing
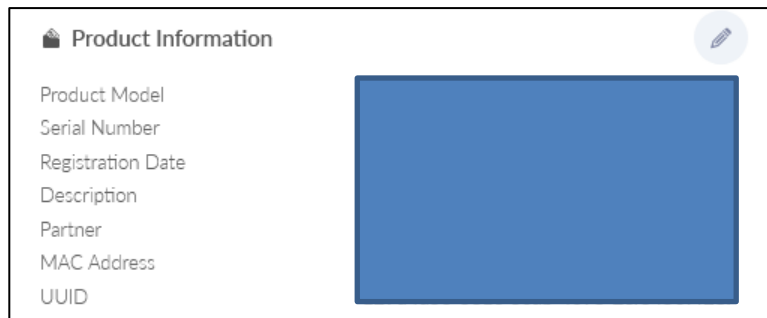
   `logout`

Step 2: Identify Serial Numbers to Update

Identify the serial number of each appliance whose MAC address and/or UUID has changed.

1. Login to the Customer Support Portal at http://Support.Fortinet.com
2. Under the **Asset Management** panel, click **Product List.**

3. Click on the Serial Number to verify the current MAC Address and UUID assigned.
4. Record the following information in the **Product Information** panel:
   - Serial Number
   - Description (**Tip**: If description is confusing, update the field with the hostname or some other entry that easily identifies which appliance the information belongs. Click on the pencil icon in the upper right corner to modify.)
   - MAC Address (existing eth0 MAC Address)
   - UUID (existing UUID)

5. Collect the information in step 4 for each appliance needing updates.

Step 3: Change Existing MAC Address and UUID Information

Open a **Customer Service** ticket online or by phone.
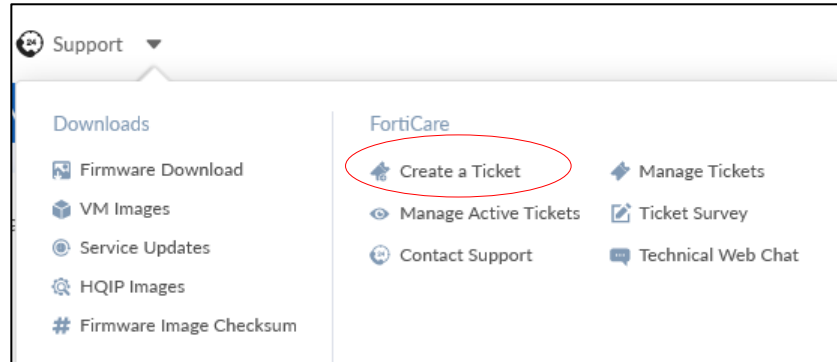
Provide the following information:

- Serial Number
- Old MAC Address
- Old UUID
- New (Eth0) MAC Address
- New UUID

Example of ticket entry:

```
Hello Customer Service Team,

We need to update the MAC Address and UUID values for the following appliances:

Serial Number: <serial number>
Description:  <description>
MAC Address = <Old MAC address>
UUID = <Old UUID>

Change to:
New MAC Address = <New MAC Address>
New UUID = <New UUID>

---------------------------------------------

Serial Number: <serial number>
Description:  <description>
MAC Address = <Old MAC address>
UUID = <Old UUID>

Change to:
New MAC Address = <New MAC Address>
New UUID = <New UUID>
```

Once Customer Service has updated the records, the new keys can be downloaded and applied.

Step 4: Download Keys

1. Login to the Customer Support Portal at http://Support.Fortinet.com
2. Under the **Asset Management** panel, click **Product List.**
3. Click on the serial number whose key will be downloaded.
4. Under **License & Key** the following rows are displayed:

    - **FortiNAC License File Download**:   Used for appliances branded as "FortiNAC" (Engine Version 8.3 and above).
    - **Network Sentry Key File**: **Important:** Only to be used for Network Sentry branded appliances (Engine Version 8.2 and below).

Key	License Number	Description
Get The License File	N/A	FortiNAC License File Download
Get The License File	N/A	Network Sentry Key File

Click **Get the License File** to download the key file. File will have a **.lic** extension.

5. Download the license key file (<serial number>.lic) and save to a folder. This will be used in the next section.

    Important: This license key can only be applied to the appliance owning the serial number in the .lic filename.

6. Repeat these steps to download keys for every appliance whose MAC and UUID was updated.

7. Logout of Customer Support Portal.
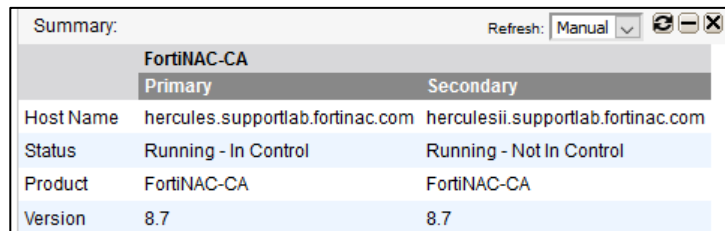
Step 5: Install New Key

Install the key file on the FortiNAC appliance owning the serial number listed in the .lic filename.

Note: Application of key requires a restart of management processes. If appliance being restarted is actively managing the network, then during this time...

- o Wireless clients will be unable to connect (Radius requests will not be answered)
- o Captive portal will be unavailable (Devices in isolation will be unable to register or remediate)
- o VLANs will not be changed

Important:

- If HA environment without a Control Manager, ensure the Primary Server is in control before applying licenses. This can be verified in the Administration UI under the **Summary** panel of the Dashboard.

Summary:		Refresh: Manual
	FortiNAC-CA	
	Primary	**Secondary**
Host Name	hercules.supportlab.fortinac.com	herculesii.supportlab.fortinac.com
Status	Running - In Control	Running - Not In Control
Product	FortiNAC-CA	FortiNAC-CA
Version	8.7	8.7

Proceed to the desired method of installation:
Install Key using Administration UI (recommended)
Configuration Wizard
Install Key Using CLI - Use if the new key's eth0 MAC address has changed

Install Key Using Administration UI

It is recommended to apply the new key using the Administration UI (shown below). This method provides the opportunity to review the details of the new key prior to application, and cancel the install if the key is not correct.

1. In the Administration UI, navigate to **System > Settings > System Management > License Management**.
2. From the drop-down list, select the appliance. The server can be identified using the eth0 MAC address, serial number or UUID.

3. Click **Modify License Key**.

4. Apply key using one of the following methods:

   Option 1 (recommended): Click **Upload**, browse to **.lic** key file, and click **Open**.

   Option 2: Copy and paste the *entire* content of the **.lic** file in the field under "Enter New Key:" **Important**: If any characters are missing from the pasted content, the license will not apply correctly.

5. Click **OK** to apply the new license key. The existing key detail is displayed in a pop-up window along with the new key detail.

6. Review the details. If they are not accurate, **click Undo to revert to the existing license key** and contact Customer Service to address. If they are accurate, click **OK** to apply the new key.

7. To restart the server immediately, click **OK** on the dialog box.

8. To restart the server later, click **Cancel** on the dialog box. Another dialog box appears stating that the new key will not be applied until the server is restarted.

   New features or license counts contained in the new license cannot be accessed until the server is restarted. The new license is saved on the server, but is not read until the server is restarted.

9. Click **OK** to confirm. The new license is applied once the appliance restarts.

10. Validate using the appropriate method below.

Review the Administration UI to verify new entitlements:

License Information Dashboard panel

System > Settings > System Management > License Management (Note: subscription license entitlements are not displayed in this view)

Subscription and Perpetual Licenses (Combined)
Subscription license count is added to the Perpetual License count.

Example:
(Perpetual License PRO count=200) + (Subscription License PRO count=25) = (PRO count=225)

Review the Administration UI to verify new entitlements:

License Information Dashboard panel

Note: At this time, entitlements retrieved from subscription licenses are *not* displayed under **System > Settings > System Management > License Management**.

Separate Control Server and Application Servers
- Application Server will always show concurrent count of 0. This is normal. For details see KB article 202173.
- License keys will not contain certificates. For details, see KB article 192245.

If the entitlements are not displaying as expected, see Troubleshooting.

1. Access the Configuration Wizard of the appropriate appliance. See sections "Accessing Configuration Wizard" and "Apply License Key" in the Configuration Wizard reference manual for instructions.

2. Validate using the appropriate method below.

Perpetual Licenses

Review the Administration UI to verify new entitlements:

License Information Dashboard panel

System > Settings > System Management > License Management

Subscription and Perpetual Licenses (Combined)

Subscription license count is added to the Perpetual License count.

Example:
(Perpetual License PRO count=200) + (Subscription License PRO count=25) = (PRO count=225)

Review the Administration UI to verify new entitlements:

License Information Dashboard panel

Note: At this time, entitlements retrieved from subscription licenses are *not* displayed under **System > Settings > System Management > License Management**.

Separate Control Server and Application Servers

- Application Server will always show concurrent count of 0. This is normal. For details see KB article 202173.

- License keys will not contain certificates. For details, see KB article 192245.

If the entitlements are not displaying as expected, see Troubleshooting.

Install Key Using CLI

Contact Support if assistance is required.

1. Using WinSCP or a similar program, copy the .lic key file to the appliance's **/bsc/campusMgr/** directory. Use transfer protocol SCP.

2. Login to the appliance CLI as root.

3. Make a copy of the current key. Type

   cd /bsc/campusMgr

   cp .licenseKey .licenseKey.orig

4. Copy the .lic file to .licenseKey. Type

   cp <.lic filename> .licenseKey

   Example
   ```
   cp FNVMCATM20000123.lic .licenseKey
   ```

5. Verify key. Type

   licensetool –key FILE –file .licenseKey

   MAC and UUID should reflect the new values.

6. Restart services in order for the key to take effect. Type

   shutdownNAC

   <wait 30 seconds>

   startupNAC

7. Validate using the appropriate method below.

Perpetual Licenses

Review the Administration UI to verify new entitlements:

License Information Dashboard panel

System > Settings > System Management > License Management

Subscription and Perpetual Licenses (Combined)

Subscription license count is added to the Perpetual License count.

Example:
(Perpetual License PRO count=200) + (Subscription License PRO count=25) = (PRO count=225)

Review the Administration UI to verify new entitlements:

License Information Dashboard panel

Note: At this time, entitlements retrieved from subscription licenses are *not* displayed under **System > Settings > System Management > License Management**.

Separate Control Server and Application Servers

- Application Server will always show concurrent count of 0. This is normal. For details see KB article 202173.
- License keys will not contain certificates. For details, see KB article 192245.

If the entitlements are not displaying as expected, see Troubleshooting.

Update Keys Due to Hardware Replacement

This section applies to new hardware replacing an appliance with a (perpetual) endpoint license key installed. This procedure does not apply to appliances using a subscription license.

When hardware appliances with endpoint license keys are replaced, the endpoint license must be transferred to the new serial number and a new key installed.
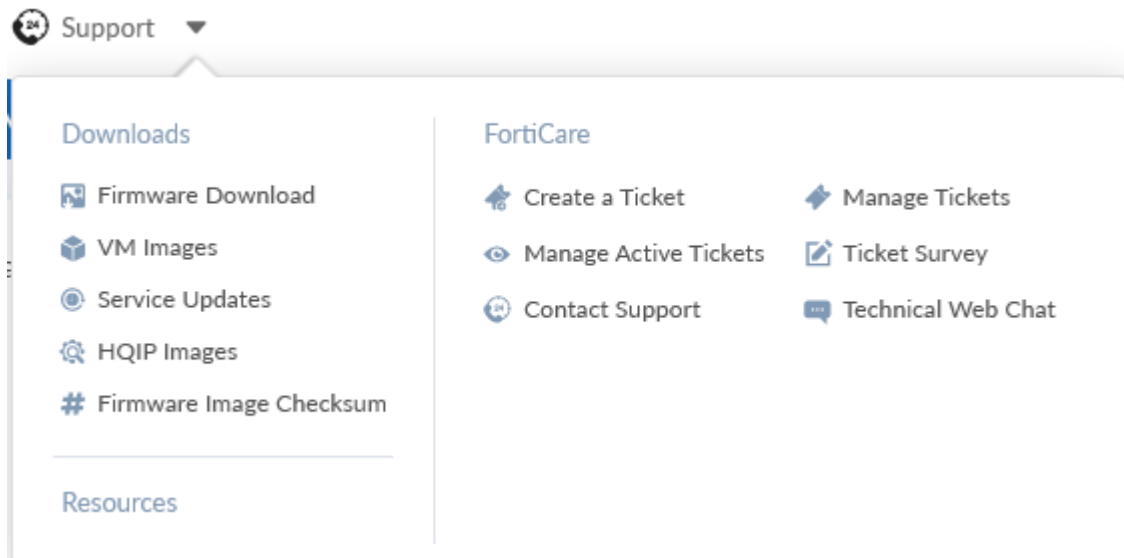
RMA replacements: Complete the RMA Transfer before proceeding. Contact Customer Service for assistance.

Step 1: Record New MAC Address

1. Login to the CLI of the new appliance and type

   `get hardware status`

2. Record MAC.

3. To exit CLI type

   `exit`

Step 2: Change Existing MAC Address Information

Open a **Customer Service** ticket online or by phone.

Provide the following information:

- New appliance Serial Number
- New (Port1) MAC Address

Example of ticket entry:

```
Hello Customer Service Team,

We need to update the MAC Address value for the following appliance:

Serial Number: <New serial number>
Description:  <Description>
MAC Address: <New MAC Address>
```

Once Customer Service has updated the records, the new key can be downloaded and applied.

Step 3: Download Keys

1. Login to the Customer Support Portal at http://Support.Fortinet.com
2. Under the **Asset Management** panel, click **Product List**.
3. Click on the serial number whose key will be downloaded.
4. Under **License & Key** the following rows are displayed:

   - **FortiNAC License File Download**: Used for appliances branded as "FortiNAC" (Engine Version 8.3 and above).
   - **Network Sentry Key File: Important**: Only to be used for Network Sentry branded appliances (Engine Version 8.2 and below).

Key	License Number	Description
Get The License File	N/A	FortiNAC License File Download
Get The License File	N/A	Network Sentry Key File

   Click **Get the License File** to download the key file. File will have a .lic extension.
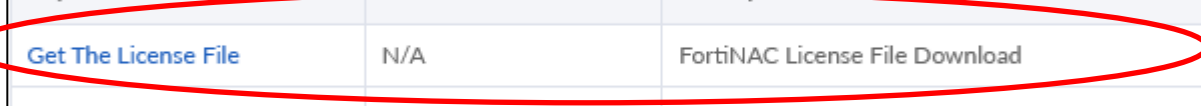
5. Download the license key file (<serial number>.lic) and save to a folder. This will be used in the next section.

   Important: This license key can only be applied to the appliance owning the serial number in the .lic filename.

6. Logout of Customer Support Portal.

Step 4: Download Keys

1. Login to the Customer Support Portal at http://Support.Fortinet.com
2. Under the **Asset Management** panel, click **Product List.**
3. Click on the serial number whose key will be downloaded.
4. Under **License & Key** the following rows are displayed:

    - **FortiNAC License File Download**:   Used for appliances branded as "FortiNAC" (Engine Version 8.3 and above).

    - **Network Sentry Key File**: **Important:** Only to be used for Network Sentry branded appliances (Engine Version 8.2 and below).

Key	License Number	Description
Get The License File	N/A	FortiNAC License File Download
Get The License File	N/A	Network Sentry Key File

Click **Get the License File** to download the key file. File will have a **.lic** extension.

5. Download the license key file (<serial number>.lic) and save to a folder. This will be used in the next section.

    Important: This license key can only be applied to the appliance owning the serial number in the .lic filename.

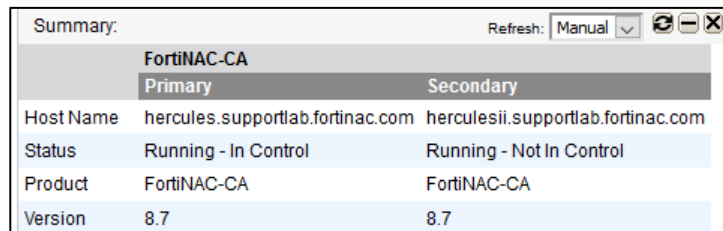6. Logout of Customer Support Portal.

Install the key file on the FortiNAC appliance owning the serial number listed in the .lic filename.

Note: Application of key requires a restart of management processes. If appliance being restarted is actively managing the network, then during this time...

- o Wireless clients will be unable to connect (Radius requests will not be answered)
- o Captive portal will be unavailable (Devices in isolation will be unable to register or remediate)
- o VLANs will not be changed

Important:

- If HA environment without a Control Manager, ensure the Primary Server is in control before applying licenses. This can be verified in the Administration UI under the **Summary** panel of the Dashboard.

Summary:		Refresh: Manual
	FortiNAC-CA	
	Primary	**Secondary**
Host Name	hercules.supportlab.fortinac.com	herculesii.supportlab.fortinac.com
Status	Running - In Control	Running - Not In Control
Product	FortiNAC-CA	FortiNAC-CA
Version	8.7	8.7

Proceed to the desired method of installation:
Install Key using Administration UI (recommended)
Install Key Using CLI - Use if the UI is not accessible

Install Key Using Administration UI

It is recommended to apply the new key using the Administration UI (shown below). This method provides the opportunity to review the details of the new key prior to application, and cancel the install if the key is not correct.

1. In the Administration UI, navigate to **System > Settings > System Management > License Management**.

2. From the drop-down list, select the appliance. The server can be identified using the eth0 MAC address or serial number.

3. Click **Modify License Key**.

4. Apply key using one of the following methods:

   Option 1 (recommended): Click **Upload**, browse to **.lic** key file, and click **Open**.

   Option 2: Copy and paste the *entire* content of the **.lic** file in the field under "Enter New Key:" **Important**: If any characters are missing from the pasted content, the license will not apply correctly.

5. Click **OK** to apply the new license key. The existing key detail is displayed in a pop-up window along with the new key detail.

6. Review the details. If they are not accurate, **click Undo to revert to the existing license key** and contact Customer Service to address. If they are accurate, click **OK** to apply the new key.

7. To restart the server immediately, click **OK** on the dialog box.

8. To restart the server later, click **Cancel** on the dialog box. Another dialog box appears stating that the new key will not be applied until the server is restarted.

   New features or license counts contained in the new license cannot be accessed until the server is restarted. The new license is saved on the server, but is not read until the server is restarted.

9. Click **OK** to confirm. The new license is applied once the appliance restarts.

10. Validate using the appropriate method below.

Review the Administration UI to verify new entitlements:

License Information Dashboard panel

System > Settings > System Management > License Management (Note: subscription license entitlements are not displayed in this view)

Subscription and Perpetual Licenses (Combined)
Subscription license count is added to the Perpetual License count.

Example:
(Perpetual License PRO count=200) + (Subscription License PRO count=25) = (PRO count=225)

Review the Administration UI to verify new entitlements:

License Information Dashboard panel

Note: At this time, entitlements retrieved from subscription licenses are *not* displayed under **System > Settings > System Management > License Management**.

Separate Control Server and Application Servers
- Application Server will always show concurrent count of 0. This is normal. For details see KB article 202173.
- License keys will not contain certificates. For details, see KB article 192245.

If the entitlements are not displaying as expected, see Troubleshooting.

Install Key Using CLI

Contact Support if assistance is required.

1. Using WinSCP or a similar program, copy the .lic key file to the appliance's **/bsc/campusMgr/** directory. Use transfer protocol SCP.

2. Login to the appliance CLI as root.

3. Make a copy of the current key. Type

   cd /bsc/campusMgr

   cp .licenseKey .licenseKey.orig

4. Copy the .lic file to .licenseKey. Type

   cp <.lic filename> .licenseKey

   Example
   ```
   cp FN6HCATAxxxxxx19.lic .licenseKey
   ```

5. Verify key. Type

   licensetool –key FILE –file .licenseKey

   Confirm serial number, entitlements and MAC are correct.

6. Restart services in order for the key to take effect. Type

   shutdownNAC

   <wait 30 seconds>

   startupNAC

7. Validate using the appropriate method below.

Review the Administration UI to verify new entitlements:

License Information Dashboard panel

System > Settings > System Management > License Management (Note: subscription license entitlements are not displayed in this view)

Subscription and Perpetual Licenses (Combined)

Subscription license count is added to the Perpetual License count.

Example:
(Perpetual License PRO count=200) + (Subscription License PRO count=25) = (PRO count=225)

Review the Administration UI to verify new entitlements:

License Information Dashboard panel

Note: At this time, entitlements retrieved from subscription licenses are *not* displayed under **System > Settings > System Management > License Management**.

Separate Control Server and Application Servers

- Application Server will always show concurrent count of 0. This is normal. For details see KB article 202173.
- License keys will not contain certificates. For details, see KB article 192245.

If the entitlements are not displaying as expected, see Troubleshooting.

Perpetual Licensing

Perpetual Endpoint License Upgrade

Step 1: Obtain New License Information

After additional licenses are purchased, an email is sent containing two document files with SKU's and their registration codes. This email will be required to register the additional licenses.

- One document contains product SKU containing the additional licenses (LIC-FNAC).
- The other document contains the co-term support contract. This contract combines the existing licenses for the control Serial Number with the additional licenses to create a new total quantity.

Example: Adding 300 license to an existing PRO level license count of 400

SKU: LIC-FNAC-PRO-100
Units of License: 300

SKU: FC3-10-FNAC0-240-02-36
Units of Contract: 700 ← 400 existing + 300 purchased

If the "Units of Contract" value does not reflect the new total license count, <u>do not proceed</u>. Contact your sales representative to correct.

Step 2: Identify Serial Number with License Support

The Endpoint License Key is installed on the "managing" server. The remaining servers in multiple appliance deployments are installed with an Appliance (Base) License Key. See chart below to determine which product requires the Endpoint License Key.

Endpoint License Key

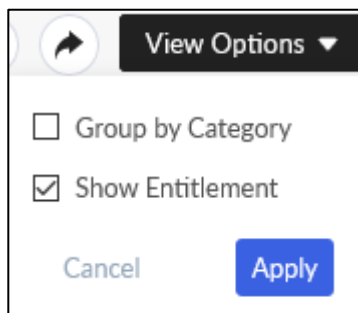| Deployment Configuration	Managing Server	Part Number
Standalone	CA Server	FNC-CA-VM
Standalone with High Availability (HA)	Primary CA Server	FNC-CA-VM
Multiple Independent Standalones	Each CA Server	FNC-CA-VM
Multiple Independent with High Availability (HA)	Each Primary CA Server	FNC-CA-VM
Distributed	Control Manager	FNC-M-VM
Distributed with High Availability (HA)	Primary Control Manager	FNC-M-VM

For more information on how licenses are distributed for each system configuration, see section **License Distribution in Multiple Appliance Deployments** in the Appendix of the Deployment Guide.

Identify the serial number of the appliance currently running with the existing endpoint license key. This information will be required to register the new licenses.

1. Login to the Customer Support Portal at http://Support.Fortinet.com
2. Under the **Asset Management** panel, click **Product List.**

3. Click **View Options** and select **Show Entitlement** and click **Apply**.

The **Support Type** column should now display.

4. In the Search bar at the top of the view, type **License Support**. The resulting entries are the products with endpoint license keys.
5. To view the MAC address and UUID, click on the serial number.
6. Note the serial number of the appliance having the endpoint license upgraded.

Step 3: Register Licenses

Register the new license product SKU following the email instructions using the registration codes included in the instructions.

- Use the product serial number noted in previous step
- Use the support contract number that came with the license

If assistance is needed with the registration process, contact Customer Service.

Step 4: Download New Key

1. Once registration of the new licenses and license support is complete, click on the appliance serial number again. Under **Entitlement**, **License Support** should be listed.
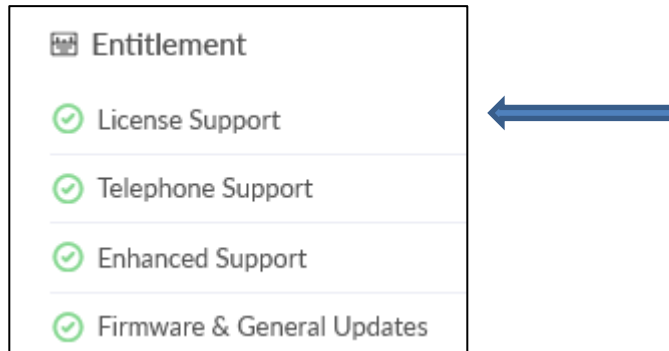
2. Under **License & Key**, the endpoint license type should be listed along with the number of concurrent licenses.

3. Under **Key** the following rows are displayed:

   - **FortiNAC License File Download**:   Used for appliances branded as "FortiNAC" (Engine Version 8.3 and above).

   - **Network Sentry Key File**: **Important:** Only to be used for Network Sentry branded appliances (Engine Version 8.2 and below).

Key	License Number	Description
Get The License File	N/A	FortiNAC License File Download
Get The License File	N/A	Network Sentry Key File

   Click **Get the License File** to download the key file. File will have a **.lic** extension.

4. Download the license key file (<serial number>.lic) and save to a folder. This will be used in the next section.

   Important: This license key can only be applied to the appliance owning the serial number in the .lic filename.

5. Logout of Customer Support Portal.

Step 5: Install New Key

Install the license file on the FortiNAC appliance owning the serial number associated to the license. For instructions on viewing the UUID and MAC address of an appliance, see KB article 195640.
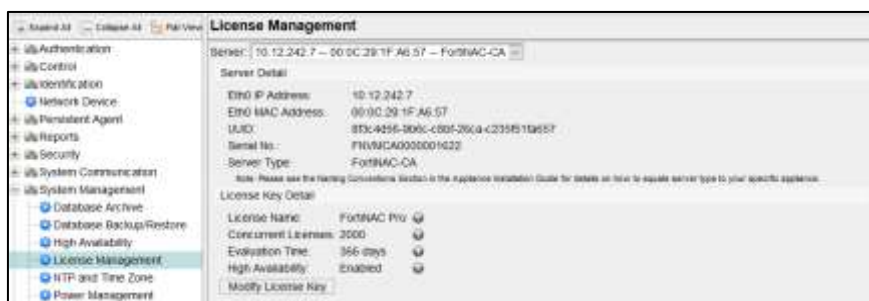
Important:

- If HA environment without a Control Manager, ensure the Primary Server is in control before applying licenses. This can be verified in the Administration UI under the **Summary** panel of the Dashboard.

- Application of license key requires a restart of management processes. During this time...
  - Wireless clients will be unable to connect (Radius requests will not be answered)
  - Captive portal will be unavailable (Devices in isolation will be unable to register or remediate)
  - VLANs will not be changed
- Application of license key in a High Availability environment requires a second restart of management processes.

It is recommended to apply the new license using the Administration UI (shown below). This method provides the opportunity to review the details of the new key prior to application, and cancel the install if the key is not correct. Alternatively, the new key can be installed using the Configuration Wizard of the appropriate appliance (see Configuration Wizard for instructions).

1. In the Administration UI, navigate to **System > Settings > System Management > License Management**.
2. From the drop-down list, select the server containing the endpoint license key. The server can be identified using the eth0 MAC address, serial number or UUID (if VM).

3. Click **Modify License Key**.

4. Apply key using one of the following methods:

   Option 1 (recommended): Click **Upload**, browse to **.lic** key file, and click **Open**.

   Option 2: Copy and paste the *entire* content of the **.lic** file in the field under "Enter New Key:" **Important**: If any characters are missing from the pasted content, the license will not apply correctly.

5. Click **OK** to apply the new license key. The existing key detail is displayed in a pop-up window along with the new key detail.

6. Review the details. The new key detail should reflect the total of the original plus new license count.

   Example:
   Original license count – 9000
   Additional license count - 1000
   New license count should show 10,000

7. If the new total *is not* correct, **click Undo to revert to the existing license key** and contact Customer Service. Installing a license with a count that is smaller than expected will prevent new registrations from completing.

   If the new total is correct, click **OK** to apply the new endpoint license key.

8. To restart the server immediately, click **OK** on the dialog box.

9. To restart the server later, click **Cancel** on the dialog box. Another dialog box appears stating that the new key will not be applied until the server is restarted. New features or license counts contained in the new license cannot be accessed until the server is restarted. The new license is saved on the server, but is not read until the server is restarted.

10. Click **OK** to confirm. The new license is applied once the appliance restarts.

Validate

Perpetual Licenses
Review the Administration UI to verify new entitlements:

License Information Dashboard panel

System > Settings > System Management > License Management

Subscription and Perpetual Licenses (Combined)
Subscription license count is added to the Perpetual License count.

Example:
(Perpetual License PRO count=200) + (Subscription License PRO count=25) = (PRO count=225)

Review the Administration UI to verify new entitlements:

License Information Dashboard panel

Note: At this time, entitlements retrieved from subscription licenses are *not* displayed under **System > Settings > System Management > License Management**.

Separate Control Server and Application Servers
- Application Server will always show concurrent count of 0. This is normal. For details see KB article 202173.
- License keys will not contain certificates. For details, see KB article 192245.

If the entitlements are not displaying as expected, see Troubleshooting.

If key was applied to a standalone appliance, the license upgrade is now complete.

If key was applied to a Primary Server, proceed to Distribute New Licensing – High Availability to complete license upgrade.

If key was applied to a Manager, proceed to Distribute New Licensing – Distributed Deployment to complete license upgrade.

Distribute New Perpetual Licensing - High Availability

Once the Primary Server has been updated with a new license, copy the new entitlements to the Secondary Server using one of the methods below. For more details on configuration and operation, refer to the [High Availability Reference Manual](#) in the Fortinet Document Library.

UI Method

Important: This method restarts both the Primary and Secondary servers.

1. In the Administration UI, navigate to **System > Settings > System Management > High Availability**
2. The current High Availability configuration should be displayed. Click **Save Settings** to re-apply.
3. Once High Availability configuration is completed (will take several minutes), verify the license information is updated for both appliances. Navigate to **System > Settings > System Management > License Management** and select the Secondary Server from the drop-down menu. The **License Key Detail** should contain the expected license information on both appliances.

If assistance is needed, contact the [Technical Assistance Center](#).

CLI Method

This method does not restart servers.

1. Login to the Secondary Server CLI as root
2. Copy entitlements from the Primary Server. Type

   ```
   scp cm1:/bsc/campusMgr/.licenseKey /bsc/campusMgr/.licenseKeyPrimary
   ```

3. Verify entitlements now reflect the new license. Type

   ```
   licensetool -key FILE -file /bsc/campusMgr/.licenseKeyPrimary
   ```

   Note: Serial, MAC and UUID will reflect the Primary Server. This is normal

Example

```
> licensetool -key FILE -file .licenseKeyPrimary
FILE:
serial = xxxxxxxxxx
type = NetworkControlApplicationServer
level = PLUS
count = 1500
expiration = 0
expired = false
mac = xx:xx:xx:xx:xx
uuid = xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxx
```

If assistance is needed, contact the [Technical Assistance Center](#).

Distribute New Perpetual Licensing - Distributed Deployment

Single Appliances: Managed FortiNAC Servers are automatically updated with new entitlements.

Appliances in High Availability configuration

- FortiNAC Versions 8.7.5, 8.8.1, 9.1.0 and greater
    - Managed Primary Servers are automatically updated with new entitlements.
    - Secondary Server is automatically updated from Primary Server.
- Prior Versions:
    - Managed Primary Servers are automatically updated with new entitlements.
    - Secondary Server is automatically updated from Manager <u>upon the next failover</u>.
    - For instructions on forcing a failover, refer to section **Failover Test** of the <u>High Availability Reference Manual</u> in the Fortinet Document Library.

<u>Validate Perpetual Licenses</u>

Review the Administration UI to verify new entitlements:

License Information Dashboard panel

System > Settings > System Management > License Management

<u>Validate Subscription and Perpetual Licenses (Combined)</u>

Subscription license count is added to the Perpetual License count.

Example:
(Perpetual License PRO count=200) + (Subscription License PRO count=25) = (PRO count=225)

Review the Administration UI to verify new entitlements:

License Information Dashboard panel

Note: At this time, entitlements retrieved from subscription licenses are *not* displayed under **System > Settings > System Management > License Management**.

If assistance is needed, contact the <u>Technical Assistance Center</u>.

Subscription Licensing

Subscription Endpoint License Upgrade

Step 1: Obtain New License Information

After additional subscription licenses are purchased, an email is sent containing two SKU's:

- Product containing the additional licenses
- Co-term support contract which combines the existing licenses for the control Serial Number with the additional licenses to create a new total quantity.

This email will be required to register the additional licenses.

Step 2: Identify Serial Number with License Support

The Endpoint License Key is installed on the "managing" server. The remaining servers in multiple appliance deployments are installed with an Appliance (Base) License Key. See chart below to determine which product requires the Endpoint License Key.

Endpoint License Key

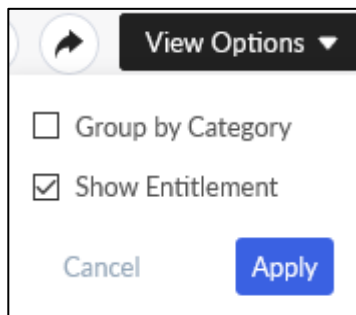| Deployment Configuration	Managing Server	Part Number
Standalone	CA Server	FNC-CA-VM
Standalone with High Availability (HA)	Primary CA Server	FNC-CA-VM
Multiple Independent Standalones	Each CA Server	FNC-CA-VM
Multiple Independent with High Availability (HA)	Each Primary CA Server	FNC-CA-VM
Distributed	Control Manager	FNC-M-VM
Distributed with High Availability (HA)	Primary Control Manager	FNC-M-VM

For more information on how licenses are distributed for each system configuration, see section **License Distribution in Multiple Appliance Deployments** in the Appendix of the Deployment Guide.

Identify the serial number of the appliance currently running with the existing endpoint license key. This information will be required to register the new licenses.

1. Login to the Customer Support Portal at http://Support.Fortinet.com
2. Under the **Asset Management** panel, click **Product List.**

3. Click **View Options** and select **Show Entitlement** and click **Apply**. The **Support Type** column should now display.

4. In the Search bar at the top of the view, type **License Support**. The resulting entries are the products with endpoint license keys.
5. To view the MAC address and UUID, click on the serial number.
6. Note the serial number of the appliance having the endpoint license upgraded.

Step 3: Register Licenses and Apply Updates

1. Register the new license product SKU following the email instructions using the registration codes included in the instructions.
   o Use the product serial number noted in previous step
   o Use the support contract number that came with the license

   If assistance is needed with the registration process, contact Customer Service.

2. Once registered, allow 5 minutes for license to update within FortiCloud.
3. Use one of the following options to poll FortiCloud to retrieve the entitlement updates. If assistance is needed, contact the Technical Assistance Center.

Option 1: Login to the appliance CLI as root and type

entitlementstool -poll

Option 2: Restart system
Note: During restart, VLANs will not be switched, Captive Portal pages will not be served and RADIUS requests will not be responded to until processes resume.

- For UI instructions see Power Management in the 8.x or 9.x Administration Guide
- For CLI instructions see KB article 196843.

Option 3: Wait for FortiNAC to automatically poll FortiCloud (occurs every 12 hours)

Validate

Subscription Licenses

Use the **License Information** Dashboard Widget to review the Administration UI to verify new entitlements.

Combined Subscription and Perpetual Licenses

Subscription license count is added to the Perpetual License count.

Example:
(Perpetual License PRO count=200) + (Subscription License PRO count=25) = (PRO count=225)

If the entitlements are not displaying as expected, see Troubleshooting.

License upgrade is now complete.

Distribute New Subscription Licensing - High Availability

Once the Primary Server has been updated with a new license, cached entitlement information is replicated to the Secondary Server. No manual intervention is required.

If Secondary Server is in control and the contract is valid, the secondary uses the cached entitlements. This ensures the state of the Secondary Server's licensing entitlements are the same as the Primary Server at the time of failover.

Note: Secondary Server will not display entitlements when in standby (Running - Not in Control).

Distribute New Subscription Licensing - Distributed Deployment

Single Appliances: Managed FortiNAC Servers are automatically updated with new entitlements.

Appliances in High Availability configuration

- FortiNAC Versions 8.7.5, 8.8.1, 9.1.0 and greater
    - Managed Primary Servers are automatically updated with new entitlements.
    - Secondary Server is automatically updated from Primary Server.
- Prior Versions:
    - Managed Primary Servers are automatically updated with new entitlements.
    - Secondary Server is automatically updated from Manager upon the next failover.
    - For instructions on forcing a failover, refer to section **Failover Test** of the High Availability Reference Manual in the Fortinet Document Library.

Validate Subscription Licenses

Use the **License Information** Dashboard Widget to review the Administration UI of the Managed servers to verify new entitlements.

Combined Subscription and Perpetual Licenses

Subscription license count is added to the Perpetual License count.

Example:
(Perpetual License PRO count=200) + (Subscription License PRO count=25) = (PRO count=225)

If assistance is needed, contact the Technical Assistance Center.

Troubleshooting

Related KB Articles
[Entitlements not applied after installing subscription license key](#)
[Unable to update license on Primary Server with licenseKeyPrimary file](#)
[Mismatched MAC Address error when installing new key](#)

Subscription License: If entitlements do not display as expected, verify FortiNAC is able to pull entitlements from FortiCloud.

```
entitlementstool -poll
```

Example output:

```
> entitlementstool -poll
description                     supportLevelDescription expirationDate
_____ _____ _____
Telephone Support               24x7                     2022-04-15
IoT Detection                   Web/Online               2022-04-15
Vulnerability Management        Web/Online               2022-04-15
Firmware & General Updates      Web/Online               2022-04-15
Enhanced Support                24x7                     2022-04-15
COMP                            24x7                     2022-04-15
Effective Count=200
Effective Level=PRO
```

Note: Secondary Server will not display entitlements when in standby (Running - Not in Control).

If the CLI output is correct but does not match the UI, then there is a display discrepancy. Functionality is not affected. Refer to the **Known Issues** section of the applicable release notes in the [Document Library](#).