

Apply Permanent Licenses in Air-Gapped Networks on FDM

Contents

[Introduction](#)

[Prerequisites](#)

[Requirements](#)

[Components Used](#)

[Configure](#)

[Enable PLR mode](#)

[Cancel PLR registration](#)

[I Have a License in CSSM](#)

[I do not Have a License in CSSM](#)

[Unregister the Device in PLR Mode](#)

[Verify](#)

[Troubleshoot](#)

[Common Issues](#)

[Related Information](#)

Introduction

This document describes how to apply Permanent Licenses in Air-Gapped Networks on Firepower Device Manager (FDM).

Prerequisites

Requirements

It is recommended to have knowledge of this topic:

- Cisco Secure Firewall Threat Defense initial configuration

Components Used

The information in this document is based on the software version:

- Firepower Threat Defense version 7.4.1.

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, ensure that you understand the potential impact of any command.

Configure

Enable PLR mode

Step 1. Enable PLR Mode in your device.

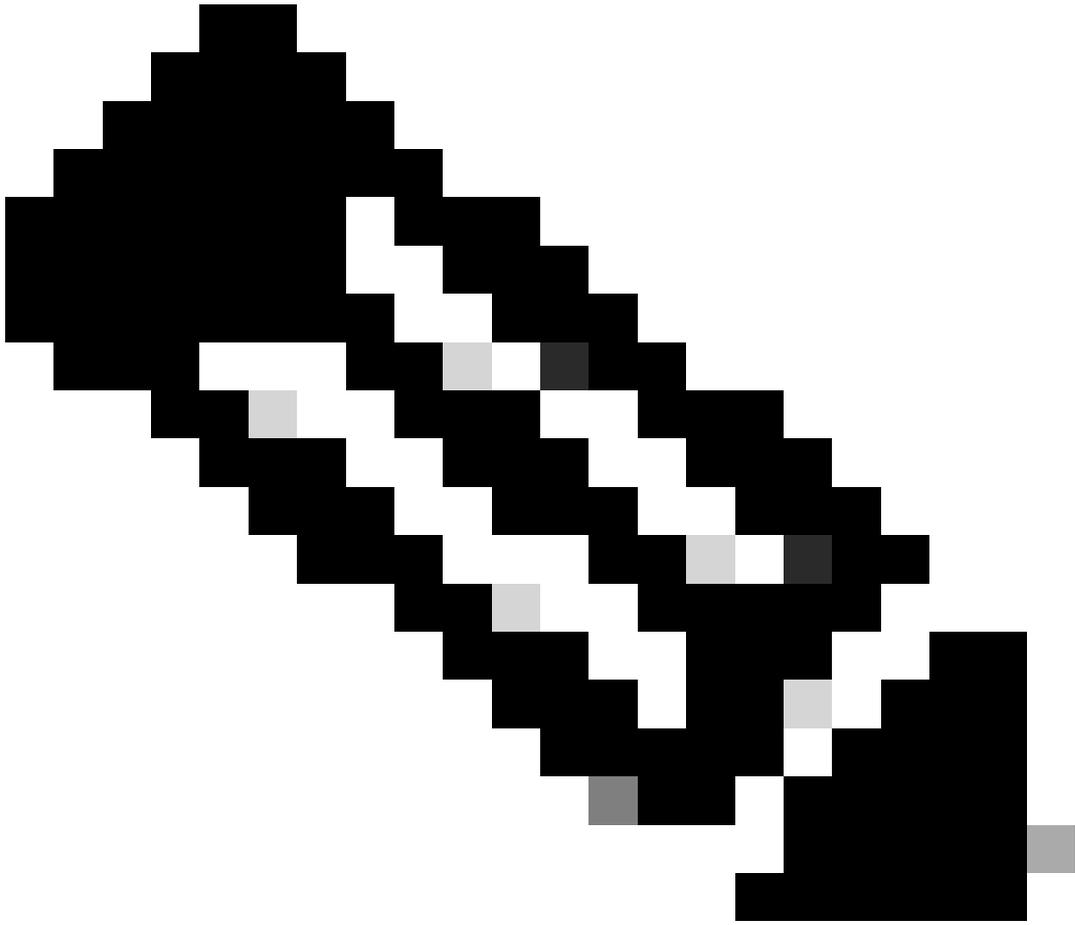
Click **Device** and navigate to **Smart License**.

The screenshot displays the Cisco Firepower Device Manager (FDM) interface. At the top, the navigation menu includes 'Firewall Device Manager', 'Monitoring', 'Policies', 'Objects', and 'Device: firepower', which is highlighted with a red box. The main dashboard shows a network diagram with 'Inside Network' and 'Internet' segments, and a central device labeled 'Cisco Firepower Threat Defense for VMware'. Below the diagram is a grid of configuration tiles. The 'Smart License' tile is highlighted with a red border and contains the following information:

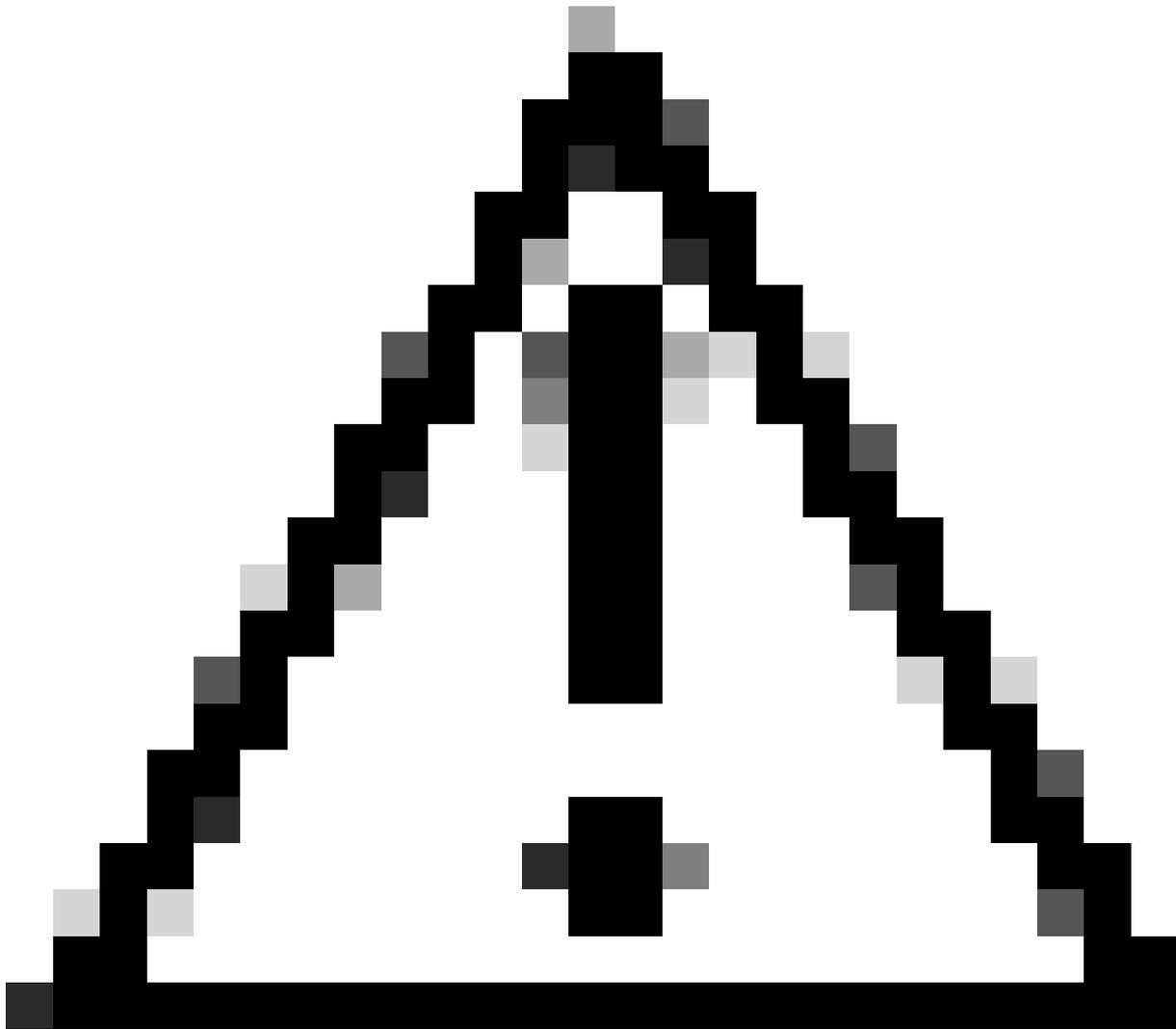
- Smart License**
- Evaluation expires in 82 days (indicated by an orange circle with '82 days')
- Tier: **FTDv5 - 100 Mbps**
- [View Configuration](#)

Other visible tiles include 'Interfaces', 'Routing', 'Updates', 'System Settings', 'Backup and Restore', 'Troubleshoot', 'Site-to-Site VPN', 'Remote Access VPN', 'Advanced Configuration', and 'Device Administration'.

Step 2. Click the gear and select **Switch to Universal PLR**.



Note: If your device is using smart licensing, you must unregister the device.



Caution: Once you switch to PLR mode, you cannot switch back to evaluation mode.

Firewall Device Manager | Monitoring | Policies | Objects | Device: firepower | admin Administrator | CISCO SECURE

Device Summary
Smart License

LICENSE ISSUE
Evaluation Period
You are in Evaluation mode now.

82/90 days left | REGISTER DEVICE | Need help?

Resync connection
Switch to Universal PLR

In the preview window, select the **Performance Tier** and click **Yes**.

⚠ Change to Permanent License



If you switch to Universal Permanent License Reservation mode, you cannot switch back to Evaluation mode.

Are you sure you want to use Universal Permanent License Reservation for this device?

Select Performance Tier

The selected performance tier determines VPN session limits and device throughput, click [here](#) to learn more.

Make sure the performance tier selected matches the license in your [Cisco Smart Software Manager](#) account.

Performance Tier

Pick a Tier



Your Device Specifications

Cores / RAM 4 core / 8 GB

NO

YES

Step 3. Save the **Request Code**.

Universal Permanent License Reservation



i If you have **Cloud Services enabled** you might want to disable them.

1 Save Request Code for this Device.



Request Code

DE-ZNGFWv:9ADKC86E1VU-CCRvmZyqM-BF

SAVE AS TXT



PRINT

2 Log into your [Cisco Smart Software Manager](#) account, go to the Inventory > Licenses page, and start the License Reservation process. Use the request code to generate an Authorization Code. Note that you must work with your Cisco representative to enable Universal Permanent License Reservation mode in your account. If you cannot start the License Reservation process (that is, the button does not appear on the Inventory > License page), please contact your Cisco representative.

3 Paste or type in the Authorization Code:

Authorization Code

Paste code from clipboard here

? For a more detailed overview on Cisco Licensing, go to cisco.com/go/licensingguide

CANCEL

REGISTER

Step 4. Log in to your CSSM account and navigate to **Smart Software Licensing > Inventory > Licenses** and click **License Reservation**.

Smart Software Licensing

[SL Product Details](#) [Support](#) [Help](#)

[Alerts](#) **Inventory** [Convert to Smart Licensing](#) | [Reports](#) | [Preferences](#) | [On-Prem Accounts](#) | [Activity](#)

General

Licenses

Product Instances

Event Log

Available Actions ▾

Manage License Tags

License Reservation...



Show License Transactions

By Name | By Tag

Search by License



Click **Proceed**.



Use of the Software contained in this Smart Account is subject to Cisco's EULA. Cisco may restrict the availability or features of this Smart Account or the Smart Licensing capabilities in any region, or modify or discontinue features to comply with applicable laws and regulations. You may only use the Software in the country for which it is purchased and intended to be used.

Proceed

Paste your Request Code and click **Next**.

Smart License Reservation



STEP 1

Enter Request Code

STEP 2

Select Licenses

STEP 3

Review and Confirm

STEP 4

Authorization Code

You can reserve licenses for product instances that cannot connect to the Internet for security reasons. You will begin by generating a Reservation Request Code from the product instance. To learn how to generate this code, see the configuration guide for the product being licensed.

Once you have generated the code:

- 1) Enter the Reservation Request Code below
- 2) Select the licenses to be reserved
- 3) Generate a Reservation Authorization Code
- 4) Enter the Reservation Authorization Code on the product instance to activate the features

• Reservation Request Code:

DE-ZNGFW:9ADKC86E1VU-CCRVmZyqM-BF



Upload File

Browse

Upload

Cancel

Next

Select your license and click **Next**.

Smart License Reservation



Product Instance Details

Product Type: VIRTSEC
UDI PID: NGFW
UDI Serial Number: 9ADKC86E1VU

Licenses to Reserve

In order to continue, ensure that you have a surplus of the licenses you want to reserve in the Virtual Account.

- Cisco Firepower Virtual Threat Defense Universal License

Cancel **Next**

Click **Generate Authorization Code**.

Smart License Reservation



Product Instance Details

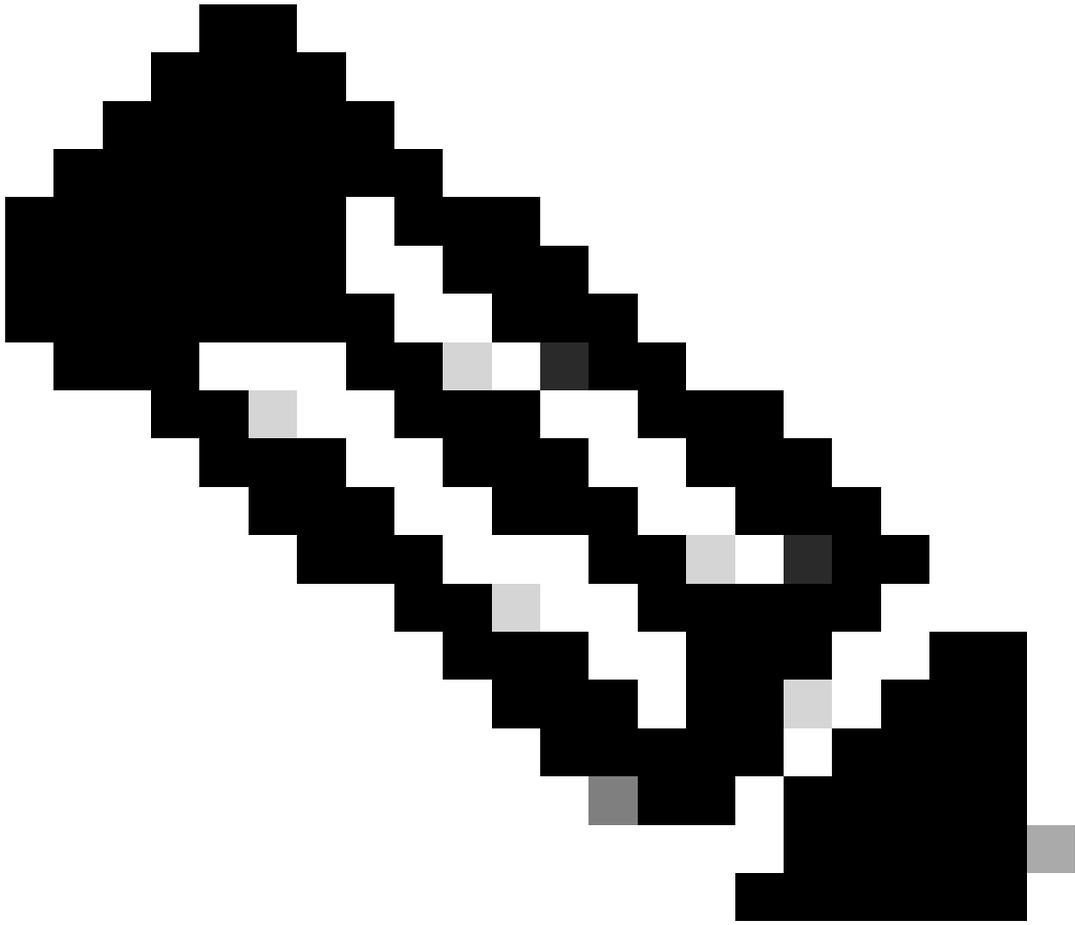
Product Type: VIRTSEC
UDI PID: NGFW
UDI Serial Number: 9ADKC86E1VU

Licenses to Reserve

License	Expires	Quantity to Reserve
Cisco Firepower Virtual Threat Defense Universal License <small>Cisco Firepower Virtual Threat Defense Universal License</small>	-	1

Cancel Back **Generate Authorization Code**

To save the Authorization Code, click **Download as File** or **Copy to Clipboard**.



Note: Refresh the page to see the current status of the license.

The screenshot shows the Cisco Firepower Device Manager interface. The top navigation bar includes 'Firewall Device Manager', 'Monitoring', 'Policies', 'Objects', and 'Device: firepower'. The main dashboard features a network diagram at the top and a grid of configuration tiles below. The 'Smart License' tile is highlighted with a red border and contains the following information:

- Smart License** (82 days)
- Evaluation expires in 82 days
- Tier: FTDv5 - 100 Mbps
- View Configuration

Step 2. Click the gear and select **Cancel PLR**.

The screenshot shows the 'Licensing' page in the Cisco Firepower Device Manager. A warning message is displayed: 'UNIVERSAL PLR NOT FINISHED' with 'Reservation Pending'. A dropdown menu is open, showing 'Resync connection' and 'Cancel PLR' (highlighted with a red box). The page also displays performance tier information and license details:

Tiered Performance Performance Tier: FTDv20 - 3 Gbps

Session limits for VPN and rate-limited throughput are determined by the selected performance tier. [Learn More](#)

Includes:

Minimum Threat Defense Virtual Cores	4 core	Rate Limit	3 Gbps
Minimum Threat Defense Virtual RAM	8 GB	VPN Limit	250

Your Device: Cores / RAM 4 core / 8 GB

Step 3. Select **I have a license in CSSM**.

Cancel Permanent License Reservation



Are you sure you want to cancel the Permanent License Reservation?

License States

I have a License in CSSM

I do not have a License in ...

1 Get Authorization Code from CSSM and paste it here:



Authorization Code

Paste code from clipboard here

2 Generate a Release License Code using your Authorization Code.



GENERATE RELEASE CODE

3 In your [Cisco Smart Software Manager](#) account free up license by putting Release Code.

CANCEL

OK

Step 4. Paste your **Authorization Code** and click **Generate Release Code**.

Cancel Permanent License Reservation



Are you sure you want to cancel the Permanent License Reservation?

License States

I have a License in CSSM

I do not have a License in ...

1 Get Authorization Code from CSSM and paste it here:



Authorization Code

2 Generate a Release License Code using your Authorization Code.



GENERATE RELEASE CODE

3 In your [Cisco Smart Software Manager](#) account free up license by putting Release Code.

CANCEL

OK

Save your Release License Code.

Cancel Permanent License Reservation



Are you sure you want to cancel the Permanent License Reservation?

License States

I have a License in CSSM

I do not have a License in ...

1 Get Authorization Code from CSSM and paste it here:



Authorization Code

DAKwJ-KeIke2-fGtuzD-coNBoo-uMz7-ID-QeGQh-+QoIke-MQ-FF-DI

2 Generate a Release License Code using your Authorization Code.



Release License Code

DKvxiU-zchZA5-M6ekJk-EmeitQ-85pErd-Ft7

SAVE AS TXT

PRINT



You will not be able to regenerate the Release Code after you unregister. Please make sure that you save this code for use in Cisco Smart Software Manager.

3 In your [Cisco Smart Software Manager](#) account free up license by putting Release Code.

CANCEL

OK

Step 5. Log in to your CSSM account and navigate to **Smart Software Licensing > Inventory > Product Instances**.

General | Licenses | **Product Instances** | Event Log

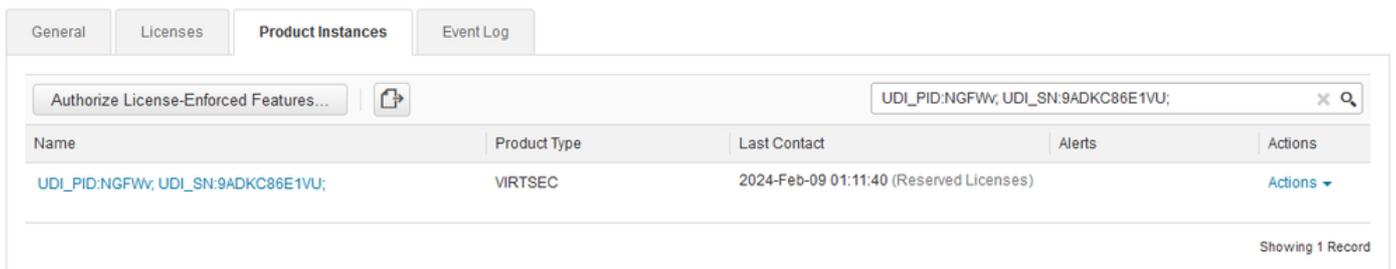
Authorize License-Enforced Features...  Search by Device or by Product Type 

Name	Product Type	Last Contact	Alerts	Actions
10.106.60.161	FP	2024-Feb-08 21:22:04		Actions ▾
68.com	ESA	2024-Feb-08 15:47:37		Actions ▾
724FMC	FP	2024-Jan-16 18:30:52		Actions ▾
A-TSZ-HIS-FMC01	FP	2023-Oct-03 21:05:28	✘ Failed to Renew	Actions ▾
a4115	FPRUHI	2024-Jan-27 17:05:40		Actions ▾
AAALAB	ASAHIGH	2024-Jan-18 19:07:58		Actions ▾
AAALAB	ASAHIGH	2024-Jan-18 11:25:38		Actions ▾
AAALAB	ASAHIGH	2024-Jan-18 20:14:33		Actions ▾
AAALAB	ASAHIGH	2024-Jan-18 05:30:17		Actions ▾
AAALAB	ASAHIGH	2024-Jan-18 08:00:04		Actions ▾

10 ▾ Showing Page 1 of 97 (963 Records)    

Step 6. Search your device by name.

Note: The Name is the device serial number.



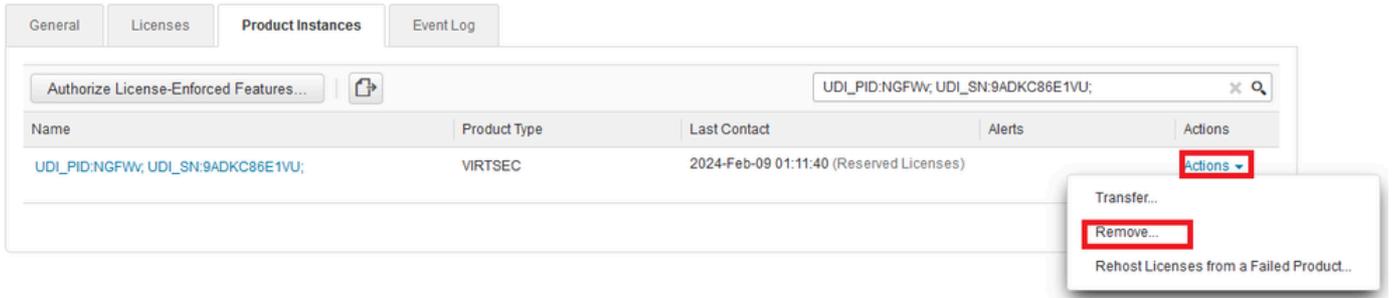
General Licenses **Product Instances** Event Log

Authorize License-Enforced Features...  UDI_PID:NGFW; UDI_SN:9ADKC86E1VU;  

Name	Product Type	Last Contact	Alerts	Actions
UDI_PID:NGFW; UDI_SN:9ADKC86E1VU;	VIRTSEC	2024-Feb-09 01:11:40 (Reserved Licenses)		Actions ▾

Showing 1 Record

Step 7. Click **Actions** and select **Remove** in the drop-down list.



Paste your **Release License Code** and click **Remove Reservation**.

Remove Reservation ✕

To remove a Product Instance that has reserved licenses and make those licenses once again available to other Product Instances, enter in the Reservation Return Code generated by the Product Instance. If you cannot generate a Reservation Return Code, contact [Cisco Support](#)

★ **Reservation Return Code:**

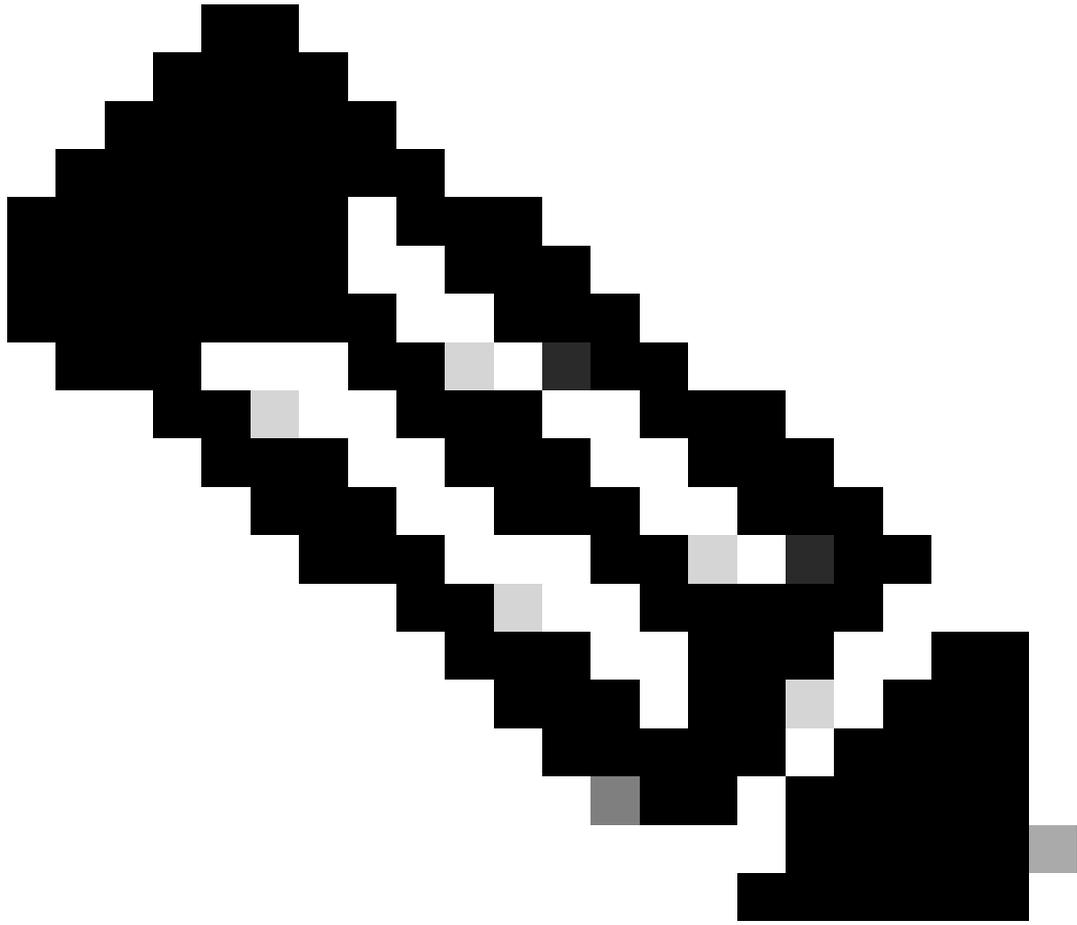
DKwxiU-zchZA5-M6ekJk-EmeitQ-85pErd-Ft7



Remove Reservation

Cancel

Step 8. Go back to your device and click **Ok**.



Note: Refresh the page to see the current status of the license.

Cancel Permanent License Reservation



Are you sure you want to cancel the Permanent License Reservation?

License States

I have a License in CSSM

I do not have a License in ...

1 Get Authorization Code from CSSM and paste it here:



Authorization Code

DKVxiU-zchZA5-M6ekJk-EmeitQ-85pErd-Ft7

2 Generate a Release License Code using your Authorization Code.



Release License Code

DKVxiU-zchZA5-M6ekJk-EmeitQ-85pErd-Ft7

SAVE AS TXT

PRINT

You will not be able to regenerate the Release Code after you unregister. Please make sure that you save this code for use in Cisco Smart Software Manager.

3 In your [Cisco Smart Software Manager](#) account free up license by putting Release Code.

CANCEL

OK

I do not Have a License in CSSM

Use this option when you do not complete the License Registration wizard in CSSM. For example, you started the PLR process in your FDM, but you do not have the correct licenses in your CSSM.

Step 1. Click **Device** and navigate to **Smart License**.

The screenshot shows the Cisco Firepower Device Manager (FDM) interface. The top navigation bar includes 'Firewall Device Manager', 'Monitoring', 'Policies', 'Objects', and 'Device: firepower'. The main dashboard displays a network diagram and several configuration tiles. The 'Smart License' tile is highlighted with a red border, indicating an evaluation period of 82 days and a tier of FTDv5 - 100 Mbps. Other tiles include 'Interfaces', 'Routing', 'Updates', 'System Settings', 'Backup and Restore', 'Troubleshoot', 'Site-to-Site VPN', 'Remote Access VPN', 'Advanced Configuration', and 'Device Administration'.

Step 2. Click the gear and select **Cancel PLR**.

The screenshot shows the 'Licensing' page in the Cisco Firepower Device Manager. A warning message 'UNIVERSAL PLR NOT FINISHED' is displayed with a red triangle icon. Below the warning is a 'CONTINUE RESERVATION' button and a 'Need help?' link. The 'Performance Tier' is set to 'FTDv20 - 3 Gbps'. A gear icon in the top right corner is clicked, opening a dropdown menu with 'Resync connection' and 'Cancel PLR' options. The 'Cancel PLR' option is highlighted with a red box.

Step 3. Select **I do not have a license in CSSM**.

Cancel Permanent License Reservation



Are you sure you want to cancel the Permanent License Reservation?

License States

I have a License in CSSM

I do not have a License in ...

i In this case you can proceed with Cancelling Permanent License Reservation.

CANCEL

OK

Click **Ok** to complete.

Unregister the Device in PLR Mode

Step 1. Click **Device** and navigate to **Smart License**.

Firewall Device Manager | Monitoring | Policies | Objects | **Device: firepower** | admin Administrator | cisco SECURE

Model: Cisco Firepower Threat Defense for VMwa... | Software: 7.4.1-172 | VDB: 376.0 | Intrusion Rule Update: 20231011-1536 | Cloud Services: Not Registered | Register | High Availability: Not Configured | CONFIGURE

Inside Network | Cisco Firepower Threat Defense for VMware | Internet | DNS Server | NTP Server | Universal P...

Interfaces: Management: Merged | Enabled 1 of 4 | View All Interfaces

Routing: 1 static route | View Configuration

Updates: Geolocation, Rule, VDB, System Upgrade, Security Intelligence Feeds | View Configuration

System Settings: Management Access, Logging Settings, DHCP Server / Relay, DDNS Service, DNS Server, Hostname, Time Services, SSL Settings | See more

Smart License: Universal PLR, Tier: Not selected (Threat Defense Virtual - Variable) | View Configuration

Backup and Restore: View Configuration

Troubleshoot: No files created yet | REQUEST FILE TO BE CREATED

Step 2. Click the gear and select **Unregister Universal PLR**.

Firewall Device Manager | Monitoring | Policies | Objects | **Device: firepower** | admin Administrator | cisco SECURE

Device Summary | Licensing

UNIVERSAL PLR Sufficient License

Unregister Universal PLR

Step 3. Click **Yes** to continue the process.

Warning

If you unregister the device, you cannot make any changes to the device configuration. You will have to re-register the device using either Smart Licensing or Universal Permanent License Reservation mode to make changes.

Are you sure you want to unregister the device?

NO YES

Step 4. **Save the Release License Code.**

Unregister Universal Permanent License Reservation

- Save Release Code for this Device.
↓
Release License Code
DCsSXH-D2rBtc-UZzer8-Un5yqp-vcKF1v-EG4 SAVE AS TXT PRINT

! You will not be able to regenerate the Release Code after you unregister. Please make sure that you save this code for use in Cisco Smart Software Manager.
- In your [Cisco Smart Software Manager](#) free up license by inserting Release License Code from here.

CANCEL UNREGISTER

Step 5. Log in to your CSSM account and navigate to **Smart Software Licensing > Inventory > Product Instances**.

General Licenses **Product Instances** Event Log

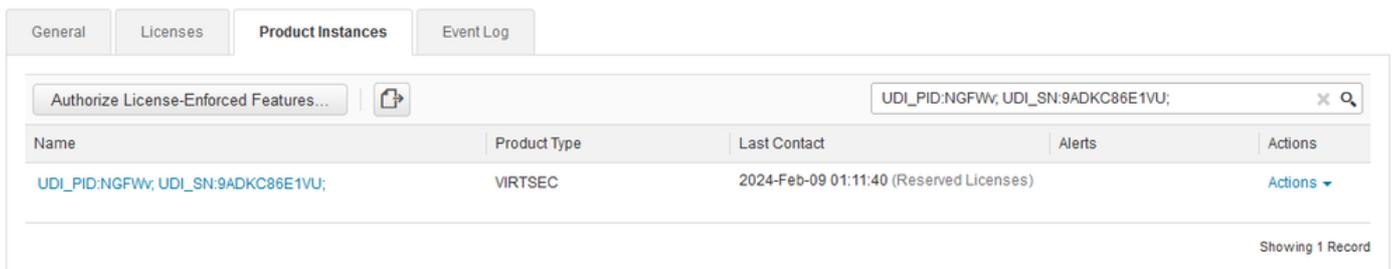
Authorize License-Enforced Features...  Search by Device or by Product Type 

Name	Product Type	Last Contact	Alerts	Actions
10.106.60.161	FP	2024-Feb-08 21:22:04		Actions ▾
68.com	ESA	2024-Feb-08 15:47:37		Actions ▾
724FMC	FP	2024-Jan-16 18:30:52		Actions ▾
A-TSZ-HIS-FMC01	FP	2023-Oct-03 21:05:28	✘ Failed to Renew	Actions ▾
a4115	FPRUHI	2024-Jan-27 17:05:40		Actions ▾
AAALAB	ASAHIGH	2024-Jan-18 19:07:58		Actions ▾
AAALAB	ASAHIGH	2024-Jan-18 11:25:38		Actions ▾
AAALAB	ASAHIGH	2024-Jan-18 20:14:33		Actions ▾
AAALAB	ASAHIGH	2024-Jan-18 05:30:17		Actions ▾
AAALAB	ASAHIGH	2024-Jan-18 08:00:04		Actions ▾

10 ▾ Showing Page 1 of 97 (963 Records) |<< >>|

Step 6. Search your device by name.

Note: The Name is the device serial number.



The screenshot shows a software interface with four tabs: General, Licenses, Product Instances, and Event Log. The 'Product Instances' tab is active. Below the tabs is a search bar with the text 'UDI_PID:NGFW; UDI_SN:9ADKC86E1VU;'. Below the search bar is a table with the following data:

Name	Product Type	Last Contact	Alerts	Actions
UDI_PID:NGFW; UDI_SN:9ADKC86E1VU;	VIRTSEC	2024-Feb-09 01:11:40 (Reserved Licenses)		Actions ▾

At the bottom right of the table area, it says 'Showing 1 Record'.

Step 7. Click **Actions** and select **Remove** in the drop-down list.

General Licenses **Product Instances** Event Log

Authorize License-Enforced Features... UDI_PID:NGFW; UDI_SN:9ADKC86E1VU;

Name	Product Type	Last Contact	Alerts	Actions
UDI_PID:NGFW; UDI_SN:9ADKC86E1VU;	VIRTSEC	2024-Feb-09 01:11:40 (Reserved Licenses)		Actions

Transfer...
Remove...
Rehost Licenses from a Failed Product...

Paste your **Release License Code** and click **Remove Reservation**.

Remove Reservation



To remove a Product Instance that has reserved licenses and make those licenses once again available to other Product Instances, enter in the Reservation Return Code generated by the Product Instance. If you cannot generate a Reservation Return Code, contact [Cisco Support](#)

* **Reservation Return Code:**

DCsSXH-D2rBtc-UZzer8-Un5yqp-vcKF1v-EG4



Remove Reservation

Cancel

Step 8. Go back to your device and click **Unregister**.

Unregister Universal Permanent License Reservation ? ×

1 Save Release Code for this Device.



Release License Code

DCsSXH-D2rBtc-UZzer8-Un5yqp-vcKF1v-EG4

SAVE AS TXT

PRINT

You will not be able to regenerate the Release Code after you unregister. Please make sure that you save this code for use in Cisco Smart Software Manager.

2 In your [Cisco Smart Software Manager](#) free up license by inserting Release License Code from here.

CANCEL

UNREGISTER

Verify

Navigate to **Device > Smart License** and you can see that the license is Universal PLR.

The screenshot shows the Cisco Firepower GUI navigation bar with 'Firewall Device Manager', 'Monitoring', 'Policies', 'Objects', and 'Device: firepower'. Below the navigation bar, the 'Device Summary' section is visible, with 'Licensing' selected. A green checkmark icon is next to the text 'UNIVERSAL PLR Sufficient License', indicating that the license is valid.

Troubleshoot

1. Look for errors in `/ngfw/var/log/cisco/smart_agent.log`.

For example, in these logs, you can see that the registration process was successful.

```
<#root>
> expert
admin@firepower:~$ sudo su
Password:
root@firepower:/home/admin# cd /ngfw/var/log/cisco/
root@firepower:/ngfw/var/log/cisco# tail smart_agent.log
2024-02-09 03:21:21 ajp-nio-8009-exec-8: INFO LicenseSoftwareIds:82 - Selected software ID: regid.2019-
```

```
2024-02-09 03:21:21 ajp-nio-8009-exec-8: INFO DefaultSmartAgentFactoryProvider:398 - New platform tag i
2024-02-09 03:21:21 ajp-nio-8009-exec-8: INFO PLRUnhandledNotificationHandler:31 - Handling listener cl
2024-02-09 03:21:21 ajp-nio-8009-exec-8: INFO PLRUnhandledNotificationHandler:31 - Handling listener cl

2024-02-09 03:21:21 ajp-nio-8009-exec-8: INFO SmartAgentConfFileSync:178 - RegistrationStatus : REGISTERED

2024-02-09 03:21:21 ajp-nio-8009-exec-8: INFO SmartAgentConfFileSync:192 - updated the smart Agent File
2024-02-09 03:21:21 ajp-nio-8009-exec-8: INFO PLRUnhandledNotificationHandler:31 - Handling listener cl
2024-02-09 03:21:21 ajp-nio-8009-exec-8: INFO DefaultSmartAgentManager:159 - Received notification from
```

2. Take a pigtail to request TAC assistance and attach it to the case notes. You can request support assistance in [Cisco Technical Support & Downloads](#).

```
> expert
admin@firepower:~$ sudo su
root@firepower:/home/admin# pigtail all -outfile LogsRegistration.txt
```

3. The license status is also reported in the /etc/sf/smart_agent.conf file. If the device is in Universal Permanent Licensing Reservation mode, the smart_agent.conf shows as REGISTERED and AUTHORIZED.

```
> expert
admin@firepower:~$ sudo su
root@firepower:/home/admin# tail /etc/sf/smart_agent.conf
#Fri Feb 09 03:21:21 UTC 2024
virtual_acct=
registration=REGISTERED,null
authorization=AUTHORIZED,1707448881842
```

Common Issues

Not enough licenses.

In the **License Reservation** process, you got this error:

Smart License Reservation x

STEP 1 ✓ Enter Request Code	STEP 2 Select Licenses	STEP 3 Review and Confirm	STEP 4 Authorization Code
--------------------------------	---------------------------	------------------------------	------------------------------

✘ The licenses cannot be reserved because the Virtual Account does not contain a sufficient surplus of the following perpetual licenses: FTDv 3 Gbps Universal License.

Recommended Action.

Verify that you have enough licenses in your CSSM account. If you have enough licenses, request TAC assistance.

You cannot see the License Reservation button.

General Licenses Product Instances Event Log

Available Actions ▾ Manage License Tags  Show License Transactions Search by License 🔍

By Name | By Tag

Recommended Action

You must contact your Cisco representative to enable PLR mode in your account.

Related Information

- [Cisco Secure Firewall Device Manager Configuration Guide, Version 7.4](#)