

Cisco NFVIS Support For Cisco UCS C-Series Rack Servers

Table 1: Feature History

Feature Name	Release Information	Description
Cisco NFVIS Support For Cisco UCS C-Series M6 Rack Servers	Cisco NFVIS Release 4.13.1	Starting from Cisco NFVIS Release 4.13.1, Cisco NFVIS software is supported on Cisco UCS C-Series M6 Rack Servers as a term-based license. Order Cisco NFVIS software smart license along with the Cisco UCS C-Series M6 Rack Servers product purchase.
Cisco NFVIS Support For Cisco UCS C-Series M5 and M7 Rack Servers	Cisco NFVIS Release 4.18.1	Starting from Cisco NFVIS Release 4.18.1, Cisco NFVIS software is supported on Cisco UCS C-Series M5 and M7 Rack Servers with a term-based license. Order the Cisco NFVIS software smart license along with the Cisco UCS C-Series M5 and M7 Rack Servers product purchase.

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Information About Cisco NFVIS Support

Cisco Smart Licensing for Cisco NFVIS on UCSC Series Rack Servers

Cisco Smart Licensing is a flexible and unified licensing model that centralizes the management of all Cisco software licenses across organizations. Cisco Smart Licensing enables you to manage all product licenses from one central location. The Cisco NFVIS smart licenses are not node-locked to the device, so they can be used across all devices in your organization. The Smart Licenses can be easily transferred between devices, without hosting or issuing the license again, or going through the Return Material Authorization (RMA), or license re-issuance. For more information on Smart Licenses see, Cisco Software Licensing Guide.

Starting with Cisco NFVIS Release 4.13.1, the software supports Cisco UCS C-Series M6 Rack Servers with a term-based license. Beginning with Cisco NFVIS Release 4.18.1, this support extends to Cisco UCS C-Series M5 and M7 Rack Servers, also under a term-based license.You can order the Cisco NFVIS Smart License together with any Cisco UCS C-Series M5, M6, or M7 Rack Server through the Cisco Commerce Workspace (CCW) page. Once purchased, the license will appear as **Licenses Available to Use** in your Virtual Account on the Cisco Smart Software Manager (CSSM), Cisco's licensing platform.

Order Cisco NFVIS Smart License

You can order the Cisco NFVIS software Smart License along with the purchase of Cisco UCS C-Series M5, M6, and M7 Rack Servers. The Cisco NFVIS Smart License is a term-based license available for durations of 3, 5, or 7 years.

Note Cisco NFVIS Smart Licenses are sold in units corresponding to 32 physical CPU cores, excluding hyper-threaded cores.

Supported Devices For Cisco NFVIS Support For Cisco UCS Rack Servers

Supported Devices for Cisco NFVIS Smart Licensing on Cisco UCS C-Series Rack Servers

Table 2: Cisco UCS Rack Servers

Server Model	Minimum Supported Release	Supported PIDs
Cisco UCS C M6 Rack Server	Cisco NFVIS Release 4.13.1	• UCSC-C220-M6S • UCSC-C240-M6SX • UCSC-C240-M6S
Cisco UCS C M5 Rack Server	Cisco NFVIS Release 4.18.1	• UCSC-C220-M5SX • UCSC-C240-M5SX • UCSC-C240-M5S

Server Model	Minimum Supported Release	Supported PIDs
Cisco UCS C M7 Rack Server	Cisco NFVIS Release 4.18.1	• UCSC-C220-M7S • UCSC-C240-M7SX

Note For UCS C-Series M5 and M6 servers, if the rack servers have LOM (LAN on Motherboard) ports, the WAN bridge will be created on port GE0-0, which is a LOM port, and GE0-1 will be the LAN bridge on a LOM port. For UCS C-Series M7 Rack Servers, however, there are no LOM ports. Hence, the first slot in the chassis with a NIC inserted will have the WAN bridge and the LAN bridge.

Prerequisites For Cisco NFVIS Support For Cisco UCS C-Series Rack Servers

- You require an active Cisco Smart Account. For more information on Smart Account see, How to Request a Smart Account
- You need to purchase Cisco UCS C-Series Rack Servers along with Cisco NFVIS Smart License.

Restrictions For Cisco NFVIS Support For Cisco UCS C-Series Rack Servers

Cisco NFVIS is not engineered to produce any notifications pertaining to the expiration of the Cisco NFVIS license subscription. Inherently, it is not the Cisco NFVIS's role to monitor compliance. The sole responsibility for determining and tracking the expiration of the license subscription lies with the Cisco Smart Software Manager (CSSM).

Configure Cisco Smart Licensing for Cisco NFVIS

Smart Licensing for Cisco NFVIS operates in two modes:

1. Smart Mode
2. CSLU Mode

Smart Mode

In the smart mode operation, the Cisco UCS C-Series Rack Server has reachability to a Cisco Smart Server Manager (CSSM) server using Cisco NFVIS. The Cisco UCS C-Series Rack Server requires the following inputs to operate in the smart mode:

1. A unique token for customer virtual account on CSSM.

Note Generate a unique token using your Cisco Virtual Account on the Licensing Server (CSSM). For more information, see How can I create a token to register my device?

Provide the geneated token as the input to the Cisco UCS C-Series Rack Servers. The CSSM token is your password for the user account on CSSM. This input is mandatory for the Smart Mode to function and has no default values.

2. Transport Mode

   The Transport Mode specifies the type of connection existing between the device and CSSM (whether the device is directly connected/ Connected through CSLU). For the Smart Mode, the Transport Mode is called as Smart Transport. The default value for the transport mode is CSLU Mode.

3. Transport URL

   The Transport URL specifies the URL to reach a CSSM/CSLU server from the device. The default transport URL for Smart Mode is https://smartreceiver.cisco.com/licservice/license. The default transport URL for CSLU mode is available on online search engines.

4. Time interval between two licence usage announcements

   The Resource Usage Measurement (RUM) is sent periodically from the device to CSSM/CSLU which presents the License Usage pertaining to the NFVIS License Entitlement to the CSSM server. You can specify the periodic time interval as an input. The default value is 30 days.

Use the following methods to provide inputs to the Cisco UCS C-Series Rack Servers using Cisco NFVIS:

- Using the Cisco NFVIS CLI
- Using NETCONF/Rest APIs

When the device is provided with the above listed inputs for the smart mode of operation, the device initiates the Trust Handshake with the CSSM server. Once Trust Handshake is successful, the device starts reporting license usage according to the time interval specified.

Configure Smart Mode Using the CLI

```
configure terminal
license smart transport smart  smart-url
license smart transport smart  token
license smart transport smart  usage
```

Verify Smart Mode Using the CLI

Use the **show license opdata** command to verify the success of smart mode.

```
show license opdata
license opdata operational-status OK
license opdata usage-reporting last-ack-received None
license opdata usage-reporting usage-interval 1
license opdata usage-reporting next-ack-deadline "Oct 01 20:32:19 2023 UTC"
license opdata usage-reporting last-report-push None
license opdata usage-reporting next-report-push None
```

CSLU Mode

In the CSLU mode operation, Cisco UCS C-Series Rack Servers has reachability to a Cisco Smart Licensing Utility (CSLU) application.

Note Cisco NFVIS supports SSM On-Prem in CSLU transport mode.

- Ensure that you've logged into CSLU using your Cisco Smart Account on the CSSM.
- The license reporting in the CSLU mode happens at an interval of 30 days by default.
- The CSLU is the default Transport Mode and no token is required as an input.
- The default Transport URL for CSLU mode is http://cslu-local:8182/cslu/v1/pi
- If you require any change in the inputs other than the defaults, configure the inputs for CSLU mode.
- The CSLU Mode doesn't require any inputs and the CSLU Mode is the default mode of operation for the Cisco NFVIS on Cisco UCS C-Series Rack Servers.

Note

- There are no specific operations in terms of Cisco NFVIS Licensing with regards to the device reboot and upgrade. The Cisco NFVIS continues to operate with respect to the interactions established through the modes of operations.
- The licensing configuration and Smart Licensing Database aren't cleared from the device in case of a Factory Default Reset.

  License usage reporting to CSSM/CSLU resumes when the device regains network connectivity through a reconfig operation after a Factory Default Reset.
- To initiate an RMA for a device, manually release the licenses associated with the device from the CSSM, or use the Cisco NFVIS action command **`license smart release`**. The command frees up the license entitlements used by this device on CSSM. If the device continues to operate with Cisco NFVIS even after the license release, it will, after a set time interval, resend the usage report (RUM) to CSSM. This report indicates the correct number of license units consumed, which is reserved again on CSSM.
- While performing a device data backup, Cisco NFVIS backups the config to a file and sends the forced License Usage report to CSSM .

Monitor Cisco NFVIS Support for Cisco UCS C-Series Rack Server

Here is a list of show commands used to monitor Cisco NFVIS Smart Licensing for Cisco UCS C-Series Rack Servers along with some configuration examples:

- Use the **`show running-config license`** command in the Cisco NFVIS CLI to view the license information:

```
show running-config license
license smart
 transport smart
 usage interval 1
 token
"$8%dXijw3ROwmU/A2JWDcd8aLvRF6v+ESdMqZJqNCKQYmjbqJMi8C3OWpjtW\nqS8FU2ljsfd49mV0qS+F92V8/uD3iUcwGqjdWQ4POcZb77ojeAwdD
NMLNM0pR/+IF\nhNRgo4762u2ob6DjSr2YGcez8s7TMKQfjswUURDXYxYn1AG8VgSjs9RfPpFVi4Ly4BUFJg=="
```

- Use the **show license accounts** command in the Cisco NFVIS CLI to view the Cisco smart account information that the device is linked with:

```
show license accounts
license accounts VIRTUAL ACCOUNT:NFVIS-VA-1
                 SMART ACCOUNT:InternalTestDemoAccount8.cisco.com
```

- Use the **show license license-units-consumed** to view the units of entitlement used by the device on the CSSM:

```
show license license-units-consumed
license license-units-consumed 2
```

- Use the **show license opdata** command to view the licensing operational data:

```
show license opdata
license opdata operational-status OK
license opdata usage-reporting last-ack-received None
license opdata usage-reporting usage-interval 1
license opdata usage-reporting next-ack-deadline "Oct 01 20:32:19 2023 UTC"
license opdata usage-reporting last-report-push None
license opdata usage-reporting next-report-push None
```

- Use the **show license status** command to view the status of your license:

```
show license status
Current tenant: nfvis-single-tenant

               Smart Licensing is ENABLED

               Smart Licensing Policy:
                 Status: ENABLED

               Transport:
                 Type: SmartTransport
                 URL: https://smartreceiver-stage.cisco.com/licservice/license
                 Proxy:
                  Not configured

               Trust Code Installed: Jul 05 06:20:56 2023 UTC
                 Last Attempt Date: Jul 05 06:19:31 2023 UTC
                 Last Attempt Status: JobStatus.success
                 Last Attempt Result: success
                 Attempt In Progress: False
                 Next Attempt Date: None


                 Usage Reporting:
                 Last ACK received: None
                 Next ACK deadline: Oct 01 20:32:19 2023 UTC
                 Reporting push interval: 1
                 Next ACK push check: None
```

```
    Next report push: None
    Last report push: None
    Last report file write: None


  Policy:
    Policy in use: None
    Policy name: Default Policy
    Reporting ACK required: yes
    Subscription:
     First report requirement (days): 90
     Ongoing reporting frequency (days): 90
     On change reporting (days): 90
    Perpetual:
     First report requirement (days): 365
     Ongoing reporting frequency (days): None
     On change reporting (days): 90
    Enforced:
     First report requirement (days): None
     Ongoing reporting frequency (days): None
     On change reporting (days): None
    Export:
     First report requirement (days): None
     Ongoing reporting frequency (days): None
     On change reporting (days): None
```

- Use the command **show license summary** to view the summary of your license

show license *summary*

```
license summary
                ### Current tenant: nfvis-single-tenant

                Smart Licensing is ENABLED

                Smart Licensing Policy:
                  Status: ENABLED

                Transport:
                  Type: SmartTransport
                  URL: https://smartreceiver-stage.cisco.com/licservice/license
                  Proxy:
                   Not configured

                Trust Code Installed: Jul 05 06:20:56 2023 UTC
                  Last Attempt Date: Jul 05 06:19:31 2023 UTC
                  Last Attempt Status: JobStatus.success
                  Last Attempt Result: success
                  Attempt In Progress: False
                  Next Attempt Date: None


                  Usage Reporting:
                  Last ACK received: None
                  Next ACK deadline: Oct 01 20:32:19 2023 UTC
                  Reporting push interval: 1
                  Next ACK push check: None
                  Next report push: None
                  Last report push: None
                  Last report file write: None
                Policy:
                  Policy in use: None
                  Policy name: Default Policy
                  Reporting ACK required: yes
                  Subscription:
```

```
                    First report requirement (days): 90
                    Ongoing reporting frequency (days): 90
                    On change reporting (days): 90
                   Perpetual:
                    First report requirement (days): 365
                    Ongoing reporting frequency (days): None
                    On change reporting (days): 90
                   Enforced:
                    First report requirement (days): None
                    Ongoing reporting frequency (days): None
                    On change reporting (days): None
                   Export:
                    First report requirement (days): None
                    Ongoing reporting frequency (days): None
                    On change reporting (days): None


                License Usage
                =============
                  Name: None
                  Short-name-tag: NFVIS_CORE_UCSC
                  Name-tag:
regid.2023-04.com.cisco.NFVIS_CORE_UCSC,1.0_81ac6671-e3e7-489e-ae14-9610ae3ccdaf
                  Description: None
                  Count: 2
                  Version: None
                  Status: IN USE
                  Enforcement_type: NOT ENFORCED
                  Feature: None
                  Feature description: None
```

- Use the **show license usage** command to view your license usage:

```
show license usage
license usage
              License Usage
              =============
                Name: None
                Short-name-tag: NFVIS_CORE_UCSC
                Name-tag:
regid.2023-04.com.cisco.NFVIS_CORE_UCSC,1.0_81ac6671-e3e7-489e-ae14-9610ae3ccdaf
                Description: None
                Count: 2
                Version: None
                Status: IN USE
                Enforcement_type: NOT ENFORCED
                Feature: None
                Feature description: None
```

- The license tech support is a part of Cisco NFVIS tech support.

Action Commands

Use the following actions commands that can help you release, sync and trust Cisco NFVIS licences:

- **license smart release**: Use this command to send a "License Usage 0" message to CSSM. This action prompts the CSSM to release the license entitlement associated with your Cisco UCS C Rack servers. If the device continues to operate with Cisco NFVIS after the license release, a usage report, also known as RUM, is sent to CSSM after a predetermined time interval. This report will indicate the

actual number of license units consumed, which will then be reserved again on CSSM. Following a license release, a notification and system logging warning is issued, urging you to cease using Cisco NFVIS as the license has been released. You receive this notification every 8 hours during the 24 hours after a license release. If you continue to use Cisco NFVIS beyond this 24-hour period, a RUM report will be generated reflecting the appropriate number of license units consumed by Cisco NFVIS. This report is sent to the Licensing server based on the set periodic interval, after which the licensing server will reserve the correct number of license units for the device again.

- **`license smart sync`**: Report a license usage to CSSM using this action command.
- **`license smart trust`**: Initiate the establishment of trust between the device and the CSSM. This action can prove beneficial in various scenarios, including but not limited to the following:

  1. If you delete the product instance from CSSM but wish to continue with Cisco NFVIS Licensing.
  2. If you transfer your licenses from one Virtual Account to another.
  3. If there is an asynchrony between the licensing state on CSSM and on the device.
  4. If the licensing certificates on the device reach their expiry date.