



Licenses

This chapter describes how to identify and resolve problems related to licenses.

Information About Licenses

The name for the Cisco Nexus 1000V license version 3.0 package is NEXUS1000V_LAN_SERVICES_PKG. By default, 1024 licenses are installed with the Virtual Supervisor Modules (VSM). These default licenses expire after 60 days. You can purchase permanent licenses that do not expire.

Licensing is based on the number of CPU sockets on the Microsoft Hyper-V servers attached as Virtual Ethernet Modules (VEMs) to the VSM.

A module is either licensed or unlicensed:

- Licensed module—A VEM is licensed if it acquires licenses for all of its CPU sockets from the pool of available licenses installed on the VSM.
- Unlicensed module—A VEM is unlicensed if it does not acquire licenses for all of its CPU sockets from the pool of available licenses installed on the VSM.

If a VEM is unlicensed, the virtual Ethernet ports corresponding to the Virtual Machines (VMs) are kept down and are shown as unlicensed.



Note

The server administrator has no information about VEM licenses. The VEM licensed state must be communicated to server administrators so that they are aware that vEthernet interfaces on unlicensed modules cannot pass traffic.

For additional information about licensing, including how to purchase or install a license, or how to remove an installed license, see the *Cisco Nexus 1000V for Microsoft Hyper-V License Configuration Guide*.

Contents of the License File

The contents of the Cisco Nexus 1000V license file contents indicate the number of licenses purchased and the host ID. To display the contents of a license file, use the **show license file** *license_name* command.

```
n1000v# show license file sample.lic
sample.lic:
```

```

SERVER this_host ANY
VENDOR cisco
INCREMENT NEXUS1000V_LAN_SERVICES_PKG cisco 3.0 permanent 16 \
  HOSTID=VDH=8449368321243879080 \
  NOTICE="<LicFileID>sample.lic</LicFileID><LicLineID>0</LicLineID> \
  <PAK>dummyPak</PAK>" SIGN=34FCB2B24AE8

```

The host ID that appears in the license file must match the ID that is shown on the VSM. To verify that the IDs match, use the **show license host-id** command. See [Example 5-6 on page 5-6](#).

**Caution**

Do not edit the contents of the license file. The license is invalidated if its contents are altered. If you have already done so, contact your Cisco Customer Support Account Team.

Prerequisites to License Troubleshooting

Before you begin troubleshooting licenses, verify the following information:

- Make sure that the name of the license file is less than 32 characters.
Check the name by entering the **show license** command. See [Example 5-3 on page 5-5](#).
- Make sure that no other license file with the same name is installed on the VSM. If there is a license file with the same name, rename your new license file to something else.
Check the name by entering the **show license brief** command. See [Example 5-3 on page 5-5](#).
- Do not edit the contents of the license file. If you have already done so, contact your Cisco Customer Support Account Team.
- Make sure that the host ID in the license file is the same as the host ID on the switch by entering the following commands:
 - **show license host-id**. See [Example 5-6 on page 5-6](#).
 - **show license file**. See [Example 5-7 on page 5-6](#).

Problems with Licenses

The following are symptoms, possible causes, and solutions for problems with licenses.

Symptom	Possible Causes	Solution
<p>When you power on a virtual machine with ports on a Cisco Nexus 1000V port group, the interfaces do not come up, but display the following status:</p> <pre>VEM Unlicensed</pre>	<p>Not enough licenses were obtained to license the CPU sockets of all VEMs connected to the VSM.</p>	<ol style="list-style-type: none"> 1. Verify license usage by entering the show license usage <i>license_name</i> command. See Example 5-4 on page 5-5. 2. Determine the number of licenses required. View the sockets installed on the VEM and then enter the show module vem license-info command. See Example 5-2 on page 5-5. 3. Contact your Cisco Customer Support Account Team to acquire additional licenses.
<p>You see the following system message:</p> <pre>PLATFORM-2-PFM_LIC_WARN_EXP Syslog 2014 Nov 19 22:28:30 N1KV %PLATFORM-2-PFM_LIC_WARN_EXP: WARNING License for VEMs is about to expire in 1 days! The VEMs' VNICS will be brought down if license is allowed to expire. Please contact your Cisco account team or partner to purchase Licenses. To activate your purchased licenses, click on www.cisco.com/go/license.</pre>	<p>The evaluation license in use is about to expire.</p> <p>Note Permanent and default licenses do not expire.</p>	<ol style="list-style-type: none"> 1. Verify license usage by entering the show license usage <i>license_name</i> command. See Example 5-4 on page 5-5. 2. Contact your Cisco Customer Support Account Team to acquire additional licenses.
<p>You see the following system message:</p> <pre>%LICMGR-2-LOG_LIC_USAGE: Feature NEXUS1000V_LAN_SERVICES_PKG is using 17 licenses, only 16 licenses are installed.</pre>	<p>More licenses are being used than are installed.</p>	<ol style="list-style-type: none"> 1. Verify license usage by entering the show license usage <i>license_name</i> command. See Example 5-4 on page 5-5. 2. Contact your Cisco Customer Support Account Team to acquire additional licenses.
<p>You see the following system message:</p> <pre>A license with a later/different expiry date already exists for this feature.</pre>	<p>Multiple entries in the license file for the same feature with different expiry dates. Use show file license <i>file_name</i> command to verify.</p>	<ol style="list-style-type: none"> 1. Contact your Cisco Customer Support Account Team to get license file re-issued.

License Troubleshooting Commands

You can use the commands in this section to troubleshoot problems related to licenses.

Command	Purpose
show module	Displays display module information including the license status (unlicensed or active). See Example 5-1 on page 5-4 .
show module vem license info	Displays the VEM license information including the license status, license version, and socket count. See Example 5-2 on page 5-5 .
show license usage [<i>license_name</i>]	Displays information about licenses and where they are used. You use this command to display information for a specific license, which indicates VEM and socket information. See Example 5-3 on page 5-5 . See Example 5-4 on page 5-5 .
show interface veth	Displays the messages logged about port profile events within the Cisco Nexus 1000V. See Example 5-5 on page 5-6 .
show license host-id	Displays the serial number for your Cisco Nexus 1000V license. See Example 5-6 on page 5-6 .
show license file	Displays the contents of a named license file. See Example 5-7 on page 5-6 .
show license brief	Displays a list of license files installed on the VSM. See Example 5-8 on page 5-6 .
show switch edition	Displays the current edition of the Cisco Nexus 1000V switch and a list of advanced features. See Example 5-9 on page 5-6 .

For detailed information about **show** command output, see the *Cisco Nexus 1000V for Microsoft Hyper-V Command Reference Guide*.

EXAMPLES

Example 5-1 *show module* Command

```
n1000v# show module
Mod  Ports  Module-Type                Model                Status
---  -
1    0      Virtual Supervisor Module  Nexus1000V          ha-standby
2    0      Virtual Supervisor Module  Nexus1000V          active *
3    288    Virtual Ethernet Module    NA                   ok
4    288    Virtual Ethernet Module    NA                   ok

Mod  Sw                Hw
---  -
-----
```

```

1 5.2(1)SM3(1.1) 0.0
2 5.2(1)SM3(1.1) 0.0
3 5.2(1)SM3(1.1) Windows Server 2016 R2 - Datacenter (6.3.9600, 6.40)
4 5.2(1)SM3(1.1) Windows Server 2016 R2 - Datacenter (6.3.9600, 6.40)

```

```

Mod  MAC-Address(es)                Serial-Num
-----
1 00-19-07-6c-5a-a8 to 00-19-07-6c-62-a8 NA
2 00-19-07-6c-5a-a8 to 00-19-07-6c-62-a8 NA
3 02-00-0c-00-03-00 to 02-00-0c-00-03-80 NA
4 02-00-0c-00-04-00 to 02-00-0c-00-04-80 NA

```

```

Mod  Server-IP      Server-UUID                Server-Name
-----
1 10.105.225.89   NA                          NA
2 10.105.225.89   NA                          NA
3 10.105.225.72   D1B16F89-9982-DF11-A3D0-D0D0FD09586A HOST-200
4 10.105.225.74   B2D389D7-C082-DF11-BECC-D0D0FD0959CC HOST-203

```

* this terminal session

Example 5-2 *show module vem license-info Command*

```

N1000v# show module vem license-info
Licenses are Sticky
Mod  Socket Count  License Usage Count  License Version  License Status
---  -
3    1           1                    3.0              licensed
4    1           1                    3.0              licensed
5    1           1                    3.0              licensed
6    2           2                    3.0              licensed

```

Example 5-3 *show license usage Command*

```

n1000v#
VSM-A-1# show license usage
Feature                               Ver  Ins Lic  Status  Expiry Date  Comments  Count
-----
NEXUS1000V_LAN_SERVICES_PKG  3.0  No 1024  In use  09 Feb 2015  -

```

Example 5-4 *show license usage license_name Command*

```

N1000v# show license usage NEXUS1000V_LAN_SERVICES_PKG
-----
Feature Usage Info
-----
Version : 3.0
Installed Licenses : 0
Default Eval Licenses : 1024
Max Overdraft Licenses : 0
Installed Licenses in Use : 0
Overdraft Licenses in Use : 0
Default Eval Lic in Use : 5
Default Eval days left : 54
Licenses Available : 1019
Shortest Expiry : 24 Jan 2015
-----
Application
-----
VEM 3 - Socket 1
VEM 4 - Socket 1

```

```
VEM 5 - Socket 1
VEM 6 - Socket 1
VEM 6 - Socket 2
-----
```

Example 5-5 *show interface vethernet Command*

```
n1000v# show interface veth1
Vethernet1 is up
  Port description is WNV-01
  Hardware: Virtual, address: 001d.d8b7.1e5f (bia 001d.d8b7.1e5f)
  Owner is VM "WNV-01"
  Active on module 4
  DVS port 8002325c-413c-4288-b9bc-de2b1f5b848c--e9a6faa1-a7ea-4cf9-8727-582e02
  88e691
  Port-Profile is dynpp_da0abdb9-b83a-44d3-b1f5-d90ce66f4d00_55e79594-417c-42b2
  -a574-8f28779dfbb2
  Port mode is access
  5 minute input rate 0 bits/second, 0 packets/second
  5 minute output rate 368 bits/second, 0 packets/second
  Rx
    3514 Input Packets 81 Unicast Packets
    2208 Multicast Packets 1225 Broadcast Packets
    297447 Bytes
  Tx
    77067 Output Packets 94 Unicast Packets
    46827 Multicast Packets 30151 Broadcast Packets 76977 Flood Packets
    6552793 Bytes
    0 Input Packet Drops 0 Output Packet Drops
```

Example 5-6 *show license host-id Command*

```
n1000v# show license host-id
License hostid: VDH=8449368321243879080
n1000v#
```

Example 5-7 *show license file Command*

```
n1000v# show license file sample.lic
sample.lic:
SERVER this_host ANY
VENDOR cisco
INCREMENT NEXUS1000V_LAN_SERVICES_PKG cisco 1.0 permanent 512\
  HOSTID=VDH=8449368321243879080 \
  NOTICE="<LicFileID>sample.lic</LicFileID><LicLineID>0</LicLineID> \
  <PAK>dummyPak</PAK>" SIGN=34FCB2B24AE8

n1000v#
```

Example 5-8 *show license brief Command*

```
n1000v# show license brief
license_file.lic
n1000v#
```

Example 5-9 *show switch edition Command*

```
n1000v# show switch edition
Switch Edition: ADVANCED (3.0)
```

Advanced Features

Feature Name	Feature State
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dhcp-snooping	enabled
---------------	---------

Licenses Available: 1022

Licenses In Use: 2

License Expiry Date: 09 Feb 2015

