



# Licenses

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

## Information About Licenses

The name for the Cisco Nexus 1000V license 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 1.0 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 usage** 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 usage** 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"> <li>1. Verify license usage by entering the <b>show license usage <i>license_name</i></b> command. See <a href="#">Example 5-4 on page 5-5</a>.</li> <li>2. Determine the number of licenses required. View the sockets installed on the VEM and then enter the <b>show module vem license-info</b> command. See <a href="#">Example 5-2 on page 5-5</a>.</li> <li>3. Contact your Cisco Customer Support Account Team to acquire additional licenses.</li> </ol>
<p>You see the following system message:</p> <pre>PLATFORM-2-PFM_LIC_WARN_EXP Syslog  2008 Dec 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><b>Note</b> Permanent and default licenses do not expire.</p>	<ol style="list-style-type: none"> <li>1. Verify license usage by entering the <b>show license usage <i>license_name</i></b> command. See <a href="#">Example 5-4 on page 5-5</a>.</li> <li>2. Contact your Cisco Customer Support Account Team to acquire additional licenses.</li> </ol>
<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"> <li>1. Verify license usage by entering the <b>show license usage <i>license_name</i></b> command. See <a href="#">Example 5-4 on page 5-5</a>.</li> <li>2. Contact your Cisco Customer Support Account Team to acquire additional licenses.</li> </ol>

# License Troubleshooting Commands

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

Command	Purpose
<b>show module</b>	Displays display module information including the license status (unlicensed or active). See <a href="#">Example 5-1 on page 5-4</a> .
<b>show module vem license info</b>	Displays the VEM license information including the license status, license version, and socket count. See <a href="#">Example 5-2 on page 5-5</a> .
<b>show license usage</b> [ <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 <a href="#">Example 5-3 on page 5-5</a> . See <a href="#">Example 5-4 on page 5-5</a> .
<b>show interface veth</b>	Displays the messages logged about port profile events within the Cisco Nexus 1000V. See <a href="#">Example 5-5 on page 5-6</a> .
<b>show license host-id</b>	Displays the serial number for your Cisco Nexus 1000V license. See <a href="#">Example 5-6 on page 5-6</a> .
<b>show license file</b>	Displays the contents of a named license file. See <a href="#">Example 5-7 on page 5-6</a> .
<b>show license brief</b>	Displays a list of license files installed on the VSM. See <a href="#">Example 5-8 on page 5-6</a> .
<b>show switch edition</b>	Displays the current edition of the Cisco Nexus 1000V switch and a list of advanced features. See <a href="#">Example 5-9 on page 5-6</a> .

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

## EXAMPLES

### Example 5-1 show module Command

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

Mod  Sw                Hw
---  ---
1    5.2(1)SM1(5.2)  0.0
```

```

2 5.2(1)SM1(5.2) 0.0
3 5.2(1)SM1(5.2) Windows Server 2012 - Datacenter (6.2.9200, 6.30)

```

```

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

```

```

Mod  Server-IP      Server-UUID                               Server-Name
--  -----
1  10.105.225.100 NA NA
2  10.105.225.100 NA NA
3  10.105.225.131 B8CB34A2-7B46-2744-A266-B6D2B68C7341 HOST1

```

### 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    2            -                    -                unlicensed
n1000v#

```

### Example 5-3 show license usage Command

```

n1000v#
VSM-A-1# show license usage
Feature Ins Lic Status Expiry Date Comments Count
-----
NEXUS1000V_LAN_SERVICES_PKG Yes 514 In use 19 Never -
-----

```

### Example 5-4 show license usage license\_name Command

```

n1000v# show license usage NEXUS1000V_LAN_SERVICES_PKG
-----
Feature Usage Info
-----
      Installed Licenses : 514
      Default Eval Licenses : 0
      Max Overdraft Licenses : 154
      Installed Licenses in Use : 10
      Overdraft Licenses in Use : 0
      Default Eval Lic in Use : 0
      Default Eval days left : 0
      Licenses Available : 658
      Shortest Expiry : Never
-----
Application
-----
VEM 3 - Socket 1
VEM 4 - Socket 1
VEM 4 - Socket 2
VEM 5 - Socket 1
VEM 5 - Socket 2
VEM 6 - Socket 1
VEM 6 - Socket 2
VEM 7 - Socket 1
VEM 7 - Socket 2
-----
n1000v#

```

**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

Advanced Features

Feature Name          Feature State
-----
```

```
dhcp snooping          enabled
```

```
Licenses Available: 478
```

```
Licenses in Use: 34
```

```
License Expiry: Never
```

