Licenses

This chapter describes how to identify and resolve problems related to licenses, and includes the following sections.

Information About Licenses

The name for the Cisco Nexus 1000V license package is NEXUS1000V_LAN_SERVICES_PKG. By default, 16 licenses are installed with the VSM. These default licenses are valid for 60 days. You can purchase permanent licenses that do not expire.

Licensing is based on the number of CPU sockets on the ESX servers attached as 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 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 License Configuration Guide*.

Contents of the License File

The contents of the Cisco Nexus 1000V license file indicates 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 that shown on the VSM. To verify this, use the **show license host-id** command. See Example 4-6 on page 4-6.

⚠

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, please contact your Cisco Customer Support Account Team.

Prerequisites to License Troubleshooting

Before you begin troubleshooting licenses, verify the information in this checklist:

- Make sure the name of the license file is less than 32 characters.

  Use the **show license usage** command. See Example 4-3 on page 4-5.

- Make sure 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.

  Use the **show license usage** command. See Example 4-3 on page 4-5.

- Do not edit the contents of the license file. If you have already done so, please contact your Cisco Customer Support Account Team.

- Make sure the host-ID in the license file is the same as the host-ID on the switch, using the following commands:

  show license host-id See Example 4-6 on page 4-6.

  show license file See Example 4-7 on page 4-6

Problems with Licenses

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

Symptom	Possible Causes	Solution
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: `VEM Unlicensed`	Not enough licenses were obtained to license the CPU sockets of all VEMs connected to the VSM.	**1.** Verify license usage. **show license usage** *license_name* See Example 4-4 on page 4-5 **2.** Determine the number of licenses required by viewing the sockets installed on the VEM. **show module vem license-info** See Example 4-2 on page 4-5 **3.** Contact your Cisco Customer Support Account Team to acquire additional licenses.

You see the following system message:
 	
`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.`
	The default or evaluation license in use is about to expire.
	
	Note Permanent licenses do not expire.
		1. Verify license usage.
		
		show license usage *license_name*
		
		See Example 4-4 on page 4-5
		
		2. Contact your Cisco Customer Support Account Team to acquire additional licenses.

You see the following system message: `%LICMGR-2-LOG_LIC_USAGE: Feature NEXUS1000V_LAN_SERVICES_PKG is using 17 licenses, only 16 licenses are installed.`	More licenses are being used than are installed.	**1.** Verify license usage. **show license usage** *license_name* See Example 4-4 on page 4-5 **2.** Contact your Cisco Customer Support Account Team to acquire additional licenses.

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 license status (unlicensed or active). See Example 4-1 on page 4-4.
show module vem license info	Displays the VEM license information including license status, license version, socket count. See Example 4-2 on page 4-5.
show license usage [*license_name*]	Displays information about licenses and where they are used. If displayed for a specific license, indicates VEM and socket information. See Example 4-3 on page 4-5. See Example 4-4 on page 4-5.
show interface veth	Displays the messages logged about port profile events within the Cisco Nexus 1000V. See Example 4-5 on page 4-5
show license host-id	Displays the serial number for your Cisco Nexus 1000V license. See Example 4-6 on page 4-6.
show license file	Displays the contents of a named license file. See Example 4-7 on page 4-6.
show license brief	Displays a list of list of license files installed on the VSM. See Example 4-8 on page 4-6.
svs license transfer src-vem *<vem no>* **license_pool**	Transfers the licenses from a VEM to the license pool. See Example 4-9 on page 4-6.

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

EXAMPLES

Example 4-1   show module

```
n1000v# show module
Mod  Ports  Module-Type                      Model              Status
--   -----  -------------------------------- ------------------ ------------
1    0      Virtual Supervisor Module        Nexus1000V         active *
5    248    Virtual Ethernet Module          NA                 unlicensed
Mod  Sw              Hw
--   --------------  ------
1    4.0(4)SV1(1)    0.0
5    4.0(4)SV1(1)    0.4
```

```
Mod  MAC-Address(es)                       Serial-Num
--  ------------------------------------  ----------
1   00-19-07-6c-5a-a8 to 00-19-07-6c-62-a8  NA
5   02-00-0c-00-05-00 to 02-00-0c-00-05-80  NA
Mod  Server-IP       Server-UUID                          Server-Name
--  --------------  ------------------------------------  --------------------
1   172.23.232.140  NA                                   NA
5   172.23.233.100  33393935-3234-5553-4539-30364e345630  172.23.233.100
```

Example 4-2   show module vem license-info

```
n1000v# show module vem license-info
Licenses are Sticky
Mod   Socket Count   License Usage Count   License Version   License Status
---   ------------   -------------------   ---------------   --------------
3     2              -                     -                 unlicensed
n1000v#
```

Example 4-3   show license usage

```
n1000v# show license usage
Feature                     Ins  Lic   Status   Expiry Date   Comments
                                 Count
--------------------------------------------------------------------------------
NEXUS_VSG_SERVICES_PKG       No   0    Unused                 -
NEXUS1000V_LAN_SERVICES_PKG  Yes  16   In use   Never         -
--------------------------------------------------------------------------------
n1000v#
```

Example 4-4   show license usage <license_name>

```
n1000v# show license usage NEXUS1000V_LAN_SERVICES_PKG
--------------------------------------
Feature Usage Info
--------------------------------------
        Installed Licenses :   10
             Eval Licenses :   0
     Max Overdraft Licenses :   16
  Installed Licenses in Use :   4
  Overdraft Licenses in Use :   0
       Eval Licenses in Use :   0
         Licenses Available :   22
--------------------------------------
Application
--------------------------------------
VEM 3 - Socket 1
VEM 3 - Socket 2
VEM 4 - Socket 1
VEM 4 - Socket 2
--------------------------------------
n1000v#
```

Example 4-5   show interface vethernet

```
n1000v# show int veth1
Vethernet1 is down (VEM Unlicensed)
    Port description is VM-Pri, Network Adapter 1
    Hardware is Virtual, address is 0050.56b7.1c7b
    Owner is VM "VM-Pri", adapter is Network Adapter 1
    Active on module 5
    VMware DVS port 32
```

```
      Port-Profile is dhcp-profile
      Port mode is access
      Rx
      5002 Input Packets 4008 Unicast Packets
      85 Multicast Packets 909 Broadcast Packets
      846478 Bytes
      Tx
      608046 Output Packets 17129 Unicast Packets
      502543 Multicast Packets 88374 Broadcast Packets 0 Flood Packets
      38144480 Bytes
      20 Input Packet Drops 0 Output Packet Drops
```

Example 4-6   *show license host-id*

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

Example 4-7   *show license file*

```
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

n1000v#
```

Example 4-8   *show license brief*

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

Example 4-9   *svs license transfer src-vem* <vem no> *license_pool*

```
n1000v# svs license transfer src-vem 3 license_pool
n1000v#
```