

# Troubleshooting Licensing Issues


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## About Troubleshooting Licensing Issues

Cisco NX-OS requires licenses for select features. The licenses enable those features on your system. You must purchase a license for each system on which you want to enable the licensed features.

### Chassis Serial Numbers

Licenses are created using the serial number of the chassis where the license file is to be installed. Once you order a license based on a chassis serial number, you cannot use this license on any other system.

### Swapping out a Chassis

If you swap out a chassis which included licenses, you must contact TAC to generate a new license. The old license was based on the chassis serial number and will not work with the new chassis.

## Guidelines and Limitations for Licensing

Follow these guidelines when dealing with licenses for Cisco NX-OS:

- Carefully determine the license(s) that you require based on the features that require a license.
- Order your license accurately, as follows:
  - Enter the Product Authorization Key that appears in the Proof of Purchase document that comes with your system.
  - Enter the correct chassis serial number when ordering the license. The serial number must be for the same chassis on which you plan to install the license. Use the **show license host-id** command to obtain your chassis serial number.
  - Enter serial numbers accurately. Do not use the letter "O" instead of a zero in the serial number.

  - Order the license that is specific to your chassis.

- Back up the license file to a remote, secure place. Archiving your license files ensures that you will not lose the licenses in the case of a failure on your system.
- Install the correct licenses on each system, using the licenses that were ordered using that system's serial number. Licenses are serial-number specific and platform specific.
- Use the **show license usage** command to verify the license installation.
- Never modify a license file or attempt to use it on a system for which it was not ordered. If you return a chassis, contact your customer support representative to order a replacement license for the new chassis.

# Initial Troubleshooting Checklist for Licensing

Begin troubleshooting license issues by checking the following issues first:

| Checklist | Done |
|---|---|
| Verify the chassis serial number for all licenses ordered. | |
| Verify the platform or module type for all licenses ordered. | |
| Verify that the Product Authorization Key that you used to order the licenses comes from the same chassis from which you retrieved the chassis serial number. | |
| Verify that you have installed all licenses on all systems that require the licenses for the features you enable. | |

# Displaying License Information Using the CLI

### SUMMARY STEPS

1. **show license** [**host-id** | **usage** [*package*]]

### DETAILED STEPS

**Procedure**

| | Command or Action | Purpose |
|---|---|---|
| **Step 1** | **show license** [**host-id** | **usage** [*package*]]<br>**Example:**<br>`switch# show license usage LAN_ENTERPRISE_SERVICES_PKG` | Displays license information configured on this system. Use the **host-id** keyword to display the host ID for the license. Use the **usage** keyword to display a list of all licensed features or a list of features in a specified package. |

### Example

This example displays all installed license key files and contents:

```
switch# show license
entp.lic:
SERVER this_host ANY
VENDOR cisco
INCREMENT LAN_ENTERPRISE_SERVICES_PKG cisco 1.0 permanent uncounted \
        VENDOR_STRING=<LIC_SOURCE>MDS_SWIFT</LIC_SOURCE><SKU>N95-LAN1K9=</SKU> \
        HOSTID=VDH=TBC10412106 \ >
        NOTICE="<LicFileID>20071025133322456</LicFileID>LicLineID>1/LicLineID>
 \
```

This example displays information about current license usage:

```
switch# show license usage
Feature                      Ins   Lic  Status   Expiry Date Comments        Count
--------------------------------------------------------------------------------

LAN_ENTERPRISE_SERVICES_PKG   No    -   In use
--------------------------------------------------------------------------------
```

This example displays a list of features in a specified package:

```
switch# show license usage LAN_ENTERPRISE_SERVICES_PKG
Application
-----------
bgp
pim
msdp
ospf
ospfv3
-----------
```

This example displays the host ID for the license:

```
switch# show license host-id
License hostid: VDH=FOX0646S017
```

**Note** Use the entire ID that appears after the colon (:) . The VHD is the Vendor Host ID.

# Licensing Installation Issues

## Serial Number Issues

Make sure that you use the correct chassis serial number when ordering your license. Use the **show license host-id** command to obtain the correct chassis serial number for your system using the CLI.

If you use a license meant for another chassis, you might see the following system message:

**Error Message:** LICMGR-3-LOG_LIC_INVALID_HOSTID: Invalid license hostid VDH=[chars] for feature [chars].

**Explanation:** The feature has a license with an invalid license Host ID. This can happen if a supervisor module with licensed features for one system is installed on another system.

**Recommended Action:** Reinstall the correct license for the chassis where the supervisor module is installed.

**Note** When entering the chassis serial number during the license ordering process, do not use the letter "O" instead of any zeros in the serial number.

# RMA Chassis Errors or License Transfers Between Systems

A license is specific to the system for which it is issued and is not valid on any other system. If you need to transfer a license from one system to another, contact your technical support representative.

# License Listed as Missing

After a license is installed and operating properly, it might show up as missing if you modify your system hardware or encounter a bootflash: issue.

| Symptom | Possible Causes | Solutions |
|---|---|---|
| A license is listed as missing. | The supervisor module was replaced after the license was installed. | See Corrupted Bootflash Recovery to recover from the corrupted bootflash:. Reinstall the license. |
| | The supervisor bootflash: is corrupted. | |