



CHAPTER 5

Managing the Cisco SRE-V Software Licenses

This chapter provides information about the Cisco SRE-V software licenses and provides instructions for managing the software licenses. It contains the following sections:

- [Software License Activation Feature Overview, page 5-1](#)
- [Basic Workflow for Software Licensing, page 5-3](#)
- [Entering the Cisco SRE-V Command Environment, page 5-3](#)
- [Determining License Activation or Installation, page 5-5](#)
- [Activating an Evaluation License, page 5-6](#)
- [Obtaining and Maintaining Software License Options, page 5-7](#)

Software License Activation Feature Overview

The Cisco software license activation feature is an orchestrated collection of processes and components designed to activate Cisco software feature sets by obtaining and validating Cisco software licenses.

The Cisco SRE-V application enables Cisco Software Licensing (CSL) to manage feature entitlements for Cisco SRE-V. CSL provides the following licenses.

- VMware vSphere Hypervisor Evaluation License—60-day evaluation license that is bundled with the Cisco SRE-V software image, which you can use to evaluate the hosting environment. Evaluation licenses require activation. The End User License Agreement (EULA) must be accepted before the evaluation license is activated.



Note Network access to the VMware vSphere Hypervisor™ is blocked until you activate the evaluation license. You cannot ping the VMware vSphere Hypervisor™ or connect to the vSphere Client until the evaluation license is activated.

- Permanent VMware vSphere Hypervisor Host License—Perpetual license that can be ordered along with the VMware vSphere Hypervisor software, or separately, after the built-in Evaluation license expires. After permanent licenses are installed, they provide all the permissions necessary to access features in the software image. All permanent licenses are node locked and validated by the licensing infrastructure during software installation. After a permanent license is installed, you do not need to upgrade it for subsequent releases.

Table 5-1 provides the feature license Stock-Keeping Units (SKUs) that are available for Cisco SRE-V.

Table 5-1 Feature License SKUs

License SKUs	Description
FL-SRE-V-HOST	VMware vSphere Hypervisor Host pre-activated paper license purchased with the software.
FL-SRE-V-HOST=	VMware vSphere Hypervisor Host paper license purchased without the software (spare). You must activate this license.
L-FL-SRE-V-HOST=	VMware vSphere Hypervisor Host electronic license purchased without the software (spare). You must activate this license.

The Cisco Product License Registration portal provides you with services to manage your licenses. To access the Cisco Product License Registration portal, you must have a Cisco.com account. If you do not have a Cisco.com account, contact your Cisco SRE-V sales representative.

The following services are provided through the Cisco Product License Registration portal:

- Product License Registration
- Return Merchandise Authorization (RMA) Replacement Licenses
- Manage Licenses (includes resend operations)
- Migration License
- License Revocation and Transfer Operations

To understand software licensing terms, see the “[Software Licensing Terms](#)” section on page 5-2.

For information about software activation, see *Software Activation on Cisco Integrated Services Routers and Cisco Integrated Service Routers G2* on Cisco.com.

Software Licensing Terms

This section provides information about licensing terms.

End User License Agreement

As part of the licensing process, you must accept the terms and conditions set forth in the End User License Agreement (EULA). This agreement is accepted implicitly when you first use a new device, but must be explicitly accepted before a feature set can be activated for evaluation and upon applying temporary extension licenses.

Product Authorization Key

A Product Authorization Key (PAK) is required to interact with the Cisco Product Licensing Portal. A PAK is provided to you when you order and purchase the right to use a feature set for a particular platform. It serves as a receipt and is an important component to obtain and upgrade a license.

Universal Device Identifier

Cisco software performs license verification checks by comparing a stored Universal Device Identifier (UDI)—a unique and unchangeable identifier assigned to all Cisco hardware devices—with that of the device. The UDI has two main components: product ID (PID) and serial number (SN). The UDI is printed on a pull-out plastic label, which is located at the bottom front panel of the Cisco SRE Service Module. To view the UDI information, use the **show license udi** command in privileged EXEC mode.

Software License Validation

CSL uses a system of validation keys to provide a simple mechanism for deploying new feature sets that offer users increased functionality for upgrading and maintaining their software.

License keys for Cisco SRE-V must be enabled. Obtain the license key using the Cisco Product Licensing Portal. A license key is issued for a specific feature set and is node-locked to the device UDI.

Basic Workflow for Software Licensing

1. Determine whether to activate an evaluation license or install a permanent license. See the [“Determining License Activation or Installation”](#) section on page 5-5.
2. Do the following:
 - To activate an evaluation license, see the [“Activating an Evaluation License”](#) section on page 5-6.
Evaluation licenses only require activation and do not need to be installed because they are included with the Cisco SRE-V software on the Cisco SRE Service Module.
 - To obtain and install a permanent license, see the [“Obtaining and Maintaining Software License Options”](#) section on page 5-7.
Permanent licenses must be installed but do not require activation.

Entering the Cisco SRE-V Command Environment

To perform configuration tasks on the Cisco SRE Service Module, such as install and manage licenses and software upgrades and configure users, roles, and permissions, you must enter the Cisco SRE-V command environment. You can enter the Cisco SRE-V command environment in two ways: using Secure Shell (SSH) or through the router. See the following sections for more information:

- [Entering the Cisco SRE-V Command Environment Using SSH, page 5-3](#)
- [Entering the Cisco SRE-V Command Environment Through the Host Router, page 5-4](#)

Entering the Cisco SRE-V Command Environment Using SSH

This section provides the steps you need to enter the Cisco SRE-V command environment using SSH.

Before you begin, make sure that you have the following information:

- IP address of the Console Manager.
- Username and password for the Console Manager.

To enter the Cisco SRE-V command environment using SSH, complete the following steps:

-
- Step 1** From your PC or workstation, start the SSH Client. The SSH Client window opens.
 - Step 2** Enter the IP address of the Console Manager.

Step 3 Enter the username and password to access the Console Manager.



Note If you are a first-time user of the VMware vSphere Hypervisor™, use **esx-admin** for the user name; and use **change_it** for the password. We highly recommend that you change the default password after the first reboot.

Step 4 Verify that the port number displayed in the Port Number field is 22, otherwise change the port number to 22.

Step 5 Click **Connect**.

Entering the Cisco SRE-V Command Environment Through the Host Router

If you have the privileges to access the host router, follow these steps to enter the Cisco SRE-V command environment.

PREREQUISITES

The following information is required to enter the command environment:

- IP address of the router that contains the Cisco SRE-V module.
- Username and password to log into the router.
- Slot number of the module.

SUMMARY STEPS

From the Host-Router CLI

1. **enable**
2. **service module sm slot/0 session**

From the Console Manager Interface

1. Enter commands.
2. **exit**

DETAILED STEPS

	Command or Action	Purpose
	From the Host-Router CLI	
Step 1	enable <password> Example: Router> enable Router> <password> Router#	Enters privileged EXEC mode on the host router. <ul style="list-style-type: none"> • Enter your password if prompted.

	Command or Action	Purpose
Step 2	service module sm slot/0 session Example: Router# service module sm 1/0 session Trying 10.0.0.1, 2065 .. Open	Begins a session on the Cisco SRE Service Module. <ul style="list-style-type: none"> To start a configuration session, press Enter.
From the Console Manager Interface —Enter commands in EXEC mode.		
Step 1	Example: SRE-Module# show user	Enter commands on the service module as needed. This example shows the show user command.
Step 2	exit	Closes the service module session.

Determining License Activation or Installation

- Use the **show license feature** command to determine whether to install a permanent license or activate an evaluation license, as shown in the following example:

```
SRE-Module# show license feature
Feature name      Enforcement  Evaluation  Clear Allowed  Enabled
SRE-V-HOST-LIC   yes         yes         yes           no
```

- Use the **show license permanent** command to display the permanent license, as shown in the following examples:

The following example shows that a permanent license is installed and is active:

```
SRE-Module# show license permanent
StoreIndex: 1 Feature: SRE-V-HOST-LIC Version: 1.0
License Type: Permanent
License State: Active, In Use
License Count: Non-Counted
```

In the following example, the CLI returns a blank line because a permanent license is not installed:

```
SRE-Module# show license permanent
[[A blank line indicates that no permanent license is installed]]
```

- Use the **show license file** command to display the actual license files, as shown in the following example:

```
SRE-Module# show license file
```

Related Topics

- [Activating an Evaluation License, page 5-6](#)
- [Obtaining and Maintaining Software License Options, page 5-7](#)

Activating an Evaluation License

The **show license** commands display the types of licenses available. If the license is an evaluation license, the **show license all** command also shows whether the EULA has been accepted or not.



Note

- Evaluation licenses require activation. The EULA must be accepted before the evaluation license is activated.
- Network access to the VMware vSphere Hypervisor™ is blocked until you activate the evaluation license. You cannot ping the VMware vSphere Hypervisor™ or connect to the vSphere Client until the evaluation license is activated.

To activate an evaluation license, complete the following steps:

Step 1 Enter the Cisco SRE-V command environment, and then enter the commands. See the “[Entering the Cisco SRE-V Command Environment](#)” section on page 5-3.

Step 2 Use the **show license all** command to display the status of the license, as shown in the following example:

```
SRE-Module# show license all
License Store: Evaluation License Storage
StoreIndex: 0 Feature: SRE-V-HOST-LIC Version: 1.0
License Type: Evaluation
License State: Active, Not in Use, EULA not accepted
Evaluation total period: 8 weeks 4 days
Evaluation period left: 8 weeks 4 days
License Count: Non-Counted
License Priority: None
```

Step 3 Use the **license activate** command in EXEC mode to activate the license. The EULA terms are displayed. Enter **y(es)** when asked to accept the EULA terms, as shown in the following example:

```
SRE-Module# license activate sreVHost
Evaluation licenses are being activated in the device for the following feature(s):

Feature Name: SRE-V-HOST-LIC

-----
EULA terms....
-----
ACCEPT? [y/n]? y
```

Step 4 Before the license activation can successfully take effect, enter the **reload** command, as shown in the following example:

```
SRE-Module# reload
```

When prompted to confirm with the reload, press **Enter**.

Step 5 Use the **show license all** command to verify that the license is accepted and activated, as shown in the following example:

```
SRE-Module# show license all
License Store: Evaluation License Storage
StoreIndex: 0 Feature: SRE-V-HOST-LIC Version: 1.0
License Type: Evaluation
License State: Active, In Use
  Evaluation total period: 8 weeks 4 days
  Evaluation period left: 8 weeks 3 days
  Expiry date: Sat Oct 30 01:59:32 2010
License Count: Non-Counted
License Priority: Low
```

Step 6 Continue with the Cisco SRE-V application configuration.

**Note**

- After the evaluation license expires, the Cisco SRE-V application continues to run. The application does not start if the **reload** command is used or the Cisco SRE Service Module is reloaded.
 - When the evaluation license is about to expire, warning messages appear on the device's console. These messages continue to appear until you either install a permanent license, or shut down the application that is using the expired evaluation license.
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Related Topic

- [Obtaining and Maintaining Software License Options, page 5-7](#)

Obtaining and Maintaining Software License Options

Use one of the following resources to obtain and register licenses:

- Cisco License Manager (Recommended)—Allows you to automate all license-related work flow using the GUI. See the “[Cisco License Manager—Recommended](#)” section on page 5-8.
- Cisco Product License Registration Portal—Allows you to manually obtain and register individual software licenses through a registration portal. See the “[Cisco Product License Registration Portal](#)” section on page 5-9.

Cisco License Manager—Recommended

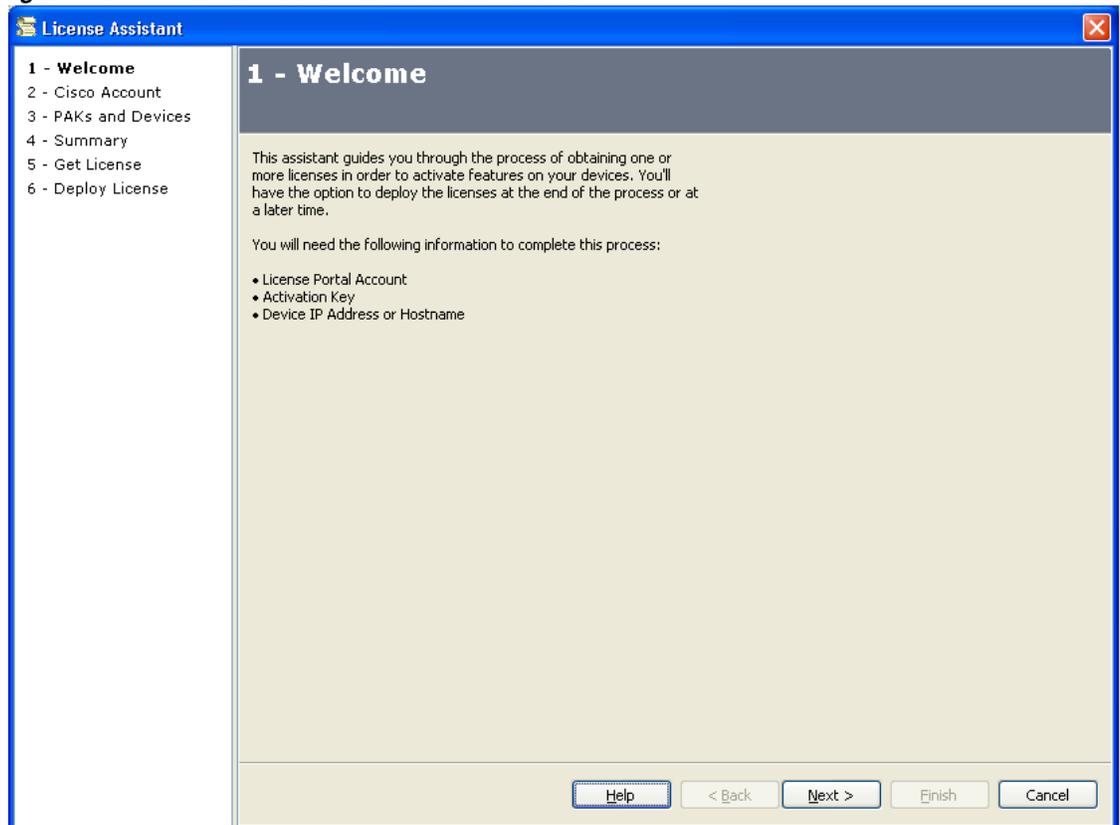
For a network-wide deployment, the Cisco License Manager can automate all license-related work flow by securely communicating with the licensing back-end fulfillment systems at Cisco.com and deploying obtained licenses to managed devices on a network-wide basis. The Cisco License Manager application keeps an inventory of deployed licenses and generates license reports. Cisco License Manager is available at no cost and can be downloaded by registered Cisco.com users from <http://www.cisco.com/go/clm>.

To start the License Assistant in Cisco License Manager, do one of the following:

- Click **Get License** in the Quick Links pane.
- Choose a PAK, SKU, or device. Right-click, and then choose **Get Licenses**.
- Choose **License > Get License**.

The Welcome screen of the License Assistant opens. See [Figure 5-1](#). The License Assistant wizard guides you through the steps to get licenses.

Figure 5-1 License Assistant Welcome Screen



For detailed procedures, see the “Get a License Using License Assistant” section in *User Guide for Cisco License Manager, Release 2.2* on Cisco.com.

For additional information about Cisco License Manager, see the “Cisco Software Activation Conceptual Overview” chapter in the *Cisco IOS Software Activation Configuration Guide*.

Related Topics

- [Basic Workflow for Configuring Users, Roles, and Permissions, page 6-2](#)
- [Setting up the VMware vSphere Hypervisor Default Gateway, page 7-1](#)

Cisco Product License Registration Portal

When you are ready to deploy your application, acquire a permanent license if your Cisco SRE Service Module does not already have one. The output of the **show license permanent** command displays a blank line if your Cisco SRE Service Module does not have a permanent license.

**Note**

You must have a Cisco.com username and password to access some of the URLs in the following procedure. If you do not have a Cisco.com account, contact your Cisco SRE-V sales representative.

To obtain licenses, complete the following steps:

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- Step 1** Go to www.cisco.com/go/ordering and choose one of the ordering options (online retailer, reseller, or Cisco direct).
- Step 2** Specify the license that you want to purchase by entering the appropriate licence SKU (see [Table 5-1](#)). After you purchase the license, you receive a product activation key (PAK), which is an alphanumeric string that represents the purchase.
- Step 3** To get your license file, go to the licensing portal at www.cisco.com/go/license and enter the appropriate information.
- You must enter the PAK and the UDI of the device on which the license is to be installed. The UDI is printed on a pull-out plastic label, which is located at the bottom front panel of the Cisco SRE Service Module. The UDI can also be viewed using the **show license udi** command in privileged EXEC mode. The UDI has two main components: PID and SN.
- Step 4** Download the license file or receive the license file through your e-mail account.
- Step 5** Repeat [Step 1](#) to [Step 4](#) for each device for which you want to obtain a license.
- Step 6** Copy the license files to an FTP, SFTP, or TFTP server that can be accessed by the Cisco SRE Service Module.
- Step 7** To install the license, use the **license install** command from the Cisco SRE Service Module interface.

**Note**

License installation supports FTP, SFTP, or TFTP servers.

The **license install** command initiates several actions that result in one of the following:

- Printing of an end-user license agreement with prompts to accept the agreement (for extension licenses only)
- Messages indicating that the license is installed

When a license is successfully installed, a message confirms the installation and its state, and whether or not the licensed feature is present in the current image, as shown in the following example:

```
SRE-Module# license install tftp://ip-address/FHH13070015_20091106190424734.lic
Installing..Feature:SRE-V-HOST-LIC..OK:No Error
1/1 licenses were successfully installed
0/1 licenses were existing licenses
0/1 licenses were failed to install
```

- Step 8** Before the license activation can successfully take effect, enter the **reload** command, as shown in the following example:

```
SRE-Module# reload
```

When prompted to confirm with the reload, press **Enter**.

- Step 9** To display a summary of all licenses installed on your Cisco SRE Service Module, use the **show license all** command. The following example shows that the EULA has not been accepted:

```
SRE-Module# show license all
License Store: Primary License Storage
StoreIndex: 0 Feature: SRE-V-HOST-LIC Version: 1.0
License Type: Permanent
License State: Active, In Use
License Count: Non-Counted
License Priority: Medium
License Store: Evaluation License Storage
StoreIndex: 0 Feature: SRE-V-HOST-LIC Version: 1.0
License Type: Evaluation
License State: Inactive
Evaluation total period: 8 weeks 4 days
Evaluation period left: 4 weeks 4 days
License Count: Non-Counted
License Priority: Low
```

- Step 10** To display licenses that are currently being used by the system, use the **show license in-use** command, as shown in the following example:

```
SRE-Module# show license in-use
StoreIndex: 0 Feature: SRE-V-HOST-LIC Version: 1.0
License Type: Permanent
License State: Active, In Use
License Count: Non-Counted
License Priority: Medium
```

- Step 11** After verifying the licenses are enabled, continue with the configuration of Cisco SRE-V.

Related Topics

- [Basic Workflow for Configuring Users, Roles, and Permissions, page 6-2](#)
- [Setting up the VMware vSphere Hypervisor Default Gateway, page 7-1](#)

Licensing Commands

Use the following privileged EXEC commands to perform basic licensing tasks, such as install, backup, and view licences:

- Install a license.

```
SRE-Module# license install url
```

where the URL is in the format `tftp://ip_address/filename.lic`.



Note License installation supports FTP, SFTP, or TFTP servers.

- Add a comment to a license.

```
SRE-Module# license comment {add | delete} feature-name comment string
```

- Save license credentials. Use this command if you need to resend the device licenses.

```
SRE-Module# license save credentials url
```

where the URL is in the format ftp://user:password@ip/filename.cred.

- Back up a license.

```
SRE-Module# license save ftp://path/filename.lic.
```

where the path is in the format ftp://user:password@ip/filename.lic.

- Remove or clear unused licenses.

- View which feature licenses the Cisco SRE-V application is using.

```
SRE-Module# show licenses all
```

- Shutdown each application that uses a feature license that you want to clear.



Note A license cannot be cleared if the license is currently in use.

- Clear the license.

```
SRE-Module# license clear feature-name
```

