# Software Activation on Cisco ISR, Cisco ISR G2, and Cisco ISR 4K

This document describes the activation process for Cisco software on Cisco Integrated Services Routers (ISRs) and Cisco Integrated Service Routers Generation 2 (ISR G2), and Cisco Integrated Service Routers 4K (ISR 4K). Cisco routers support Cisco IOS software entitlement and enforcement on various platforms. This document supports the following products:

| Modular ISRs | • Cisco ISR 4400 Series |
| | • Cisco ISR 4300 Series |
| | • Cisco ISR 3900 Series |
| | • Cisco ISR 2900 Series |
| | • Cisco ISR 1900 Series |
| **Fixed ISRs** | • Cisco ISR 890 Series |
| | • Cisco ISR 880 Series |
| | • Cisco ISR 860 Series |
| | • Cisco ISR 810 Series |

**Finding Support Information for Platforms and Cisco IOS and Catalyst OS Software Images**

Use Cisco Feature Navigator to find information about platform support and Cisco IOS image support. To access Cisco Feature Navigator, go to http://www.cisco.com/go/cfn. An account on Cisco.com is not required.

# Contents

This document contains the following topics:

# Before You Begin

When you order a new router, it is shipped preinstalled with the software image and the corresponding permanent licenses for the packages and features that you specified. You do not need to activate or register the software before use.

The following prerequisites apply if you are upgrading or installing a new Cisco IOS software license on Cisco ISRs:

- Purchase the software package or feature you want to install. You will receive a product activation key (PAK) with your purchase.
- If you do not have a cisco.com username and password, get your username and password by registering at Cisco.com.
- Familiarize yourself with the Cisco software licensing concepts detailed in the *Cisco Software Activation Conceptual Overview* chapter in *Cisco IOS Software Activation Configuration Guide*.

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**Tip** Use the **show license feature** command to view the software packages and features supported on your router. Table 2, Table 3, and Table 5 list the package and feature licenses available for your router.

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**Tip** Use the **show license** command in privileged EXEC mode to display information about the Cisco IOS software packages and features license level on your router.

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**Note** Starting from Release 15.4(1)T, the license-level **appxk9** is removed from the **license boot module** command and licensing show commands for the Cisco 3900, 2900, and 1900 Series Routers. The license-level **appxk9** is available for Cisco ISR 4400 and ISR 4300 routers in the **license boot level** command.

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# Cisco IOS Software Releases Supported

The following Cisco IOS software releases support software activation on Cisco ISRs:

- Cisco 3900 series, 2900 series, and 1900 series ISRs running Cisco IOS Release 15.0(1)M.
  - Cisco 3925E and Cisco 3945E ISR running Cisco IOS Release 15.1(1)T.
- Right to Use license is supported on Cisco IOS Release 15.0(1)M4, 15.1(1)T2, 15.1(2)T2, 15.1(3)T, 15.1(4)M1, or later.
- Cisco 800 series ISRs running Cisco IOS Release 12.4(15)XZ or later support either the non-cryptographic image or the cryptographic image.
- Cisco 800 series ISRs running Cisco IOS Release images earlier than Cisco IOS Release 12.4(15)XZ do not support software activation.
- Cisco One Suite License is supported only on Cisco 3900 series, 2900 series, and 1900 series ISRs running Cisco IOS Release 15.5(1)T.

# Information About Software Activation on Cisco ISRs, ISRs G2, and ISR 4K

The Cisco IOS universal image contains *all* packages and features in one image. You can access the required functionality based on the license installed on your router.

### Software Claim Certificate and License Activation

Software Claim Certificates are used for licenses that require software activation. The claim certificate provides the Product Activation Key (PAK) for your license and important information regarding the Cisco End User License Agreement (EULA).

In most cases, Cisco or your Cisco partner will have already activated the licenses ordered at the time of purchase and no Software Claim Certificate is provided. You can determine the licenses activated on your system by issuing the **show license feature** command on the router command-line interface (CLI) or with a Cisco management application such as Cisco CP or Cisco License Manager (CLM). Cisco License Manager is a free software application available at http://www.cisco.com/go/clm.

**Note**  SSL VPN may not list in the show license feature and show license detail commands, however it is a part of the securityk9 technology package license and need not be purchased separately.

### Right to Use Notification

When you order a license from Cisco, you will receive a Right to Use Notification. You may begin using the licensed features upon receipt of the Right to Use Notification. Keep the Right to Use Notification for your records as proof of your license purchase.

### Universal Device Identifier

The universal device identifier (UDI) has two main components: the product ID (PID) and the serial number (SN). Cisco ISR 4K Series use Route Processor serial number (SN). Cisco 3900 Series platforms, which have field-replaceable unit (FRU) motherboards, use motherboard's PID and SN. All other platforms use the chassis PID and SN.

The PID and SN are printed on a label located on the back of most Cisco hardware devices or on a label tray visible on the front panel of field-replaceable motherboards. See your router's *Hardware Installation Guide* or *Read Me First* to see the location of the label.

**Tip**  The Cisco Product Identification (CPI) tool provides detailed illustrations and descriptions showing where to locate serial number labels on Cisco products. The Cisco Product Identification tool can be accessed at http://tools.cisco.com/Support/CPI/index.do

The UDI can be viewed using the **show license udi** command in privileged Exec mode.

### UDI Example for 3900

The following example shows the output from the **show license udi** command on a Cisco 3925 ISR:

```
Router#show license udi
Device#   PID                SN               UDI
-------------------------------------------------------------------------
*0       C3900-SPE100/K9     FHH13030044      C3900-SPE100/K9:FHH13030044
Router#
```

### UDI Example for 4K

The following example shows the output from the **show license udi** command on a Cisco 4400 ISR:

```
Router#show license udi
SlotID   PID                                 SN                            UDI
------------------------------------------------------------------------------------------
-------------------------
*6        ISR4451-X/K9               FOC17042FJ9        ISR4451-X/K9:FOC17042FJ9

Router#
```

### Evaluation License

Your router comes with the evaluation license, also known as a temporary license, for most packages and features supported on your router. If you want to try a new software package or feature, activate the evaluation license for that package or feature.
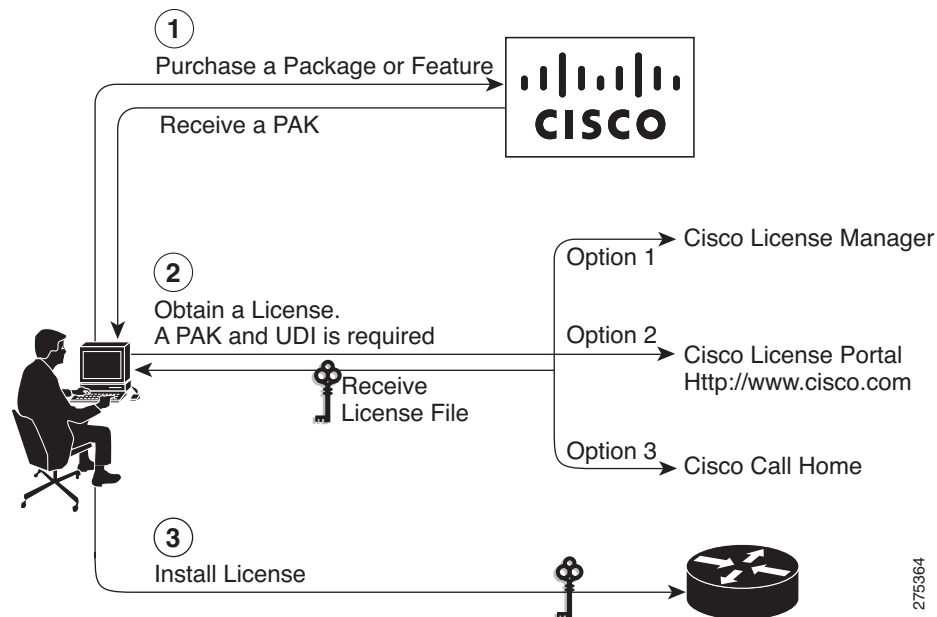
### Right to Use License

Right to Use licenses are available on Cisco IOS Release 15.0(1)M4, 15.1(1)T2, 15.1(2)T2, 15.1(3)T, 15.1(4)M1, or later. These licenses are available on the honor system.

### Permanent License

If you want to permanently activate a software package or feature on your router, you must get a new software license.

Figure 1 shows the steps for software activation.

***Figure 1***        ***Steps for Software Activation***



You can also activate the license using the **license right-to-use move** command. Perform the following tasks to activate the license:

**Step 1**    Purchase License

**Step 2**    Activate Evaluation License

**Step 3**    Run the **license right-to-use move** command

**Note**    This method is not applicable for HSEC and LI licenses.

**End User License Agreement**

By accessing or using the Cisco products received with your Cisco ISR, ISR G2 or ISR 4K, you agree that your use of such products is governed by the terms and conditions of the Cisco Software License and any applicable supplemental license agreement. A copy of the terms of the End User License Agreement (EULA) is available at

http://www.cisco.com/en/US/docs/general/warranty/English/EU1KEN_.html.

A EULA is presented for acceptance when you activate an evaluation license.

# Software Packages and Features

The Cisco IOS universal image contains *all* packages and features in one image. The universal image on the Cisco 1900, 2900, 3900, 4300, and 4400 series ISRs are a superset of Cisco IOS simplified technology packages.

Each package is a grouping of technology-specific features. Multiple technology package licenses can be installed and activated on the Cisco 1900, 2900, 3900, 4300 and 4400 series ISR platforms.

Individual features can be enabled or disabled by license keys. Feature licenses may be subscription-based, uncounted, or count-based licenses.

**Tip** Use the **show license feature** command to view the technology package licenses and feature licenses supported on your router.

The Cisco ISR 1900, 2900, 3900, 4300, and 4400 series support the following universal images:

- universalk9—offers all IOS features supported by next generation ISRs.
- universalk9_npe—does not support VPN payload and secure voice functionality and satisfies import considerations for CIS countries.

Table 1 lists the image names for the Cisco 1900, 2900, 3900, 4300, and 4400 series routers.

*Table 1        Universal Image Names for Cisco ISR 1900, 2900, 3900, 4300, and 4400 Series*

| Platform | Image Name |
|---|---|
| CISCO 1905, CISCO 1921 | c1900-universalk9-mz |
|  | c1900-universalk9_npe-mz |
| CISCO 1906C | c1900c-universalk9-mz |
|  | c1900c-universalk9_npe-mz |
| CISCO1941, CISCO1941W | c1900-universalk9-mz |
|  | c1900-universalk9_npe-mz |
| CISCO 2901, CISCO 2911, CISCO 2921 | c2900-universalk9-mz |
|  | c2900-universalk9_npe-mz |
| CISCO 2951 | c2951-universalk9-mz |
|  | c2951-universalk9_npe-mz |
| CISCO 3925, CISCO 3945 | c3900-universalk9-mz |
|  | c3900-universalk9_npe-mz |
| CISCO 3925E, CISCO 3945E | c3900e-universalk9-mz |
|  | c3900e-universalk9_npe-mz |
| ISR4451, ISR 4431 | isr4400-universalk9 |
|  | isr4400-universalk9_npe |
| ISR4351, ISR4331, ISR4321 | isr4300-universalk9 |
|  | isr4300-universalk9_npe |

The following sections provide information on the technology package and feature licenses available on your router.

- Technology Package Licenses, page 7
- Feature Licenses, page 7
- Cisco One Suite Licenses, page 8
- Evaluation and Right to Use Licenses, page 9
- Management Licenses, page 9
- Platform Limitations, page 11

# Technology Package Licenses

The features available in a technology package license may differ from platform to platform. For a list of features available in a technology package license, use the Cisco Feature Navigator at: http://www.cisco.com/go/cfn

Table 2 lists the technology package licenses supported on Cisco ISR platforms.

*Table 2*  *Technology Package Licenses Supported on Fixed Cisco ISR Platforms*

| Technology Package License | 810 Series | 860 Series | 880 Series | 890 Series |
|---|---|---|---|---|
| Advanced Security | — | Yes | Yes | — |
| Advanced IP Services | Yes | — | Yes[1] | Yes |

1. Some of the 880 SKUs come with the default 'Advanced IP Services' license, which is a superset of 'Advanced Security' license.

Table 3 lists the technology package licenses supported on Cisco ISR G2 and 4K platforms.

*Table 3*  *Technology Package Licenses Supported on Modular Cisco ISR G2 and 4K Platforms*

| Technology Package License | 1900 Series | 2900 Series | 3900 Series | 4300 Series | 4400 Series |
|---|---|---|---|---|---|
| ipbasek9 | Yes | Yes | Yes | Yes | Yes |
| securityk9_npe[1] | Yes | Yes | Yes | Yes | Yes |
| securityk9[2] | Yes | Yes | Yes | Yes | Yes |
| datak9/appxk9[3] | Yes | Yes | Yes | Yes | Yes |
| uck9 (Unified Communications) | — | Yes | Yes | Yes | Yes |

1. Supported only on the universalk9_npe image.
2. Supported only on the universalk9 image.
3. Data License (datak9) is EoSed (end-of-sale). It is replaced by App license(appxk9).

# Feature Licenses

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**Note**  Enabling a feature license may require that a particular technology package license be installed and enabled on the router.

The following section lists the feature licenses available on the fixed and modular Cisco ISR platforms:

- Table 4—Feature Licenses Supported on Fixed Cisco ISR Platforms, page 8
- Table 5—Feature Licenses Supported on Modular Cisco 1900, 2900, 3900, and 4K Platforms, page 8

Table 4 lists the feature licenses available on the fixed Cisco ISR platforms.

*Table 4*　　　　　*Feature Licenses Supported on Fixed Cisco ISR Platforms*

| Feature License | 810 Series | 860 Series | 880 Series | 890 Series |
|---|---|---|---|---|
| IPS (Subscription) | Yes | — | Yes | Yes |

Table 5 lists the feature licenses available on Cisco ISR G2 and 4K platforms and the required technology package license.

*Table 5*　　　　　*Feature Licenses Supported on Modular Cisco 1900, 2900, 3900, and 4K Platforms*

| Feature License | Required Technology Package License | 1900 Series | 2900 Series | 3900 Series | 4300 Series | 4400 Series |
|---|---|---|---|---|---|---|
| Memory License | — | Yes[1] | — | — | — | — |
| SNA Switching (SNASw) | datak9 | — | Yes | Yes | — | — |
| HSEC-K9[2] | securityk9 | — | Yes[3] | Yes | Yes | Yes |
| cme-srst | uck9 (Unified Communications) | — | Yes | Yes | Yes | Yes |
| Lawful Intercept (LI)[4] | datak9, uck9, and securityk9 | — | Yes | Yes | — | — |
| Performance | ipbasek9 | — | — | — | Yes | Yes |
| CUBE[5] | | Yes | Yes | Yes | Yes | Yes |

1. Cisco model 1905 and 1906c only.
2. The HSEC-K9 features are supported only on the universalk9-mz image.
3. Only 2921 and 2951 routers support the HSEC-K9 feature license.
4. Only 3900 Series (3925, 3945, 3925E and 3945E) and 2951 Series support Lawful Intercept.
5. CUBE is a paper-based license.

# Cisco One Suite Licenses

Table 7 lists the Cisco One Suite Licenses supported on Cisco 1900, 2900, and 3900 Platforms. See Activating Cisco One Suite License, page 17 for activating Cisco One Suite License.

*Table 6*　　　　　*Cisco One Suite Licenses*

| Suite Licenses | Included Licenses | 1900 Series | 2900 Series | 3900 Series |
|---|---|---|---|---|
| FoundationSuite[1] | datak9, securityk9 | yes | yes | yes |
| FoundationSuiteK9_npe[2] | datak9, securityk9_npe | yes | yes | yes |
| AdvUCSuiteK9 | uck9, cme-srst, cube | — | yes | yes |

1. Supported only on the universalk9-mz image
2. Supported only on the universalk9_npe-mz image

# Evaluation and Right to Use Licenses

Table 7 lists the Evaluation and Right to Use (RTU) licenses available on the Fixed Cisco ISRs and Cisco ISR G2 platforms.

**Note** RTU licenses do not require a product activation key (PAK) to be registered.

*Table 7        Evaluation and Right to Use Licenses*

| Technology Package or Feature | Evaluation License | Right to Use License |
|---|---|---|
| **Technology Package** | | |
| Advanced Security | — | — |
| Advanced IP Services[1] | Yes | Yes |
| ipbasek9 | — | — |
| securityk9_npe[2] | Yes | Yes |
| securityk9[3] | Yes | Yes |
| datak9/appxk9 | Yes | Yes |
| uck9 (Unified Communications) | Yes | Yes |
| **Feature Licenses** | | |
| Memory License | Yes | Yes |
| SNA Switching (SNASw) | Yes | Yes |
| HSEC-K9[4] | — | — |
| cme-srst | Yes | Yes |
| Lawful Intercept | — | — |
| **Cisco One Suite Licenses** | | |
| FoundationSuiteK9_npe[5] | Yes | Yes |
| FoundationSuiteK9[6] | Yes | Yes |
| AdvUCSuiteK9 | Yes | Yes |

1. Not all SKUs support Evaluation and RighToUse license for 'Advanced IP Services'. Some of the 880 SKUs come with Default/Non-enforcement 'Advanced IP Services' license and no Evaluation and RightToUse license support for Default/Non-enforcement license.

2. Supported only on the universalk9_npe image.

3. Supported only on the universalk9 image.

4. The HSEC-K9 features are supported only on the universalk9-mz image.

5. Supported only on the universalk9_npe image.

6. Supported only on the universalk9 image.

# Management Licenses

Starting from Cisco IOS Release 15.3(3)M, the following management licenses are supported on the Cisco ISR and Cisco ISR G2 routers:

- mgmt-plug-and-play

- mgmt-lifecycle

- mgmt-assurance

- mgmt-onplus

- mgmt-compliance

The management licenses are enabled by default. When these management licenses are installed, they become active and in use.

# Resource Allocation with the securityk9 Technology Package License

Table 8 shows how resources such as bandwidth, number of tunnels, and TLS sessions for voice, and IPSec are allocated with a securityk9 technology package license.

***Table 8        Resource Allocation with securityk9 Technology Package License***

| Client | Tx Bandwidth[1] | Rx Bandwidth[2] | Tunnels[3] | TLS Sessions |
|--------|-----------------|-----------------|------------|--------------|
| Voice | Necessary bandwidth is reserved or released as needed. | Necessary bandwidth is reserved or released as needed. | Resources are reserved or released as needed. | Resources are reserved or released as needed. Maximum:1000 |
| IPSec | Dynamically uses available bandwidth. | Dynamically uses available bandwidth. | Resources are reserved or released as needed. | NA |

1. The maximum bandwidth in the ingress is 85,000 Kbps.

2. The maximum bandwidth in the egress is 85,000 Kbps.

3. The maximum cumulative tunnels are 225.

To view the resource allocated on your router, use the **show platform cerm-information** command. The following output shows an example of the resource allocation for a securityk9 license:

```
Router#show platform cerm-information
Crypto Export Restrictions Manager(CERM) Information:
CERM functionality: ENABLED

----------------------------------------------------------------
Resource                     Maximum Limit          Available
----------------------------------------------------------------
Tx Bandwidth(in kbps)        85000                  85000
Rx Bandwidth(in kbps)        85000                  85000
Number of tunnels            225                    225
Number of TLS sessions       1000                   1000

Resource reservation information:
D - Dynamic
----------------------------------------------------------------------
Client         Tx Bandwidth   Rx Bandwidth   Tunnels   TLS Sessions
               (in kbps)      (in kbps)
----------------------------------------------------------------------
VOICE          0              0              0         0
IPSEC          D              D              0         N/A

Statistics information:
Failed tunnels    : 0
Failed sessions   : 0
```

```
Failed tx bandwidth: 0
Failed rx bandwidth: 0
Failed encrypt pkts: 0
Failed decrypt pkts: 0
Failed encrypt pkt bytes: 0
Failed decrypt pkt bytes: 0
Passed encrypt pkts: 0
Passed decrypt pkts: 0
Passed encrypt pkt bytes: 0
Passed decrypt pkt bytes: 0
```

**Note**     An HSEC-K9 feature license provides enhanced payload encryption functionality with increased VPN tunnel counts and secure voice sessions.

# Platform Limitations

Table 9 shows the maximum number of licenses allowed for the CME, and SRST feature licenses.

*Table 9        Maximum Number of Licenses for the CME, and SRST Feature Licenses*

| Platform | CME | SRST |
| --- | --- | --- |
| 860,880 | — | — |
| 890 | — | — |
| 1941 | — | — |
| 2901 | 35 | 35 |
| 2911 | 50 | 50 |
| 2921 | 100 | 100 |
| 2951 | 150 | 250 |
| 3925 | 250 | 730 |
| 3945 | 350 | 1200 |
| 3925E | 400 | 1350 |
| 3945E | 450 | 1500 |
| 4321 | 50 | 50 |
| 4331 | 100 | 100 |
| 4351 | 250 | 750 |
| 4431 | 350 | 1200 |
| 4451 | 450 | 2000 |

# Options for Getting and Managing Software Licenses

There are multiple options for getting and managing the software licenses on your router. Use one of the following options to get and manage software licenses on your router:

- Cisco License Manager—software application that lets you get, register, install, and manage software licenses on multiple devices on your network. See the "Cisco License Manager" section on page 12 for details.

- Cisco Smart Licensing—simplifies the Cisco software experience and helps you to understand how Cisco software is used across your network. Smart Licensing is the next generation licensing platform for all Cisco software products. See the Cisco Smart Licensing Guide for details.

- Cisco License Call Home—lets you interact with the Cisco Product License Registration portal directly from your router to get, install, and manage your license. See the "Cisco License Call Home" section on page 13 for details.

- Cisco Product License Registration Portal—lets you manually get and register individual software licenses through a registration portal. See the "Cisco Product License Registration Portal" section on page 14 for details.

- Cisco IOS CLI—lets you install and manage licenses using the Cisco IOS command-line interface (CLI). See the "Cisco IOS CLI" section on page 14 for details.

- RTU Migration—lets you migrate to an Existing or Lifetime RTU release and recommends steps you must perform before upgrading. See the "RTU Migration" section on page 40 for details.

- Simple Network Management Protocol—lets you install, view, and clear software licenses using Simple Network Management Protocol (SNMP). See the "Simple Network Management Protocol" section on page 46 for details.

# Cisco License Manager

For a network-wide deployment, the Cisco License Manager can automate all license-related work flows by securely communicating with the licensing back-end fulfillment systems at Cisco.com and deploying the obtained licenses to managed devices on a network-wide basis. The application also 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.

For additional information on Cisco License Manager, see the *Cisco Software Activation Conceptual Overview* chapter in *Cisco IOS Software Activation Configuration Guide* and the documents at http://www.cisco.com/en/US/products/ps7138/tsd_products_support_series_home.html.

# Cisco Smart Licensing

Smart Licensing Client feature is a standardized licensing platform that simplifies the Cisco software experience and helps you to understand how Cisco software is used across your network. Smart Licensing is the next generation licensing platform for all Cisco software products.

For additional information on Cisco Smart Licensing, see Cisco Smart Licensing Client.

# Cisco License Call Home

You can interact directly with the Cisco Product License Registration portal from your device by using the Cisco License Call Home interface. This interface is included with the Cisco Software Activation feature and described in the *Cisco Software Activation Conceptual Overview* and the *Configuring Cisco License Call Home* chapters in *Cisco IOS Software Activation Configuration Guide*.

The License Call Home feature works as a client or server model. Each transaction requires a separate connection to the Cisco licensing infrastructure. The License Call Home feature displays prompts for obtaining required information, converting that information into a defined data structure, and then connecting to the Cisco licensing back-end to interact with the Cisco licensing infrastructure. A request is initiated by a License Call Home EXEC command, and the response is provided by the Cisco licensing infrastructure.

This section contains the following topics:

- Before You Begin, page 13
- Platform Support, page 13
- Installing a License Using License Call Home, page 13

## Before You Begin

Your router must have an Internet connection and use HTTPS to connect to the Cisco licensing infrastructure.

## Platform Support

Only certain platforms support the Cisco License Call Home function and must run a Cisco IOS crypto K9 image.

For information about platform support, see the *Configuring Cisco License Call Home* chapter in *Cisco IOS Software Activation Configuration Guide.*

## Installing a License Using License Call Home

**Note** Purchase the software feature or package you want to install. You receive a product activation key (PAK) with your purchase.

To install a license using the License Call Home feature, follow these steps:

**Step 1** Use the **show license call-home pak** EXEC command to display the SKU list and features available for the PAK provided.

**Step 2** Use the **license call-home install pak** command to install a license by using the Cisco License Call Home function.

    **a.** Complete the license installation by entering **yes** when prompted to install the license and then entering the information requested.

# Cisco Product License Registration Portal

Use the Cisco Product License Registration Portal at http://www.cisco.com/go/license to manually perform the following licensing tasks:

- Get a license
- Register for an RMA license
- Look-up a license

This section contains the following topic:

- Getting a Permanent License Using Cisco License Portal, page 14

## Getting a Permanent License Using Cisco License Portal

To get a permanent license, perform the steps detailed in this section.

**Step 1**  Enter the appropriate information at http://www.cisco.com/go/license.

**Step 2**  Download the license file or receive the license file by e-mail.

**Step 3**  To obtain additional licenses, repeat Step 1 and Step 2.

# Cisco IOS CLI

Use the Cisco IOS CLI to install and manage the software licenses on your router. This section contains the following procedures:

- Installing a Permanent License Using Cisco IOS CLI, page 14
- Activating Cisco One Suite License, page 17
- Activating CME-SRST Feature License, page 20
- Activating an Evaluation License, page 21
- Activating a Memory Evaluation License, page 24
- Activating an SNA Switching Feature License, page 26
- Configuring the HSEC-K9 Feature License, page 27
- Clearing an Active Permanent Technology Package License, page 29
- Configuring the EULA, page 34
- Verifying Licenses and Other Licensing Tasks, page 35

## Installing a Permanent License Using Cisco IOS CLI

To install a permanent license, perform the steps detailed in this section.

**Note**  You can install multiple licenses on the Cisco 4400, 4300, 3900, 2900, and 1900 series ISRs.

## SUMMARY STEPS

1. **enable**

2. **license install** *stored-location-url*

3. **reload**

## DETAILED STEPS

| | Command or Action | Purpose |
|---|---|---|
| Step 1 | **enable**<br><br>**Example:**<br>`Router> enable` | Enables privileged EXEC mode.<br><br>• Enter your password if prompted. |
| Step 2 | **license install** *stored-location-url*<br><br>**Example:**<br>`Router)# license install`<br>`flash0:uck9-C3900-SPE150_K9-FHH12250057.xml` | Installs a license file. |
| Step 3 | **reload**<br><br>**Example:**<br>`Router# reload` | (Optional) Reloads the router.<br><br>A reload is not required if an evaluation license is active.<br><br>A reload is required to activate a technology package license if an evaluation license is not active.<br><br>To activate the SNASw feature license, perform the steps detailed in the "Activating an SNA Switching Feature License" section on page 26.<br><br>See the "Configuring the HSEC-K9 Feature License" section on page 27 for additional information on configuring the HSEC-K9 feature license.<br><br>See the "Activating a Memory Evaluation License" section on page 24 for additional information on configuring a memory license. |

## Screencast

The following screencast shows how to install a license:

http://www.cisco.com/en/US/docs/routers/access/sw_activation/license_install_demo/license_install_demo.swf

## Example

The following example shows how to install a license:

```
Router> enable
Router# license install flash0:uck9-C3900-SPE150_K9-FHH12250057.xml
Installing licenses from "uck9-C3900-SPE150_K9-FHH12250057.xml"
Installing...Feature:uck9...Successful:Supported
1/1 licenses were successfully installed
0/1 licenses were existing licenses
0/1 licenses were failed to install

upt-3945-1#
*Jul  7 17:24:57.391: %LICENSE-6-INSTALL: Feature uck9 1.0 was installed in this device.
UDI=C3900-SPE150/K9:FHH12250057; StoreIndex=15:Primary License Storage
*Jul  7 17:24:57.615: %IOS_LICENSE_IMAGE_APPLICATION-6-LICENSE_LEVEL: Module name = c3900
Next reboot level = uck9 and License = uck9
Router# reload
Router# show version
Cisco IOS Software, C3900 Software (C3900-UNIVERSALK9-M), Version 12.4(24.6)PI11k PI11
ENGINEERING WEEKLY BUILD, synced to V124_24_6_T9
Copyright (c) 1986-2009 by Cisco Systems, Inc.
Compiled Mon 15-Jun-09 15:27 by pallavik

ROM: System Bootstrap, Version 15.0(1r)M, RELEASE SOFTWARE (fc1)

upt-3945-1 uptime is 1 day, 3 hours, 53 minutes
System returned to ROM by power-on
System image file is "flash0:c3900-universalk9-mz.SSA.124-24.6.PI11k"

This product contains cryptographic features and is subject to United
States and local country laws governing import, export, transfer and
use. Delivery of Cisco cryptographic products does not imply
third-party authority to import, export, distribute or use encryption.
Importers, exporters, distributors and users are responsible for
compliance with U.S. and local country laws. By using this product you
agree to comply with applicable laws and regulations. If you are unable
to comply with U.S. and local laws, return this product immediately.

A summary of U.S. laws governing Cisco cryptographic products may be found at:
http://www.cisco.com/wwl/export/crypto/tool/stqrg.html

If you require further assistance please contact us by sending email to
export@cisco.com.

Cisco C3945 (revision 1.0) with 2025472K/71680K bytes of memory.
Processor board ID FHH1226P01E
3 Gigabit Ethernet interfaces
4 Serial(sync/async) interfaces
2 ISDN Basic Rate interfaces
1 ATM interface
25 terminal lines
1 Virtual Private Network (VPN) Module
DRAM configuration is 72 bits wide with parity enabled.
255K bytes of non-volatile configuration memory.
2000880K bytes of ATA System CompactFlash 0 (Read/Write)


License Info:


License UDI:


-------------------------------------------------
Device#   PID                 SN
```

```
-----------------------------------------------
*0        C3900-SPE150/K9      FHH12250057



Technology Package License Information for Module:'c3900'

----------------------------------------------------------------
Technology     Technology-package          Technology-package
               Current      Type           Next reboot
----------------------------------------------------------------
ipbase         ipbasek9     Permanent      ipbasek9
security       None         None           None
uc             uck9         Permanent      uck9
data           None         None           None

Configuration register is 0x0
```

## Activating Cisco One Suite License

Starting with Cisco IOS Releases 15.5(1)T, Cisco One Suite Licenses are supported on Cisco 3900 series, 2900 series, and 1900 series routers.

**SUMMARY STEPS**

1. **enable**

2. **configure terminal**

3. **license boot suite** *suite-name*

4. **exit**

5. **reload**

**DETAILED STEPS**

|        | **Command or Action** | **Purpose** |
|--------|----------------------|-------------|
| Step 1 | **enable**<br><br>**Example:**<br>`Router> enable` | Enables privileged EXEC mode.<br><br>• Enter your password if prompted. |
| Step 2 | **configure terminal**<br><br>**Example:**<br>`Router# configure terminal` | Enters global configuration mode. |
| Step 3 | **license boot suite** *suite-name*<br><br>**Example:**<br>`Router(config)# license boot suite FoundationSuiteK9` | Enables suite license.<br><br>**Note**  This command is required for activating both the evaluation and permanent licenses. |

| | Command or Action | Purpose |
|---|---|---|
| Step 4 | **exit**<br><br>**Example:**<br>`Router(config)# exit` | Exits global configuration mode. |
| Step 5 | **reload**<br><br>**Example:**<br>`Router# reload` | Reloads the router. A reload is required to activate the software suite. |

**Example**

The following example shows how to activate an evaluation license:

```
Router>enable
Router#configure terminal
Router(config)#license boot suite FoundationSuiteK9

PLEASE   READ THE   FOLLOWING TERMS   CAREFULLY. INSTALLING THE LICENSE OR
LICENSE   KEY  PROVIDED FOR  ANY CISCO   PRODUCT   FEATURE   OR   USING SUCH
PRODUCT   FEATURE  CONSTITUTES   YOUR   FULL ACCEPTANCE  OF   THE FOLLOWING
TERMS. YOU MUST NOT PROCEED FURTHER IF YOU ARE NOT WILLING TO  BE BOUND
BY ALL THE TERMS SET FORTH HEREIN.

Use of this product feature requires  an additional license from Cisco,
together with an additional  payment.  You may use this product feature
on an evaluation basis, without payment to Cisco, for 60 days. Your use
of the  product,  including  during the 60 day  evaluation  period,  is
subject to the Cisco end user license agreement
http://www.cisco.com/en/US/docs/general/warranty/English/EU1KEN_.html
If you use the product feature beyond the 60 day evaluation period, you
must submit the appropriate payment to Cisco for the license. After the
60 day  evaluation  period,  your  use of the  product  feature will be
governed  solely by the Cisco  end user license agreement (link above),
together  with any supplements  relating to such product  feature.  The
above  applies  even if the evaluation  license  is  not  automatically
terminated  and you do  not receive any notice of the expiration of the
evaluation  period.  It is your  responsibility  to  determine when the
evaluation  period is complete and you are required to make  payment to
Cisco for your use of the product feature beyond the evaluation period.

Your  acceptance  of  this agreement  for the software  features on one
product  shall be deemed  your  acceptance  with  respect  to all  such
software  on all Cisco  products  you purchase  which includes the same
software.  (The foregoing  notwithstanding, you must purchase a license
for each software  feature you use past the 60 days evaluation  period,
so  that  if you enable a software  feature on  1000  devices, you must
purchase 1000 licenses for use past  the 60 day evaluation period.)

Activation of the software command line interface will be evidence of
your acceptance of this agreement.


ACCEPT? [yes/no]: yes
% use 'write' command to make license boot config take effect on next boot

Router(config)#
```

```
*Nov  6 01:48:34.023: %LICENSE-6-EULA_ACCEPTED: EULA for feature FoundationSuiteK9 1.0 has
been accepted. UDI=C3900-SPE100/K9:FOC14440KXB; StoreIndex=3:Built-In License Storage
Router(config)#exit
Router#write
Router#reload
Router#show version
Cisco IOS Software, C3900 Software (C3900-UNIVERSALK9-M), Version 15.5(0.25)T0.6,
MAINTENANCE INTERIM SOFTWARE
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2014 by Cisco Systems, Inc.
Compiled Fri 31-Oct-14 23:50 by prod_rel_team

ROM: System Bootstrap, Version 15.0(1r)M15, RELEASE SOFTWARE (fc1)

uft_3925 uptime is 2 minutes
System returned to ROM by reload at 01:49:09 UTC Thu Nov 6 2014
System image file is "flash0:c3900-universalk9-mz.SPA.155-0.25.T0.6"
Last reload type: Normal Reload
Last reload reason: Reload Command


This product contains cryptographic features and is subject to United
States and local country laws governing import, export, transfer and
use. Delivery of Cisco cryptographic products does not imply
third-party authority to import, export, distribute or use encryption.
Importers, exporters, distributors and users are responsible for
compliance with U.S. and local country laws. By using this product you
agree to comply with applicable laws and regulations. If you are unable
to comply with U.S. and local laws, return this product immediately.

A summary of U.S. laws governing Cisco cryptographic products may be found at:
http://www.cisco.com/wwl/export/crypto/tool/stqrg.html

If you require further assistance please contact us by sending email to
export@cisco.com.

Cisco CISCO3925-CHASSIS (revision 1.0) with C3900-SPE100/K9 with 1835264K/261888K bytes of
memory.
Processor board ID FTX1649AME3
1 DSL controller
1 Ethernet interface
3 Gigabit Ethernet interfaces
1 ATM interface
3 terminal lines
2 Channelized (E1 or T1)/PRI ports
1 Virtual Private Network (VPN) Module
1 Subrate T3/E3 port
2 Cellular interfaces
DRAM configuration is 72 bits wide with parity enabled.
255K bytes of non-volatile configuration memory.
999936K bytes of ATA System CompactFlash 0 (Read/Write)
250880K bytes of ATA CompactFlash 1 (Read/Write)


License Info:

License UDI:

-------------------------------------------------
Device#   PID                 SN
-------------------------------------------------
*1        C3900-SPE100/K9     FOC14440KXB
```

```
Suite License Information for Module:'c3900'

--------------------------------------------------------------------------------
Suite                 Suite Current        Type            Suite Next reboot
--------------------------------------------------------------------------------
FoundationSuiteK9     FoundationSuiteK9    EvalRightToUse FoundationSuiteK9
securityk9
datak9

AdvUCSuiteK9          None                 None            None
uck9
cme-srst
cube


Technology Package License Information for Module:'c3900'

-----------------------------------------------------------------------
Technology    Technology-package                 Technology-package
              Current          Type              Next reboot
-----------------------------------------------------------------------
ipbase        ipbasek9         None              ipbasek9
security      None             None              None
uc            None             None              None
data          None             None              None

Configuration register is 0x2

Router#
```

## Activating CME-SRST Feature License

The Cisco ISR G2 comes with a 60-day evaluation license. After 60 days, the license changes to "right to use". The customer is required to pay for the CME-SRST feature license which is valid for 12 years.

✎

**Note**    CME-SRST RTU license is introduced in Cisco IOS release 15.1(3)T and higher.

### Prerequisites

- UCK9 license
- Cisco ISR G2 already accepts UC CLIs
- CME-SRST feature must be configured

### SUMMARY STEPS

1. **configure terminal**
2. **telephony-service**
3. **max-ephones** *max-phones*
4. **exit**

**DETAILED STEPS**

|        | Command or Action | Purpose |
|--------|-------------------|---------|
| Step 1 | **configure terminal**<br><br>Example:<br>`Router# configure terminal` | Enters global configuration mode. |
| Step 2 | **telephony service**<br><br>Example:<br>`Router(config)# telephone service` | Enters the telephony-service configuration mode for configuring Cisco Unified CME. |
| Step 3 | **max-ephones** *max-phones*<br><br>Example:<br>`Router(config-telephony)# max-ephones 50` | Sets the maximum number of Cisco IP phones to be supported by a Cisco CallManager Express. |
| Step 4 | **exit**<br><br>Example:<br>`Router(config-telephony)# exit` | Exits global configuration mode. |

## Activating an Evaluation License

✎

**Note**  Starting with Cisco IOS Releases 15.0(1)M6, 15.1(1)T4, 15.1(2)T4, 15.1(3)T2, and 15.1(4)M, Evaluation licenses are replaced with Evaluation Right To Use licenses. Evaluation Right to Use licenses automatically become Right to Use licenses after the initial evaluation period. Follow the steps detailed in this section to activate an Evaluation Right to Use license.

To activate an evaluation license in the Cisco 4400, 4300, 3900, 2900, and 1900 series routers, perform the steps detailed in this section.

For ISR G2 routers, evaluation licenses are activated using the **license boot module** *module-name* **technology-package** *package-name* command.

For ISR 4K routers, evaluation licenses are activated using the **license boot level** *license-level* command.

**SUMMARY STEPS**

1. **enable**
2. **configure terminal**
3. **license boot module** *module-name* **technology-package** *package-name*
4. **exit**
5. **reload**

### DETAILED STEPS

| | Command or Action | Purpose |
|---|---|---|
| Step 1 | **enable**<br><br>**Example:**<br>`Router>enable` | Enables privileged EXEC mode.<br><br>• Enter your password if prompted. |
| Step 2 | **configure terminal**<br><br>**Example:**<br>`Router#configure terminal` | Enters global configuration mode. |
| Step 3 | **license boot module** *module-name* **technology-package** *package-name*<br><br>**Example:**<br>`Router(config)#license boot module c3900 technology-package securityk9` | Enables the evaluation license.<br>Use the **?** command with the **module** command to see the module name for your router, and with the **technology-package** command to see the software packages and features supported on your router. |
| Step 4 | **exit**<br><br>**Example:**<br>`Router(config)#exit` | Exits global configuration mode. |
| Step 5 | **reload**<br><br>**Example:**<br>`Router#reload` | Reloads the router. A reload is required to activate the software package. |

### Screencast

The following screencast shows how to activate an evaluation license:

http://www.cisco.com/en/US/docs/routers/access/sw_activation/eval_license_demo/eval_license_2_demo.swf.

### Example

The following example shows how to activate an evaluation license:

```
Router> enable
Router# configure terminal
Router(config)# license boot module c3900 technology-package data
PLEASE  READ THE  FOLLOWING TERMS  CAREFULLY. INSTALLING THE LICENSE OR
LICENSE  KEY  PROVIDED FOR  ANY CISCO  PRODUCT  FEATURE  OR  USING SUCH
PRODUCT  FEATURE  CONSTITUTES  YOUR  FULL ACCEPTANCE  OF  THE FOLLOWING
TERMS. YOU MUST NOT PROCEED FURTHER IF YOU ARE NOT WILLING TO  BE BOUND
BY ALL THE TERMS SET FORTH HEREIN.

You hereby  acknowledge  and  agree that  the  product feature  license
is terminable and that the product  feature  enabled  by  such  license
may  be  shut  down or  terminated by  Cisco  after  expiration of  the
```

```
applicable  term  of  the  license  (e.g.,  30-day  trial  period). Cisco
reserves the  right to terminate or shut down  any such product feature
electronically  or by  any other  means available. While alerts or such
messages  may  be provided, it is  your sole  responsibility to monitor
your terminable  usage of any  product  feature enabled by  the license
and to ensure that your systems and  networks are prepared for the shut
down of the product feature. You acknowledge  and agree that Cisco will
not have any liability  whatsoever for  any damages, including, but not
limited to, direct, indirect, special, or consequential damages related
to any product  feature  being shutdown or terminated. By clicking  the
"accept" button  or typing "yes" you are  indicating  you have read and
agree to be bound by all the terms provided herein.

ACCEPT? [yes/no]: yes
% use 'write' command to make license boot config take effect on next boot

Router(config)#
*Jul  7 00:38:56.391: %IOS_LICENSE_IMAGE_APPLICATION-6-LICENSE_LEVEL: Module name = c3900
Next reboot level = securityk9 and License = securityk9
*Jul  7 00:38:56.987: %LICENSE-6-EULA_ACCEPTED: EULA for feature securityk9 1.0 has been
accepted. UDI=C3900-SPE150/K9:FHH12250057; StoreIndex=1:Evaluation License Storage
Router(config)# exit
Router# reload
Router# show version
Cisco IOS Software, C3900 Software (C3900-UNIVERSALK9-M), Version 12.4(24.6)PI11k PI11
ENGINEERING WEEKLY BUILD, synced to V124_24_6_T9
Copyright (c) 1986-2009 by Cisco Systems, Inc.
Compiled Mon 15-Jun-09 15:27 by pallavik

ROM: System Bootstrap, Version 15.0(1r)M, RELEASE SOFTWARE (fc1)

Router uptime is 1 day, 3 hours, 53 minutes
System returned to ROM by power-on
System image file is "flash0:c3900-universalk9-mz.SSA.124-24.6.PI11k"



This product contains cryptographic features and is subject to United
States and local country laws governing import, export, transfer and
use. Delivery of Cisco cryptographic products does not imply
third-party authority to import, export, distribute or use encryption.
Importers, exporters, distributors and users are responsible for
compliance with U.S. and local country laws. By using this product you
agree to comply with applicable laws and regulations. If you are unable
to comply with U.S. and local laws, return this product immediately.

A summary of U.S. laws governing Cisco cryptographic products may be found at:
http://www.cisco.com/wwl/export/crypto/tool/stqrg.html

If you require further assistance please contact us by sending email to
export@cisco.com.

Cisco C3945 (revision 1.0) with 2025472K/71680K bytes of memory.
Processor board ID FHH1226P01E
3 Gigabit Ethernet interfaces
4 Serial(sync/async) interfaces
2 ISDN Basic Rate interfaces
1 ATM interface
25 terminal lines
1 Virtual Private Network (VPN) Module
DRAM configuration is 72 bits wide with parity enabled.
255K bytes of non-volatile configuration memory.
2000880K bytes of ATA System CompactFlash 0 (Read/Write)
```

```
License Info:

License UDI:

-------------------------------------------------
Device#   PID                  SN
-------------------------------------------------
*0        C3900-SPE150/K9      FHH12250057


Technology Package License Information for Module:'c3900'

----------------------------------------------------------------
Technology     Technology-package          Technology-package
               Current      Type           Next reboot
----------------------------------------------------------------
ipbase         ipbasek9     Permanent      ipbasek9
security       securityk9   Evaluation     securityk9
uc             ucK9         Permanent      uck9
data           None         None           None

Configuration register is 0x0
```

# Activating a Memory Evaluation License

To activate a memory evaluation license in the Cisco 1905 router, perform the steps detailed in this section. Evaluation licenses are activated using the **license feature MEM-1900-256U512MB** command.

### SUMMARY STEPS

1. **enable**

2. **configure terminal**

3. **license feature** *MEM-1900-256U512MB*

4. **exit**

5. **reload**

### DETAILED STEPS

| | Command or Action | Purpose |
|---|---|---|
| Step 1 | **enable**<br><br>**Example:**<br>`Router>enable` | Enables privileged EXEC mode.<br><br>• Enter your password if prompted. |
| Step 2 | **configure terminal**<br><br>**Example:**<br>`Router#configure terminal` | Enters global configuration mode. |

|        | Command or Action | Purpose |
|--------|-------------------|---------|
| Step 3 | **license feature** *MEM-1900-256U512MB*<br><br>Example:<br>`Router(config)#license feature`<br>`MEM-1900-256U512MB` | Enables the MEM-1900-256U512MB evaluation license.<br><br>Use the **?** command with the **license feature** command to see the memory evaluation license name available for your router. |
| Step 4 | **exit**<br><br>Example:<br>`Router(config)#exit` | Exits global configuration mode. |
| Step 5 | **reload**<br><br>Example:<br>`Router#reload` | Reloads the router. A reload is required to activate the memory license feature. |

## Screencast

The following screencast shows how to activate an evaluation license:

http://www.cisco.com/en/US/docs/routers/access/sw_activation/eval_license_demo/eval_license_2_demo.swf.

## Example

The following example shows how to activate an evaluation license:

```
Router(config)# license feature MEM-1900-256U512MB
          Feature Name:MEM-1900-256U512MB

PLEASE  READ THE  FOLLOWING TERMS  CAREFULLY. INSTALLING THE LICENSE OR
LICENSE  KEY  PROVIDED FOR  ANY CISCO  PRODUCT  FEATURE  OR  USING SUCH
PRODUCT  FEATURE  CONSTITUTES  YOUR  FULL ACCEPTANCE  OF  THE FOLLOWING
TERMS. YOU MUST NOT PROCEED FURTHER IF YOU ARE NOT WILLING TO  BE BOUND
BY ALL THE TERMS SET FORTH HEREIN.

You hereby  acknowledge  and  agree that  the  product feature  license
is terminable and that the product  feature  enabled  by  such  license
may  be  shut  down  or  terminated by  Cisco  after  expiration  of  the
applicable  term  of  the  license  (e.g.,  30-day  trial  period). Cisco
reserves the  right to terminate or shut down  any such product feature
electronically  or by  any other  means available. While alerts or such
messages  may  be provided, it is  your sole  responsibility to monitor
your terminable  usage of any  product  feature enabled by  the license
and to ensure that your systems and  networks are prepared for the shut
down of the product feature. You acknowledge  and agree that Cisco will
not have any liability  whatsoever for  any damages, including, but not
limited to, direct, indirect, special, or consequential damages related
to any product  feature  being shutdown or terminated. By clicking  the
"accept" button  or typing "yes" you are  indicating  you have read and
agree to be bound by all the terms provided herein.

ACCEPT? [yes/no]: yes
Router(config)#
```

```
*Nov 17 23:48:18.891: %XFR_EXT_MEMORY_LICENSING-6-LICENSE_NOT_ACTIVATED: License
MEM-1900-256U512MB will take effect af reboot.

*Nov 17 23:48:19.779: %LICENSE-6-EULA_ACCEPTED: EULA for feature MEM-1900-256U512MB 1.0
has been accepted. UDI=CISCO1920B; StoreIndex=3:Evaluation License Storage

Router# license install tftp://223.255.254.254/FCW1345000B_20091118190946245.lic
Installing licenses from "tftp://223.255.254.254/FCW1345000B_20091118190946245.lic"

Loading colbywen/FCW1345000B_20091118190946245.lic from 223.255.254.254 (via
GigabitEthernet0/0): !
[OK - 1171 bytes]
Installing...Feature:MEM-1900-256U512MB...Successful:Supported
1/1 licenses were successfully installed
0/1 licenses were existing licenses
0/1 licenses were failed to install

Router#
*Nov 19 00:14:48.603: %XFR_EXT_MEMORY_LICENSING-6-LICENSE_NOT_ACTIVATED: License
MEM-1900-256U512MB will take effect after the system reboot.

*Nov 19 00:14:48.607: %LICENSE-6-INSTALL: Feature MEM-1900-256U512MB 1.0 was installed in
this device. UDI=CISCO1921/K9:FCW1345000B; StoreIndex=0:Primary License Storage
```

## Activating an SNA Switching Feature License

**Note**    An SNASw feature license must be activated to configure SNASw.

To activate an evaluation or permanent license for the SNA Switching (SNASw) feature, perform the steps detailed in this section. The SNASw feature license is activated using the **license feature snasw** command.

### SUMMARY STEPS

1. **enable**

2. **configure terminal**

3. **license feature snasw**

4. **exit**

5. **show license feature**

**DETAILED STEPS**

|        | Command or Action | Purpose |
|--------|-------------------|---------|
| Step 1 | **enable**<br><br>Example:<br>`Router>enable` | Enables privileged EXEC mode.<br><br>• Enter your password if prompted. |
| Step 2 | **configure terminal**<br><br>Example:<br>`Router#configure terminal` | Enters global configuration mode. |
| Step 3 | **license feature snasw**<br><br>Example:<br>`Router(config)#license feature snasw` | Enables the SNASw feature license. |
| Step 4 | **exit**<br><br>Example:<br>`Router(config)#exit` | Exits global configuration mode. |
| Step 5 | **show license feature**<br><br>Example:<br>`Router#show license feature` | Verifies that the feature license has been activated. |

**Example**

The following example shows how to activate an SNASw feature license:

```
Router> enable
Router# configure terminal
Router(config)# license feature snasw
Router(config)# exit
Router# show license feature
Feature name          Enforcement  Evaluation  Subscription  Enabled  RightToUse
ipbasek9              no           no          no            yes      no
securityk9            yes          yes         no            yes      yes
uck9                  yes          yes         no            yes      yes
datak9                yes          yes         no            no       yes
LI                    yes          no          no            no       no
ios-ips-update        yes          yes         yes           no       yes
SNASw                 yes          yes         no            yes      yes
```

# Configuring the HSEC-K9 Feature License

### Activating the HSEC-K9 Feature License

No action is required to activate the HSEC-K9 feature license. The HSEC-K9 feature license is active after installation.

**Deactivating an Active HSEC-K9 Feature License**

To deactivate an active HSEC-K9 feature license, perform the steps detailed in this section.

Note    After the HSEC-K9 feature license is installed, the Crypto Export Restrictions Manager (CERM) is disabled and the **show platform cerm-information** command output displays the "CERM functionality: DISABLED" message.

## SUMMARY STEPS

1. **enable**

2. **configure terminal**

3. **no license feature HSEC-K9**

4. **exit**

5. **reload**

6. **license clear** *feature-name*

7. **show license detail**

## DETAILED STEPS

| | Command or Action | Purpose |
|---|---|---|
| Step 1 | **enable**<br><br>**Example:**<br>`Router>enable` | Enables privileged EXEC mode.<br><br>• Enter your password if prompted. |
| Step 2 | **configure terminal**<br><br>**Example:**<br>`Router#configure terminal` | Enters global configuration mode. |
| Step 3 | **no license feature HSEC-K9**<br><br>**Example:**<br>`Router(config)#no license feature HSEC-K9` | Disables the HSEC-K9 feature license. |
| Step 4 | **exit**<br><br>**Example:**<br>`Router(config)#exit` | Exits global configuration mode. |
| Step 5 | **reload**<br><br>**Example:**<br>`Router#reload` | Reloads the image.<br><br>A reload is required to disable the feature. |

| | Command or Action | Purpose |
|---|---|---|
| Step 6 | **license clear** *feature-name*<br><br>Example:<br>`Router#license clear HSEC-K9` | Clear the feature license from license storage.<br><br>**Note**    If you do not clear the HSEC-K9 feature license after disabling it, the HSEC-K9 feature license can be reactivated using the **license feature HSEC-K9** command. A reload is not required to activate an HSEC-K9 feature license. |
| Step 7 | **show license detail**<br><br>Example:<br>`Router#show license detail` | Verifies that the license has been cleared. |

**Example**

The following example shows how to deactivate an active license:

```
Router> enable
Router# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)# no license feature HSEC-K9
% use 'write' command to disable 'HSEC-K9' license on next boot
Router(config)# exit
Router# reload

Router# license clear HSEC-K9
```

## Clearing an Active Permanent Technology Package License

To clear an active permanent license from the Cisco 4400, 4300, 3900, 2900, and 1900 series routers, perform the following tasks:

1. Disable the Technology Package

2. Clear the License

### Disable the Technology Package

To disable a license, perform the steps detailed in this section.

**SUMMARY STEPS**

1. **enable**

2. **configure terminal**

3. **license boot module** *module-name* **technology-package** *package-name* **disable**

4. **exit**

5. **reload**

6. **show version**

**DETAILED STEPS**

|  | Command or Action | Purpose |
|---|---|---|
| Step 1 | **enable**<br><br>**Example:**<br>`Router>enable` | Enables privileged EXEC mode<br><br>• Enter your password if prompted. |
| Step 2 | **configure terminal**<br><br>**Example:**<br>`Router#configure terminal` | Enters global configuration mode. |
| Step 3 | **license boot module** *module-name* **technology-package** *package-name* **disable**<br><br>**Example:**<br>`Router(config)#license boot module c3900 technology-package uck9 disable` | Disables the active license.<br><br>Note    For ISR 4K routers, evaluation licenses are activated using the **license boot level** *license-level* **disable** command. |
| Step 4 | **exit**<br><br>**Example:**<br>`Router(config)#exit` | Exits global configuration mode. |
| Step 5 | **reload**<br><br>**Example:**<br>`Router#reload` | Reloads the image.<br><br>A reload is required to make the software package inactive. |
| Step 6 | **show version**<br><br>**Example:**<br>`Router#show version` | Verifies that the technology package has been disabled. |

**Clear the License**

To clear the license, perform the steps detailed in this section.

**SUMMARY STEPS**

1. **license clear** *feature-name*

2. **configure terminal**

3. **no license boot module technology** *module-name* **technology-package** *package-name* **disable**

4. **exit**

5. **reload**

6. **show version**

## DETAILED STEPS

| | Command or Action | Purpose |
|---|---|---|
| Step 1 | **license clear** *feature-name*<br><br>**Example:**<br>`Router#license clear uck9` | Clears the technology package license from license storage. |
| Step 2 | **configure terminal**<br><br>**Example:**<br>`Router#configure terminal` | Enters global configuration mode. |
| Step 3 | **no license boot module** *module-name* **technology-package** *package-name* **disable**<br><br>**Example:**<br>`Router(config)#no license boot module c3900`<br>`technology uck9 disable` | Clears the **license boot module** *module-name* **technology-package** *package-name* **disable** command used for disabling the active license.<br><br>**Note**  For ISR 4K routers, evaluation licenses are activated using the **license boot level** *license-level* **disable** command**.** |
| Step 4 | **exit**<br><br>**Example:**<br>`Router(config)#exit` | Exits global configuration mode. |
| Step 5 | **reload**<br><br>**Example:**<br>`Router#reload` | Reloads the image. |
| Step 6 | **show version**<br><br>**Example:**<br>`Router#show version` | Verifies that the license has been cleared. |

### Example

The following example shows how to clear an active license:

```
Router> enable
Router# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)# license boot module c3900 technology-package ?
  datak9       data technology
  securityk9   security technology
  uck9         unified communications technology

Router(config)# license boot module c3900 technology-package uck9 disable
% use 'write' command to make license boot config take effect on next boot

Router(config)# exit

Router# reload

Router# show version
```

```
Cisco IOS Software, C3900 Software (C3900-UNIVERSALK9-M), Version 12.4(24.6)PI11k PI11
ENGINEERING WEEKLY BUILD, synced to V124_24_6_T9
Copyright (c) 1986-2009 by Cisco Systems, Inc.
Compiled Mon 15-Jun-09 15:27 by pallavik

ROM: System Bootstrap, Version 15.0(1r)M, RELEASE SOFTWARE (fc1)

upt-3945-1 uptime is 1 day, 3 hours, 53 minutes
System returned to ROM by power-on
System image file is "flash0:c3900-universalk9-mz.SSA.124-24.6.PI11k"


This product contains cryptographic features and is subject to United
States and local country laws governing import, export, transfer and
use. Delivery of Cisco cryptographic products does not imply
third-party authority to import, export, distribute or use encryption.
Importers, exporters, distributors and users are responsible for
compliance with U.S. and local country laws. By using this product you
agree to comply with applicable laws and regulations. If you are unable
to comply with U.S. and local laws, return this product immediately.

A summary of U.S. laws governing Cisco cryptographic products may be found at:
http://www.cisco.com/wwl/export/crypto/tool/stqrg.html

If you require further assistance please contact us by sending email to
export@cisco.com.

Cisco C3945 (revision 1.0) with 2025472K/71680K bytes of memory.
Processor board ID FHH1226P01E
3 Gigabit Ethernet interfaces
4 Serial(sync/async) interfaces
2 ISDN Basic Rate interfaces
1 ATM interface
25 terminal lines
1 Virtual Private Network (VPN) Module
DRAM configuration is 72 bits wide with parity enabled.
255K bytes of non-volatile configuration memory.
2000880K bytes of ATA System CompactFlash 0 (Read/Write)


License Info:

License UDI:

--------------------------------------------------
Device#   PID                 SN
--------------------------------------------------
*0        C3900-SPE150/K9     FHH12250057



Technology Package License Information for Module:'c3900'

----------------------------------------------------------------
Technology     Technology-package          Technology-package
               Current      Type           Next reboot
----------------------------------------------------------------
ipbase         ipbasek9     Permanent      ipbasek9
security       securityk9   RightToUse     securityk9
uc             disable      Permanent      disable
data           None         None           None

Configuration register is 0x0
```

```
Router#
Router# license clear uck9
*Jul  7 00:34:23.691: %SYS-5-CONFIG_I: Configured from console by consoleclear uck9
Feature: uck9
    1   License Type: Permanent
        License State: Active, Not in Use
        License Addition: Exclusive
        License Count: Non-Counted
        Comment:
        Store Index: 15
        Store Name: Primary License Storage


Are you sure you want to clear? (yes/[no]): yes
upt-3945-1#
*Jul  7 00:34:31.223: %LICENSE-6-REMOVE: Feature uck9 1.0 was removed from this device.
UDI=C3900-SPE150/K9:FHH12250057; StoreIndex=15:Primary License Storage
Router#
Router# configure terminal
Router(config)# no license boot module c3900 technology uck9 disable
Router(config)# exit
Router# reload
Router# show version
Cisco IOS Software, C3900 Software (C3900-UNIVERSALK9-M), Version 12.4(24.6)PI11k PI11
ENGINEERING WEEKLY BUILD, synced to V124_24_6_T9
Copyright (c) 1986-2009 by Cisco Systems, Inc.
Compiled Mon 15-Jun-09 15:27 by pallavik

ROM: System Bootstrap, Version 15.0(1r)M, RELEASE SOFTWARE (fc1)

upt-3945-1 uptime is 1 minute
System returned to ROM by reload at 00:41:07 UTC Tue Jul 7 2009
System image file is "flash:c3900-universalk9-mz.SSA.124-24.6.PI11k"
Last reload reason: Reload Command


This product contains cryptographic features and is subject to United
States and local country laws governing import, export, transfer and
use. Delivery of Cisco cryptographic products does not imply
third-party authority to import, export, distribute or use encryption.
Importers, exporters, distributors and users are responsible for
compliance with U.S. and local country laws. By using this product you
agree to comply with applicable laws and regulations. If you are unable
to comply with U.S. and local laws, return this product immediately.

A summary of U.S. laws governing Cisco cryptographic products may be found at:
http://www.cisco.com/wwl/export/crypto/tool/stqrg.html

If you require further assistance please contact us by sending email to
export@cisco.com.

Cisco C3945 (revision 1.0) with 2025472K/71680K bytes of memory.
Processor board ID FHH1226P01E
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25 terminal lines
1 Virtual Private Network (VPN) Module
DRAM configuration is 72 bits wide with parity enabled.
255K bytes of non-volatile configuration memory.
2000880K bytes of ATA System CompactFlash 0 (Read/Write)


License Info:
```

```
License UDI:

--------------------------------------------------
Device#   PID                 SN
--------------------------------------------------
*0        C3900-SPE150/K9     FHH12250057



Technology Package License Information for Module:'c3900'

----------------------------------------------------------------
Technology     Technology-package        Technology-package
               Current     Type          Next reboot
----------------------------------------------------------------
ipbase         ipbasek9    Permanent     ipbasek9
security       securityk9  RightToUse    securityk9
uc             disable     None          None
data           None        None          None

Configuration register is 0x0

Router#
```

## Configuring the EULA

Use the **license accept end user agreement** command in global configuration mode to configure a one-time acceptance of the EULA for all Cisco IOS software packages and features. After the command is issued and the EULA accepted, the EULA is automatically applied to all Cisco IOS software licenses; the EULA is not displayed and the user is not prompted to accept the EULA.

The following example shows how to configure a one-time acceptance of the EULA:

```
Router(config)#license accept end user agreement
PLEASE  READ THE  FOLLOWING TERMS  CAREFULLY. INSTALLING THE LICENSE OR
LICENSE  KEY  PROVIDED FOR  ANY CISCO  PRODUCT  FEATURE  OR  USING SUCH
PRODUCT  FEATURE  CONSTITUTES  YOUR  FULL ACCEPTANCE  OF  THE FOLLOWING
TERMS. YOU MUST NOT PROCEED FURTHER IF YOU ARE NOT WILLING TO  BE BOUND
BY ALL THE TERMS SET FORTH HEREIN.

Use of this product feature requires  an additional license from Cisco,
together with an additional  payment.  You may use this product feature
on an evaluation basis, without payment to Cisco, for 60 days. Your use
of the  product,  including  during the 60 day  evaluation  period,  is
subject to the Cisco end user license agreement
http://www.cisco.com/en/US/docs/general/warranty/English/EU1KEN_.html
If you use the product feature beyond the 60 day evaluation period, you
must submit the appropriate payment to Cisco for the license. After the
60 day  evaluation  period,  your  use of the  product  feature will be
governed  solely by the Cisco  end user license agreement (link above),
together  with any supplements  relating to such product  feature.  The
above  applies  even if the evaluation  license  is  not  automatically
terminated  and you do  not receive any notice of the expiration of the
evaluation  period.  It is your  responsibility  to  determine when the
evaluation  period is complete and you are required to make  payment to
Cisco for your use of the product feature beyond the evaluation period.

Your  acceptance  of  this agreement  for the software  features on one
product  shall be deemed  your  acceptance  with  respect  to all  such
software  on all Cisco  products  you purchase  which includes the same
software.  (The foregoing  notwithstanding, you must purchase a license
for each software  feature you use past the 60 days evaluation  period,
```

```
so  that  if you enable a software  feature on  1000  devices, you must
purchase 1000 licenses for use past  the 60 day evaluation period.)

Activation  of the  software command line interface will be evidence of
your acceptance of this agreement.


ACCEPT? [yes/no]: yes
Router(config)#
*Oct 25 22:05:27.626: %LICENSE-6-EULA_ACCEPT_ALL: The Right to Use End User License
Agreement is accepted
Router(config)#
Router(config)# end
Router#
```

# Verifying Licenses and Other Licensing Tasks

See the *"Cisco IOS Software Activation Tasks and Commands"* chapter of the *Cisco IOS Software Activation Configuration Guide* for information about the following topics and more:

- Software activation tasks, such as displaying and verifying licenses
- Software activation processes, such as rehosting and RMA

Use the **show license**, **show license all**, and **show license detail** commands in the privileged EXEC mode to see information about all the Cisco IOS software licenses. The following example is a sample output of the **show license** command:

```
Router# show license
Index 1 Feature: ipbasek9
Index 2 Feature: securityk9
        Period left: Not Activated
        Period Used: 0  minute 0  second
        License Type: EvalRightToUse
        License State: Not in Use, EULA not accepted
        License Count: Non-Counted
        License Priority: None
Index 3 Feature: uck9
        Period left: Not Activated
        Period Used: 0  minute  0  second
        License Type: EvalRightToUse
        License State: Not in Use, EULA not accepted
        License Count: Non-Counted
        License Priority: None
Index 4 Feature: datak9
        Period left: Not Activated
        Period Used: 0  minute  0  second
        License Type: EvalRightToUse
        License State: Not in Use, EULA not accepted
        License Count: Non-Counted
        License Priority: None
Index 5 Feature: NtwkEssSuitek9
        Period left: Not Activated
        Period Used: 0  minute  0  second
        License Type: EvalRightToUse
        License State: Not in Use, EULA not accepted
        License Count: Non-Counted
        License Priority: None
Index 6 Feature: CollabProSuitek9
        Period left: Not Activated
        Period Used: 0  minute  0  second
        License Type: EvalRightToUse
```

```
                              License State: Not in Use, EULA not accepted
                              License Count: Non-Counted
                              License Priority: None
              Index 7 Feature: LI
              Index 8 Feature: ios-ips-update
                              Period left: Not Activated
                              Period Used: 0  minute  0  second
                              License Type: EvalRightToUse
                              License State: Not in Use, EULA not accepted
                              License Count: Non-Counted
                              License Priority: None
              Index 9 Feature: SNASw
                              Period left: Not Activated
                              Period Used: 0  minute  0  second
                              License Type: EvalRightToUse
                              License State: Not in Use, EULA not accepted
                              License Count: Non-Counted
                              License Priority: None
              Index 10 Feature: HSEC-K9
              Index 11 Feature: cme-srst
                              Period left: Not Activated
                              Period Used: 0  minute  0  second
                              License Type: EvalRightToUse
                              License State: Not in Use, EULA not accepted
                              License Count: 0/0  (In-use/Violation)
                              License Priority: None
              Index 12 Feature: mgmt-plug-and-play
                              Period left: Life time
                              License Type: Permanent
                              License State: Active, In Use
                              License Count: Non-Counted
                              License Priority: Medium
              Index 13 Feature: mgmt-lifecycle
                              Period left: Life time
                              License Type: Permanent
                              License State: Active, In Use
                              License Count: Non-Counted
                              License Priority: Medium
              Index 14 Feature: mgmt-assurance
                              Period left: Life time
                              License Type: Permanent
                              License State: Active, In Use
                              License Count: Non-Counted
                              License Priority: Medium
              Index 15 Feature: mgmt-onplus
                              Period left: Life time
                              License Type: Permanent
                              License State: Active, In Use
                              License Count: Non-Counted
                              License Priority: Medium
              Index 16 Feature: mgmt-compliance
                              Period left: Life time
                              License Type: Permanent
                              License State: Active, In Use
                              License Count: Non-Counted
                              License Priority: Medium

Router#
```

The following is a sample output of the **show license detail** command:

```
Router# show license detail
Index: 1       Feature: CollabProSuitek9              Version: 1.0
              License Type: EvalRightToUse
```

```
                      License State: Not in Use, EULA not accepted
                          Evaluation total period: 8   weeks 4   days
                          Evaluation period left: 8   weeks 4   days
                          Period used: 0   minute   0   second
                      License Count: Non-Counted
                      License Priority: None
                      Store Index: 5
                      Store Name: Built-In License Storage
Index: 2        Feature: NtwkEssSuitek9                   Version: 1.0
                      License Type: EvalRightToUse
                      License State: Not in Use, EULA not accepted
                          Evaluation total period: 8   weeks 4   days
                          Evaluation period left: 8   weeks 4   days
                          Period used: 0   minute   0   second
                      License Count: Non-Counted
                      License Priority: None
                      Store Index: 4
                      Store Name: Built-In License Storage
Index: 3        Feature: SNASw                            Version: 1.0
                      License Type: EvalRightToUse
                      License State: Not in Use, EULA not accepted
                          Evaluation total period: 8   weeks 4   days
                          Evaluation period left: 8   weeks 4   days
                          Period used: 0   minute   0   second
                      License Count: Non-Counted
                      License Priority: None
                      Store Index: 7
                      Store Name: Built-In License Storage
Index: 4 Feature: cme-srst                      Version: 1.0
                      License Type: EvalRightToUse
                      License State: Not in Use, EULA not accepted
                          Evaluation total period: 8   weeks 4   days
                          Evaluation period left: 8   weeks 4   days
                          Period used: 0   minute   0   second
                      License Count: 0/0  (In-use/Violation)
                      License Priority: None
                      Store Index: 8
                      Store Name: Built-In License Storage
Index: 5 Feature: datak9                         Version: 1.0
                      License Type: EvalRightToUse
                      License State: Not in Use, EULA not accepted
                          Evaluation total period: 8   weeks 4   days
                          Evaluation period left: 8   weeks 4   days
                          Period used: 0   minute   0   second
                      License Count: Non-Counted
                      License Priority: None
                      Store Index: 2
                      Store Name: Built-In License Storage
Index: 6 Feature: ios-ips-update                  Version: 1.0
                      License Type: EvalRightToUse
                      License State: Not in Use, EULA not accepted
                          Evaluation total period: 8   weeks 4   days
                          Evaluation period left: 8   weeks 4   days
                          Period used: 0   minute   0   second
                      License Count: Non-Counted
                      License Priority: None
                      Store Index: 6
                      Store Name: Built-In License Storage
Index: 7 Feature: mgmt-assurance                  Version: 1.0
                      License Type: Permanent
                      License State: Active, In Use
                      License Count: Non-Counted
                      License Priority: Medium
                      Store Index: 1
```

```
                    Store Name: Primary License Storage
          Index: 8 Feature: mgmt-compliance            Version: 1.0
                    License Type: Permanent
                    License State: Active, In Use
                    License Count: Non-Counted
                    License Priority: Medium
                    Store Index: 2
                    Store Name: Primary License Storage
          Index: 9 Feature: mgmt-lifecycle             Version: 1.0
                    License Type: Permanent
                    License State: Active, In Use
                    License Count: Non-Counted
                    License Priority: Medium
                    Store Index: 3
                    Store Name: Primary License Storage
          Index: 10 Feature: mgmt-onplus               Version: 1.0
                    License Type: Permanent
                    License State: Active, In Use
                    License Count: Non-Counted
                    License Priority: Medium
                    Store Index: 4
                    Store Name: Primary License Storage
          Index: 11 Feature: mgmt-plug-and-play        Version: 1.0
                    License Type: Permanent
                    License State: Active, In Use
                    License Count: Non-Counted
                    License Priority: Medium
                    Store Index: 0
                    Store Name: Primary License Storage
          Index: 12 Feature: securityk9                Version: 1.0
                    License Type: EvalRightToUse
                    License State: Not in Use, EULA not accepted
                        Evaluation total period: 8  weeks 4  days
                        Evaluation period left: 8  weeks 4  days
                        Period used: 0  minute  0  second
                    License Count: Non-Counted
                    License Priority: None
                    Store Index: 0
                    Store Name: Built-In License Storage
          Index: 13 Feature: uck9                      Version: 1.0
                    License Type: EvalRightToUse
                    License State: Not in Use, EULA not accepted
                        Evaluation total period: 8  weeks 4  days
                        Evaluation period left: 8  weeks 4  days
                        Period used: 0  minute  0  second
                    License Count: Non-Counted
                    License Priority: None
                    Store Index: 1
                    Store Name: Built-In License Storage
Router#
```

The following is a sample output of the **show license all** command:

```
Router# show license all
License Store: Primary License Storage
StoreIndex: 0   Feature: mgmt-plug-and-play           Version: 1.0
        License Type: Permanent
        License State: Active, In Use
        License Count: Non-Counted
        License Priority: Medium
StoreIndex: 1   Feature: mgmt-assurance               Version: 1.0
        License Type: Permanent
        License State: Active, In Use
        License Count: Non-Counted
```

```
                    License Priority: Medium
StoreIndex: 2   Feature: mgmt-compliance                Version: 1.0
        License Type: Permanent
        License State: Active, In Use
        License Count: Non-Counted
        License Priority: Medium
StoreIndex: 3   Feature: mgmt-lifecycle                 Version: 1.0
        License Type: Permanent
        License State: Active, In Use
        License Count: Non-Counted
        License Priority: Medium
StoreIndex: 4   Feature: mgmt-onplus                    Version: 1.0
        License Type: Permanent
        License State: Active, In Use
        License Count: Non-Counted
        License Priority: Medium
License Store: Built-In License Storage
StoreIndex: 0   Feature: securityk9                     Version: 1.0
        License Type: EvalRightToUse
        License State: Not in Use, EULA not accepted
            Evaluation total period: 8   weeks 4   days
            Evaluation period left: 8   weeks 4   days
            Period used: 0   minute   0   second
        License Count: Non-Counted
        License Priority: None
StoreIndex: 1   Feature: uck9                           Version: 1.0
        License Type: EvalRightToUse
        License State: Not in Use, EULA not accepted
            Evaluation total period: 8   weeks 4   days
            Evaluation period left: 8   weeks 4   days
            Period used: 0   minute   0   second
        License Count: Non-Counted
        License Priority: None
StoreIndex: 2   Feature: datak9                         Version: 1.0
        License Type: EvalRightToUse
        License State: Not in Use, EULA not accepted
            Evaluation total period: 8   weeks 4   days
            Evaluation period left: 8   weeks 4   days
            Period used: 0   minute   0   second
        License Count: Non-Counted
        License Priority: None
StoreIndex: 3 Feature: NtwkEssSuitek9                   Version: 1.0
        License Type: EvalRightToUse
        License State: Not in Use, EULA not accepted
            Evaluation total period: 8   weeks 4   days
            Evaluation period left: 8   weeks 4   days
            Period used: 0   minute   0   second
        License Count: Non-Counted
        License Priority: None
StoreIndex: 4 Feature: CollabProSuitek9                 Version: 1.0
        License Type: EvalRightToUse
        License State: Not in Use, EULA not accepted
            Evaluation total period: 8   weeks 4   days
            Evaluation period left: 8   weeks 4   days
            Period used: 0   minute   0   second
        License Count: Non-Counted
        License Priority: None
StoreIndex: 5 Feature: ios-ips-update                   Version: 1.0
        License Type: EvalRightToUse
        License State: Not in Use, EULA not accepted
            Evaluation total period: 8   weeks 4   days
            Evaluation period left: 8   weeks 4   days
            Period used: 0   minute   0   second
        License Count: Non-Counted
```

```
        License Priority: None
StoreIndex: 6 Feature: SNASw                        Version: 1.0
        License Type: EvalRightToUse
        License State: Not in Use, EULA not accepted
            Evaluation total period: 8  weeks 4  days
            Evaluation period left: 8  weeks 4  days
            Period used: 0  minute  0  second
        License Count: Non-Counted
        License Priority: None
StoreIndex: 7 Feature: cme-srst                     Version: 1.0
        License Type: EvalRightToUse
        License State: Not in Use, EULA not accepted
            Evaluation total period: 8  weeks 4  days
            Evaluation period left: 8  weeks 4  days
            Period used: 0  minute  0  second
        License Count: 0/0  (In-use/Violation)
Router#
```

Use the **show license suites** command in the privileged EXEC mode to see information about Cisco One Suite Licenses.

The following example shows the output of the command:

```
Router#show license suites
Suites Information
-----------------

FoundationSuiteK9:
securityk9
datak9


AdvUCSuiteK9:
uck9
cme-srst
cube
```

# RTU Migration

This section describes customer scenarios with regard to migrating to Existing or Lifetime RTU release and recommends actions to take before upgrading.

The initial version of RTU release (Existing RTU) contains built-in evaluation licenses valid for 12 years and Lifetime RTU licenses that are similar to permanent licenses, in that they are built into the IOS image and avoid the overhead of license installation.

> **Note** Permanent licenses are not affected by any IOS release upgrade.

The first course of action is to consider what release your router is running and then follow the recommended actions if any. This section contains the following topics:

# RTU Releases

The IOS software releases to consider are categorized as follows:

- Preceding RTU
- Existing RTU
- Lifetime RTU

## Preceding RTU

Preceding RTU releases are customers' running IOS releases with 60 days of evaluation licenses. These include the following releases:

- 15.0(1)M; 15.0(1)M1; 15.0(1)M2; 15.0(1)M3
- 15.1(1)T; 15.1(1)T1
- 15.1(2)T; 15.1(2)T1
- Any 12.4T release

Customers running these releases with evaluation licenses and planning to upgrade to Existing or Lifetime RTU releases are affected. They should follow the recommended actions specified under Preceding RTU to Existing/Lifetime migration paths.

## Existing RTU

Initial RTU support was provided in the Existing RTU releases listed below:

- 15.0(1)M4; 15.0(1)M5
- 15.1(1)T2; 15.1(1)T3
- 15.1(2)T2; 15.1(2)T3
- 15.1(3)T; 15.1(3)T1
- 15.1(4)M

Such arrangement basically provided 12-year evaluation licenses and was intended to be a temporary solution until Lifetime RTU support was available. This temporary RTU solution provided immediate relief for customers facing licensing-related overhead.

If you are running Existing RTU releases and planning to upgrade to Lifetime RTU releases, please follow the recommended actions specified under Existing RTU to Lifetime RTU migration paths.

## Lifetime RTU

A Lifetime RTU release license includes the following:

1. Initial evaluation period of 60 days
2. Transition to Lifetime RTU license without customer intervention

RTU transition warning/complete Syslogs/Traps are provided 10 days and 5 days before transition and on the actual day of transition.

Customers running the following Lifetime RTU releases are not impacted:

- 15.0(1)M6 or later
- 15.1(1)T4 or later
- 15.1(2)T4 or later

- 15.1(3)T2 or later

- 15.1(4)M1 or later

- 15.2(1)T or later

## Global EULA Acceptance

Customers migrating to Lifetime RTU are required to accept the global end user license agreement with the Exising RTU release. This is because the Lifetime RTU keys have changed and EULA needs to be accepted again to ensure a smooth transition.

Please perform the following actions when required:

```
Router(config)# license accept end user agreement
PLEASE  READ THE  FOLLOWING TERMS  CAREFULLY. INSTALLING THE LICENSE OR
LICENSE  KEY  PROVIDED FOR  ANY CISCO  PRODUCT  FEATURE  OR  USING SUCH
PRODUCT  FEATURE  CONSTITUTES  YOUR  FULL ACCEPTANCE  OF  THE FOLLOWING
TERMS.  YOU MUST NOT PROCEED FURTHER IF YOU ARE NOT WILLING TO BE BOUND
BY ALL THE TERMS SET FORTH HEREIN.

Use of this product feature requires an additional license from Cisco,
together with an additional  payment. You may use this product feature
on an evaluation basis, without payment to Cisco, for 60 days. Your use
of  the  product,  including  during the 60 day  evaluation  period, is
subject to the Cisco end user license agreement
http://www.cisco.com/en/US/docs/general/warranty/English/EU1KEN_.html
If you use the product feature beyond the 60 day evaluation period, you
must submit the appropriate payment to Cisco for the license. After the
60 day evaluation  period,  your  use of  the  product  feature will be
governed  solely by the Cisco  end user license agreement (link above),
together  with any supplements  relating to such product  feature.  The
above  applies  even if the evaluation  license  is  not  automatically
terminated  and you do  not receive any notice of the expiration of the
evaluation  period.  It is your  responsibility  to  determine when the
evaluation  period is complete and you are required to make  payment to
Cisco for your use of the product feature beyond the evaluation period.

Your  acceptance  of  this agreement  for the software  features on one
product  shall be deemed  your  acceptance  with  respect  to all  such
software  on all Cisco  products  you purchase  which includes the same
software.  (The foregoing  notwithstanding, you must purchase a license
for each software  feature you use past the 60 days evaluation  period,
so  that  if you enable a software  feature on  1000  devices, you must
purchase 1000 licenses for use past  the 60 day evaluation period.)

Activation of the software command line interface will be evidence of
your acceptance of this agreement.

ACCEPT? [yes/no]: yes
Router(config)# end

Jun 14 21:39:59.021: %LICENSE-6-EULA_ACCEPT_ALL: The Right to Use End User License
Agreement is accepted
Router# wr
Building configuration...
[OK]
```

## RTU Migration Paths

There are basically two IOS release migration paths a typical customer must take to upgrade to Existing or Lifetime RTU release.

1. Preceding RTU Release —> Existing/Lifetime RTU Release
2. Existing RTU Release —> Lifetime RTU Release

Figure 2 shows the steps for migrating to Existing or Lifetime RTU.

*Figure 2*      *Steps for RTU Migration*

| Preceding RTU | Existing RTU | Lifetime RTU |
|---|---|---|
| **Permanent Licenses (No eval license in use)** | No Further Action Required | No Further Action Required |
| **Evaluation Licenses (At least one eval license in use)** | See Preceding RTU -> Existing/Lifetime RTU Migration Path | See Preceding RTU -> Existing/Lifetime RTU Migration Path |
| | **Permanent Licenses (No eval license in use)** | No Further Action Required |
| | **Evaluation/RTU Licenses (At least one eval/RTU license in use)** | See Existing RTU -> Lifetime RTU Migration Path |

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### Preceding RTU —> Existing/Lifetime RTU Migration Path

This procedure covers customers running IOS Preceding RTU releases with evaluation licenses that have not expired and wishing to migrate to Existing or Lifetime RTU releases.

The Existing/Lifetime RTU license keys have changed and require re-acceptance of the end user license agreement. A migration performed without the recommended upgrade procedure results in a loss of functionality related to features that relied on the presence of Preceding RTU license.

Figure 3 shows the migration path from Preceding RTU to Existing/Lifetime RTU releases.

*Figure 3        Preceding RTU to Existing/Lifetime RTU Migration*
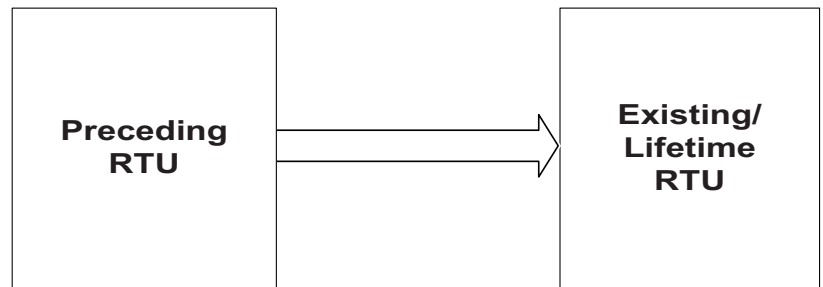


Before upgrading, perform the following steps:

**Step 1** On the Preceding RTU router, save the startup-config to a location of your choice—it could be a compact flash, tftp server, etc. Note: If any other configuration is required before upgrade, this must be completed and the configuration should be saved before proceeding with this step. The example below is for a tftp server.

```
Router# copy startup-config tftp://<tftp_server>/<user_id>/startup-config
```

**Step 2** Edit the startup-config and add the "license accept end user agreement" as shown below in bold right after the "license udi pid …." entry.

```
license udi pid C3900-SPE250/K9 sn FHH1313001U
license accept end user agreement
```

**Step 3** Copy the startup-config back to the Preceding RTU router. The example below is for tftp a server.

```
Router# copy tftp://<tftp_server>/<user_id>/startup-config startup-config
```

**Step 4** Do *not* save the configuration.

**Step 5** Reload the router, without saving the configuration, with the upgrade release, either Existing or Lifetime RTU release. After reload, you can see that the configurations related to licenses are rejected.

**Step 6** Do *not* save the configuration.

**Step 7** Immediately reload again, without saving the configuration, with the same Existing or Lifetime RTU release. After reload, all the configurations are preserved.

**Step 8** Verify license-related configurationss and feature functionality.

## Existing RTU —> Lifetime RTU Migration Path

This procedure covers customers running IOS Existing RTU releases with Eval/RTU licenses and wishing to upgrade to Lifetime RTU releases.

The Lifetime RTU license keys have changed and require re-acceptance of the end user license agreement. A migration performed without the recommended upgrade procedure  results in a loss of functionality related to features that relied on the presence of Existing RTU release license.

Figure 4 shows the migration path from Preceding RTU to Existing/Lifetime RTU releases.

*Figure 4*        *Existing RTU to Lifetime RTU Migration*
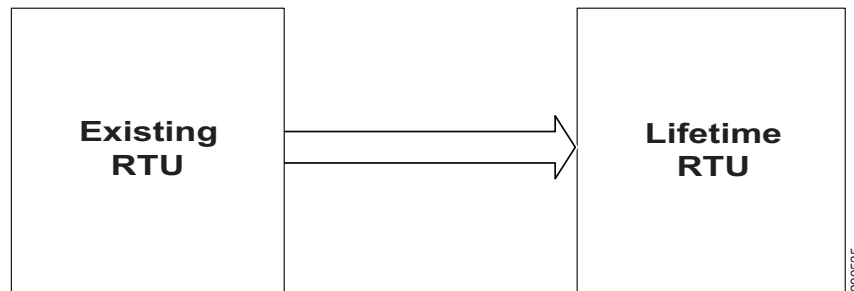


Before upgrading, perform the following steps:

**Note**    If the global "license accept end user agreement" has already been performed on the Existing RTU release router, then Steps 1 and 2 can be skipped.

**Step 1**    On the Existing RTU release router, configure the global end user license agreement:

```
Router#(config) license accept end user agreement
```

**Step 2**    Save the configuration.

```
Router# write
```

**Step 3**    Upgrade to Lifetime RTU IOS Release.

## Lifetime RTU (After Migration)

Once you migrate to a Lifetime RTU release, as the license keys have changed, the RTU license restarts from time zero. This means that for the first 60 days, the Lifetime RTU license is considered to be in evaluation mode. The show CLI output displays the "EvalRightToUse" for the initial 60 days. An example of this output is shown below.

```
Router# show license
Index 4 Feature: datak9
        Period left: 8  weeks 4  days
        Period Used: 0  minute 0  second
        License Type: EvalRightToUse
        License State: Active, In Use
        License Count: Non-Counted
        License Priority: Low
```

After approximately 60 days, the Lifetime RTU license transitions to "RightToUse" without any further customer intervention. Syslogs and Traps are sent 10 days and 5 days before transition and on the actual day of transition to provide notice of pending/completion of license transition. After the transition, the show CLI output displays "RightToUse" for the License Type. An example of this output is shown below.

```
Router# show license
Index 4 Feature: datak9
        Period left: Life time
        License Type: RightToUse
        License State: Active, In Use
        License Count: Non-Counted
        License Priority: Low
```

# Simple Network Management Protocol

Software licenses can be installed and managed with network management systems using Simple Network Management Protocol (SNMP). For more information on using SNMP, see *Cisco IOS Software Activation Configuration Guide*

# RMA License Transfer

To transfer a software license from a failed device to a new device, go to the Cisco licensing portal at http://www.cisco.com/go/license.

**Note** You need the UDI of the defective as well as the RMA router to initiate an RMA replacement license.

**Note** To transfer a software license from a Cisco 3925 or Cisco 3945 ISR, use the SN and PID from the service performance engine (SPE) and not the chassis.

# Restoring Configuration Files on RMA Replacement Routers

This section describes the steps for RMA replacement routers if restoration of configuration files is required. This applies to RMA replacement routers received with Lifetime RTU release installed.

**Note** An *RMA router* is the router that is sent back to the manufacturer for RMA, while an *RMA replacement router* is a new router from the manufacturer.

Restoring configuration files on RMA replacement routers is a two-part process.

- First Part: Restoring Licenses
- Second Part: Restoring Configurations

## First Part: Restoring Licenses

Perform the following steps to bring up your RMA replacement router with the required licenses:

**Step 1** It is assumed that the startup-config was already saved, for example to a tftp server, compact flash, etc., before the router was sent for RMA. The example shown below is for a tftp server:

```
Router# copy startup-config tftp://<tftp_server>/<user_id>/startup-config
```

**Step 2**  Edit the saved startup-config with any text editor of your choice. Add the "license accept end user agreement" as shown below right after the "license udi pid..." line.

```
license accept end user agreement
```

**Step 3**  Copy the startup-config to your RMA replacement router as running config. This step is to bring back your configured licenses from the RMA router. Note that some configurations have been thrown out, although the objective here is to restore the licenses only. The example shown below is for a tftp server:

```
Router# copy tftp://<tftp_server>/<user_id>/startup-config running-config
```

**Step 4**  Save the configuration.

**Step 5**  Reload the RMA replacement router.

## Second Part: Restoring Configurations

Perform the following steps to restore the configurations on your RMA replacement router:

**Step 1**  Copy the startup-config to RMA replacement router as running config. This step will restore all the configurations. The example shown below is for a tftp server:

```
Router# copy tftp://<tftp_server>/<user_id>/startup-config running-config
```

**Step 2**  Save the configuration.

**Step 3**  Verify license-related configurations and feature functionality.

For additional information on RMA license transfer, see the *Cisco Software Activation Conceptual Overview* chapter in *Cisco IOS Software Activation Configuration Guide*.

# Disabling Advanced IP Service License on 880 Series SKUs

Perform the following steps to disable the advanced IP service license on 880 series SKUs:

**Step 1**  license boot module c880-data level advsecurity

**Step 2**  write mem

**Step 3**  reload

**Step 4**  license clear advipservices

**Step 5**  no license boot module c880-data level advsecurity

**Step 6**  write mem

**Step 7**  reload

# Software Activation on Modules

For information on the technology package required to support modules on the Cisco 2900 series and 3900 series ISR, see the *Module Support on Cisco Integrated Services Routers Generation 2* document.

For information on software activation and software applications supported on a module, see the documentation set for the module and the software application.

# Additional References

The following sections provide references related to the software activation feature.

# Related Documents and Links

| Related Topic | Document Title |
|---|---|
| Cisco License Manager | *User Guide for Cisco License Manager* |
| | Cisco License Manager Online Help |
| | API Reference Guides for Cisco License Manager |
| Smart Licensing | *Cisco Smart Software Licensing* |
| | *Cisco Smart Licensing Client* |
| Software Activation using Cisco IOS CLI and Cisco Call Home | *Cisco IOS Software Activation Configuration Guide* |
| | Cisco IOS Software Activation |
| Feature Documents | *Cisco Services for IPS on IOS* |
| | *Configuring Cisco Unified Border Element with Gatekeeper* |
| | *Cisco Software Activation QA: Gatekeeper: A Cisco Unified Border Element Component* |
| Q&A and White paper | *Software Activation Q&A for Cisco 860 and 880 Integrated Services Routers* |
| | *Cisco's Integrated Services Routers Generation Two Licensing and Packaging* |
| Data Sheets | *Cisco 860 Series Integrated Services Routers* |
| | *Cisco 880 Series Integrated Services Routers* |
| | *Cisco 890 Series Integrated Services Routers* |
| | *Cisco 1941 Series Integrated Services Routers* |
| | *Cisco 2900 Series Integrated Services Routers* |
| | *Cisco 3900 Series Integrated Services Routers* |
| | *Cisco 4000 Series Integrated Services Routers* |

# MIBs

| Description | Link |
| --- | --- |
| Use Cisco MIB Locator to locate and download MIBs for selected platforms, Cisco software releases, and feature sets. | http://www.cisco.com/go/mibs |

# Technical Assistance

| Description | Link |
| --- | --- |
| The Cisco Support website provides extensive online resources, including documentation and tools for troubleshooting and resolving technical issues with Cisco products and technologies. | http://www.cisco.com/techsupport |
| To receive security and technical information about your products, you can subscribe to various services, such as the Product Alert Tool (accessed from Field Notices), the Cisco Technical Services Newsletter, and Really Simple Syndication (RSS) Feeds. | |
| Access to most tools on the Cisco Support website requires a Cisco.com user ID and password. | |