



Cisco IOS Software Activation

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This document describes the tasks used to activate software using the Cisco IOS Software Activation feature, license keys, and Cisco EXEC commands. Activating software from a Cisco device has the benefit of being able to license software without the need for additional application software.

Finding Feature Information in This Module

Your software release may not support all the features documented in this module. For the latest feature information and caveats, see the release notes for your platform and software release. To find information about the features documented in this module, and to see a list of the releases in which each feature is supported, see the [“Feature Information for Cisco IOS Software Activation”](#) section on page 22.

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

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Restrictions for Cisco IOS Software Activation

Not all Cisco router and switch platforms can use the Cisco IOS Software Activation feature. Use the Cisco Feature Navigator at <http://www.cisco.com/go/cfn> and the table in the “[Feature Information for Cisco IOS Software Activation](#)” section on page 22, to determine which platforms and images support the Cisco IOS Software Activation feature.

For the stackable switches that support the Cisco IOS Software Activation feature, one switch must act as primary and the others as secondaries. The primary switch performs management and administrative operations on itself as well as on the secondary switches.

Information About the Cisco IOS Software Activation

You need to understand the following concepts before using the Cisco IOS Software Activation feature and License Call Home commands:

- [Cisco IOS Software Activation Command Line Interface, page 2](#)
- [License Activation MIB Support, page 3](#)
- [Software End User License Agreement, page 3](#)

Cisco IOS Software Activation Command Line Interface

The Cisco IOS Software Activation EXEC commands support the following licensing processes:

- Install a license.
- Add a comment to a license.
- Back up all licenses.
- Remove unused licenses.
- Save device credentials.
- Rehost (revoke and transfer) a license.
- Troubleshoot license messages.
- Verify software image feature sets.

All control subsystems on a Cisco router or switch must have the license line to perform the necessary control and enforcement operations. You must have obtained the license file from either Cisco’s Product License Registration portal at <http://www.cisco.com/go/license> or by using the **license save** EXEC command.

For manual license fulfillment case, you enter a Product Activation Key (PAK) into the Cisco Product License Registration portal, which retrieves the Stock Keeping Units (SKUs) associated with the PAK. You then select the SKU and enter the Universal Device Identifier (UDI), a unique and unchangeable identifier of the device where the license should be installed. A license key is then e-mailed to you and you use that key to install the license.

License Activation MIB Support

The Cisco IOS Software Activation feature introduces the CISCO-LICENSE-MGMT-MIB to allow SNMP-based license management and administrative tasks. A description of this MIB can be found using tools at the following URL: <http://tools.cisco.com/ITDIT/MIBS/servlet/index> Use the MIB Locator tool and the Search for MIB selection box, to select CISCO-ENHANCED-LICENSING-MIB.

The UDI is also associated with the Entity Name and Product Description data elements for the management information base (MIB) system. The MIB nomenclature for Entity Name is entPhysicalName and for Product Description is entPhysicalDescr.

Software End User License Agreement

You can read the terms and conditions of the [End User License Agreement](http://www.cisco.com/en/US/docs/general/warranty/English/EU1KEN_.html) online at the following URL: http://www.cisco.com/en/US/docs/general/warranty/English/EU1KEN_.html

How to Activate Software from a Cisco IOS Device

This section contains the following procedures:

- [Installing and Upgrading Licenses Using Software Activation Commands, page 3](#)
- [Managing Licenses Using Software Activation Commands, page 5](#)
- [Removing Licenses Using Software Activation Commands, page 13](#)
- [Troubleshooting Licensing, page 16](#)

Installing and Upgrading Licenses Using Software Activation Commands

A license is obtained and installed following these basic steps:

- Purchase a PAK for the desired type of license.
- Submit the PAK code and UDI of the switch to Cisco's online license portal.
- Install the license file returned from license portal to the device using Cisco IOS commands. (This step can also be done using the Cisco License Manager application, which can be downloaded at <http://www.cisco.com/go/clm>.)
- Reboot the device (if required). The new feature set is enabled.

Perform this task to manually install or upgrade a license using the Cisco IOS **install license** command. The license file must have already been received from Cisco's licensing portal or have been backed up using the Cisco IOS **license save** command.

SUMMARY STEPS

1. Obtain the PAK.
2. **enable**
3. **show license udi**
4. Convert the PAK to a license.
5. **license install** *stored-location-url*
6. Reboot if required.

DETAILED STEPS

Step 1 Obtain the PAK.

PAKs are purchasable items, ordered in the same manner as other Cisco equipment. PAKs are used to obtain license files for feature sets on specific classes of Cisco devices.

Step 2 **enable**

Use this command to enable privileged EXEC mode:

```
Router> enable
```

Enter your password if prompted.

Step 3 **show license udi**

Display all licensable UDIs in the system. The following example shows the type of information displayed:

```
Router# show license udi
```

Device#	PID	SN	UDI
*0 AS54XM-AC-RPS	JAE0948QXKD	AS54XM-AC-RPS:JAE0948QXKD	

Step 4 Convert the PAK to a license (www.cisco.com/go/license).

After entering the appropriate information at the above URL, you will receive an email containing the license information that you can use to install the license. Or you can simply click the **Install** button on the web page.

Step 5 **license install** *stored-location-url*

Install the license. As shown in the following example (which is truncated for easier readability), the command initiates several actions that result in either the printing of an end user license agreement with prompts to accept the agreement (evaluation/extension licenses only) or messages indicating that the license is installed. When a license is successfully installed, a message will confirm the installation and state whether or not the licensed feature is present in the current image.

```
Router# license install tftp://infra-sun/<user>/license/5400/38a.lic
```

```
Installing licenses from "tftp://infra-sun/<user>/license/5400/38a.lic"
```

```
Loading <user>/license/5400/38a.lic from 172.19.211.47 (via GigabitEthernet0/0): !
[OK - 1192 bytes]
```

```
Extension licenses are being installed in the device with UDI "AS54XM-AC-RPS:JAE0948QXKD"
for the following features:
```

```
Feature Name: gsmamrnb-codec-pack
```

```
PLEASE READ THE FOLLOWING TERMS CAREFULLY. . .
```

```
ACCEPT? [yes/no]: yes
```

```
Issue 'license feature gsmamrnb-codec-pack' command to enable the license  
Installing...Feature:gsmamrnb-codec-pack...Successful:Supported
```

The installation process does not install duplicate licenses. The following message is displayed when duplicate licenses are detected:

```
Installing...Feature:xxx-xxx-xxx...Skipped:Duplicate
```

Step 6 Reboot if required.

Managing Licenses Using Software Activation Commands

The following sections describe how to manage software licenses:

- [Adding a Comment to a License, page 5](#)
- [Saving All Licenses, page 7](#)
- [Saving License Credential Information, page 7](#)
- [Displaying All Licenses, page 8](#)
- [Displaying License Details, page 9](#)
- [Verifying License Feature Sets, page 9](#)

Adding a Comment to a License

Perform this task to add comments to a license file.

SUMMARY STEPS

1. **enable**
2. **license comment** {**add** *feature-name comment* | **delete**} (Cisco router and Catalyst 3560-E switch platforms)
or
license comment {**add** *feature-name comment switch switch-num* | **delete**} (Cisco Catalyst 3750-E switch platforms)
3. **show license file** [**switch** *switch-num*]

DETAILED STEPS

Step 1 **enable**

Use this command to enable privileged EXEC mode:

```
Router> enable
```

Enter your password if prompted.

Step 2 **license comment** {**add** *feature-name comment* | **delete**}

or

license comment {**add** *feature-name comment* | **switch** *switch-num* | **delete**}

You can use this command to add or delete information about a specific license. The command checks that a license associated with the specified feature is present in license storage. If a switch number is specified, this command is executed on the specified switch.

As the following example shows, when the license is present and multiple license lines are stored, you are prompted to select a license line. This action helps to distinguish licenses. Type the number at the Select Index to Add Comment prompt, to select the license.

```
Router# license comment add gsmamrnb-codec-pack "Use this permanent license"
```

```
Feature: gsmamrnb-codec-pack
  1 License Type: Evaluation
  License State: Inactive
    Evaluation total period: 20 hours 0 minute
    Evaluation period left: 20 hours 0 minute
  License Addition: Additive
  Comment:
  Store Index: 0
  Store Name: Primary License Storage

  2 License Type: Permanent
  License State: Active, Not in Use
  License Addition: Exclusive
  Comment:
  Store Index: 1
  Store Name: Primary License Storage
```

```
Select Index to Add Comment [1-2]: 2
```

```
% Success: Adding comment "Use this permanent license" succeeded
```

Step 3 **show license file** [**switch** *switch-num*]

Use this command to display comments added to a Cisco software license file. If the device is a switch, this command obtains statistics from the specified switch. Following is an example of the type of information displayed:

```
Router# show license file
```

```
License Store: Primary License Storage
Store Index: 0
License: 11 gsmamrnb-codec-pack 1.0 LONG TRIAL DISABLED 20 DISABLED STANDALONE ADD INFINITE_KEYS INFINITE_KEYS NEVER NEVER NiL SLM_CODE CL_ND_LCK NiL *1YCHJRBMWKZAED2400 NiL NiL NiL 5_MINS <UDI><PID>AS54XM-AC-RPS</PID><SN>JAE0948QXKD</SN></UDI> ,Jx8qaVf:ixWah9PsXjkVnmz7gWh:cxdf9nUkzY6o8fRuQbu,7wTUz237Cz6g9VjfrCk,0a2Pdo,Ow6LWxcCRFL:x cTxwnffn9i,4,aUWv8rL50opDUGAsFnxLsvofRkCafm$<WLC>AQEBIQAB//9NA+1mUwfs/lD0dmdF9kyX8wDrua1TZhnnAy6Mxs1dTboIcRaahKxJJdj4Oiw3wscqvPiAmWSaEmUT56rstk6gvmj+EQKRfD9A0ime1czrdKxfILT0LaXT416nwmfp92Tya6vIQ4Fn1BdqJ1sMzXeSq8PmVcTU9A4o9hil9vKur8N9F885D9GVF0bJHciT5M=</WLC>
Comment: Use this permanent license.
Hash: ElWjIQo4qs19g8cpnpogP/0DeY=
```

Saving All Licenses

Perform this task to save copies of all licenses in a specified storage area. Saved licenses are restored using the **license install** command.

SUMMARY STEPS

1. **enable**
2. **license save** *lic-location-url* [**switch** *switch-num*]

DETAILED STEPS

Step 1**enable**

Use this command to enable privileged EXEC mode:

```
Router> enable
```

Enter your password if prompted.

Step 2**license save** *lic-location-url* [**switch** *switch-num*]

Use this command to save copies of all licenses in a device and store them in a format required by the **license install** command, in the specified storage location.

The license storage location can be a directory or a URL that points to a file system. Use the **?** command to see the storage locations supported by your device.

The optional **switch** *switch-num* keyword and argument send this request to a specific switch in a switch stack.

```
Router# license save flash:all_licenses.lic  
license lines saved ..... to flash:all_licenses.lic
```

Saving License Credential Information

To enact the rehost or resend process, a Device Credential is required. Cisco IOS licensing requires that the license files generated by Cisco's licensing back end for its devices be secure and tamper resistant. Security features are in place to authenticate a license by means of encrypted license credentials. If it becomes necessary to transfer a license from one device to another (which is called rehosting), a permission ticket is required. To generate the permission ticket, Cisco's licensing back end requires the device credential information.

Perform this task to save license credential information associated with a device to a specified storage area.

SUMMARY STEPS

1. **enable**
2. **license save credential** *location-to-save* [**switch** *switch-num*]

DETAILED STEPS

Step 1 **enable**

Use this command to enable privileged EXEC mode:

```
Router> enable
```

Enter your password if prompted.

Step 2 **license save credential** *location-to-save* [**switch** *switch-num*]

Use this command to save credential information associated with a device to a specified URL. Use the **?** command to see the storage locations supported by your device. The optional **switch** *switch-num* keyword and argument send this request to a specific switch in a switch stack.

```
Switch# license save credential flash:cred.lic
```

```
Device credential saved ..... to flash:cred.lic
```

Displaying All Licenses

Perform this task to display all licenses in a device.

SUMMARY STEPS

1. **enable**
2. **show license all**

DETAILED STEPS

Step 1 **enable**

Use this command to enable privileged EXEC mode:

```
Router> enable
```

Enter your password if prompted.

Step 2 **show license all**

The following example shows the type of information displayed:

```
Router# show license all
```

```
License Store: Primary License Storage
StoreIndex: 0 Feature: TEST_FEATURE_1 Version: 1.0
License Type: Trial
License State: Active, Not in Use, EULA accepted
Trial total period: 1 day 0 hour
Trial period left: 0 second
Lock type: Node locked
Vendor info <PID>AS54XM-AC-RPS</PID><SN>JAE0948QXJW</SN>
License Addition: Additive
License Generation version 135266304
License Precedence: 1
```

Displaying License Details

Perform this task to display information about licenses associated with a feature name.

**Note**

The feature name is optional. If a feature name is not provided, details of all licenses will be displayed.

SUMMARY STEPS

1. **enable**
2. **show license detail**

DETAILED STEPS

Step 1**enable**

Use this command to enable privileged EXEC mode:

```
Router> enable
```

Enter your password if prompted.

Step 2**show license detail**

The following example shows the type of information displayed:

```
Router# show license detail
```

```
Index: 1 Feature: gsmamrnb-codec-pack   Version: 1.0
  License Type: Evaluation
  License State: Active, Not in Use, EULA accepted
    Evaluation total period: 8 weeks 4 days
    Evaluation period left: 8 weeks 4 days
  Lock type: Non Node locked
  Vendor info
  License Addition: Additive
  License Generation version 135266304
  License Priority: Low
  Store Index: 0
  Store Name: Evaluation License Storage
```

Verifying License Feature Sets

Perform this task to display the list of licensed features that are available in an image.

SUMMARY STEPS

1. **enable**
2. **show license feature**

DETAILED STEPS

Step 1**enable**

Use this command to enable privileged EXEC mode:

```
Router> enable
```

Enter your password if prompted.

Step 2 show license feature

The following example shows the type of information displayed:

```
Router# show license feature
```

Feature name	Enforcement	Evaluation	Clear Allowed	Enabled
gsmamrnb-codec-pack	yes	yes	no	no

Additions to Outputs of Commands

The following generic commands have addition output for platforms that have licensing support:

- [show version, page 10](#)
- [show tech-support, page 11](#)
- [show running-config, page 12](#)
- [reload, page 13](#)

show version

The **show version** command displays the license unique device identifier (UDI) information. The following example shows the type of information displayed:

```
Router> show version
Cisco IOS Software, C2951 Software (C2951-UNIVERSALK9-M), Experimental Version
12.4(20090326:052343)
[rifu-xformers_3_25 130]
Copyright (c) 1986-2009 by Cisco Systems, Inc.
Compiled Thu 26-Mar-09 21:49 by rifu

ROM: System Bootstrap, Version 12.4(20090303:092436)
[BLD-xformers_dev.XFR_20090303-20090303_0101-53
107], DEVELOPMENT SOFTWARE

csl-xfr-enhance-2951 uptime is 3 days, 4 hours, 28 minutes
System returned to ROM by reload at 18:48:45 PST Mon Nov 26 1956
System image file is "flash0:c2951-universalk9-mz.SSA"
Last reload reason: Reload Command

...
...

Cisco C2951 (revision 1.0) with 1005568K/43008K bytes of memory.
Processor board ID FHH1211P037
3 Gigabit Ethernet interfaces
1 terminal line
1 cisco Special Services Engine(s)
DRAM configuration is 72 bits wide with parity enabled.
255K bytes of non-volatile configuration memory.
250880K bytes of ATA System CompactFlash 0 (Read/Write)

License Info:

License UDI:
```

```

-----
Device#      PID                SN
-----
*0          CISCO2951          FHH1211P037

Technology Package License Information for Module:'c2951'

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

Configuration register is 0x0

```

show tech-support

The **show tech-support** command displays the output of the **show license udi**, **show license file**, **show license detail**, **show license status**, and **show license statistics** commands. The following example shows the type of information displayed:

```

Router# show tech-support

----- show license udi -----
Device#      PID                SN                UDI
-----
*0          CISCO2951          FHH1211P037      CISCO2951:FHH1211P037

----- show license feature -----
Feature name      Enforcement  Evaluation  Subscription  Enabled
ipbasek9          no          no          no            no
securityk9        yes         yes         no            no
uc                yes         yes         no            yes
data              yes         yes         no            no
gatekeeper        yes         yes         no            no
LI                yes         no          no            no
SSL_VPN           yes         yes         no            no
ios-ips-update    yes         yes         yes           no
SNASw             yes         yes         no            no

----- show license file -----

License Store: Primary License Storage
License Store: Evaluation License Storage
Store Index: 0
License: 11 securityk9 1.0 LONG TRIAL DISABLED 1440 DISABLED STANDALONE AD
D INFINITE_KEYS INFINITE_KEYS NEVER NEVER NiL SLM_CODE DEMO NiL N
iL Ni NiL NiL 5_MINS NiL GT5YVbrMAdt0NY50UcKGFvLTjQ17P2o3g84hE8Tq
sOfu3Xph0N:2AmMdpMNxxKXSVG$<WLC>AQEBIQAB//+FugzZgqFJn/XhIxoyelg63
YJD++i6Qx6vVp0MVqrX2EinbufbTfGzc7/GHNZaDZqRqwInXo3s+nsLU7rOtdOxoI
xYZAo3LYmUJ+MFzsqlhKoJvLpYEvQ8H21MNUjVbhoN0gyIWsyiJaM8AQIkVBQFzhr
10GYo1VzdzfJfEPQIx6tZ++/Vtc/q3SF/5Ko8XCY=</WLC>

Comment:
Hash: CLWUVZgY84BMRT03Ji1YmIqwAQA=

```

```

----- show license detail -----
Index: 1          Feature: SNASw          Version: 1.0
License Type: Evaluation
License State: Active, Not in Use, EULA not accepted
    Evaluation total period: 8 weeks 4 days
    Evaluation period left: 8 weeks 4 days
Lock type: Non Node locked
Vendor info:
License Addition: Additive
License Generation version: 0x8100000
License Count: Non-Counted
License Priority: None
Store Index: 5
Store Name: Evaluation License Storage

----- show license status -----

License Type Supported
permanent          Non-expiring node locked license
extension          Expiring node locked license
evaluation         Expiring non node locked license
paid subscription  Expiring node locked subscription license
                  with valid end date
extension subscription Expiring node locked subscription license
evaluation subscription Expiring node locked subscription license

...
...
----- show license statistics -----

Administrative statistics
Install success count: 0
Install failure count: 0
Install duplicate count: 0
Comment add count: 0
Comment delete count: 0
Clear count: 0
Save count: 0
Save cred count: 1

Client statistics
Request success count: 1
Request failure count: 3
Release count: 0
Global Notify count: 4

```

show running-config

The **show running-config** command displays the UDI of the device. If the configuration file was copied from a different device, a warning is displayed upon reload. A UDI mismatch warning is also displayed during reload if the startup-config file has a different UDI than the platform UDI. The following example shows the type of information displayed:

```

router# show running-config

Building configuration...

Current configuration : 4772 bytes
!
version 12.4
no service pad

```

```
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
service internal
!
hostname csl-xfr-enhance-2951
!
...
...

license udi pid CISCO2951 sn FHH1211P037
license boot module c2951 technology-package securityk9 disable
license boot module c2951 technology-package uc
license boot module c2951 technology-package data
license call-home url https://tools-stage.cisco.com/SWIFT/Licensing
license agent listener http plaintext /lic-agent authenticate none
!
!
archive
  log config
    hidekeys
!
...
```

reload

The **reload** command shows the expired licenses, followed by expiring licenses sorted by period left and end date. The following example shows the type of information displayed:

```
router# reload
```

```
The following license(s) are expiring or have expired.
Features with expired licenses may not work after Reload.
Feature: uc,Status: expiring, Period Left: 7 wks 5 days
```

```
Proceed with reload? [confirm]
```

Removing Licenses Using Software Activation Commands

The following sections describe how to remove software licenses:

- [Clearing a License, page 13](#)
- [Rehosting \(Revoking and Transferring\) a License, page 15](#)

Clearing a License

Perform this task to remove a license entry from a permanent license file. Keep the following in mind when performing the steps:

- When executed, the **license clear** command lists all licenses, but some licenses such as built-in licenses cannot be cleared.
- Only licenses that have been added using the **license install** command are removed. Evaluation licenses are not removed.

- If a license is not in use, the **license clear** command displays all the licenses related to this feature and prompts you to make a selection. Different prompts are displayed, depending upon whether there are single or multiple licenses available in the device. The selected licenses are removed from the router or switch.
- If a license is in use, the **license clear** command may fail, although, depending upon the application policy using the license, some licenses may be cleared.
- When a switch is specified, the **license clear** command is issued on that switch. When a mixed stack platform is used, the primary switch must have installed the minimum licensing features required to support the licensing operations of the secondary switches. When this command is issued from a primary switch, the switch number is required to clear a license on that switch.

SUMMARY STEPS

1. **enable**
2. **license clear** *feature-name*
or
license clear *feature-name* **switch** *switch-num* (Cisco Catalyst 3750-E mixed stack switch and Cisco Catalyst 3560-E switch and switch stack platforms)
3. **show license detail**

DETAILED STEPS

Step 1 enable

Use this command to enable privileged EXEC mode:

```
Router> enable
```

Enter your password if prompted.

Step 2 license clear *feature-name* [**switch** *switch-num*]

Use this command to remove a license entry from license storage once it has been verified that the license line is valid and was explicitly installed.

The optional **switch** *switch-num* keyword and argument send this request to a specific switch in a switch stack.

You must select the index number of the license to clear. Type the number at the Select Index to Clear prompt, as shown in the following example:

```
Router# license clear gsmamrnb-codec-pack

Feature: gsmamrnb-codec-pack
  1 License Type: Evaluation
  License State: Inactive
    Evaluation total period: 20 hours 0 minute
    Evaluation period left: 20 hours 0 minute
  License Addition: Additive
  Comment:
  Store Index: 0
  Store Name: Primary License Storage

  2 License Type: Permanent
  License State: Active, Not in Use
  License Addition: Exclusive
  Comment:
  Store Index: 1
```

```
Store Name: Primary License Storage
```

```
Select Index to Clear [1-2]: 1
```

```
Are you sure you want to clear? (yes/[no]): yes
```

Step 3 show license detail

Use this command to verify that the license has been cleared.

```
Router# show license detail
```

```
Index: 1 Feature: gsmamrnb-codec-pack Version: 1.0
License Type: Permanent
License State: Active, Not in Use
Lock type: Node locked
Vendor info <UDI><PID>AS54XM-AC-RPS</PID><SN>JAE0948QXKD</SN></UDI>
License Addition: Exclusive
License Generation version 135266304
License Priority: Medium
Store Index: 1
Store Name: Primary License Storage
```

```
Index: 2 Feature: gsmamrnb-codec-pack Version: 1.0
License Type: Evaluation
License State: Inactive
Evaluation total period: 8 weeks 4 days
Evaluation period left: 8 weeks 4 days
Lock type: Non Node locked
Vendor info
License Addition: Additive
License Generation version 135266304
License Priority: Low
Store Index: 0
Store Name: Evaluation License Storage
```

Rehosting (Revoking and Transferring) a License

Perform this task to rehost (revoke and transfer) a license. The command removes the original, permanent license from the device and provides a license for the new device by accomplishing the following operations:

- Obtains a permission ticket from the Cisco licensing infrastructure portal that will allow the license to be moved.
- Parses the permission ticket file to extract data related to generating the rehosting ticket.
- Uploads the rehost ticket to the Cisco licensing infrastructure portal, so the customer can obtain the final license.
- The license security application processes the data and offers a grace-period license.
- Once an end user license agreement is accepted, the licensing infrastructure processes the permission ticket and generates the rehost ticket.

**Note**

Cisco IOS licensing requires that the license files generated by Cisco's licensing back end for its devices be secure and tamper resistant. Security features are in place to authenticate a license by means of encrypted license credentials. Rehosting requires a permission ticket. To generate the permission ticket, Cisco's licensing back end requires the device credential information. Use the **license save credential** command to save device credential information to a specified file system.

SUMMARY STEPS

1. **enable**
2. **license revoke** *permission-file-url output-rehost-ticket-url*

DETAILED STEPS**Step 1 enable**

Use this command to enable privileged EXEC mode:

```
Router> enable
```

Enter your password if prompted.

Step 2 license revoke *permission-file-url output-rehost-ticket-url*

Use this command to revoke and transfer a license using the permission ticket provided by Cisco's back end licensing system.

An end user license agreement is displayed for all grace-period licenses in the permission ticket. You must read and accept an end user license agreement, (which is truncated in the following example for easier readability). Type "yes" at the ACCEPT? prompt, as shown in the following example. If you do not accept the agreement, the rehost operation stops.

```
Router# license revoke tftp://infra-sun/ramanp/pt.lic flash:rt.lic
```

```
Following Permanent license(s) will be revoked from this device
  Feature Name: gsmamrnb-codec-pack
```

```
Following Extension license(s) will be installed in this device
  Feature Name: gsmamrnb-codec-pack
```

```
PLEASE READ THE FOLLOWING TERMS CAREFULLY. . .
```

```
ACCEPT? [yes/no]: yes
```

```
Issue 'license feature gsmamrnb-codec-pack' command to enable the license
Rehost ticket saved ..... to flash:rt.lic
```

Troubleshooting Licensing

This section describes the Cisco IOS EXEC commands used to troubleshoot license operations.

SUMMARY STEPS

1. **enable**

2. **show license file** [*switch switch-num*]
3. **show license statistics**
4. **show license status** [*switch switch-num*]
5. **debug license** {*all | core | errors | events*}
6. **no debug license**

DETAILED STEPS

Step 1 enable

Use this command to enable privileged EXEC mode:

```
Router> enable
```

Enter your password if prompted.

Step 2 show license file [*switch switch-num*]

Use this command to display license entries and license details stored in a Cisco software license file. If the device is a switch, this command obtains statistics from the specified switch. Following is an example of the type of information displayed:

```
Router# show license file
```

```
License Store: Primary License Storage
Store Index: 0
License: 11 gsmamrnb-codec-pack 1.0 LONG TRIAL DISABLED 20 DISABLED STANDALONE ADD INFINITE_KEYS INFINITE_KEYS NEVER NEVER NiL SLM_CODE CL_ND_LCK NiL *1YCHJRBMWKZAED2400 NiL NiL NiL 5_MINS <UDI><PID>AS54X M-AC-RPS</PID><SN>JAE0948QXKD</SN></UDI> ,Jx8qaVf:iXWah9PsXjkVnmz7gWh:cxdf9nUkzY6o8fRuQbu,7wTUz237Cz6g9VjfrCk,0a2Pdo,Ow6LWxcCRFL:x cTxwnffn9i,4,aUWv8rL50opDUDAsFnxLsvoFRkcAfm$<WLC>AQEBIQAB//9NA+1mUwfs/1D0dmdF9kyX8wDrua1TZhnnAy6Mxs1dTboIcRaahKxJJdj4O1lw3wscqvPiAmWSaEmUT56rstk6gvmj+EQKRfD9A0ime1czrdKxfILT0LaXT416nwmfp92Tya6vIQ4FnlBdqJ1sMzXeSq8PmVcTU9A4o9hil9vKur8N9F885D9GVF0bJHciT5M=</WLC>
Comment:
Hash: E1WjIQo4qsl9g8cpnpoogP/0DeY=
License Store: Evaluation License Storage
Store Index: 0
License: 11 gsmamrnb-codec-pack 1.0 LONG TRIAL DISABLED 1440 DISABLED STANDALONE ADD INFINITE_KEYS INFINITE_KEYS NEVER NEVER NiL SLM_CODE D EMO NiL NiL Ni NiL NiL 5_MINS NiL v:v87LOPTP81Kxf7eIXJfj7JeYSI,vf3eQefsQqNBELX1L9I4qkescUsSc8iUTW33:$<WLC>AQEBIQAB//9yMZkgcwLeVo052FBJbjBGsDsQwOpmggu2ARMqN4hj77A8uk20wzahdXfClp3E2YcqPiAmWSaEmUT56rstk6gvmj+EQKRfD9A0ime1czrdKxfILT0LaXT416nwmfp92Tya6vIQ4FnlBdqJ1sMzXeSq8PmVcTU9A4o9hil9vKur8N9F885D9GVF0bJHciT5M=</WLC>
Comment:
Hash: f8M0YeFxx9uUbyKToh5vJMTtcs0=
```

Step 3 show license statistics

Use this command to display license statistics information. The display will include relevant statistics for error counts and is useful for troubleshooting licensing related problem. See the following example.

```
Router# show license statistics
```

```
Administrative statistics
Install success count: 4
Install failure count: 1
Install duplicate count: 12
Comment add count: 2
```

```

Comment delete count:    0
Clear count:             10
Save count:              1
Save cred count:        6

Client statistics
Request success count 0
Request failure count 0
Release count          0
Global Notify count   21

SWIFT url status
Swift value changed by user
Current Value : https://cisco.com/SWIFT/Licensing
Default Value : https://cisco.com/SWIFT/Licensing

```

Step 4 **show license status [switch *switch-num*]**

Use this command to display the status of licenses in the system. If the device is a switch, this command obtains status from the specified switch. Following is an example of the display seen:

```

Router# show license status

License Type Supported
  permanent  Non-expiring node locked license
  extension  Expiring node locked license
  evaluation  Expiring non node locked license

License Operation Supported
  install    Install license
  clear      Clear license
  annotate    Comment license
  save       Save license
  revoke     Revoke license
  call-home  License call-home

Call-home Operation Supported
  show pak   Display license pak via call-home
  install    Install license via call-home
  revoke     Revoke license via call-home
  resend     Fetch license via call-home

Device status
Device Credential type: IMAGE
Device Credential Verification: PASS
Rehost Type: DC_OR_IC

```

Step 5 **debug license {all | core | errors | events}**

Use this command to enable controlled Cisco IOS software license debugging activity on a device.

```
Router# debug license errors
```

Step 6 **no debug license**

Use this command to disable license debugging activity on a device.

Configuring Examples for Software Licensing

This section provides the following configuration examples:

- [Installing and Upgrading Licenses Using Software Activation:Example, page 19](#)
- [Managing Licenses Using Software Activation Commands:Example, page 19](#)
- [Removing Licenses Using Software Activation Commands:Example, page 20](#)

Installing and Upgrading Licenses Using Software Activation:Example

The **show license udi** command displays all licensable UDIs in the system. The following example shows the type of information displayed:

```
Router# show license udi
```

Device#	PID	SN	UDI
*0 AS54XM-AC-RPS	JAE0948QXKD	AS54XM-AC-RPS:	JAE0948QXKD

Managing Licenses Using Software Activation Commands:Example

The **license comment** command is used to add or delete information about a specific license. The command checks that a license associated with the specified feature is present in license storage. If a switch number is specified, this command is executed on the specified switch.

As the following example shows, when the license is present and multiple license lines are stored, you are prompted to select a license line. This action helps to distinguish licenses. Type the number at the Select Index to Add Comment prompt, to select the license.

```
Router# license comment add gsmamrnb-codec-pack "Use this permanent license"
```

```
Feature: gsmamrnb-codec-pack
  1 License Type: Evaluation
    License State: Inactive
      Evaluation total period: 20 hours 0 minute
      Evaluation period left: 20 hours 0 minute
    License Addition: Additive
    Comment:
    Store Index: 0
    Store Name: Primary License Storage

  2 License Type: Permanent
    License State: Active, Not in Use
    License Addition: Exclusive
    Comment:
    Store Index: 1
    Store Name: Primary License Storage
```

```
Select Index to Add Comment [1-2]: 2
```

```
% Success: Adding comment "Use this permanent license" succeeded
```

Removing Licenses Using Software Activation Commands:Example

The **license clear** command is used to remove a license entry from license storage once it has been verified that the license line is valid and was explicitly installed.

You must select the index number of the license to clear. Type the number at the Select Index to Clear prompt, as shown in the following example:

```
Router# license clear gsmamrnb-codec-pack

Feature: gsmamrnb-codec-pack
  1 License Type: Evaluation
  License State: Inactive
    Evaluation total period: 20 hours 0 minute
    Evaluation period left: 20 hours 0 minute
  License Addition: Additive
  Comment:
  Store Index: 0
  Store Name: Primary License Storage

  2 License Type: Permanent
  License State: Active, Not in Use
  License Addition: Exclusive
  Comment:
  Store Index: 1
  Store Name: Primary License Storage

Select Index to Clear [1-2]: 1
Are you sure you want to clear? (yes/[no]): yes
```

Additional References

The following sections provide references related to the Cisco IOS Software Activation feature.

Related Documents

Related Topic	Document Title
Cisco License Manager application	User Guide for Cisco License Manager.
Cisco IOS Software Activation overview	Cisco IOS Software Activation Conceptual Overview
Cisco Software License Agent	Cisco IOS Software License Agent feature module
GateKeeper licensing	IP-to-IPGwy Feature Guide
Integrated Services Routers licensing	Software Activation on Cisco Integrated Services Routers

Standards

Standard	Title
None	—

MIBs

MIB	MIBs Link
CISCO-LICENSE-MGMT-MIB	To locate and download MIBs for selected platforms, Cisco IOS releases, and feature sets, use Cisco MIB Locator found at the following URL: http://www.cisco.com/go/mibs

RFCs

RFC	Title
None	—

Technical Assistance

Description	Link
<p>The Cisco Support website provides extensive online resources, including documentation and tools for troubleshooting and resolving technical issues with Cisco products and technologies.</p> <p>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.</p> <p>Access to most tools on the Cisco Support website requires a Cisco.com user ID and password.</p>	http://www.cisco.com/techsupport

Feature Information for Cisco IOS Software Activation

Table 9 lists the release history for this feature.

Not all commands may be available in your Cisco IOS software release. For release information about a specific command, see the command reference documentation.

Use Cisco Feature Navigator to find information about platform support and software image support. Cisco Feature Navigator enables you to determine which Cisco IOS and Catalyst OS software images support a specific software release, feature set, or platform. To access Cisco Feature Navigator, go to <http://www.cisco.com/go/cfn>. An account on Cisco.com is not required.



Note

Table 9 lists only the Cisco IOS software release that introduced support for a given feature in a given Cisco IOS software release train. Unless noted otherwise, subsequent releases of that Cisco IOS software release train also support that feature.

Table 9 Feature Information for Cisco IOS Software Activation

Feature Name	Releases	Feature Information
Cisco IOS Software Activation	12.4(15)XZ 12.4(20)T 15.0(1)M	<p>Cisco IOS Software Activation EXEC commands support basic licensing processes.</p> <p>This feature is platform-independent.</p> <p>The following sections provide information about this feature:</p> <ul style="list-style-type: none"> • Cisco IOS Software Activation Command Line Interface • Installing and Upgrading Licenses Using Software Activation Commands • Managing Licenses Using Software Activation Commands • Removing Licenses Using Software Activation Commands • Troubleshooting Licensing <p>The following commands were introduced or modified by this feature: debug license, license clear, license comment, license install, license revoke, license save, license save credential, show license all, show license detail, show license feature, show license file, show license statistics, show license status, show license udi.</p>
CISL-SNMP support (MIB)	12.4(20)T 15.0(1)M	<p>SNMP support for the CISCO-LICENSE-MGMT-MIB was added.</p> <p>The following sections provide information about this feature:</p> <ul style="list-style-type: none"> • License Activation MIB Support • MIBs <p>The following commands were introduced or modified by this feature: snmp-server enable traps, snmp-server host.</p>

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