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license accept end user agreement

To accept the end-user license agreement (EULA) for all Cisco IOS software packages and features at one time, use the **license accept end user agreement** command in global configuration mode.

license accept end user agreement

Syntax Description

This command has no arguments or keywords.

Command Default

EULA is not accepted.

Command Modes

Global configuration (config)

Command History

Release	Modification
15.0(1)M4	This command was introduced for the fixed Cisco ISR and the Cisco ISR G2 platforms.

Usage Guidelines

The **license accept end user agreement** command is used to accept the EULA for all Cisco IOS software packages and features. After the command is issued and the EULA accepted, it is automatically applied for all Cisco IOS software packages and feature licenses.

- If this configuration command is part of the start-up configuration, it implies that the EULA is accepted. The EULA is automatically applied to any subsequent license that is activated; the EULA is not displayed and the user is not prompted to accept the EULA.
- A copy of the terms of the EULA is available at http://www.cisco.com/en/US/docs/general/warranty/English/EU1KEN_.html

Examples

The following example shows how to configure the EULA:

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

Related Commands

Command	Description
license install	Installs a stored license file.

Command	Description
show license	Displays information about a Cisco IOS software license.

license agent default

To configure license agent authentication, use the **license agent default** command in global configuration mode.

license agent default authenticate [**none**]

Syntax Description

authenticate	Authenticates by using the HTTP mechanism.
none	(Optional) Disables (bypasses) HTTP authentication.

Command Default

The license agent is enabled, and it monitors the HTTP path /lic-agent by using plaintext.

Command Modes

Global configuration (config)

Command History

Release	Modification
15.0(1)M	This command was introduced.
15.0(1.1)M	This command was modified. The **no** form of the command was removed.
Cisco IOS XE Release 3.5S	This command was integrated into Cisco IOS XE Release 3.5S and implemented on the Cisco ASR 903 router.

Usage Guidelines

By default, the license agent starts automatically when the device boots up.

The agent responds to ConnectRequest XML messages and, depending on the configuration of the **license agent listener http** command, all other Cisco License Manager XML messages.

Examples

The following example shows how to use the default HTTP mechanism for authentication:

```
Router(config)# license agent default authenticate
```

Related Commands

Command	Description
license agent listener	Configures the path that the license agent authentication monitors.
license agent max-sessions	Limits the number of HTTP sessions to the license agent.
license agent notify	Specifies the URL to send license agent notifications.

license agent listener

To configure the path that the license agent authentication monitors, use the **license agent listener** command in global configuration mode. To return to the default setting, use the **no** form of this command.

license agent listener http {**encrypt** | **plaintext**} *url-path* **authenticate** [**acl** *access-list*] [**max-message** *size*] [**none**]

no license agent listener http

Syntax Description

http	Uses the HTTP listener transport.
encrypt	Accepts encrypted connections.
plaintext	Accepts plaintext connections.
url-path	The HTTP servlet path to respond to.
authenticate	Authenticates by using the default HTTP mechanism.
acl *access-list*	(Optional) Uses the specified access list for trusted clients on this session. The range is 1 to 65536.
max-message *size*	(Optional) Defines the maximum message size that the license agent accepts. The range is 1000 to 4294967295.
none	(Optional) Disables (bypasses) HTTP authentication.

Command Default

The license agent authentication monitors the HTTP path /lic-agent by using plaintext.

Command Modes

Global configuration (config)

Command History

Release	Modification
15.0(1)M	This command was introduced.
Cisco IOS XE Release 3.5S	This command was integrated into Cisco IOS XE Release 3.5S and implemented on the Cisco ASR 903 router.

Usage Guidelines

This command starts the license agent in listener mode.

If the value for the *url-path* argument is not **/lic-agent**, then /lic-agent (for example, license agent default) accepts only the ConnectRequest message. Otherwise, if the value for the *url-path* argument is **/lic-agent** (and **encrypt** is specified), then encrypt /lic-agent accepts all requests and plaintext /lic-agent accepts only the ConnectRequest message.

Examples

The following example shows how to authenticate the license agent by using the HTTP encrypted authentication mechanism:

```
Router(config)# license agent listener http encrypt /lic-agent authenticate
```

Related Commands

Command	Description
license agent default	Configures license agent authentication.
license agent max-sessions	Limits the number of HTTP sessions to the license agent.
license agent notify	Specifies the URL to send license agent notifications.

license agent max-sessions

To limit the number of HTTP sessions to the license agent, use the **license agent max-sessions** command in global configuration mode. To return to the default setting, use the **no** form of this command.

license agent max-sessions *number*

no license agent max-sessions

Syntax Description

number	Maximum number of license agent sessions. The range is 4 to 25.

Command Default

The default number of HTTP sessions is 9.

Command Modes

Global configuration (config)

Command History

Release	Modification
15.0(1)M	This command was introduced.
Cisco IOS XE Release 3.5S	This command was integrated into Cisco IOS XE Release 3.5S and implemented on the Cisco ASR 903 router.

Examples

The following example shows how to limit the number of concurrent license agent sessions on a router:

```
Router(config)# license agent max-sessions 5
Router(config)# exit
Router# show license agent session
License Agent Sessions: 0 open, maximum is 5
```

Related Commands

Command	Description
license agent default	Configures license agent authentication.
license agent listener	Configures the path that the license agent authentication monitors.

Command	Description
license agent notify	Specifies the URL to send license agent notifications.

license agent notify

To specify the URL to send license agent notifications, use the **license agent notify** command in global configuration mode. To remove the configuration, use the **no** form of this command.

license agent notify *url-path user password version*

no license agent notify

Syntax Description

url-path	URL to use (for example, http://10.1.1.1/abc).
user	HTTP-level username to use.
password	HTTP-level password to use.
version	Notification version number.

Command Default

The URL is not configured.

Command Modes

Global configuration (config)

Command History

Release	Modification
15.0(1)M	This command was introduced.
Cisco IOS XE Release 3.5S	This command was integrated into Cisco IOS XE Release 3.5S and implemented on the Cisco ASR 903 router.

Usage Guidelines

You can also configure this command by using the Cisco License Manager message ConnectRequest.

Examples

The following example shows how to specify the URL to send license agent notifications:

```
Router(config)# license agent notify http://10.1.1.1/abc users anonymous 1
```

Related Commands

Command	Description
license agent default	Configures license agent authentication.
license agent listener	Configures the path that the license agent authentication monitors.
license agent max-sessions	Limits the number of HTTP sessions to the license agent

license boot level

To boot a new software license on switching platforms, use the **license boot level** command in global configuration mode. To return to the previously configured license level, use the **no** form of this command.

Cisco ASR 903 Router

license boot level *license-level*

no license boot level *license-level*

Cisco ASR 1000 Router

license boot level *license-level*

no license boot level *license-level*

Cisco Catalyst 3560-E Switch Platforms

license boot level *license-level*

no license boot level *license-level*

Cisco Catalyst 3750-E Switch and Switch Stack Platforms

license boot level *license-level* [**switch** *switch-num*]

no license boot level *license-level* [**switch** *switch-num*]

Cisco Catalyst 3750-E Switch Mixed Stack Platforms

license boot level *license-level* **switch** *switch-num*

no license boot level *license-level* **switch** *switch-num*

Cisco Catalyst 4500E Series Switch Platforms

license boot level *license-level*

Syntax Description

license-level	Level at which the switch is booted (for example, ipservices). The license levels available in a universal/ universalk9 image are: • entservices • ipbase • lanbase The license levels available in a universal-lite/ universal-litek9 image are: • ipbase • lanbase The license levels available for the Cisco ASR 903 router are: • metroaggrservices • metroipservices • metroservices The license levels available for the Cisco ASR 1000 router are: • adventerprise • advipservices • ipbase
switch *switch-num*	Switch or slot ID in a stackable environment.

Command Default

The switch boots the configured image.

Command Modes

Global configuration (config)

Command History

Release	Modification
12.4(15)XZ	This command was introduced.
12.4(20)T	This command was integrated into Cisco IOS Release 12.4(20)T.
Cisco IOS XE Release 3.1.0SG	This command was integrated into Cisco IOS XE Release 3.1.0SG on Catalyst 4500E series switches.

Release	Modification
Cisco IOS XE Release 3.5S	This command was integrated into Cisco IOS XE Release 3.5S and implemented on the Cisco ASR 903 router.

Usage Guidelines

Use the **license boot level** command for these purposes:

- Downgrade or upgrade licenses
- Enable or disable an evaluation or extension license
- Clear an upgrade license

This command forces the licensing infrastructure to boot the configured license level instead of the license hierarchy maintained by the licensing infrastructure for a given module.

- When the switch reloads, the licensing infrastructure checks the configuration in the startup configuration for any licenses. If there is a license in the configuration, the switch boots with that license. If there is no license, the licensing infrastructure follows the image hierarchy to check for licenses.
- If the forced boot evaluation license expires, the licensing infrastructure follows the regular hierarchy to check for licenses.
- If the configured boot license is already expired, the licensing infrastructure follows the hierarchy to check for licenses.

This command takes effect at the next reboot of any of the supervisors (Act or stby). This configuration must be saved to the startup configuration for it to be effective. After you configure the level, the next time the standby supervisor boots up, this configuration is applied to it.

To boot the standby supervisor to a different level than active, configure that level by using this command and then bring up the standby.

If the **show license all** command displays the license as "Active, Not in Use, EULA not accepted," you can use the **license boot level** command to enable the license and accept the end-user license agreement (EULA).

Examples

The following example shows how to activate the *ipbase* license on the switch upon the next reload:

```
Switch(config)# license boot level ipbase
```

Related Commands

Command	Description
license install	Installs a stored license file.
license save	Saves a copy of a permanent license to a specified license file.
show license all	Shows information about all licenses in the system.

license boot module

To boot a new software license on routing platforms, use the **license boot module** command in global configuration mode. Use the **no** form of this command to return to the default setting.

Cisco ASR 1001 Router Platforms

license boot module *module-name* **group** {**all** | **feature**} **level** *license-level*

no license boot module

Cisco 860, 880, and 890 Series Routers, and Cisco 1900, 2900, and 3900 Series Integrated Services Router Platforms

license boot module *module-name* **level** *license-level*

no license boot module *module-name* **level** *license-level*

Cisco uBR10012 Universal Broadband Routers

license boot module *module-name* **technology-package** *package-name* [**disable**]

no license boot module *module-name* **technology-package** *package-name* [**disable**]

Syntax Description

module-name	Router or module to be configured (for example: c880-data or c3900).
group	Selects a specific group that contains the image and feature licenses for the device.
all	Groups by all features.
feature	Groups by feature.
level *license-level*	Boots the device or module at the specified level (for example, advipservices).
technology-package	Upgrades or downgrades a software license, or enables or disables an evaluation license.
package-name	Package or feature set the given module should boot (for example, data).
disable	(Optional) Disables the package or the feature set.

Command Default

The router boots the configured image.

Command Modes

Global configuration (config)

Command History

Release	Modification
12.4(15)XZ	This command was introduced.
12.4(20)T	This command was integrated into Cisco IOS Release 12.4(20)T.
15.0(1)M	This command was modified. The **technology-package** keyword was added for the Cisco 1900, 2900, and on the 3900 series integrated services router platforms.
Cisco IOS XE Release 3.2S	This command was modified. The **group**, **all**, **feature**, and **level** keywords were added for the Cisco ASR 1001 router.

Usage Guidelines

Use the **license boot module** command for these purposes:

- Downgrade or upgrade licenses
- Enable or disable an evaluation or extension license
- Clear an upgrade license

This command forces the licensing infrastructure to boot the configured license level instead of the license hierarchy maintained by the licensing infrastructure for a given module.

- When the router reboots, the licensing infrastructure checks the configuration in the startup configuration/rommon for any licenses. If there is a license in the configuration, the router boots with that license. If there is no license, the licensing infrastructure follows the image hierarchy to check for licenses.
- If the forced boot evaluation license expires, the licensing infrastructure follows the regular hierarchy to check for licenses.
- If the configured boot license is already expired, the licensing infrastructure follows the hierarchy to check for licenses.

To make the evaluation license inactive, use the **no license boot module technology-package** command. To re-activate the evaluation license, use the **license boot module technology-package** command.

If the **show license all** command displays the license as "Active, Not in Use, EULA not accepted," you can use the **license boot module** command to enable the license and accept the EULA. Do not confuse the **license boot module** global configuration command with a similarly named command available in privileged EXEC mode.

Examples

The following example shows how to activate the *ipbase* image license that is part of the group *all* on the ASR 1001 module at the next reboot:

```
Router(config)# license boot module asr1001 group all level ipbase
```

The following example shows how to activate the *advipservices* license on the c880-data module at the next reboot:

```
Router(config)# license boot module c880-data level advipservices
```

The following example shows how to enable an evaluation license:

```
Router(config)# license boot module c3900 technology-package data
```

The following example shows how to make an evaluation license inactive:

```
Router(config)# no license boot module c3900 technology-package data
```

Related Commands

Command	Description
license install	Installs a stored license file.
license save	Saves a copy of a permanent license to a specified license file.
show license all	Shows information about all licenses in the system.

license call-home install pak

To install a license by using a product authorization key (PAK) and the Cisco License Call Home feature, use the **license call-home install pak** command in privileged EXEC mode.

Cisco 860, 880, and 890 Series Routers, and Cisco 1900, 2900, and 3900 Series Integrated Services Router Platforms

license call-home install pak *pak-id*

Cisco Catalyst 3560-E Switch Platforms

license call-home install pak *pak-id*

Cisco Catalyst 3750-E Switch and Switch Stack Platforms

license call-home install pak *pak-id* [**switch** *switch-num*]

Cisco Catalyst 3750-E Switch Mixed Stack Platforms

license call-home install pak *pak-id* **switch** *switch-num*

Cisco Catalyst 4500E Series Switch Platforms

license call-home install pak *pak-id*

Syntax Description

pak-id	A product authorization key sent through e-mail or through regular mail by manufacturing to authorize software upgrades.
switch *switch-num*	Specifies a switch in a switch stack or in a mixed switch stack. The switch number range is 1 to 9.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(35)SE2	This command was introduced.
12.4(15)XZ	This command was integrated into Cisco IOS Release 12.4(15)XZ.
12.4(20)T	This command was integrated into Cisco IOS Release 12.4(20)T.

Release	Modification
Cisco IOS XE Release 3.3SG	This command was integrated into Cisco IOS XE Release 3.3SG and implemented on the Cisco Catalyst 4500E series switch.
15.1(1)SG	This command was integrated into Cisco IOS Release 15.1(1)SG and implemented on the Cisco Catalyst 4500E series switch.

Usage Guidelines

The Cisco License Call Home feature allows a Cisco router to communicate with the Cisco licensing infrastructure through the Internet and retrieve licensing information. This command requires that the router be connected to the Internet.

This command requires the following:

- The router or switch must have an Internet connection and use HTTPS to connect to the Cisco licensing infrastructure. To set up a secure HTTP connection, see the HTTP 1.1 Web Server and Client module in the *Cisco IOS Network Management Configuration Guide*.
- Only certain platforms support the Cisco License Call Home feature, and those devices must be running a Cisco IOS crypto K9 image.
- You must obtain the device certificate from the Cisco licensing infrastructure.
- You must have a Cisco.com user login account.

The PAK is a unique token supplied to allow partial fulfillment of licenses. A PAK is not tied to any particular device, but rather to a product identifier (PID).

When you issue the **license call-home install pak** command, these events occur:

1. Information about the stock keeping unit (SKU) is displayed. SKUs map to one or more Cisco software features.
2. You receive prompts at the command line for required fields such as an e-mail address, username, and password to access the Cisco website and SKU quantities.
3. The user-entered data is validated and processed, and then the license is installed on the router. If data is not validated, warning messages are displayed.

Examples

The following example shows the commands, prompts, and responses required to install a license by using a PAK and the Cisco License Call Home feature. Use the **show license clear** command to verify the installation.

```
Router# license call-home install pak 3XPXR9E7D30
CCO User name: User1
CCO password : ************
Pak Number          : 3XPXR9E7D30
Pak Fulfillment type: SINGLE
    1. SKU Name           : Gatekeeper
       SKU Type           : Product
       Description        : Gatekeeper
       Ordered Qty        : 1
       Available Qty      : 1
       Feature List       :
          Feature name:         gatekeeper Count: Uncounted
       Platform Supported : N/A
                            5400
```

```
                5350
                2800
                3800
Do you want to install the above listed SKU(s)? [yes/no]: yes
Please enter the user's detail:
First Name : First-name
Last Name : Last-name
Title : Software Engineer
Company Name : Cisco Systems
Address1 : 510 McCarthy Blvd.
Address2  [Optional]:
City : Milpitas
State : CA
Province  [Optional]:
Zipcode : 95134
Country : USA
Phone : 408 526-4000
Fax  [Optional]:
Email : User1@cisco.com
Installing...Feature:gatekeeper...Successful
```

Related Commands

Command	Description
license call-home resend	Restores a lost license by using the Cisco License Call Home feature.
license call-home revoke	Rehosts (revokes and transfers) a license by using the Cisco License Call Home feature.
show license call-home	Displays the SKU list and features available in a PAK by using the Cisco License Call Home feature.
show license feature	Shows a list of licensed features available in an image.

license call-home resend

To request a license be re-sent by using the Cisco License Call Home feature, use the **license call-home resend** command in privileged EXEC mode.

Cisco 860, 880, and 890 Series Routers, and Cisco 1900, 2900, and 3900 Series Integrated Services Router Platforms

license call-home resend *dest-lic-location*

Cisco Catalyst 3560-E Switch Platforms

license call-home resend *dest-lic-location*

Cisco Catalyst 3750-E Switch and Switch Stack Platforms

license call-home resend *dest-lic-location* [**switch** *switch-num*]

Cisco Catalyst 3750-E Switch Mixed Stack Platforms

license call-home resend *dest-lic-location* **switch** *switch-num*

Cisco Catalyst 4500E Series Switch Platforms

license call-home resend *dest-lic-location*

Syntax Description

dest-lic-location	The location where the Cisco IOS software license is to be stored. Valid location file systems are **archive**, **bs**, **flash**, **flash** *n*, **ftp**, **http**, **https**, **null**, **nvram**, **pram**, **rcp**, **scp**, **syslog**, **system**, **tftp**, **tmpsys**, **vb**. The license location can also be a directory. • The **bs://**, **null://**, and **vb://** file systems do not accept filenames. • The **bs** file system is available only on mixed Cisco 3750-E switch stacks. • The **archive**, **pram scp**, and **syslog** file systems are available only on router platforms. • The **flash** *n* file system, where *r,* is an integer in the range from 1 to 9, is available only on Cisco 3750-E switches and stacks. • The **https** file system is not available on mixed Cisco 3750-E switch stacks and the Cisco 3560-E switch.
switch *switch-num*	Specifies a switch in a switch stack or in a mixed switch stack. The switch number range is 1 to 9.

Command Modes Privileged EXEC (#)

Command History

Release	Modification
12.2(35)SE2	This command was introduced.
12.4(15)XZ	This command was integrated into Cisco IOS Release 12.4(15)XZ.
12.4(20)T	This command was integrated into Cisco IOS Release 12.4(20)T.
Cisco IOS XE Release 3.3SG	This command was integrated into Cisco IOS XE Release 3.3SG and implemented on the Cisco Catalyst 4500E series switch.
15.1(1)SG	This command was integrated into Cisco IOS Release 15.1(1)SG and implemented on the Cisco Catalyst 4500E series switch.

Usage Guidelines The Cisco License Call Home feature allows a Cisco router to communicate with the Cisco licensing infrastructure through the Internet and retrieve licensing information. This command requires that the router be connected to the Internet.

This command contacts the Cisco licensing back-end fulfillment system and obtains licenses that are valid for a specified unique device identifier (UDI). The **license call-home resend** command also stores the received license lines in the specified destination URL.

This command requires the following:

- The router or switch must have an Internet connection and use HTTPS to connect to the Cisco licensing infrastructure. To set up a secure HTTP connection, see the HTTP 1.1 Web Server and Client module in the *Cisco IOS Network Management Configuration Guide*.
- Only certain platforms support the Cisco License Call Home feature, and those devices must be running a Cisco IOS crypto K9 image.
- You must obtain the device certificate from the Cisco licensing infrastructure before starting.
- You must have a Cisco.com user login account.

This command initiates these actions:

1. The device credential is retrieved from the device and sent to the Cisco licensing infrastructure.
2. This command invokes the Cisco licensing infrastructure to request all licenses with the device credential information be sent to the device. The Cisco licensing infrastructure provides all purchased licenses for the given UDI.
3. This command stores all licenses in the destination URL (filesystem).

Examples

The following example shows the commands, prompts, and responses required to request a license to be sent from the Cisco licensing infrastructure and to be stored in the requested destination file system:

```
Router# license call-home resend flash:licenseresend.xml
CCO User name: User1
CCO password : ************
Email Address: User1@cisco.com
Alternate Email Address: User1@cisco.com
Getting Licenses from SWIFT .....
Saving it to flash:licenseresend.xml.....Done
```

Related Commands

Command	Description
license call-home install	Installs a license by using the Cisco License Call Home feature.
license call-home revoke	Rehosts (revokes and transfers) a license by using the Cisco License Call Home feature.
show license call-home	Displays the SKU list and features available in a PAK by using the Cisco License Call Home feature.

license call-home revoke

To rehost (revoke and transfer) a license by using unique device identifiers (UDIs) and the Cisco License Call Home feature, use the **license call-home revoke** command in privileged EXEC mode.

Cisco 860, 880, and 890 Series Routers, and Cisco 1900, 2900, and 3900 Series Integrated Services Router Platforms

license call-home revoke [**udi** *target-udi*] *output-of-rehosted-license-url* [**permission-ticket** *permission-ticket-url*] [**rehost-ticket** *rehost-ticket-url*]

Cisco Catalyst 3560-E Switch Platforms

license call-home revoke [**udi** *target-udi*] *output-of-rehosted-license-url* [**permission-ticket** *permission-ticket-url*] [**rehost-ticket** *rehost-ticket-url*]

Cisco Catalyst 3750-E Switch and Switch Stack Platforms

license call-home revoke [**udi** *target-udi*] *output-of-rehosted-license-url* [**permission-ticket** *permission-ticket-url*] [**rehost-ticket** *rehost-ticket-url*] [**switch** *switch-num*]

Cisco Catalyst 3750-E Switch Mixed Stack Platforms

license call-home revoke [**udi** *target-udi*] *output-of-rehosted-license-url* [**permission-ticket** *permission-ticket-url*] [**rehost-ticket** *rehost-ticket-url*] **switch** *switch-num*

Cisco Catalyst 4500E Series Switch Platforms

license call-home revoke [**udi** *target-udi*] *output-of-rehosted-license-url* [**permission-ticket** *permission-ticket-url*] [**rehost-ticket** *rehost-ticket-url*]

Syntax Description

udi *target-udi*	(Optional) Revokes license information for this target UDI.
output-of-rehosted-license-url	(Optional) Output received from the rehosted process, which saves the rehost ticket or the license file in the specified file system.
permission-ticket *permission-ticket-url*	(Optional) Revokes license information by using the permission ticket in the specified URL.
rehost-ticket *rehost-ticket-url*	(Optional) Revokes license information by using the rehost ticket in the specified URL.
switch *switch-num*	Specifies a switch in a switch stack or in a mixed switch stack. The switch number range is 1 to 9.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.4(15)XZ	This command was introduced.
12.4(20)T	This command was integrated into Cisco IOS Release 12.4(20)T.
Cisco IOS XE Release 3.3SG	This command was integrated into Cisco IOS XE Release 3.3SG and implemented on the Cisco Catalyst 4500E series switch.
15.1(1)SG	This command was integrated into Cisco IOS Release 15.1(1) SG and implemented on the Cisco Catalyst 4500E series switch.

Usage Guidelines

The Cisco License Call Home feature allows a Cisco router to communicate with the Cisco licensing infrastructure through the Internet and retrieve licensing information. This command requires that the router be connected to the Internet.

If you do not specify a target UDI, the rehost ticket is stored in the specified URL. If you do specify a target UDI, this command sends the rehost ticket to the Cisco licensing infrastructure with the target UDI, converts it to a license file, and stores it in the specified URL. If one of the operations fails in the call-home revoke operations, the intermediate results are stored at the specified URL and a message explaining what to do next is displayed.

This command requires the following:

- The router or switch must have an Internet connection and use HTTPS to connect to the Cisco licensing infrastructure. To set up a secure HTTP connection, see the HTTP 1.1 Web Server and Client module in the *Cisco IOS Network Management Configuration Guide*.
- Only certain platforms support the Cisco License Call Home feature, and those devices must be running a Cisco IOS crypto K9 image.
- You must obtain the device certificate from the Cisco licensing infrastructure.
- You must have a Cisco.com user login account.

The **license call-home revoke** EXEC command performs this sequence of operations:

1. The Cisco licensing module establishes communication with the Cisco licensing infrastructure to start the rehost operation.
2. The Cisco licensing infrastructure sends a signed request to obtain the SKU details for this UDI from the Cisco licensing portal. The request contains the source UDI.
3. The Cisco licensing portal responds that either the target UDI is not correct or lists the stock keeping units (SKUs) available on the device for rehosting.
4. The Cisco licensing infrastructure requests the permission ticket from the licensing portal by providing the SKU and the e-mail address of the user.
5. The Cisco licensing portal provides the permission file to the Cisco licensing infrastructure.
6. The software uses this permission ticket file to generate the rehost ticket.
7. This rehost ticket is sent to the licensing back end along with the target UDI and optional e-mail address.
8. The Cisco licensing back end generates a new license file and sends it by using the e-mail address collected in the prompts.

Examples

The following example shows how to use the **license call-home revoke** command to revoke a license on the device with the specified UDI. In the display, the user selects the SKU called SL-LWAPP= to revoke the license for the *lwapp* feature. This command sends the rehost ticket to the Cisco licensing infrastructure with the target UDI, converts it to a license file, and stores it in the specified URL (flash: REHOSTED_LICENSE):.

```
Router# license call-home revoke udi CISCO887W:FHH1124P02Y flash:REHOSTED_LICENSE

CCO User name : xxxxx
CCO password  :
Retrieving the sku from swift .....!.....
1. SKU Name          : SA-LWAPP
      SKU Type       : Product
      Description    : For Internal purposes only
      Ordered Qty    : 1
      Available Qty  : 1
      Feature List   :
        Feature name:          lwapp Count: Uncounted
      Platform Supported : N/A
2. SKU Name          : SA880-AIS
      SKU Type       : Product
      Description    : For Internal purposes only
      Ordered Qty    : 1
      Available Qty  : 1
      Feature List   :
        Feature name:    advipservices Count: Uncounted
      Platform Supported : N/A
3. SKU Name          : SL-LWAPP=
      SKU Type       : Product
      Description    : For Internal purposes only
      Ordered Qty    : 1
      Available Qty  : 1
      Feature List   :
        Feature name:          lwapp Count: Uncounted
      Platform Supported : N/A
4. SKU Name          : SL-AV
      SKU Type       : Product
      Description    : For Internal purposes only
      Ordered Qty    : 1
      Available Qty  : 1
      Feature List   :
        Feature name:     advsecurity Count: Uncounted
      Platform Supported : N/A
5. All of the above
Please select the sku number you want to revoke : 3
Retrieving the permission ticket from swift .....!... Output file saved ..... to flash: REHOSTED_LICENSE
Retrieving the rehost ticket from the device .....!.
Following Permanent license(s) will be revoked from this device
      Feature Name: lwapp
Following Extension license(s) will be installed on this device
      Feature Name: lwapp
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
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
Output file saved ..... to flash: REHOSTED_LICENSE
Retrieving the revoked license line from the swift .....Output file saved ..... to flash: REHOSTED_LICENSE
```

Related Commands

Command	Description
license call-home install	Installs a license by using the Cisco License Call Home feature.
license call-home resend	Restores a lost license by using the Cisco License Call Home feature.
show license call-home	Displays the SKU list and features available in a PAK by using the Cisco License Call Home feature.

license call-home url

To configure a new URL for accessing the Cisco licensing infrastructure, use the **license call-home url** command in global configuration mode. To change the URL, use the **no** form of this command.

license call-home url *licensing-infrastructure-url*

no license call-home url

Syntax Description

licensing-infrastructure-url	The HTTP address where the Cisco licensing infrastructure can be accessed.

Command Default

The default URL is https://tools.cisco.com/SWIFT/licensing.

Command Modes

Global configuration (config)

Command History

Release	Modification
12.4(15)XZ	This command was introduced.
12.4(20)T	This command was integrated into Cisco IOS Release 12.4(20)T.
Cisco IOS XE Release 3.3SG	This command was integrated into Cisco IOS XE Release 3.3SG and implemented on the Cisco Catalyst 4500E series switch.
15.1(1)SG	This command was integrated into Cisco IOS Release 15.1(1)SG and implemented on the Cisco Catalyst 4500E series switch.

Usage Guidelines

Use this command to configure a new URL for accessing the Cisco licensing infrastructure.

This feature requires that:

- The router or switch must have an Internet connection and use HTTPS to connect to the Cisco licensing infrastructure. To set up a secure HTTP connection, see the HTTP 1.1 Web Server and Client module in the *Cisco IOS Network Management Configuration Guide*.
- Only certain platforms support the Cisco License Call Home feature, and those devices must be running a Cisco IOS crypto K9 image.
- You must obtain the device certificate from the Cisco licensing infrastructure.
- You must have a Cisco.com user login account.

Examples

The following example shows how to change the URL to http://cisco.com/newserver:

```
Router(config)# license call-home url http://cisco.com/newserver
```

Related Commands

Command	Description
license call-home install	Installs a license by using the Cisco License Call Home feature.
license call-home resend	Restores a lost license by using the Cisco License Call Home feature.
license call-home revoke	Rehosts (revokes and transfers) a license by using the Cisco License Call Home feature.
show license call-home	Displays the SKU list and features available in a PAK by using the Cisco License Call Home feature.
show license status	Displays license status information.

license clear

To remove a license entry from license storage, use the **license clear** command in privileged EXEC mode.

Cisco ASR 903 Routers

license clear *feature-name* **standby**

Cisco ASR 1001 Routers, Cisco 860, 880, and 890 Series Routers, and Cisco 1900, 2900, and 3900 Series Integrated Services Router Platforms

license clear *feature-name*

Cisco Catalyst 3560-E Switch Platforms

license clear *feature-name*

Cisco Catalyst 3750-E Switch and Switch Stack Platforms

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

Cisco Catalyst 3750-E Switch Mixed Stack Platforms

license clear *feature-name* **switch** *switch-num*

Syntax Description

feature-name	Name of the feature to be removed.
standby	(Optional) Clears license information on the standby processor.
switch *switch-num*	Specifies a switch in a switch stack or in a mixed switch stack. The switch number range is 1 to 9.

Command Default

Licenses are not removed.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(35)SE2	This command was introduced.
12.4(15)XZ	This command was integrated into Cisco IOS Release 12.4(15)XZ.

Release	Modification
12.4(20)T	This command was integrated into Cisco IOS Release 12.4(20)T.
Cisco IOS XE Release 3.2S	This command was integrated into Cisco IOS XE Release 3.2S on the Cisco ASR 1001 router.
Cisco IOS XE Release 3.5S	This command was modified. The **standby** keyword was added for the Cisco ASR 903 router.

Usage Guidelines

For the ASR 1001 router, the **license clear** command clears only image-level licenses that are not in-use. Once the throughput feature license is in-use, it cannot be cleared.

The **license clear** command clears all licenses, but some licenses, such as built-in licenses, cannot be cleared.

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 single or multiple licenses are available in the device. The selected licenses are removed from the router or switch.

If a license is in-use, the **license clear** command might fail. However, depending on the application policy using the license, some licenses might be cleared.

For some devices, the **license clear** command verifies that the license line is valid and explicitly installed. Only licenses that have been added using the **license install** command are removed. Evaluation licenses are not removed.

When a switch is specified, the **license clear** command is executed only on that switch. When a mixed stack platform is used, the primary switch has installed the minimum licensing feature required to support the licensing operations of the secondary switches. The **license clear** command clears a license from license storage, which a primary switch does not have. When the command is issued from the primary switch, the switch number is required to clear a license on a specific switch.

Examples

The following example shows how to display the installed licenses on an ASR 1001 router and how to clear the throughput license. Note that active, in-use licenses cannot be cleared:

```
Router# show license all
License Store: Primary License Storage
StoreIndex:  0  Feature: throughput                Version: 1.0
      License Type: Evaluation
      License State: Active, Not in Use, EULA accepted
         Evaluation total period:  4 weeks  2 days
         Evaluation period left:  0 minute   0 second
      License Count: Non-Counted
      License Priority: Low
Router# license clear throughput
Feature: throughput
   1  License Type: Evaluation
      License State: Active, Not in Use, EULA accepted
         Evaluation total period:  4 weeks  2 days
         Evaluation period left:  0 minute   0 second
      License Addition: Additive
      License Count: Non-Counted
      Comment:
      Store Name: Primary License Storage
```

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

The following example shows how to clear a license associated with the advsecurity feature:

```
Router# license clear advsecurity
Feature: advsecurity
  1   License Type: Permanent
      License State: Active, In Use
      License Addition: Exclusive
      Comment: Permanent License
      Store Index: 0
      Store Name: Primary License Storage
  2   License Type: Evaluation
      License State: Inactive
         Evaluation total period: 8  weeks 4  days
         Evaluation period left: 8  weeks 4  days
      License Addition: Additive
      Comment:
      Store Index: 1
      Store Name: Primary License Storage
Select Index to Clear [1-2]: 2
Are you sure you want to clear? (yes/[no]): yes
```

Related Commands

Command	Description
license install	Installs a stored license file.
license save	Saves a copy of a permanent license to a specified license file.
show license file	Displays information in a Cisco IOS software license file.

license comment

To add or remove a comment about a feature license, use the **license comment** command in privileged EXEC mode.

Cisco ASR 903 Routers

license comment {**add** *feature-name comment* | **delete** *feature-name*} [**standby**]

Cisco ASR 1001 Router Platforms

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

Cisco 860, 880, and 890 Series Routers, and Cisco 1900, 2900, and 3900 Series Integrated Services Router Platforms

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

Cisco Catalyst 3560-E Switch Platforms

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

Cisco Catalyst 3750-E Switch Platforms

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

Cisco Catalyst 3750-E Switch Mixed Stack Platforms

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

Syntax Description

add	Adds a comment about a feature license.
feature	Specifies the feature name.
feature-name	Name of the licensed feature.
comment	String of a maximum of 99 characters, including special characters.
delete	Deletes a comment about a licensed feature.
standby	(Optional) Specifies license information on the standby processor.
switch *switch-num*	Specifies a switch in a switch stack or in a mixed switch stack. The switch number range is 1 to 9.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(35)SE2	This command was introduced.
12.4(15)XZ	This command was integrated into Cisco IOS Release 12.4(15)XZ.
12.4(20)T	This command was integrated into Cisco IOS Release 12.4(20)T.
Cisco IOS XE Release 3.2S	This command was modified. The **feature** keyword was added for the Cisco ASR 1001 router.
Cisco IOS XE Release 3.5S	This command was modified. The **standby** keyword was added for the Cisco ASR 903 router.

Usage Guidelines

This command is useful for tracking a license when multiple licenses are stored on a device, and for adding or deleting information about a specific license. You can also use the **license comment** command to verify that a license associated with the specified feature is present in license storage.

Use the **show license file** command to display comments added to the license file.

The **license comment** command performs these operations:

- Verifies that the license associated with the specified feature is present in the license storage.
- If there are multiple license lines, the command prompts for license line selection.
- If a comment exists in the license line, the command displays the comment first before prompting for a new comment. Up to 99 characters are stored in license storage.
- If a switch number is specified, this command is executed on the specified switch.

Examples

The following example shows how to add a comment to a license file on the Cisco ASR 1001 router by using the **license comment** command and by verifying it with the **show license file** command:

```
Router# license comment add feature throughput newest
Feature: throughput
    1  License Type: Permanent
       License State: Active, In Use
       License Addition: Exclusive
       License Count: Non-Counted
       Comment: --
       Store Name: Primary License Storage
% Success: Updating comment “--” with "newest" succeeded
Router# show license file
License Store: Primary License Storage
  Store Index: 0
   License: 11 throughput 1.0 LONG NORMAL STANDALONE EXCL INFINITE_KEYS INFIN
         ITE_KEYS NEVER NEVER NiL SLM_CODE CL_ND_LCK NiL *12MDFXFBE6TEQR54
         00 NiL NiL NiL 5_MINS <UDI><PID>ASR1001</PID><SN>JAE14020AT5</SN>
         </UDI> :0oy5aopCvhfLBBk3:l0fBb4Kr3EwMLaYAHDV93ClpLXhJGOUE1ZuBusC,
         0B2QIQLvo6eUrKn27faF3zOYTTyjLRCGA8UMkemMyqmvjcg0Jhfm$<WLC>AQEBIQA
         B//8szae77QGOnFBXBoP02Obx6Fq2XtGPUJnh5pGplTkDzw9J5aqkkUjTNkuO4sv4
         FYORqwInXo3s+nsLU7rOtdOxoIxYZAo3LYmUJ+MFzsqlhKoJVlPyEvQ8H21MNUjVb
         hoN0gyIWsyiJaM8AQIkVBQFzhr10GYolVzdzfJfEPQIx6tZ++/Vtc/q3SF/5Ko8XC
         Y=</WLC>
   Comment: newest
     Hash: ZJJz5MveEOPePQA3ATs6+OxF4bw=
```

The following example shows how to add a comment to a license file. You are prompted to select the index number of the license to add the comment to.

```
Router# license comment add advsecurity "Permanent License"
Feature: advsecurity
  1   License Type: Permanent
      License State: Active, In Use
      License Addition: Exclusive
      Comment:
      Store Index: 0
      Store Name: Primary License Storage
  2   License Type: Evaluation
      License State: Inactive
         Evaluation total period: 8  weeks 4  days
         Evaluation period left: 8  weeks 4  days
      License Addition: Additive
      Comment:
      Store Index: 1
      Store Name: Primary License Storage
Select Index to Add Comment [1-2]: 1
% Success: Adding comment "Permanent License" succeeded
```

The following example shows the output from **show license file** command for verification purposes:

```
Router# show license file
License Store: Primary License Storage
 Store Index: 0
  License: 11 advsecurity 1.0 LONG NORMAL STANDALONE EXCL INFINITE_KEYS INFI
        NITE_KEYS NEVER NEVER NiL SLM_CODE CL_ND_LCK NiL *1F8CTTRHMU8DBMZ
        400 NiL NiL NiL 5_MINS <UDI><PID>CISCO861W</PID><SN>FHH112400KA</
        SN></UDI> DjRM8tEsBrR7ayv1U6CWL7JIe1Nmu60biRNQuFWM8sV2dUQhQSS,iB4
        WgUgos4KILZJ,4xrseQQCwOQeASIi:SVNCL1Cdffc,OpH8TQkzxbX3q$<WLC>AQEB
        IQAB//9fp/DSeV2xPKc+d4T/DiUhG8UQwBA786dE+HuT2GMU3uDvMbIOdbpmBQ00Q
        tQTGTKRqwInXo3s+nsLU7rOtdOxoIxYZAo3LYmUJ+MFzsqlhKoJVlPyEvQ8H21MNU
        jVbhoN0gyIWsyiJaM8AQIkVBQFzhr10GYolVzdzfJfEPQIx6tZ++/Vtc/q3SF/5Ko
        8XCY=</WLC>
  Comment: Permanent License
    Hash: Mx0Sy+VmbfaB7uRctuPLsblzpBU=
```

Related Commands

Command	Description
license clear	Removes a license entry from a permanent license file.
license install	Installs a stored license file.
license save	Saves a copy of a permanent license to a specified license file.
show license file	Displays information in a Cisco IOS software license file.

license expand nvram

To expand the memory allocation for license storage in NVRAM for Cisco 2800 and Cisco 3800 series integrated services router platforms, use the **license expand nvram** command in privileged EXEC mode.

license expand nvram

Syntax Description

This command has no arguments or keywords.

Command Default

No license storage expansion is configured.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.4(20)T	This command was introduced for the Cisco 2800 and Cisco 3800 series integrated services router platforms

Usage Guidelines

License storage expansion reduces the amount of NVRAM available for configuration file storage. If the configuration files are too large to fit into the reduced NVRAM, you must run file compression on the configuration files by using the **service compress-config** command.

Examples

The following example shows how to expand the allocation for license storage in NVRAM:

```
Router# license expand nvram
Caution: IOS configuration space will be re-partitioned in NVRAM.
You must back up your IOS configuration before running this command.
Do you wish to continue NVRAM re-partition?[confirm]
Router# y
```

The following response indicates that the operation was successful:

```
License storage expanded successfully.
IOS must be restarted for changes to take effect.
```

The following response shows that the existing configuration files need compression before the licensing file system can be expanded:

```
Error: startup-config is too large.  Compress the config with "service compress-config" followed by "copy system:running-config
nvram:startup-config" and rerun "licence expand nvram".
```

The following response shows that a configuration file is still too large for the resized NVRAM:

```
Error: cannot expand the license storage. Insufficient NVRAM to store compressed configuration.
```

The following response shows that expansion cannot take place because the size of the block files is too large:

```
Error: cannot expand the license storage. Existing block files are too large.  Back up existing block files, delete them from nvram and reissue “license expand nvram”.
```

The following response indicates that this command is being issued on an already expanded NVRAM:

```
Error: license storage already expanded to maximum size.
```

Related Commands

Command	Description
service compress-config	Compresses startup configuration files.

license feature

To activate the specified license feature, use the **license feature** command in global configuration mode. To deactivate the specified license feature, use the **no** form of this command.

license feature *feature-name*

no license feature *feature-name*

Syntax Description

feature-name	Software feature name.

Command Default

The license feature is not activated.

Command Modes

Global configuration (config)

Command History

Release	Modification
15.0(1)M	This command was introduced for the Cisco 1905 integrated services router platform.
XE 3.5S	This command was integrated into Cisco IOS XE Release 3.5S and implemented on the Cisco ASR 903 router.

Usage Guidelines

Use the **license feature** command to activate the specified license feature.

Examples

The following example shows how to activate the memory license feature on the Cisco 1905 router:

```
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
```

Related Commands

Command	Description
license install	Installs a stored license file.
license revoke	Revokes a software license from one device and transfers it to another.

license feature snasw

To activate the SNA Switching (SNASw) feature license, use the **license feature snasw** command in global configuration mode. To deactivate the SNAsw feature license, use the **no** form of this command.

license feature snasw

no license feature snasw

Syntax Description

This command has no arguments or keywords.

Command Default

The SNASw feature license is not activated.

Command Modes

Global configuration (config)

Command History

Release	Modification
15.0(1)M	This command was introduced for the Cisco 3900, 2900, and the 1900 series integrated services router platforms.

Usage Guidelines

The **license feature snasw** command is used to activate the SNASw feature license.

Examples

The following example shows how to enable the SNASw feature license:

```
Router(config)# license feature snasw
```

Related Commands

Command	Description
license install	Installs a stored license file.

license install

To install a stored license file, use the **license install** command in privileged EXEC mode.

license install *stored-location-url*

ASR 1001 Router Platforms

license install file *stored-location-url*

Cisco Catalyst 4500E Series Switch Platforms

license install *stored-location-url* **standby**

Syntax Description

stored-location-url	The location within a device where Cisco IOS software licenses are stored. Depending on the hardware platform, valid URL location file systems might be: **archive**, **bootflash**, **bs**, **flash**, **flash** *n*, **ftp**, **http**, **https**, **null**, **nvram**, **pram**, **rcp**, **scp**, **syslog**, **system**, **tftp**, **tmpsys**, **usb0**, **vb**. • The **bs://**, **null://**, and **vb://** file systems do not accept filenames. • The **bs** file system is available only on mixed Cisco 3750-E switch stacks. • The **archive**, **pram scp**, and **syslog** file systems are available only on router platforms. • The **flash** *n* file system, where *r*, is an integer in the range from 1 to 9, is available only on Cisco 3750-E switches and stacks. • The **https** file system is not available on mixed Cisco 3750-E switch stacks and the Cisco 3560-E switch.
file	Installs a license file.
standby	(Optional) Specifies that the installation occurs on the standby device only.

Command Default

A license is not installed.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(35)SE2	This command was introduced.
12.4(15)XZ	This command was integrated into Cisco IOS Release 12.4(15)XZ.
12.4(20)T	This command was integrated into Cisco IOS Release 12.4(20)T.
Cisco IOS XE Release 3.1.0.SG	This command was modified. The **standby** keyword was added for the Cisco Catalyst 4500E series switches.
Cisco IOS XE Release 3.2S	This command was modified. The **file** keyword was added for the Cisco ASR 1001 router.
Cisco IOS XE Release 3.5S	This command was implemented on the Cisco ASR 903 router.

Usage Guidelines

You must have already purchased the license and obtained the license file from either the Cisco licensing portal or by using the **license save** EXEC command.

For Cisco Catalyst 6500 series switches, the active supervisor allows the license to be installed on both the active and the standby supervisors. The license keys are stored in NVRAM for both the active and standby supervisors. Each supervisor requires a separate license key.

When the **license install** command is issued, these actions are initiated:

- The license module parses the license file and retrieves the unique device identifier (UDI), license line, and license comments.
- If the UDI in the license file is not local, this command passes the license line and user comments to the specified switch where the information is provided to the license security application.
- If the license is a trial license, this command initiates an end-user license agreement prompting you to accept it. If you do not accept the end-user license agreement, the license line installation is stopped.
- Upon successful completion, the application notifies you about the installation of the license.
- The command displays an information message stating that the license installation is successful and whether the licensed feature is present in the current image.

The installation process does not install duplicate licenses. This message appears when duplicate licenses are detected:

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

On some hardware platforms, you must reload (or reboot) the device to make a newly installed license active.

When the **standby** keyword is specified, the license is available only on the standby device. The active supervisor is not able to use it.

Examples

The following example shows how to install a license from the bootflash system on the Cisco ASR 1001 router. The license is a duplicate and is not installed as shown in the display:

```
Router# license install file bootflash:1ru_bu2-throughtput-license
Installing...Feature:throughput...Skipped:Duplicate
0/1 licenses were successfully installed
1/1 licenses were existing licenses
0/1 licenses failed to install
```

The following example shows how to install a license saved in TFTP. You might need to read and accept an end-user license agreement during the installation. The following output has been truncated for easier readability.

```
Router# license install tftp://infra-sun/rifu/2800/normal_better_2.lic00
Installing licenses from "tftp://infra-sun/rifu/2800/normal_better_2.lic00"
Loading rifu/2800/normal_better_2.lic00 from 172.19.211.47 (via GigabitEthernet0/0): !
[OK - 2361 bytes]
Expiring licenses are being installed in the device with
UDI "CISCO2851:FTX1018A21R" for the following features:
      Feature Name: ios-ips-update
      Start Date:       N/A, End Date: Oct 01 2009
      Feature Name: ios-ips-update
      Start Date:       N/A, End Date: Oct 01 2008
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
Installing...Feature:ios-ips-update...Successful:Supported
Installing...Feature:ios-ips-update...Failed:
% Error: Better license exists
1/2 licenses were successfully installed
0/2 licenses were existing licenses
1/2 licenses were failed to install
Router#
Apr 22 23:24:45.727: %LICENSE-6-EULA_ACCEPTED: EULA for feature ios-ips-update 1.0 has been accepted.
UDI=CISCO2851:FTX1018A21R; StoreIndex=2:Primary License Storage
Apr 22 23:24:46.263: %LICENSE-6-EULA_ACCEPTED: EULA for feature ios-ips-update 1.0 has been accepted.
UDI=CISCO2851:FTX1018A21R; StoreIndex=-1:UNKNOWN License Store
Apr 22 23:24:46.267: %LICENSE-6-INSTALL: Feature ios-ips-update 1.0 was installed in this device.
UDI=CISCO2851:FTX1018A21R; StoreIndex=2:Primary License Storage
```

The following example shows how to initiate license installation from a flash file system on a Cisco switch:

```
Switch# license install flash:flash//test.lic
```

Related Commands

Command	Description
license clear	Removes a license entry from a permanent license file.
license comment	Adds or removes a comment about a feature license.
license save	Saves a copy of a permanent license to a specified license file.
license save credential	Saves license identity information associated with a device to a specified URL.
show license	Displays information about a Cisco IOS software license.

license modify priority

To modify a license priority, use the **license modify priority** command in privileged EXEC mode.

license modify priority *feature-name* {**high** | **low**}

Cisco ASR 903 Routers

license modify priority *feature-name* {**high** | **low**} [**standby**]

Syntax Description

feature-name	Name of the feature whose priority you want to modify.
high	Changes priority to high.
low	Changes priority to low.
standby	(Optional) Applies the priority change to the license on the standby processor.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.4(24)T	This command was introduced.
Cisco IOS XE Release 3.2S	This command was integrated into Cisco IOS XE Release 3.2S for the Cisco ASR 1001 router.
Cisco IOS XE Release 3.5S	This command was modified. The **standby** keyword was added for the Cisco ASR 903 router.

Usage Guidelines

This command adjusts the priority of a license. This command generates a list of metered licenses available for a feature and prompts you to select one from the list. If only one license is present, it is automatically selected. If the selected license is an evaluation license and the feature has not been activated, the end-user license agreement (EULA) is shown, and you are prompted to accept or reject the agreement. If you accept the EULA, the priority of the selected license to the permanent license increases or decreases, and the selected license becomes the active license.

Examples

The following example shows how the **license modify priority** command is used to modify the priority of a license:

```
Router# license modify priority lcabcv10 high
Feature: lcabcv10
Index:  1       License type    : Evaluation
        Lock type       : Locked
        License Count   : 10
        License Priority: None
Index:  2       License type    : Evaluation
        Lock type       : Locked
        License Count   : 5
        License Priority: None
Select Index to Adjust [1-2]2
Are you sure you want to modify priority? (yes/[no]): yes
Increase Precedence of Evaluation License
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? [y/n]: y
```

Related Commands

Command	Description
show license	Displays information about a Cisco IOS software license.

license purge

To purge unneeded licenses (licenses that are not associated with the current chassis unique device identifier [UDI]), use the **license purge** command in privileged EXEC mode.

license purge

Cisco ASR 903 Routers

license purge standby

Syntax Description

standby	(Optional) Purges license information on the standby processor.

Command Default

Licenses are retained.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Release 3.1.0SG	This command was introduced for the Cisco Catalyst 4500E series switches.
Cisco IOS XE Release 3.5S	This command was modified. The **standby** keyword was added for the Cisco ASR 903 router.

Usage Guidelines

Use this command to remove licenses that are not associated with the current chassis UDI. Removing these licenses frees up additional space.

When supervisors are moved from one chassis to another, the licenses that were installed on the supervisor might be tied to the old chassis. These license are not usable when the supervisor is present on the new chassis. This command removes licenses from storage that do not belong to the current chassis.

Examples

The following example shows how to purge unneeded licenses:

```
Switch# license purge
Are you sure you want to purge licenses? [y] y
```

Related Commands

Command	Description
license install	Installs a stored license file.
license save credential	Saves the identity information associated with a license to a specified URL.

license revoke

To revoke a software license from one device and transfer it to another, use the **license revoke** command in privileged EXEC mode.

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

Syntax Description

permission-file-url	URL of the location to get to the permission ticket.
output-rehost-ticket-url	URL of the location to save the rehost ticket.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.4(15)XZ	This command was introduced.
12.4(20)T	This command was integrated into Cisco IOS Release 12.4(20)T.
Cisco IOS XE Release 3.2S	This command was integrated into Cisco IOS XE Release 3.2S for the Cisco ASR 1001 router.
Cisco IOS XE Release 3.5S	This command was implemented on the Cisco ASR 903 router.

Usage Guidelines

The **license revoke** command removes the original, permanent license from the device and provides a license for the new device by accomplishing these operations:

- Obtains a permission ticket from the Cisco licensing infrastructure portal that allows 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 you can obtain the final license.
- The license security application processes the data and offers a grace-period license.
- Once you accept the end-user license agreement, the licensing infrastructure processes the permission ticket and generates the rehost ticket.

Note Cisco IOS licensing requires that the license files generated by the Cisco 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, the Cisco licensing back end requires the device credential information. Use the **license save credential** command to save device credential information to a specified file system.

Examples

The following example shows how to revoke a license stored in TFTP and how to transfer it to a license stored in flash memory. You might need to read and accept the terms and conditions of the license type being transferred. The following example is truncated for readability:

```
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 on 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
```

Related Commands

Command	Description
license install	Installs a stored license file.
license save	Saves a copy of a permanent license to a specified license file.

license right-to-use deactivate

To deactivate a license level on a switch, use the license right-to-use deactivate command.

license right-to-use deactivate *license-level* [**switch** *switch-num*]

Syntax Description

license-level	Specifies the license level that you want to deactivate on the switch.
switch *switch-num*	(Optional) Specifies a switch in a switch stack or in a mixed switch stack. The range is 1 to 9.

Command Default

There is no default configuration

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
15.0(2)SE1	This command was introduced.

Usage Guidelines

Right-to-use (RTU) is a licensing system that allows you to upgrade or move a license on your switch without interacting with the Cisco Product License Registration portal. Unlike node-locked licenses, RTU licenses are not associated with specific switches. They can be instantly activated on a supported switch without requiring an Internet connection.

For moving licenses from one switch to another, you can deactivate the license on the first switch and activate it on the second. Unlike the node-locked license model, you do not have to go through the rehost process for moving licenses.

In a switch stack, you can use switches that have both licensing models. For example, you can configure a switch stack to use IP Services node-locked license on some switches and IP Services RTU license on other switches.

Note After you have deactivated an RTU license, reboot the switch to start using the highest available license.

Examples

The following example shows how to deactivate the IP Services license on a switch:

```
Switch# license right-to-use deactivate ipservices
```

```
Deactivated the Permanent Right To Use license
Switch#
Mar 30 01:48:11.628: %LICENSE-6-REMOVE: Feature ipservices 1.0 was removed from this device. UDI=WS-C3750E-48TD-
S:CAT1127RH97; StoreIndex=0:Primary License Storage
```

Related Commands

Command	Description
license right-to-use activate	Activates a license level on a switch.
show license right-to-use	Displays information about right-to-use licenses and their states on the switch.
show license status	Displays license information for troubleshooting licensing issues.

license save

To save a copy of a permanent license in a Cisco IOS device to a specified license file, use the **license save** command in privileged EXEC mode.

Cisco ASR 903 Router

license save *file-sys:filename* [**standby**]

Cisco ASR 1001 Router Platforms

license save file *file-sys:filename*

Cisco 860, 880, and 890 Series Routers, and Cisco 1900, 2900, and 3900 Series Integrated Services Router Platforms

license save file *file-sys//lic-location*

Cisco Catalyst 3560-E Switch Platforms

license save file *file-sys//lic-location*

Cisco Catalyst 3750-E Switch and Switch Stack Platforms

license save file *file-sys//lic-location* [**switch** *switch-num*]

Cisco Catalyst 3750-E Switch Mixed Stack Platforms

license save file *file-sys//lic-location* **switch** *switch-num*

Syntax Description

file	Saves a license file.
file-sys:filename	The location and filename within a device where Cisco IOS software licenses are stored. For Cisco ASR 1001 routers, valid file systems are **bootflash** and **usb0**.

file-sys://lic-location	The location within a device where Cisco IOS software licenses are stored. Depending on the hardware platform, valid file system values might be: **archive**, **bootflash**, **bs**, **flash**, **flash** *n*, **http**, **https**, **null**, **nvram**, **pram**, **rcp**, **scp**, **syslog**, **system**, **tftp**, **tmpsys**, **vb**. The license location can also be a directory with these restrictions: • The **bs://**, **null://**, and **vb://** URLs do not accept filenames. • The **bs** file system is available only on mixed Cisco 3750-E switch stacks. • The **archive**, **pram**, **scp**, and **syslog** file systems are available only on router platforms. • The **flash** *n* file system, where *r*, is an integer in the range of 1 to 9, is available only on Cisco 3750-E switches and stacks. • The **https** file system is not available on Cisco 3750-E switch mixed stacks or on the Cisco 3560-E switch.
standby	(Optional) Saves license information to the standby processor.
switch *switch-num*	Specifies a switch in a switch stack or in a mixed switch stack. The switch number range is 1 to 9.

Command Default Licenses are not saved.

Command Modes Privileged EXEC (#)

Command History

Release	Modification
12.2(35)SE2	This command was introduced.
12.4(15)XZ	This command was integrated into Cisco IOS Release 12.4(15)XZ.
12.4(20)T	This command was integrated into Cisco IOS Release 12.4(20)T.
Cisco IOS XE Release 3.2S	This command was modified. The **file** *file-sys:filename* keyword and argument were added for the Cisco ASR 1001 router.

Release	Modification
Cisco IOS XE Release 3.5S	This command was modified. The **standby** keyword was added for the Cisco ASR 903 router.

Usage Guidelines

Issuing this command stores the license line and comment in XML format as required by the command. Issuing this command saves copies of all permanent licenses.

Saved licenses can be restored by using the **license install** command.

Examples

The following example shows how to save a license named throughput-license to the bootflash on the Cisco ASR 1001 router:

```
Router# license save file bootflash:throughput-license
license lines saved ..... to bootflash/throughput-license
```

The following example shows how to save a license named feat1.lic in the FTP file system:

```
Router# license save ftp:feat1.lic
license lines saved ..... to ftp:feat1.lic
```

Related Commands

Command	Description
license install	Installs a stored license file.
license save credential	Saves the identity information associated with a license to a specified URL.

license save credential

To save the identity information associated with a device to a specified URL, use the **license save credential** command in privileged EXEC mode.

Cisco ASR 903 Routers

license save credential *file-sys:filename* **standby**

Cisco ASR 1001 Routers

license save credential file *file-sys:filename*

Cisco 860, 880, and 890 Series Routers, and Cisco 1900, 2900, and 3900 Series Integrated Services Router Platforms

license save credential file *file-sys//lic-location*

Cisco Catalyst 3560-E Switch Platforms

license save credential file *file-sys//lic-location*

Cisco Catalyst 3750-E Switch and Switch Stack Platforms

license save credential file *file-sys//lic-location* [**switch** *switch-num*]

Cisco Catalyst 3750-E Switch Mixed Stack Platforms

license save credential file *file-sys//lic-location* **switch** *switch-num*

Syntax Description

file	Saves a license credential file.
file-sys:filename	The location and filename within a device where Cisco IOS software licenses are stored. For Cisco ASR 1001 routers, valid file systems are **bootflash** and **usb0**.

file-sys://lic-location	The location within a device where Cisco IOS software license credentials are stored. Depending on the hardware platform, valid file system values might be: **archive**, **bootflash**, **bs**, **flash**, **flash** *n*, **ftp**, **http**, **https**, **null**, **nvram**, **pram**, **rcp**, **scp**, **syslog**, **system**, **tftp**, **tmpsys**, **vb**. • The **bs://**, **null://**, and **vb://** URLs do not accept filenames. • The **bs** file system is available only on mixed Cisco 3750-E switch stacks. • The **archive**, **pram**, **scp**, and **syslog** file systems are available only on router platforms. • The **flash** *n* file system, where *r*, is an a number from 1 to 9, is available only on Cisco 3750-E switches and stacks. • The **https** file system is not available on Cisco 3750-E switch mixed stacks or on the Cisco 3560-E switch.
standby	(Optional) Saves identity information to the standby processor.
switch *switch-num*	Specifies a switch in a switch stack or in a mixed switch stack. The range is 1 to 9.

Command Default License credentials are not saved.

Command Modes Privileged EXEC (#)

Command History

Release	Modification
12.2(35)SE2	This command was introduced.
12.4(15)XZ	This command was integrated into Cisco IOS Release 12.4(15)XZ.
12.4(20)T	This command was integrated into Cisco IOS Release 12.4(20)T.
Cisco IOS XE Release 3.2S	This command was modified. The **file** *file-sys:filename* keyword and argument were added for the Cisco ASR 1001 router.
Cisco IOS XE Release 3.5S	This command was modified. The **standby** keyword was added for the Cisco ASR 903 router.

Usage Guidelines

Use this command to save credential information about a device.

Examples

The following example shows how to save identity information about a license named tput-license to the bootflash system on the Cisco ASR 1001 router:

```
Router# license save credential file bootflash:tput-license
Device credential saved ..... to /bootflash/tput-license
```

The following example shows how to save identity information about a license named feat1.lic in the http file system:

```
Switch# license save credential http:feat1.lic
Device credential saved ..... to http:feat1.lic
```

The following example shows how to save identity information about a license named feat2.lic in the scp file system:

```
Router# license save credential scp:feat2.lic
Device credential saved ..... to scp:feat2.lic
```

Related Commands

Command	Description
license install	Installs a stored license file.
license save	Saves a copy of a permanent license to a specified license file.

license right-to-use activate

To activate a license level on a switch, use the **license right-to-use activate** command.

license right-to-use activate *license-level* [**switch** *switch-num* | **acceptEULA**]

Syntax Description

license-level	Specifies the license level that you want to activate on the switch.
switch *switch-num*	(Optional) Specifies a switch in a switch stack or in a mixed switch stack. The range is 1 to 9.
acceptEULA	(Optional) Activates the switch and accepts the End User License Agreement (EULA) automatically. This may be useful in scenarios where deployment is automated using install scripts.

Command Default

There is no default configuration.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
15.0(2)SE1	This command was introduced.

Usage Guidelines

Right-to-use (RTU) is a licensing system that allows you to upgrade a license on your switch without interacting with the Cisco Product License Registration portal. Unlike node-locked licenses, RTU licenses are not associated with specific switches. They can be instantly activated on any supported switch without requiring an Internet connection.

The RTU license model is based on mutual trust between you and Cisco. When you apply an RTU license, it is implied that you have first purchased the license from Cisco. This agreement is explained in detail in the EULA, which is displayed when you activate the license.

In a switch stack, you can use switches that have both licensing models. For example, you can configure a switch stack to use IP Services node-locked license on some switches and IP Services RTU license on other switches.

Note After you have activated an RTU license, reboot the switch to start using the highest available license.

Related Commands

Command	Description
license right-to-use deactivate	Deactivates a license level on a switch.
show license right-to-use	Displays information about right-to-use licenses and their states on the switch.
show license status	Displays license information for troubleshooting licensing issues.

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