



Software License Activation for Cisco RF Gateway 10 DS-384 Line Card

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Software licensing allows a product to ship with a base set of functionality enabled, while containing advanced functionality that can be offered without a change in the underlying hardware. Using executable licenses helps in preventing the illegal use of the advanced functions.

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Installing the License

Complete the following steps to install the license:

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- Step 1** Generate the license from the [SWIFT tool](#).
- Step 2** Receive the license key through email.
- Step 3** Save the license file to the line card boot flash using the following command:
copy tftp://ip-address/license-file linecard -slot-id- flash:



Step 4 Telnet to the line card using the following command:

```
cable telnet -slot-id-
```

Step 5 Login as root.

Step 6 Install the license file using the following command:

```
license install /flash/license-file
```

Upgrading the License

To enable all software features, all new or upgraded Cisco devices that require software activation must be registered with Cisco. The registration process requires a Product Authorization Key (PAK), which is an 11-character alphanumeric key printed on the purchase order document shipped with your device hardware. The registration process converts the PAK to an electronic license file containing a unique key for your device hardware. The license file must then be installed on your device to unlock the product.

Complete the following to upgrade and install a license:

Step 1 Purchase a PAK for the required type of license.

Step 2 Submit the PAK code and UDI of the line card to the Cisco Product License Registration portal. The portal retrieves the stock keeping units (SKUs) associated with the PAK.

Step 3 Select the SKU and enter the UDI, which is a unique and unchangeable identifier of the device where the license should be installed. A license key is then e-mailed to you, which you can use to upgrade the license.

Step 4 Install the license file returned from the license portal on the line card.

Installing and Upgrading Licenses using Software Activation Commands

SUMMARY STEPS

1. Obtain the PAK
2. Login to the line card console
3. View the UDI
4. Convert the PAK to a license
5. Copy the license to the line card flash
6. Login to the line card console
7. Install the license file

DETAILED STEPS

	Command or Action	Purpose
Step 1	Obtain the PAK.	The PAK is provided to you when you order or purchase the right to use a feature set for a particular platform. The PAK serves as a receipt and is used as part of the process to obtain a license.
Step 2	<pre>cable telnet slot-id</pre> <p>Example: Router# cable telnet 3 Trying 192.0.2.1 ... Open</p> <p>QNX Neutrino (slot3) (ttyp0)</p> <p>login: root No home directory. Logging in with home = "/". #</p>	<p>Exits the Supervisor console and logs in to the line card console with login as the root.</p> <ul style="list-style-type: none"> <i>slot-id</i>—Line card slot. Valid range is from 3 to 12.
Step 3	<pre>show license udi</pre> <p>Example: # show license udi # exit</p>	<p>(Executes on line card console)</p> <p>Displays all the UDI values that can be licensed in a system.</p> <ul style="list-style-type: none"> You need the UDI of the device as part of the process to obtain a license <p>Note This command is executed only from the line card console.</p> <p>Exit line card console.</p>
Step 4	Convert the PAK to a license by entering the PAK and the UDI into the Cisco Product License Registration portal: http://www.cisco.com/go/license .	After entering the appropriate information, you will receive an e-mail containing the license information that you can use to install the license.
Step 5	<pre>copy tftp://ip-address/license-file linecard -slot-id- flash:</pre> <p>Example: Router# Router# copy license-file linecard 3 flash: Router# exit</p>	<p>(Executes on Supervisor console)</p> <p>Login to Supervisor console.</p> <p>Copies the license file received from the Cisco Product License Registration portal to the line card boot flash.</p> <ul style="list-style-type: none"> <i>slot-id</i>—Line card slot. Valid range is from 3 to 12. <p>Exit Supervisor console.</p>

	Command or Action	Purpose
Step 6	<pre>cable telnet <i>slot-id</i></pre> <p>Example: Router# cable telnet 3 Trying 192.0.2.1 ... Open</p> <p>QNX Neutrino (slot3) (tty0)</p> <p>login: root No home directory. Logging in with home = "/". #</p>	<p>Exits the Supervisor console and logs in to the line card console with login as the root.</p> <ul style="list-style-type: none"> <i>slot-id</i>—Line card slot. Valid range is from 3 to 12.
Step 7	<pre>license install /flash/license-file</pre> <p>Example: # license install /flash/38a.lic # exit</p>	<p>(Executes on line card console)</p> <p>Installs the license from the boot flash.</p> <ul style="list-style-type: none"> Accept the end-user license agreement if prompted. <p>Note This command is executed only from the line card console.</p> <p>Reboot the line card to enable the PowerKEY license. Exit line card console.</p>

Verifying the License Upgrade

To verify the license upgrade, use the following commands:

- show license detail** from the line card console—This command displays the details of the license installed on the line card.

```
Router# show license detail
Index: 1          Feature: DS_License          Version: 1.0
License Type: Permanent
License State: Active, In Use
License Count: 20 /20 (Active/In-use)
License Priority: Medium
Store Index: 0
Store Name: Primary License Storage
Index: 2          Feature: DS_License          Version: 1.0
License Type: Evaluation
License State: Inactive
Evaluation total period: 8 weeks 4 days
Evaluation period left: 8 weeks 3 days
License Count: 384 / 0 (Active/In-use)
License Priority: Low
Store Index: 0
Store Name: Evaluation License Storage
```

- show cable license all** from the Supervisor console—This command displays all the licenses on the chassis.

```
Router# show cable licenses all

Slot 3 : License Capability : DS384_96_PKEY
-----
Feature: Downstream Licenses
```

Installed: 96 Consumed: 12 Available: 84 Forced-Shut: 0

Feature: Downstream Span Licenses
 Installed: 640 Consumed: 14 Available: 626 Forced-Shut: 0

Feature: PowerKEY License
 Installed: YES Enforced: YES Channels with PKEY ON: 20

Feature: DVB License
 Installed: NO Enforced: NO Channels with DVB ON: 0

Slot 4 : License Capability : DS384_384_PKEY

 Feature: Downstream Licenses
 Installed: 384 Consumed: 0 Available: 384 Forced-Shut: 0

Feature: Downstream Span Licenses
 Installed: 640 Consumed: 0 Available: 640 Forced-Shut: 0

Feature: PowerKEY License
 Installed: YES Enforced: NO Channels with PKEY ON: 0

Feature: DVB License
 Installed: NO Enforced: NO Channels with DVB ON: 0

Slot 11 : License Capability : DS384_96_PKEY

 Feature: Downstream Licenses
 Installed: 96 Consumed: 0 Available: 96 Forced-Shut: 0

Feature: Downstream Span Licenses
 Installed: 640 Consumed: 0 Available: 640 Forced-Shut: 0

Feature: PowerKEY License
 Installed: YES Enforced: NO Channels with PKEY ON: 0

Feature: DVB License
 Installed: NO Enforced: NO Channels with DVB ON: 0

Slot 12 : License Capability : DS384_128_PKEY

 Feature: Downstream Licenses
 Installed: 128 Consumed: 0 Available: 128 Forced-Shut: 0

Feature: Downstream Span Licenses
 Installed: 640 Consumed: 0 Available: 640 Forced-Shut: 0

Feature: PowerKEY License
 Installed: YES Enforced: NO Channels with PKEY ON: 0

Feature: DVB License
 Installed: NO Enforced: NO Channels with DVB ON: 0

- **show license udi** from the line card console—Displays all the UDI values that can be licensed on the line card.

```
# show license udi
Device# PID                               SN                               UDI
```

```

-----
*0      RFGW-DS384          CAT1624E027          RFGW-DS384:CAT1624E027

#
Error Message:
License Exhausted! Unable to Turn ON Qam7/8.1
    
```

License Downgrade

Perform the following steps to install a permanent license for the Cisco RFGW-10 DS-384 line card with a downstream count lower than the existing active permanent license:

-
- Step 1** Log in to the Cisco RFGW-10 DS-384 line card console.
 - Step 2** Enable the Cisco RFGW-10 DS-384 line card evaluation license with the **license modify priority** *feature-name* **high** command.
 - Step 3** Clear the permanent license with higher downstream count using the **license clear** *feature-name* command.
 - Step 4** Install the new permanent license with lower downstream count.
 - Step 5** Disable the Cisco RFGW-10 DS-384 line card evaluation license using the **license modify priority** *feature-name* **low**.
-

Modifying the License Priority

To modify the license priority, use the following command:

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

Return Materials Authorization

When a line card fails, a replacement card is required with equivalent licenses for restoring the services completely. If the failed line card has the same license as the shipping order, the return materials authorization (RMA) replacement and spares also have the same license as the failed line card.

To transfer a software license from a failed device to a new device, the devices must interact with the Cisco Product License Registration portal to initiate an RMA replacement license (<http://www.cisco.com/go/license>).

Complete the following to initiate the RMA replacement license process:

-
- Step 1** Obtain the UDI of the defective and RMA devices.
 - Step 2** Enter the UDI into the RMA License portal tool on Cisco.com.
The license portal determines licenses associated with defective device. The license portal issues replacement licenses.
 - Step 3** Install the new license on the new device.
-

Rehost

The rehosting process transfers a license from one UDI to another by revoking the license from the source device and installing it on a new device.

Revoking the License on the Cisco DS-384 Line Card

Cisco DS-384 line card is the next generation line card for Cisco RFGW-10 and supports up to 128 downstream licenses. License is used for QAM channels.

A license is revoked to rehost or transfer the existing license to another line card.

Complete the following steps to revoke a Cisco DS-384 line card license:

-
- Step 1** Save the license credential in the line card.
 - Step 2** Register the license credential to get a permission ticket.
 - Step 3** Revoke the license with the permission ticket to get a rehost ticket.
 - Step 4** Register the rehost ticket and obtain the rehosted license.
-

Example for Revoking the License on the Cisco DS-384 Line Card

The following example shows the rehosting or transferring of 64 licenses from LC 3 (which has 128 licenses) to LC 5 (which has 64 licenses).


-
- Step 1** Login into the line card console.
 - Step 2** Save the license credential to the line card flash using the following command:

```
# license save credential /flash/CAT1531E033_128P.lic_lcd
```

Device credential saved to /flash/CAT1531E033_128P.lic_lcd
 - Step 3** Use the **more** command on the Supervisor console to display the contents of device credentials and copy it:

```
# more /flash/CAT1531E033_128P.lic_lcd
```

WARNING: terminal is not fully functional

```
<?xml version="1.0" encoding="UTF-8"?><CISCO_WT_ARTIFACTS version="1.0"><CISCO_W/>
```
 - Step 4** Go to the following website and paste the device credentials to register and request a license transfer:
<https://tools.cisco.com/SWIFT/LicensingUI/lookupLicenseForRehost>
-  **Note** Log in with your Cisco.com user name and password.
-
- Step 5** Copy the permission ticket (*pt.lic*) to the TFTP server and download it to the Cisco RFGW-10 using the following command:

```
tftp://ip_address/tftpboot/username/CAT1531E033_revoke.lic
```

- Step 6** Revoke the license using the following command:
license revoke /flash/ CAT1531E033_revoke.lic /flash/rehost.lic
- Step 7** Use the **more** command to display the contents of the rehost ticket and copy it.
- Step 8** Go to the following website and paste the rehost ticket to register and obtain the rehosted license:
<https://tools.cisco.com/SWIFT/LicensingUI/rehostTktUploadRequest>
- Step 9** Receive the license key through email.
- Step 10** Install the license key on the destination device.
-

License Operations

Following are the license administrative commands:

- **license install** *license-file*
- **license clear** *feature-name*
- **license revoke** *permission-file-url output-rehost-ticket-url*
- **license save** *filename*
- **license save credential** *filename*
- **license modify priority** *feature-name* {**high** | **low**}

Additional References

These topics provide references related to the Software License Activation feature and the CMTS routers.

Related Documents

Document Title	URL
Software Activation Configuration Guide, Cisco IOS XE Release 3S	http://www.cisco.com/en/US/docs/ios-xml/ios/csa/configuration/xs-3s/csa-xe-3s-book.html
Cisco IOS Software Activation Command Reference	http://www.cisco.com/en/US/docs/ios-xml/ios/csa/command/csa-cr-book.html
Configuring the Cisco IOS Software Activation Feature	http://www.cisco.com/en/US/docs/ios/csa/configuration/guide/csa_commands.html
Introduction to Cisco Software Activation	http://www.cisco.com/assets/cdc_content_elements/flash/ios/csa/csa_softwareactivation.htm
Cisco RF Gateway 10 Command Reference	http://www.cisco.com/en/US/docs/cable/rf_gateway/command/reference/RFGW-10_Book.html
Cisco RF Gateway 10 Software Configuration Guide	http://www.cisco.com/en/US/docs/cable/rf_gateway/feature/guide/rfgw_scg.html

Standards

Standard	Title
ITU-T J.83-B	<i>Annex B to ITU-T Rec. J.83 (4/97), Digital multi-programme systems for television sound and data services for cable distribution.</i>
DOCSIS2	<i>Data-Over-Cable Service Interface Specifications, Radio Frequency Interface Specification v2.0, SP-RF1v2.0-I11-060602, June 2, 2006, Cable Television Laboratories, Inc.</i>
DOCSIS Downstream RF Interface (DRFI)	<i>DOCSIS Downstream RF Interface (DRFI): CM-SP-DRFI-I11-110210.</i>

MIBs

MIB	MIBs Link
No new or modified MIBs are supported, and support for existing MIBs has not been modified.	To locate and download MIBs for selected platforms, Cisco IOS-XE releases, and feature sets, use Cisco MIB Locator found at the following URL: http://www.cisco.com/go/mibs

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>	<p>http://www.cisco.com/cisco/web/support/index.html</p>

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