



# Cisco CPT Licensing Configuration Guide

This document provides detailed information about installing and managing licenses for the CPT 50 panel in the Cisco Packet Transport (CPT) system. This document includes the following sections:

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## Revision History

Date	Notes
January 2012	The document has been reorganized for improved usability.
May 2013	Updated the sections "Permanent License" and "Licensing Rules".

# Overview

A license is a permit for a software feature to be functional or enabled on a device. The "pay as you grow" model enables you to upgrade your hardware and software capacity by using a license key. As a result, the upfront deployment cost is reduced and additional capacity or features can be purchased on a need basis. You need not complete a return merchandise authorization (RMA) process to add a new hardware. Instead, you can purchase the license, have it electronically delivered, and use the license key to enable the licensed feature.

On a device, some ports are active by default. These are known as base functionality and do not require any license for their use. However, to activate additional ports, you need to purchase licenses.

The Cisco Transport Controller (CTC) assists you in deploying the licenses to the Cisco devices in your network, discovering the devices, and managing and viewing your inventory of licenses and devices. The licensing operations are not supported on TL1, SNMP, or Cisco IOS interfaces.

New devices are shipped with preinstalled licenses for specific functionalities based on your order. New licenses have to be added for enabling additional functionalities. New or upgraded Cisco devices must be registered and must have a product authorization key (PAK) to obtain licenses from Cisco.

## Understanding Common Licensing Terms

The following sections describes the Cisco software licensing concepts:

- [Product Authorization Key](#), on page 2
- [Unique Device Identifier](#), on page 2
- [Cisco Software License Validation](#), on page 3
- [Software End-User License Agreement](#), on page 3
- [Watchtower Device Certificate](#), on page 3

### Product Authorization Key

The PAK is an 11-character alphanumeric key printed on the purchase order document shipped with your device hardware. Accessing Cisco licensing portals require a PAK, which is provided when you order and purchase the right to use a feature set for a particular device. The PAK serves as a receipt and is an important component in the process of obtaining, upgrading, and activating a license. The registration process requires a PAK.

You can also purchase a bulk PAK to fulfill multiple licenses on a device.

### Unique Device Identifier

Every Cisco device is provided with a unique device identifier (UDI). The UDI is printed on a label located on the back of most Cisco hardware devices.

Licenses are associated with the UDI. The UDI information present on the license file is compared with the actual UDI of the device during license installation. If they do not match, the UDI mismatch error is displayed.

The UDI has three main components—product ID (PID), version ID (VID), and serial number (SN). However, the license uses only the PID and SN for product identification.

To view the PID and SN using CTC, go to the node view, and then click the **Inventory** tab. The PID and SN are displayed in the 'Product ID' and 'Serial #' columns, respectively. The PID and SN can also be retrieved using the TL1 interface command RTRV-INV. The licensable PIDs for the devices are listed in [CPT Licensing Information](#), on page 7.

**Note**

Ensure that the correct UDI information, comprising of PID and SN, is used when the license is registered.

## Cisco Software License Validation

The Cisco software licensing (CSL) uses a system of validation keys to provide a simple mechanism for deploying new feature sets that offer increased functionality for upgrading and maintaining software.

The [Cisco licensing portal](#) issues a license key to enable the specified number of ports or features, and the license is locked to the device UDI. This is known as a node-locked license.

## Software End-User License Agreement

As part of the licensing process, you must accept the terms and conditions provided in the end-user license agreement. You must accept the agreement when you first use a new device.

Read the terms and conditions of the end-user license agreement located in the following URL:

[http://www.cisco.com/en/US/docs/general/warranty/English/EU1KEN\\_.html](http://www.cisco.com/en/US/docs/general/warranty/English/EU1KEN_.html)

## Watchtower Device Certificate

The Watchtower Device Certificate (WDC) is used to ascertain the physical authenticity of the device. The WDC is hard-coded on the device.

# License Types

The different types of licenses are:

- [Permanent Licenses](#), on page 3
- [Temporary Licenses for Emergencies](#), on page 4
- [Built-in Evaluation Licenses](#), on page 4

## Permanent Licenses

Permanent licenses do not have an expiry date, that is, they do not have any limitation in the usage period associated with them. Procure and install a permanent license to increase the number of licensed ports.

Permanent licenses provide the necessary permissions required to access the licensed ports on the device. All permanent licenses are device locked and validated by the Cisco licensing infrastructure. After a permanent license is installed, you do not need to upgrade the license for subsequent releases.

The different types of permanent license are:

- Exclusive Permanent License
- Additive Permanent License

## Temporary Licenses

Temporary licenses are limited to a specific usage period. The different types of temporary licenses are:

- [Temporary Licenses for Emergencies](#)
- [Built-in Evaluation Licenses](#)

### Temporary Licenses for Emergencies

To avoid network downtime in the event of device failure and if the replaced device does not have the same licenses as the failed device, a temporary license can be used on the device. It is not possible to buy temporary license from the license portal. Temporary license is provided by Cisco TAC for a limited usage period.

The “TEMP-LIC” condition is raised on the card when the temporary license is in use.



#### Note

Prior to expiry of a temporary license, you must go to the Cisco Product License Registration portal to obtain a permanent RMA replacement license and install it on the device.

### Built-in Evaluation Licenses

Evaluation licenses are temporary and can be used to evaluate a feature set on new hardware for 60 days. The built-in evaluation license comes preinstalled on the device and cannot be deleted or rehosted.

The “EVAL-LIC” condition is raised on the card when the evaluation license is in use.



#### Note

You must go to the Cisco Product License Registration portal prior to the expiration of the evaluation license to upgrade the license status.

The following conditions prevail for the usage of evaluation licenses:

- If you are using  $m$  number of ports in the evaluation license, and then if you install the permanent license of  $n$  ports (where  $m > n$ ), the evaluation license takes higher priority and will be in use. The evaluation license is in use until the reset of the licensed device or controller card, or the priority of the evaluation license is changed to “Low”.
- When the evaluation license expires, the permanent license is used with  $n$  ports and the traffic goes down on the extra ports. The number of ports that exceed the license count are displayed in the **Provisioning > Licensing > Counted License Features > Unlicensed Count** field in CTC. To avoid the traffic hit on ports, increase license counts or unconfigure the ports before the evaluation period expires.
- When the evaluation license is in use with the usage count as  $m$  and you install the permanent license of count  $n$  where ( $n > m$ ), the permanent license takes the priority and continues to run in the permanent mode.

If no permanent licenses are installed on a device, the evaluation license is automatically activated when you try to provision the port that is licensed. An evaluation license enables the full functionality supported by the device only for the evaluation period.

The device defaults to the base functionality when the evaluation license expires. When the evaluation license expires, the traffic continues to flow until the next reset of the device or the controller card. After the reset, the permanent license (if installed) takes the priority and the traffic flow is maintained. If the permanent license does not exist, then the traffic goes down. However, traffic is unaffected on the ports that are under base functionality.

For more information on severity level of the conditions and procedure to clear the alarms, see the *"Alarms" chapter of the Cisco CPT Configuration Guide—CTC and Documentation Release 9.3 and Cisco IOS Release 15.1(01) SA*.

## License Synchronization

The license on the licensed device gets synchronized with the controller card (TNC/TSC/TCC2P/TCC3) during the following events:

- Cold or warm restart of the CPT 50 panel.
- Cold or warm restart of the controller card.
- Switch over of the controller card.
- Installation or deletion of the license.
- Change of license priority.
- License expiry.
- Periodically every 24 hours.

## Licensing Rules

The licensing rules are as follows:

- The default priority is low for the evaluation license, and medium for the permanent license. The priority of the evaluation license can be increased or decreased than the permanent license. The priority of the permanent license cannot be modified.
- The license having higher priority is used when there is a license request.
- All externally installed licenses are active as soon as they are installed.
- Installation of an exclusive permanent license deletes the existing permanent license for that feature but an additive permanent license does not delete the existing permanent license and both the license will be available.
- When there are no high priority licenses, licenses with low priority are considered valid. In this case, the license is selected based on the following logic by the licensing library:
  - Permanent license is selected over any usage-based (evaluation or temporary) license.
  - If more than one permanent license exists, the license with the highest port count is selected.

- If there are no permanent licenses, and more than one usage based (evaluation or temporary) license exists, the license that has the highest port count is used.
- If there are no permanent licenses, and more than one evaluation license with the same port count exists, the recently installed license is used.

If a permanent license is already installed on the card, by default the permanent license is used. If you want to use an evaluation license, you must change the priority for that license using CTC. This is useful when there is a need to temporarily use the full capacity supported by the evaluation license while the installed permanent license is for lesser number of ports. For example, you have  $m$  port permanent licenses, and want to use  $n$  ports for some period, where  $n > m$ ; you can switch to the evaluation mode with higher port counts enabled.

If an evaluation license is in use and a permanent license is installed after that, the permanent license takes higher priority and will be in use.

**Note**

When an active license expires and there is no other valid license available, the traffic is not hit until one of the following events occur:

- Reset of the CPT 50 panel
- Reset of the controller card
- Switch over of the controller card

## License Alarms

Various license related alarms are reported on the device based on the license status. These provide indication about the type of license in use and its validity duration.

Following alarms are reported on the device:

- EVAL-LIC—(Minor alarm) Indicates that the evaluation license is in use.
- TEMP-LIC—(Minor alarm) Indicates that the temporary license is in use.
- LIC-EXPIRING-SOON—(Major alarm) Indicates that the cumulative validity period of all the available evaluation and temporary licenses fall in the range of one to fourteen days.
- LIC-EXPIRING-SHORTLY—(Major alarm) Indicates that the cumulative validity period of all the available evaluation and temporary licenses fall in the range of zero to twenty four hours.
- LIC-EXPIRED—(Critical alarm) Indicates that the evaluation or temporary license has expired.

**Note**

The LIC-EXPIRING-SOON and LIC-EXPIRING-SHORTLY alarms are never raised if there is a permanent license available.

Following alarm is reported on the port:

- LIC-MISSING—(Critical alarm) Indicates that the 1 Gigabit Ethernet port of the CPT 50 panel is no longer licensed. This happens when the license supporting the service on the port has expired.

Alarms are raised taking into account all the valid licenses present on the device. When a license expires, the next best license is activated without raising any alarm. However, an alarm is raised when the last valid license is in the expiring state.

## Rehost License

Transferring a license between two working devices is accomplished by using a process known as rehosting. 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.

You can also opt for partial revoke. The partial revoke enables you revoke a subset of ports and install it on other devices. For example, if a device is running  $m$  port licenses, you can transfer only  $n$  licensed ports to other devices (where  $m > n$ ), and the remaining  $m - n$  ports can continue on the same device.

For more information about rehosting license procedure, see [NTP-L3 Transfer a License Between Working Devices](#), on page 13.

## CPT Licensing Information

This topic provides the licensing information for the following devices:

- [CPT 50 Panel](#)

### CPT 50 Panel

CPT 50 panel deploys licenses on its 1 Gigabit Ethernet (1GE) ports. The 10 Gigabit Ethernet (10GE) ports does not require licenses. By default, the device has a base license for 11 ports (perpetual). The first 11 ports that you provision come under base functionality. You must procure a license for additional port usage. Permanent licenses can be ordered or purchased in 11 port increments.

The built-in evaluation license allows the use of 33 ports for 60 days. Hence, with the built-in evaluation license you can use 44 ports in total. Of this, the first 11 ports (in order of creation) come under perpetual license. The CPT 50 panel supports up to a maximum of 20 licenses (excluding the evaluation license). The license usage is triggered when you provision the pluggable port module (PPM) payloads, and not when you change the service state of the ports to IS or Unlocked, or OOS or locked.

The licensable PIDs of the CPT 50 panel are:

- CPT-50-AC-LIC
- CPT-50-48A-LIC
- CPT-50-48E-LIC
- CPT-50-24A-LIC

The non-licensable PIDs of the CPT 50 panel are:

- CPT-50-44GE-AC

- CPT-50-44GE-48A
- CPT-50-44GE-48E
- CPT-50-44GE-24A

## Related Procedures

Use the following procedures and tasks for license provisioning:

- [NTP-L1 Register Cisco Product Licenses](#), on page 8
- [NTP-L2 Install and Manage Licenses](#), on page 9
- [NTP-L3 Transfer a License Between Working Devices](#), on page 13
- [NTP-L4 Transfer License Between a Failed and a Working Device](#), on page 15

## NTP-L1 Register Cisco Product Licenses

<b>Purpose</b>	This procedure explains how to register Cisco product licenses.
<b>Tools/Equipment</b>	None
<b>Prerequisite Procedures</b>	None
<b>Required/As Needed</b>	As Needed
<b>Onsite/Remote</b>	Onsite or Remote

### Procedure

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- Step 1** Collect the PAK and unique device identifier (UDI) information for the devices you need to register. Ensure that the correct UDI (PID and serial number) is used during license registration. For more information about PAK and UDI, see [Product Authorization Key](#), on page 2 and [Unique Device Identifier](#), on page 2. The licensable PIDs for the devices are listed in [CPT Licensing Information](#), on page 7.
- Step 2** Go to the [Cisco Product License Registration](#) portal. You must have a Cisco.com account before you can access the portal. You need to provide information on the web page in the following sequence:
- Enter a PAK Number—Provide the PAK information in the "Product Authorization Key (PAK)" section of the web page and click **Submit**.
  - Validate Features—Validate the product information and click **All Done**.
  - Designate Licensee—Enter the Product ID and serial number and select the **Agreement** check box. Click **Continue**.
- Note** Do not enter any "=" symbol in the Product ID.



- d) Finish and Submit—Verify the information summary and click **Submit**.  
The Cisco Product License Registration portal e-mails you the license file. The license file has the information about the number of licenses, features, and Stock Keeping Unit (SKUs) supported.  
**Stop. You have completed this procedure.**
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### What to Do Next

Install the license file and deploy the license on your device using CTC. See [NTP-L2 Install and Manage Licenses](#), on page 9.

## NTP-L2 Install and Manage Licenses

<b>Purpose</b>	This procedure explains how to install and manage licenses.
<b>Tools/Equipment</b>	None
<b>Prerequisite Procedures</b>	"DLP-G46 Log into CTC" procedure at <a href="#">Connect the PC and Log into the GUI</a> .
<b>Required/As Needed</b>	As Needed
<b>Onsite/Remote</b>	Onsite or Remote
<b>Security Level</b>	Superuser

### Procedure

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- Step 1** From the View menu, choose **Go to Other Node**. Choose the node on which the device to be licensed is present and click **OK**.
- Step 2** Right-click the fabric or line card and choose **Open Packet Transport System View**. The Packet Transport System View window appears. Double-click the CPT 50 panel.
- Step 3** As needed, choose the operation described in the following table that best suits your requirement.
- Note** License provisioning is done using the options available in the Provisioning > Licensing tab. The Licensing tab is displayed only when the device has licensable PIDs and the software release supports licensing for the device.

Operation	Description
<ol style="list-style-type: none"> <li>1 Choose the <b>Provisioning &gt; Licensing &gt; License Operations</b> tab.</li> <li>2 Choose <b>Install License</b> from the “Choose the operation to perform” drop-down list.</li> <li>3 Click <b>Browse</b> to navigate to the license file location and select the saved license file.</li> <li>4 Click <b>Open &gt; OK</b>.</li> </ol>	<p>Installs the license on the card.</p> <p>The license file would have been emailed to your registered e-mail address after the license registration on the licensing portal.</p>
<ol style="list-style-type: none"> <li>1 Choose the <b>Provisioning &gt; Licensing &gt; License Operations</b> tab.</li> <li>2 Choose <b>Save Licenses</b> from the “Choose the operation to perform” drop-down list.</li> <li>3 Click <b>Browse</b> to choose the folder and file name on which the license will be saved.</li> <li>4 Click <b>Save &gt; OK</b>.</li> </ol>	<p>Saves the license file.</p> <p>You can always save a license file that you have installed. If you have lost the license by accidental delete, you can reinstall the license using the saved license file.</p> <p><b>Note</b> An evaluation license cannot be saved.</p>
<ol style="list-style-type: none"> <li>1 Choose the <b>Provisioning &gt; Licensing &gt; Counted License Features</b> tab.</li> </ol>	<p>Displays details of licensed port counts. You can view the following information:</p> <ul style="list-style-type: none"> <li>• License Feature Name—Shows the feature name for the license. For the CPT system the license feature name is GIGE PORT.</li> <li>• Total Base count—Shows the number of ports available in the built-in base functionality.</li> <li>• Available Base Count—Shows the number of ports available to provision under the base functionality.</li> <li>• Total License Count—Shows the total number of licensed ports that can be used under the current in-use license.</li> <li>• Available License Count—Shows the number of ports available to provision under the current in-use license.</li> <li>• Unlicensed Count—Shows the number of unlicensed ports.</li> </ul>

Operation	Description
<ol style="list-style-type: none"> <li>1 Choose the <b>Provisioning &gt; Licensing &gt; Counted License Features</b> tab.</li> <li>2 Choose the license entry and click <b>Manage License Lines</b>.</li> <li>3 Choose the license entry that you want to annotate and click <b>Annotate License</b>.</li> </ol>	<p>Enables you to annotate comments to a license line. The comments added are saved in the license file. To view the comments, save the license and view the license file.</p> <p>Evaluation license cannot be annotated.</p> <p><b>Note</b> Annotate license allows you to add a maximum of 99 characters. This operation overwrites the existing user comments, if any.</p>
<ol style="list-style-type: none"> <li>1 Choose the <b>Provisioning &gt; Licensing &gt; Counted License Features</b> tab.</li> <li>2 Choose the license entry and click <b>Manage License Lines</b>.</li> <li>3 Choose the license entry that you want to modify and click <b>Modify License Priority</b>.</li> <li>4 Choose high or low priority from the "Modify License Priority" drop-down list.</li> <li>5 Click <b>OK</b> to continue.</li> <li>6 Click <b>Refresh Licenses</b>.</li> </ol>	<p>Changes the license priority of an evaluation or temporary license.</p> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>• Changing the priority of the license from high to low or vice versa may affect traffic</li> <li>• License priority of a permanent license cannot be modified.</li> </ul>
<ol style="list-style-type: none"> <li>1 Choose the <b>Provisioning &gt; Licensing &gt; Counted License Features</b> tab.</li> <li>2 Choose the license entry and click <b>Manage License Lines</b>.</li> <li>3 Choose the license entry that you want to delete.</li> <li>4 Click <b>Delete License</b>.</li> </ol>	<p>Deletes a permanent or temporary license from the device.</p> <p>You can delete a license only when the license has expired or when it is in the "Inactive" or "Active, not in use" state.</p> <p>When you delete the licensed ports, the unlicensed ports automatically moves to the licensed state. Also, when the ports with a base license are deleted, the unlicensed ports automatically move to the base licensed state.</p> <p>To assign an unlicensed port to a base-license, it is always recommended that you first you delete the unlicensed port and then install the license on that port.</p> <p><b>Note</b> When there are no unlicensed ports left, deleting a licensed port does not have an impact on any port. When you provision the port next time, the port is assigned to the base functionality, if a base functionality port is vacant; else it moves to a licensed state if a licensed port is vacant. If the base and licensed ports are not vacant, then CTC does not allow you to provision the port.</p>

Operation	Description
<ol style="list-style-type: none"> <li>1 Choose the <b>Provisioning &gt; Licensing &gt; Counted License Features</b> tab.</li> <li>2 Choose the license entry to refresh the license data.</li> <li>3 Click <b>Refresh License Data</b></li> </ol>	<p>Refreshes the license data. The refresh license data shows the updated (most recent) license data.</p>
<ol style="list-style-type: none"> <li>1 Choose the <b>Provisioning &gt; Licensing &gt; Counted License Features</b> tab.</li> <li>2 Choose the license entry.</li> <li>3 Click <b>Manage License Lines</b>.</li> </ol> <p><b>Note</b> You can also view the licensing details of all the devices in a network. To view the licensing details of all the devices in a network, go to network view, click <b>Maintenance &gt; License explorer</b> tab.</p> <p><b>Note</b> When you change the system time in CTC, the updated expiry date is not reflected in CTC. To view the updated expiry date in CTC, create or delete 1 GE port, or change the license priority.</p>	<p>Displays license line details. You can view the following information:</p> <ul style="list-style-type: none"> <li>• <b>License Index</b>—In count-based licenses, the license index is based on the license type and the number of licensed ports. In feature-based licenses, the license index is based on the license type and is always license type-1. An example of license index in count-based licenses is temporary-4 where the license type is temporary and the number of licensed ports is 4. An example of license index in feature-based licenses is permanent-1 where the license type is permanent.</li> <li>• <b>License State</b>—Shows the license state. Active, Inactive, In_use, or Not In use.</li> <li>• <b>License Type</b>—Shows the license type, namely Evaluation, Temporary, or Permanent.</li> <li>• <b>Expired</b>—Shows whether the license is expired or not.</li> <li>• <b>Validity Period Remaining</b>—Shows the time before the In_use licenses expire.</li> <li>• <b>Total License Count</b>—Shows the number of licensed ports.</li> <li>• <b>Priority</b>—Shows the priority of the license, as high, medium, or low.</li> <li>• <b>Expiry Date</b>—Shows the license expiry date.</li> </ul>

Operation	Description
<ol style="list-style-type: none"> <li>1 Choose the <b>Provisioning &gt; Licensing &gt; Counted License Features</b> tab.</li> <li>2 Choose the license entry.</li> <li>3 Click <b>Get Detail License Usage</b></li> <li>4 Click the <b>Refresh &amp; Sort Ports By Created Order</b> tab to view the ports in order of creation.</li> <li>5 Click the <b>Refresh &amp; Sort By Channel Number</b> tab to view the ports, based on the port numbers.</li> </ol>	<p>Displays details of license usage.</p> <p>You can view the list of ports and the corresponding license status for each of these ports. You can sort the ports displayed, based on the created order or port number.</p>

**Stop. You have completed this procedure.**

## NTP-L3 Transfer a License Between Working Devices

<b>Purpose</b>	This procedure explains how to transfer a license between working devices.
<b>Tools/Equipment</b>	None
<b>Prerequisite Procedures</b>	None
<b>Required/As Needed</b>	As Needed
<b>Onsite/Remote</b>	Onsite or Remote
<b>Security Level</b>	Superuser

### Procedure

- Step 1** At the node, go to the source device and save the device credentials. Do the following to save the device credentials:
- a) Use CTC to access the node where you want to install the license. For more information about logging into CTC, see the task "NTP-J22 Log into CTC" in the [Cisco CPT Configuration Guide](#).
  - b) From the View menu, choose **Go to Other Node**.
  - c) Choose the required node, click **OK**.
  - d) Right-click the fabric or line card and choose **Open Packet Transport System View**. The Packet Transport System View window appears.
  - e) Double-click the CPT 50 panel.

- f) Click the **Provisioning > Licensing > License Operations** tabs.
- g) Choose **Save Device Credentials (WDC)** from the "Choose the operation to perform" drop-down list.
- h) Browse to navigate to the location where you want to save the file.
- i) Click **Save** and then click **OK**.  
The device credentials (WDC) associated with the card are saved at the specified location.

- Step 2** In the [Cisco Product License Registration](#) portal, get the permission ticket. Do the following to get the permission ticket:
- a) Click the **Look Up a License** link.  
You must have a Cisco.com account before you can access the portal.
  - b) Enter the PID and serial number of the source device.
  - c) Open the file saved in Step 1 in a text-editor, copy and paste all its content in the Device Credentials field.  
This gives the device and license details to the Cisco Product License Registration portal.
  - d) Enter security word displayed on the web page and click **Continue**.
  - e) Expand the "+" (plus sign) and select an entry based on the number of ports or feature you want to rehost.
  - f) Click **Start License Transfer**.
  - g) At this stage, you can opt for partial revoke or complete rehost by making the entry in the Quantity column.  
Click **Continue**.
  - h) Enter the PID and serial number of the destination device and accept the End User Agreement. Click **Continue**.
  - i) Verify the information summary and click **Submit**. The permission ticket is e-mailed to you.
  - j) Save this file to a secure location.

- Step 3** In CTC, click **Manage License Lines > Rehost License**.

- Step 4** Browse and choose the permission ticket file saved in the previous step and click **OK**.  
At this stage, a temporary license with port counts equal to the permanent license count with a validity period of 60 days is installed; this newly installed license remains in the same state as the permanent license that is rehosted. For example, consider you have a CPT 50 panel with 33 port permanent licenses. Now if you rehost only 11 ports, then a new permanent license with 22 counts and a temporary license with 33 counts with validity period of 60 days is installed on the device. In case of complete rehost, the permanent license is deleted from the source device.

- Step 5** Save the rehost ticket file that CTC generates.

- Step 6** In the [Cisco Product License Registration](#) portal, click the **Upload Rehost Ticket** link.

- Step 7** Open the file saved in the previous step in a text editor, copy and paste all the contents to the Upload Rehost Ticket page.

- Step 8** Click **Next** on the page.

- Step 9** Provide the target PID and serial number. The new license is sent in an e-mail.

- Step 10** Save this license file and install the license on the new device using CTC.  
**Stop. You have completed this procedure.**
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## NTP-L4 Transfer License Between a Failed and a Working Device

<b>Purpose</b>	This procedure explains how to transfer licence between a failed and a working device.
<b>Tools/Equipment</b>	None
<b>Prerequisite Procedures</b>	None
<b>Required/As Needed</b>	As Needed
<b>Onsite/Remote</b>	Onsite or Remote
<b>Security Level</b>	Superuser

### Procedure

- Step 1** Obtain the PID and SN of the failed and working devices. See [Unique Device Identifier](#), on page 2 on how to obtain PID and SN.
  - Step 2** Go to the Cisco Product License Registration portal at <http://www.cisco.com/go/license>. You must have a Cisco.com account before you can access the portal.
  - Step 3** From the Transfer drop-down list, choose **RMA**.
  - Step 4** From the Product Family drop-down list, choose the product as **Carrier Packet Transport & 15454**.
  - Step 5** Enter the source UDI PID and SN, target UDI PID and SN, and RMA information and click **Next**. The license portal determines the licenses associated with the defective device. The new license for the working device is sent by email.
  - Step 6** Review the information that you have provided and click **Transfer**.
  - Step 7** Install the new license on the working device. Complete the [NTP-L2 Install and Manage Licenses](#) to install the license on the device.
- Stop. You have completed this procedure.**

## License Upgrade

To enable all software features, all new or upgraded Cisco devices that require software activation must be registered with Cisco. The registration process converts the PAK to an electronic license file containing a unique key for your hardware device. The license file must then be installed on your device to unlock the product and its features. If you want to extend the number of licenses for the increased number of port usage, you can procure the license as described in the task [NTP-L1 Register Cisco Product Licenses](#).

## Additional References

Use the *Cisco CPT Licensing Configuration Guide* in conjunction with the referenced publications listed in the table below.

Related Topic	Document Title
Release notes	<i>Release Notes for Cisco CPT-CTC and Documentation Release 9.3 and Cisco IOS Release 15.1(01)SA</i>
Configuration guide	<i>Cisco CPT Configuration Guide</i>

## Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, submitting a service request, and gathering additional information, see the monthly What's New in Cisco Product Documentation, which also lists all new and revised Cisco technical documentation, at: <http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html>

Subscribe to the What's New in Cisco Product Documentation as a Really Simple Syndication (RSS) feed and set content to be delivered directly to your desktop using a reader application. The RSS feeds are a free service and Cisco currently supports RSS version 2.0.

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