Configuring Right-To-Use Licenses

Finding Feature Information

Your software release may not support all the features documented in this module. For the latest feature information and caveats, see the release notes for your platform and software release.

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

Related Topics

Feature History and Information for Troubleshooting Software Configuration

Restrictions for Configuring RTU Licenses

The following are the restrictions for configuring and using RTU licenses.

- AP count licenses can be ordered and pre-activated on your switch.
- Imaged based licenses can be upgraded. AP count licenses can be deactivated and moved between switches and controllers.
- To activate a permanent license, you must reboot your switch after configuring the new image level. The AP-count license does not require a reboot to activate.

- An expired image based evaluation license can not be reactivated after reboot.
- Stack members of a switch stack must run the same license level.
- Licenses on mixed switch stacks are not supported.
- Your switch is pre-installed with the image that you ordered. If an image was not pre-ordered, then the switch is booted with a LAN base image by default.
- Adder AP-count licenses are installed in the factory.

Related Topics

Activating an Imaged Based License, on page 5
Examples: Activating RTU Image Based Licenses, on page 11

Information About Configuring RTU Licenses

Right-To-Use Licensing

Right-to-use (RTU) licensing allows you to order and activate a specific license type and level, and then to manage license usage on your switch. The types of licenses available to order are:

- Permanent licenses—Purchased with a specific feature set with no expiration date.
- Evaluation licenses—Pre-installed on the switch and is valid for only a 90 day in-use period.

To activate a permanent or evaluation license, you are required to accept the End-User License Agreement (EULA). For the evaluation license, you are notified to purchase a permanent license or deactivate the license before the 90 day period expires.

A permanent license can be moved from one device to another. To activate a license, you must reboot your switch.

An evaluation license is a manufacturing image on your switch and is not transferable to another switch. This type of license cannot be reactivated after reboot.

Related Topics

Activating an Imaged Based License, on page 5
Examples: Activating RTU Image Based Licenses, on page 11

Right-To-Use Image Based Licenses

Right-to-use imaged licenses support a set of features based on a specific image-based license:

- LAN Base—Layer 2 features.
- IP Base—Layer 2 and Layer 3 features.
- IP Services—Layer 2, Layer 3, and IPv6 features. (Applicable only to switches and not controllers.)

The default image based license is LAN Base.

Right-To-Use License States

After you configure a specific license type and level, you can manage your licenses by monitoring the license state.

Table 1: RTU License States

License State	Description
Active, In Use	EULA was accepted and the license is in use after device reboot.
Active, Not In Use	EULA was accepted and the switch is ready to use when the license is enabled.
Not Activated	EULA was not accepted.

Guidelines to follow when monitoring your image based license state:

- A purchased permanent license is set to *Active, In Use* state only after a switch reboot.
- If more than one license was purchased, a reboot will activate the license with the highest feature set. For instance, the IP Services license is activated and not the LAN Base license.
- Remaining licenses purchased after switch reboot, stay in **Active, Not In Use** state.

Note For the AP count license, to change the state to Active, In Use, you must first make sure that the evaluation AP count license is deactivated.

License Activation for Switch Stacks

Right-to-use licensing is supported on switch stacks. A switch is a set of up to nine stacking-capable switches connected through their StackWise-160 ports. You can connect only one switch type in a stack. One switch in the stack is identified as the active switch and the remaining switches are standby switches. The active switch is the switch that is activated with an RTU license and from its active console, the license level for the standby switches in the stack can be activated at the same time.

A new switch is allowed to join the switch stack if its license level matches. If there is a mismatch, then the active switch can reconfigure the license level and reboot it to allow it to join the stack.

Mobility Controller Mode

AP-count licenses are used only when the switch is in Mobility Controller mode. The MC is the gatekeeper for tracking the AP-count licenses and allows an access point to join or not.

Management of AP-count licenses is performed by the in mobility controller mode configurable through the CLI.

Related Topics

Changing Mobility Mode, on page 9

Right-To-Use AP-Count Licensing

Right-to-use licensing (RTU) allows you to order and activate a specific license type, and then to manage license usage on your .

You can order your device with support for a specific number of adder access point count licenses, but the total number of licenses ordered should not exceed 25. You can also order your adder access point count licenses after receiving the device.

For example, if you have ordered 25 new adder licenses, you can add only those ordered adder licenses to the device. The licenses can be added in increments of 1, but the total number of licenses added for the device should not exceed 25 .

You can configure your switch to manage the access point count licenses and view the number of access points currently in use from the CLI.

The following are two different types of access point licenses:

1 Permanent licenses for the access points

- Adder access point count license—You can purchase the adder license to increase the device capacity at a later time. You can transfer the adder access point count license from one device to another.

2 Evaluation licenses for the access points

- You can activate these licenses to evaluate more access points before purchasing the licenses.
- The maximum number of access points that can be evaluated is 25 .
- The evaluation period for using the access point licenses is 90 days.
- You can activate and deactivate the evaluation licenses from the CLI.

Related Topics

Activating an AP-Count License, on page 7
Obtaining an Upgrade or Capacity Adder License, on page 7
Rehosting a License, on page 8

Right-to-Use AP-Count Evaluation Licenses

If you are considering upgrading to a license with a higher access point count, you can try an evaluation license before upgrading to a permanent version of the license. For example, if you are using a permanent license with a 10 access-point count and want to try an evaluation license with a 15-access-point count, you can try out the evaluation license for 90 days.

When an evaluation license is activated, the permanent AP-count licenses are ignored. The maximum supported licenses of 25 access points are available for 90 days.

To prevent disruptions in operation, the device does not change licenses when an evaluation license expires. A warning expiry message is displayed daily starting five days prior to the expiry date. After 90 days, the evaluation license expires with a warning message. You must disable the evaluation license and then purchase the permanent license.

When the device reboots after the evaluation license expiry, the license defaults to a permanent license.

Related Topics

Activating an AP-Count License, on page 7

Obtaining an Upgrade or Capacity Adder License, on page 7

Rehosting a License, on page 8

Right-To-Use Adder AP-Count Rehosting Licenses

Revoking a license from one device and installing it on another is called rehosting. You might want to rehost a license to change the purpose of a device.

To rehost a license, you must deactivate the adder ap-count license from one device and activate the same license on another device.

Evaluation licenses cannot be rehosted.

How to Configure RTU Licenses

Activating an Imaged Based License

SUMMARY STEPS

1. **license right-to-use activate**{**ipbase** |**ipservices** | **lanbase**} {**all** | **evaluation all** } [**slot** *slot-number*] [**acceptEULA**]
2. **reload** [*LINE* | **at** | **cancel** | **in** | **slot** *stack-member-number* | **standby-cpu**]
3. **show license right-to-use usage** [**slot** *slot-number*]

DETAILED STEPS

	Command or Action	Purpose
Step 1	**license right-to-use activate**{**ipbase** |**ipservices**	**lanbase**} {**all**	**evaluation all** } [**slot** *slot-number*] [**acceptEULA**] **Example:** `Device# license right-to-use activate ipservices all acceptEULA`	Activates a type of image based license. Activation can happen on all switches and also include the EULA acceptance.

	Command or Action	Purpose
		Note If you do not accept EULA, the modified configuration will not take effect after reload. The default license (or a license that was not deactivated) becomes active after reload.

Step 2	**reload** [*LINE* | **at** | **cancel** | **in** | **slot** *stack-member-number* | **standby-cpu**]
	
	Example:
	`Device# reload slot 1`
	`Proceed with reload? [confirm] y`
		Reloads a specific stack member to complete the activation process for the RTU adder AP-count license.
		Note The reminder to accept a EULA is displayed after reload if it was not accepted earlier.

Step 3	**show license right-to-use usage** [**slot** *slot-number*]
	
	Example:
	`Device# show license right-to-use usage`
	
	`Slot# License Name Type usage-duration(y:m:d) In-Use EULA`
	`---`
	`1 ipservices permanent 0 :10 :0 yes yes`
	`1 ipbase permanent 0 :0 :0 no no`
	`1 ipbase evaluation 0 :0 :0 no no`
	`1 lanbase permanent 0 :0 :7 no yes`
	`1 apcount evaluation 0 :0 :0 no no`
	`1 apcount base 0 :0 :0 no no`
	`1 apcount adder 0 :0 :0 no no`
	
	`Switch#`
		Displays detailed usage information.

Related Topics

Restrictions for Configuring RTU Licenses, on page 1
Right-To-Use Licensing, on page 2
Monitoring and Maintaining RTU Licenses, on page 10
Examples: Activating RTU Image Based Licenses, on page 11

Activating an AP-Count License

SUMMARY STEPS

1. **license right-to-use activate**{**apcount** *ap-number* **slot** *slot-num*} | **evaluation**} [**acceptEULA**]
2. **show license right-to-use usage** [**slot** *slot-number*]

DETAILED STEPS

	Command or Action	Purpose
Step 1	**license right-to-use activate**{**apcount** *ap-number* **slot** *slot-num*}	**evaluation**} [**acceptEULA**] **Example:** `Device# license right to use activate apcount 5 slot 1 acceptEULA`	Activates one or more adder AP-count licenses and immediately accepts the EULA.

Step 2	**show license right-to-use usage** [**slot** *slot-number*]
	
	Example:
	
	`Device# show license right-to-use usage`
	
	`Slot# License Name Type usage-duration(y:m:d) In-Use EULA`
	`---`
	
	`1 ipservices permanent 0 :3 :29 yes yes`
	`1 ipservices evaluation 0 :0 :0 no no`
	`1 ipbase permanent 0 :0 :0 no no`
	`1 ipbase evaluation 0 :0 :0 no no`
	`1 lanbase permanent 0 :0 :0 no no`
	`1 apcount evaluation 0 :3 :11 no no`
	`1 apcount base 0 :0 :0 no yes`
	`1 apcount adder 0 :0 :17 yes yes`
	
	`Switch#`
		Displays detailed usage information.

Related Topics

Monitoring and Maintaining RTU Licenses, on page 10
Right-To-Use AP-Count Licensing, on page 4
Right-to-Use AP-Count Evaluation Licenses, on page 4

Obtaining an Upgrade or Capacity Adder License

You can use the capacity adder licenses to increase the number of access points supported by the device.

SUMMARY STEPS

1. **license right-to-use** {**activate** | **deactivate**} **apcount** {*ap-number* | **evaluation** } **slot** *slot-num* [**acceptEULA**]

DETAILED STEPS

	Command or Action	Purpose
Step 1	**license right-to-use** {**activate** | **deactivate**} **apcount** {*ap-number* | **evaluation** } **slot** *slot-num* [**acceptEULA**] **Example:** `Device# license right to use activate apcount 5 slot 2 acceptEULA`	Activates one or more adder AP-count licenses and immediately accepts the EULA.

Related Topics

Right-to-Use AP-Count Evaluation Licenses, on page 4
Right-To-Use AP-Count Licensing, on page 4

Rehosting a License

To rehost a license, you have to deactivate the license from one device and then activate the same license on another device.

SUMMARY STEPS

1. **license right-to-use deactivate apcount** *ap-number* **slot** *slot-num* [**acceptEULA**]
2. **license right-to-use activate apcount** *ap-number* **slot** *slot-num* [**acceptEULA**]

DETAILED STEPS

	Command or Action	Purpose
Step 1	**license right-to-use deactivate apcount** *ap-number* **slot** *slot-num* [**acceptEULA**] **Example:** `Device# license right to use deactivate apcount 1 slot 1 acceptEULA`	Deactivates the license on one device.
Step 2	**license right-to-use activate apcount** *ap-number* **slot** *slot-num* [**acceptEULA**] **Example:** `Device# license right to use activate apcount 2 slot 2 acceptEULA`	Activates the license on another device.

Related Topics

Right-To-Use AP-Count Licensing, on page 4
Right-to-Use AP-Count Evaluation Licenses, on page 4

Changing Mobility Mode

SUMMARY STEPS

1. **wireless mobility controller**
2. **write memory**
3. **reload** [*LINE* | **at** | **cancel** | **in** | **slot** *stack-member-number* | **standby-cpu**]
4. **no wireless mobility controller**
5. **write memory**
6. **reload** [*LINE* | **at** | **cancel** | **in** | **slot** *stack-member-number* | **standby-cpu**]

DETAILED STEPS

	Command or Action	Purpose

Step 1	**wireless mobility controller**
	
	Example:
	`Device(config)# wireless mobility controller`
	`%`
	`Mobility role changed to Mobility Controller.`
	`Please save config and reboot the whole stack.`
		Changes a switch in Mobility Agent mode to Mobility Controller mode.

Step 2	**write memory**
	
	Example:
	`Device# write memory`
	
	`Building configuration...`
	`Compressed configuration from 13870 bytes to 5390 bytes[OK]`
	`Device#`	

Step 3	**reload** [*LINE*	**at**	**cancel**	**in**	**slot** *stack-member-number*	**standby-cpu**]
						
						Example:
						`Device# reload slot 3`
						`Proceed with reload? [confirm] y`	

	Command or Action	Purpose

Step 4	**no wireless mobility controller**
	
	Example:
	`Device(config)# no wireless mobility controller`
	`%`
	`Mobility role changed to Mobility Agent.`
	`Please save config and reboot the whole stack.`
	`Switch(config)#`
		Changes a switch in Mobility Controller mode to Mobility Agent mode.

Step 5	**write memory**
	
	Example:
	`Device# write memory`
	
	`Building configuration...`
	`Compressed configuration from 13870 bytes to 5390 bytes[OK]`
	`Device#`	

Step 6	**reload** [*LINE* | **at** | **cancel** | **in** | **slot** *stack-member-number* | **standby-cpu**]
	
	Example:
	`Device# reload slot 3`
	`Proceed with reload? [confirm] y`	

Related Topics

Mobility Controller Mode, on page 3

Monitoring and Maintaining RTU Licenses

Command	Purpose
show license right-to-use default	Displays the default license information.
show license right-to-use detail	Displays detailed information of all the licenses in the switch stack.
show license right-to-use eula {adder | evaluation | permanent}	Displays the end user license agreement.
show license right-to-use mismatch	Displays the license information that does not match.
show license right-to-use slot *slot-number*	Displays the license information for a specific slot in a switch stack.
show license right-to-use summary	Displays a summary of the license information on the entire switch stack.

Command	Purpose
show license right-to-use usage [**slot** *slot-number*]	Displays detailed information about usage for all licenses in the switch stack.
show switch	Displays detailed information of every member in a switch stack including the state of the license.

Related Topics

Activating an Imaged Based License, on page 5
Examples: Activating RTU Image Based Licenses, on page 11
Activating an AP-Count License, on page 7

Configuration Examples for RTU Licensing

Examples: Activating RTU Image Based Licenses

This example shows how to activate an IP Services image license and accept the EULA for a specific slot:

```
Switch# license right-to-use activate ipservices slot 1 acceptEULA
% switch-1:stack-mgr:Reboot the switch to invoke the highest activated License level
```

This example shows how to activate a license for evaluation:

```
Switch# license right-to-use activate ipservices evaluation acceptEULA
% switch-1:stack-mgr:Reboot the switch to invoke the highest activated License level
```

Related Topics

Activating an Imaged Based License, on page 5
Restrictions for Configuring RTU Licenses, on page 1
Right-To-Use Licensing, on page 2
Monitoring and Maintaining RTU Licenses, on page 10

Examples: Displaying RTU Licensing Information

This example shows the consolidated RTU licensing information from the active switch on a switch stack. All of the members in the stack have the same license level. When the evaluation AP-count license is activated, the adder AP-count licenses are ignored. The maximum number of AP-count licenses are available when evaluation is enabled.

```
Switch# show license right-to-use summary
```

```
 License Name    Type           Count   Period left
--------------------------------------------------------
  ipservices     permanent        10      Lifetime
  apcount        evaluation       15       90

--------------------------------------------------------

License Level In Use: ipservices
License Level on Reboot: ipbase
Evaluation AP-Count: Enabled
Total AP Count Licenses: 25
AP Count Licenses In-use: 10
AP Count Licenses Remaining: 15
```

This example shows a summary of permanent and adder licenses. The evaluation AP-count license is disabled displaying the total number of activated adder AP-count licenses in the switch stack. AP-count licenses in-use mean that they are connected.

```
Switch# show license right-to-use summary

  License Name    Type           Count      Period left
------------------------------------------------------------
  ipservices     permanent      N/A         Lifetime
  apcount        base           0
  apcount        adder          25          Lifetime

------------------------------------------------------------

License Level In Use: ipservices
License Level on Reboot: ipservices eval
Evaluation AP-Count: Disabled
Total AP Count Licenses: 25
AP Count Licenses In-use: 10
AP Count Licenses Remaining: 15
```

This example shows the RTU default licenses. Default licenses are pre-installed and cannot be removed or transferred. If no license is activated the switch uses the default license, after a reboot.

```
Switch# show license right-to-use default

 Slot#    License Name    Type            Count
-----------------------------------------------------
 1        ipservices      permanent      N/A
 1        apcount         base           0
 1        apcount         adder          10

 Slot#    License Name    Type            Count
-----------------------------------------------------
 2        ipservices      permanent      N/A
 2        apcount         base           0
 2        apcount         adder          10

 Slot#    License Name    Type            Count
-----------------------------------------------------
 3        ipservices      permanent      N/A
 3        apcount         base           0
 3        apcount         adder          10
```

Example: Displaying RTU License Details

This example shows all the detailed information for the RTU licenses on slot 1:

```
Switch# show license right-to-use detail slot 1
```

```
Index 1:  License Name: ipservices
           Period left: Lifetime
           License Type: permanent
           License State: Active, In use
           License Count: Non-Counted
           License Location: Slot 1
Index 2:  License Name: ipservices
           Period left: 90
           License Type: evaluation
           License State: Not Activated
           License Count: Non-Counted
           License Location: Slot 1
Index 3:  License Name: ipbase
           Period left: Lifetime
           License Type: permanent
           License State: Active, Not In use
           License Count: Non-Counted
           License Location: Slot 1
Index 4:  License Name: ipbase
           Period left: 90
           License Type: evaluation
           License State: Not Activated
           License Count: Non-Counted
           License Location: Slot 1
           License Location: Standby Switch 1
Index 5:  License Name: lanbase
           Period left: Lifetime
           License Type: permanent
           License State: Not Activated
           License Count: Non-Counted
           License Location: Slot 1
Index 6:  License Name: apcount
           Period left: 90
           License Type: evaluation
           License State: Active, In use
           License Count: 50
           License Location: Slot 1
Index 7:  License Name: apcount
           Period left: Lifetime
           License Type: base
           License State: Active, Not In use
           License Count: 0
           License Location: Slot 1
Index 8:  License Name: apcount
           Period left: Lifetime
           License Type: adder
           License State: Active, Not In use
           License Count: 10
           License Location: Slot 1
```

Example: Displaying RTU License Mismatch

This example shows the license information of the switches in a stack and a mismatch state of a member switch. The member must match the active.

```
Switch# show switch

Switch/Stack Mac Address : 6400.f125.0c80
                                                      H/W   Current
Switch#   Role        Mac Address     Priority Version  State
-----------------------------------------------------------------------------
 1       Standby     6400.f125.1b00     1      0        Ready
*2       Active      6400.f125.0c80     1      V01      Ready
 3       Member      6400.f125.1780     1      0        Lic-Mismatch
```

Note To resolve the license mismatch, first check the RTU license summary:

```
Switch# show switch right-to-use summary
```

Then change the license level of the mismatched switched so that it is the same license level of the active switch. This example shows that the IP Base license was activated for the member switch to match the active switch.

```
Switch# license right-to-use activate ipbase slot 1 acceptEULA
```

Example: Displaying RTU Licensing Usage

This example shows the detailed licensing usage on your switch stack. The IP Services license in Slot 1 is permanent and usage is one day. An AP-count license in Slot 2 is ready for evaluation. EULA was accepted and state shows in use, but after reboot the evaluation license will be deactivated.

```
Switch# show license right-to-use usage

 Slot#  License Name     Type     usage-duration(y:m:d)  In-Use  EULA
-------------------------------------------------------------------------------------------

 1      ipservices     permanent      0 :0 :1            yes     yes
 1      ipservices     evaluation     0 :0 :0            no      no
 1      ipbase         permanent      0 :0 :0            no      yes
 1      ipbase         evaluation     0 :0 :0            no      no
 1      lanbase        permanent      0 :0 :0            no      no
 1      apcount        evaluation     0 :0 :0            yes     yes
 1      apcount        base           0 :0 :0            no      yes
 1      apcount        adder          0 :0 :0            no      yes

 Slot#  License Name     Type     usage-duration(y:m:d)  In-Use  EULA
-------------------------------------------------------------------------------------------

 2      ipservices     permanent       0 :0 :1           yes     no
 2      ipservices     evaluation      0 :0 :0           no      yes
 2      ipbase         permanent       0 :0 :0           no      yes
 2      ipbase         evaluation      0 :0 :0           no      no
 2      lanbase        permanent       0 :0 :0           no      no
 2      apcount        evaluation      0 :0 :0           yes     yes
 2      apcount        base            0 :0 :0           no      yes
 2      apcount        adder           0 :0 :0           no      no

 Slot#  License Name     Type     usage-duration(y:m:d)  In-Use  EULA
-------------------------------------------------------------------------------------------

 3      ipservices     permanent       0 :0 :1           yes     yes
 3      ipservices     evaluation      0 :0 :0           no      no
 3      ipbase         permanent       0 :0 :0           no      no
 3      ipbase         evaluation      0 :0 :0           no      no
 3      lanbase        permanent       0 :0 :0           no      no
 3      apcount        evaluation      0 :0 :0           yes     yes
 3      apcount        base            0 :0 :0           no      yes
 3      apcount        adder           0 :0 :0           no      no
```

Additional References for RTU Licensing

Related Documents

Related Topic	Document Title
RTU commands	*System Management Command Reference (Catalyst 3650 Switches)*
RTU AP image preload feature	*System Management Configuration Guide (Cisco WLC 5700 Series)*

Standards and RFCs

Standard/RFC	Title
None	—

MIBs

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

Technical Assistance

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

Feature History and Information for RTU Licensing

Release	Feature Information
Cisco IOS XE 3.3SE	This feature was introduced.