Specific License Reservation

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CHAPTER 1

Specific License Reservation

Specific License Reservation allows customers in highly secure networks to use Smart Licensing (and Smart licenses) without communicating the license information.

For a more detailed overview on Cisco Licensing, go to cisco.com/go/licensingguide.

Introduction to Specific License Reservation

Devices that are registered with smart licenses share device information at regular intervals with Cisco Smart Software Manager (SSM). Devices that are deployed in a highly secure network must not share the device information externally. Cisco offers license reservation as an on-request configuration for these devices.

Note License reservation provides limited or no functionality to certain smart licensing features such as transfer of licenses between products, license usage, asset management and so on.

Specific License Reservation (SLR) allows reservation of specific licenses, including add-on licenses. Begin by requesting license reservation for your Smart Account. After you have received a response from the licensing support team, you can proceed with the next steps, as outlined below.

To reserve specific licenses for a device, generate a request code from the device. Enter the request code in Cisco SSM along with the required licenses and their quantity, and generate an authorization code. Enter the authorization code on the device to map the license to the Unique Device Identifier (UDI).

To reserve specific licenses for a stack configuration, generate a request code for each member in the stack. Generate individual authorization codes for each of the request codes. Register each member of the stack with the generated authorization code.

To reserve specific licenses for modular switches, generate request codes for the supervisor module and chassis module separately. Enter the request code in Cisco SSM and select the required licenses (Network license for the supervisor module and DNA license for the chassis module) and generate authorization codes. Register the supervisor module and the chassis module with the respective authorization codes.

Requesting License Reservation for Your Smart Account

To request license reservation to your Smart Account in Cisco Smart Software Manager, complete the following steps:

1. Go to Support Case Manager.

2. Click **OPEN NEW CASE**

3. Select **Software Licensing**

The licensing team will contact you to start the process or for any additional information.

Migrating Traditional Licenses to Cisco SSM

Cisco SSM allows you to manage all your Cisco smart software licenses from one centralized portal. The traditional license that the device is registered with should be migrated to Cisco SSM before license reservation.

Raise a request for license migration with the Cisco Technical Assistance Center (TAC). After the request is approved, Cisco TAC requests the Global Licensing Operation (GLO) team to deposit the license in Cisco SSM.

Registering a Device with SLR

To register a device with SLR, perform the following tasks:

1. Enable license reservation on a device.

2. Generate a license reservation request code from the device.

3. Enter the request code in Cisco SSM, reserve a license, and generate an authorization code.

4. Register the device with the generated authorization code.

Configuring the License Level

This procedure is optional. Use this procedure to:

- Downgrade or upgrade licenses.

- Enable or disable an evaluation or extension license.

- Clear an upgrade license.

Configure the required license levels on the device before registering. The following are the license levels that are available for the Cisco Catalyst 3000 Series Switches:

Base licenses

- LAN Base—Supports Layer 2 features.

- IP Base—Supports Layer 2 and Layer 3 features.

- IP Services—Supports Layer 2, Layer 3, and IPv6 features.

Add-on licenses—These licenses can be subscribed for a fixed term of three, five, or seven years.

- Cisco Digital Networking Architecture (DNA) Essentials

- Cisco DNA Advantage (includes DNA Essentials)

To configure the license levels, follow this procedure:

Procedure

	Command or Action	**Purpose**
Step 1	**enable** **Example:** `> enable`	Enables privileged EXEC mode. Enter your password, if prompted.
Step 2	**configure terminal** **Example:** `# configure terminal`	Enters global configuration mode.
Step 3	**license boot level** *license_level* **Example:** `(config)# license boot level ipservices`	Activates the licenses on the device.
Step 4	**exit** **Example:** `(config)# exit`	Returns to privileged EXEC mode.
Step 5	**write memory** **Example:** `# write memory`	Saves the license information on the device.

Step 6	**show version**
	Example:
	`# show version`
	`Snippet`
	`---------------------------------------------------`
	`Technology-package Current     Type`
	`                Technology-package Next`
	` reboot`
	
	`---------------------------------------------------`
	`ipbasek9                     Smart`
	`License                 ipservicesk9`
		Shows license-level information.

	Command or Action	Purpose
	`None` `Subscription Smart License        None`	
Step 7	**reload** **Example:** `# reload`	Reloads the device.

Enabling SLR on a Device

To enable SLR, perform this procedure:

Procedure

	Command or Action	Purpose
Step 1	**enable** **Example:** `> enable`	Enables privileged EXEC mode. Enter your password, if prompted.
Step 2	**configure terminal** **Example:** `# configure terminal`	Enters global configuration mode.
Step 3	**license smart reservation** **Example:** `(config)# license smart reservation`	Enables SLR. Use the **no** form of this command to disable SLR.
Step 4	**exit** **Example:** `(config)# exit`	Exits global configuration mode, and returns the device to privileged EXEC mode.

Generating a Request Code from a Device

After SLR is enabled, you must generate a request code from the device.

To generate a request code, perform this procedure:

Procedure

	Command or Action	Purpose
Step 1	**enable** **Example:** `> enable`	Enables privileged EXEC mode. Enter your password, if prompted.

	Command or Action	Purpose

Step 2	**license smart reservation request** [**all** | **local**]
	
	Example:
	
	`# license smart reservation request local`
	`Enter this request code in the Cisco`
	`Smart Software Manager portal:`
	`CK-ZWS-C3850-24P:FCW1831C1A2-BgPWudjgx-50`
		Generates a request code that needs to be entered in Cisco SSM. The request code can be generated for the following:
		
		• **all**—Generates a request code for all connected devices.
		
		• **local**—Generates a request code for the active device.

What to do next

Reserving a License in Cisco SSM.

Verifying the License Status After Generating a Request Code

To verify the license status after generating a request code, use the **show license reservation** command:

```
Device> enable
Device# show license reservation
Overall status:
  Active: PID:WS-C3850-24P,SN:FCW1831C1A2
    License reservation: ENABLED
      Reservation status: RESERVATION IN PROGRESS on Jun 12 15:36:04 2018 UTC
      Export-Controlled Functionality: Not Allowed
      Request code: CK-ZWS-C3850-24P:FCW1831C1A2-BgPWudjgx-50
      Last return code: CgTDxM-Wy7B7z-dxBBCu-E4o2BG-s8tzsB-SfRnF9-21KoGt-LU7Ckp-Kj2
```

Reserving a License in Cisco SSM

Procedure

Step 1   Log in to the Cisco SSM from https://software.cisco.com/#.

Log in to the Cisco SSM using the username and password provided by Cisco.

Step 2   Click the **Inventory** tab.

Step 3   From the **Virtual Account** drop-down list, choose your virtual account.

Step 4   Click the **Licenses** tab.

Step 5   Click **License Reservation**.

The **Smart License Reservation** window is displayed. The **Enter Request Code** tab is selected by default.

Step 6   In the **Reservation Request Code** field, enter the request code.

Step 7   Click **Next**.

The **Select Licenses** tab is displayed.

Step 8   Check the **Reserve a specific license** check box.

Step 9   In the **Quantity to Reserve** field, enter the numeral 1 adjacent to the required license.

Note   The **Quantity to Reserve** field allows the reservation of only one license at a time.

Step 10   Click **Next**.

The **Review and confirm** tab is displayed.

Step 11   Click **Generate Authorization Code**.

The **Authorization Code** tab is displayed.

Step 12 After the authorization code is generated, click **Copy to Clipboard** to copy the authorization, or **Download as File** to download the file and save it to the Flash drive or TFTP server.

What to do next

Register a device using the authorization code.

Registering a Device Using the Authorization Code

To register a device using the authorization code, perform this procedure:

Procedure

	Command or Action	**Purpose**
Step 1	**enable** **Example:** `> enable`	Enables privileged EXEC mode. Enter your password, if prompted.

Step 2	**license smart reservation install file**
	{**flash**:*filename* | **tftp**://*filepath*}
	
	Example:
	`# license smart reservation install file`
	` flash:AuthCode.txt`
	`Reservation install file successful`
	`Last Confirmation code UDI:`
	`PID:WS-C3850-24P,SN:FCW1831C1A2`
	`5a56f188`
		Loads the authorization code either from the Flash drive or the TFTP server and registers the device.

Verifying the License Status After Registering a Device with Authorization Code

To verify the license status after registration, use the **show license reservation** command:

```
Device> enable
Device# show license reservation
Overall status:
  Active: PID:WS-C3850-24P,SN:FCW1831C1A2
    License reservation: ENABLED
      Reservation status: SPECIFIC INSTALLED on Sep 06 11:12:46 2018 EDT
      Export-Controlled Functionality: Not Allowed
      Last Confirmation code: 5a56f188

Specified license reservations:
  C3850_24_Ipbase (C3850-24 IP Base):
    Description: C3850 24 Port Ipbase
    Total reserved count: 1
    Term information:
      Active: PID:WS-C3850-24P,SN:FCW1831C1A2
        License type: PERPETUAL
          Term Count: 1
```

Registering Stack Members with a Single Authorization File

In a stack configuration, a single authorization file can be used to register all the members in the stack instead of registering each member separately.

To create a single authorization file, perform this procedure:

1. Download the authorization files of each member in the stack and save it locally.

2. Open any of the authorization file using a text editor.

The following code is available:

```
<specificPLR><authorizationCode><flag>A</flag>
<version>C</version><piid>07639008-be16-43c7-8dfd-fd31eae63fdf</piid>
<timestamp>1528829828573</timestamp><entitlements><entitlement>
<startDate>2018-JUN-12 UTC</startDate><endDate>2018-DEC-09 UTC</endDate>
<tag>regid.2018-02.com.cisco.C3850_24_Ipserv,1.0_f8e7b1ab-93d6-4c16-b579-e1aef2d7e528</tag>
<count>1</count><licenseType>TERM</licenseType><displayName>C3850_24_Ipserv</displayName>
<tagDescription>C3850 24 Port
Ipserv</tagDescription><subscriptionID></subscriptionID></entitlement></entitlements></authorizationCode>
<signature>MEQCIHfhX7eqXaTlPvUwHUlkXMut9nfibYGMtSMx/CmlKKX2AiBc4/oxMsyzGhwFZDY3htC0FUN/ujJ1y4xbmSezL4Nxkw==</signature>
<udi>P:WS-C3850-24P,S:FCW1818C01U</udi></specificPLR>
```

3. Insert the tag **<smartLicense>** at the beginning of the code, and the tag **</smartLicense>** at the end of the code:

```
<smartLicense>
<specificPLR><authorizationCode><flag>A</flag>
<version>C</version><piid>07639008-be16-43c7-8dfd-fd31eae63fdf</piid>
<timestamp>1528829828573</timestamp><entitlements><entitlement>
<startDate>2018-JUN-12 UTC</startDate><endDate>2018-DEC-09 UTC</endDate>
<tag>regid.2018-02.com.cisco.C3850_24_Ipserv,1.0_f8e7b1ab-93d6-4c16-b579-e1aef2d7e528</tag>
<count>1</count><licenseType>TERM</licenseType><displayName>C3850_24_Ipserv</displayName>
<tagDescription>C3850 24 Port
Ipserv</tagDescription><subscriptionID></subscriptionID></entitlement></entitlements></authorizationCode>
<signature>MEQCIHfhX7eqXaTlPvUwHUlkXMut9nfibYGMtSMx/CmlKKX2AiBc4/oxMsyzGhwFZDY3htC0FUN/ujJ1y4xbmSezL4Nxkw==</signature>
<udi>P:WS-C3850-24P,S:FCW1818C01U</udi></specificPLR></smartLicense>
```

4. Copy the authorization code from all the other files and paste it into this file:

```
<smartLicense>
<specificPLR><authorizationCode><flag>A</flag>
<version>C</version><piid>07639008-be16-43c7-8dfd-fd31eae63fdf</piid>
<timestamp>1528829828573</timestamp><entitlements><entitlement>
<startDate>2018-JUN-12 UTC</startDate><endDate>2018-DEC-09 UTC</endDate>
<tag>regid.2018-02.com.cisco.C3850_24_Ipserv,1.0_f8e7b1ab-93d6-4c16-b579-e1aef2d7e528</tag>
<count>1</count><licenseType>TERM</licenseType><displayName>C3850_24_Ipserv</displayName>
<tagDescription>C3850 24 Port
Ipserv</tagDescription><subscriptionID></subscriptionID></entitlement></entitlements></authorizationCode>
<signature>MEQCIHfhX7eqXaTlPvUwHUlkXMut9nfibYGMtSMx/CmlKKX2AiBc4/oxMsyzGhwFZDY3htC0FUN/ujJ1y4xbmSezL4Nxkw==</signature>
<udi>P:WS-C3850-24P,S:FCW1818C01U</udi></specificPLR>
<specificPLR><authorizationCode><flag>A</flag>
<version>C</version><piid>07639008-be16-43c7-8dfd-fd31eae63fdf</piid>
<timestamp>1528829828573</timestamp><entitlements><entitlement>
<startDate>2018-JUN-12 UTC</startDate><endDate>2018-DEC-09 UTC</endDate>
<tag>regid.2018-02.com.cisco.C3850_24_Ipserv,1.0_f8e7b1ab-93d6-4c16-b579-e1aef2d7e345</tag>
<count>1</count><licenseType>TERM</licenseType><displayName>C3850_24_Ipserv</displayName><tagDescription>C3850
 24 Port
Ipserv</tagDescription><subscriptionID></subscriptionID></entitlement></entitlements></authorizationCode>
<signature>MEQCIHfhX7eqXaTlPvUwHUlkXMut9nfibYGMtSMx/CmlKKX2AiBc4/oxMsyzGhwFZDY3htC0FUN/ujJ1y4xbmSezL4Nxkw==</signature>
<udi>P:WS-C3850-24P,S:FCW2089C01X</udi></specificPLR></smartLicense>
```

5. Save the authorization file. Install the authorization file using the **license smart reservation install file** {**flash**:*filename* | **tftp**://*filepath*} command.

Upgrading or Downgrading a License on a Device

You can upgrade or downgrade your device license level without sharing the device information with Cisco SSM.

To change the license level on a device, perform the following tasks:

1. Generate a new authorization code for the new license from Cisco SSM.

2. Install the authorization code on the device and get the confirmation code.

3. Configure the new license level on the device.

4. Enter the confirmation code in Cisco SSM.

Generating a New Authorization Code for the New License in Cisco SSM

Procedure

Step 1 Log in to the Cisco SSM at https://software.cisco.com/#.

Log in to the Cisco SSM using the username and password provided by Cisco.

Step 2 Click the **Inventory** tab.

Step 3 From the **Virtual Account** drop-down list, choose your virtual account.

Step 4 Click the **Product Instances** tab.

Cisco Software Central > Smart Software Licensing

English [Change]   Hello   Smart Account Name ▼

Smart Software Licensing

Feedback   Support   Help

Alerts | **Inventory** | Convert to Smart Licensing | Reports | Preferences | Satellites | Activity

Questions About Licensing?
Try our Virtual Assistant

Virtual Account: Virtual Account 1 ▼

104 Minor | **Hide Alerts**

General	Licenses	**Product Instances**	Event Log

Search by Name, Product Type

Name	Product Type	Last Contact	Alerts	Actions
513E.C.26-9300-9	C9300	2018-Aug-02 21:07:03		Actions ▼
CAT3850-DLC	C3850	2018-Jul-09 15:41:30		Actions ▼
CAT93008x	C9300	2018-Aug-29 02:02:59		Actions ▼
elo-csr5	CSR1KV	2018-Aug-03 06:39:48		Actions ▼
jgorlin-asav	ASAHIGH	2018-Aug-01 20:03:34		Actions ▼
UDI_PID:C9300-24U; UDI_SN:FCW2123G002;	C9300	2018-Aug-29 02:01:13		Actions ▼
UDI_PID:C9407R; UDI_SN:FXS2131Q29D;	C9400	2018-Jul-06 14:40:11 (Reserved Licenses)		
UDI_PID:C9410R; UDI_SN:RME4QEXT0AQ;	C9400	2018-Jul-30 17:00:05 (Reserved Licenses)		Actions ▼
UDI_PID:C9410R; UDI_SN:SME4QEXT0AQ;	C9400	2018-Apr-06 09:26:05 (Reserved Licenses)		Actions ▼

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Showing Page 1 of 2 (11 Records) |◀ ◀ ▶ ▶|

The list of product instances that are available is displayed.

Step 5 Locate the required product instance from the product instances list. Optionally, you can also enter a name or product type string in the search tab to locate the product instance.

Step 6 Click the required product instance to expand the same.

The **Overview** window is displayed.

Step 7   From the **Actions** drop-down list, choose **Update Reserved Licenses**.

The **Update License Reservation** window is displayed.

Step 8   In the **Quantity to Reserve** field, enter the numeral 1 adjacent to the required license.

Note   The **Quantity to Reserve** field allows reservation of one license at a time.

Step 9   Click **Next**.

The **Review and confirm** tab is displayed.

Step 10   Review the license reservation information and click **Generate Authorization Code**.

The **Authorization Code** tab is displayed.

Step 11   After the authorization code is generated, click **Copy to Clipboard** to copy the authorization, or **Download as File** to download the file and save it to the Flash drive or the TFTP server.

What to do next

Registering a device using authorization code.

Registering a Device Using Authorization Code

To register a device with the authorization code, perform this procedure:

Procedure

	Command or Action	Purpose
Step 1	**enable** **Example:** `> enable`	Enables privileged EXEC mode. Enter your password, if prompted.

Step 2	**license smart reservation install file** {**flash**:*filename* | **tftp**://*filepath*}
	
	Example:
	
	`# license smart reservation install file`
	`  flash:AuthCode.txt`
	`Reservation install file successful`
	`Last Confirmation code UDI:`
	`PID:WS-C3850-24P,SN:FCW1831C1A2`
	`44ff1028`
		Loads the authorization code either from the Flash drive or the TFTP server, and registers the device.

Verifying the License Status After Registering the Device Using Authorization Code

To verify the status of the license after registration, use the **show license reservation** command:

```
Device> enable
Device# show license reservation
Overall status:
  Active: PID:WS-C3850-24P,SN:FCW1831C1A2
    License reservation: ENABLED
      Reservation status: SPECIFIC INSTALLED on Sep 06 11:12:46 2018 EDT
      Export-Controlled Functionality: Not Allowed
      Last Confirmation code: 44ff1028

Specified license reservations:
  C3850-DNA-A-24 (C3850-24 DNA Advantage):
    Description: C3850-DNA-A
    Total reserved count: 1
    Term information:
      Active: PID:WS-C3850-24P,SN:FCW1831C1A2
        License type: PERPETUAL
          Term Count: 1
  C3850_24_Ipbase (C3850-24 IP Base):
    Description: C3850 24 Port Ipbase
    Total reserved count: 1
    Term information:
      Active: PID:WS-C3850-24P,SN:FCW1831C1A2
        License type: PERPETUAL
          Term Count: 1
```

Configuring the License Level

This procedure is mandatory. Only on completion of this procedure, is a device authorized to use the new license level.

To configure the license level, follow this procedure:

Procedure

	Command or Action	**Purpose**
Step 1	**enable** **Example:** > **enable**	Enables privileged EXEC mode. Enter your password, if prompted.
Step 2	**configure terminal** **Example:** # **configure terminal**	Enters global configuration mode.
Step 3	**license boot level** *license_level* **Example:** (config)# **license boot level ipservices addon dna-advantage**	Activates the licenses on the device.

	Command or Action	Purpose
Step 4	**exit** **Example:** `(config)# exit`	Returns to privileged EXEC mode.
Step 5	**write memory** **Example:** `# write memory`	Saves the license information on the device.

Step 6	**show version**
	
	Example:
	
	`# show version`
	`Snippet`
	`----------------------------------------`
	`Technology-package Current    Type`
	`                Technology-package Next`
	` reboot`
	`----------------------------------------`
	`ipbasek9                    Smart`
	`License                 ipservicesk9`
	`dna-advantage`
	`Subscription Smart License`
	`dna-advantage`
		Shows license-level information.

Step 7	**reload** **Example:** `# reload`	Reloads the device. **Note** This step is mandatory.

Entering the Confirmation Code in Cisco SSM

This procedure is mandatory. On completion of this procedure, information stored in Cisco SSM is updated to indicate that the device is reloaded with the new license level and registered with the new authorization code. You need to complete this procedure to allow Cisco SSM to accept upgrades or downgrades at the license level in the future.

Procedure

Step 1   Log in to the Cisco SSM at https://software.cisco.com/#.

Log in to the Cisco SSM using the username and password provided by Cisco.

Step 2   Click the **Inventory** tab.

Step 3   From the **Virtual Account** drop-down list, choose your virtual account.

Step 4   Click the **Product Instances** tab.

List of product instances available is displayed.

Step 5   Locate the required product instance from the product instances list. Optionally, you can also enter a name or product type string in the search tab to locate the product instance.

Step 6   Click the required product instance to expand the same.

The **Overview** window is displayed.

Step 7   From the **Actions** drop-down list, choose **Enter Confirmation Code**.

The **Enter Confirmation code** window is displayed.

Step 8   In the **Reservation Confirmation Code** field, enter the confirmation code.

Step 9   Click **OK**.

The confirmation code is updated on CSSM.

Canceling a SLR Request

The license reservation request code can be cancelled before or after an authorization code is generated. Note that the authorization file needs to be returned to Cisco SSM if the cancellation request is raised after an authorization code is generated from CSSM.

To cancel an SLR request before the authorization code is installed, perform this procedure:

Procedure

	Command or Action	Purpose
Step 1	**enable** **Example:** `> enable`	Enables privileged EXEC mode. Enter your password, if prompted.
Step 2	**license smart reservation cancel** [**all** | **local**] **Example:** `# license smart reservation cancel local`	Cancels the license reservation request. Cancellation can be requested for the following: • **all**—Cancels the request for all the connected devices. • **local**—Cancels the request for the active device.
Step 3	**license smart reservation return authorization file** {**flash**:*filename* | **tftp**://*filepath*} **Example:** `# license smart reservation return authorization file flash:AuthCode.txt`	(Optional) Returns the generated authorization file. **Note** This step is required if only an authorization file is generated. Use the **license smart reservation return authorization file** command to return the authorization file if you need to return the license, but have misplaced the return reservation code.

Verifying the License Status After Canceling SLR

To verify the license status after canceling SLR, use the **show license reservation** command:

```
Device> enable
Device# show license reservation
Overall status:
  Active: PID:WS-C3850-24P,SN:FCW1831C1A2
    License reservation: ENABLED
      Reservation status: NOT INSTALLED
      Export-Controlled Functionality: Not Allowed
      Last return code: CgTDxM-Wy7B7z-dxBBCu-E4o2BG-s8tzsB-SfRnF9-21KoGt-LU7Ckp-Kj2
```

Removing SLR from a Device

To remove SLR from a device, perform the following tasks:

1. Generate a return code from a device.

2. Enter the return code on Cisco SSM.

3. Remove the product instance.

Generating a Return Code from a Device

To generate a return code, perform this procedure:

Procedure

	Command or Action	**Purpose**
Step 1	**enable** **Example:** `> enable`	Enables privileged EXEC mode. Enter your password, if prompted.

Step 2	**license smart reservation return** [**all** | **local**]
	
	Example:
	
	`# license smart reservation return`
	`This command will remove the license`
	`reservation authorization code and the`
	`device will transition back to the`
	`unregistered state. Some features may`
	`not function properly.`
	
	`Do you want to continue? [yes/no]: y`
	`Enter this return code in Cisco Smart`
	`Software Manager portal:`
	`UDI: PID:WS-C3850-24P,SN:FCW1831C1A2`
	
	`CgIDxM-Wy7B7z-dxBBCu-E4o2BG-s8tzsB-SfRnF9-21KcGt-1U7Ckp-Kj2`
		Cancels the device registration with the return code. The return code can be generated for the following:
		
		• **all** —Generates return codes for all the connected devices.
		
		• **local**—Generates return code for the active device.

Removing the Product Instance from CSSM

Procedure

Step 1 Log in to Cisco SSM at https://software.cisco.com/#.

Log in to Cisco SSM using the username and password provided by Cisco.

Step 2 Click the **Inventory** tab.

Step 3 From the **Virtual Account** drop-down list, choose your virtual account.

Step 4   Click the **Product Instances** tab.

The list of product instances that are available is displayed.

Step 5   Locate the required product instance from the product instances list. Optionally, you can enter a name or product type string in the search tab to locate the product instance.

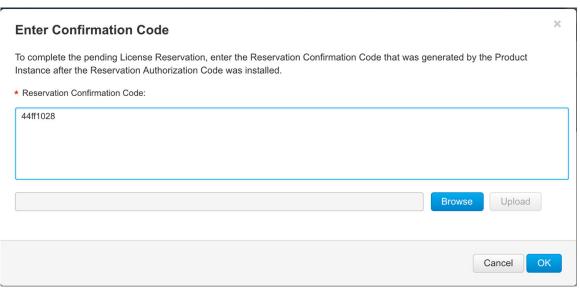**Step 6**   Click the required product instance to expand the same.

The **Overview** window is displayed.

Step 7   From the **Actions** drop-down list, choose **Remove**.

The **Remove Product Instance** window is displayed.

Step 8 In the **Reservation Return Code** field, enter the return code.

Step 9 Click **Remove Product Instance**.

The reservation information is removed and the license is made available in the virtual account.

Configuration Examples for SLR

The following sections provide various SLR examples.

Example: Enabling SLR

To enable SLR, use the **license smart reservation** command:

```
Device> enable
Device# configure terminal
Device(config)# license smart reservation
Device(config)# exit
```

Example: Viewing the License Information Before Registering

Example

To display the license entitlements, use the **show license all** command:

```
Device> enable
Device# show license all
Load for five secs: 2%/0%; one minute: 5%; five minutes: 3%
No time source, 11:00:34.118 EDT Thu Sep 6 2018

Smart Licensing Status
======================

Smart Licensing is ENABLED
License Reservation is ENABLED

Registration:
  Status: UNREGISTERED
  Export-Controlled Functionality: Not Allowed

License Authorization:
  Status: EVAL MODE
  Evaluation Period Remaining: 66 days, 3 hours, 8 minutes, 24 seconds

License Conversion:
  Automatic Conversion Enabled: False
  Status: Not started

Utility:
  Status: DISABLED

Data Privacy:
  Sending Hostname: yes
    Callhome hostname privacy: DISABLED
    Smart Licensing hostname privacy: DISABLED
```

```
     Version privacy: DISABLED

Transport:
  Type: Callhome

License Usage
==============

(C3850-24 IP Base):
  Description:
  Count: 1
  Version: 1.0
  Status: EVAL MODE
  Reservation:
    Reservation status: NOT INSTALLED

Product Information
===================
UDI: PID:WS-C3850-24P,SN:FCW1831C1A2

Agent Version
=============
Smart Agent for Licensing: 4.4.13_rel/116
Component Versions: SA:(1_3_dev)1.0.15, SI:(dev22)1.2.1, CH:(rel5)1.0.3, PK:(dev18)1.0.3

Reservation Info
================
License reservation: ENABLED

Overall status:
  Active: PID:WS-C3850-24P,SN:FCW1831C1A2
      Reservation status: NOT INSTALLED
      Export-Controlled Functionality: Not Allowed
```

License Usage Information

To display the license usage information, use the **show license usage** command:

```
Device> enable
Device# show license usage
License reservation: ENABLED

Overall status:
  Active: PID:WS-C3850-24P,SN:FCW1831C1A2
      Reservation status: NOT INSTALLED
      Export-Controlled Functionality: Not Allowed
```

License Summary Information

To display all the license summaries, use the **show license summary** command:

```
Device> enable
Device# show license summary

Smart Licensing is ENABLED
License Reservation is ENABLED

Registration:
```

```
  Status: UNREGISTERED
  Export-Controlled Functionality: Not Allowed

License Authorization:
  Status: EVAL MODE
  Evaluation Period Remaining: 66 days, 3 hours, 8 minutes, 24 seconds

License Usage:
  License                    Entitlement tag              Count Status
  -------------------------------------------------------------------------
                             (C3850-24 IP Base)              1 EVAL MODE
```

License Status Information

To display the license status information, use the **show license status** command:

```
Device> enable
Device# show license status
Smart Licensing is ENABLED

Utility:
  Status: DISABLED

Data Privacy:
  Sending Hostname: yes
    Callhome hostname privacy: DISABLED
    Smart Licensing hostname privacy: DISABLED
  Version privacy: DISABLED

Transport:
  Type: Callhome

Registration:
  Status: UNREGISTERED
  Export-Controlled Functionality: Not Allowed

License Authorization:
  Status: EVAL MODE
  Evaluation Period Remaining: 66 days, 3 hours, 8 minutes, 24 seconds
```

Example: Viewing the License Status After Registering

To display license entitlements, use the **show license all** command:

```
Device> enable
Device# show license all
Load for five secs: 2%/0%; one minute: 4%; five minutes: 3%
No time source, 11:05:30.019 EDT Thu Sep 6 2018

Smart Licensing Status
======================

Smart Licensing is ENABLED
License Reservation is ENABLED

Registration:
  Status: REGISTERED - SPECIFIC LICENSE RESERVATION
```

```
       Export-Controlled Functionality: Not Allowed
       Initial Registration: SUCCEEDED on Sep 06 11:04:48 2018 EDT

  License Authorization:
     Status: AUTHORIZED - RESERVED on Sep 06 11:04:48 2018 EDT

  License Conversion:
     Automatic Conversion Enabled: False
     Status: Not started

  Utility:
     Status: DISABLED

  Data Privacy:
     Sending Hostname: yes
       Callhome hostname privacy: DISABLED
       Smart Licensing hostname privacy: DISABLED
     Version privacy: DISABLED

  Transport:
     Type: Callhome

  License Usage
  ==============

  C3850_24_Ipbase (C3850-24 IP Base):
     Description: C3850 24 Port Ipbase
     Count: 1
     Version: 1.0
     Status: AUTHORIZED
     Reservation:
       Reservation status: SPECIFIC INSTALLED
       Total reserved count: 1

  Product Information
  ===================
  UDI: PID:WS-C3850-24P,SN:FCW1831C1A2

  Agent Version
  =============
  Smart Agent for Licensing: 4.4.13_rel/116
  Component Versions: SA:(1_3_dev)1.0.15, SI:(dev22)1.2.1, CH:(rel5)1.0.3, PK:(dev18)1.0.3

  Reservation Info
  ================
  License reservation: ENABLED

  Overall status:
     Active: PID:WS-C3850-24P,SN:FCW1831C1A2
          Reservation status: SPECIFIC INSTALLED on Sep 06 11:04:48 2018 EDT
          Export-Controlled Functionality: Not Allowed
          Last Confirmation code: 5a56f188

  Specified license reservations:
     C3850_24_Ipbase (C3850-24 IP Base):
        Description: C3850 24 Port Ipbase
        Total reserved count: 1
        Term information:
          Active: PID:WS-C3850-24P,SN:FCW1831C1A2
             License type: PERPETUAL
```

```
                    Term Count: 1
```

To display the license usage information, use the **show license usage** command:

```
Device> enable
Device# show license usage
License Authorization:
  Status: AUTHORIZED - RESERVED on Sep 06 11:04:48 2018 EDT
C3850_24_Ipbase (C3850-24 IP Base):
  Description: C3850 24 Port Ipbase
  Count: 1
  Version: 1.0
  Status: AUTHORIZED
  Reservation:
    Reservation status: SPECIFIC INSTALLED
    Total reserved count: 1
```

To display all the license summaries, use the **show license summary** command:

```
Device> enable
Device# show license summary
Smart Licensing is ENABLED
License Reservation is ENABLED

Registration:
  Status: REGISTERED - SPECIFIC LICENSE RESERVATION
  Export-Controlled Functionality: Not Allowed

License Authorization:
  Status: AUTHORIZED - RESERVED

License Usage:
  License                 Entitlement tag                   Count Status
  --------------------------------------------------------------------------
  C3850_24_Ipbase         (C3850-24 IP Base)                    1 AUTHORIZED
```

To display the license status information, use the **show license status** command:

```
Device> enable
Device# show license status
Smart Licensing is ENABLED

Utility:
  Status: DISABLED
License Reservation is ENABLED

Data Privacy:
  Sending Hostname: yes
    Callhome hostname privacy: DISABLED
    Smart Licensing hostname privacy: DISABLED
  Version privacy: DISABLED

Transport:
  Type: Callhome
```

```
Registration:
  Status: REGISTERED - SPECIFIC LICENSE RESERVATION
  Export-Controlled Functionality: Not Allowed
  Initial Registration: SUCCEEDED on Sep 06 11:04:48 2018 EDT

License Authorization:
  Status: AUTHORIZED - RESERVED on Sep 06 11:04:48 2018 EDT
```

Example: Adding a New Member to a Stack Running SLR

This example shows how to add a new member to an existing stack running SLR. Although the sample ouput in the example is that of a Catalyst 9300 switch, the same process applies to the Cisco Catalyst 3850 and 3650 Series Switches.

The following are the key aspects of this process:

- Ensure that the Cisco IOS XE software version on the new member is the same as the version running on the existing stack.

- Bring-up the member as a standalone, install the SLR authorization code, and only then add it to the existing stack running SLR.

1. Displaying and verifying the details of the existing stack.

   This is a two-member stack, where one switch is the active and the other, the standby. The **show license summary** command shows that the stack is registered and running SLR. The **show version** command shows that the software version running on the stack is Cisco IOS XE Gibraltar 16.12.4.

```
Device# show switch
Switch/Stack Mac Address : 0077.8d38.ba00 - Local Mac Address
Mac persistency wait time: Indefinite
                                        H/W   Current
Switch#   Role    Mac Address     Priority Version State
-------------------------------------------------------------------------------
*1       Active  0077.8d38.ba00    15     V02     Ready
 2       Standby 0c75.bd0e.e080    10     V01     Ready

Device# show license udi
UDI: PID:C9300-24UX,SN:FCW2303D16Y

HA UDI List:
    Active:PID:C9300-24UX,SN:FCW2303D16Y
    Standby:PID:C9300-24U,SN:FHH2043P09E

Device# show license summary
Smart Licensing is ENABLED
License Reservation is ENABLED

Registration:
  Status: REGISTERED - SPECIFIC LICENSE RESERVATION
  Export-Controlled Functionality: ALLOWED

License Authorization:
  Status: AUTHORIZED - RESERVED

License Usage:
  License              Entitlement tag            Count Status
  -----------------------------------------------------------------
  C9300 24P Network Ad... (C9300-24 Network Advan...)     2 AUTHORIZED
```

```
    C9300 24P DNA Advantage (C9300-24 DNA Advantage)          2 AUTHORIZED

Device# show version
Cisco IOS XE Software, Version 16.12.04
Cisco IOS Software [Gibraltar], Catalyst L3 Switch Software (CAT9K_IOSXE),
Version 16.12.4, RELEASE SOFTWARE
<output truncated>
```

2. Bringing up the new member as a standalone and verifying that the software version is the same as the existing stack. In this example, this is Cisco IOS XE Gibraltar 16.12.4.

```
Device# show switch
Switch/Stack Mac Address : f8b7.e24e.a100 - Local Mac Address
Mac persistency wait time: Indefinite
                                         H/W    Current
Switch#   Role    Mac Address     Priority Version State
----------------------------------------------------------
*1        Active  f8b7.e24e.a100    1       P2B     Ready

Device# show version
Cisco IOS XE Software, Version 16.12.04
Cisco IOS Software [Gibraltar], Catalyst L3 Switch Software (CAT9K_IOSXE),
Version 16.12.4, RELEASE SOFTWARE
<output truncated>
```

3. Enabling SLR on the standlone and saving configuration changes.

   The **show license summary** command is used to verify the same (`License Reservation is ENABLED`).

```
Device# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Device(config)# license smart reservation
Device(config)# exit
Switch# copy running-config startup-config
Building configuration...
[OK]

Device# show license udi
UDI: PID:C9300-48T,SN:FCW2139L056

Device# show license summary

Smart Licensing is ENABLED
License Reservation is ENABLED

Registration:
  Status: UNREGISTERED
  Export-Controlled Functionality: NOT ALLOWED

License Authorization:
  Status: EVAL MODE
  Evaluation Period Remaining: 89 days, 22 hours, 47 minutes, 10 seconds

License Usage:
  License                 Entitlement tag            Count Status
  ----------------------------------------------------------------------------
                          (C9300-48 Network Advan...)    1 EVAL MODE
                          (C9300-48 DNA Advantage)       1 EVAL MODE
```

4. Generating a request code from the standalone, reserving the license in CSSM (not shown in the sample output), registering the device using the authorization code generated in CSSM.

```
Device# license smart reservation request all
Enter this request code in the Cisco Smart Software Manager portal:
UDI: PID:C9300-48T,SN:FCW2139L056
    Request code: CB-ZC9300-48T:FCW2139L056-AK9A6sMTr-B0
```

At this point, you have to enter the request code in CSSM and generate an authorization code. See Reserving a License in Cisco SSM, on page 5, then proceed with the installation of the authorization code.

The **show license summary** command shows that the standalone now has a registered SLR and can be added to a stack running SLR.

```
Device# license smart reservation install file
tftp://192.0.2.0//auto/tftp-users2/tom/SLR-9300-SA.txt
Reservation install file successful
Last Confirmation code UDI: PID:C9300-48T,SN:FCW2139L056
    Confirmation code: fc6c282f
```

```
Device# show license summary
Smart Licensing is ENABLED
License Reservation is ENABLED
Registration:
  Status: REGISTERED - SPECIFIC LICENSE RESERVATION
  Export-Controlled Functionality: ALLOWED
License Authorization:
  Status: AUTHORIZED - RESERVED
License Usage:
  License                 Entitlement tag            Count Status
  --------------------------------------------------------------------------
  C9300 48P Network Ad... (C9300-48 Network Advan...)     1 AUTHORIZED
  C9300 48P DNA Advantage (C9300-48 DNA Advantage)        1 AUTHORIZED
```

5. Power off the standalone switch. Through their StackWise ports, connect the switch to a powered-on switch stack, and finally power on the new member.

For information about connecting switches in a stack, refer to the *Planning a Switch Data Stack* section of the *Hardware Installation Guide* for the device.

Powering off the switch and then connecting it to a stack is faster, but you can also reload the switch to bootloader (switch:) and add it to the SLR stack. To reload to bootloader, you must ensure that the switch is set to manual boot mode as shown below:

```
Device# configure terminal
Device(config)# boot manual
Device(config)# end
Device# copy running-config startup-config

Device# show boot | include Manual
Manual Boot = yes

!!!Reload to bootloader, add the switch to the stack running SLR and boot the new switch.
```

The **show switch** command shows that the stack has a third member now.

The **show license udi** command shows that the active is the retained (PID:C9300-24UX,SN:FCW2303D16Y), and the new member is listed (PID:C9300-48T,SN:FCW2139L056).

The **show license summary** and **show license all** commands display SLR-related information for the three-member stack.

```
Device# show switch
Switch/Stack Mac Address : 0077.8d38.ba00 - Local Mac Address
Mac persistency wait time: Indefinite
                                        H/W   Current
Switch#   Role    Mac Address    Priority Version State
---------------------------------------------------------------------------------
*1        Active  0077.8d38.ba00    15     V02    Ready
 2        Standby 0c75.bd0e.e080    10     V01    Ready
 3        Member  f8b7.e24e.a100     1     P2B    Ready

Device# show license udi
UDI: PID:C9300-24UX,SN:FCW2303D16Y
HA UDI List:
    Active:PID:C9300-24UX,SN:FCW2303D16Y
    Standby:PID:C9300-24U,SN:FHH2043P09E
    Member:PID:C9300-48T,SN:FCW2139L056


Device# show license summary
Smart Licensing is ENABLED
License Reservation is ENABLED
Registration:
  Status: REGISTERED - SPECIFIC LICENSE RESERVATION
  Export-Controlled Functionality: ALLOWED
License Authorization:
  Status: AUTHORIZED - RESERVED
License Usage:
  License               Entitlement tag              Count Status
  -----------------------------------------------------------------------
  C9300 24P Network Ad... (C9300-24 Network Advan...)    2 AUTHORIZED
  C9300 24P DNA Advantage (C9300-24 DNA Advantage)       2 AUTHORIZED
  C9300 48P Network Ad... (C9300-48 Network Advan...)    1 AUTHORIZED
  C9300 48P DNA Advantage (C9300-48 DNA Advantage)       1 AUTHORIZED


Device# show license all
Smart Licensing Status
======================

Smart Licensing is ENABLED
License Reservation is ENABLED
Registration:
  Status: REGISTERED - SPECIFIC LICENSE RESERVATION
  Export-Controlled Functionality: ALLOWED
  Initial Registration: SUCCEEDED on Nov 24 13:59:33 2020 PST
License Authorization:
  Status: AUTHORIZED - RESERVED on Nov 24 11:38:45 2020 PST
Export Authorization Key:
  Features Authorized:
    <none>
Utility:
  Status: DISABLED
Data Privacy:
  Sending Hostname: yes
    Callhome hostname privacy: DISABLED
    Smart Licensing hostname privacy: DISABLED
  Version privacy: DISABLED
Transport:
  Type: Callhome
License Usage
=============
C9300 24P Network Advantage (C9300-24 Network Advantage):
  Description: C9300-24P Network Advantage
  Count: 2
```

```
         Version: 1.0
         Status: AUTHORIZED
         Export status: NOT RESTRICTED
         Reservation:
           Reservation status: SPECIFIC INSTALLED
           Total reserved count: 2
C9300 24P DNA Advantage (C9300-24 DNA Advantage):
         Description: C9300-24P DNA Advantage
         Count: 2
         Version: 1.0
         Status: AUTHORIZED
         Export status: NOT RESTRICTED
         Reservation:
           Reservation status: SPECIFIC INSTALLED
           Total reserved count: 2
C9300 48P Network Advantage (C9300-48 Network Advantage):
         Description: C9300 48P Network Advantage
         Count: 1
         Version: 1.0
         Status: AUTHORIZED
         Export status: NOT RESTRICTED
         Reservation:
           Reservation status: SPECIFIC INSTALLED
           Total reserved count: 1
C9300 48P DNA Advantage (C9300-48 DNA Advantage):
         Description: C9300 48P DNA Advantage
         Count: 1
         Version: 1.0
         Status: AUTHORIZED
         Export status: NOT RESTRICTED
         Reservation:
           Reservation status: SPECIFIC INSTALLED
           Total reserved count: 1
Product Information
===================
UDI: PID:C9300-24UX,SN:FCW2303D16Y
HA UDI List:
    Active:PID:C9300-24UX,SN:FCW2303D16Y
    Standby:PID:C9300-24U,SN:FHH2043P09E
    Member:PID:C9300-48T,SN:FCW2139L056
Agent Version
=============
Smart Agent for Licensing: 4.8.10_rel/63

Reservation Info
================
License reservation: ENABLED

Overall status:
  Active: PID:C9300-24UX,SN:FCW2303D16Y
      Reservation status: SPECIFIC INSTALLED on Nov 24 11:38:45 2020 PST
      Export-Controlled Functionality: ALLOWED
      Last Confirmation code: db4dc928
  Standby: PID:C9300-24U,SN:FHH2043P09E
      Reservation status: SPECIFIC INSTALLED on Nov 24 11:38:45 2020 PST
      Export-Controlled Functionality: ALLOWED
      Last Confirmation code: 2edf2248
  Member: PID:C9300-48T,SN:FCW2139L056
      Reservation status: SPECIFIC INSTALLED on Nov 24 13:12:38 2020 PST
      Export-Controlled Functionality: ALLOWED
      Last Confirmation code: fc6c282f

Specified license reservations:
  C9300 24P Network Advantage (C9300-24 Network Advantage):
```

```
           Description: C9300-24P Network Advantage
           Total reserved count: 2
           Term information:
             Active: PID:C9300-24UX,SN:FCW2303D16Y
               License type: PERPETUAL
                 Term Count: 1
             Standby: PID:C9300-24U,SN:FHH2043P09E
               License type: PERPETUAL
                 Term Count: 1
      C9300 24P DNA Advantage (C9300-24 DNA Advantage):
           Description: C9300-24P DNA Advantage
           Total reserved count: 2
           Term information:
             Active: PID:C9300-24UX,SN:FCW2303D16Y
               License type: PERPETUAL
                 Term Count: 1
             Standby: PID:C9300-24U,SN:FHH2043P09E
               License type: PERPETUAL
                 Term Count: 1
      C9300 48P DNA Advantage (C9300-48 DNA Advantage):
           Description: C9300 48P DNA Advantage
           Total reserved count: 1
           Term information:
             Member: PID:C9300-48T,SN:FCW2139L056
               License type: PERPETUAL
                 Term Count: 1
      C9300 48P Network Advantage (C9300-48 Network Advantage):
           Description: C9300 48P Network Advantage
           Total reserved count: 1
           Term information:
             Member: PID:C9300-48T,SN:FCW2139L056
               License type: PERPETUAL
                 Term Count: 1
```

Example: Replacing the License for a Member in a Stack Running SLR

If you have a new member in a stack and there are no spare licenses available to reserve, this example shows you how to correctly go about getting the license for the member. Although the sample ouput in the example is that of a Catalyst 9300 switch, the same process applies to the Cisco Catalyst 3850 and 3650 Series Switches.

The following are the key aspects of this process:

- Remove the member for which you want to replace the license, from the stack. Then boot the removed member as a standalone, to return the SLR authorization code.

- After the returned license count is updated in CSSM, follow the steps as shown in Example: Adding a New Member to a Stack Running SLR, on page 28, to install a new SLR authorization code.

1. Starting with a three-member stack running SLR and attempting to request a code and install an SLR authorization code (generated in CSSM).

```
Device# show switch
Switch/Stack Mac Address : 0077.8d38.ba00 - Local Mac Address
Mac persistency wait time: Indefinite
                                        H/W    Current
Switch#    Role    Mac Address    Priority Version State
--------------------------------------------------------------------------------
*1       Active   0077.8d38.ba00    15     V02     Ready
 2       Standby  0c75.bd0e.e080    10     V01     Ready
 3       Member   f8b7.e24e.a100    1      P2B     Ready
```

```
Device# show license summary

Smart Licensing is ENABLED
License Reservation is ENABLED

Registration:
  Status: UNREGISTERED
  Export-Controlled Functionality: NOT ALLOWED

License Authorization:
  Status: EVAL MODE
  Evaluation Period Remaining: 89 days, 4 hours, 12 minutes, 51 seconds

License Usage:
  License                 Entitlement tag                 Count Status
  -----------------------------------------------------------------------------
                          (C9300-24 Network Advan...)       2 EVAL MODE
                          (C9300-24 DNA Advantage)          2 EVAL MODE
                          (C9300-48 Network Advan...)       1 EVAL MODE
                          (C9300-48 DNA Advantage)          1 EVAL MODE

Device# license smart reservation request all
Enter this request code in the Cisco Smart Software Manager portal:
UDI: PID:C9300-24UX,SN:FCW2303D16Y
    Request code: CD-ZC9300-24UX:FCW2303D16Y-AK9A6sMTr-65
UDI: PID:C9300-24U,SN:FHH2043P09E
    Request code: CD-ZC9300-24U:FHH2043P09E-AK9A6sMTr-F6
UDI: PID:C9300-48T,SN:FCW2139L056
    Request code: CC-ZC9300-48T:FCW2139L056-AK9A6sMTr-DD

Device# license smart reservation install file
tftp://192.0.2.0//auto/tftp-users2/tom/SLR-9300-3M.txt
Reservation install file successful
Last Confirmation code UDI: PID:C9300-24UX,SN:FCW2303D16Y
    Confirmation code: 2d5a7388
UDI: PID:C9300-24U,SN:FHH2043P09E
    Confirmation code: dc8d69d8
UDI: PID:C9300-48T,SN:FCW2139L056
    Confirmation code: d4edc453

Device# show license summary

Smart Licensing is ENABLED
License Reservation is ENABLED

Registration:
  Status: REGISTERED - SPECIFIC LICENSE RESERVATION
  Export-Controlled Functionality: ALLOWED

License Authorization:
  Status: AUTHORIZED - RESERVED

License Usage:
  License                 Entitlement tag                 Count Status
  -----------------------------------------------------------------------------
  C9300 24P Network Ad... (C9300-24 Network Advan...)       2 AUTHORIZED
  C9300 24P DNA Advantage (C9300-24 DNA Advantage)          2 AUTHORIZED
  C9300 48P Network Ad... (C9300-48 Network Advan...)       1 AUTHORIZED
  C9300 48P DNA Advantage (C9300-48 DNA Advantage)          1 AUTHORIZED
```

2. Removing the device (switch 3) which does not have enough spare licenses to reserve.

   The **show switch** command shows that switch 3 has been removed.

```
Device# reload slot 3
Proceed with reload?[confirm]

Device# show license summary
Smart Licensing is ENABLED
License Reservation is ENABLED
Registration:
  Status: REGISTERED - SPECIFIC LICENSE RESERVATION
  Export-Controlled Functionality: ALLOWED
License Authorization:
  Status: AUTHORIZED - RESERVED
License Usage:
  License                Entitlement tag                Count Status
  --------------------------------------------------------------------------
  C9300 24P Network Ad... (C9300-24 Network Advan...)     2 AUTHORIZED
  C9300 24P DNA Advantage (C9300-24 DNA Advantage)        2 AUTHORIZED

Device# show switch
Switch/Stack Mac Address : 0077.8d38.ba00 - Local Mac Address
Mac persistency wait time: Indefinite
                                          H/W   Current
Switch#   Role    Mac Address    Priority Version State
----------------------------------------------------------------------------------
*1      Active    0077.8d38.ba00    15     V02    Ready
 2      Standby   0c75.bd0e.e080    10     V01    Ready
 3      Member    0000.0000.0000     0     P2B    Removed
```

3. Bringing-up the removed member as a standalone and returning the SLR.

   The second instance of the **show license summary** command shows that the device has returned to an unregistered state and is in EVAL MODE.

```
Device# show switch
Switch/Stack Mac Address : f8b7.e24e.a100 - Local Mac Address
Mac persistency wait time: Indefinite
                                          H/W   Current
Switch#   Role    Mac Address    Priority Version State
----------------------------------------------------------------------------------
 1      Member    0000.0000.0000     0            Provisioned
 2      Member    0000.0000.0000     0            Provisioned
*3      Active    f8b7.e24e.a100     1     P2B    Ready

Device# show license summary
Smart Licensing is ENABLED
License Reservation is ENABLED
Registration:
  Status: REGISTERED - SPECIFIC LICENSE RESERVATION
  Export-Controlled Functionality: ALLOWED
License Authorization:
  Status: AUTHORIZED - RESERVED
License Usage:
  License                Entitlement tag                Count Status
  --------------------------------------------------------------------------
  C9300 48P Network Ad... (C9300-48 Network Advan...)     1 AUTHORIZED
  C9300 48P DNA Advantage (C9300-48 DNA Advantage)        1 AUTHORIZED

Device# license smart reservation return all
This command will remove the license reservation authorization code and the device will

transition back to the unregistered state. Some features may not function properly.

Do you want to continue? [yes/no]: yes
Enter this return code in Cisco Smart Software Manager portal:
```

```
UDI: PID:C9300-48T,SN:FCW2139L056
    Return code: CjJP1E-V1SDoG-XaQXfN-n7MFFk-vLcijg-eSF1ev-KEF2Pq-U3uBXq-gQM

Device# show license summary
Smart Licensing is ENABLED
License Reservation is ENABLED
Registration:
  Status: UNREGISTERED
  Export-Controlled Functionality: NOT ALLOWED
License Authorization:
  Status: EVAL MODE
  Evaluation Period Remaining: 89 days, 22 hours, 39 minutes, 28 seconds
License Usage:
  License                    Entitlement tag              Count Status
  -----------------------------------------------------------------------
                             (C9300-48 Network Advan...)    1 EVAL MODE
                             (C9300-48 DNA Advantage)       1 EVAL MODE
```

4. Booting up the switch and reserving the license

> ✎
>
> **Note**   After this point, the sample output follows the same steps as in this example: Example: Adding a New Member to a Stack Running SLR, on page 28.

```
Device# show switch
Switch/Stack Mac Address : f8b7.e24e.a100 - Local Mac Address
Mac persistency wait time: Indefinite
                                         H/W    Current
Switch#   Role    Mac Address    Priority Version  State
--------------------------------------------------------------------------------
*1        Active  f8b7.e24e.a100    1       P2B     Ready


Device# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.

Device(config)# license smart reservation
Device(config)# exit
Device# copy running-config startup-config
Device# show license summary

Smart Licensing is ENABLED
License Reservation is ENABLED

Registration:
  Status: UNREGISTERED
  Export-Controlled Functionality: NOT ALLOWED

License Authorization:
  Status: EVAL MODE
  Evaluation Period Remaining: 89 days, 22 hours, 31 minutes, 51 seconds

License Usage:
  License                    Entitlement tag              Count Status
  -----------------------------------------------------------------------
                             (C9300-48 Network Advan...)    1 EVAL MODE
                             (C9300-48 DNA Advantage)       1 EVAL MODE


Device#
Device# license smart reservation request all
```

```
Enter this request code in the Cisco Smart Software Manager portal:
UDI: PID:C9300-48T,SN:FCW2139L056
    Request code: CD-ZC9300-48T:FCW2139L056-AK9A6sMTr-36

Device# license smart reservation install file
tftp://192.0.2.0//auto/tftp-users2/tom/SLR-9300-SA.txt
Reservation install file successful
Last Confirmation code UDI: PID:C9300-48T,SN:FCW2139L056
    Confirmation code: f9eb0732

Device# show license summary
Smart Licensing is ENABLED
License Reservation is ENABLED
Registration:
  Status: REGISTERED - SPECIFIC LICENSE RESERVATION
  Export-Controlled Functionality: ALLOWED
License Authorization:
  Status: AUTHORIZED - RESERVED
License Usage:
  License                 Entitlement tag           Count Status
  -----------------------------------------------------------------------------
  C9300 48P Network Ad... (C9300-48 Network Advan...)     1 AUTHORIZED
  C9300 48P DNA Advantage (C9300-48 DNA Advantage)        1 AUTHORIZED
```

After reloading the new switch, adding it to the stack and booting up the switch to join the stack:

```
Device# show switch
Switch/Stack Mac Address : 0077.8d38.ba00 - Local Mac Address
Mac persistency wait time: Indefinite
                                       H/W   Current
Switch#   Role    Mac Address     Priority Version State
------------------------------------------------------------------------------------------
*1       Active  0077.8d38.ba00     15     V02    Ready
 2       Standby 0c75.bd0e.e080     10     V01    Ready
 3       Member  f8b7.e24e.a100      1     P2B    Ready

Device# show license summary
Smart Licensing is ENABLED
License Reservation is ENABLED
Registration:
  Status: REGISTERED - SPECIFIC LICENSE RESERVATION
  Export-Controlled Functionality: ALLOWED
License Authorization:
  Status: AUTHORIZED - RESERVED
License Usage:
  License                 Entitlement tag           Count Status
  -----------------------------------------------------------------------
  C9300 24P Network Ad... (C9300-24 Network Advan...)     2 AUTHORIZED
  C9300 24P DNA Advantage (C9300-24 DNA Advantage)        2 AUTHORIZED
  C9300 48P Network Ad... (C9300-48 Network Advan...)     1 AUTHORIZED
  C9300 48P DNA Advantage (C9300-48 DNA Advantage)        1 AUTHORIZED

Device# show license all
Smart Licensing Status
======================
Smart Licensing is ENABLED
License Reservation is ENABLED
Registration:
  Status: REGISTERED - SPECIFIC LICENSE RESERVATION
  Export-Controlled Functionality: ALLOWED
  Initial Registration: SUCCEEDED on Nov 24 16:17:28 2020 PST
License Authorization:
  Status: AUTHORIZED - RESERVED on Nov 24 15:39:51 2020 PST
Export Authorization Key:
```

```
      Features Authorized:
        <none>
Utility:
  Status: DISABLED
Data Privacy:
  Sending Hostname: yes
    Callhome hostname privacy: DISABLED
    Smart Licensing hostname privacy: DISABLED
  Version privacy: DISABLED
Transport:
  Type: Callhome
License Usage
=============

C9300 24P Network Advantage (C9300-24 Network Advantage):
  Description: C9300-24P Network Advantage
  Count: 2
  Version: 1.0
  Status: AUTHORIZED
  Export status: NOT RESTRICTED
  Reservation:
    Reservation status: SPECIFIC INSTALLED
    Total reserved count: 2

C9300 24P DNA Advantage (C9300-24 DNA Advantage):
  Description: C9300-24P DNA Advantage
  Count: 2
  Version: 1.0
  Status: AUTHORIZED
  Export status: NOT RESTRICTED
  Reservation:
    Reservation status: SPECIFIC INSTALLED
    Total reserved count: 2

C9300 48P Network Advantage (C9300-48 Network Advantage):
  Description: C9300 48P Network Advantage
  Count: 1
  Version: 1.0
  Status: AUTHORIZED
  Export status: NOT RESTRICTED
  Reservation:
    Reservation status: SPECIFIC INSTALLED
    Total reserved count: 1

C9300 48P DNA Advantage (C9300-48 DNA Advantage):
  Description: C9300 48P DNA Advantage
  Count: 1
  Version: 1.0
  Status: AUTHORIZED
  Export status: NOT RESTRICTED
  Reservation:
    Reservation status: SPECIFIC INSTALLED
    Total reserved count: 1

Product Information
===================
UDI: PID:C9300-24UX,SN:FCW2303D16Y

HA UDI List:
    Active:PID:C9300-24UX,SN:FCW2303D16Y
    Standby:PID:C9300-24U,SN:FHH2043P09E
    Member:PID:C9300-48T,SN:FCW2139L056

Agent Version
```

```
=============
Smart Agent for Licensing: 4.8.10_rel/63

Reservation Info
================
License reservation: ENABLED

Overall status:
  Active: PID:C9300-24UX,SN:FCW2303D16Y
      Reservation status: SPECIFIC INSTALLED on Nov 24 15:39:51 2020 PST
      Export-Controlled Functionality: ALLOWED
      Last Confirmation code: 2d5a7388
  Standby: PID:C9300-24U,SN:FHH2043P09E
      Reservation status: SPECIFIC INSTALLED on Nov 24 15:39:51 2020 PST
      Export-Controlled Functionality: ALLOWED
      Last Confirmation code: dc8d69d8
  Member: PID:C9300-48T,SN:FCW2139L056
      Reservation status: SPECIFIC INSTALLED on Nov 24 16:12:00 2020 PST
      Export-Controlled Functionality: ALLOWED
      Last Confirmation code: f9eb0732

Specified license reservations:
  C9300 24P DNA Advantage (C9300-24 DNA Advantage):
    Description: C9300-24P DNA Advantage
    Total reserved count: 2
    Term information:
      Active: PID:C9300-24UX,SN:FCW2303D16Y
        License type: PERPETUAL
          Term Count: 1
      Standby: PID:C9300-24U,SN:FHH2043P09E
        License type: PERPETUAL
          Term Count: 1
  C9300 24P Network Advantage (C9300-24 Network Advantage):
    Description: C9300-24P Network Advantage
    Total reserved count: 2
    Term information:
      Active: PID:C9300-24UX,SN:FCW2303D16Y
        License type: PERPETUAL
          Term Count: 1
      Standby: PID:C9300-24U,SN:FHH2043P09E
        License type: PERPETUAL
          Term Count: 1
  C9300 48P DNA Advantage (C9300-48 DNA Advantage):
    Description: C9300 48P DNA Advantage
    Total reserved count: 1
    Term information:
      Member: PID:C9300-48T,SN:FCW2139L056
        License type: PERPETUAL
          Term Count: 1
  C9300 48P Network Advantage (C9300-48 Network Advantage):
    Description: C9300 48P Network Advantage
    Total reserved count: 1
    Term information:
      Member: PID:C9300-48T,SN:FCW2139L056
        License type: PERPETUAL
          Term Count: 1
```

Supported Devices

The following devices support SLR.

• Cisco Catalyst 3650 Series Switches

• Cisco Catalyst 3850 Series Switches

Feature History for SLR

This table provides release and related information for features explained in this module.

These features are available on all releases subsequent to the one they were introduced in, unless noted otherwise.

Command History

Release	Feature	Feature Information
Cisco IOS XE Fuji 16.9.1	Specific License Reservation (SLR)	This feature was introduced. SLR enables you to use Smart Licensing in an air-gapped network. It does this by providing the option to reserve the required licenses.
Cisco IOS XE Gibraltar 16.12.6	License status change for evaluation and expired evaluation license	If a device is not connected to CSSM, what was displayed as EVAL MODE and EVAL EXPIRED (prior to Cisco IOS XE Gibraltar 16.12.6), is displayed as IN-USE starting from Cisco IOS XE Gibraltar 16.12.6. For detailed information, see License Status Change for Evaluation and Expired Evaluation Licenses, on page 41.

License Status Change for Evaluation and Expired Evaluation Licenses

To ensure audit compliance for all your licenses, starting with Cisco IOS XE Gibraltar 16.12.6, a device that is not connected to CSSM will see a change in the license status field, only for evaluation and expired evaluation licenses.

This change does not alter any Specific License Reservation (SLR) functionality.

The following sections clarify the various aspects of this change:

Change Details and Sample Output

Example 1: EVAL MODE → IN-USE

Sample outputs of the **show license summary** command on a Catalyst 3850 switch displays the following:

- What was displayed as EVAL MODE (evaluation license) prior to Cisco IOS XE Gibraltar 16.12.6, is displayed as IN-USE starting from Cisco IOS XE Gibraltar 16.12.6.

- The accompanying notification relating to the remaining evaluation period is no longer displayed.

- The registration status remains unchanged.

Prior to Cisco IOS XE Gibraltar 16.12.6	Cisco IOS XE Gibraltar 16.12.6 and later
| ```
Device# show license summary

Smart Licensing is ENABLED
License Reservation is ENABLED

Registration:
  Status: UNREGISTERED
  Export-Controlled Functionality: NOT ALLOWED

License Authorization:
  Status: EVAL MODE
  Evaluation Period Remaining: 89 days, 22 hours, 47 minutes, 10 seconds

License Usage:
  License           Entitlement tag          Count Status
  --------------------------------------------------------------
  C3850-DNA-E-24    (C3850-24 DNA Essentials)     1 EVAL MODE
  C3850_24_Lanbase  (C3850-24 LAN Base)           1 EVAL MODE
``` | ```
Device# show license summary

Smart Licensing is ENABLED
License Reservation is ENABLED

Registration:
  Status: UNREGISTERED
  Export-Controlled Functionality: NOT ALLOWED

License Authorization:
  Status: IN-USE

License Usage:
  License           Entitlement tag          Count Status
  --------------------------------------------------------------
  C3850-DNA-E-24    (C3850-24 DNA Essentials)     1 IN-USE
  C3850_24_Lanbase  (C3850-24 LAN Base)           1 IN-USE
``` |
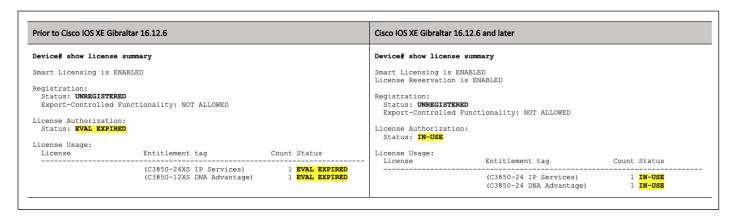
Example 2: EVAL EXPIRED → IN-USE

Sample outputs of the **show license summary** command on a Catalyst 3850 switch displays the following:

- What was displayed as EVAL EXPIRED (expired evaluation license) prior to Cisco IOS XE Gibraltar 16.12.6, is displayed as IN-USE starting from Cisco IOS XE Gibraltar 16.12.6.

- The registration status remains unchanged.

Prior to Cisco IOS XE Gibraltar 16.12.6	Cisco IOS XE Gibraltar 16.12.6 and later
| ```
Device# show license summary

Smart Licensing is ENABLED

Registration:
  Status: UNREGISTERED
  Export-Controlled Functionality: NOT ALLOWED

License Authorization:
  Status: EVAL EXPIRED

License Usage:
  License           Entitlement tag          Count Status
  --------------------------------------------------------------
                    (C3850-24XS IP Services)     1 EVAL EXPIRED
                    (C3850-12XS DNA Advantage)   1 EVAL EXPIRED
``` | ```
Device# show license summary

Smart Licensing is ENABLED
License Reservation is ENABLED

Registration:
  Status: UNREGISTERED
  Export-Controlled Functionality: NOT ALLOWED

License Authorization:
  Status: IN-USE

License Usage:
  License           Entitlement tag          Count Status
  --------------------------------------------------------------
                    (C3850-24 IP Services)       1 IN-USE
                    (C3850-24 DNA Advantage)     1 IN-USE
``` |

This change is also displayed in all other **show** commands where license status information is included in the output. See the *System Management Commands* section of the Command Reference:

Command Reference, Cisco IOS XE Gibraltar 16.12.x (Catalyst 3650 Switches)

Command Reference, Cisco IOS XE Gibraltar 16.12.x (Catalyst 3850 Switches)

Conditions

This change is effective only under the following conditions:

- The device was using an evaluation license or an expired evaluation license *prior* to Cisco IOS XE Gibraltar 16.12.6.

- The device is *not* connected to CSSM.

- The device is now running Cisco IOS XE Gibraltar 16.12.6 or a later release.

Note   If a device is not connected to CSSM, but is registered with an SLR authorization code, there will be no change in the license status field for an evaluation or expired evaluation license.

Applicable Devices

Only Cisco Catalyst 3650 Series Switches and Cisco Catalyst 3850 Series Switches.

I N D E X