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Licensing on the Cisco Catalyst IE9300 Series Switches

Licensing

For information about the licensing packages for features available on Cisco Catalyst IE9300 Rugged Series, see Licensing on the Cisco Catalyst IE9300 Rugged series.

License Types

The following license types are available:

- Permanent: for a license level, and without an expiration date.
- Term: a time-based license for a three, five, or seven year period.
- Evaluation: a license that is not registered.

Note

Evaluation licenses are only used in Cisco IOS XE Release 17.3.1. Starting with Cisco IOS XE Release 17.3.2, Evaluation licenses are no longer used by Smart Licensing.

License Levels

The software features available on Cisco Catalyst IE9300 Rugged Series switches fall under these base or add-on license levels.

Base Licenses

- Network Essentials
- Network Advantage—Includes features available with the Network Essentials license and more.

Add-On Licenses

Add-On Licenses require a Network Essentials or Network Advantage as a pre-requisite. The features available with add-on license levels provide Cisco innovations on the switch, and on the Cisco Catalyst Center.

- Catalyst Center DNA Essentials
- Catalyst Center DNA Advantage: Includes features available with the Catalyst Center DNA Essentials license and more.

To find information about platform support and to know which license levels a feature is available with, use Cisco Feature Navigator. To access Cisco Feature Navigator, go to https://cfnng.cisco.com. An account on cisco.com is not required.

Smart Licensing Using Policy

An enhanced version of Smart Licensing is available, with the overarching objective of providing a licensing solution that does not interrupt the operations of your network, rather, one that enables a compliance relationship to account for the hardware and software licenses you purchase and use.

With this licensing model, you do not have to complete any licensing-specific operations, such as registering or generating keys before you start using the software and the licenses that are tied to it. Only export-controlled and enforced licenses require Cisco authorization *before* use. License usage is recorded on your device with timestamps, and the required workflows can be completed at a later date.

Multiple options are available for license usage reporting – this depends on the topology you implement. You can use the Cisco Smart Licensing Utility (CSLU) Windows application, or report usage information directly to Cisco Smart Software Manager (CSSM). A provision for offline reporting for air-gapped networks, where you download usage information and upload to CSSM, is also available.

Starting with this release, Smart Licensing Using Policy is automatically enabled on the device. This is also the case when you upgrade to this release.

By default, your Smart Account and Virtual Account in CSSM is enabled for Smart Licensing Using Policy.

Note

Starting with Cisco IOS XE Amsterdam 17.3.2, with the introduction of Smart Licensing Using Policy, even if you configure a hostname for a product instance or device, only the Unique Device Identifier (UDI) is displayed.

This change in the display can be observed in all licensing utilities and user interfaces where the hostname was displayed in earlier releases. It does not affect any licensing functionality. There is no workaround for this limitation.

The licensing utilities and user interfaces that are affected by this limitation include only the following: Cisco Smart Software Manager (CSSM), Cisco Smart License Utility (CSLU), and Smart Software Manager On-Prem (SSM On-Prem).

For more information about Smart Licensing, see Smart Licensing Using Policy for Cisco Enterprise Routing Platforms.

Feature License

Note

Information about the MRP feature license described below applies only to Cisco IOS XE releases earlier than 17.7.1. Use of MRP in Cisco IOS XE 17.7.1 and later does not require a feature license, only the Network Essentials Base license. Information below about Base Licenses and Add-On Licenses applies to all Cisco IOS XE releases.

In Cisco IOS XE releases prior to 17.7.1, use of the MRP feature requires a feature license. The feature license is enforced and must be authorized by Cisco before the feature can be enabled. To use the MRP feature, you buy an MRP feature license and Cisco installs an authorization code on your device at the time the device is purchased, or you can install the authorization code on your device using the **license smart authorization request add <feature-name> local** command.

In online mode, the device requests the license from the Cisco Smart Software Manager (CSSM) directly or through the Cisco Smart Licensing Utility (CSLU). The CSSM returns a smart license authorization code (SLAC) to the Product Instance (PI) directly or through the CSLU. If a device receives the authorization code, the smart agent on the device stores this authorization code in the tamper-proof trusted store and you can enable the feature. If you install the authorization code and do not enable the feature, when you boot the device the smart agent on the device will honor the auth-code that was stored in trusted store. The device does not need to request the authorization code from the CSSM again and you can enable the feature.

Feature Licenses are bound to a specific feature or set of features. Feature licenses can be enabled regardless of Base License (Network Advantage or Network Essential). Feature licenses are Smart Licenses as well and require a Smart Account to be activated.

There are 2 MRP licenses available for IE9300:

- LIC-MRP-MGR-XE= MRP Ring Manager license.
- LIC-MRP-CLIENT-XE= MRP Ring Client license.

Activating the MRP License

Note

Activating the MRP license applies to Cisco IOS XE 17.6.x and earlier. The MRP feature license requirement is removed in Cisco IOS XE 17.7.1 and later.

The procedure to activate the MRP license depends on whether you are using Smart Licensing in online mode or offline mode. Each mode has two scenarios:

- Online mode:
  - The device is connected directly to the Cisco Smart Software Manager (CSSM).
  - The device is connected to the CSSM through the CSLU.
- Offline mode:
  - The device is not connected to the CSSM or the CSLU.
  - The device is in CSLU mode and not connected to the CSSM.

Perform one of the following procedures to activate the MRP license, based on your Smart Licensing mode.

Note

The following procedures show examples of activating both the MRP Manager and Client licenses. When activating the MRP license on your switch, enter the commands for your license type: mrp-manager or mrp-client.

Device Directly Connected to CSSM

To activate the MRP license when the device is directly connected to the CSSM, follow these steps.

Step 1 Enter configuration mode:

configure terminal

Step 2 Configure the transport mode:

license smart transport smart

license smart url smart *url*

Example:

```
Switch# configure terminal
Switch(config)# license smart transport smart
Switch(config)# license smart url smart https://smartreceiver.cisco.com/licservice/license
Switch(config)# end
Switch# write
```

Step 3 Check the transport mode configuration:

show license all

Example:

```
Switch# show license all

Transport:
  Type: Smart
  URL: license smart url smart https://smartreceiver.cisco.com/licservice/license
```

Step 4 Establish trust with the CSSM:

license smart trust idtoken *idtoken* **local force**

A syslog message indicates if trust is established.

Step 5 Verify that trust got established:

show license tech sup | i INSTALL

Example:

```
Switch# show licence tech sup | i INSTALL
Reservation status: NOT INSTALLED
Local Device: P:IE-3300-8T2X,S:FCW24160H8C, state[2], Trust Data INSTALLED
Overall Trust: INSTALLED (2)
```

Step 6 Request and install the Smart License Authorization Code (SLAC) to allow usage of MRP licenses:

license smart authorization request add mrp_manager local

or

license smart authorization request add mrp_client local

Example:

```
Switch# license smart authorization request add mrp_manager local
Switch# license smart authorization request add mrp_client local
Switch# show licence summary
                        Account Information:
  Smart Account: <none>
  Virtual Account: <none>

License Usage:
  License                 Entitlement Tag               Count Status
  -----------------------------------------------------------------------------
  network-advantage       (IE9300_NW_A)                     4 IN USE
```

Step 7 Enable the MRP feature:

platform license feature mrp-manager

or

platform license feature mrp-client

Example:

```
Switch(config)# platform license feature mrp-manager
Switch(config)# platform license feature mrp-client
Switch# show license summary
Account Information:
  Smart Account: <none>
  Virtual Account: <none>

License Usage:
```

```
License                 Entitlement Tag               Count Status
-----------------------------------------------------------------------------
network-advantage       (IE9300_NW_A)                     4 IN USE
```

Device Connected to CSSM through CSLU

To activate the MRP license when the device is connected to the CSSM through the CLSU, follow these steps.

Step 1 Enter configuration mode:

configure terminal

Step 2 Configure the transport mode:

license smart transport cslu

license smart url cslu http://<*ip-of-windows-machine*>**:8182/cslu/v1/pi**

Example:

```
Switch# configure terminal
Switch(config)# license smart transport cslu
Switch(config)# license smart url cslu http://10.65.77.61:8182/cslu/v1/pi

Switch(config)# end

Switch# write
```

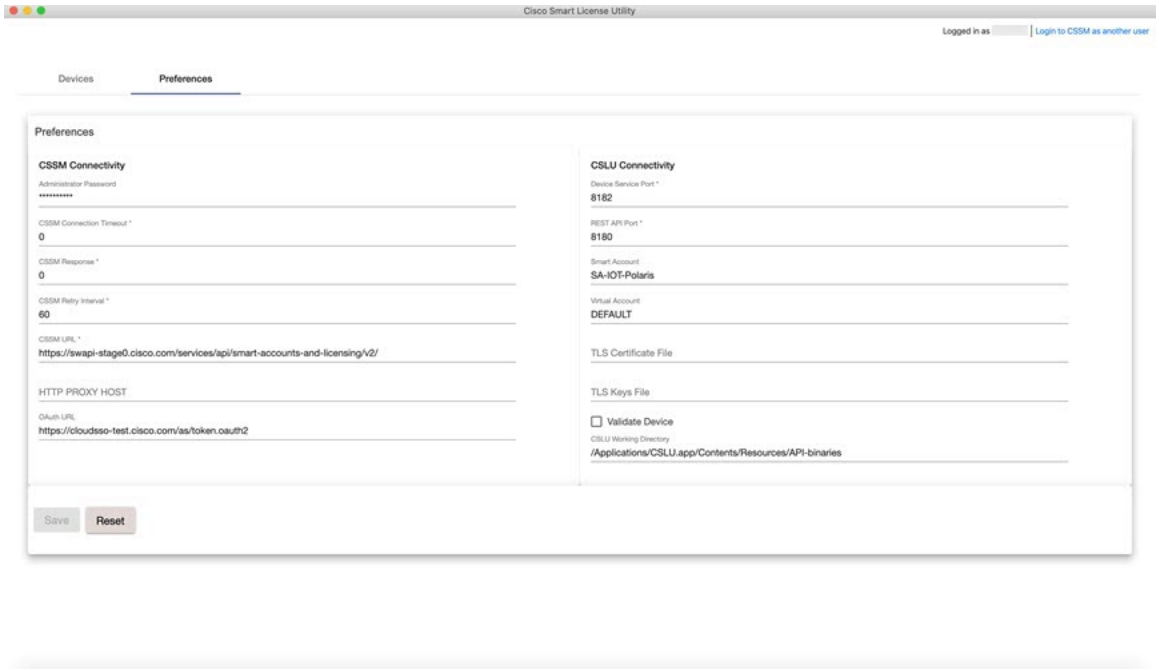
Step 3 Check the transport mode configuration:

show license all

Example:

```
Switch# show license all
Transport:
  Type: cslu
  Cslu address: http://10.65.77.61:8182/cslu/v1/pi
```

Step 4 In the CSLU, enter the required information such as the CSSM URL, Smart Account, and Virtual Account, as shown below, and log in to the CSSM.



Step 5 Request and install the Smart License Authorization Code (SLAC) to allow usage of MRP licenses:

license smart authorization request add mrp_manager local

or

license smart authorization request add mrp_client local

Example:

```
Switch# license smart authorization request add mrp_manager local
Switch# license smart authorization request add mrp_client local
Switch# show licence summary

Account Information:
  Smart Account: <none>
  Virtual Account: <none>

License Usage:
  License                 Entitlement Tag               Count Status
  -----------------------------------------------------------------------------
  network-advantage       (IE9300_NW_A)                     4 IN USE
```

Step 6 Enable the MRP feature:

platform license feature mrp-manager

or

platform license feature mrp-client

Example:

```
Switch(config)#platform license feature mrp-manager
Switch(config)#platform license feature mrp-client
Switch#show license summary
Account Information:
  Smart Account: <none>
```

```
  Virtual Account: <none>

License Usage:
  License                 Entitlement Tag               Count Status
  -----------------------------------------------------------------------------
  network-advantage       (IE9300_NW_A)                     4 IN USE
```

Device Not Connected to CSSM or CSLU

To activate the MRP license when the device is not connected to the CSSM or the CSLU, follow these steps.

Step 1 Configure the transport mode:

license smart transport off

Example:

```
Switch# configure terminal
Switch(config)# license smart transport off
```

Step 2 Check the transport mode configuration:

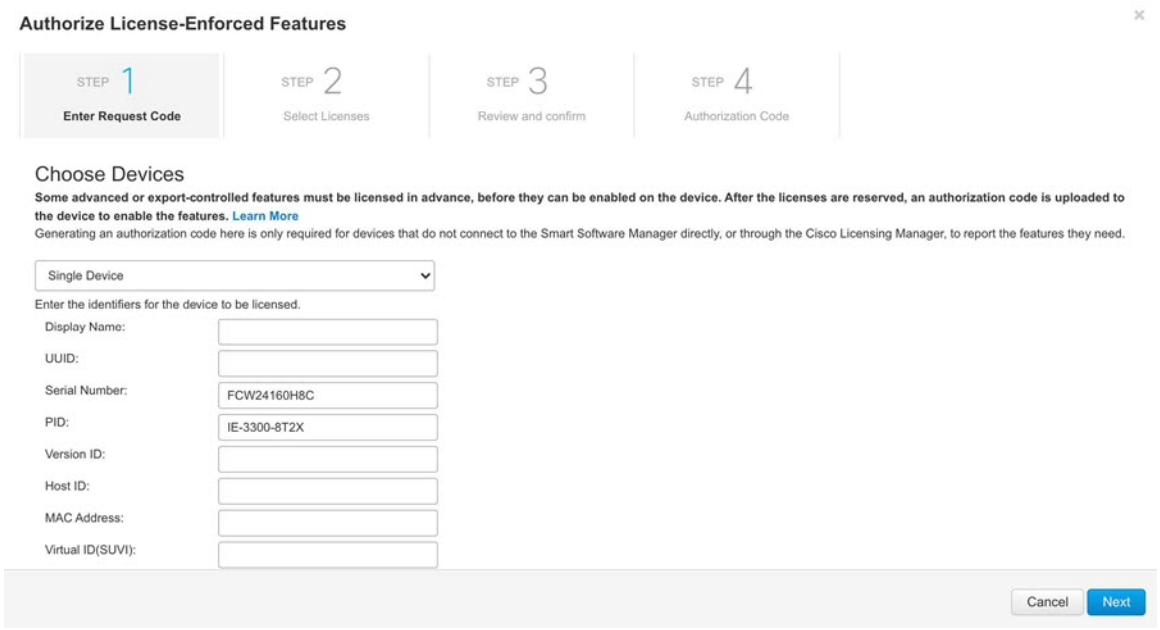
show license all

Example:

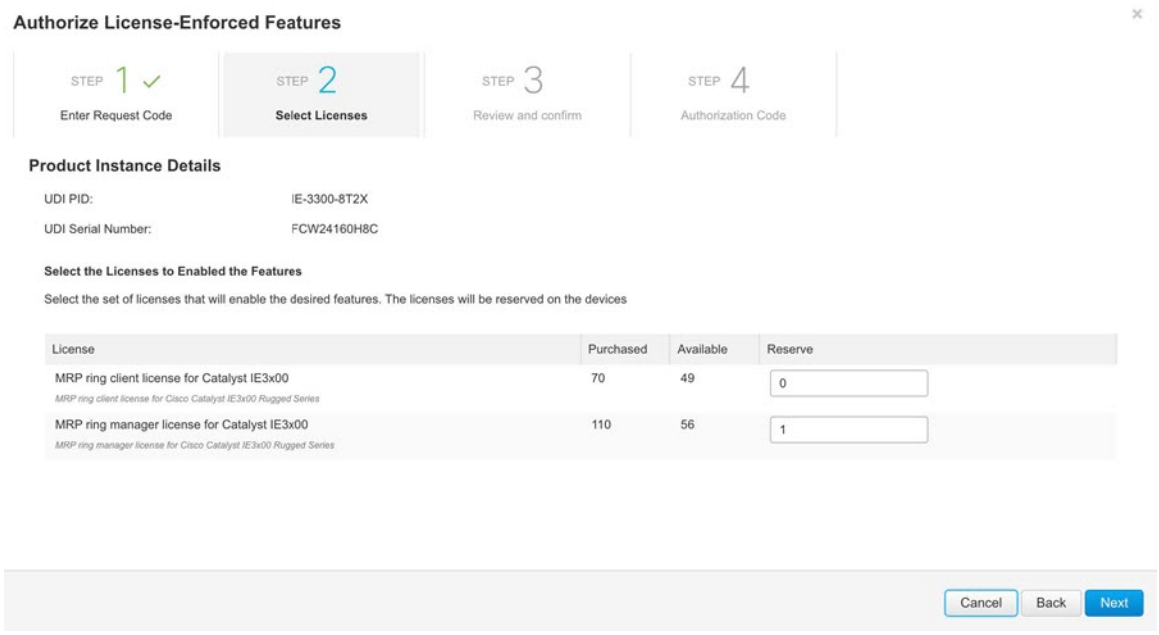
```
Switch# show license all
Transport:
  Type: Transport Off
```

Step 3 To download the Authorization code, go to CSSM > Product Instances, click on **Authorize License-Enforced Features**, and follow the steps.

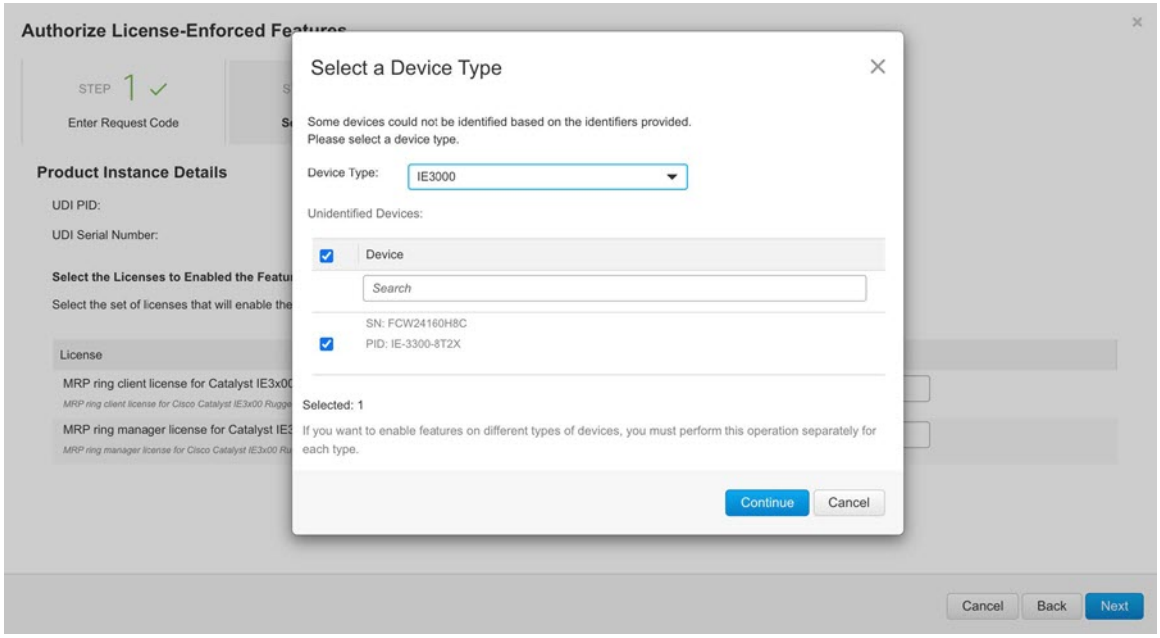
a) Enter the device identifiers:



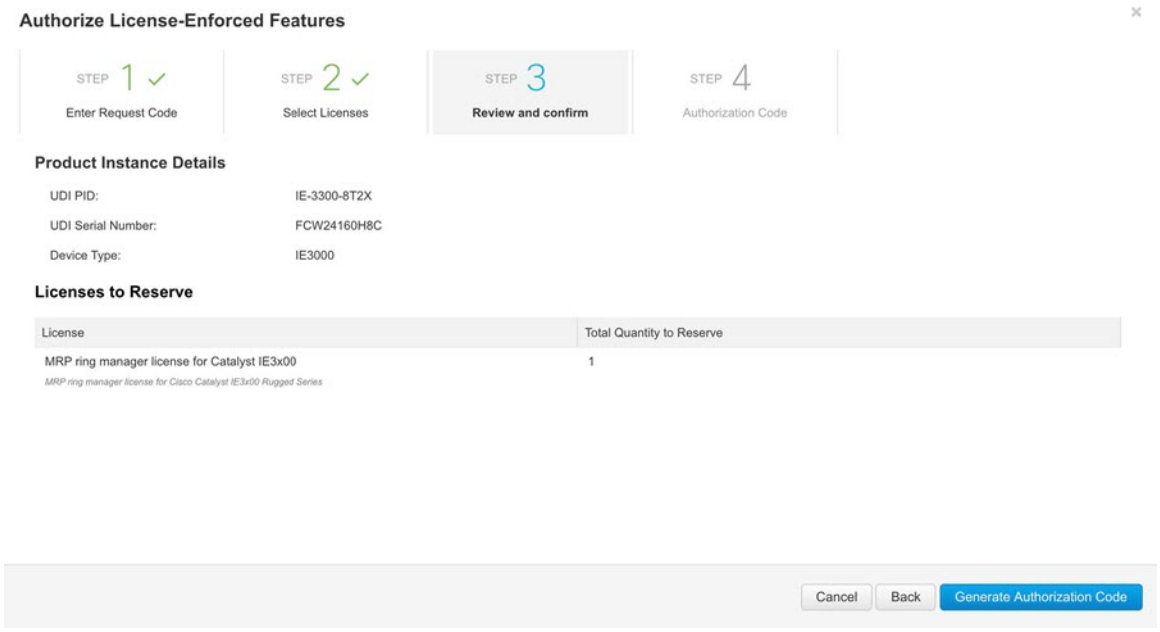
b) Enter the required number of MRP licenses:



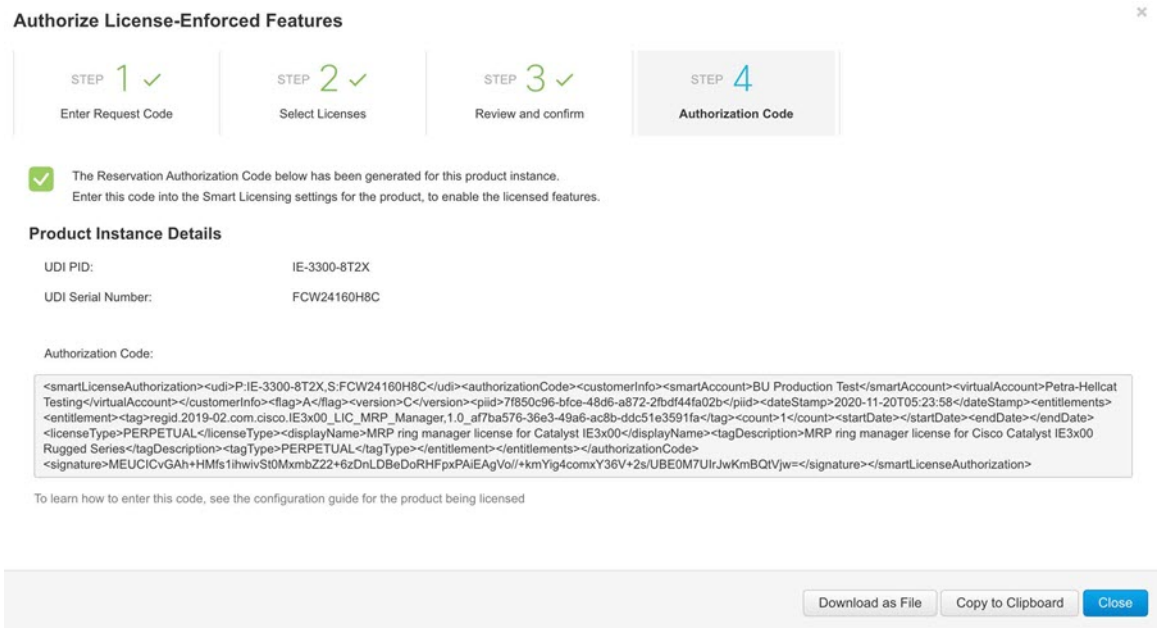
c) Select the device type:



d) Verify device and licenses:



e) Click **Download as File** or **Copy to Clipboard** to obtain the Authorization Code:



Step 4 Install the Authorization Code obtained in the previous step in the device:

license smart import *<AuthorizationCode.txt>*

Example:

```
Switch# license smart import AuthorizationCode.txt
Import Data Successful
Last Confirmation code UDI: PID:IE-3400H-24T,SN:FCW23200H5S
Confirmation code: 8c55e536
```

Step 5 Enable the MRP feature:

platform license feature mrp-manager

or

platform license feature mrp-client

Example:

```
Switch(config)# platform license feature mrp-manager
Switch(config)# platform license feature mrp-client
Switch# show license summary
Account Information:
  Smart Account: <none>
  Virtual Account: <none>

License Usage:
  License                 Entitlement Tag               Count Status
  -----------------------------------------------------------------------------
  network-advantage       (IE9300_NW_A)                     4 IN USE
```

Device in CSLU Mode and Not Connected to CSSM

To activate the MRP license when the device is in CLSU mode and not connected to the CSSM, follow these steps.

Step 1 Enter configuration mode:

configure terminal

Step 2 Configure the transport mode:

license smart transport cslu

license smart url cslu http://<*ip-of-windows-machine*>**:8182/cslu/v1/pi**

Example:

```
Switch# configure terminal
Switch(config)# license smart transport cslu
Switch(config)# license smart url cslu http://10.65.77.61:8182/cslu/v1/pi

Switch(config)# end

Switch# write
```

Step 3 Check the transport mode configuration:

show license all

Example:

```
Switch# show license all
Transport:
  Type: cslu
  Cslu address: http://10.65.77.61:8182/cslu/v1/pi
```

Step 4 Send the authorization request from the device to the CLSU.

Export the request to a file on the CSLU, upload the file in CSSM, and get the authorization code from the CSSM.

Step 5 Import the authorization code on the CSLU.

The device will get the authorization code on the next communication with the CSLU and install it.

Step 6 Enable the MRP feature:

platform license feature mrp-manager

or

platform license feature mrp-client

Example:

```
Switch(config)# platform license feature mrp-manager
Switch(config)# platform license feature mrp-client
Switch# show license summary
Account Information:
  Smart Account: <none>
  Virtual Account: <none>

License Usage:
  License                 Entitlement Tag               Count Status
  -----------------------------------------------------------------------------
  network-advantage       (IE9300_NW_A)                     4 IN USE
```

Canceling a Device's Registration in CSSM

When your device is taken off the inventory, shipped elsewhere for redeployment, or returned to Cisco for replacement using the return merchandise authorization (RMA) process, you can use the **deregister** command to cancel the registration of your device.

To cancel device registration, follow this procedure:

Layer 3 connection to CSSM must be available to successfully deregister the device.

Step 1 Use **enable** command to enter into privileged EXEC mode.

Example:

Enables privileged EXEC mode.

```
Switch> enable
```

Enter your password, if prompted.

Step 2 Use **license smart** command to remove the instance from CSSM.

Example:

Enables privileged EXEC mode.

```
Switch# license smart remove_trust
```

OR

```
Switch# license smart factory
```