Smart Licensing

This chapter provides an overview of the Cisco Smart Licensing Client feature and describes the several tools and processes required to complete the products registration and authorization.

This chapter includes this section:

Introduction to Smart Licensing

Cisco Smart Licensing is a flexible licensing model that provides you with an easier, faster, and more consistent way to purchase and manage software across the Cisco portfolio and across your organization. And it's secure – you control what users can access. With Smart Licensing, you get:

- Easy Activation: Smart Licensing establishes a pool of software licenses that can be used across the entire organization—no more PAKs (Product Activation Keys).

- Unified Management: My Cisco Entitlements (MCE) provides a complete view into all of your Cisco products and services in an easy-to-use portal, so you always know what you have and what you are using.

- License Flexibility: Your software is not node-locked to your hardware, so you can easily use and transfer licenses as needed.

To use Smart Licensing, you must first set up a Smart Account on Cisco Software Central (http://software.cisco.com/).

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

For Smart Licensing configuration information for access and edge routers, see the https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/smart-licensing/qsg/b_Smart_Licensing_QuickStart/b_Smart_Licensing_QuickStart_chapter_01.html.

Prerequisites for Cisco Smart Licensing Client

- Ensure that Call Home is enabled before using the Smart Licensing Client feature.

- Ensure that the device is running the Cisco IOS XE Everest 16.6.1 version that supports the Smart Licensing mode.

Restrictions for Cisco Smart Licensing Client

- Cisco 4000 Series ISR platforms support Cisco One Suites License, Technology Package License, Throughput License, and HSECK9 license in Cisco Smart Licensing from Cisco IOS XE Release 16.6.1.

Information About Cisco Smart Licensing Client

Cisco Smart Licensing - An Overview

Smart licensing has the capability to capture a customer's order and to communicate with Cisco Cloud License Service through the Smart Call Home Transport Gateway. Additionally, the Smart Call Home Transport Gateway helps to complete product registration and authorization based on the desired performance and technology levels of Cisco products. To know more about Call Home, refer to *Call Home* .

Benefits of Smart Licensing are the following:

- Support for CiscoONE suites in the Cisco IOS Software License (CISL) and Smart Licensing mode, including the Foundation Suite and Active Directory Users and Computers (ADUC) Suite.

- The ability to switch between traditional licensing (CSL) and Smart Licensing mode

- Support for four software universal images NPE, NO-LI, NPE-NO-LI, and Non-NPE images.

Transitioning from CSL to Smart Licensing

In the Smart Licensing Model, customers can activate licensed objects without the use of a special software key or upgrade license file. Customers simply activate the new functionality using the appropriate product commands and configurations and the functionality is activated. A software reboot may or may not be required depending on the product capabilities and requirements.

Similarly, downgrading or removing an advanced feature, performance, or functionality would require removal of the configuration or command.

After either of the above actions has been taken, the change in license state is noted by the Smart Software Manager upon next synchronization and an appropriate action is taken.

Cisco ONE Suites

Cisco ONE Suites is a new way for customers to purchase infrastructure software. Cisco ONE offers a simplified purchasing model, centered on common customer scenarios in the data center, wide area network, and local access networks.

Smart Licensing supports Smart License Cisco ONE suite level licenses and image licenses, such as ipbase, Advanced IP Services (AIS), Advanced Enterprise Services (AES) and feature license and throughput performance, crypto throughput and port licensing.

To know more about Cisco One Suites, please refer to Cisco ONE Suites.

How to Activate Cisco Smart Licensing Client

Enable Smart Licensing

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **license smart enable**
4. **exit**
5. **write memory**
6. **show license all**

DETAILED STEPS

Procedure

	Command or Action	**Purpose**
Step 1	**enable** **Example:** `Device> enable`	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	**configure terminal** **Example:** `Device# configure terminal`	Enters global configuration mode.
Step 3	**license smart enable** **Example:** `Device# license smart enable`	Activates Smart Licensing on the device. **Note** When you enable Smart Licensing, the Cisco Software License (CSL) and all licensing calls pass through the Smart Agent. For the 'no' case, if Smart Licensing is already registered, the Smart Agent performs the "license smart deregister" operation that deactivates Smart Licensing. Reload the device to activate the CSL on the device.
Step 4	**exit** **Example:** `Device# exit`	Exits the global configuration mode.
Step 5	**write memory** **Example:**	Saves the running configuration to NVRAM.

	Command or Action	Purpose
	`Device# write memory`	
Step 6	**show license all** **Example:** `Device# show license all`	(Optional) Displays summary information about all licenses.

Smart License Disable

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **no license smart enable**
4. **exit**
5. **write memory**
6. **reload**
7. **show license all**

DETAILED STEPS

Procedure

	Command or Action	Purpose
Step 1	**enable** **Example:** `Device> enable`	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	**configure terminal** **Example:** `Device# configure terminal`	Enters global configuration mode.
Step 3	**no license smart enable** **Example:** `Device(config)# no license smart enable`	Deactivates Smart Licensing on the device. **Note** When you enable Smart Licensing, the Cisco Software License (CSL) and all licensing calls pass through the Smart Agent. For the 'no' case, if Smart Licensing is already registered, the Smart Agent performs the "license smart deregister" operation that deactivates Smart Licensing. Reload the device to activate the CSL on the device.

	Command or Action	Purpose
Step 4	**exit** **Example:** `Device(config)# exit`	Exits the global configuration mode.
Step 5	**write memory** **Example:** `Device# write memory`	Saves the running configuration to NVRAM.
Step 6	**reload** **Example:** `Device# reload`	(Optional) Restarts the device to enable the new feature set. **Note** Reload the device if you have not reloaded the device after configuring the Cisco One Suites.
Step 7	**show license all** **Example:** `Device# show license all`	(Optional) Displays summary information about all licenses.

Device Registration

SUMMARY STEPS

1. **enable**
2. **license smart register idtoken** *idtoken* [**force**]
3. **license smart deregister**
4. **license smart renew** [**ID | auth**]

DETAILED STEPS

Procedure

	Command or Action	Purpose
Step 1	**enable** **Example:** `Device> enable`	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	**license smart register idtoken** *idtoken* [**force**] **Example:** `Device# license smart register idtoken 123`	Registers the device with the back-end server. Token id can be obtained from your virtual a/c in the Smart Licensing server. • **force**: To forcefully register your device irrespective of either the device is registered or not.

	Command or Action	Purpose
		Note The device supplies the token ID to the Cisco server, which sends back a "Device Certificate" that is valid for 365 days.
Step 3	**license smart deregister** **Example:** `Device# license smart deregister`	Deregisters the device from the backend server.
Step 4	**license smart renew [ID	auth]** **Example:** `Device# license smart renew ID`	(Optional) Manually renews the ID certification or authorization. For more information on license boot level, license feature hseck9, and platform hardware throughput level, see the Smart Licensing Guide for Access and Edge Routers.

Troubleshooting for Cisco Smart Licensing Client

You can troubleshoot Smart Licensing enabling issues using the following commands on the device:

- **show version**
- **show running-config**
- **show license summary**
- **show license all**
- **show license tech support**
- **debug smart_lic error**
- **debug smart_lic trace**

Configuration Examples for Cisco Smart Licensing Client

Example: Displays summary information about all licenses

The following example shows how to use the **show license all** command to display summary information about all licenses.

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

Smart Licensing is ENABLED

Registration:
Status: REGISTERED
Smart Account: BU Production Test
Virtual Account: ISR4K
Export-Controlled Functionality: Allowed
Initial Registration: SUCCEEDED on Sep 04 15:40:03 2015 PDT
```

```
Last Renewal Attempt: None
Next Renewal Attempt: Mar 02 15:40:02 2016 PDT
Registration Expires: Sep 03 15:34:53 2016 PDT

License Authorization:
Status: AUTHORIZED on Sep 04 15:40:09 2015 PDT
Last Communication Attempt: SUCCEEDED on Sep 04 15:40:09 2015 PDT
Next Communication Attempt: Oct 04 15:40:08 2015 PDT
Communication Deadline: Dec 03 15:35:01 2015 PDT

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

ISR_4400_FoundationSuite (ISR_4400_FoundationSuite):
Description: Cisco ONE Foundation Perpetual License ISR 4400
Count: 1
Version: 1.0
Status: AUTHORIZED

ISR_4400_AdvancedUCSuite (ISR_4400_AdvancedUCSuite):
Description: Cisco ONE Advanced UC Perpetual License ISR 4400
Count: 1
Version: 1.0
Status: AUTHORIZED

ISR_4451_2G_Performance (ISR_4451_2G_Performance):
Description: Performance on Demand License for 4450 Series
Count: 1
Version: 1.0
Status: AUTHORIZED

Product Information
===================
UDI: PID:ISR4451-X/K9,SN:FOC17042FJ9

Agent Version
=============
Smart Agent for Licensing: 1.4.0_rel/16
Component Versions: SA:(1_4_rel)1.0.15, SI:(dev22)1.2.6, CH:(dev5)1.0.32, PK:(dev18)1.0.17

Device#
```

Example: Enabling Smart Licensing

The following example shows how to use the **license smart enable** command to confirm if the Cisco ONE Suite is enabled.

Note The warning message that is displayed in the following example applies only for Cisco ISR G2 platform. For Cisco 4000 Series ISR platform, it does not display warning message when you enable the smart license.

```
Device# license smart enable
Currently only Cisco ONE license suites are supported by Smart Licensing.
Please make sure your Cisco ONE suites are enabled before turning on Smart Licensing.
Any other licenses outside of Cisco ONE suites would be disabled and made unusable in Smart
 Licensing.
If you have any questions, please get in touch with your Cisco representative before using
```

```
 this mmode.
Please confirm Cisco ONE suites are enabled? [yes/no]: yes
```