Configuring Smart Licensing Using Policy

This chapter provides the simplest and fastest way to implement a topology.

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Note These workflows are meant for new deployments only. If you are migrating from an existing licensing model, see Migrating to Smart Licensing Using Policy.

Connected to CSSM Through CSLU

When implementing the product instance-initiated method of communication, complete the following tasks:

Tasks for Product Instance-Initiated Communication

CSLU Installation > **CSLU Preference Settings** > **Product Instance Configuration**

Step 1 CSLU Installation

Where task is performed: A Windows host (laptop, desktop, or a Virtual Machine (VM) Download the file from Smart Software Manager **> Smart Licensing Utility**.

Refer to the Cisco Smart License Utility Quick Start Setup Guide for help with installation and setup.

Step 2 CSLU Preference Settings

Where tasks are performed: CSLU

a) Logging into Cisco (CSLU Interface)
b) Configuring a Smart Account and a Virtual Account (CSLU Interface)
c) Adding a Product-Initiated Product Instance in CSLU (CSLU Interface)

Step 3 Product Instance Configuration

Where tasks are performed: Product Instance

a) [Ensuring Network Reachability for Product Instance-Initiated Communication.](#)

b) Ensure that transport type is set to **cslu**.

CSLU is the default transport type. If you have configured a different option, enter the **license smart transport cslu** command in global configuration mode. Save any changes to the configuration file.

```
Device(config)# license smart transport cslu

Device(config)# exit

Device# copy running-config startup-config
```

c) Specify how you want CSLU to be discovered (choose one):

- Option 1:

No action required. Name server configured for Zero-touch DNS discovery of **cslu-local**.

Here, if you have configured DNS (The name server IP address is configured on the product instance), and the DNS server has an entry where hostname **cslu-local** is mapped to the CSLU IP address, then no further action is required. The product instance automatically discovers hostname **cslu-local**.

- Option 2:

No action required. Name server and domain configured for Zero-touch DNS discovery of **cslu-local.<domain>**.

Here if you have configured DNS, (the name server IP address and domain is configured on the product instance), and the DNS server has an entry where **cslu-local.<domain>** is mapped to the CSLU IP address, then no further action is required. The product instance automatically discovers hostname cslu-local.

- Option 3:

Configure a specific URL for CSLU.

Enter the **license smart url cslu** *http://<cslu_ip_or_host>:8182/cslu/v1/pi* command in global configuration mode. For **<cslu_ip_or_host>**, enter the hostname or the IP address of the Windows host where you have installed CSLU. 8182 is the port number and it is the only port number that CSLU uses.

```
Device(config)# license smart url cslu http://192.168.0.1:8182/cslu/v1/pi

Device(config)# exit

Device# copy running-config startup-config
```

Result:

As the product instance initiates communication, it automatically sends out the first RUM report at the scheduled time, per the policy. To know when the product instance will be sending this information, enter the **show license all** command in privileged EXEC mode and in the output, check the date for field Next report push:.

CSLU forwards the information to CSSM and the returning ACK from CSSM, to the product instance.

In case of a change in license usage, see [Setting the Transport Type, URL, and Reporting Interval](#) to know how it affects reporting.

Connected Directly to CSSM

When implementing the product instance-initiated method of communication, complete the following tasks:

Tasks for Product Instance-Initiated Communication

Smart Account Set-Up > **Product Instance Configuration** > **Trust Establishment with CSSM**

Step 1   Smart Account Set-Up

Where task is performed: CSSM Web UI, Smart Software Manager.

Ensure that you have a user role with proper access rights to a Smart Account and the required Virtual Accounts.

Step 2   Product Instance Configuration

Where tasks are performed: Product Instance.

a) Set up product instance connection to CSSM: Setting Up a Connection to CSSM.
b) Configure a connection method and transport type (choose one):

- Option 1:

Smart transport: Set transport type to **smart** using the **license smart transport smart**. Save any changes to the configuration file.

```
Device(config)# license smart transport smart
Device(config)# license smart url smart
https://smartreceiver.cisco.com/licservice/license
Device(config)# copy running-config startup-config
```

- Option 2:

Configure Smart transport through an HTTPS proxy. See Configuring Smart Transport Through an HTTPS Proxy.

- Option 3:

Configure Callhome service for direct cloud access. See Configuring the Callhome Service for Direct Cloud Access.

- Option 4:

Configure Callhome service for direct cloud access through an HTTPS proxy. See Configuring an HTTP Proxy Server, on page 4.

Step 3   Trust Establishment with CSSM

Where task is performed: CSSM Web UI and then the product instance

a) Generate one token for each Virtual Account you have. You can use the same token for all the product instances that are part of one Virtual Account: Generating a New Token for a Trust Code from CSSM.
b) Having downloaded the token, you can now install the trust code on the product instance: Installing a Trust Code.

Result:

After establishing trust, CSSM returns a policy. The policy is automatically installed on all product instances of that Virtual Account. The policy specifies if and how often the product instance reports usage.

If you want to change your reporting interval to report more frequently: on the product instance, configure the **license smart usage interval** command in global configuration mode. For syntax details see the **license smart (privileged EXEC)** command in the Command Reference for the corresponding release.

In case of a change in license usage, see Setting the Transport Type, URL, and Reporting Interval to know how it affects reporting.

Configuring an HTTP Proxy Server

You can configure Smart Callhome to send HTTP messages through an HTTP proxy server. If you do not configure an HTTP proxy server, Smart Callhome sends HTTP messages directly to the Cisco Transport Gateway (TG).

To configure an HTTP proxy server, follow these steps:

Procedure

	Command or Action	Purpose
Step 1	switch# **configure terminal**	Enters configuration mode.
Step 2	switch(config)# **callhome**	Enters Callhome configuration submode.
Step 3	switch(config-callhome)# **transport http proxy server** *ip address*	Configures the HTTP proxy server domain name server (DNS) name, IPv4 address, or IPv6 address. Optionally configures the port number. The port range is from 1 to 65535. The default port number is 8080.
Step 4	switch(config-callhome)# **transport http proxy enable**	Enables Smart Callhome to send all HTTP messages through the HTTP proxy server. **Note** You can execute this command only after the proxy server address has been configured.
Step 5	Optional: switch(config-callhome)# **show callhome transport**	Displays the transport-related configuration for Smart Callhome. **Note** The default value for full text destination and for XML is 1 MB.

CSLU Disconnected from CSSM

Depending on whether you want to implement a product instance-initiated method of communication. Complete the following tasks:

Tasks for Product Instance-Initiated Communication

CSLU Installation > **CSLU Preference Settings** > **Product Instance Configuration** > **Download All for Cisco and Upload From Cisco**

Step 1   CSLU Installation

Where task is performed: A Windows host (laptop, desktop, or a Virtual Machine (VM) Download the file from Smart Software Manager > **Smart Licensing Utility**.

Refer to the Cisco Smart License Utility Quick Start Setup Guide for help with installation and setup.

Step 2   CSLU Preference Settings

Where tasks are performed: CSLU.

a) In the CSLU Preferences tab, click the Cisco Connectivity toggle switch to **off**. The field switches to ″Cisco Is Not Available″.

b) Configuring a Smart Account and a Virtual Account (CSLU Interface).

c) Adding a Product-Initiated Product Instance in CSLU (CSLU Interface).

Step 3   Product Instance Configuration

Where tasks are performed: Product Instance

a) Ensuring Network Reachability for Product Instance-Initiated Communication.

b) Ensure that transport type is set to **cslu**.

CSLU is the default transport type. If you have configured a different option, enter the **license smart transport cslu** command in global configuration mode. Save any changes to the configuration file.

```
Device(config)# license smart transport cslu

Device(config)# exit

Device# copy running-config startup-config
```

c) Specify how you want CSLU to be discovered (choose one):

  • Option 1:

    No action required. Name server configured for Zero-touch DNS discovery of cslu-local.

    Here, if you have configured DNS (The name server IP address is configured on the product instance), and the DNS server has an entry where hostname **cslu-local** is mapped to the CSLU IP address, then no further action is required. The product instance automatically discovers hostname **cslu-local**.

  • Option 2:

    No action required. Name server and domain that is configured for Zero-touch DNS discovery of **cslu-local.<domain>**.

    Here if you have configured DNS, (the name server IP address and domain is configured on the product instance), and the DNS server has an entry where **cslu-local.<domain>** is mapped to the CSLU IP address, then no further action is required. The product instance automatically discovers hostname **cslu-local**.

  • Option 3:

    Configure a specific URL for CSLU.

Enter the **license smart url cslu** *http://<cslu_ip_or_host>:8182/cslu/v1/pi* command in global configuration mode. For **<cslu_ip_or_host>**, enter the hostname or the IP address of the windows host where you have installed CSLU. 8182 is the port number and it is the only port number that CSLU uses.

```
Device(config)# license smart url cslu http://192.168.0.1:8182/cslu/v1/pi

Device(config)# exit

Device# copy running-config startup-config
```

Step 4   Download All for Cisco and Upload From Cisco.

Where tasks are performed: CSLU and CSSM

a) Download All for Cisco (CSLU Interface).
b) Uploading Usage Data to CSSM and Downloading an ACK.
c) Upload From Cisco (CSLU Interface).

Result:

As the product instance initiates communication, it automatically sends out the first RUM report at the scheduled time, as per the policy. To know when the product instance will be sending this information, enter the **show license all** command in privileged EXEC mode and in the output, check the date for field **Next report push:**.

As the CSLU is disconnected from CSSM, you must save usage data which CSLU has collected from the product instance to a file. Then, from a workstation that is connected to Cisco, upload it to CSSM. After this, download the ACK from CSSM. In the workstation where CSLU is installed and connected to the product instance, upload the file to CSLU.

In case of a change in license usage, see Setting the Transport Type, URL, and Reporting Interval to know how it affects reporting.

Connected to CSSM Through SSM On-Prem

When implementing the product instance-initiated method of communication, complete the corresponding sequence of tasks:

Note   If the device is registered to SSM On-Prem with pre-SLP release using callhome transport, then the transport mode changes to CSLU after the migration. Also, the url will be populated on the product instance from **OnPrem CSLU tenant ID**. Ensure that you save the configuration using the **copy running-config startup-config** command.

Tasks for Product Instance-Initiated Communication

SSM On-prem Installation > **On-prem Settings** > **Product Instance Configuration**

Step 1   SSM On-Prem Installation

Where task is performed: Download the file from Smart Software Manager.

Refer to the Cisco Smart License Utility Quick Start Setup Guidefor help with installation and setup.

Step 2   On-Prem Settings

Where tasks are performed: On-Prem

Refer Smart Software Manager On-Prem User Guide.

Step 3   Product Instance Configuration

Where tasks are performed: Product Instance

a) Ensuring Network Reachability for Product Instance-Initiated Communication.

b) Ensure that transport type is set to **cslu**.

If you have configured a different option, enter the **license smart transport cslu** command in global configuration mode. Save any changes to the configuration file.

```
Device(config)# license smart transport cslu

Device(config)# exit

Device# copy running-config startup-config
```

c) The SSM On-Prem url will be populated on the product instance from SSU On-Prem tenant ID.

This configuration is visible as license smart url *https://Cisco_SSM_OnPrem/cslu/v1/pi/XYZ-ON-PREM-1*.

In the above url **XYZ-ON-PREM-1** is the tenant ID.

d) To discover SSM On-Prem:

No action required. Name server configured for Zero-touch DNS discovery of **Cisco_SSM_OnPrem**.

Here, if you have configured DNS (The name server IP address is configured on the product instance), and the DNS server has an entry where hostname **Cisco_SSM_OnPrem** is mapped to the On-Prem IP address, then no further action is required. The product instance automatically discovers hostname **Cisco_SSM_OnPrem**.

Result:

As the product instance initiates communication, it automatically sends out the first RUM report at the scheduled time, as per the policy. To know when the product instance will be sending this information, enter the **show license all** command in privileged EXEC mode and in the output, check the date for field **Next report push:**.

On-Prem forwards the information to CSSM and the returning ACK from CSSM, to the product instance.

In case of a change in license usage, see Setting the Transport Type, URL, and Reporting Interval to know how it affects reporting.

SSM On-Prem Disconnected from CSSM

Depending on whether you want to implement a product instance-initiated method of communication. Complete the following tasks:

> ✏️
>
> **Note** If the device is registered SSM On-Prem with pre-SLP release, the transport mode will change to CSLU after the migration. Also, the url will be populated on the product instance from **OnPrem CSLU tenant ID**. Ensure that you save the configuration using the **copy running-config startup-config** command.

Tasks for Product Instance-Initiated Communication

SSM On-prem Installation > On-prem Settings > Product Instance Configuration

Step 1 SSM On-Prem Installation

Where task is performed: Download the file from Smart Software Manager.

Refer to the Cisco Smart License Utility Quick Start Setup Guide for help with installation and setup.

Step 2 On-Prem Settings

Where tasks are performed: On-Prem

Refer Smart Software Manager On-Prem User Guide.

Step 3 Product Instance Configuration

Where tasks are performed: Product Instance

a) Ensuring Network Reachability for Product Instance-Initiated Communication.
b) Ensure that transport type is set to **cslu**.

   If you have configured a different option, enter the **license smart transport cslu** command in global configuration mode. Save any changes to the configuration file.

   ```
   Device(config)# license smart transport cslu

   Device(config)# exit

   Device# copy running-config startup-config
   ```

c) The SSM On-Prem url will be populated on the product instance from SSM On-Prem tenant ID. This configuration is visible as license smart url *https://Cisco_SSM_OnPrem/cslu/v1/pi/XYZ-ON-PREM-1*.

   In the above url, **XYZ-ON-PREM-1** is the tenant ID.

d) To discover SSM On-Prem:

   No action required. Name server configured for Zero-touch DNS discovery of **Cisco_SSM_OnPrem**.

   Here, if you have configured DNS (The name server IP address is configured on the product instance), and the DNS server has an entry where hostname **Cisco_SSM_OnPrem** is mapped to the On-Prem IP address, then no further action is required. The product instance automatically discovers hostname **Cisco_SSM_OnPrem**.

Step 4 Download All for Cisco and Upload From Cisco.

Where tasks are performed: On-Prem and CSSM.

a) Log in to SSM On-Prem licensing workspace GUI.

   1. Click **SL Using Policy** tab.

   2. Click **Export/Import All** drop-down.

   3. Select **Export Usage Cisco** to upload and save the file.

b) Uploading Usage Data to CSSM and Downloading an ACK.

c) Log in to SSM On-Prem licensing workspace GUI.

   1. Click **SL Using Policy** tab.

   2. Click **Export/Import All** drop-down.

   3. Select **Import From Cisco** to upload the ACK that is downloaded from CSSM.

Result:

Since the product instance initiates communication, it automatically sends out the first RUM report at the scheduled time, as per the policy. To know when the product instance will be sending this information, enter the **show license all** command in privileged EXEC mode and in the output, check the date for field `Next report push:`.

Since On-Prem is disconnected from CSSM, you must save usage data which On-Prem has collected from the product instance to a file. Then, from a workstation that is connected to Cisco, upload it to CSSM. After this, download the ACK from CSSM. In the workstation where On-Prem is installed and connected to the product instance, upload the file to On-Prem.

In case of a change in license usage, see Setting the Transport Type, URL, and Reporting Interval to know how it affects reporting.

No Connectivity to CSSM and No CSLU

Since you do not have to configure connectivity to any other component, the list of tasks that are required to set up the topology is a small one. See, the Results section at the end of the workflow to know how you can complete requisite usage reporting after you have implemented this topology.

Product Instance Configuration

Where task is performed: Product Instance Set transport type to **off**.

Enter the **license smart transport off** command in global configuration mode. Save any changes to the configuration file.

```
Device(config)# license smart transport off

Device(config)# exit

Device# copy running-config startup-config
```

Result:

All communication to and from the product instance is disabled. To report license usage, you must save RUM reports to a file (on your product instance) and upload it to CSSM (from a workstation that has connectivity to the internet, and Cisco):

   1. Generate and save RUM reports

Enter the **license smart save usage** command in privileged EXEC mode. In the example below, all RUM reports are saved to the flash memory of the product instance, in the all_rum.txt file. In the example, the file is first saved to the bootflash and then copied to a TFTP location:

```
Device# license smart save usage all bootflash:all_rum.txt

Device# copy bootflash:all_rum.txt tftp://10.8.0.6/all_rum.txt
```

Note The RUM reports capture the licensing transactions in the device for upload. On a greenfield device, there is nothing to report, so it is empty and not generated. Also, when there are no licensing transactions, and the user tries to save the report, the **"Failure: save status: The requested item was not found"** error appears. After a few licensing transactions, such as enabling a licensing feature, the report gets populated and generated for online/offline upload.

2. Upload usage data to CSSM: Uploading Usage Data to CSSM and Downloading an ACK.

3. Install the ACK on the product instance: Installing a File on the Product Instance.

In case of a change in license usage, see Setting the Transport Type, URL, and Reporting Interval to know how it affects reporting.