



Cisco Smart License Utility User Guide

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Preface

This section describes the objectives and organization of this document and explains how to find additional information on related products and services. This preface contains these sections.

Objectives

This document provides an overview of software functionality that is specific to the Cisco Smart License Utility (CSLU). This section refers you to other related documentation that also might be useful to you.

Related Documentation

This section refers you to related documentation for CSLU.

- CSLU Quick Start Guide

Document Conventions

This documentation uses the following conventions:

Convention	Description
bold	Bold text indicates the commands and keywords used in one or more steps.
<i>italic</i>	Italic text indicates arguments for which the user supplies the values or a citation of another document.
[x]	Square brackets enclose an optional element (keyword or argument).
[x y]	Square brackets enclosing keywords or arguments separated by a vertical bar indicate an optional choice.
{x y}	Braces enclosing keywords or arguments separated by a vertical bar indicate a required choice.
[x {y z}]	Nested set of square brackets or braces indicate optional or required choices within optional or required elements. Braces and a vertical bar within square brackets indicate a required choice within an optional element.
variable	Indicates a variable for which you supply a value, in context where italics cannot be used.

Convention	Description
string	A non-quoted set of characters. Do not use quotation marks around the string or the string will include the quotation marks.

Examples for the following conventions:

Convention	Description
screen font	Terminal sessions and information the switch displays are in screen font.
boldface screen font	Information you must enter is in boldface screen font.
<i>italic screen font</i>	Arguments for which you supply values are in italic screen font.
< >	Nonprinting characters, such as passwords, are in angle brackets.
[]	Default responses to system prompts are in square brackets.
!, #	An exclamation point (!) or a pound sign (#) at the beginning of a line of code indicates a comment line.

This document uses the following call out conventions:



NOTE

Means reader take note. Notes contain helpful suggestions or references to material not covered in the manual.



CAUTION

Means reader be careful. In this situation, you might do something that could result in equipment damage or loss of data.

Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, using the Cisco Bug Search Tool (BST), submitting a service request, and gathering additional information, see [What's New in Cisco Product Documentation](#).

To receive new and revised Cisco technical content directly to your desktop, you can subscribe to the [What's New in Cisco Product Documentation RSS feed](#).



NOTE: RSS feeds are a free service.

Introduction to Cisco Smart License Utility

Cisco Smart License Utility Manager (CSLU) is a Windows-based application that enables customers to administer licenses and their associated Product Instances from their premises instead of having to directly connect their Smart Licensed enabled Product Instances to Cisco Smart Software Manager (CSSM) hosted on <https://software.cisco.com/> (Smart Software Licensing).

ATTENTION: For this document the acronym CSSM (Cisco Smart Software Manager) is represented as Cisco. (hosted on <https://software.cisco.com/>)

Software Packaging

Your installation package for CSLU consists of the following component:

- CSLU (Cisco Smart License Utility)

System Limits and Scalability

Product and User Scalability:

- Up to 10,000 Product Instances
- Single tenant (a virtual account with a Smart Account)

System Requirements

Cisco Smart Account Access

Make sure that you have access to a Cisco Smart Account, and have the role of either Smart Account Admin, or Virtual Account Admin, before you proceed with the tasks mentioned in this section.

Supported OS

Windows 10

Localization

This release of CSLU supports English.

Hardware-Based Deployment Requirements

CSLU can be deployed on a machine (laptop or desktop) running Window 10 OS. These requirements are recommended for optimal performance on a machine running the Windows 10 Operating System.

Minimum	Recommended
100 GB Hard Disk	200 GB Hard Disk
4 GB RAM	8 GB RAM
x86 Dual Core	x86 Quad Core
1 Ethernet NIC	1 Ethernet NIC

Installing CSLU on Your System

See the *CSLU Quick Start Guide* for installation instructions.

NOTE: The default installation path is c:\Users\\AppData\Roaming\CSLU

NOTE: As part of the installation process, the CSLU.exe file is installed onto the desktop of your Windows host.

Uninstalling CSLU from Your System

See the *CSLU Quick Start Guide* for uninstalling CSLU from your Windows host.

CAUTION: When you uninstall CSLU, you are prompted whether to keep your CSLU data or not. If you choose no, all your data will be deleted. Before uninstalling CSLU, refer to the *CSLU Quick Start Guide* for the complete CSLU Uninstall procedure.

Configuring CSLU

After you have installed CSLU on your system, you will need to set the following parameters for proper functioning:

- Open the Preferences tab and configure a Smart Account and Virtual Account (See [Configuring a Smart Account and a Virtual Account](#))
- Add Product Instances to CSLU (see [Adding a Single Product-Initiated Product Instance in CSLU](#) or [Adding a CSLU Initiated Product Instance in CSLU](#))
- If CSLU is not connected to Cisco, you can work locally and login to Cisco when you need to be connected to Cisco. (See [Logging into Cisco](#).)

Once these three actions have been completed, you will be able to [send authorization requests](#) to receive license authorizations.

NOTE: If you have difficulties with connectivity, see [Appendix 3. Troubleshooting](#)

Configuring a Product Instance to Send Usage (RUM) Reports Using the Product Instance CLI: Product Instance Initiated

To connect to a Product Instance, you need to configure that Product Instance (PI) to be able to connect with CSLU. Use one of the three options described here for discovering CSLU in order to send usage (RUM) reports.

Option 1: No action required: Zero-touch DNS discovery of cslu-local.

- If you have configured the name server with an entry where the hostname cslu-local is mapped to the CSLU IP address (the windows host where you installed CSLU), no configuration is required. The product instance automatically discovers hostname cslu-local.

Option 2: Configure DNS discovery of your domain.

If you choose this option, you will need to use domain name command shown below. The name-server creates the entry cslu-local.example.com.

In the global configuration mode:

- Enter the IP domain-name command: <domain_name> shown in this example:
Device(config)#: ip domain-name example.com

Option 3: Configure a specific URL for CSLU

Use this command for configuring a specific URL.

- Follow this flow:

```
Enter the license smart url cslu http://<host or IP>:<port-num>/cslu/v1/pi
Command in global configuration mode.
```

```
Where <host or IP> is the hostname or IP address of the windows host where
you have installed CSLU
```

```
Where <port-num> is 8182
```

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

Since the product instance initiates communication, it automatically starts by sending out the first RUM report. Along with this first report, if applicable and if required, it sends a trust code request and an authorization code request. CSLU forwards the information to Cisco and the returning acknowledgment (ACK) to the product instance, for installation. It gets the acknowledgment (ACK) from Cisco and sends this back to the product instance for installation.

When you have completed either of these options, you are now able to receive Usage (RUM) reports using CSLU.

Logging into Windows and Opening CSLU

CSLU is a Windows-based application, therefore you only need to login to your local machine using your Windows system credentials (Windows Username and Password).

When you are successfully logged in to your Windows host, you can open CSLU by double-clicking on the CSLU icon located on the Windows host.

The CSLU Home Screen

Procedures for each of the menu options are described in their own sections.

The CSLU home screen has four main menus:

- **CSLU:** This menu has three options:
 - **Preferences:** This option opens the Preferences tab screen.
 - **Reload:** This option closes and restarts the application
 - **Quit:** This option enables you to exit the application
- **Product Instances:** This menu affects all Product Instances. (See the [Product Instances Menu Chapter](#) for more information.)
 - The first section has two menu options and is used to download and upload Product Instances from a file using the .CSV format.
 - **Download All Product Instance List:** This menu option allows you to download all devices from the device list to a local file.
 - **Upload Product Instance List:** this menu option allows you to upload to devices from a local.
 - The second section is used to immediately send information to Cisco when CSLU is connected to Cisco.
 - **Send All To Cisco:** When logged into Cisco this option triggers API calls to immediately send RUM reports and DLC requests using API calls to Cisco from CSLU.
 - The third section has three menu options and is used when CSLU is unable to be connected to Cisco:
 - **Download All For Cisco:** Creates a file with all the information needed to send to Cisco, for example, RUM reports, Auth request, DLC requests in a compressed .tar file format.
 - **Upload From Cisco:** Allows either downloaded responses from Cisco (such as RUM ACKS, Auth codes, DCL ACK) or a single authorization code or Policy file downloaded from Cisco.
- **Edit:** This menu provides basic Windows editing options so that you can perform basic editing functions with your device lists.
 - Cut (Ctrl+x)
 - Copy (Ctrl+c)
 - Paste (Ctrl+v)
- **Help:** This menu provides help resources as well as information on the current version of CSLU.
 - Download Help Manual (Ctrl+Shift+H): Selecting this menu option opens a modal that allows you to both select a directory on your system as well as customizing the name of the user guide. (It is recommended that you keep the default name of the PDF file.)
 - Download Log File (Ctrl+Shift+L): Selecting this menu option opens a modal that allows you select files to download into your working directory. The working directory is listed in the Preference Tab under the Working directory field (<working directory>/var/logs).

NOTE: The working directory will be the repository for log files that you will need if you have to contact Cisco for support.

NOTE: The **maximum size** (`logfile maxsize`) for the log file is **10MB**. When it exceeds 10MG that file is automatically renamed, and a new file is started.(For example <file name>-2020-08-19T20-51-10.545.) The **maximum size limit** for the directory is **100MB**. If the size

limit is exceeded, then files are deleted to keep within the size limit. The **maximum number of log files** (`logfile maxbackups`) that can be stored is **10**. Once the number of files is exceeded, then the oldest file is deleted to make room for a newer file.

- About CSLU: Selecting this option opens the About Cisco Smart Licensing Utility window which provides:
 - Cisco Smart Licensing Utility copyright and trademark information,
 - Installed Modules
 - End User License Agreement.

About the Inventory Tab

The Inventory tab allows you to manage your configured Product Instances using the three buttons available to you (depending on your situation).

Product Instances Table

The Product Instances table provides the following information about the Product Instances in your system.

You select specific devices by using the selection box in the column located on the left side of the table. You can also use the Select All check box is located on the left of the Product Instance (Product Instance) heading. The default setting is empty which means nothing is selected. A minus (-) sign means that at least one device is selected, but not all devices are selected. If you click in the box, the box shows a check mark (✓) which means that all devices are selected.

The Product Instances table is composed of the following buttons and columns:

Buttons

- **Add Single Product:** This button opens a modal where you add the Host Name and Connect Method to add a Product Instance.
- **Actions for Selected...:** This button presents a menu that has four options:
 - **Remove:** Allows you to delete the selected Product Instance(s) from CSLU.
 - **Edit:** Allows you to edit one or more parameters for selected Product Instance(s).
 - **Collect Usage...:** Allows you to trigger the collection of Usage Reports from selected Product Instances on any Product Instance(s) that are configured for one of the CSLU Initiated methods. See [Collecting Usage Reports](#).
 - **Authorization Code Request:** Selecting this menu option downloads an authorization request file for the devices that have been selected. See [Requesting Authorization Codes](#).
- **Refresh Product Instance List:** This button allows you to refresh the Product Instances table and show any additions or modifications that have been made to the Product Instances table (for example, adding a new Product Instance). It also clears any devices that were selected so that all the selection boxes are cleared.

Product Instances Table Column Descriptions

NOTE: you can search for Product Instances by Name, Product Type, Last Contact, or Alert.

- **Name:** Shows the Product Instances (in column format) registered to an account. Product Instances can be filtered (the filter field is not case sensitive) to filter by Host/IP, SN or PID.
-

NOTE: Once a device is added, the Host/IP Address displays as a hyperlink to the device record port field. From this screen you can edit the record.

- **Last Contact:** The date that the Product Instance was last contacted.
- **Alerts:** Provides latest status of this Product Instance (for example, Failed to Connect).
- **Items per page:** This field enables you to select the number of Product Instance that are listed on each page. The options are: 5, 10, 25, and 100.

About the Preferences Tab

The Preferences screen has two panels of parameters that provide the following:

- **Cisco Connectivity Panel**

- **Cisco Is Available:** A toggle switch for enabling ability to set the preferences associated with connectivity to Cisco. The default is that connectivity is enabled (blue color). Clicking on the toggle switch disables connectivity (gray color). Cisco connectivity allows you to automatically send daily reports to Cisco. After enabling CCSM is Available, you must login to Cisco each time you load the application to establish connectivity.
- **Cisco Connection Timeout:** (in seconds) A numerical field where you enter the number of seconds that Cisco has not connected before the application times out. (The default is 10 seconds.)
- **Cisco Response:** (in seconds): A numerical field where you enter the number of seconds before the system times out while waiting for a response from Cisco. (The default is 90 seconds.)
- **Cisco Retry Interval:** (in seconds) A numerical field where you can enter the number of seconds that must pass before the application attempts to re-connect to Cisco (after a Cisco Connection Timeout). The default is 900 seconds.
- **Cisco URL:** Lists the URL (directory location) for Cisco the application uses. It is listed so you can ensure that this URL is available to your network because it is used for Cisco connectivity.

NOTE: Default URL is:

<https://swapi-stage1.cisco.com/services/api/smart-accounts-and-licensing/v2/>

- **HTTP Proxy Host:** Used if you will be using a Proxy between CSLU and Cisco. If a proxy is used, then set the (URL) for the proxy host here
- **OAuth URL:** Lists the URL (directory location) of the Cisco authentication server used to login to your CCO account to allow the application to communicate with CSSM. It is shown so you can ensure Cisco is available to your network because it is used for Cisco connectivity.

NOTE: Default OAuth URL is:

<https://cloudsso-test.cisco.com/as/token.oauth2>

NOTE: It is important to make sure the Cisco URL and OAuth URL fields are correct or the upload and download process will not function properly.

- **CSLU Connectivity Panel**

- **Product Service Port:** (Required field) The port the Product Instances use to communicate with the CSLU application.

NOTE: Default value is: 8182

- **REST API Port:** (Required field) The port for the REST-API operations supported by the CSLU application if it is using CSLU: Initiated REST-API for the collection method.

NOTE: Default value is: 8180

- **Smart Account:** Name of the Smart Account (SA) on CSLU that receives RUM reports. (The Smart Account name is case sensitive and must exactly match Cisco.)

- **Virtual Account:** The Virtual Account (VA) paired with the Smart Account. (The Virtual Account name is case sensitive and must exactly match Cisco.)
- **TLS Certificate File:** Lists the certificate that secures the Product Instance communication using HTTPS.
- **TLS Keys File:** Shows the directory location of the TLS Keys for your Product Instance communications using HTTPS.

- **Validate Device:** (Used if you are in Product Instance Initiated only Mode, see [Product Instance Initiated only under Default Connect Method](#).) If you have selected Product Instance Initiated only mode, selecting the **Validate Device** check box will control the automatic creation of Product Instances when the usage report is received. When Validate Device is enabled and an unknown Product Instance sends a usage (RUM) report, the local database is examined to see if the device is present or not. If it is present in the database, then the usage (RUM) report will be accepted. If it is an unknown device (not present in the data base) the usage report will be rejected. If you want the CSLU to 'auto-discover' new Product Instances based on the receipt of usage (RUM) reports, then make sure that the Validate Device check box is not selected.

NOTE: For this release, after you have installed CSLU, you will need to configure CSLU from the Product Instance CLI so that devices can send usage (RUM) Reports.

- **CSLU Working Directory:** The local directory where records are stored. This is the directory that is established when you install CSLU.

NOTE: The default directory is: C:\Users\\AppData\Roaming\CSLU

- **Default Connect Method:** Provides four methods for connecting to a Product Instance, what you select here will be pre-populated in the Connect Method field when adding Product Instances.
 - **Product Instance Initiated only:** (Default setting) This mode enables CSLU to receive information from a Product Instance. For more information see, [Configuring a Product Instance to Send RUM Reports Using the Command Line Interface \(CLI\)](#).
 - **CSLU Initiated:** NETCONF enables CSLU to send Product Instance information using Remote Procedure Calls (RPC) to Cisco if CSLU is connected to Cisco.
 - **CSLU Initiated:** RESTCONF enables CSLU to send Product Instance information using HTTP protocol to Cisco if CSLU is connected to Cisco.
 - **CSLU Initiated:** REST API enables CSLU to send Product Instance information using HTTP protocol to Cisco if CSLU is connected to Cisco.

NOTE: A Connection Method can be independently changed from the Add Product Instance or Modify Product Instance screens without affecting the selection in the Preferences tab. See [Appendix 2: CSLU Initiated Collect Method Descriptions](#) for information on CSLU Initiated protocols.

- **Save:** Saves all the settings to your system.
- **Reset:** Resets all the settings to the last save.

The Product Instances Menu Options

The Product Instances menu offers options for either uploading or downloading usage reports and other information. These options are applied system wide for all Product Instances. Each product menu option in this release is described in the following sections.

Download All Product Instances List

The **Product Instances > Download All Product Instance List...** option is a way to globally download a full Product Instance list as a *.csv file. The *.csv file can then be used for obtaining reports for managing Product Instances. Complete these steps to download a list of **all** Product Instances and their associated information.

Step	Action
Step 1	From the CSLU main screen, select Product Instances > Download All Product Instance List .
Step 2	A download modal opens for you to: <ul style="list-style-type: none"> Browse for a folder where the .csv file will reside and input the file name that will have the .csv extension.
Step 3	Click Save . The product usage (*.csv) files are downloaded for all Product Instance (s).

NOTE: The Windows operating system can change the behavior of a usage report file properties by dropping the extension when that file is re-named. The behavior change happens when you re-name the downloaded file and the re-named file **drops the extension**. For example, the downloaded default file named **DeviceList.csv** is re-named to **MyDeviceList**. The file loses its CSV extension. To enable the DeviceList file to function normally, after re-naming a usage report file, you must also **add the CSB** extension back to the file name before saving, for example **MyDeviceList.csv**.

Upload Product Instance List

Like the Download Product Instance List files option, you can globally upload to CSLU using the Upload Product Instance List feature. The information is uploaded in the *.csv format. Complete these steps to upload a list of **all** Product Instances and their associated information.

Step	Action
Step 1	From the CSLU main screen, select Product Instance > Upload Product Instance List .
Step 2	An Upload Product Instances modal opens for you to either: <ul style="list-style-type: none"> Drag & Drop a Product Instance List file that resides on your local drive.

Step	Action
	<p>or</p> <ul style="list-style-type: none"> Browse for a file, select the Product Instance List file (.csv file) and click upload. <p>NOTE: There is a *.csv template you can use. Click Download to download the file to your local drive. Then you can use this template to format your *.csv files. You can only upload one device list at a time.</p>
Step 3	<p>The files are uploaded to CSLU, and any new Product Instances are added to the device list with the information provided. See Appendix 1 for the meaning of each field.</p> <p>NOTE: The Smart Account and Virtual account are globally set in the Preference tab, so the SA/VA values entered in the .csv are ignored.</p>

Send All To Cisco

The Send to Cisco option is used after you have collected a RUM report from the Product Instances. (See Step 9 of [Collect Usage...](#) option in the Available Actions Button menu for details on collecting Usage (RUM) Reports) When logged into Cisco this menu option triggers API calls to immediately send RUM reports, and DLC requests using API REST calls to Cisco from CSLU.

NOTE: To successfully send reports to Cisco, you will need to have selected a Smart Account (SA) and Virtual Account (VA) in CSLU and be logged into Cisco. (See [Preference Tab](#) for details.)

NOTE: By default, these reports are automatically sent on a scheduled basis.

Download All for Cisco and Upload From Cisco Menu Options

The Product Instance menu has two options that are used when CSLU is not connected to Cisco (offline mode). You use these options as part of a manual upload/download procedure when you want the workstation isolated for security purposes. The following sections provide the procedures used for the **Download For Cisco** and **Upload From Cisco** menu options.

Download All for Cisco

The Download All for Cisco menu option is a manual process used for offline purposes. Complete these steps to use the Download For Cisco menu option.

Step	Action
Step 1	<p>(If you want to work offline.) From the CSLU Preferences Tab screen, click the Cisco Connectivity toggle switch to off. (The field switches to “Cisco Is Not Available”).</p>

Step	Action
Step 2	Navigate to Product Instances > Download All For Cisco .
Step 3	Select the file from the modal that opens and click Save . You now have the file saved. NOTE: At this point you have a DLC file, RUM file, or both.
Step 4	At this stage, go to a station that has connectivity to Cisco, and complete the following: <ul style="list-style-type: none"> a. Navigate to software.cisco.com b. Select the Smart Account (upper left-hand corner of the screen) that will receive the report. c. Next, select Licensing > Smart Software Licensing > Reports > Usage Data Files. d. Click Upload Usage Data. (RUM report in tar format.) e. Browse for and select the file to be uploaded, and then click Upload Data. f. From the Select Virtual Accounts pop-up, select the Virtual Account that will receive the uploaded file. The file is uploaded to Cisco and is listed in the Usage Data Files table in the Reports screen showing the File Name, time it was Reported, which Virtual Account it was uploaded to, the Reporting Status, Number of Product Instances reported, and the Acknowledgement status. g. In the Acknowledgement column, click Download. The acknowledgement file is downloaded to your third-party device.
Step 6	Once the file is downloaded, you can transfer to CSLU .
Step 7	Click Upload From Cisco . (See Upload from Cisco .)

Upload from Cisco

Once you have received the acknowledgment file (ACK) or other file, such as smart licensing authorization code, from Cisco, you are ready to Upload the that file to your system. This procedure can be used for workstations that are offline. Complete these steps to select and upload a file(s) from Cisco.

Step	Action
Step 1	Make sure you have downloaded the ACK file for the device. (See Download All for Cisco .)
Step 2	From the CSLU main screen, select Product Instance > Upload from Cisco .
Step 3	A Cisco File Upload modal opens for you to either:

Step	Action
	<ul style="list-style-type: none">• Drag and Drop a File that resides on your local drive. or <ul style="list-style-type: none">• Browse for the appropriate *.xml file, select the File and click Open.
Step 4	<p>If the upload is successful, you will get message indicating that the ACK file was successfully sent to the server. If the upload is not successful, you will get an import error.</p> <p>When you have finished uploading, click the x at the top right corner of the modal to close it.</p>

Working in CSLU

Adding Product Instances in CSLU

Using the CSLU interface, there are three ways you can add Product Instances to your system.

- **CSLU Created:** In the Inventory tab, click **Add Single Product Instance**.
- **Upload to CSLU:** Select **Inventory > Upload Product Instance List** to import for a .csv file.
- **Product Created:** CSLU will extract Product Instance related information from the RUM (usage) report sent by the Product Instance and then create corresponding Product Instances. You can configure this by selecting **Preferences tab > Product Instance Initiated only**, and de-selecting (if it is selected) the **Validate Device** check box. The Product Instances are then added when each Product Instance sends its first usage (RUM) report.

NOTE: The default Connect Method is set in the Preferences tab.

Adding a Single Product Initiated Product Instance in CSLU

To know what each field means see [Appendix 1](#) or hover over each field entry for the tool tip to show the meaning of field.

Complete these steps to add a single Product Instance from the Inventory tab.

NOTE: To add individual product-initiated Product Instances, CSLU must be configured for collecting usage reports. See [collecting usage \(RUM\) reports using CLI](#).

Step	Action
Step 1	From the CSLU main screen, under the devices tab, select Available Actions > Add Single Product Instance .
Step 2	(Required) Enter the Host (IP Address of the Host).
Step 3	(Required) Select Product Instance Initiated only as the Connect Method.
Step 4	Click Save . The information is saved to the system and the device is listed in the Product Instances.

Adding a CSLU-Initiated Product Instance in CSLU

Using the CSLU interface, you can configure the connect method to be CSLU Initiated. This connect method (mode) enables CSLU to request information from devices. If CSLU is connected to Cisco, it will forward to Cisco information received from Product Instances, whether requested by CSLU or pushed by Product Instances.

NOTE: The default Connect Method is set in the Preferences tab.

To know what each field means see [Appendix 1](#) or hover over each field entry and a tool tip opens that defines the function of the field.

Complete these steps to add a Product Instance from the Inventory tab.

Step	Action
Step 1	Return to Inventory tab and from the Product Instances table, select Available Actions > Add Single Product Instance .
Step 2	Enter the Host (IP Address of the Host).
Step 3	Select the Connect Method and select an appropriate CSLU Initiated connect method.
Step 4	In the right panel, click Product Instance Login Credentials . The left panel of the screen changes to show the User Name and Password fields. NOTE: If you click General , the detailed Add Product modal opens. (See Appendix 1 field descriptions for details)
Step 5	Enter the Product Instance User Name and Password .
Step 6	Click Save . The information is saved to the system and the device is listed in the Product Instances with the Last Contact listed as -never-. You can now collect usage (RUM) reports .

Adding a Product-Initiated Product Instance in CSLU

Complete these steps to add a device-created Product Instance using the Preferences tab.

Step	Action
Step 1	Select the Preferences tab .
Step 2	In the Preferences screen, de-select the Validate Instance check box.
Step 3	Set the Default Connect Method to Product Instance Initiated only and then click Save .

Modifying a Product Instance

CSLU allows you to edit one or multiple Product Instance (PIs) in your system from the Available Actions menu.

Complete these steps to edit one or multiple Product Instance (bulk operations).

Step	Action
Step 1	Select one or more Product Instances . NOTE: If you select multiple devices, you can only modify the User Name , Password , and Connect Method . The Host, and all UDI fields can only be modified one Product Instance at a time.
Step 2	From the CSLU main screen, select Available actions > Edit .
Step 3	(Required) Modify the appropriate fields (see note in Step 1)
Step 4	Click Save . The modifications are listed in the Product Instances.

NOTE: You can also modify a single device by clicking on the **Product Instance Name** in the Product Instances table.

Removing a Product Instance

In CSLU, you can remove one or multiple Product Instance (PIs) from your system using the **Actions for Selected** button.

Step	Action
Step 1	From the Inventory tab, select one or more devices .
Step 2	From the CSLU Main screen, select Actions for Selected... > Remove . NOTE: If the device is removed or upgraded, the data associated with the device (for example reports) will not be removed.

Collecting Usage Reports (RUM): CSLU Initiated

CSLU also allows you to manually trigger the gathering of usage reports from devices.

NOTE: By default, the CSLU is scheduled to collect usage information at 5 minute intervals.

After configuring and selecting a Product Instance (selecting **Add Single Product Instance**, filling in the **Host** name and selecting a **CSLU Initiated** connect method), then select **Actions for Selected > Collect Usage**. CSLU connects to the selected Product Instance(s) and collects the usage reports. These usage reports are then stored in CSLU's local library. These reports can then be transferred to Cisco if CSLU is connected to Cisco, or (if you are not connected to Cisco) you can manually trigger usage collection by selecting **Product Instances > Download for Cisco**.

Complete these steps to collect Product Instance usage reports.

Step	Action
Step 1	(If you have not already done so.) Select the Preference tab and enter a valid Smart Account and Virtual Account , and then select an appropriate CSLU Initiated collect method. (If there have been any changes in Preferences, make sure you click Save .)
Step 2	Open the Inventory tab and select one or more Product Instances .
Step 3	<p>From the CSLU main screen, select Available actions > Collect Usage.</p> <p>RUM reports are retrieved from each selected device and stored in the CSLU local library. The Last Contacted column is updated to show the time the report was received, and the Alerts column shows the status.</p> <p>NOTE: If CSLU is currently logged into Cisco the reports will be automatically sent to the associated Smart Account and Virtual Account in Cisco and Cisco will send an acknowledgement to CSLU as well as to the Product Instance. The acknowledgement will be listed in the alerts column of the Product Instance table.</p> <p>NOTE: To manually transfer Usage Reports to Cisco, select Download for Cisco from the Product Instances Menu.</p>
Step 4	<p>From the Download for Cisco modal, select the local directory where the reports are to be stored. (<CSLU_WORKING_Directory>/data/default/rum/unsent)</p> <p>At this point, the usage reports are saved in your local directory (library). To upload these usage reports to Cisco, Follow the steps described in Uploading Usage Reports to Cisco.</p>

NOTE: The Windows operating system can change the behavior of a usage report file properties by dropping the extension when that file is re-named. The behavior change happens when you re-name the downloaded file and the re-named file **drops the extension**. For example, the downloaded default file named **UD_xxx.tar** is re-named to **UD_yyy**. The file loses its TAR extension and cannot function. To enable the usage file to function normally, after re-naming a usage report file, you must also **add the TAR** extension back to the file name, for example **UD_yyy.tar**.

Uploading Usage Reports to Cisco

If you are logged into Cisco, you can upload Product Instance usage (RUM) reports to a SA/VA.

NOTE: By default, the CSLU is scheduled to upload usage information at 5 minute intervals.

NOTE: Before uploading Product Instance usage reports, make sure you have configured CSLU with a valid SA/VA.

Complete these steps to upload device usage (RUM) reports to Cisco.

Step	Action
Step 1	If you haven't already done so, login to Cisco .
Step 2	Navigate to: software.cisco.com and select the Smart Account .
Step 3	From the main page, select Smart Software Licensing > Reports > Usage Data Files > Upload Usage Data .
Step 4	Next, at the Upload Usage Data modal, click Browse . Navigate to the local directory where the files have been saved and select the file(s) to upload.
Step 5	Click Upload Data . The Select Virtual Accounts modal opens.
Step 6	Select the Virtual Account that will receive the upload. Once the VA is selected a "This usage data is being processed" prompt opens. Showing that the VA selected is viable and that the report data is being processed. NOTE: Depending on the number of reports selected, the processing time could take a while. In the Usage Reporting screen, the reporting status for the selected VA is labeled, "Data Being Processed" and the Acknowledgement column shows Pending status.
Step 7	When the processing is complete, the VA record Reporting Status any errors that occurred during the upload. The Acknowledgement column shows "Available". (The file shows up in the download queue. Tim right-clicks on file in queue and selects "Always open files of this type.")
Step 8	Right-click the file in the Acknowledgement column to download the file.
Step 9	Once you have the Acknowledgement file (ACK), then in CSLU select Product Instance > Send All to Cisco . When the modal opens, you can either browse for the file or drag and drop the file RUM (tar) file. The upload to Cisco is now complete.

Requesting Bulk Authorization Codes

The Authorization Code Request menu option is specifically used to manually request authorization codes from Cisco. This option is specifically used for one or more Product Instances.

Complete these steps if you are not connected to Cisco to request authorization codes from Cisco.

Step	Action
Step 1	From the Product Instance table, select the Product Instances for authorization

Step	Action
	code request.
Step 2	With one or more Product Instances selected, select the Authorization Code Request option from the Available Actions menu.
Step 3	In the modal it describes that steps to take, click Accept The upload modal opens to select a *.CSV file for uploading. (local)
Step 4	<p>Next, follow these steps.</p> <ol style="list-style-type: none"> a. Upload the file to Cisco by following this directory path: software.cisco.com > Smart Software Licensing > Inventory > Product Instances > Authorize License Enforced Features. b. Follow the steps shown on the wizard to select licenses and then download the authorization codes to CSLU.
Step 5	<p>You then can apply the authorization codes by selecting Product Instances > Upload from Cisco. (For uploading procedure, go to Upload From Cisco)</p> <ul style="list-style-type: none"> • If CSLU is In Product-Initiated mode: The uploaded codes are now applied to the Product Instances the next time the Product Instance contacts CSLU. • If CSLU is in a CSLU initiated mode: The uploaded codes are now applied to the Product Instances the next time the CSLU runs an update.

Appendix 1. Product Instance Field Definitions for *.csv files

This table provides the full list of field descriptions for a Product Instance. These fields are listed in the *.csv files.

NOTE: The IP Address is the only required field for the *.csv files

Field Name	Description
Name	For a Future Use Requirement: A place holder in case a port number is required to connect to Product Instances in the future
IP Address	(Required) IP address of the Product Instance
Smart Account	The Smart Account name in Cisco.
Virtual Account	The Virtual Account name in Cisco.
UDI	Universal Device Identifier
PID	Product ID NOTE: If PID is entered, you must also enter the SN
Serial Number	Serial Number of the Product Instance NOTE: If SN is entered, you must also enter the PID
VID	The version of the customer orderable product (PID) so that the customer can see any version improvements that have occurred with the product NOTE: If VID is entered, you must also enter the PID and SN
UDI Host ID	The Product Instance IP Address
MAC Address	The physical address of the Product Instance
SUVI	Secure Unique Version Identifier (This is a trusted unique identifier.)
UUID	Universally Unique Identifier is a value that describes the Product Instance for a certain product family
User Name	A user name to allow CSLU to login to device and collect information such as, RUM reports, DLC information, and can install Policy and Authorization codes.

	NOTE: Only CSLU Initiated Connect methods need this.
Password	A password to allow CSLU to login to device and collect RUM reports NOTE: Only CSLU-Initiated Connect Methods need this.
Connect Method	<p>Product Instance Initiated only: This mode is used for CSLU when it is in “Standalone” mode (not connected to Cisco). It enables CSLU to receive information from a Product Instance. For more information see, Configuring a Product Instance to Send RUM Reports Using the Command Line Interface (CLI).</p> <p>CSLU also has three CSLU initiated modes. These modes provide two-way communication between CSLU and Cisco. See Appendix 2: CSLU Initiated Collect Method Descriptions for information on these protocols.</p> <ul style="list-style-type: none"> • CSLU Initiated: NETCONF enables CSLU to send Product Instance information using Remote Procedure Calls (RPC) to Cisco if CSLU is connected to Cisco. • CSLU Initiated: RESTCONF enables CSLU to send Product Instance information using HTTP protocol to Cisco if CSLU is connected to Cisco. • CSLU Initiated: REST API enables CSLU to send Product Instance information using HTTP protocol to Cisco if CSLU is connected to Cisco.

Appendix 2. CSLU Initiated Collect Method Descriptions

The table below provides the protocol, reference documentation, and transport information for each of the CSLU-initiated collect methods used.

Network Management Protocol	Reference	Additional information
NETCONF	rfc6241	Transport: SSH. Requires configuring SSH and Netconf.
RESTCONF	rfc8040	Transport: HTTP, HTTPS. Requires configuring HHTP/HTTPS server, Restconf.
Native REST	Cisco Proprietary	Transport: HTTP, HTTPS. Requires configuring HHTP/HTTPS server. Some device may enable HTTP server by default.

Appendix 3. Troubleshooting: Enabling HTTPS Server on Your Product Instance

If you are having connectivity issues when you are trying to receive usage reports from a Product Instance, follow these suggested steps.

1. Configure interface and IP route
2. This is an example of the steps used to enable the HTTP server using an authentication method.

```
ip http server
ip http authentication local
ip http secure-server
!
aaa new-model
  aaa authentication login default local
  aaa authorization exec default local
  username admin privilege 15 password 0 lab
```

3. Verify that the SL-HTTP server is now enabled by using these steps:

```
Switch#show ip http server session-module

HTTP server application session modules:
Session module Name Handle Status Secure-status Description
OPENRESTY_PKI 3 Active IOS OpenResty PKI Server
SL_HTTP 2 Active Active HTTP REST IOS-XE Smart License Server
HTTP_IFS 1 Active Active HTTP based IOS File Server
NBAR2 4 Active Active NBAR2 HTTP(S) Server
HOME_PAGE 5 Active Active IOS Homepage Server
BANNER_PAGE 6 Active Active HTTP Banner Page Server
WEB_EXEC 7 Active Active HTTP based IOS EXEC Server
GSI7F7B53506098-lic 8 Active Active license agent app
GSI7F7B59697718-web 9 Active Active wsma infra
GSI7F7B59699CA0-web 10 Active Active wsma infra
NG_WEBUI 11 Active Active Web GUI

Switch#
```

4. Ping the IP configured from your CSLU-W host.

Appendix 4. Default Data Transfer Intervals

By default, CSLU is scheduled to transfer usage data with Cisco or Product Instance(s) at specific intervals. Listed here are the usage data intervals:

- Retrieve Usage Data from Product Instances: 60 day intervals
- Importing Usage Data to Product Instances: 5 minute intervals

Appendix 5. CSLU Firewall Settings

When the CSLU application first runs, Windows 10 prompts you for your firewall settings. Please refer to the table below for firewall settings.

CSLU-Connect Mode	CSLU - API Firewall (Backend Server)	CSLU Firewall (UI Client)	NOTE
CSLU-Initiated: REST API RESTCONF NETCONF	Select Cancel	Select Cancel	In the CSLU-initiated mode, the CSLU will never receive requests from external hosts, therefore, the CSLU firewall ports can be blocked.
Product Instance Initiated only	Select Allow Access	Select Cancel	In this mode, the CSLU will receive reports and request from the Product Instances, and therefore the CSLU-API firewall needs to be in the Allow Access state. NOTE: The CSLU firewall is for the UI and the UI does not receive requests from an external host.
Both CSLU-Initiated and Product Instance Initiated	Select Allow Access	Select Cancel	See: Product Instance initiated note in the Product Instance Initiated only Mode.