



The bridge to possible



# Smart License using Policy

## A Simplified License Approach

17.3.2 /17.4.1 & later Release

Pradeep Chaudhari

Technical Marketing Engineer

May 2021

# News & Upcoming events



# Upcoming Community Live Event

## COMMUNITY LIVE

Unified Communications on Catalyst 8000

June 22nd, 2021

With Lokesh Kumar Lal

Participate: <http://bit.ly/cl-june22nd>



The promotional graphic features a dark blue background with a white silhouette of a person's head and shoulders. Inside the silhouette, there is a circular profile picture of Lokesh Kumar Lal. To the right of the silhouette, a woman and a man are shown in a professional setting, looking at a whiteboard. The text 'Community Live Event' is at the top right. Below the profile picture, the date '22 June, 2021' and the name 'Lokesh Kumar Lal' are listed, with 'Public Event' in smaller text below. A 'Register Today' button with a right-pointing arrow is in the bottom right. The bottom of the graphic has a blue banner with the text 'Networking' and 'Unified Communications on Catalyst 8000'. A small icon of a person with a speech bubble is on the left side of the graphic.

Community Live Event

22 June, 2021  
Lokesh Kumar Lal  
*Public Event*

Register Today >>

Networking  
Unified Communications on Catalyst 8000

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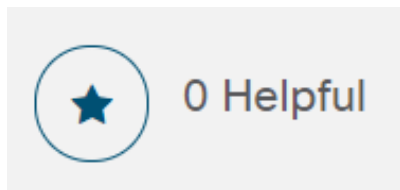


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Pradeep Chaudhari  
Technical Marketing Engineer

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# Smart License using Policy

## A Simplified License Approach

17.3.2 /17.4.1 & later Release

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# Agenda

1 Cisco Smart Licensing Recap

2 Smart Licensing using Policy (SLP)

3 SL using Policy End-to-End

4 SL Reporting Policy

5 SL using Policy License Servers

6 Deploying SL using Policy

7 SLP Migration Workflow

8 Supported Routing Products



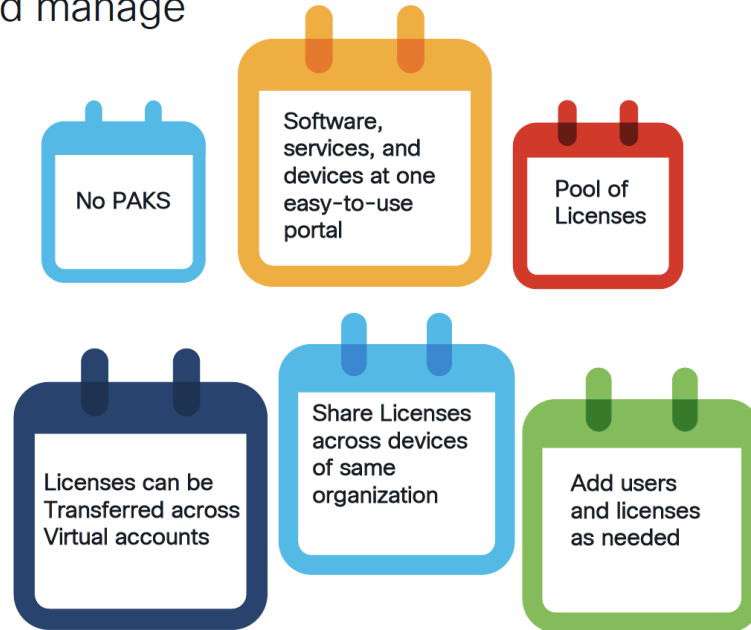
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# Cisco Smart Licensing Recap

# Introduction - What is Smart Licensing?

Smart Licensing is a flexible software licensing model that simplifies the way you activate and manage licenses across your organization

- ✓ Easy Registration
- ✓ Complete Visibility
- ✓ License Pooling
- ✓ License Portability
- ✓ Company Specific
- ✓ Cost Reduction
- ✓ Compliance Reporting



# Challenges with Existing Cisco Licensing



Customer  
Challenges

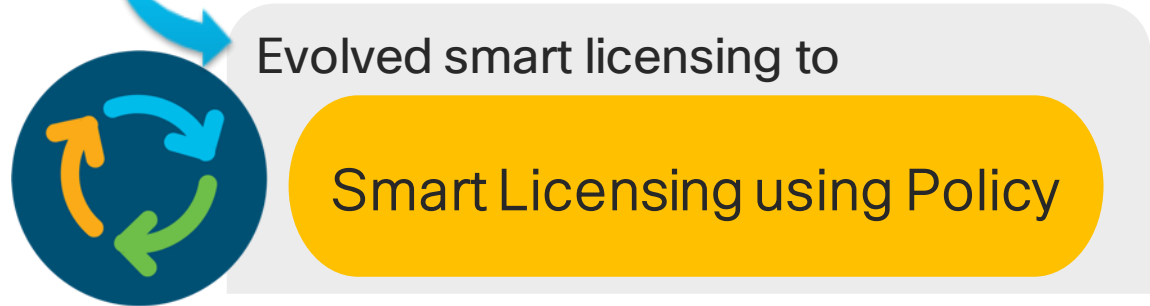
Complex system affecting device  
configuration

Challenging SW compliance

Processes are complicated.

Impact Security Policies and  
Increase in OPEX costs

# Challenges with Cisco Licensing



# Polling Question #1

Which software release introduced support for Smart Licensing Using Policy (SLP)?

- A. 1. IOS XE 17.3.1
- B. 2. IOS XE 17.3.2
- C. 3. IOS XE 17.3.4
- D. 4. IOS XE 17.5.1





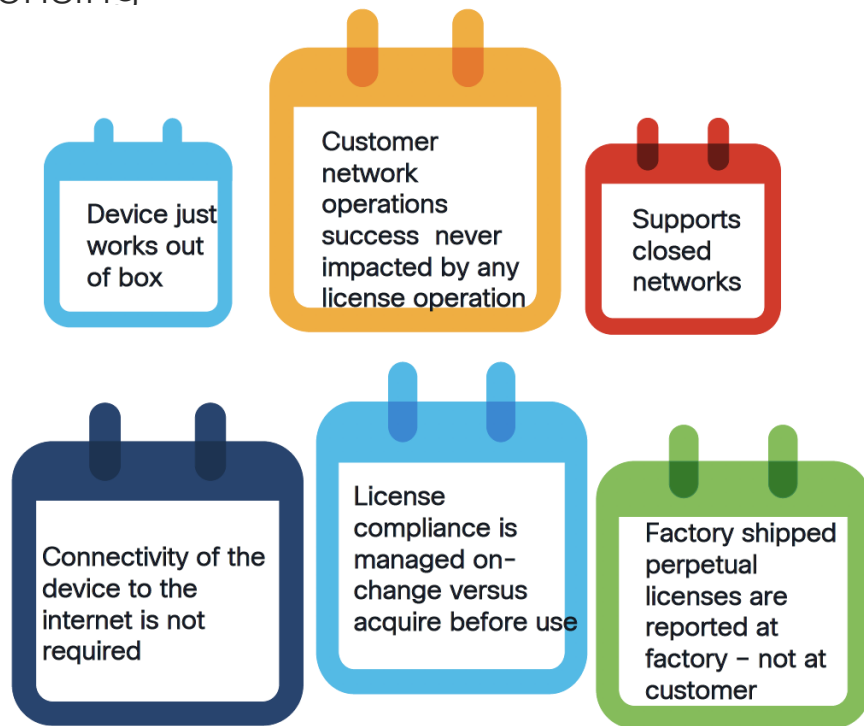
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# Cisco Smart Licensing using Policy

# Top Principles Behind Smart Licensing using Policy

Smart Licensing Using Policy is a simplify licensing Experience without impacting security policies and OPEX costs

- ✓ Simplified Operations
- ✓ No Eval mode
- ✓ Less Connectivity to Cisco
- ✓ Eliminated Day-0 Friction
- ✓ Supports Closed Networks
- ✓ Maintains regulatory compliance





# What's new? ...Smart Licensing using Policy



## What?

- o Any EN and IoT IOS-XE product running 17.3.2 / 17.4.1 or later
- o DNAC appliances
- o Collab CUBE, SRST, CME on XE products
- o ACI, NX-OS and MDS - Q3CY21



## WHY?

Simplify licensing OPEX

Enable customers to be SW compliant without impacting security policies and OPEX costs



## When?

EFT Mid-September - Complete

Release: November 9<sup>th</sup>, 2020

Cisco DNAC on-prem - Available, Cisco DNAC Cloud and SD WAN - April 2021, SSM on-prem - April 2021



## How?

Upgrade any Polaris IOS-XE product to the 17.3.2 release

Legacy PAK, SLR, PLR keys honored

Upgrade any DNAC appliance to receive all SLP features

# Smart Licensing Simplified for EN

## Smart Licensing using Policy (new version Polaris 17.3.2 or >)

Note...



No change to the ordering processes of HW and SW  
Note: Use your smart and virtual accounts for management and visibility, nested RBAC available

CHANGE : 3 REQUIREMENTS DOWN TO 1



No EVAL  
@ product boot,



no registration to  
cisco.com per device



No on-going communication  
to cisco.com per device  
every 30 - 90 days

Simply

Send Cisco a report with SW license use

# Smart Licensing Simplified – November 2020(17.3.2 or Later Release)



Configure your product.

Each IOS-XE device records the configured package

- ✓ Each device is the single-source-of-truth of software in use
- ✓ A RUM report is created in IOS-XE



New APIs and CLIs offer reporting Automation

- ✓ Use a Cisco tool or 3rd Party system
- ✓ Smart Account APIs automate reporting
- ✓ RUM reports can be pushed or pulled from each device

0110  
110010  
0110



Cisco Smart Software Manager – CSSM  
Update you Smart Account

Send SW license use reports  
Note: Reporting of SW use is required

- ✓ Know what software is available to use
- ✓ Keep your software purchase vs. use in sync

# Smart Licensing Simplified – November 2020(17.3.2 or Later Release)

Customer request!

## Tag products – Private telemetry



- ✓ We have added four free-form fields to IOS-XE, 256 char limit
- ✓ Push or pull this data to any device via API or CLI
- ✓ Add, modify, delete as needed
- ✓ This data is not sent to Cisco



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# SL vs SL Using Policy

# SL vs. SL using Policy Differences

## Smart Licensing

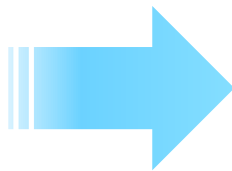
Day 0 registration required

Mandatory evaluation mode

Regular interval Licenses reporting

Acquire before use model

SLR/PLR for off-line customers



## Smart License Using Policy

No Day 0 registration required

No more Evaluation Mode

Usage reports are stored on device and reported later

Acquire before use for export control Licenses Only

No SLR/PLR required due to flexible policy model



# Polling Question #2

What are the various tools/options to collect software use report in Smart License using Policy?

- A. Via CSLU
- B. On-Prem DNAC
- C. Via APIs / CLIs for any 3rd party system
- D. Directly to a Smart Account
- E. Air Gap
- F. All of the above



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# Smart License using Policy End-2-End

# Smart Licensing Using Policy End-2-End

1



## Order SW.

Include your Cisco Smart Account

2



## SW Reported.

Cisco reports all purchases to your Cisco Smart Account

3



## Use Your Product.

No Registration. SW use reports created on product

4



## Report SW Use.

On-change of SW in-use. Options: on box API or CLI

5



## Upload to Cisco.

Via connected on-line or disconnected off-line

6



## View SW Assets.

Reporting Tracked. Status of uploads available

# 1 Purchase

## What you need to know....ordering and use

No change to the ordering processes of HW and SW



When ordering Smart Licensing include your SA (VA optional)

Drop-ship  
Orders from  
Cisco factory:

And / Or

Via  
direct partner  
or distributor

- ✓ Creates a report record of all software purchased
- ✓ Installs all purchased trade-controlled software and keys

- ✓ Report a record of all software purchased when point-of-sale transactions are sent to Cisco.

Then...

Use your product  
Report SW use changes to Cisco





## No Smart Account on the order?

1. Upgrade to 17.3.2 or >
2. Then, send a report to your smart account
3. Software assets are transferred from a holding account to your smart account
4. All software purchased is then reported as 'in-use'

# 2

Use

## Customer Receives Product – Day 0 / 1 HW+ SW No registration

No connection to Cisco required, boot and use



# 3

## Report

A **RUM** (Resource Utilization Measurement) report is License Usage Report

- ✓ The product instance generates a RUM report
- ✓ A RUM report may be accompanied by other requests, such as a trust code request, or a SLAC request.
- ✓ The RUM file is Cisco authentic, cert-signed by the HW chip on-board
- ✓ SW use collected: Via APIs or CLIs to pull license use data out per device
- ✓ Export a file from the device. Use a Cisco controller or Cisco Smart Licensing Utility (CSLU) app
- ✓ An ACK from CSSM may include RUM report IDs, authorization codes, trust codes, and policy files as well.

# Reporting: What data does Cisco care about?

## 3 Report

### Required data fields for SW reconciliation per customer, per product

UDI	HW Product serial number
SW	SW Unique ID SN
SW Package + Reg ID	Software product package and entitlement tag
Count	Software use count per license entitlement
Time and date stamp	Per license entitlement change and use



# What you need to know....SW reporting

## When should I report? - Report on-change

### Perpetual



#### 1. Report after upgrade

Establish a smart account SW asset baseline, report after upgrade to 17.3.2. / 17.4.1 or >

#### 2. Report on-change, within 90 days

A single notification indicates reporting is required

#### 3. Report annually (or more frequently)

Network changes will be reflected in your smart account

### Subscription



#### 1. Report after upgrade

Establish a smart account software asset baseline, report after upgrade to 17.3.2. / 17.4.1 or >

#### 2. Report on-change, within 90 days

A single notification indicates reporting is required

#### 3. Report annually (or more frequently)

Network changes will be reflected in your smart account

# How can I report SW?

Use one or many of these options to report SW use...

Coming May 2021

SD WAN

DNAC  
On-Prem

SSM  
On-Prem

Direct to  
Smart Account

CSLU App  
Cisco Smart Licensing  
Utility Lite Windows  
Application

3<sup>rd</sup> Party

Set-up controller  
reporting cadence  
preferences

Set-up reporting  
cadence preferences

Set-up reporting  
cadence preferences

Report on-line  
automatically

Set-up reporting  
cadence preferences

APIs to push or pull  
report data

The controller  
manages SW use and  
reporting

ID products running  
SLE

ID products running  
SLE

Report off-line via  
upload to CSSM

Report on-line  
automatically

CLIs to push or pull  
report data

Report on-line  
automatically, including  
MSLA post-paid use

Report on-line  
automatically

Report on-line  
automatically

IOS-XE's WebUI  
supports reporting

Report off-line via  
upload to CSSM

Report off-line via  
upload to CSSM

Report off-line via  
upload to CSSM

Report off-line via  
upload to CSSM

Bulk and automated  
options supported

Bulk and automated  
options supported

Bulk and automated  
options supported

Bulk and automated  
options supported

Cisco Smart Software Manager (CSSM) / My Cisco Entitlements (MCE)

Use APIs or the web portal to report use, [https://apidocs-prod.cisco.com/explore;category=Smart\\_Accounts\\_&\\_Licensing\\_APis;sgroup=Smart\\_Licensing\\_Using\\_Policy](https://apidocs-prod.cisco.com/explore;category=Smart_Accounts_&_Licensing_APis;sgroup=Smart_Licensing_Using_Policy)



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# SLP Reporting Policy

# SLP Policy

## What is it?

- ✓ File which is maintained on CSSM.
- ✓ Can be uploaded to the PI devices to instruct reporting behaviour
- ✓ Custom policies available based on contract agreements and military/government devices.

## What does it do

- ✓ Determines the reporting frequency.
- ✓ If present on CSSM will be included in the ack sent by CSSM to the PI.
- ✓ For new orders from Cisco factory, any policy will be automatically installed at factory.
- ✓ Can be independently downloaded from the CSSM and loaded on the PI to change its reporting behaviour.

# SLP Policy



## Default policy

- ✓ Ack needed – Optional\*
- ✓ Perpetual Licenses:
  - First report – 365 days
  - Subsequent reports – Once a Year
  - On license change – Within 90 days
- ✓ Subscription Licenses:
  - First report – 365 days
  - Subsequent reports – Once a Year
  - On license change – Within 90 days



### Policy:

Policy in use: Merged from multiple sources.

Reporting ACK optional: : **yes (CISCO default)** <link why ACK>

### Unenforced/Non-Export **PERPETUAL** Attributes:

First report requirement (days): 365 (CISCO default)

Reporting frequency (days): 365 (CISCO default)

**Report on change (days): 90 (CISCO default)**

### Unenforced/Non-Export **SUBSCRIPTION** Attributes:

First report requirement (days): 365 (CISCO default)

Reporting frequency (days): 365 (CISCO default)

**Report on change (days): 90 (CISCO default)**

### Enforced (Perpetual/Subscription) License Attributes:

First report requirement (days): 0 (CISCO default)

Reporting frequency (days): 0 (CISCO default)

Report on change (days): 0 (CISCO default)

### Export (Perpetual/Subscription) License Attributes:

First report requirement (days): 0 (CISCO default)

Reporting frequency (days): 0 (CISCO default)

Report on change (days): 0 (CISCO default)



Each attribute can be changed using a custom policy

\* The output currently shows yes. Output will be updated in future releases.



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# License Server

# CSLU Functions

## Cisco Smart License Utility (CSLU)

### What is CSLU?

Deployed as micro service on windows host

Can also be integrated as software component with controller-based products:

- Cisco DNA-C
- On the device

Able to deliver an on-line or off-line connectivity model for the license data.

### CSLU - Different Form Factor



### CSLU Key Functions

Administer all licenses and their associated device

Sends authorization code requests to CSSM, receives authorization codes from CSSM and can install authorization codes on a device

Collects usage reports from the device and upload these usage reports to SA/VA in CSSM

The RUM report ACK from CSSM is collected online, or offline, and provided back to a device



# CSLU – Mode of Operation

## Pull Mode

- ✓ CSLU initiated communication
- ✓ CSLU can be set-up to pull the required information from the product instances at a configurable

## Push Mode

- ✓ Product Instance initiated communication
- ✓ Alternatively, the product instance can be configured to push the same to CSLU



# 1 Product Instance – Pull Mode transport config options

## Config on Product Instance

### 1. Use DNS

- ✓ Add “`cslu-local`” resolution to DNS server  
OR
- ✓ Add “`cslu-local.<ip-domain>`” resolution to DNS server
- ✓ Add config: `ip domain name`

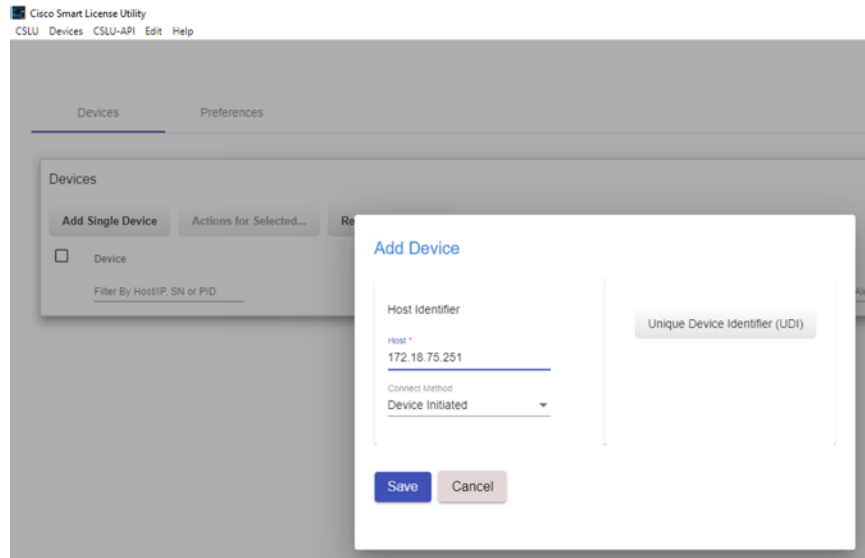
### 2. Enable HTTP:

- ✓ `ip http server`
- ✓ `ip http secure-server`
- ✓ `ip http client source-interface <Interface-Name>`

### 3. CSLU URL Config

- ✓ `license smart transport cslu`
- ✓ `license smart url cslu http://<cslu-ip>:8182/cslu/v1/pi`

## Config on CSLU for Push Mode



## 2 Product Instance – Push Mode transport config options

### Config on Product Instance

#### 1. Use DNS

- ✓ Add “`cslu-local`” resolution to DNS server  
OR
- ✓ Add “`cslu-local.<ip-domain>`” resolution to DNS server
- ✓ Add config: `ip domain name`

#### 2. Enable HTTP:

- ✓ `ip http server`
- ✓ `ip http secure-server`
- ✓ `ip http client source-interface <Interface-Name>`

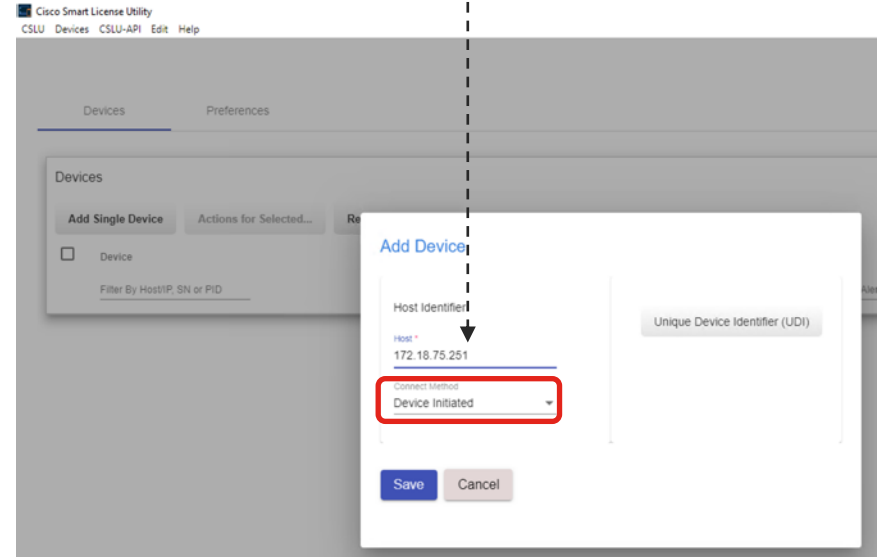
#### 3. CSLU URL Config

- ✓ `license smart transport cslu`
- ✓ `license smart url cslu http://<cslu-ip>:8182/cslu/v1/pi`

#### 4. CLI to Push Report

- ✓ `license smart sync local -`

### Config on CSLU for Push Mode



# CSLU Preferences [Administration Screen]

Login to CSSM

Logged in as Test [Login to CSSM as another user](#)

Devices Preferences

## Preferences

### CSSM Connectivity

CSSM Is Available

CSLU In online Mode

CSSM Connection Timeout \*

10

CSSM Response \*

90

CSSM Retry Interval \*

900

CSSM URL \*

https://swapi-stage0.cisco.com/services/api/smart-accounts-and-licensing/v2/

HTTP PROXY HOST

http://proxy.esl.cisco.com:80

OAuth URL

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

### CSLU Connectivity

Device Service Port \*

8182

REST API Port \*

8180

Smart Account

SDWAN\_LabTests

Virtual Account

SLE\_Routing\_Demo

TLS Certificate File

Validate Device

CSLU working directory

Device Initiated

CSLU Initiated - NETCONF

CSLU Initiated - RESTCONF

CSLU Initiated - REST API

- 1 This knob is used to switch CSLU Online or Offline Mode.
- 2 Select Smart Account
- 3 Select Virtual Account
- 4 Validated Device: Check to prevent PI to be created on receipt of usage report
- 5 'default' connection method as device Initiated (Push)
- OR
- 6 CSLU Pull mode  
CSLU Initiated - Netconf  
CSLU Initiated - Restconf  
CSLU Initiated - REST API
- 7 Save

7

Save Reset

# CSLU Device Operations

The screenshot displays the 'Devices' section of the CSLU interface. A dropdown menu titled 'Available Actions' is open, listing several options: 'Add', 'Remove', 'Edit', 'Collect Usage...', and 'Authorization Code Request'. Three blue callout boxes on the left point to these actions:

- Manual Add, remove or change info about a device** points to the 'Add', 'Remove', and 'Edit' options.
- Perform a "pull" collect operation of usage data** points to the 'Collect Usage...' option.
- Request an auth code** points to the 'Authorization Code Request' option.

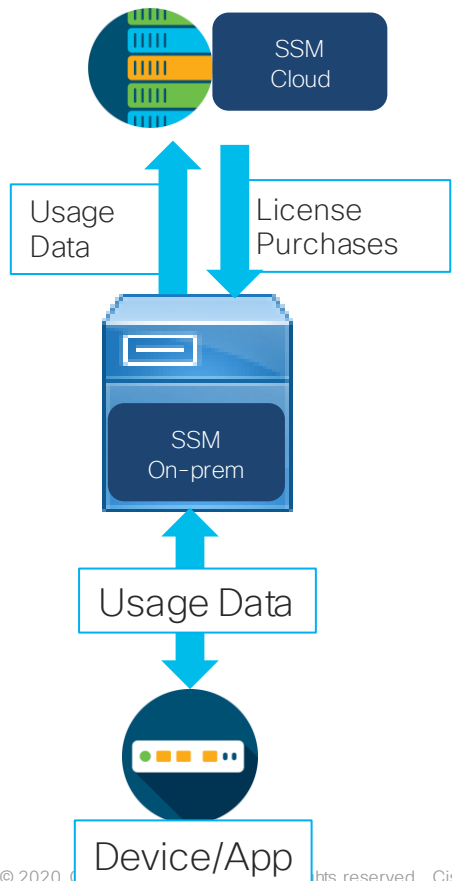
The background interface shows a table of devices with columns for 'Device', 'Last Contacted', and 'Alerts'. A device with ID '10.83.111.27' is highlighted, showing its SN as '9R0MMKTVMLO' and PID as 'CSR1000V'. The 'Last Contacted' column shows '15-Jun-2020 15:05'. The 'Alerts' column shows a green status icon and the text 'PULL\_USAGE\_STATUS: Pulling Usage Completed'.

# On-Prem DNAC Supporting Smart Licensing using Policy

Reporting	Manages all SW use compliance reporting, through online method
EC Software	Manages authorization codes required for any purchased export controlled software, e.g., HSEC
Legacy Management	Managing RTU, PAK, Smart Licensing (including SLR/PLR) and SLP use (smart licensing using Policy) for migration scenarios
Telemetry	Data from and tagging of products makes needed information possible

# On-Prem SSM Support for SL Using Policy – What’s New!!

On-Prem SSM Support  
Coming in May 2021



1. Multi-tenancy supported
2. On-Prem stores and forwards usage reports
  - Usage reports are forwarded, parsed and used to show compliance data
  - License Compliance Data synced back and forth with CSSM cloud
3. Device Registration to On-Prem Process – Two Flavors
  - Push Mode
    - Send data to CSSM on-Prem from device
  - Pull Mode
    - Pull data from device and send to on-prem

# Cisco Cloud CSSM Changes for SL Using Policy

- Automated and manual uploading of license usage data
- Parsing of data for compliance displays
- Authorization code generation and download
- Equipment shipped direct from Cisco will be shown in CSSM automatically

The screenshot shows the 'Smart Software Licensing' interface in Cisco Software Central. The page title is 'Smart Software Licensing' and it includes navigation links for Alerts, Inventory, Convert to Smart Licensing, Reports, Preferences, On-Prem Accounts, and Activity. The 'Reports' section is active, showing tabs for Report, Usage Data Files, Reporting Policy, and Synch File for Device Controllers. Below the tabs, there is a message: 'Devices can be configured to report the features that they are using. This usage then determines which licenses are needed, in order to be compliant.' There is an 'Upload Usage Data...' button and a search bar labeled 'Search by File Name, Virtual Account'. A table displays two usage data files:

Usage Data File	Reported	Virtual Account	Reporting Status	Devices	Acknowledgement
9200L_FI_usage.txt	2021-Feb-17	Frankfurt Cisco Lab	No Errors	1	Download
berlab-c9300-2_slup_report_01.txt	2021-Jan-22	Berlin Lab Cloud	No Errors	1	Download

Showing All 2 Records



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# SL using Policy

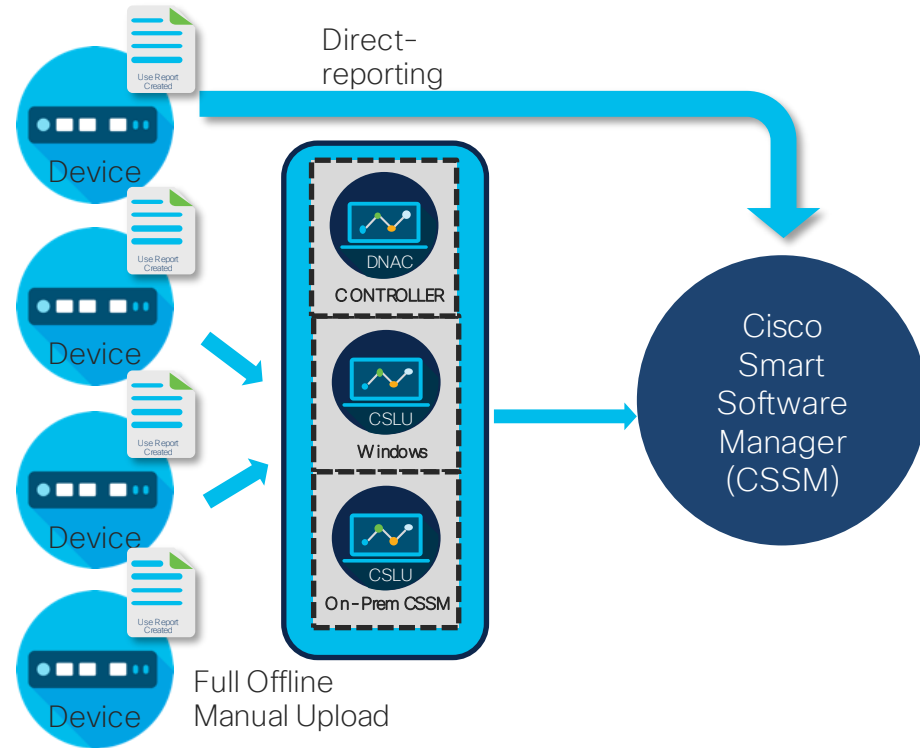
- Overall Functionality



# Smart License using Policy – Functionality

## SL Using Policy

1. Product boots up and start using the product. (no eval mode, no registration)
2. Device records usage reports (RUM Reports) into a trusted store on the device.
3. Reports sent to Cisco for compliance operations
  - Factory / Direct / Off-Line
  - License servers (CSLU, CSSM On-Prem, DNAC)
4. Cloud CSSM reads reports and updates compliance statistics
5. No enforcement – syslogs only
6. No initial licensing operations (no eval mode, no registration, no reservations,...)



\*Registration or trust needs to establish only if Products directly have access to CSSM.



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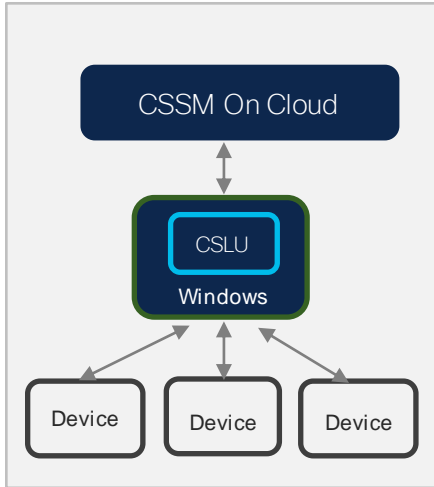
# Deploying Smart Licensing Using Policy

# SL using Policy Deployment Models

- Currently Supported

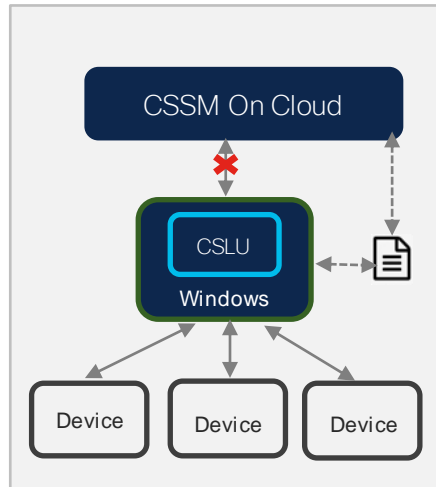
1

Connected to CSSM through CSLU



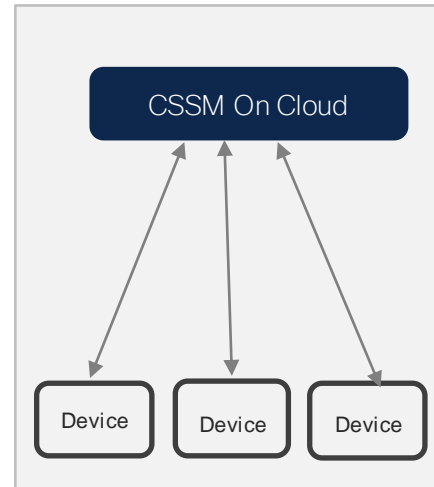
2

CSLU Disconnected from CSSM



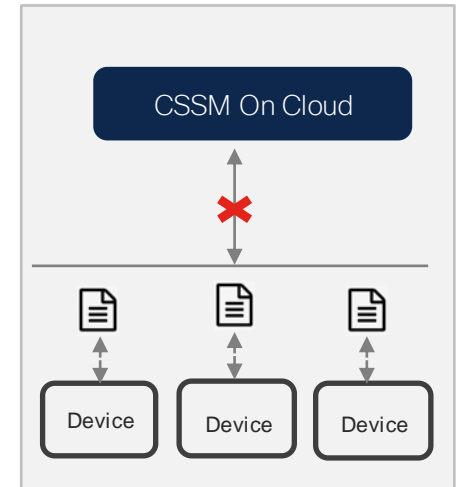
3

Direct Access to CSSM



4

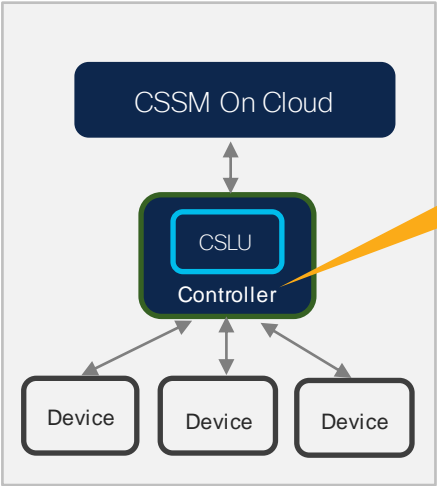
Offline / Air Gapped



# SL using Policy Deployment Models

5

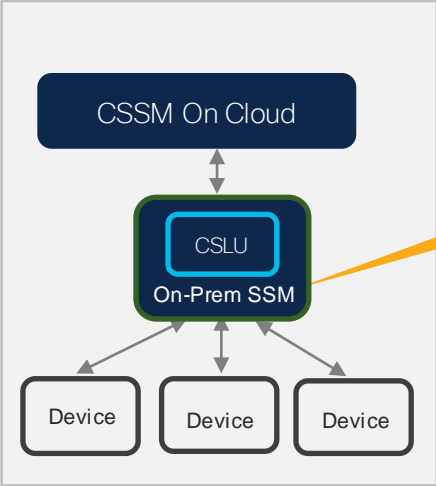
Connected to CSSM through On-Prem DNAC



On-Prem DNAC (2.2.1.0 & later release)

6

CSSM On Prem

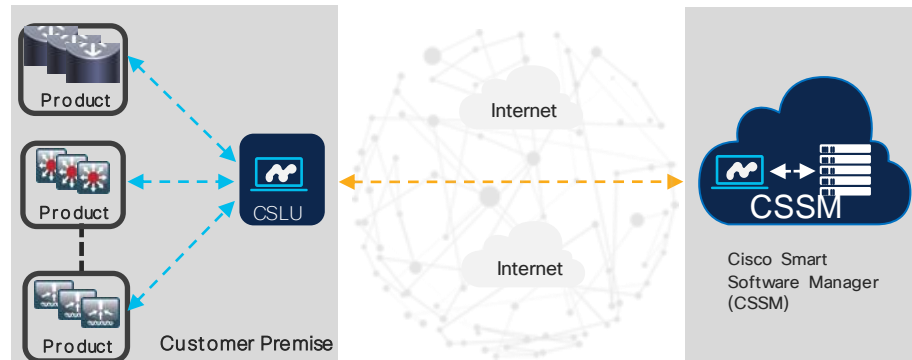


On-Prem SSM Support coming in May 2021

# Product Connected to CSSM Through CSLU

1

Connected to CSSM through CSLU



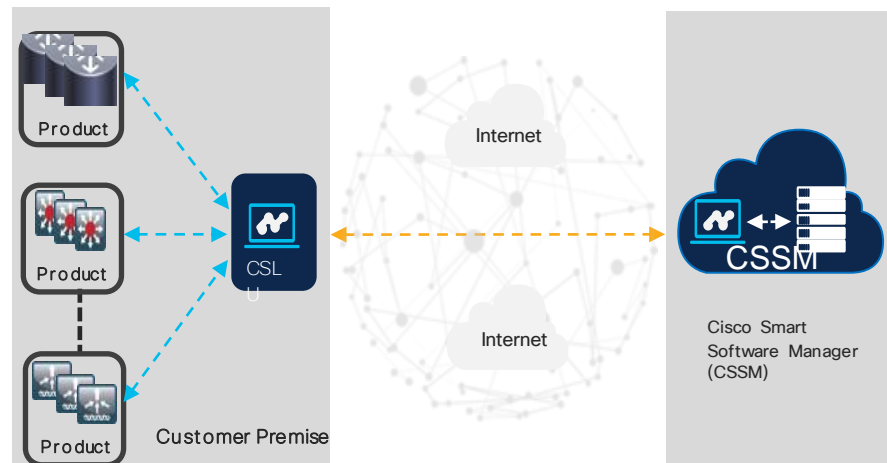
# Configuration

## 1 Connected to CSSM Through CSLU

### Product Configuration

1. Configuration Required on Product Instance
  - `license smart transport cslu`
2. CSLU Discovery
  - a. Option 1: Using DNS to resolve `cslu-local`
  - b. Option 2: Using DNS to resolve `cslu-local.<domain_name>`
  - c. Option 3: CSLU URL with IP
    - `license smart url cslu http://<cslu-ip>:8182/cslu/v1/pi`
3. HTTP Config for CSLU DNS option

```
ip http server
ip http secure-server
ip http client source-interface <interface-name>
```



# Configure CSLU on Device

```
[Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
[Router(config)#license smart url cslu http://10.24.58.115:8182/cslu/v1/pi
[Router(config)#end
[Router#sh lic status
Utility:
  Status: DISABLED

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

Transport:
  Type: cslu
  Cslu address: http://10.24.58.115:8182/cslu/v1/pi
```

Verify CSLU config

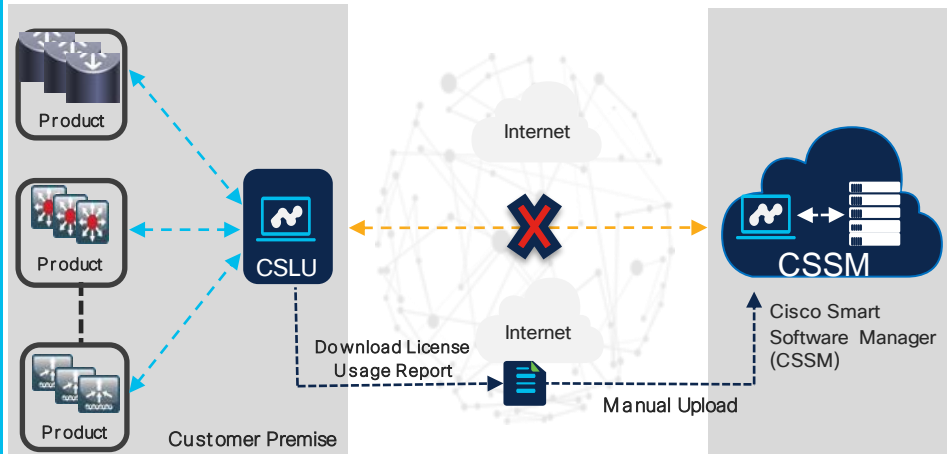
Windows CSLU IP Address

Transport:  
Type: cslu  
Cslu address: http://10.24.58.115:8182/cslu/v1/pi

# CSLU Disconnected from CSSM

2

## CSLU Disconnected from CSSM





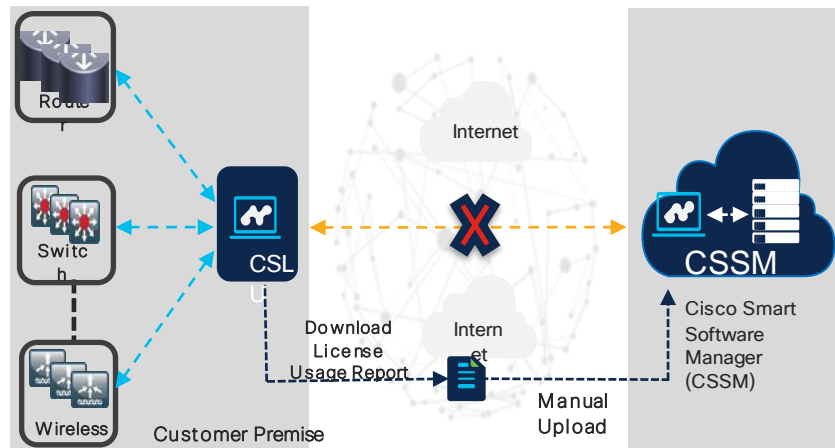
# Configuration

## 2 CSLU Disconnected from CSSM

### Product Configuration

1. Configuration Required
  - license smart transport cslu
2. CSLU Discovery
  - a. Option 1: Using DNS to resolve cslu-local
  - b. Option 2: Using DNS to resolve cslu-local.<domain\_name>
  - c. Option 3: CSLU URL with IP
    - license smart url cslu http://<cslu-ip>:8182/cslu/v1/pi
3. HTTP Config for CSLU DNS config

```
ip http server
ip http secure-server
ip http client source-interface <interface-name>.
```



## 2 Full offline reporting using CSLU

Inventory Preferences

Preferences

Cisco Connectivity

Cisco Is Not Available

Cisco Connection Timeout  
10

Cisco Smart License Utility

CSLU Product Instances Edit Help

- Download All Product Instance List Ctrl+S
- Upload Product Instance List Ctrl+U
- Send All To Cisco Ctrl+Enter
- Download All For Cisco Ctrl+Shift+S**
- Upload From Cisco Ctrl+Shift+U

CSLU in offline methods

Download License Usage RUM Report

Cisco Smart License Utility

CSLU Product Instances Edit Help

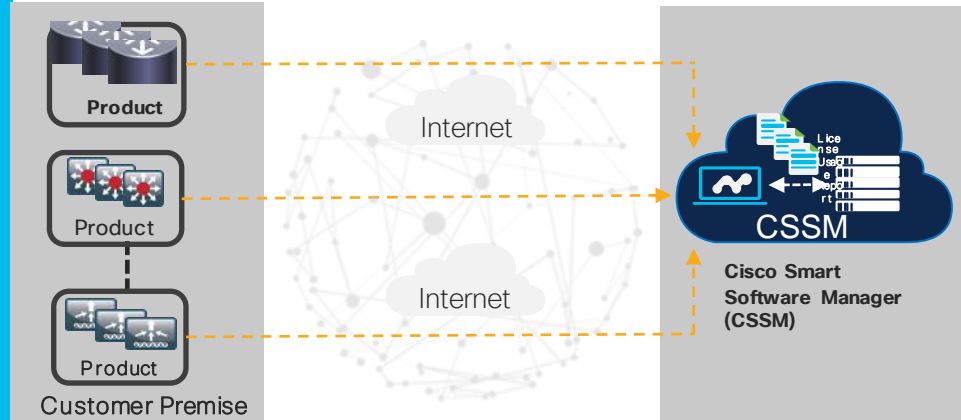
- Download All Product Instance List Ctrl+S
- Upload Product Instance List Ctrl+U
- Send All To Cisco Ctrl+Enter
- Download All For Cisco Ctrl+Shift+S
- Upload From Cisco Ctrl+Shift+U**

2 Upload ACK from CSSM

# Direct Access to CSSM

3

## Direct Access to CSSM



# Configurations

3

## Direct Access to CSSM

### Product Configuration

1. Smart Transport
  - `license smart transport smart`
  - `license smart url`
  - `https://smartreceiver.cisco.com/licservice/license`

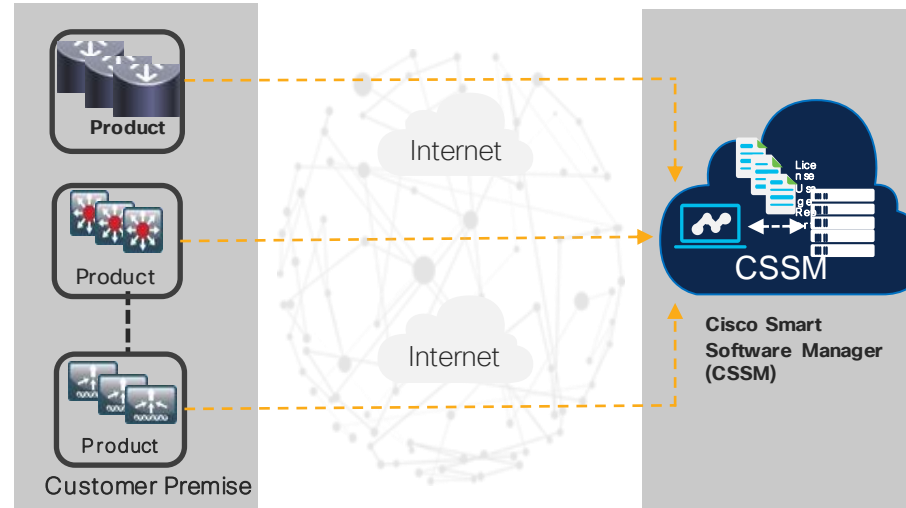
OR

1. If Using Call Home Profile

```
license smart transport callhome
!  
call-home  
profile "CiscoTAC-1"
```

```
destination address http https://tools.cisco.com/its/service/oddce/services/DDCEService
```

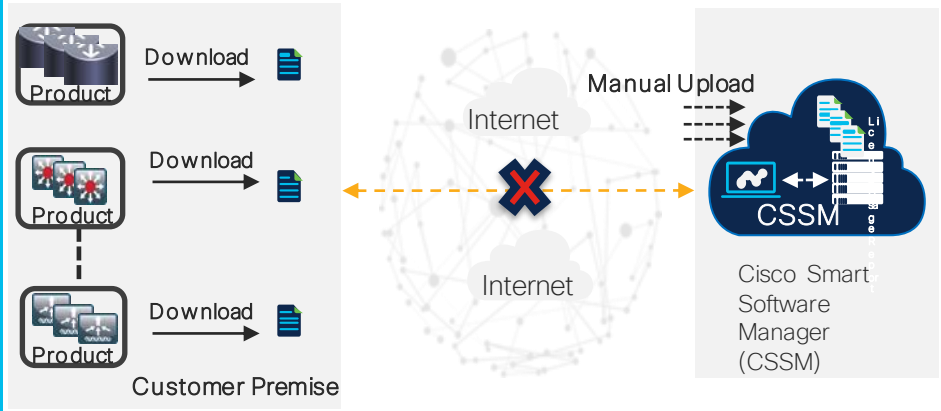
2. Establish Trust by registering products with CSSM
  - `license smart trust idtoken <token-from-cssm>`
3. Same idtoken can be used on multiple product instances



# Full Offline / Air Gapped Network

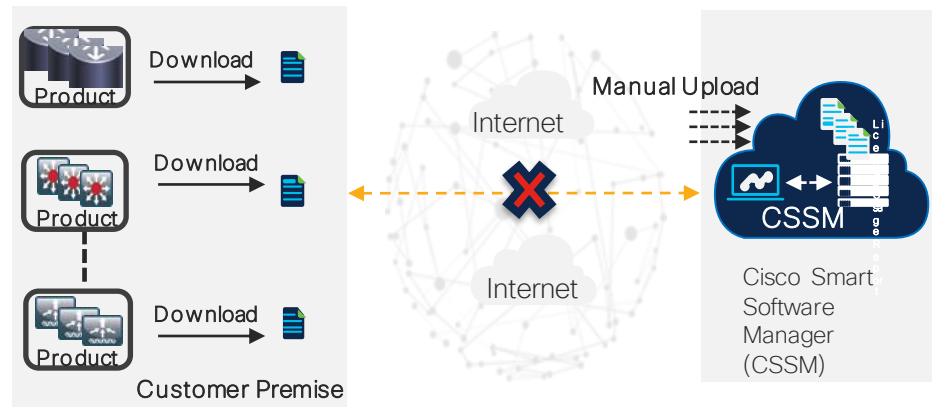
4

## Offline / Air Gap



## Reporting via Manual/Upload-Download

- Download Usage Reports from PI
  - license smart save usage all file  
bootflash:RUM\_Report.txt
- Upload License usage report to CSSM
- Download ACK from CSSM and import it on Product Instance
- Copy ACK to Product, and Import it:
  - license smart import  
bootflash:ACK\_saved\_usage.txt
- Generate Auth codes on CSSM for enforced or export-controlled licenses and import it on PI the same way.
- To avoid “communication failed” syslog:
  - license smart transport off
- No need to establish trust



## 4 Offline report upload on CSSM

### Smart Software Licensing

[Feedback](#) [Support](#) [Help](#)

[Alerts](#) | [Inventory](#) | [Convert to Smart Licensing](#) | **Reports** | [Preferences](#) | [On-Prem Accounts](#) | [Activity](#)

#### Reports

Report **Usage Data Files** Reporting Policy

Devices can be configured to report the features that they are using.

This usage then determines which licenses are needed, in order to be compliant.

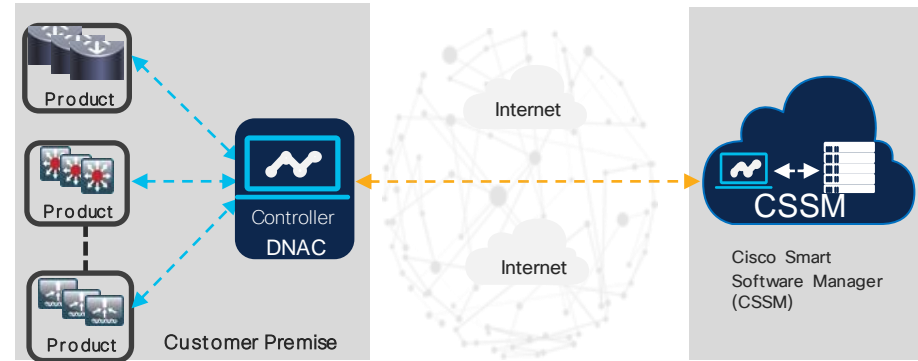
**Upload Usage Data...**

Search by File Name, Virtual Account

Usage Data File	Reported	Virtual Account	Reporting Status	Devices	Acknowledgement
rum_pvt_slr	2020-Oct-13	Starfleet	No Errors	1	<a href="#">Download</a>
UD_SA_BU_Production_Test_20Oct08_18_27_58	2020-Oct-09	DLC-VA1	No Errors	1	<a href="#">Download</a>
UD_SA_BU_Production_Test_20Oct08_18_14_35	2020-Oct-09	DLC-VA1	Errors (1)	1	<a href="#">Download</a>
rum_slr_sle	2020-Oct-06	Starfleet	No Errors	1	<a href="#">Download</a>
UD_SA_BU_Production_Test_20Oct05_12_40_30	2020-Oct-05	DLC-VA1	No Errors	1	<a href="#">Download</a>
trust_offline_request	2020-Sep-30	9800_Test	No Errors	1	<a href="#">Download</a>
rum663.txt	2020-Sep-30	DLC-VA1	No Errors	1	<a href="#">Download</a>

# Connected to CSSM Through On-Prem DNAC

## 5 Connected to CSSM through On-Prem DNAC



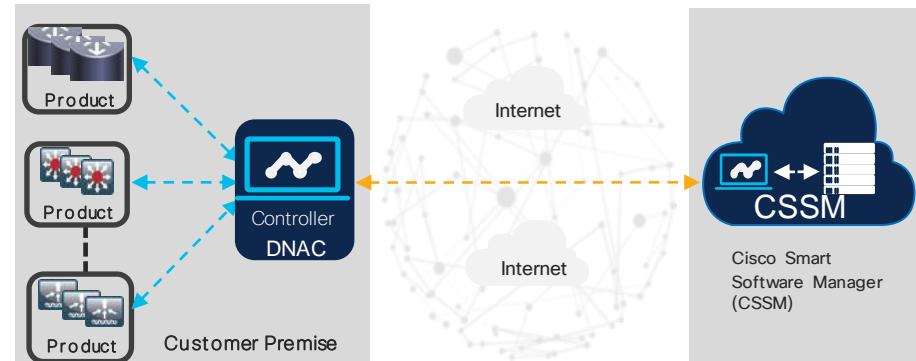


# Function

## 5 Connected to CSSM through On-Prem DNAC

### How it works?

1. The Product Instance (PI) are connected to DNAC controller.
2. Only Manager (CSSM) DNAC has connectivity to Cisco Smart Software
3. DNAC Request and install auth code for HSEC
4. DNAC fetch license usage report from Product Instance
5. DNAC share/upload information with CSSM
  - a. Adhoc: Manually triggering workflow from DNAC UI.
  - b. Reporting Policy Interval : Can set while triggering the SLP workflow



# Connected to CSSM Through DNAC Controller

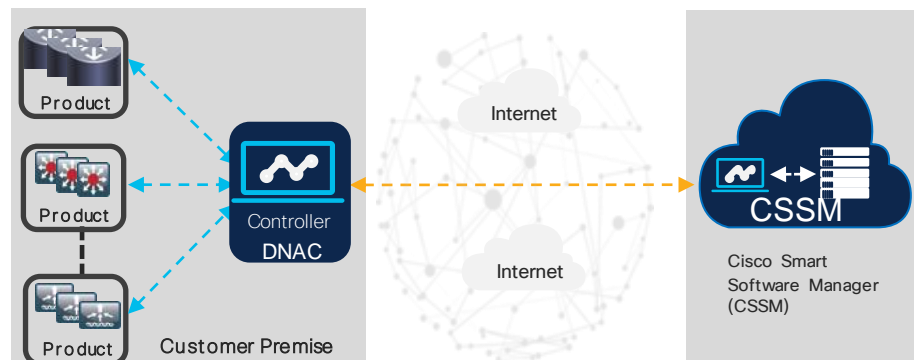
## 5 Connected to CSSM through On-Prem DNAC

### DNAC Configuration

1. Add device in Inventory with Netconf and SSH Protocol
2. Device should get assign to site.
3. DNAC should be connected to CSSM.

### Product Configuration

1. Device Software Image should  $\geq$  17.3.2 / 17.4.1 & later Release
2. Device Transport mode should be off  
show license status  
Transport:  
Type: Transport Off



# 1. Initiate Smart License Workflow - On-Prem

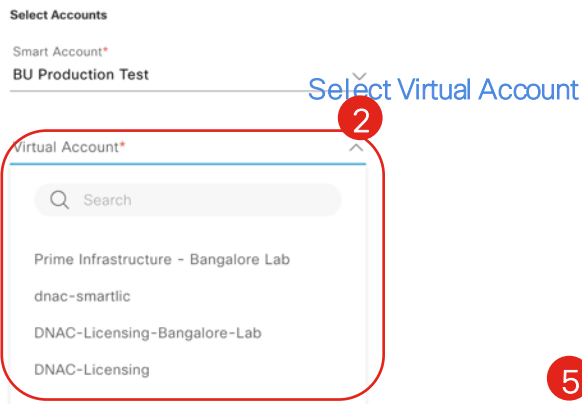
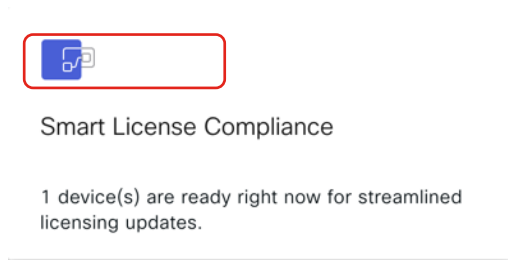
Tools -> License Manager -> Reporting and Compliance -> Smart License Compliance ->



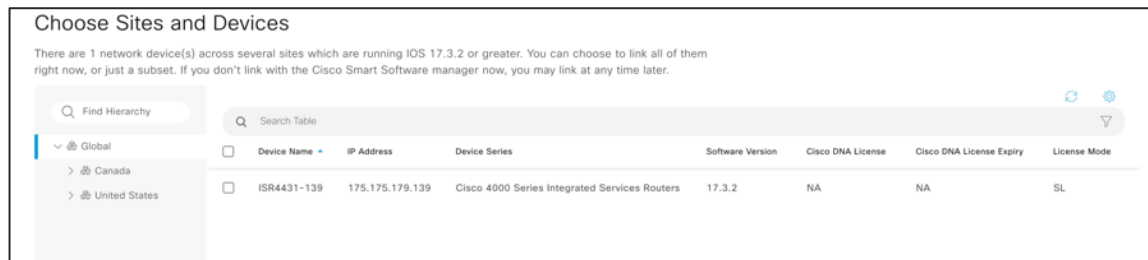
## 2. SLP Workflow – On-Prem DNAC

Authcode install, HSEC enable and SLE workflow

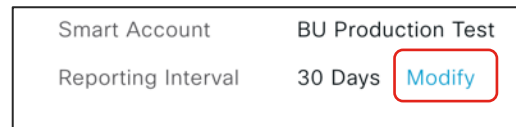
### 1 Select Smart License Compliance



### 4 Choose site and Device -> Next

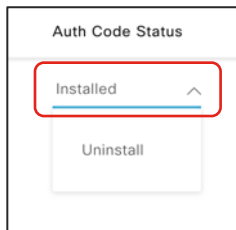


### 5 Modify Reporting Interval if required -> Next

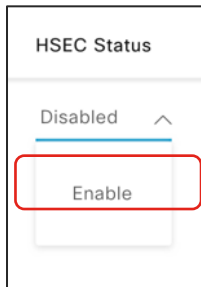


# 3. Smart License using Policy Workflow

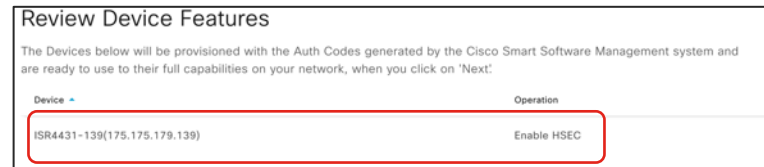
6 Have to Install Authcode to Enable HSEC



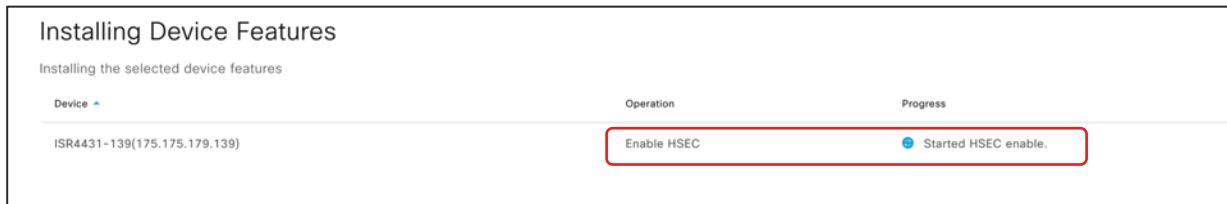
7 Enable HSEC -> Next



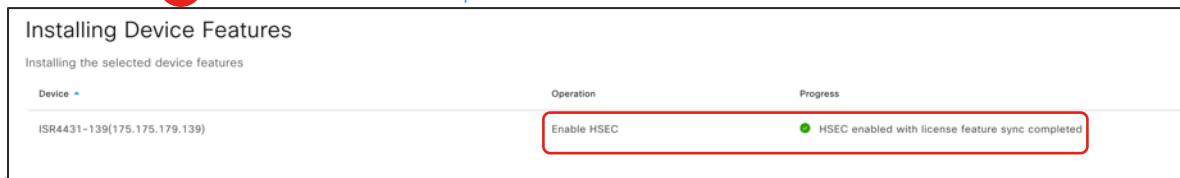
8 Review Device Features -> Next



9 Enabling HSEC in progress ->



10 HSEC enabled completed -> Next



# 4. Syncing Data : fetching Usage report, Uploading usage Report, Provisioning

## 11 Sync Data with Cisco

When you click 'Next' Cisco DNA Center is going to retrieve the usage data from the device(s) and then send the data to CSSM. A report will be generated once that completes.

[Sync data with Cisco -> Next](#)

### Submitting Devices

Q Search Table

Device Name	Device Family	Device Series
ISR4431-139	Routers	Cisco 4000 Series Integrated Services Routers

## Summary

These are the following operations performed in this flow.

### Installing Device Features

Installing the selected device features

Device	Operation	Progress
ISR4431-139(175.175.179.139)	Enable HSEC	<span style="color: green;">●</span> HSEC enabled with license feature sync completed

1 Records

Show Records: 25 1 - 1 < 1 >

### Syncing Data

Sending device usage data to CSSM

Overall Sync Progress



12 ● Fetching Usage Report

Device	Status
ISR4431-139(175.175.179.139)	<span style="color: green;">●</span> Completed successfully.

Collecting License Usage Data from Device

## 5. Syncing Data : fetching Usage report, Uploading usage Report, Provisioning

13

### Syncing Data

Sending device usage data to CSSM

Overall Sync Progress

66%

✓ Fetching Usage Report

Device	Status
ISR4431-139(175.175.179.139)	✓ Completed successfully.

> ✓ Uploading Usage Report

> ⌚ Provisioning Acknowledgement

14

Finish

## 5. Syncing Data : fetching Usage report, Uploading usage Report, Provisioning

**Done! Synced with Cisco**

The selected device(s) has been made complaint with Smart Licensing. The progress can be tracked from Recent Tasks link in the Reporting & Compliance page.

What's Next?

[Launch Smart License Compliance](#)

[Return to Reporting & Compliance](#)

17 Launch Smart License Compliance to trigger new workflow

[Launch Smart License Compliance](#)

15

Return to Reporting and Compliance to check progress of the Usage Report Collection Task triggered

**Recent Tasks (Last 50)**

All ▼ Last Updated Time 3:05 PM [Refresh](#) ✕

Usage Report Collection ✓

Created on Dec 15, 2020 2:44 PM

Usage Report Collection is initiated on 1 device(s)

IP Address	Device Name	Status	Error Message
175.175.179.139	ISR4431-139	✓	

16



# Polling Question #3

What is the status of license after upgrading to Smart Licensing Using Policy (SLP)?

- A. Eval
- B. Authorised
- C. IN-USE
- D. ACTIVE



The bridge to possible

# SL using Policy Deployment -Brownfield Workflow

1

# Connected to CSSM Through CSLU - Online

- PAK/RTU to SL using Policy Brownfield workflow

Existing Device image

Automated tasks

Perform task by user

1

Device upgrade to 17.3.2/17.4.1 & later image

2

All license will remain intact and Crypto throughput level intact (Hsec)



9

Device Receives conversion status completed

3

Auto DLC initiated by device

4

DLC request sent to CSSM

5

DLC Conversion complete



8

CSLU sends DLC conversion Details to Device

7

CSSM Send conversion details.

6

License usage of device updated on CSSM

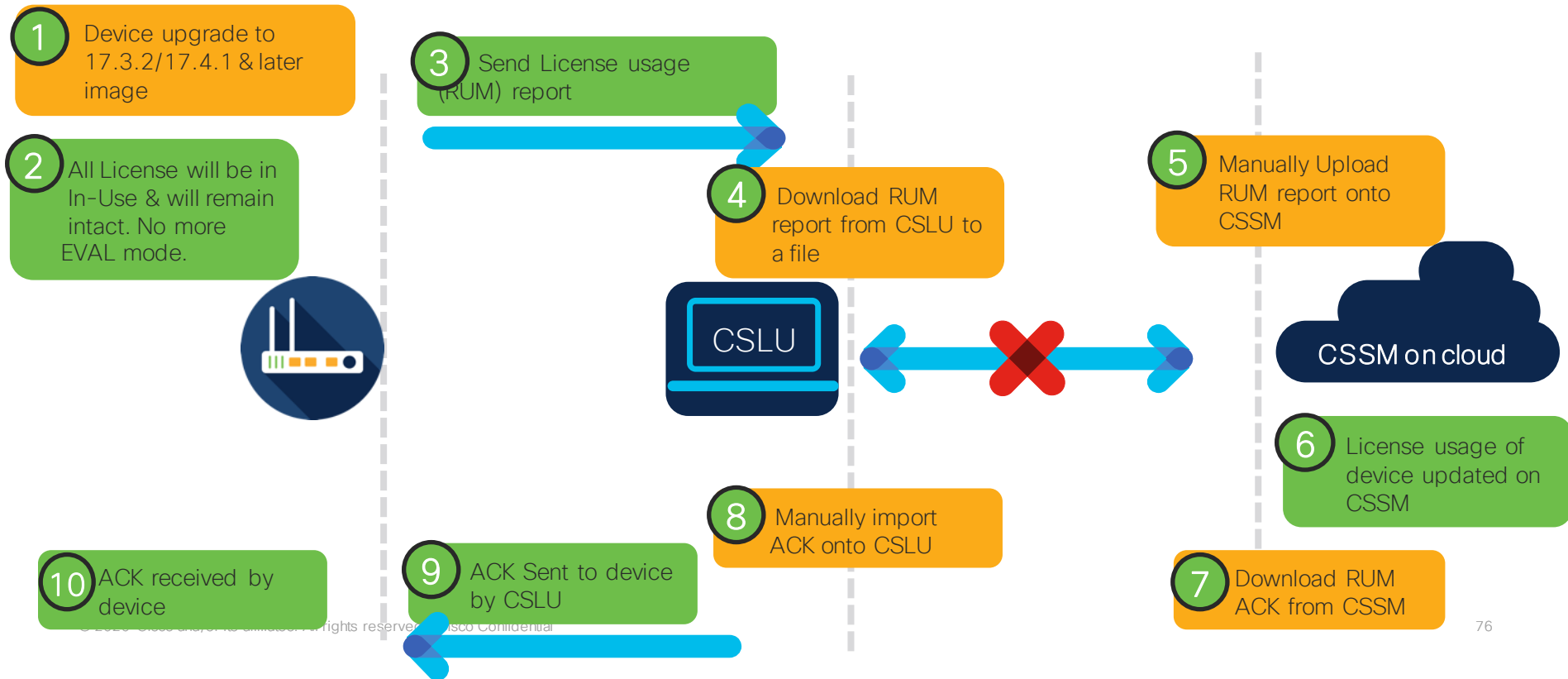
## 2 CSLU Disconnected From CSSM - Offline

- SL-Only(Eval) to SL using Policy Brownfield workflow

Existing Device image

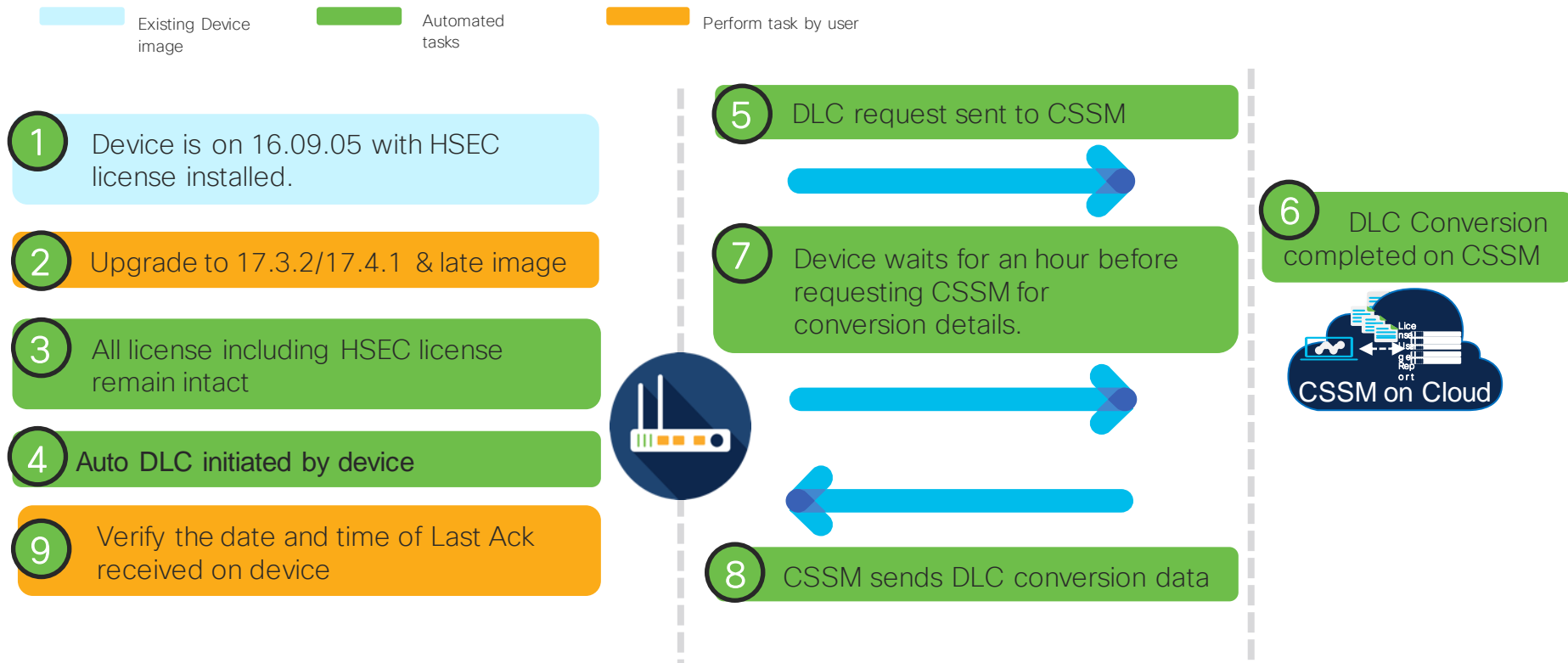
Automated tasks

Perform task by user



# Device have direct Access to CSSM

- PAK with HSEC License (16.9 & earlier) to SL using Policy (17.3.2 & later) workflow



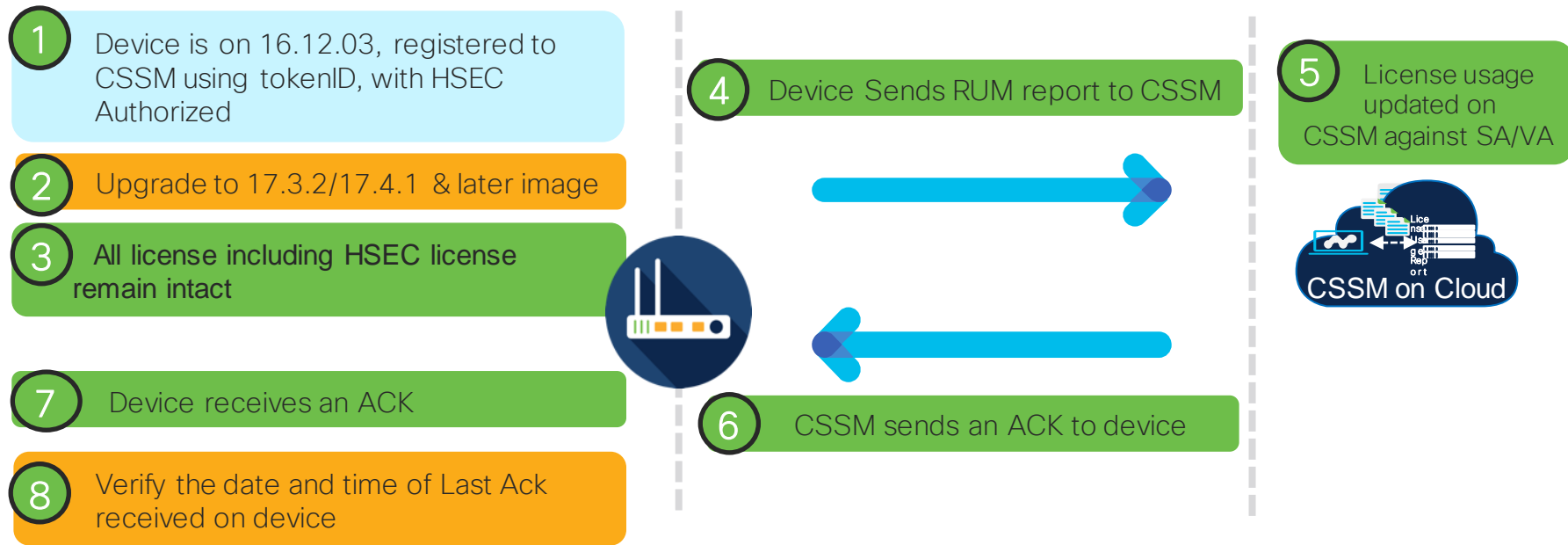
# Device have direct Access to CSSM

- SL (16.10 or later release) to SL Using Policy (17.3.2 & later) Brownfield Workflow

Existing Device image

Automated tasks

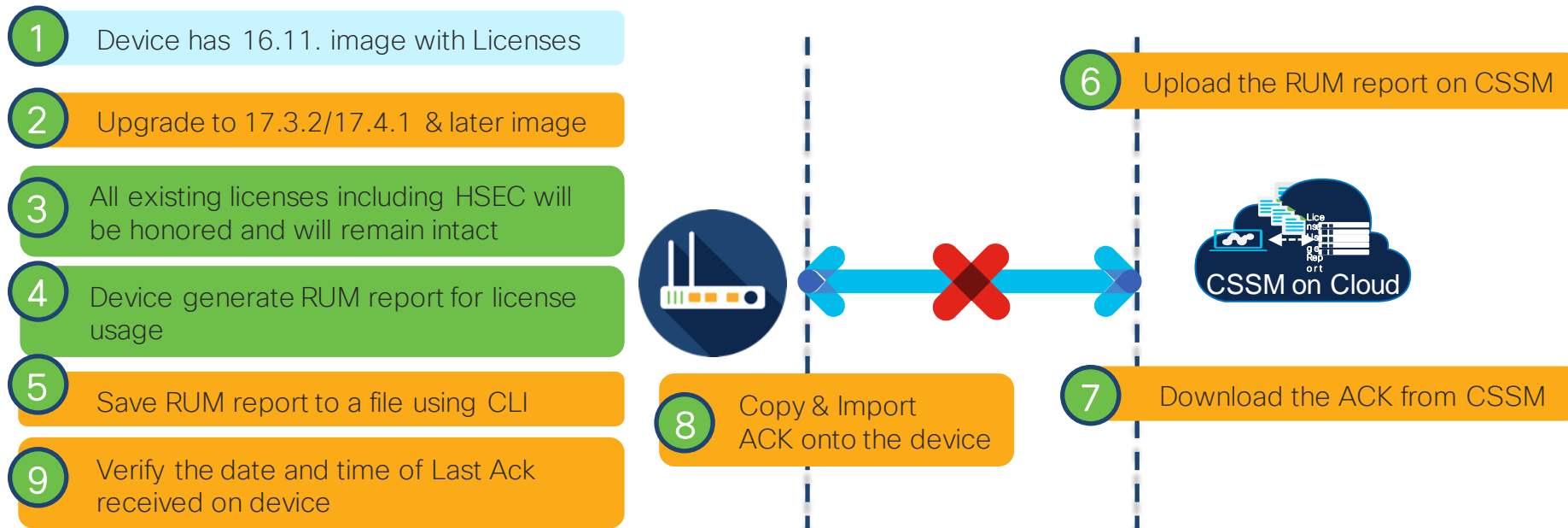
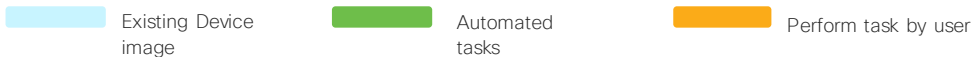
Perform task by user



4

## Offline / Air Gap

- SLR to SL using Policy(17.3.2 & later) Brownfield Workflow



6  
CSSM  
off-line  
report upload

Cisco Software Central

Smart Software Licensing

Reports

Usage Data Files

Upload Usage Data...

Usage Data File	Reported	Virtual Account	Reporting Status	Devices	Acknowledgement
UD_SA_SDWAN_LabTests_20Dec22_13_43_57_	2020-Dec-22	SLE_Routing_Demo	Warnings (1)	0	

Cisco Software Central

Smart Software Licensing

Reports

Usage Data Files

Upload Usage Data...

Usage Data File	Reported	Virtual Account	Reporting Status	Devices	Acknowledgement
RUM_Report_16_Apr_21.txt	2021-Apr-16	SLE_Routing_Demo	No Errors	1	Download
UD_SA_SDWAN_LabTests_20Dec22_13_43_57_	2020-Dec-22	SLE_Routing_Demo	Warnings (1)	0	

7  
Download  
Ack





The bridge to possible

# Supported Routing Products

# List of PIDs supported

## Supported Products for 17.3.2:

- ✓ All ASR1000 family
- ✓ All ISR1000 family
- ✓ All ISR4000 family
- ✓ All Catalyst8300 family
- ✓ All Catalyst8500 family

## Supported Products for 17.4.1

- ✓ All products supported in 17.3.2
- ✓ All Catalyst8200 family
- ✓ Catalyst8000V
- ✓ CSR1000v upgrade to C8KV
- ✓ ISRv upgrade to C8KV



The bridge to possible

Thank you!

Submit Your  
Questions Now!



Use the Q&A panel to submit your  
questions, our expert will respond.

# Ask Me Anything

## ASK ME ANYTHING

Till May 28, 2021

With Pradeep Chaudhari

Participate: <http://bit.ly/AMA-May18th>



Pradeep Chaudhari

# Collaborate within our Social Media



## Twitter

- @Cisco\_Support
- <http://bit.ly/csc-twitter>

## Facebook

- Cisco Community
- <http://bit.ly/csc-facebook>

Learn About Upcoming Events

# We invite you to review our Social Media Channels

## YouTube

- Cisco Community
- <http://bit.ly/csc-youtube>



## App

- Cisco Technical Support



## LinkedIn

- Cisco Community
- <http://bit.ly/csc-linked-in>



# Cisco has support communities in other languages!

If you speak Spanish, Portuguese, Japanese, Russian or Chinese we invite you to participate & collaborate







# More IT Training Videos and Technical Seminars on the Cisco Learning Network

View Upcoming Sessions Schedule  
<https://cisco.com/go/techseminars>

Thank you for Your  
Time!

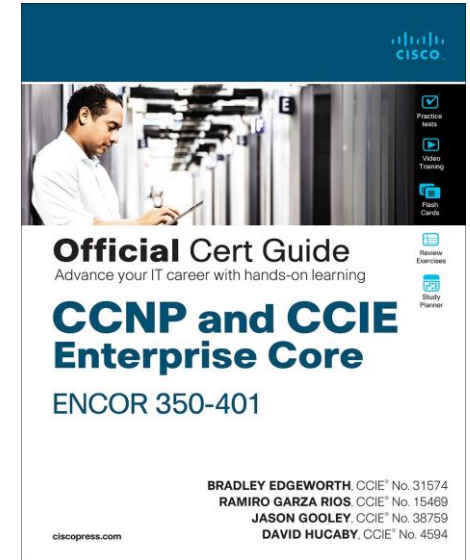
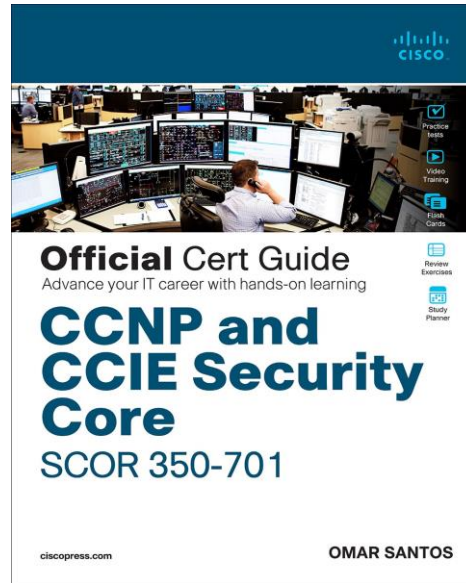
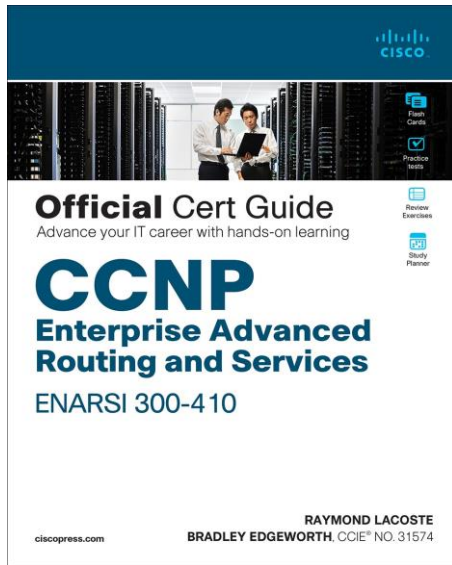
Please take a moment to complete  
the survey



# Thank you for participating, you earned a discount!

Redeem your 35% discount offer by entering code: CSC when checking out.

<http://bit.ly/Community-CiscoPress2020>



*Thanks For Joining today!*



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