

# Troubleshoot Catalyst Center Licensing Use Cases and Workflows

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## Introduction

This document describes different Cisco Catalyst Center licensing scenarios that are frequently encountered.

## Prerequisites

### Requirements

There are no specific requirements for this document.

### Components Used

This document is not restricted to specific software and hardware versions.

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, ensure that you understand the potential impact of any command.

## Background Information

This document provides the step-by-step details of how to use the License Manager workflow of Cisco

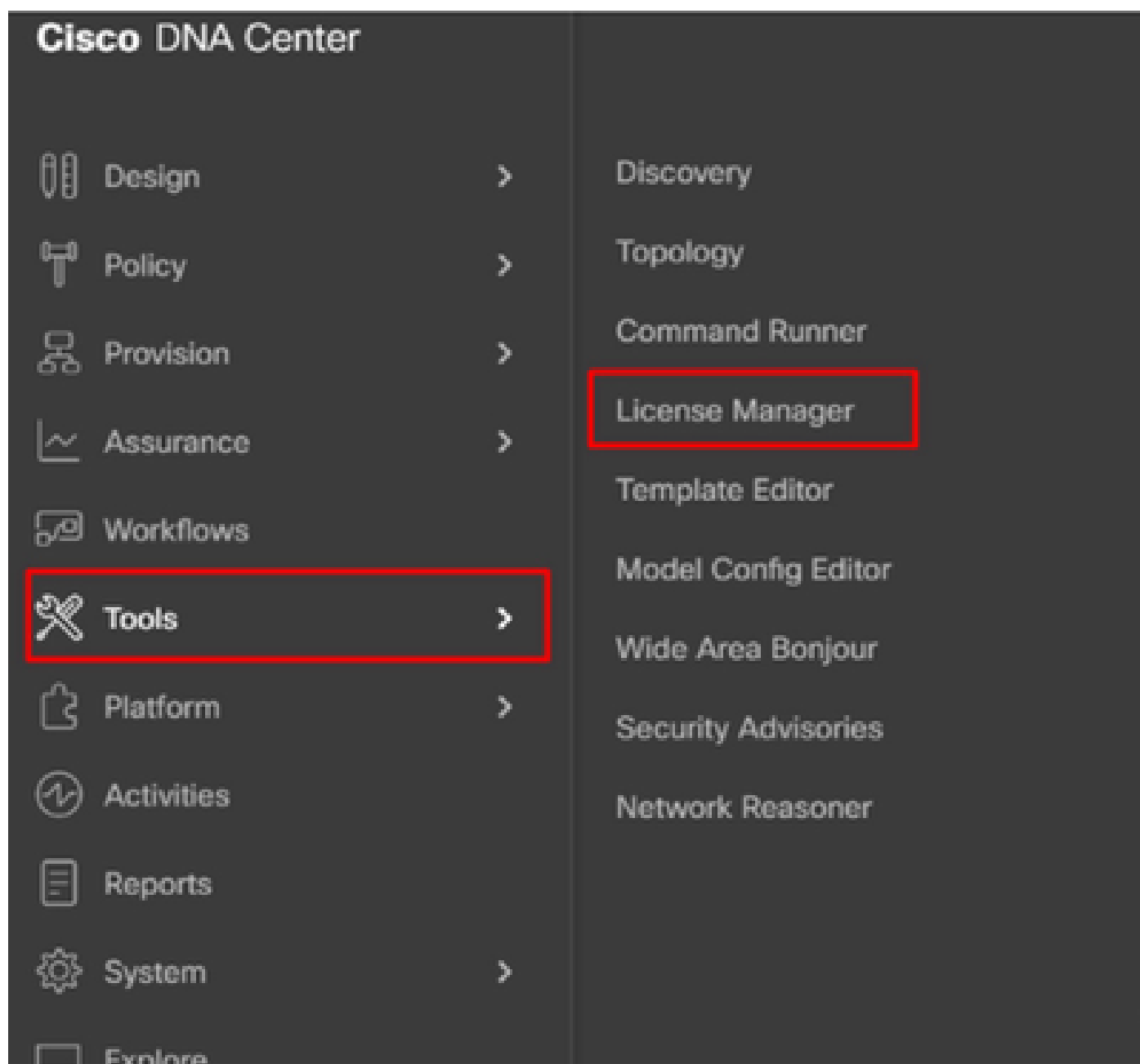
Catalyst Center (formerly known as DNA Center) for device license registration, license migration between Virtual Accounts via CSSM, and so on.

## Scenarios

### Scenario 1: Device License Registration via Cisco Catalyst Center License Manager: Legacy Method

Step 1. Log into **Cisco Catalyst Center** via admin credentials or via a custom role with super-admin privileges.

Step 2. Navigate to **Hamburger** and select **Tools > License Manager**.



Step 3. Select **Devices** tab and use the **Filter** option or scroll through the table to find the devices whose licenses you want to register.

Step 4. Select the **check box** next to each device whose license you want to register, then choose **Actions > Manage Smart License > Register**.

Step 5. Choose the **Virtual Account** where the respective license is deposited and click **Continue**.

# Register Smart License

## SMART ACCOUNT

Name Cisco Systems, TAC Domain tac.cisco.com

Search Table

	Name	Cisco DNA License Count	Description
<input type="radio"/>	Bangalore DNAC TAC	0	DNAC TAC-POD's Device Licenses are deposited here.
<input type="radio"/>	NMS	0	

Showing 2 of 2

Cancel

Continue

Step 6. Cisco Catalyst Center prompts whether the change is to be applied immediately or later. Choose the **desired option** and click **Confirm**.

# Register Smart License

Registering 1 device(s) to **Bangalore DNAC TAC**

☒ Now ☐ Later

Task Name\*

License mode update

Cancel

Confirm

**Scenario 2: Device License Registration via Cisco Catalyst Center License Manager:**

## CSLU Reporting Workflow

Starting from Cisco Catalyst Center release 2.2.1.x and Devices running 17.3.2 or higher, devices are no longer required to get registered with CSSM. Instead, a new workflow shall be used called Smart License Compliance Reporting. Please refer to the snippet listed for more details.

- On DNA Center release 2.2.1.0 and devices running 17.3.2 or higher:
  - Devices are no longer required to get registered with CSSM
  - License usage information will be stored in a secured location on the device
    - RUM or Usage Reports
  - Now, Cisco DNA Center is going to pull the reports and upload it to CSSM
  - Uploads can be done periodically or on demand basis
  - CSSM go through reports and make the respective updates on Virtual Account
  - After that, CSSM is going to send Acknowledge to DNAC if report is good
  - Finally, Cisco DNA Center is going to update the license status on GUI and on the Device itself
  - Cisco DNA Center can generate PDF reports for users

## Prerequisites

### Cisco Catalyst Center

- Cisco Catalyst Center must be running on release 2.2.1.0 and later.
- Catalyst Center Appliance must be registered with Cisco Smart Software Manager (CSSM) via **Settings > Smart Licensing**.
- Cisco Catalyst Center must be able to communicate with CSSM portal and be able to reach tools.cisco.com.
- Devices must be Reachable and Managed on Cisco Catalyst Center Inventory dashboard.
- Appropriate SSM Connection mode must be chosen on Catalyst Center. CSLU workflow is not applicable for On-Prem CSSM (Satellite Server) as of Catalyst Center release 2.3.7.x
- CSLU workflow is not applicable for AireOS Wireless Controllers (Models: 3504, 5520, 8540).

### Network Device

- Device must be running on Cisco IOS® XE 17.3.2 or later and must have enough space in flash for the RUM report.
- For the release 2.3.7.x and later: NetConf configuration (netconf-yang) is no longer mandatory.
- For the release 2.3.5.x and before: Device must have netconf-yang model configured and Cisco Catalyst Center must be able to communicate with the device over Netconf port 830.
- To validate the NetConf configuration on device:

**show run | sec netconf-yang**

i. During Device discovery on Cisco Catalyst Center, the **Netconf** parameter under **credentials** section must be enabled.

Cisco DNA Center
Discover Devices

### Provide Credentials

Next, enter the following credentials that Cisco DNA Center will configure for the devices it discovers. At least one CLI credential and one SNMP credential are required. You can have a maximum of five global credentials and one job-specific credential for each type.

CLI
SNMPv3(s) Read
SNMPv3(s) Write
SNMPv3
HTTP(s) Read
HTTP(s) Write
NETCONF

If your network contains IOS XE-based wireless controllers, please enter the port that should be used for discovery and the enabling of wireless services on these controllers. Select from existing ports or add new ones. You can add either a job-specific port or a global port.

We recommend using port number 830. See also standard ports like 22, 80, 8080.

EXISTING GLOBAL NETCONF PORT

830

ii. If the Netconf parameter was not enabled at the time of Device Discovery, use the **Edit Device** option on the Cisco Catalyst Center Inventory to enable it.

Edit Device

Credentials
Management IP
Resync Interval
Device Role

> SNMP\*

> SNMP Retries and Timeout\*

> HTTP(S)

NETCONF

Port
830

Hint

NETCONF with user privilege 15 is mandatory for enabling Wireless Services on Wireless capable devices such as Catalyst 9000 series Switches and C9800 Series Wireless Controllers. The NETCONF credentials are required to connect to C9800 Series Wireless Controllers as the majority of data collection is done using NETCONF for these Devices.

- Device must have the sdn-network-infra-iwan trustpoint installed; this is done by the Cisco Catalyst Center.

To validate:

**show crypto pki trustpoint sdn-network-infra-iwan** (To check the trustpoint)

**show crypto pki certificates verbose sdn-network-infra-iwan** (To check the trustpoint in detail)

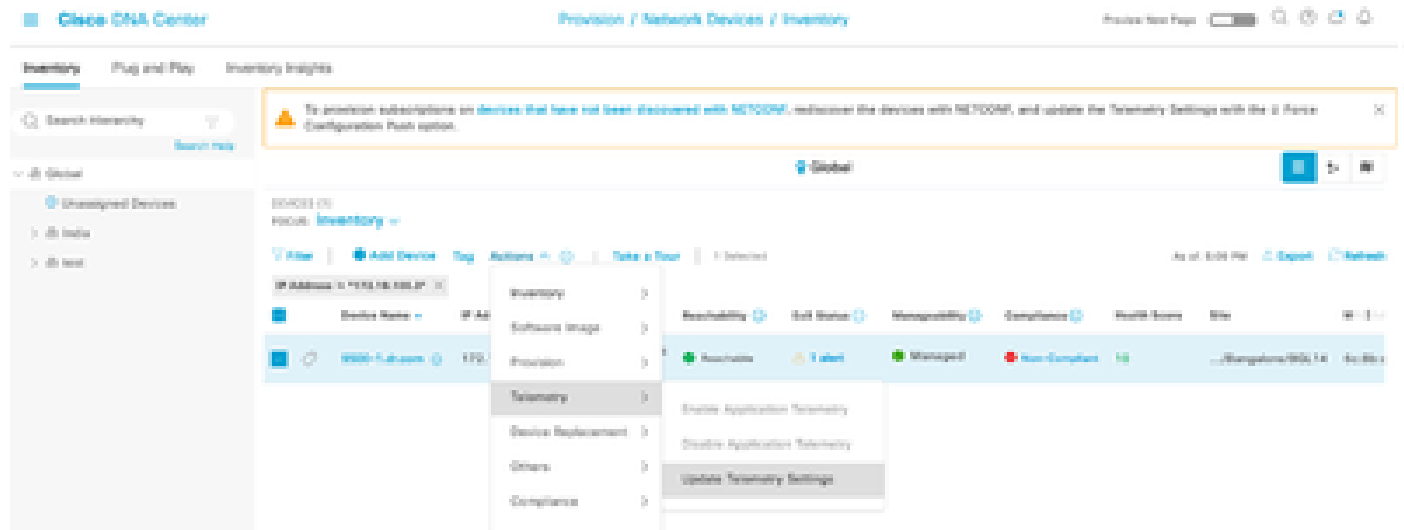
- If the sdn-network-infra-iwan trustpoint is not installed, do these steps:

Step 1. Log into **Cisco Catalyst Center** via admin credentials or via a custom role with super-admin

privileges.

Step 2. Navigate to **Hamburger** and select **Provision > Inventory**.

Step 3. Select the **device** you want to install the trustpoint on, click **Actions > Telemetry > Update Telemetry Settings**.



Step 4. Select **Force Configuration Push** and click **Next**

Update Telemetry Settings

Force Configuration Push ⓘ

GLOBAL/INDIA/BANGALORE/BSL14

9500-1.dr.com

9500-1.dr.com

The following settings will be deployed during assignment to site.

Syslog Server	Cisco DNA Center
Netflow Collector	Cisco DNA Center
Cisco TrustSec (CTS) Credentials	Yes
Wireless Streaming Telemetry	Yes
SNMP Trap Receiver	Cisco DNA Center
DTLS Ciphersuite	Skipped
AP Impersonation	Enabled
Cisco TrustSec (CTS) Credentials	Yes
Syslog Level	6 - Information Messages
Controller Certificates	Yes

Cancel

Next

Step 5. Select **Now** and click **Apply**. This has no effect on production.



### Update Telemetry Settings

☒ Now

☐ Later

☐ Generate configuration preview

Creates preview which can be later used to deploy on selected devices. View status in [Work Items](#)

Task Name\*

Update Telemetry Settings Task

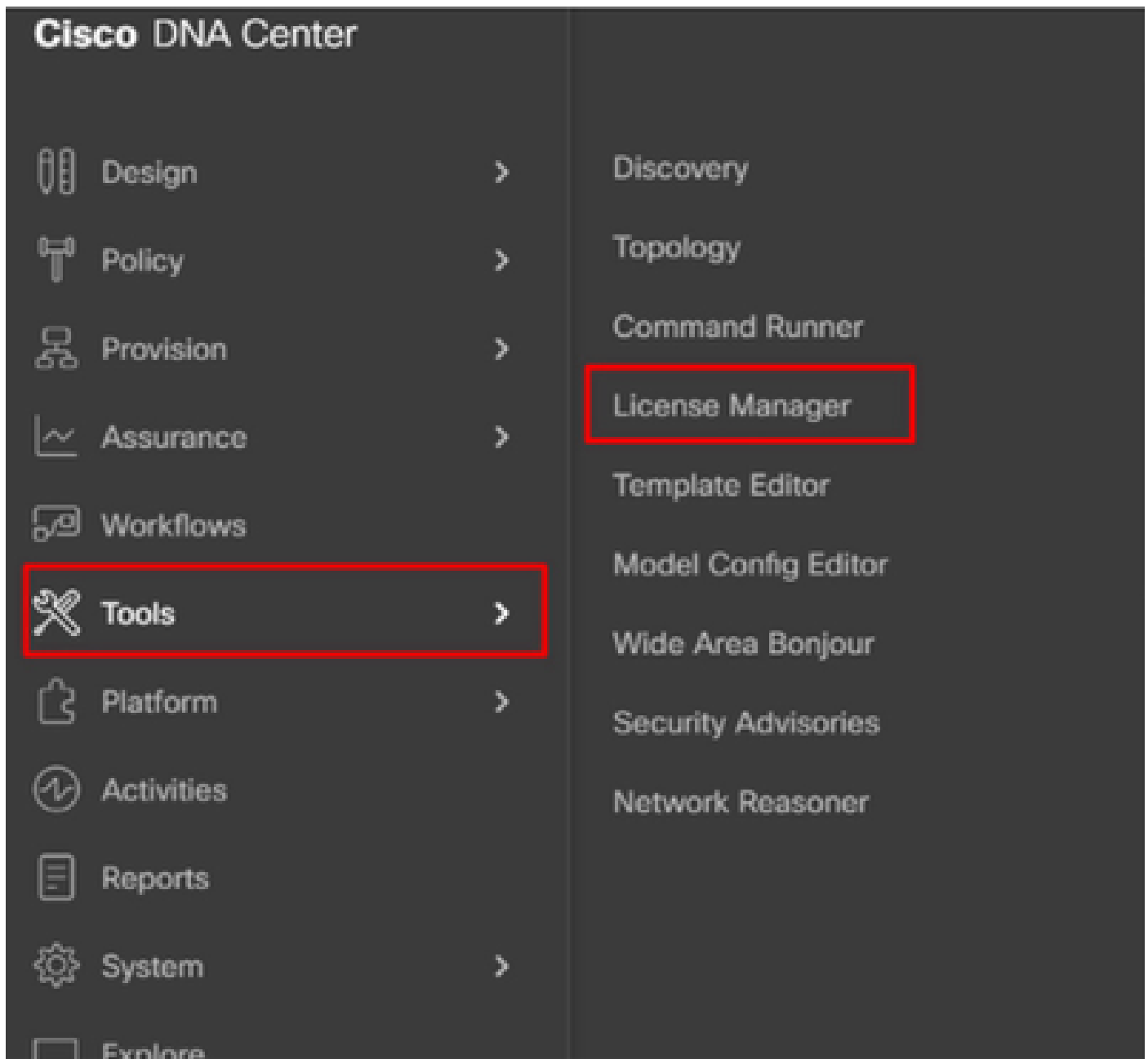
Cancel

Back

Apply

If all prerequisites are met, then refer to next steps mentioned to execute the Reporting Workflow:

Step 1. Log into **Cisco Catalyst Center** via admin credentials or via a custom role with super-admin privileges.



Step 2. Navigate to **Hamburger** and select **Tools > License Manager**.

Step 3. Select the **Reporting** tab and locate the **Smart License Compliance** dashlet; click the **dashlet** to launch the workflow.

Tools / License Manager

OverviewLicensesDevicesReportingSync Status

Q

Search Hierarchy

▽

Search Help

Global

Unassigned Devices

> India

> test

Available Workflows

Recent Workflows

Smart License Compliance

5 device(s) are ready right now for streamlined licensing updates.

Step 4. Select the **Smart Account** and **Virtual Account** where the device licenses are stored and click **Next**.

Cisco DNA Center

Smart License Compliance

Select Smart Account

Choose the Smart account or Virtual Account which these Network Devices will be associated with. If multiple accounts need to be utilized, you may associate devices by site or by selection later.

Workflow Name  
Started on: December 12th 2020, 4:10:51 PM

Select Accounts	
Smart Account Cisco Systems, TAC	✓
Virtual Account Bengaluru (PRAC) TAC	✓

Back

All changes saved

Next

Step 5. Choose the **device** whose license utilization you want to report.

Cisco DNA Center

Smart License Compliance

Choose Sites and Devices

There are 6 network device(s) across several sites which are running IOS 17.3.2 or greater. You can choose to list all of them right now, or just a subset. If you don't list with the Cisco Smart Software Manager now, you may list at any time later.

Search Hierarchy

Search Help

Global

Site

Device

Search Table

Search

Device Name	Device Family	Device Series	IP Address	Software Version	Cisco DNA license	Last Report
9500-1.dn.com	[1] Switches and Hubs	Cisco Catalyst 9500 Series Switches	172.16.100.3	17.6.1	Advantage	December 18, 2023 4:27 PM
9500-1.dn.com	[1] Routers	Cisco 9500 Series Integrated Services Routers	172.16.100.2	17.3.2	NA	November 18, 2023 4:06 AM
9500-2.dn.com	[1] Routers	Cisco 9500 Series Integrated Services Routers	172.16.100.10	17.6.4	NA	NA
9500-1.dn.com	[1] Switches and Hubs	Cisco Catalyst 9500 Series Switches	172.16.100.8	17.3.0	Advantage	NA
9500-1.dn.com	[1] Switches and Hubs	Cisco Catalyst 9500 Series Switches	172.16.100.7	17.6.1	Advantage	NA
9500-1.dn.com	[1] Wireless Controllers	Cisco Catalyst 9500 Series Wireless Controllers	172.160.200.1	17.6.3	Advantage	NA

1 Records

Show Records: 25 1 - 6

Exit

All changes saved

Back

Next

Step 6. Modify the **Reporting** interval, if required.

Cisco DNA Center

Smart License Compliance

Modify Policy

The policy defines how often the network device(s) will report their feature usage. It overrides the default policy which enables only the core functionality on each device.

POLICY SETTINGS

Policy Name

Policy Description

Policy Version

Smart Account

Reporting Interval

NA

Cisco Systems, TAC

30 Days

Modify

CSSM POLICY

License

First Report Within

Report Usage Every

Report After Usage Change

No data to display

Step 7. Review the **summary of devices** and click **Next** to trigger Reporting.

Cisco DNA Center

Smart License Compliance

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.

Submitting Devices

Search Table

Search

Device Name	Device Family	Device Series	IP Address	Software Version	Cisco DNA license
9500-1.dn.com	[1] Switches and Hubs	Cisco Catalyst 9500 Series Switches	172.16.100.3	17.6.1	Advantage

## Summary

These are the following operations performed in this flow.

### Syncing Data

Sending device license usage data to CSSM. The time taken to sync this data depends on the size of usage data and number of requests queued for processing on CSSM.

Overall Sync Progress



#### ✓ Fetching Usage Report

Device	Status
9500-1.dn.com(172.19.180.3)	✓ Usage consumption report collected from device successfully

## Summary

These are the following operations performed in this flow.

### Syncing Data

Sending device license usage data to CSSM. The time taken to sync this data depends on the size of usage data and number of requests queued for processing on CSSM.

Overall Sync Progress



#### > ✓ Fetching Usage Report

#### > ✓ Uploading Usage Report

Device	Status
9500-1.dn.com(172.19.180.3)	✓ Usage consumption report uploaded to Cisco ICM cloud, waiting for acknowledgement

## Summary

These are the following operations performed in this flow.

### Syncing Data

Sending device license usage data to CSSM. The time taken to sync this data depends on the size of usage data and number of requests queued for processing on CSSM.

Overall Sync Progress



- 1> Fetching Usage Report
- 2> Uploading Usage Report
- 3> Provisioning Acknowledgement

- If a device has not been onboarded on Catalyst Center but has already been registered with a Virtual Account, then Catalyst Center would run the SLUP reporting for that device automatically once it is onboarded on Catalyst Center without the need to explicitly execute the Smart License Compliance workflow.
- If a device has not been linked or registered to a Virtual Account/Smart Account, then Smart License Compliance workflow is not executed automatically. Refer to this screenshot wherein Last Synced status is NA:

Catalyst Center Smart License Compliance

### Choose Sites and Devices

There are 6 network device(s) across several sites which are running IOS 17.3.2 or greater.

You can choose to link all of them right now, or just a subset. If you don't link with the Cisco Smart Software manager now, you may link at any time later.

Device Name	Device Family	Device Series	IP Address	Smart Account	Virtual Account	Last Synced
ThorFusion_C9300	Switches and Hubs	Cisco Catalyst 9300 Series Switches	10.78.9.44		NA	NA

- To report the License utilization, customer needs to execute the **Smart License Compliance** workflow via Catalyst Center's License Manager. From this point onwards Catalyst Center would execute the Smart License Compliance workflow automatically at interval scheduled by the customer during the first time execution of SLC workflow.

Refer to this screenshot wherein Last Synced status is shown:

Catalyst Center Smart License Compliance

### Choose Sites and Devices

There are 6 network device(s) across several sites which are running IOS 17.3.2 or greater.

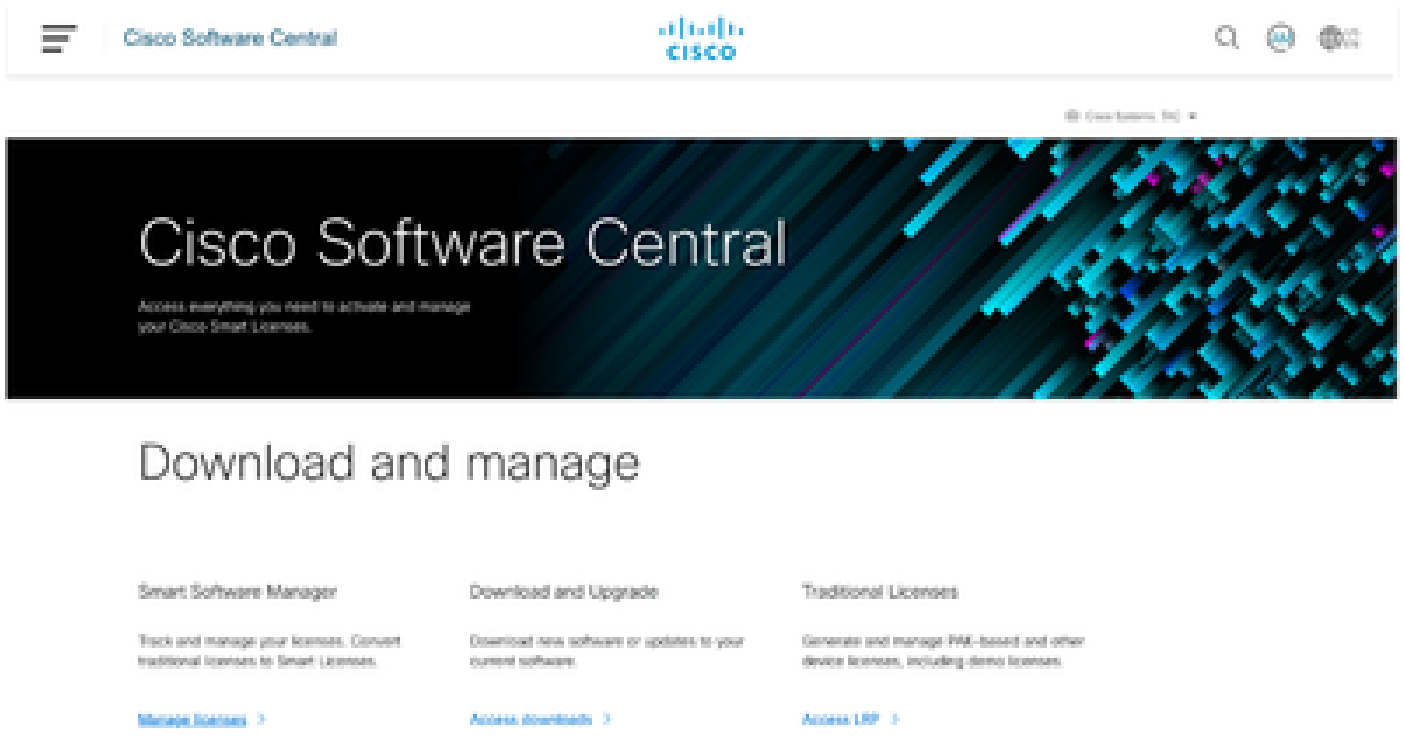
You can choose to link all of them right now, or just a subset. If you don't link with the Cisco Smart Software manager now, you may link at any time later.

Device Name	Device Family	Device Series	IP Address	Smart Account	Virtual Account	Last Synced
ThorFusion_C9300	Switches and Hubs	Cisco Catalyst 9300 Series Switches	10.78.9.44	Cisco Systems, TAC	Bangalore DNAC TAC	Apr 14, 2025 11:18 AM

### Scenario 3: License Migration between Virtual Accounts

Step 1. Log into **Cisco Catalyst Center** via admin credentials or via a custom role with super-admin privileges.

Step 2. Log into **software.cisco.com** and select **Manage Licenses**.



Step 3. Navigate to **Inventory** and select the source **Virtual Account**.

# Smart Software Licensing

Alerts | Inventory | Convert to Smart Licensing | Reports | Preferences | On-Prem Accounts | Activity

Virtual Account: TAC Cisco Systems, Inc....

On-Prem Virtual Account

General

License

Virtual Account

Description:

Virtual Account Type

Product Instance

Because this

By Name

By Tag

6 node cluster	335	38	2
AMM-ARCH-ONPREM	2	3	
Bangalore DNAC TAC	11	2	
deleted3			
RTP-CX2	2	1	
sdwan-lab		3	
sindhrao		1	
TAC Cisco Systems, Inc....	1	3	

TAC Cisco Systems, Inc....

Step 4. Select the **License** tab and choose the **Target Virtual Account**.



## Smart Software Licensing

[Alerts](#) | [Inventory](#) | [Convert to Smart Licensing](#) | [Reports](#) | [Preferences](#) | [On-Prem Accounts](#) | [Activity](#)Virtual Account: [TAC Cisco Systems, Inc....](#) ▼

🔍 On-Prem Virtual Account (cats-satellite)

General

Licenses

Product Instances

Event Log

### Transfer Licenses Between Virtual Accounts

Transfer To Virtual Account: [Select Virtual Account](#) ▼

License

Balance

Transfer

Show Preview

Cancel

By Name

By Tag

6 node cluster

AMM-ARCH-ONPREM

Bangalore DNAC TAG

deleted3

RTP-CX2

sdwan-lab

sindhrao

Yazan Bikuwi

Step 5. Select the **license** you want to transfer and click **Actions & Select Transfer**.

Cisco Software Central > Smart Software Licensing

Smart Software Licensing

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

Virtual Account: [TAC Cisco Systems, Inc....](#) ▼

🔍 On-Prem Virtual Account (cats-satellite)

General

Licenses

Product Instances

Event Log

Available Actions ▼

Manage License Tags

🔍

Show License Transactions

Search by License

By Name

By Tag

Advanced Search ▼

License	Billing	Available to Use	In Use	Substitution	Balance	Alerts	Actions
🔍 Cx500 Network Advantage	Prepaid	0	1	-	-1	🔴 Insufficient Licenses	Actions ▼
🔍 CxM - Base	Prepaid	10	0	-	+10		Actions ▼

Transfer

Step 6. Choose the **quantity of licenses** you want to transfer and click **Transfer**.

General Licenses Product Instances Event Log

### Transfer Licenses Between Virtual Accounts

Transfer To Virtual Account: **Bangalore DRAC TAC**

License	Billing	Purchased	In Use	Balance	Transfer
CML - Base	Prepaid	10	0	10	1

Source: Manual Entry  
Subscription Id: NA  
SKU: CML-ENT-BASE  
Family: Learning at Cisco Software  
Products  
Start Date: 2023-Jul-03  
Expires: 2024-Jul-03

Transfer Show Preview Cancel

## Scenario 4: License Migration between Smart Accounts

Migration of Licenses between different Smart Accounts can be done by the Cisco Licensing team. Please refer to these next steps to raise the case with the respective team.

Step 1. Log into [Support Case Manager](#) with Cisco credentials.

Step 2. Click **Open New Case** and select **Software Licensing > Expand License Management > Select Move Licenses**. Then select **Reassign licenses between SA** and click **Open Case**.

Support Case Manager  
Create and manage Support cases for Akirshan Mehra (akirshan@cisco.com)

**Open New Case**

Products & Services  
Wireless  
**Software Licensing**  
Fieldwork / Consulting  
Trial Offer Support

**Open a New Case for Software Licensing Support**

Search Categories

- Smart Account Administration
- License Delivery
- License Management**
  - Move Licenses**
    - Obtain temporary/demo/extend licenses
    - View Enterprise Agreement licenses in cloud dashboard
    - Generate License
    - Upgrade licenses through version upgrade
    - [View More Categories](#)
- Device Management

**Select a sub-category**

**Reassign licenses between SA, including HA**

Move licenses between devices in License Registration Portal due to device failure/RMA  
Move licenses between devices in License Registration Portal

**Open Case**

Step 3. Select the **relevant product** (for example, wireless, switching, and so), fill in the **form**, and submit the **request**.

Create and manage Support cases for Aescher-Milner [support@aescher-milner.com](mailto:support@aescher-milner.com)

Create and manage Support cases for Aescher-Milner [support@aescher-milner.com](mailto:support@aescher-milner.com)



© 2004 Blackwell Publishing Ltd *Journal of Internal Medicine* 255: 105–112

## References

Answered: How do you write a good answer?

 Springer

Reassigned: Names between 7.0, including 8.0 [change](#)

100

## Language in Production



100

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**Keywords:** *Self-esteem, self-esteem threat, self-esteem threat sensitivity, self-esteem threat response, self-esteem threat response style, self-esteem threat response style scale, self-esteem threat response style scale, self-esteem threat response style scale*

This category is for (L2/EN5050) related requests (RFX). For technical issues, please click "change" above and open a case by using the "Products & Services" category. Otherwise please provide the details of your L2/EN5050 request below and include the necessary contact information (Name/Title (Name /Title), Service (Service (RFX/EN5050)), etc.) and Email Address/Phone Number (E-Mail/No.)

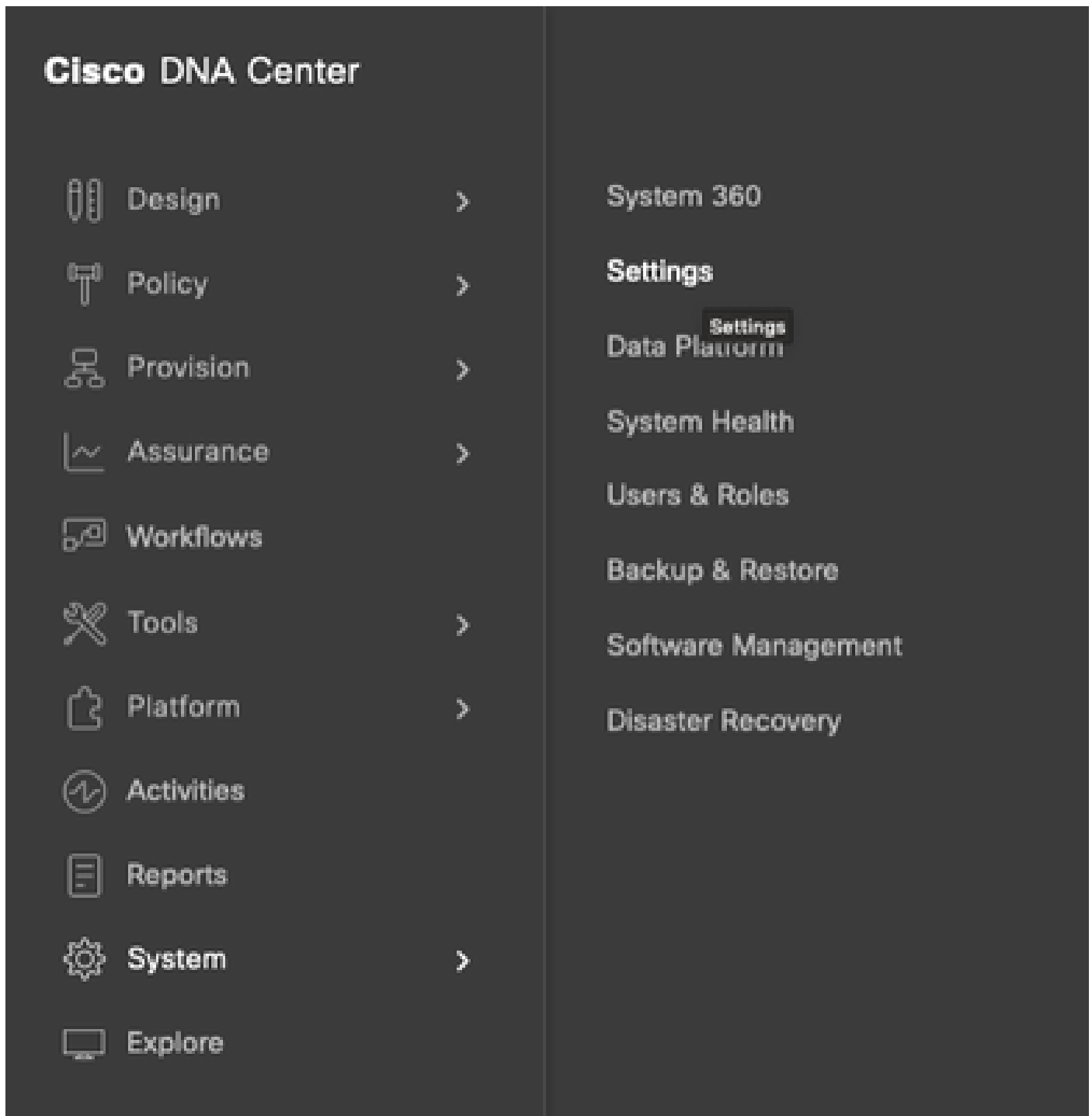
Source: *U.S. Census Bureau, 1997*



 **Notice:** All items must have appropriate office space for placement.

Robert A. Anderson, Chairman, C-

Step 2. Navigate to **Hamburger** and select **System > Settings**.



Step 3. Select **SSM Connection Mode** and choose the **desired option** (Direct/Smart Proxy/On-Prem). Click **Save**.

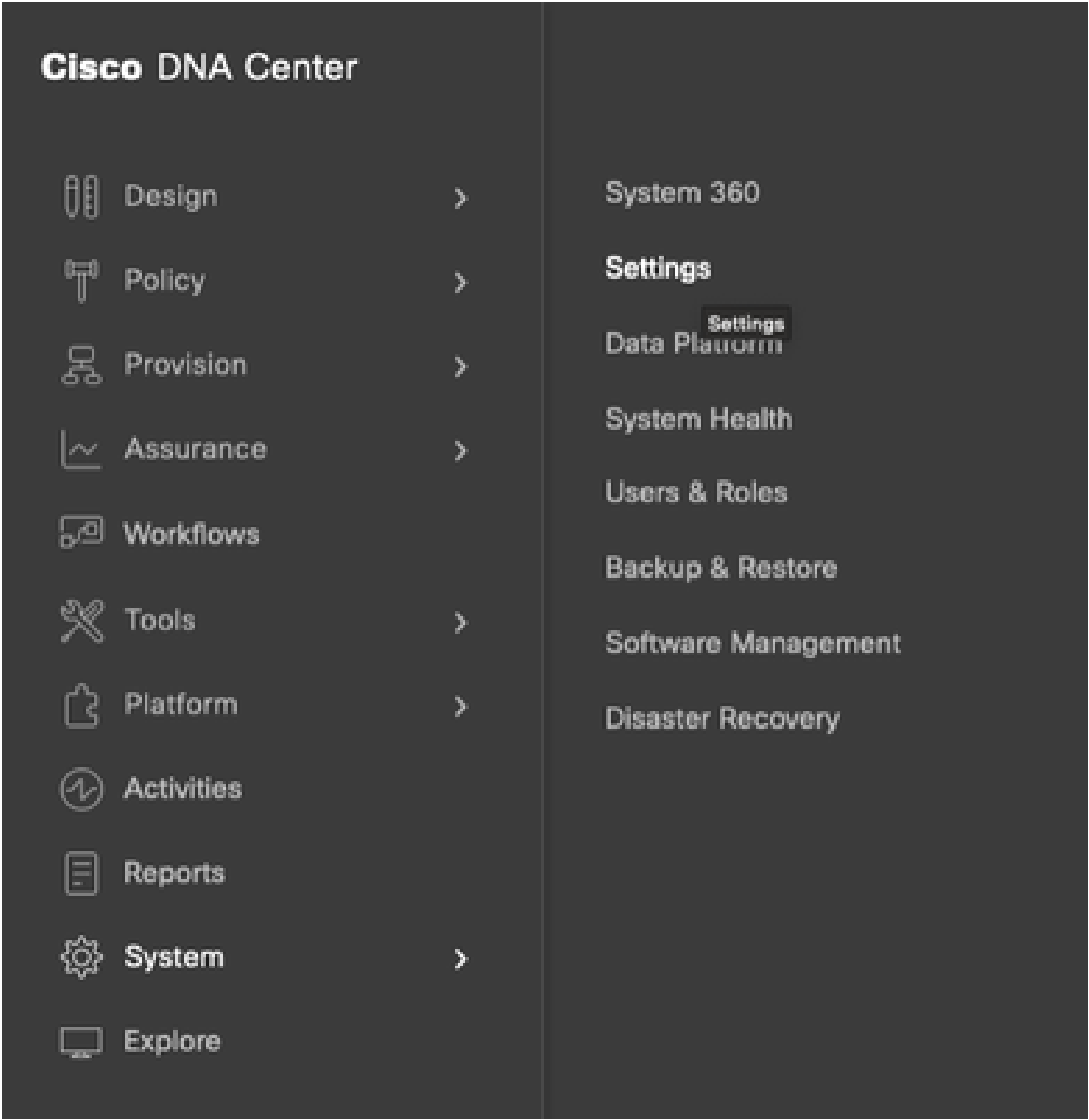


- **Direct SSM Mode:** In Direct Mode, Catalyst Center still acts as the proxy for the SLUP workflow wherein Catalyst Center collects the RUM report from the network devices and uploads it to the Cisco Smart Software Manager (CSSM) cloud.
- **On-Prem CSSM SSM Mode:** Run Reports are sent to the On-Prem CSSM and then it is sent to the Cisco Smart Software Manager (CSSM) cloud.

## Scenario 6: Integration of Smart Account with Cisco Catalyst Center

Step 1. Log into **Cisco Catalyst Center** via admin credentials or via a custom role with super-admin privileges.

Step 2. Navigate to **Hamburger** and select **System > Settings**.



Step 3. Under **Smart Account**, click **Add**.

Class DNA Center

System / Settings

Search Settings

Class Accounts

Port Connect

Classroom Essentials

Smart Account

Smart Licensing

WiFi Connection Mode

Device Settings

Device Connectivity

Network Manager Internal

Smart

Smart Plug

Image Distribution System

Device OSA Acceptance

Port Device Authorization

Settings / Class Accounts

### Smart Account

Some of your license compliance requirements have not been met. [Learn more.](#)

Class Smart Account credentials are used for connecting to your Smart Licensing product. The License Manager tool will use the details and license information from the Smart Account for entitlement and license management.

Selected Smart Account user

admin@cs

Selected Smart Account name

Class Systems, Ltd [Change](#)

Auto register smart license enabled devices

[View all smart accounts](#)

Smart Account Credentials (2)

Save

[Delete historical information](#)

Step 4. Enter the **Smart Account username** and **password**, and click **Save**.

## Add Smart Account Credentials



Username

akimishr



Info

Password

\*\*\*\*\*

Show

Cancel

Save

Step 5. If you have multiple Smart Accounts, repeat steps 3 and 4.



---

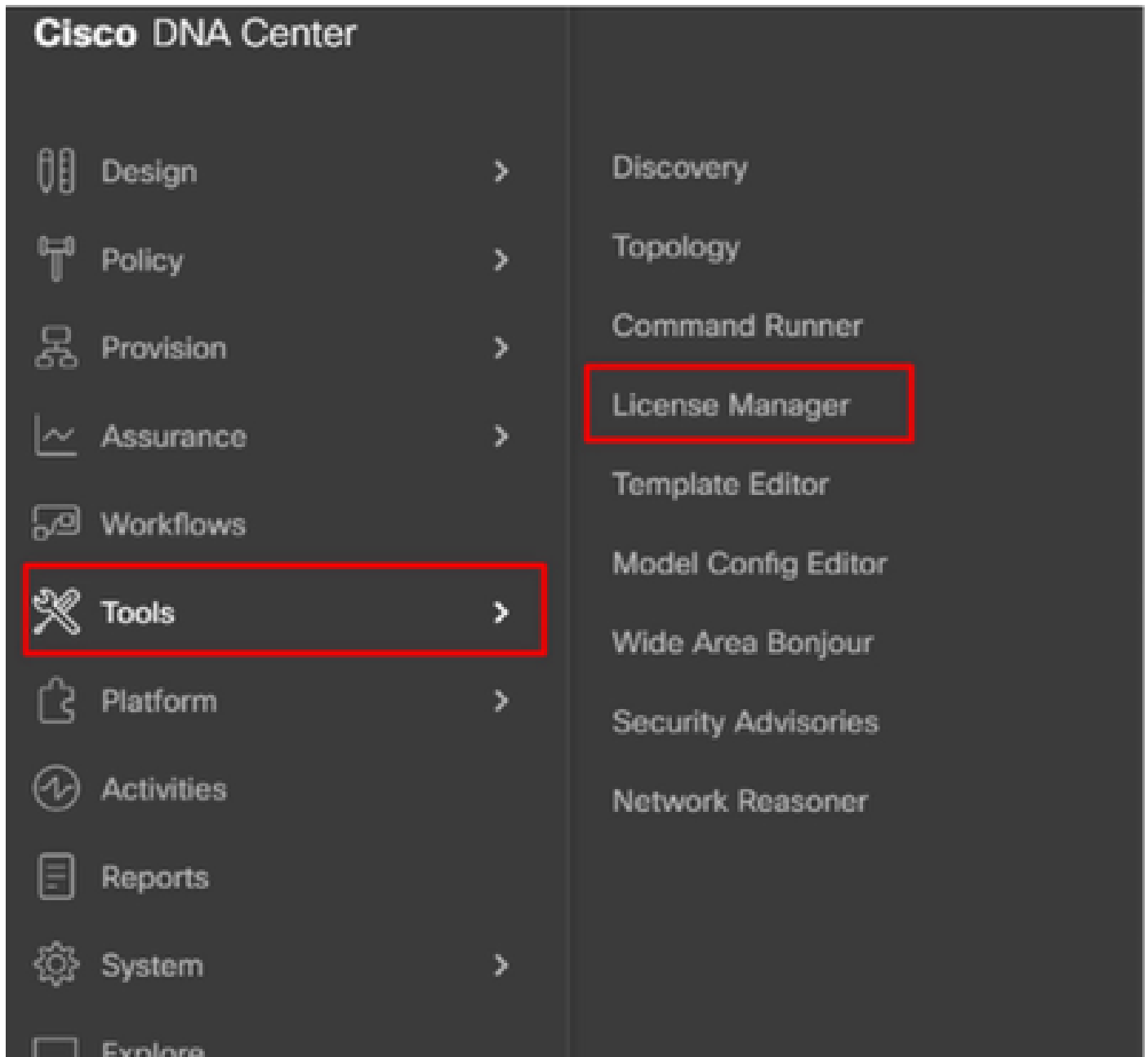
: If you have multiple Smart Accounts, choose one account to be the default. The License Manager uses the default account for visualization and licensing operations.

---

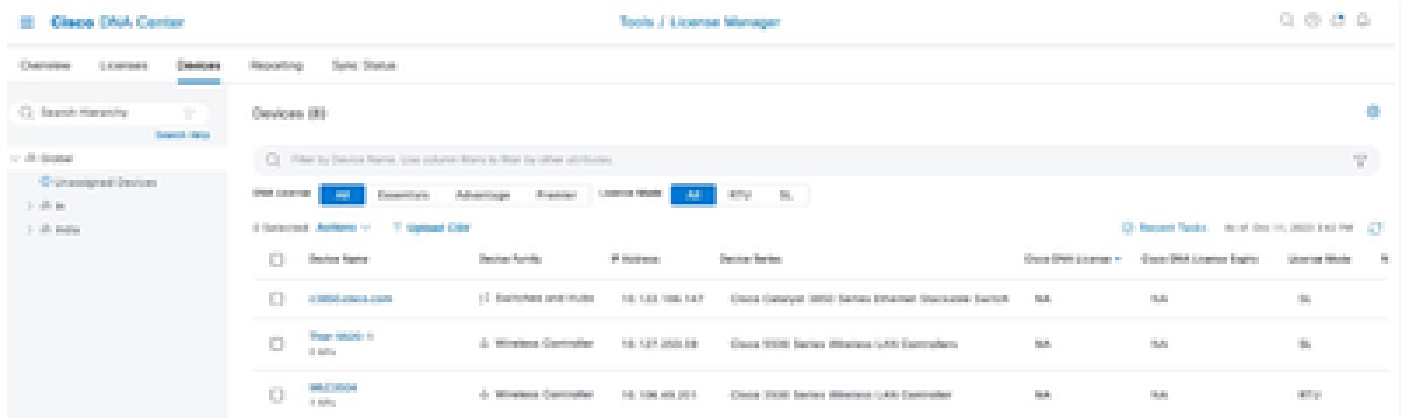
## Scenario 7: Change of License Level

Step 1. Log into **Cisco Catalyst Center** via admin credentials or via a custom role with super-admin privileges.

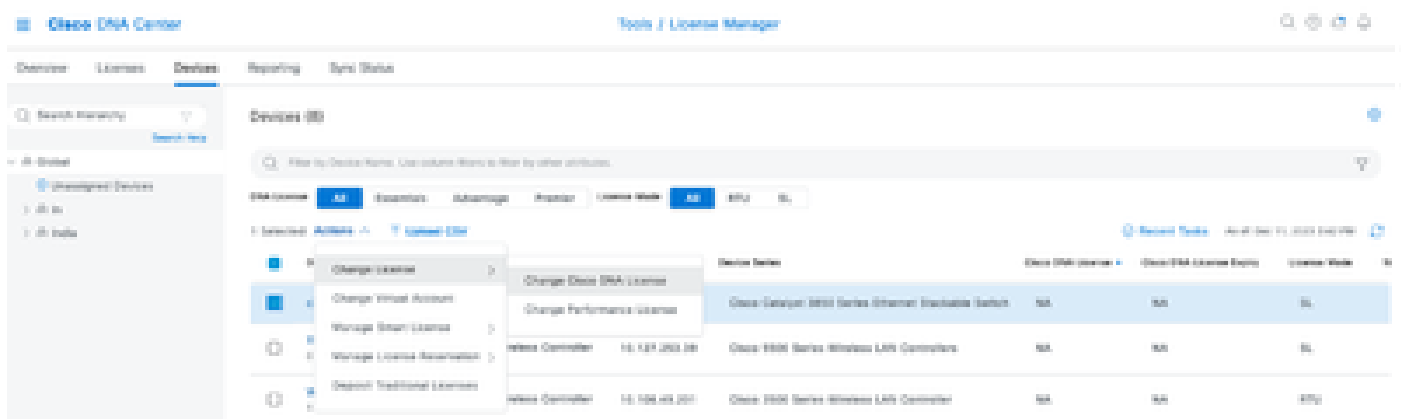
Step 2. Navigate to **Hamburger** and select **Tools > License Manager**.



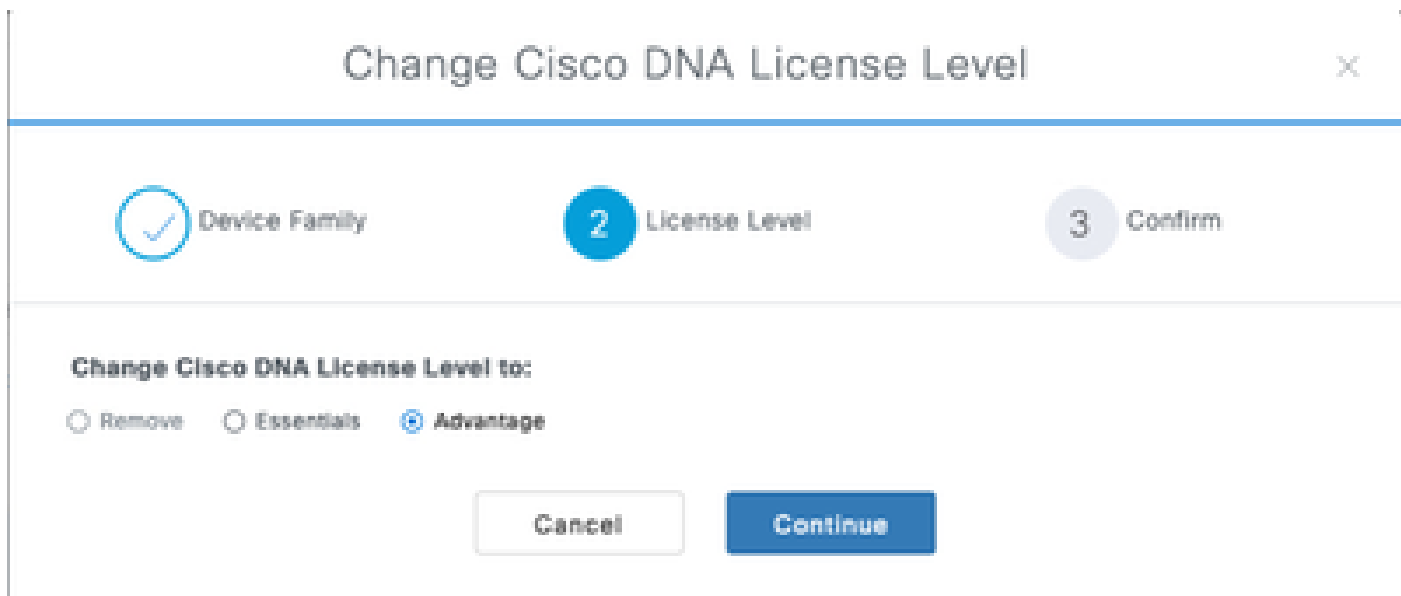
Step 3. Select **Devices** tab and use **Find** or scroll through the table to find the devices whose license level you want to change.



Step 4. Check the **check box** next to each device whose license level you want to change, then choose **Actions > Change Cisco DNA License**.



Step 5. Click the **license level** for either the **Essentials** or **Advantage** devices. Then click **Continue**.



Step 6. Cisco Catalyst Center prompts whether the change is to be applied immediately or later. Choose the **desired option** and click **Confirm**.

## Change Cisco DNA License Level



Device Family



License Level



Confirm

**Cisco DNA License for 1 device(s) will be activated to Advantage.**

*Note:* Network license may be upgraded to Advantage for applicable devices.

License change will take effect only after the device rebooted. Some devices like CAT3560-CX, AireOS controllers will not reboot even after selecting this checkbox.

☒ Reboot device on update



Now



Later

Task Name\*

License update

Back

Confirm



**Note:** You must also choose the option **Reboot device on update** for changes to take effect. Also, this activity needs to be performed in downtime.

---

## Related Information

- [Cisco Technical Support & Downloads](#)