

Catalyst Center许可使用案例和工作流程故障排除

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简介

本文档介绍经常遇到的各种Cisco Catalyst Center许可方案。

先决条件

要求

本文档没有任何特定的要求。

使用的组件

本文档不限于特定的软件和硬件版本。

本文档中的信息都是基于特定实验室环境中的设备编写的。本文档中使用的所有设备最初均采用原始（默认）配置。如果您的网络处于活动状态，请确保您了解所有命令的潜在影响。

背景信息

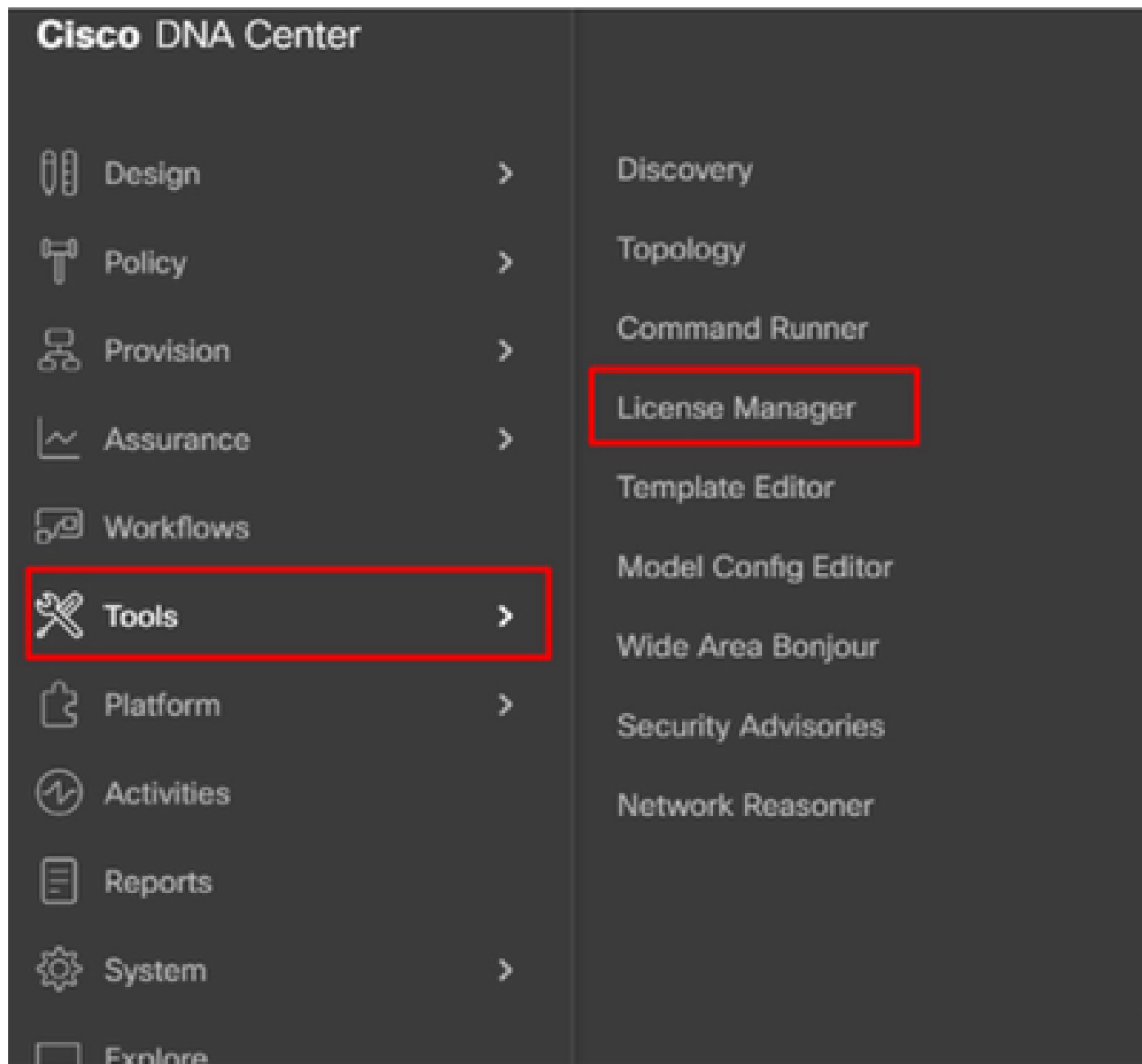
本文档详细介绍如何使用Cisco Catalyst Center (以前称为DNA Center) 的许可证管理器工作流程进行设备许可证注册、通过CSSM在虚拟帐户之间迁移许可证等。

场景

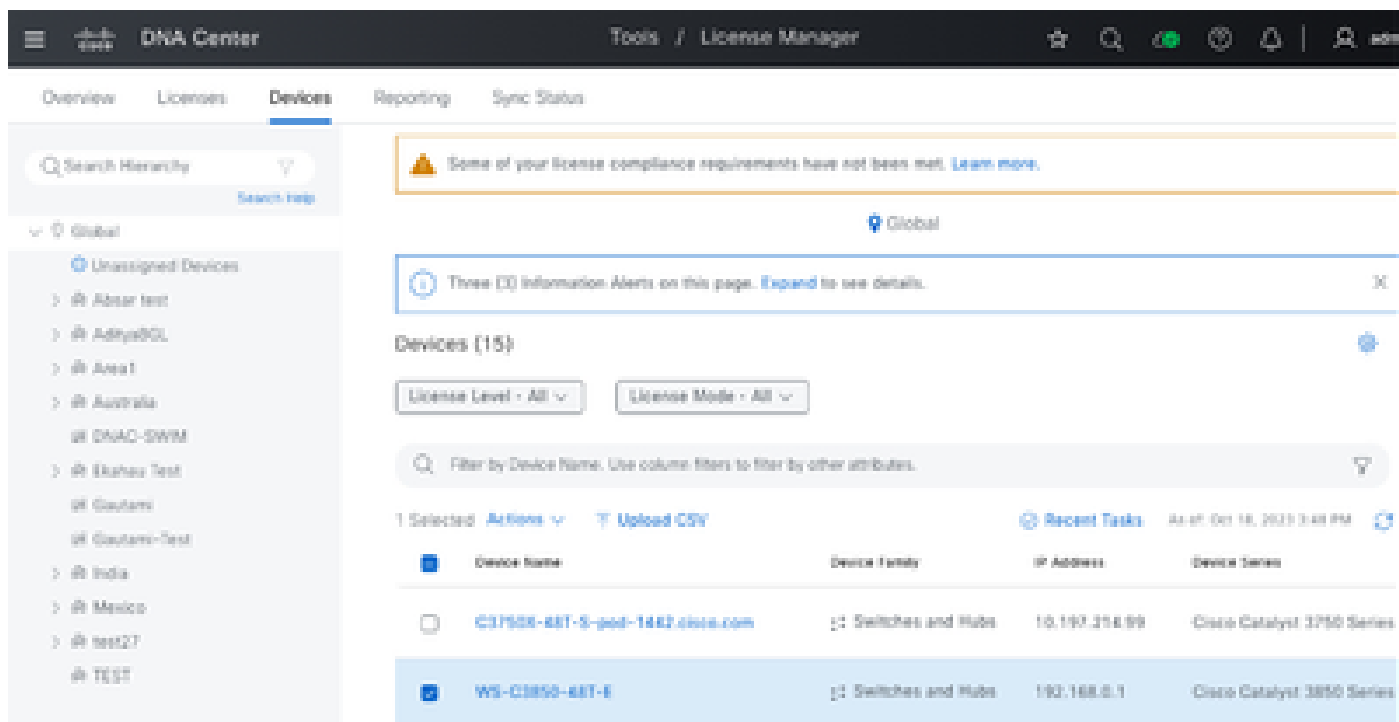
情形 1：通过Cisco Catalyst Center License Manager注册设备许可证：传统方法

步骤1.通过管理员凭据，或通过具有超级管理员权限的自定义角色登录Cisco Catalyst Center。

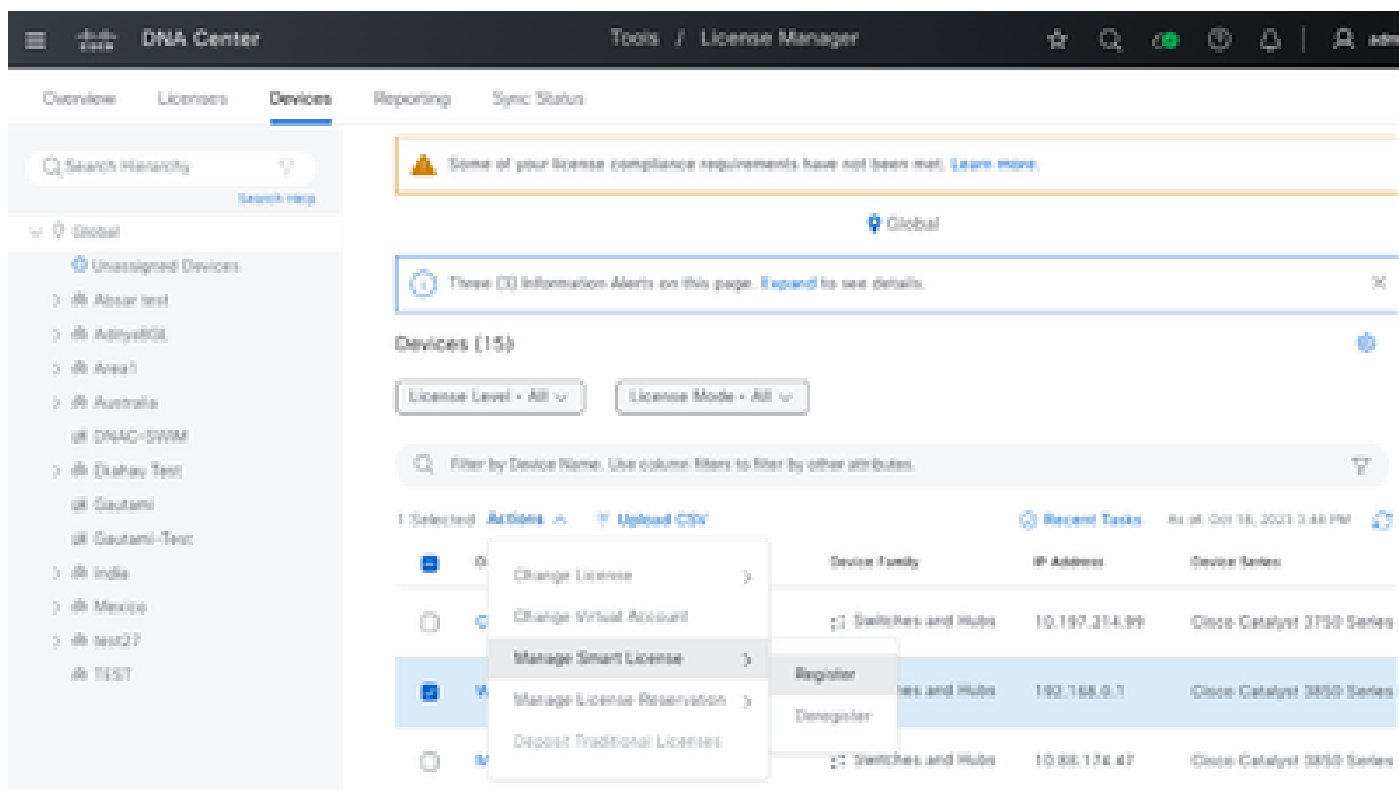
步骤2.导航到Hamburger，然后选择工具> License Manager。



步骤3.选择Devices选项卡并使用Filter选项或滚动表以查找要注册其许可证的设备。



第4步：选中要注册其许可证的每个设备旁的复选框，然后选择操作>管理智能许可证>注册。



第5步：选择存放相应许可证的虚拟帐户，然后单击继续。

Register Smart License

SMART ACCOUNT

Name Cisco Systems, TAC Domain tac.cisco.com

Search Table

	Name	Cisco DNA License Count	Description
☐	Bangalore DNAC TAC	0	DNAC TAC-POD's Device Licenses are deposited here.
☐	NMS	0	

Showing 2 of 2

Cancel

Continue

步骤6. Cisco Catalyst Center会提示是立即应用更改还是稍后应用更改。选择所需选项，然后单击 Confirm。

Register Smart License

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

☒ Now ☐ Later

Task Name*

License mode update

Cancel

Confirm

方案 2：通过Cisco Catalyst Center License Manager注册设备许可证：CSLU报告工作流程

从Cisco Catalyst Center版本2.2.1.x和运行17.3.2或更高版本的设备开始，设备不再需要注册CSSM。应使用称为智能许可证合规性报告的新工作流程。有关详细信息，请参阅列出的片段。

- 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

先决条件

思科Catalyst中心

- Cisco Catalyst Center必须在版本2.2.1.0及更高版本上运行。
- Catalyst Center设备必须通过设置>智能许可向思科智能软件管理器(CSSM)注册。
- Cisco Catalyst Center必须能够与CSSM门户通信，并且能够访问tools.cisco.com。
- 设备必须在Cisco Catalyst Center资产控制面板上可访问和管理。
- 必须在Catalyst Center上选择适当的SSM连接模式。从Catalyst Center版本2.3.7.x起，CSLU工作流程不适用于本地CSSM（卫星服务器）
- CSLU工作流程不适用于AireOS无线控制器(型号：3504、5520、8540)。

网络设备

- 设备必须在Cisco IOS® XE 17.3.2或更高版本上运行，并且闪存中必须有足够的空间来存储RUM报告。
- 对于版本2.3.7.x及更高版本：NetConf配置(netconf-yang)不再为必填项。
- 对于版本2.3.5.x及更早版本：设备必须配置netconf-yang模型，并且Cisco Catalyst Center必须能够通过Netconf端口830与设备通信。
- 验证设备上的NetConf配置：

```
show run | sec netconf-yang
```

i.在Cisco Catalyst Center上发现设备期间，必须启用凭证部分下的Netconf参数。

Cisco DNA CenterDiscover 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 also enter 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

二、如果在设备发现时未启用Netconf参数，请使用Cisco Catalyst Center资产上的Edit Device选项启用该参数。

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.

- 设备必须安装sdn-network-infra-iwan信任点；这由Cisco Catalyst Center完成。

要验证，请执行以下操作：

show crypto pki trustpoint sdn-network-infra-iwan (检查信任点)

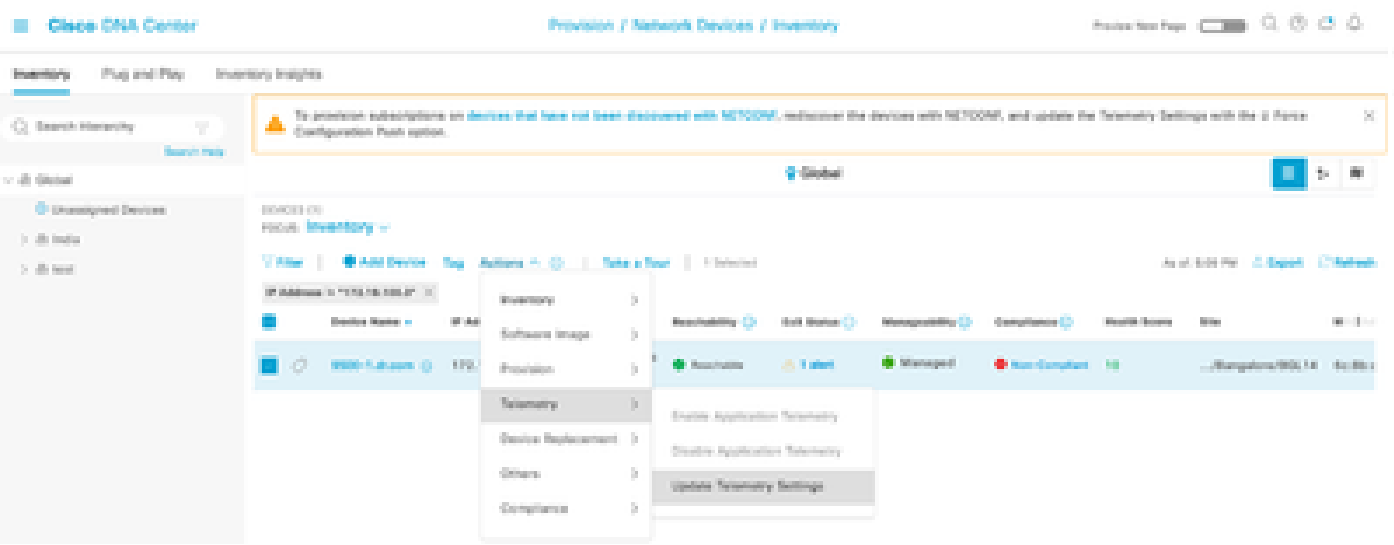
show crypto pki certificates verbose sdn-network-infra-iwan (详细检查信任点)

- 如果未安装sdn-network-infra-iwan信任点，请执行以下步骤：

步骤1.通过管理员凭据，或通过具有超级管理员权限的自定义角色登录Cisco Catalyst Center。

步骤2.定位至Hamburger，然后选择Provision > Inventory。

第3步：选择要安装信任点的设备，单击操作>遥测>更新遥测设置。



步骤4.选择Force Configuration Push，然后点击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

步骤5.选择立即，然后单击应用。这对生产没有任何影响。

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

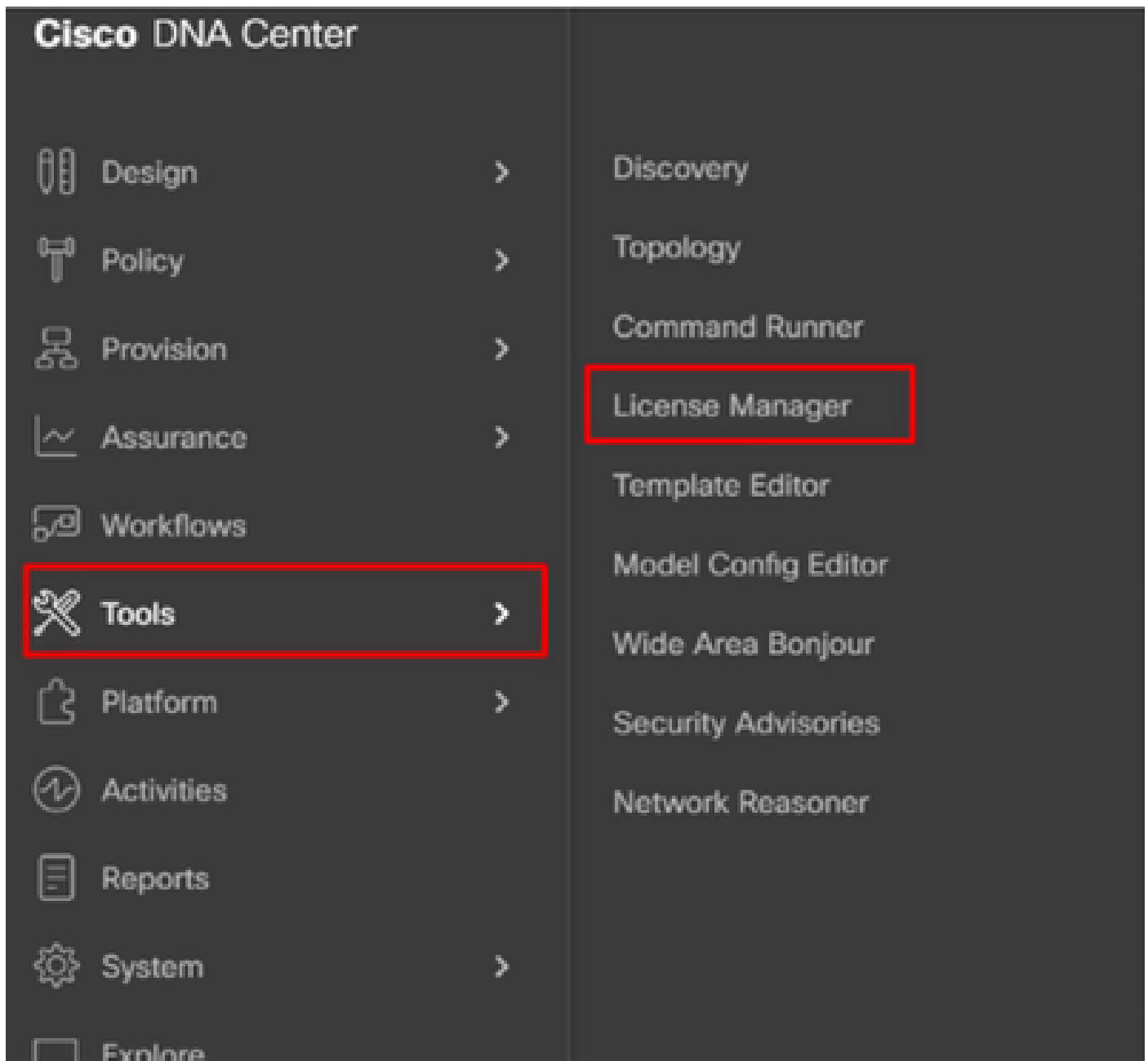
Cancel

Back

Apply

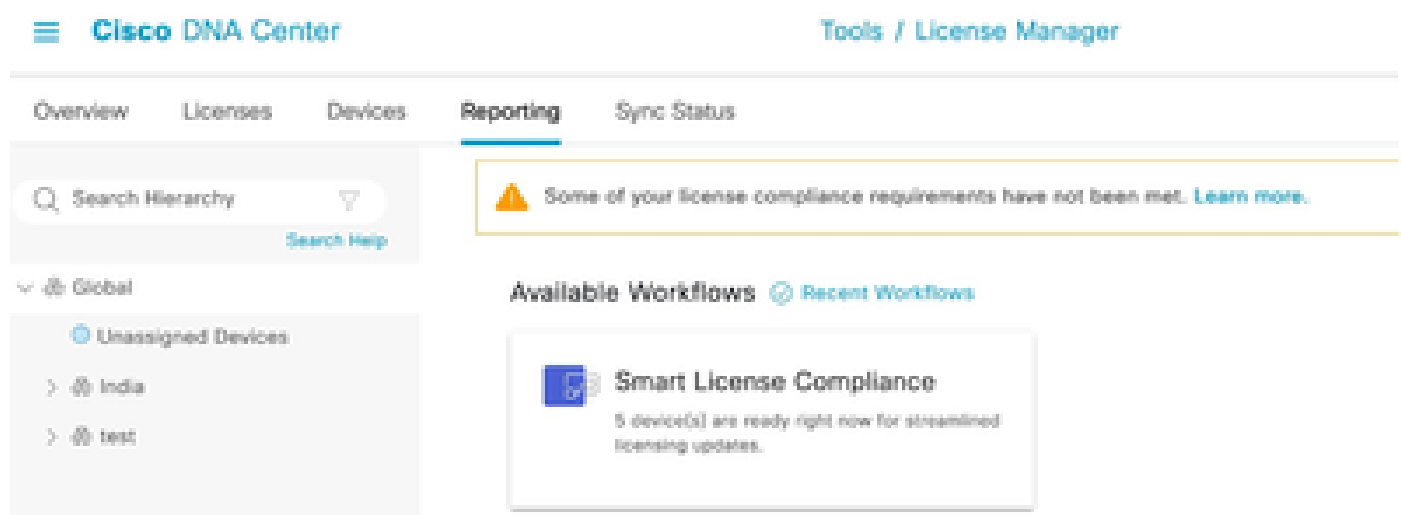
如果满足所有前提条件，请参阅下面提到的执行报告工作流程的后续步骤：

步骤1.通过管理员凭据，或通过具有超级管理员权限的自定义角色登录Cisco Catalyst Center。



步骤2.导航到Hamburger，然后选择工具> License Manager。

步骤3.选择Reporting选项卡并找到Smart License Compliance Dashlet;单击dashlet启动工作流。



步骤4.选择存储设备许可证的智能帐户和虚拟帐户，然后单击下一步。



步骤5.选择要报告其许可证利用率的设备。

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 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.

Search Hierarchy

Search Help

Global

Site Info

Site List

Search Site

Search

Device Name	Device Family	Device Series	IP Address	Software Version	Cisco PAK License	Last Report
9500-1.dn.com	Switches and Hubs	Cisco Catalyst 9500 Series Switches	172.16.100.3	17.6.1	Advantage	December 16, 2023 4:27 PM
9500-1.dn.com	Routers	Cisco 9500 Series Integrated Services Routers	172.16.100.2	17.3.2	NA	November 16, 2023 4:06 AM
9500-2.dn.com	Routers	Cisco 9500 Series Integrated Services Routers	172.16.100.10	17.6.4	NA	NA
9507-1-9500-2.dn.com	Switches and Hubs	Cisco Catalyst 9500 Series Switches	172.16.100.8	17.3.0	Advantage	NA
9507-1-9500-2.dn.com	Switches and Hubs	Cisco Catalyst 9500 Series Switches	172.16.100.7	17.6.1	Advantage	NA
9500-1.dn.com	Wireless Controller	Cisco Catalyst 9500 Series Wireless Controllers	172.160.200.1	17.6.3	Advantage	NA

4 Records

Show Records: 25 1 - 6

Exit

All changes saved

Back

Next

步骤6.根据需要修改报告间隔。

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

COSM POLICY

Licenses

First Report Within

Report Usage Every

Report After Usage Change

No data to display

步骤7.查看设备摘要并点击下一步以触发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 COSM. A report will be generated once that completes.

Submitting Devices

Search Table

Search

Device Name	Device Family	Device Series	IP Address	Software Version	Cisco PAK License
9500-1.dn.com	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 ISM 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

- 如果设备尚未在Catalyst Center上登录，但已注册到虚拟帐户，则Catalyst Center会在设备在Catalyst Center上登录后自动运行该设备的SLUP报告，而无需明确执行智能许可证合规性工作流程。
- 如果设备尚未链接或注册到虚拟帐户/智能帐户，则智能许可证合规性工作流程不会自动执行。请参阅此屏幕截图，其中“上次同步状态”为“不可用”：

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.

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

- 要报告许可证利用率，客户需要通过Catalyst Center的许可证管理器执行智能许可证合规性工作流。此后，Catalyst Center将按客户在首次执行SLC工作流程期间所计划的间隔自动执行智能许可证合规性工作流程。

请参阅此屏幕截图，其中显示了“上次同步”状态：

Choose Sites and Devices

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

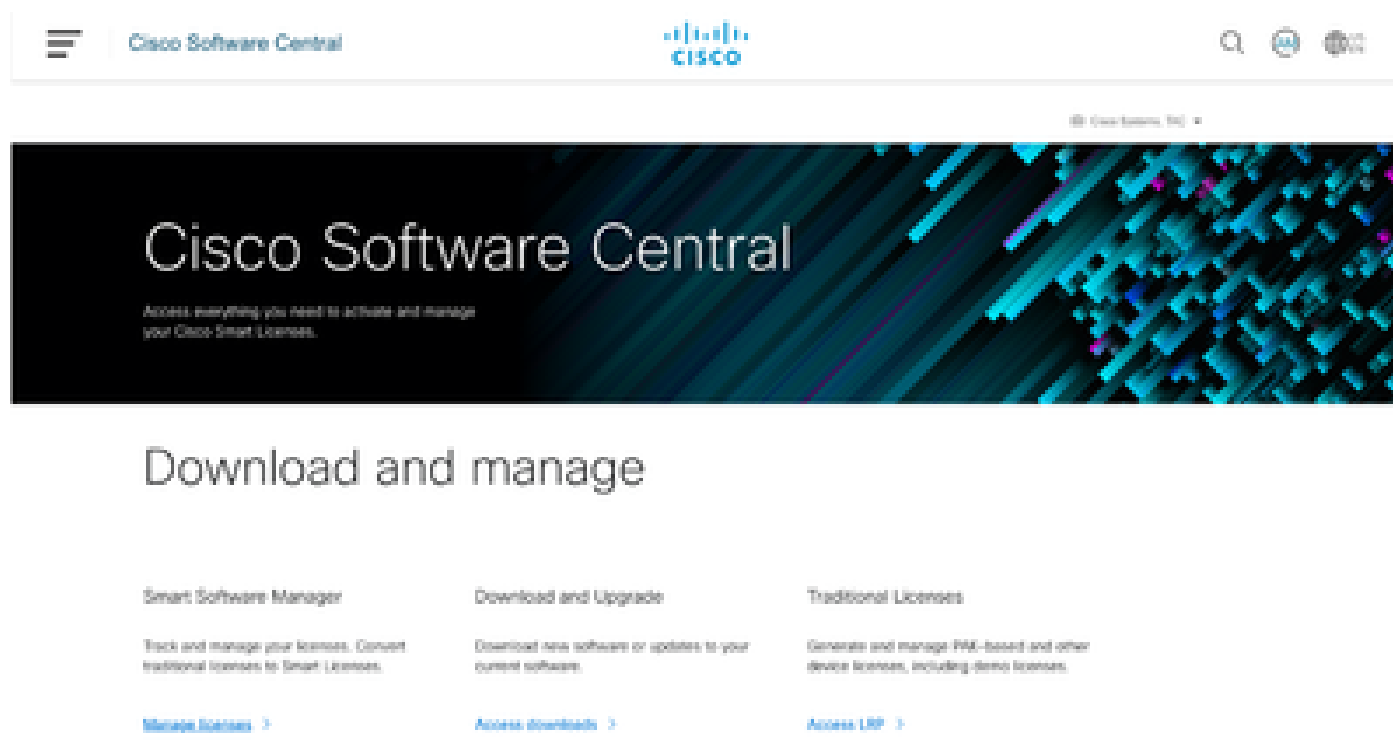
You can choose to link all of them right now, or just a subset. If you don't link with the Cisco Smart Software manager now, you may link at any time later.

ThorFusion_C9300						
☐	Device Name	Device Family	Device Series	IP Address	Smart 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

情形 3：虚拟帐户之间的许可证迁移

步骤1.通过管理员凭据，或通过具有超级管理员权限的自定义角色登录Cisco Catalyst Center。

步骤2.登录software.cisco.com并选择Manage Licenses。



步骤3.导航到Inventory并选择源虚拟帐户。

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 | Licenses

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....

第4步：选择许可证选项卡，然后选择目标虚拟帐户。

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 TAC

deleted3

RTP-CX2

sdwan-lab

sindhrao

Yazan Bikawi

第5步：选择要传输的许可证，然后点击操作(Actions)并选择传输(Transfer)。

Smart Software Licensing

🏠 Cisco Systems, TAC ▼

[SL Product Details](#) | [Support](#) | [Help](#)[Alerts](#) | [Inventory](#) | [Convert to Smart Licensing](#) | [Reports](#) | [Preferences](#) | [On-Prem Accounts](#) | [Activity](#)Virtual Account: [TAC Cisco Systems, Inc....](#) ▼🔴 Major | 🟡 Minor | [Hide Alerts](#)

🔍 On-Prem Virtual Account (cats-satellite)

General

Licenses

Product Instances

Event Log

Available Actions ▼

Manage License Tags

📄

☒ Show License Transactions

By Name

By Tag

Search by License 🔍

Advanced Search ▼

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

Transfer

步骤6.选择要传输的许可证数量，然后点击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

10

Transfer Show Preview Cancel

场景 4：智能帐户之间的许可证迁移

许可证在不同智能帐户之间迁移可由思科许可团队完成。请参阅以下步骤，向相关团队提出问题。

步骤1.使用思科凭证[登录Support Case Manager](#)。

步骤2.单击Open New Case，然后选择Software Licensing > Expand License Management > Select Move Licenses。然后选择Reassign licenses between SA，然后单击Open Case。

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

Open New Case

Products & Services
Wireless
Software Licensing
Fieldwork / CUMMIS
Total 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

步骤3.选择相关产品（例如无线、交换等），填写表，然后提交请求。

Support Case Manager

Create and manage Support cases for Arista.com/Merxo (admin@case.com)



OPEN NEW CASE
Software Licensing

Need help with your case?



Chat Now



Category

Baseline/Business between SA, including HA. [change](#)

Product

Select a Product

Title

6000 characters

Problem Description

This category is for L3/OSM-related requests (PBR). For technical issues, please click 'change' above and open a case by using the 'Products & Services' category. Otherwise, please provide the details of your L3/OSM request below and include the necessary customer information (Source/Host Name (HNA), Source/Serial (SR/MSR/HA), etc.) and Smart Account/Virtual Account (SA/VA).

Describe the issue you are experiencing...

60000 characters

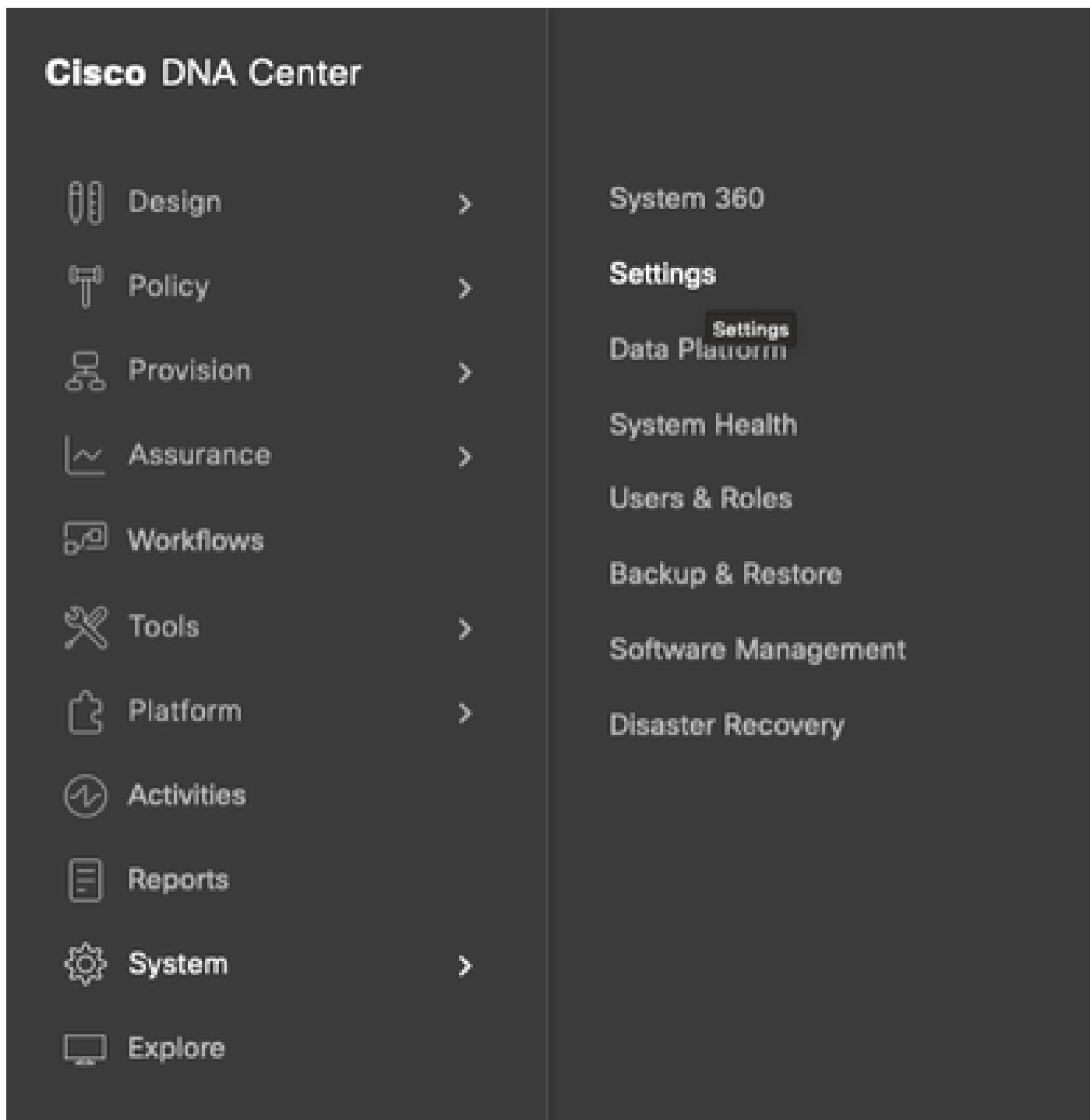
Note: Files can be uploaded after case is created.

Smart Account Domain ID:

场景 5：更改SSM连接模式

步骤1.通过管理员凭证或具有超级管理员权限的自定义角色登录Cisco Catalyst Center。

步骤2.导航到Hamburger，然后选择System > Settings。



第3步：选择SSM Connection Mode，然后选择所需的选项(Direct/Smart Proxy/On-Prem)。Click Save.

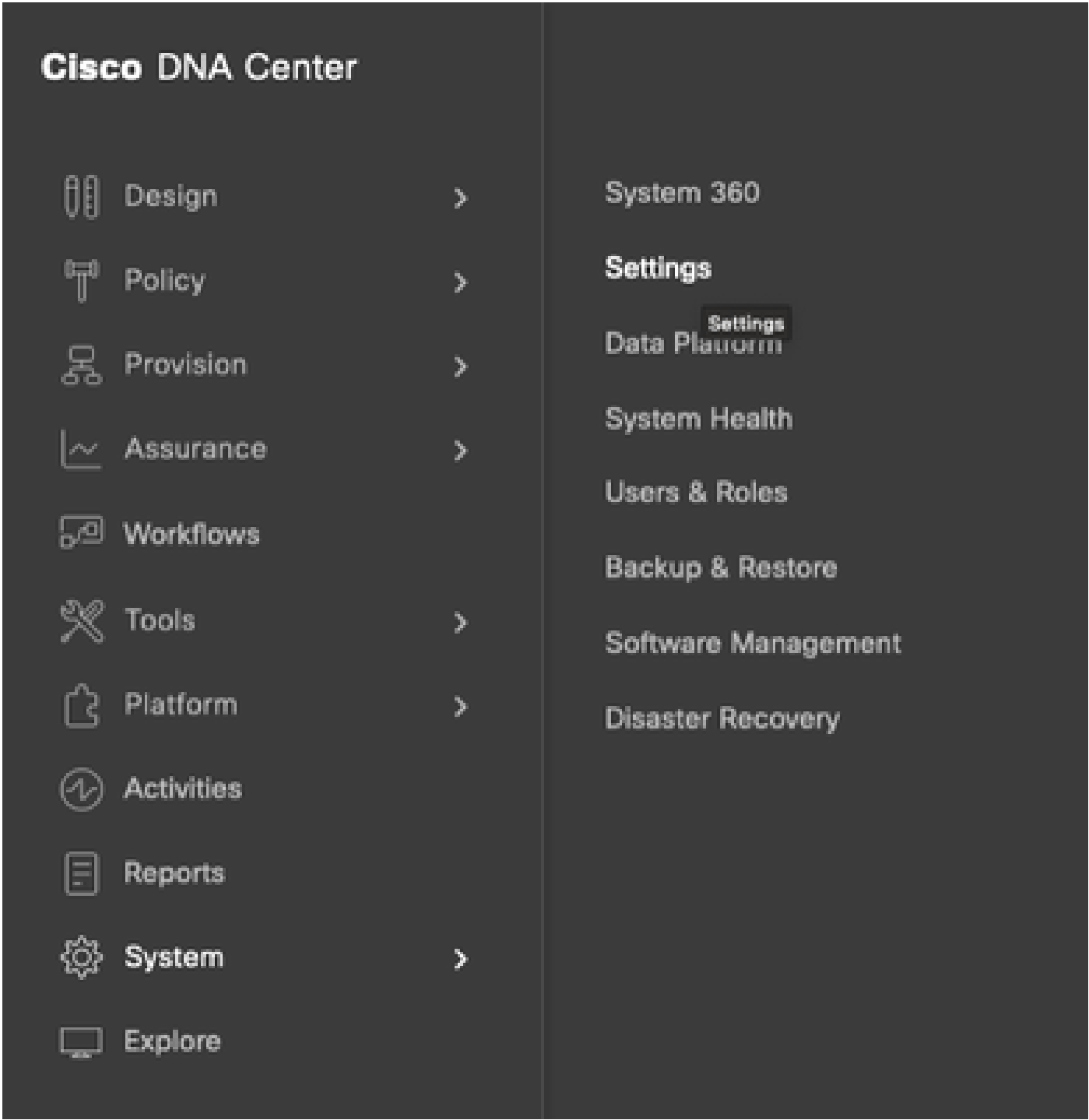


- 直接SSM模式：在直接模式下，Catalyst Center仍然充当SLUP工作流的代理，其中Catalyst Center从网络设备收集RUM报告并将其上传到思科智能软件管理器(CSSM)云。
- 本地CSSM SSM模式：运行报告发送到内部CSSM，然后发送到思科智能软件管理器(CSSM)云。

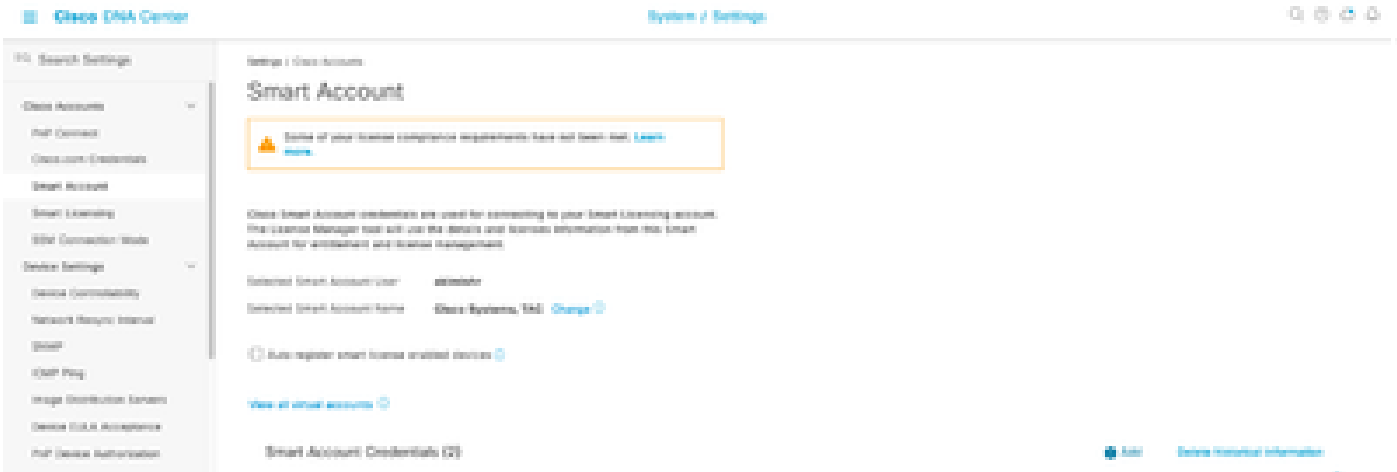
场景 6：智能帐户与Cisco Catalyst Center的集成

步骤1.通过管理员凭据，或通过具有超级管理员权限的自定义角色登录Cisco Catalyst Center。

步骤2.导航到Hamburger，然后选择System > Settings。



步骤3.在Smart Account下，单击Add。



步骤4.输入智能帐户用户名和密码，然后单击保存。

Add Smart Account Credentials



Username

akimishr



Info

Password

Show

Cancel

Save

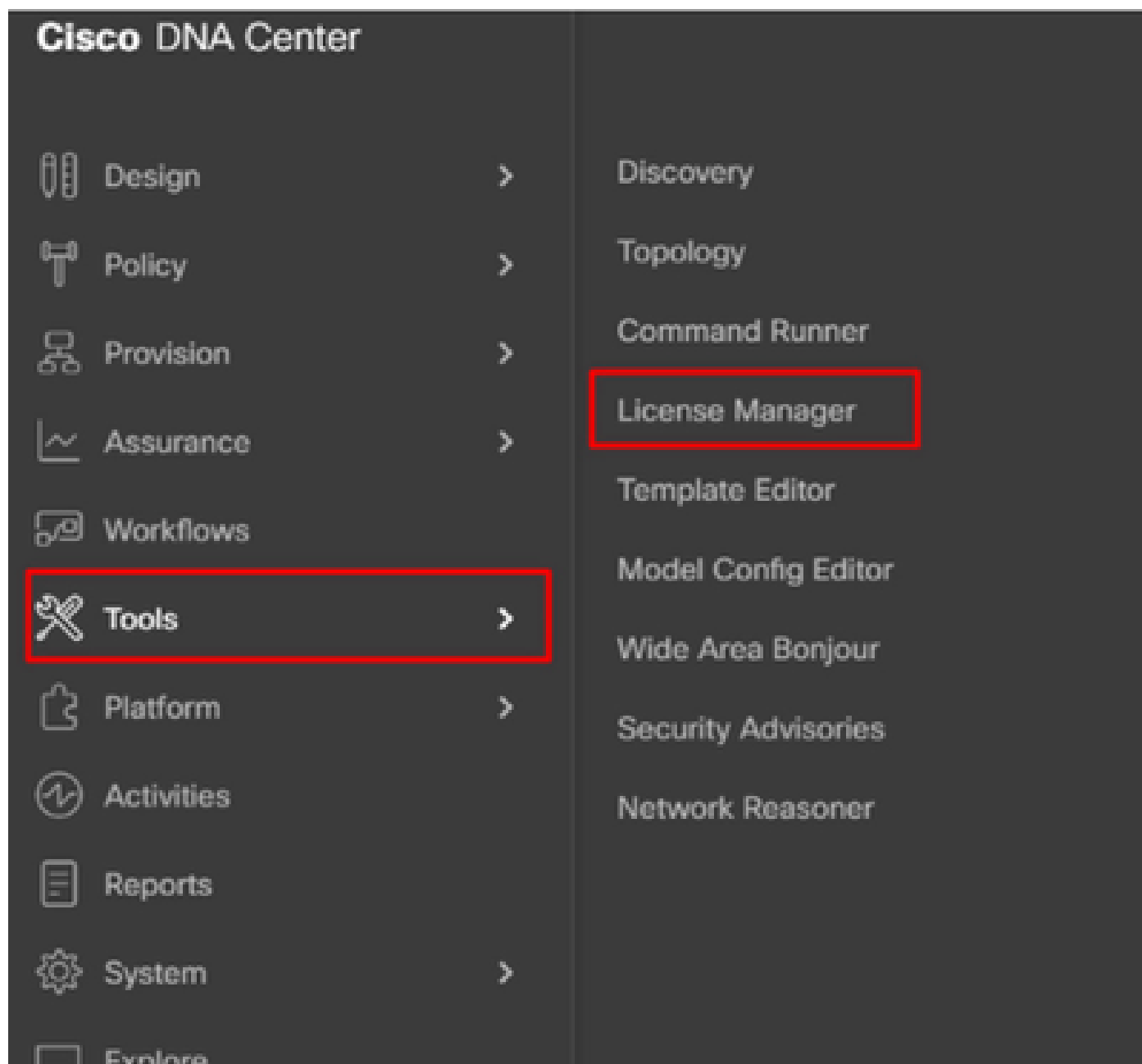
步骤5.如果您有多个智能帐户，请重复步骤3和4。

如果您有多个智能帐户，请选择一个帐户作为默认值。许可证管理器使用默认帐户进行可视化和许可操作。

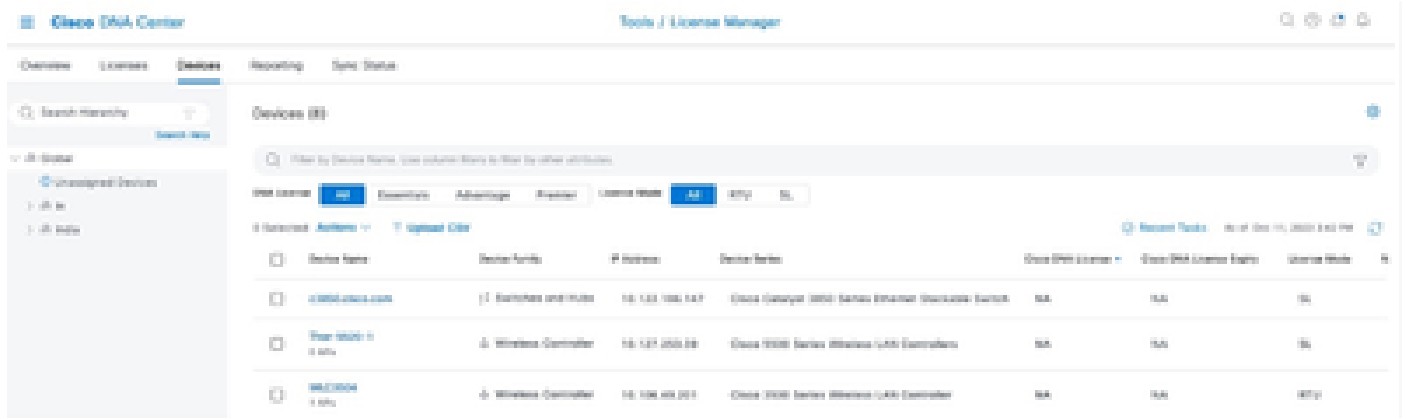
场景 7：许可证级别更改

步骤1.通过管理员凭据，或通过具有超级管理员权限的自定义角色登录Cisco Catalyst Center。

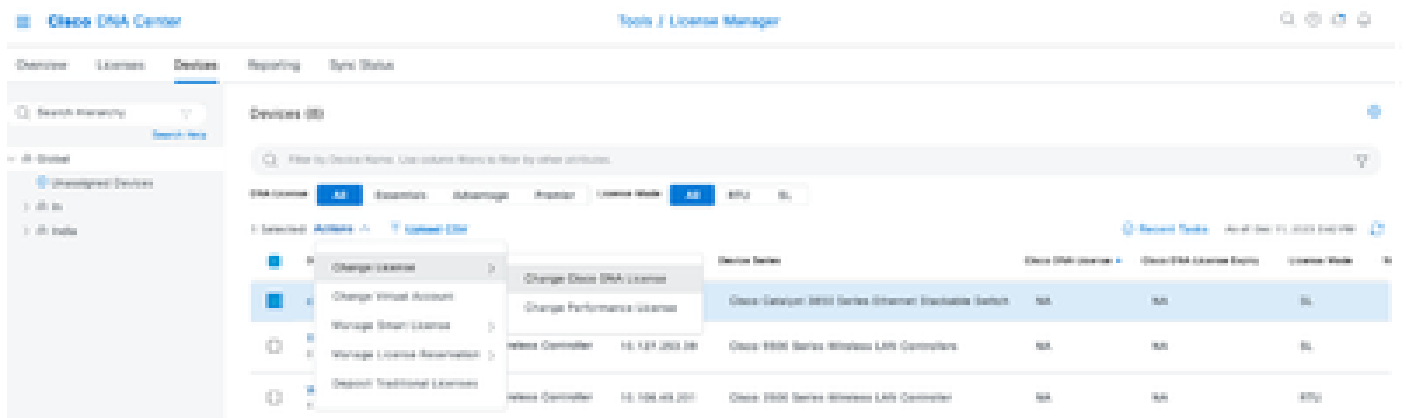
步骤2.导航到Hamburger，然后选择工具> License Manager。



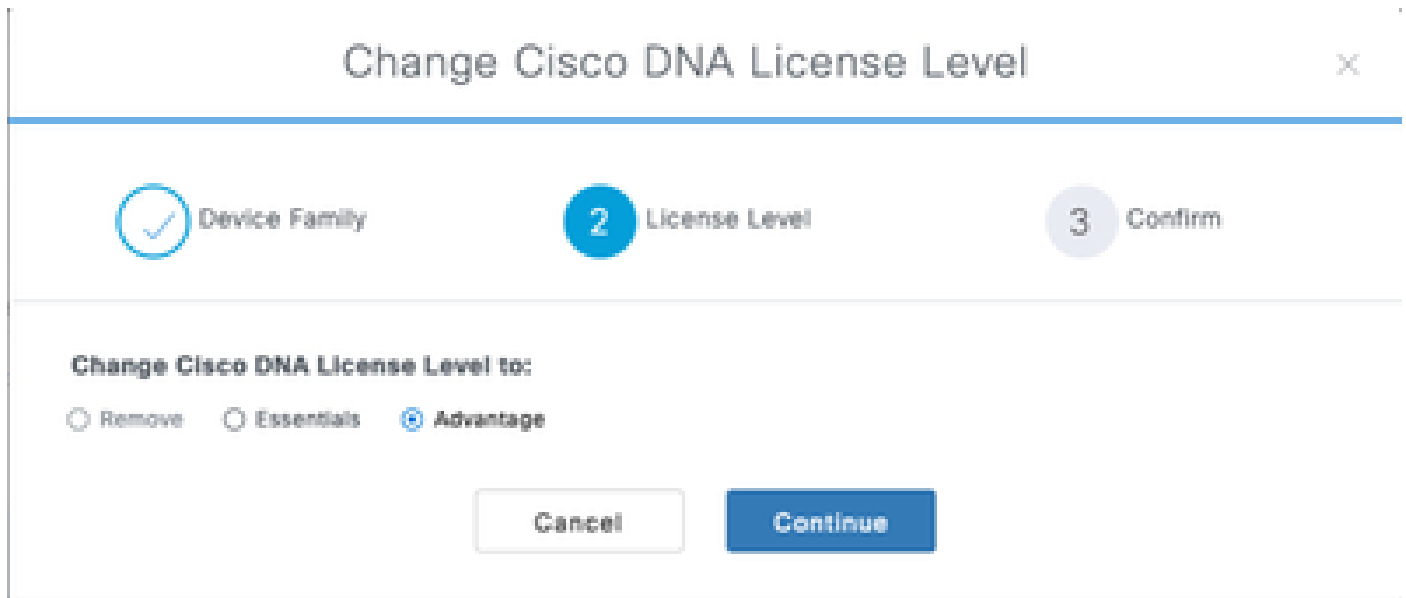
步骤3.选择Devices选项卡，使用Find或滚动表以查找要更改其许可证级别的设备。



步骤4.选中要更改其许可证级别的每台设备旁的复选框，然后选择操作>更改思科DNA许可证。



步骤5.单击Essentials或Advantage设备的许可证级别。然后单击Continue。



步骤6. Cisco Catalyst Center会提示是立即应用更改还是稍后应用更改。选择所需选项，然后单击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



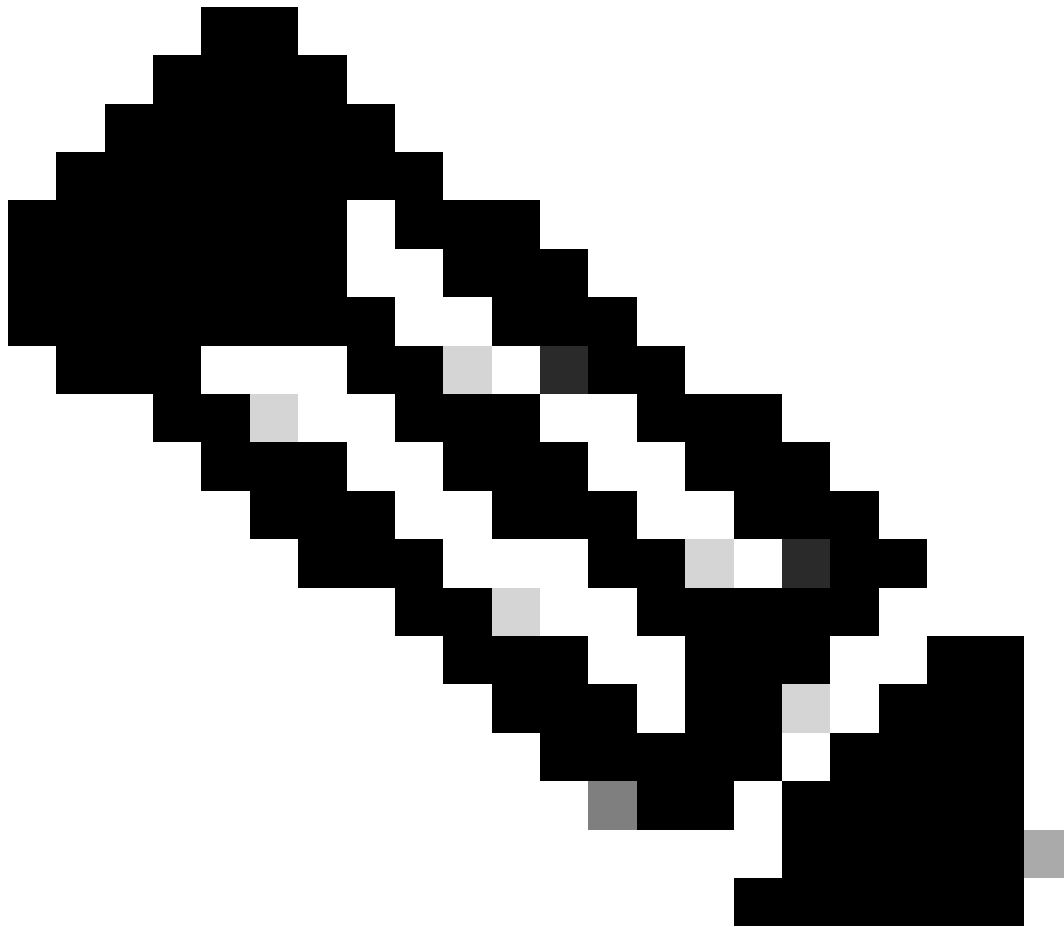
Later

Task Name*

License update

Back

Confirm



注意：您还必须选择更新时重新启动设备选项，以使更改生效。此外，本练习需要在停机时间内执行。

相关信息

- [思科技术支持和下载](#)

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