The bridge to possible

# Cisco DNA Center Licensing for Campus Networks

Gayathri Devi, Technical Marketing Engineer

# Agenda

- Introduction to Smart Accounts
- Smart Licensing
- Cisco DNA Essentials vs Advantage
- CSSM
- Cisco DNA Center License Manager


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Gayathri Devi

Technical Marketing Engineer

Cisco DNA Center



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# Cisco Webex App

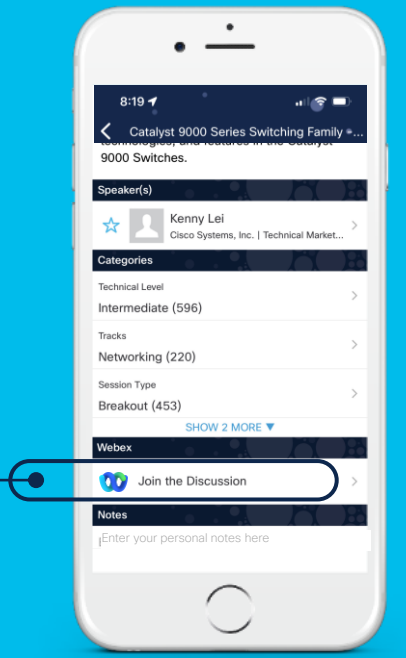
## Questions?

Use Cisco Webex App to chat
with the speaker after the session

## How

1. Find this session in the Cisco Live Mobile App
2. Click “Join the Discussion”
3. Install the Webex App or go directly to the Webex space
4. Enter messages/questions in the Webex space

## Webex spaces will be moderated until February 24, 2023.

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# Cisco Smart Account

## Centralized account of Cisco Smart Software Licenses

- Visibility of Assets
- Access Control

## Pools

- Devices
- User roles
- Licenses
- Agreements

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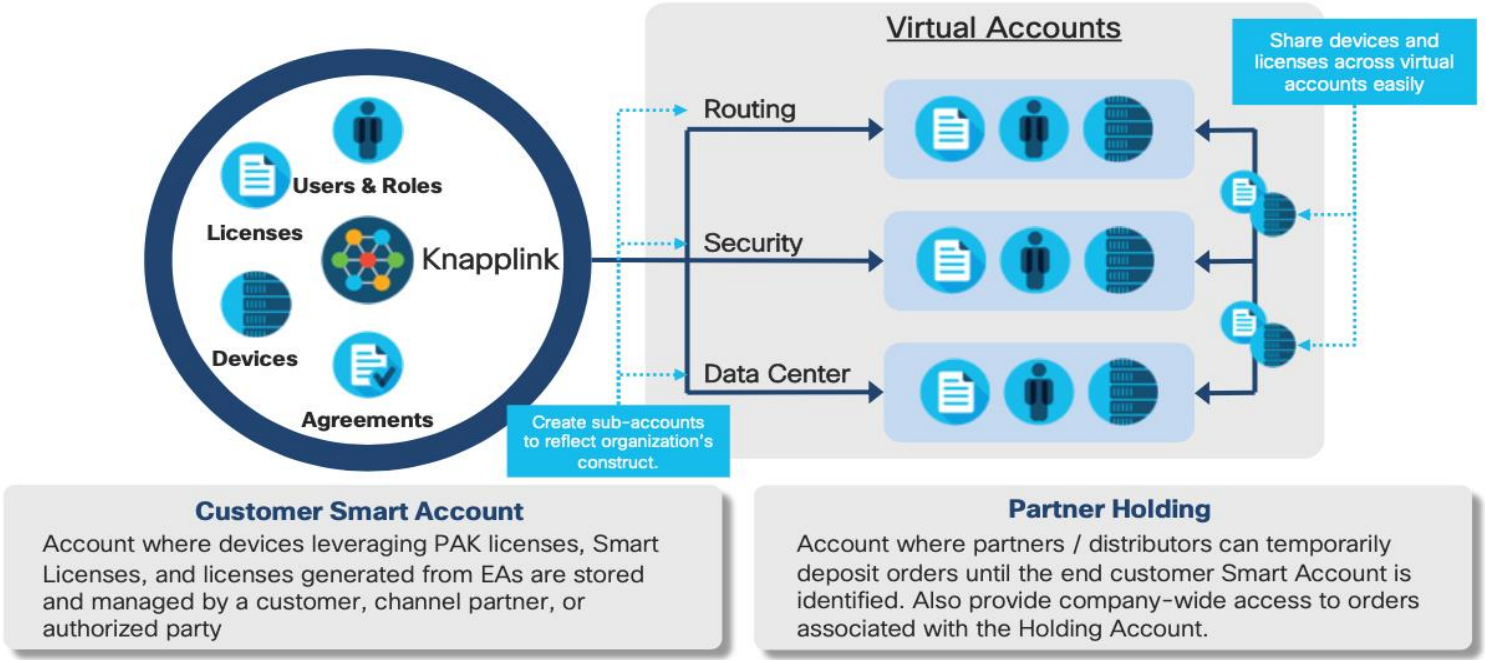
# What's in a Smart Account





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# Smart Account Structure

## Considerations..

### LOCATION

- Single / multiple region or countries
- Limited or complex variations in legal requirements or org liability

### ORG STRUCTURE

- Level of centralization in org structure
- No. of operational divisions controlling assets

### STREAMLINING PROCESS

- Need for license management – static hardware / fluid assets
- Dedicated license manager or team


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# Smart Account Structure

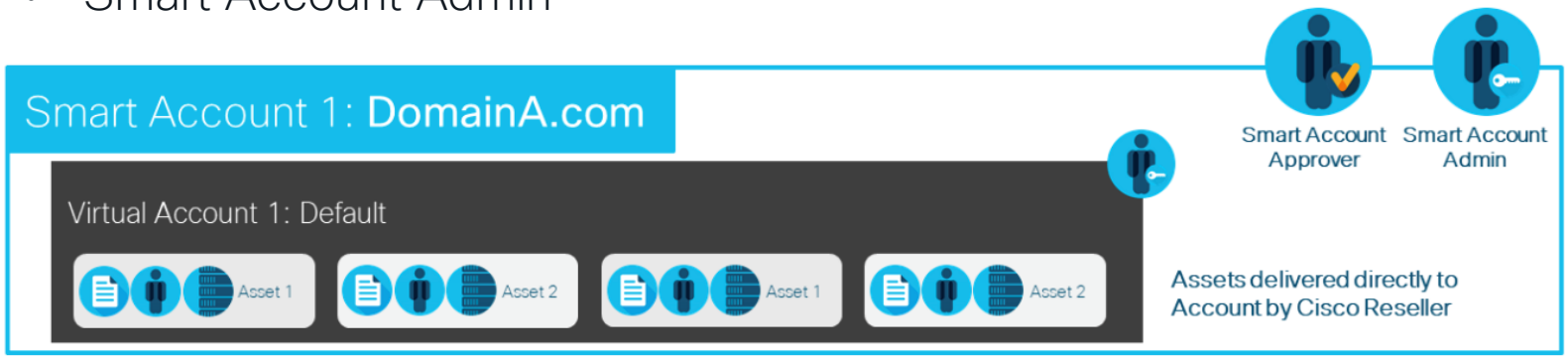
## Single Domain

Dedicated Smart Account to keep track of

- Assets
- License usage

One Virtual Account : 2 global roles

- Smart Account Approver
- Smart Account Admin





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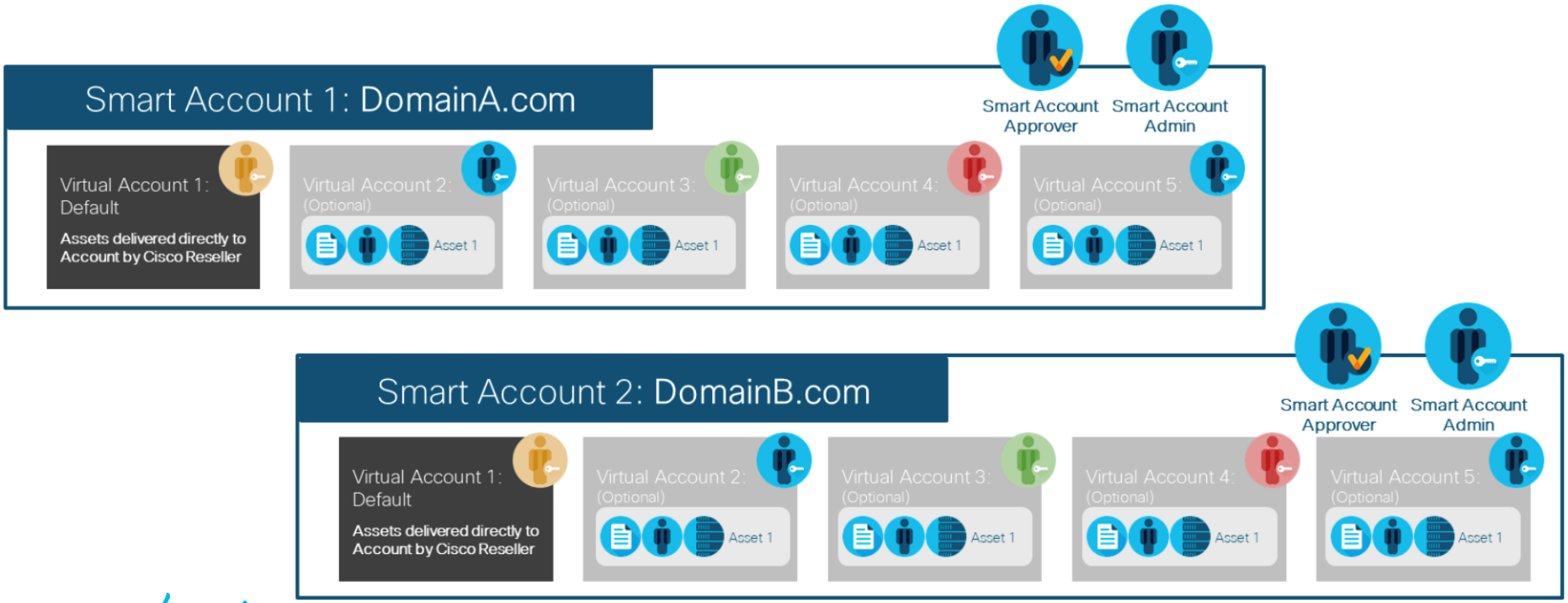
# Smart Account Structure

## Multi Domain

## Multiple Smart Account to manage complex asset ecosystem





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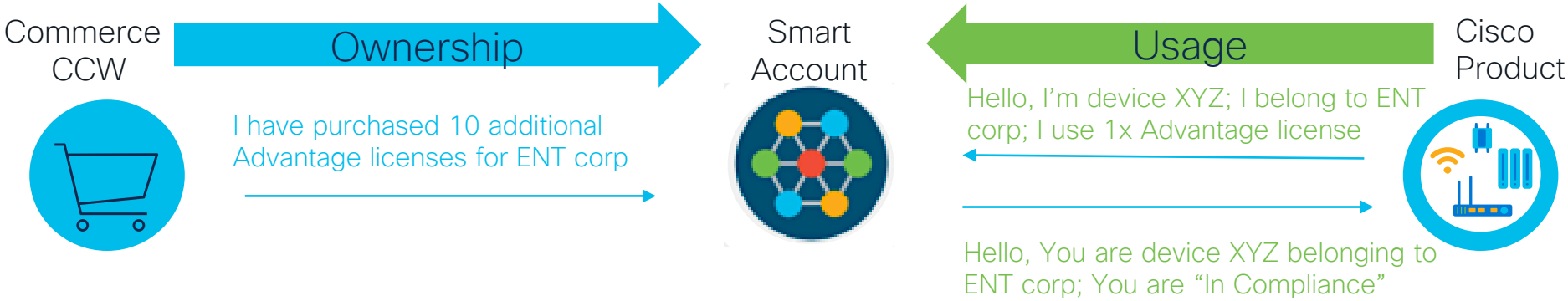
# Smart Licensing

# What is Smart Licensing

- Software Inventory Management System
- Cisco Smart Software Manager




| ENT corp | | |
|---|---|---|
| I own | 15 | +5 |
| I use | 15 | +1 |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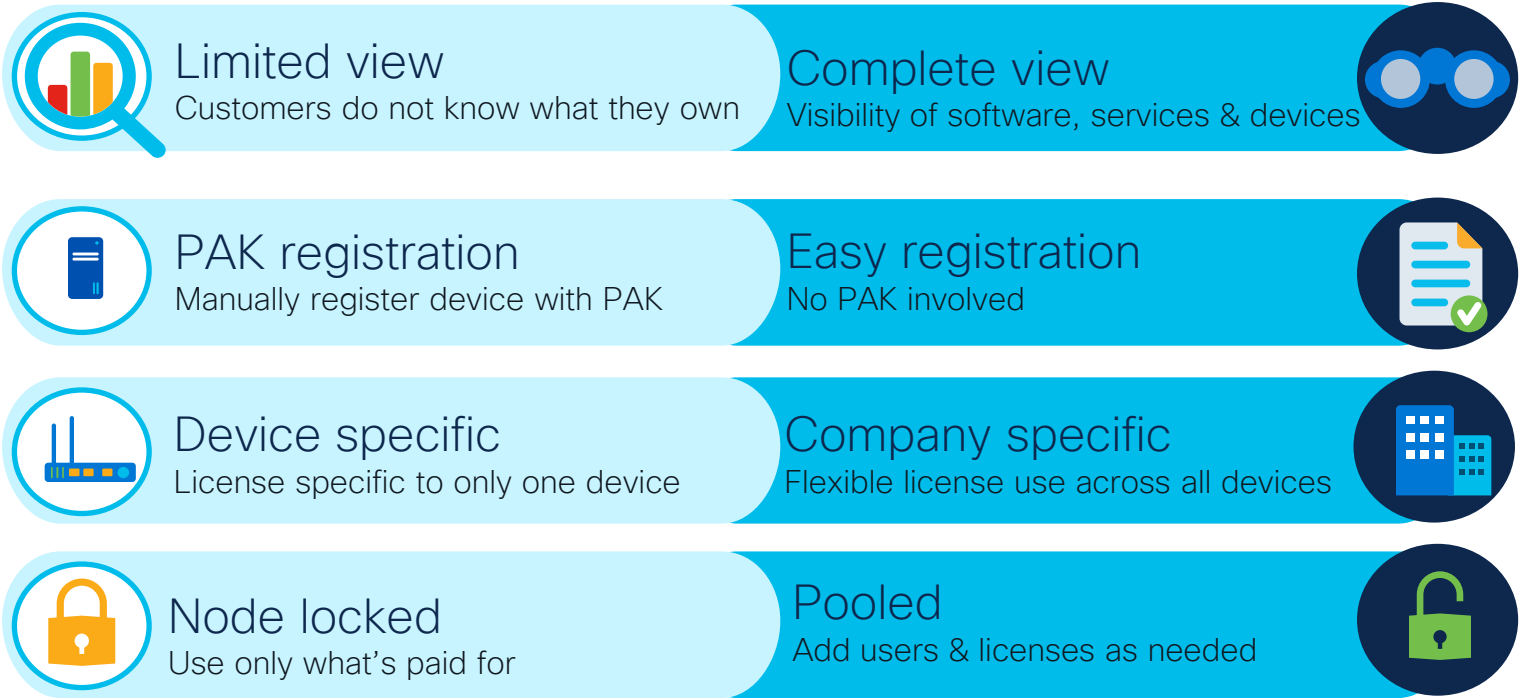
# Transition from Traditional to Smart Licensing





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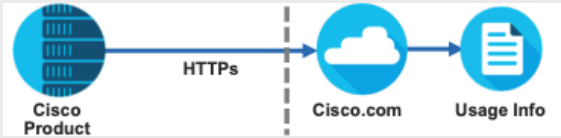
# Methods of Communication

## Cisco Products are configured to use Smart Licensing at install / provision

1

### Direct Cloud Access

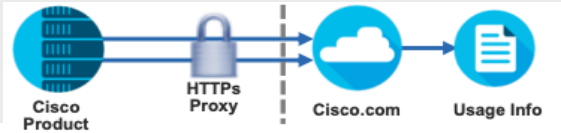
Usage information sent over internet directly; No additional component




2

### Proxy Cloud Access

Usage information sent over internet via Proxy server; Any off-the-shelf proxy





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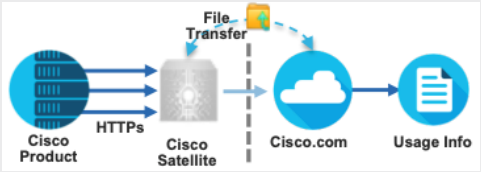
# Methods of Communication

Cisco Products are configured to use Smart Licensing at install / provision

3

## On-Prem CSSM server

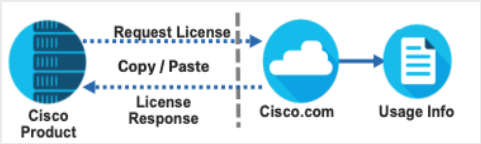
Usage information sent to locally installed satellite (periodic sync with Cisco)
Both connected and disconnected environments




4

## Full Offline Access

Manual copy/paste of info between product & Cisco.com
Manual license check-in / check out





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# Cisco DNA Center Licenses

# Cisco DNA Licensing

## In a nutshell

### Switching

**Cisco DNA Expansion Pack**

Cisco Spaces, Stealthwatch, ISE, ThousandEyes

**Cisco DNA Advantage**

SD-Access, Assurance, Analytics, Security, IoT, Telemetry, Visibility, Cisco DNA Essentials, Cisco Prime Infrastructure

**Cisco DNA Essentials**

Base Automation, management and monitoring

### Routing & SD-WAN

**Cisco DNA Premier**

Cisco Umbrella Plus, Cisco ThreatGrid, Cisco DNA Advantage

**Cisco DNA Advantage**

Cloud OnRamp for IaaS & SaaS, vAnalytics, Cisco Advanced Malware Protection, Cisco DNA Essentials

**Cisco DNA Essentials**

Simplified management and security protection, up to 50 devices overlay

### Wireless

**Cisco DNA Expansion Pack**

Cisco Spaces, Stealthwatch, ISE, ThousandEyes

**Cisco DNA Advantage**

Assurance , Analytics, Advanced Automation, aWIPS, Cisco Spaces See, Cisco Spaces Extend, Cisco DNA Essentials

**Cisco DNA Essentials**

Base automation and management, Cisco Prime Infrastructure


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# Cisco Smart Software Manager

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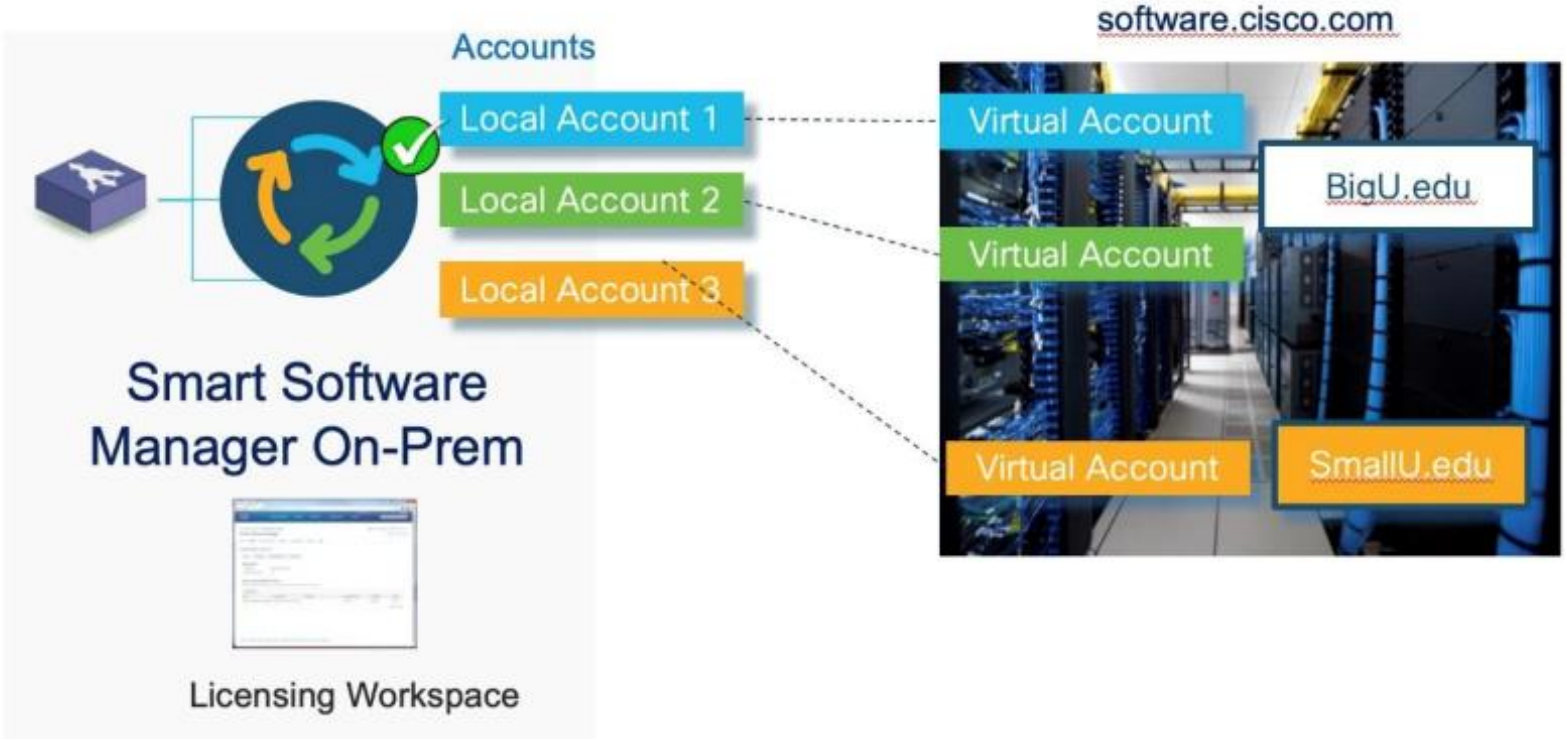
# CSSM On-Prem

## Source of “truth” for air-gaped networks





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# Cisco DNA Center License Manager

# Show of Hands

- How many of you have traditional network licenses?
- Have you tried conversion to smart licenses?
- Do you manage smart licenses using Cisco DNA Center?


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# Pre-req Check - 1

## Access privilege

- SUPER-ADMIN-ROLE permissions and appropriate RBAC scope defined in Cisco DNA Center

## Credentials

- Collect Cisco user ID and password for your Smart Account

## Reachability

- Cisco DNA Center must have reachability to tools.cisco.com to register with Smart Account


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# Pre-req Check - 2

## Manage Device

- Devices must be managed under Inventory, assigned to site, and must have reachability to tools.cisco.com for Cisco DNA Center to apply license

## Min. required Software Version for Smart License

- Switches 16.9.1 or above & Routers IOS16.10 or above

## Security

- Required ports, FQDN, URL to be permitted


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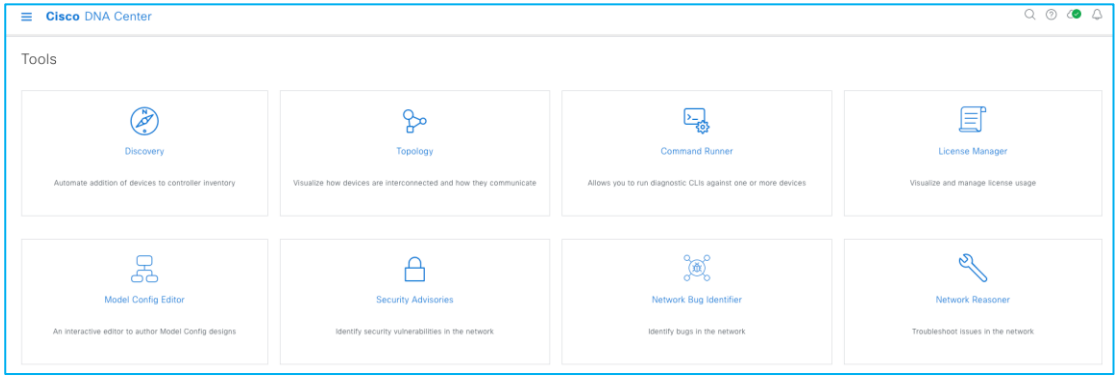
# Cisco DNA Center License Manager

## Manage Cisco DNA Licenses

- Register Smart license
- Change license level
- Change Virtual Account Mapping
- License Reservation




## View Cisco DNA Licenses

- Purchased and Used license count
- License Timeline and Expiry
- Device license details & License history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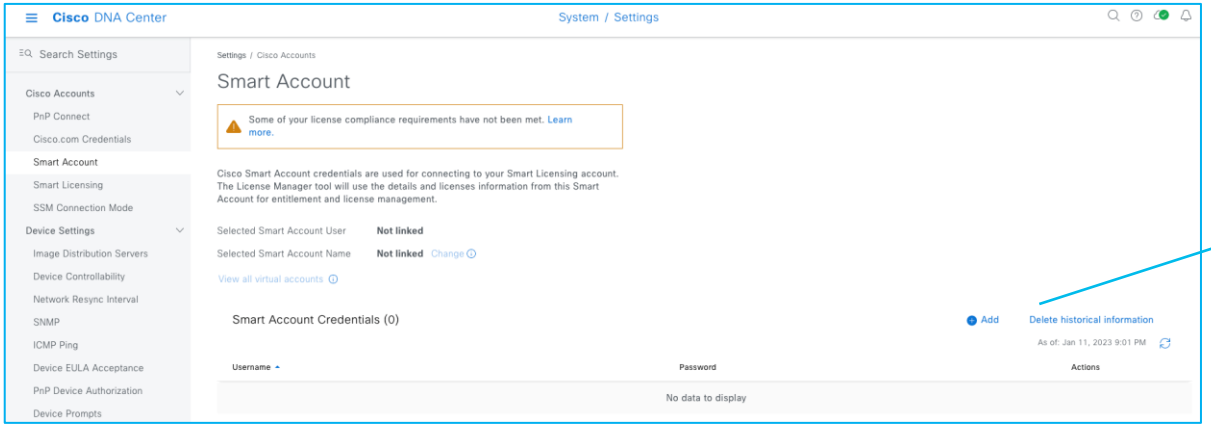
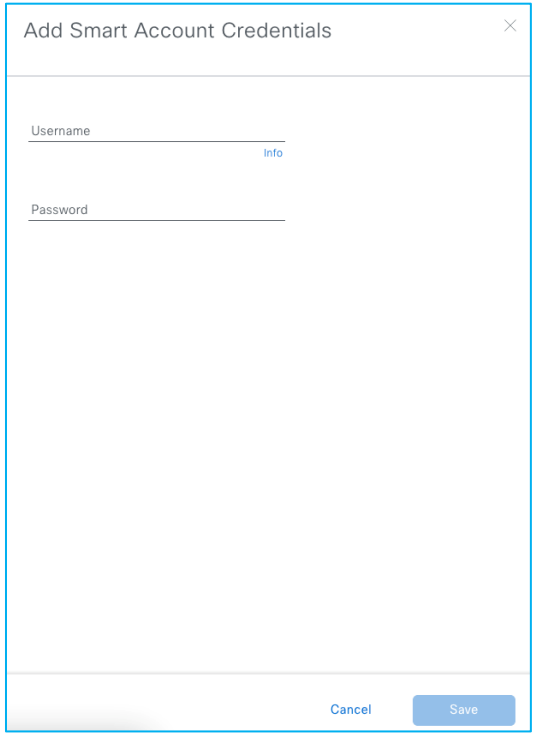
# Prep 1- Configure Smart Account





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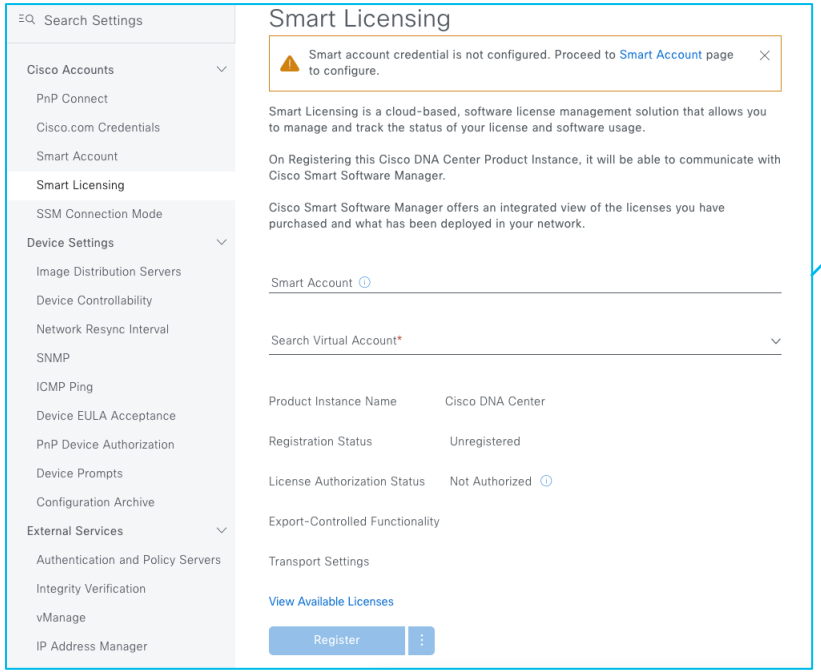
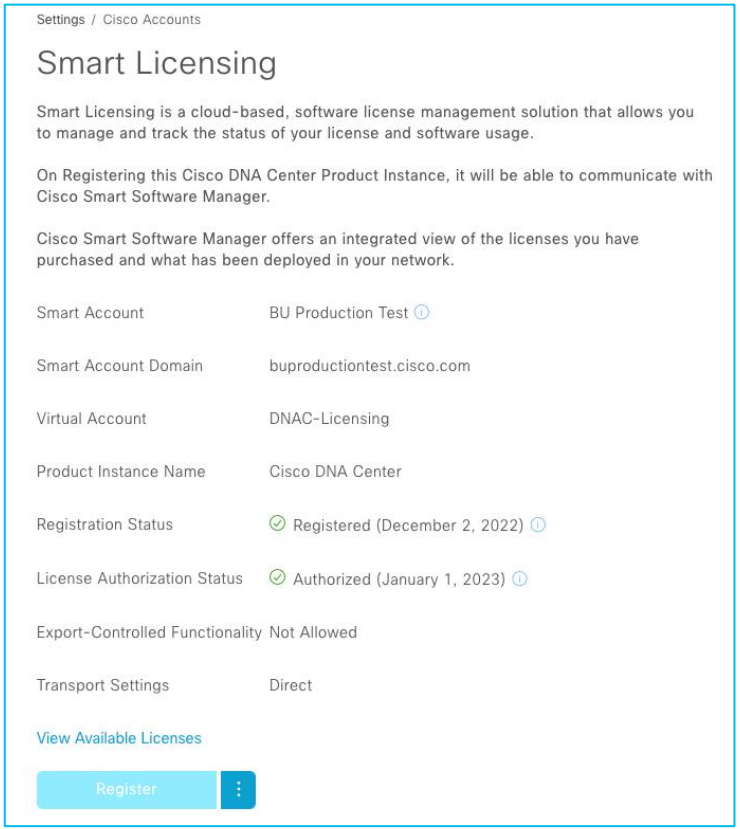
# Prep 2 - Register Smart Account





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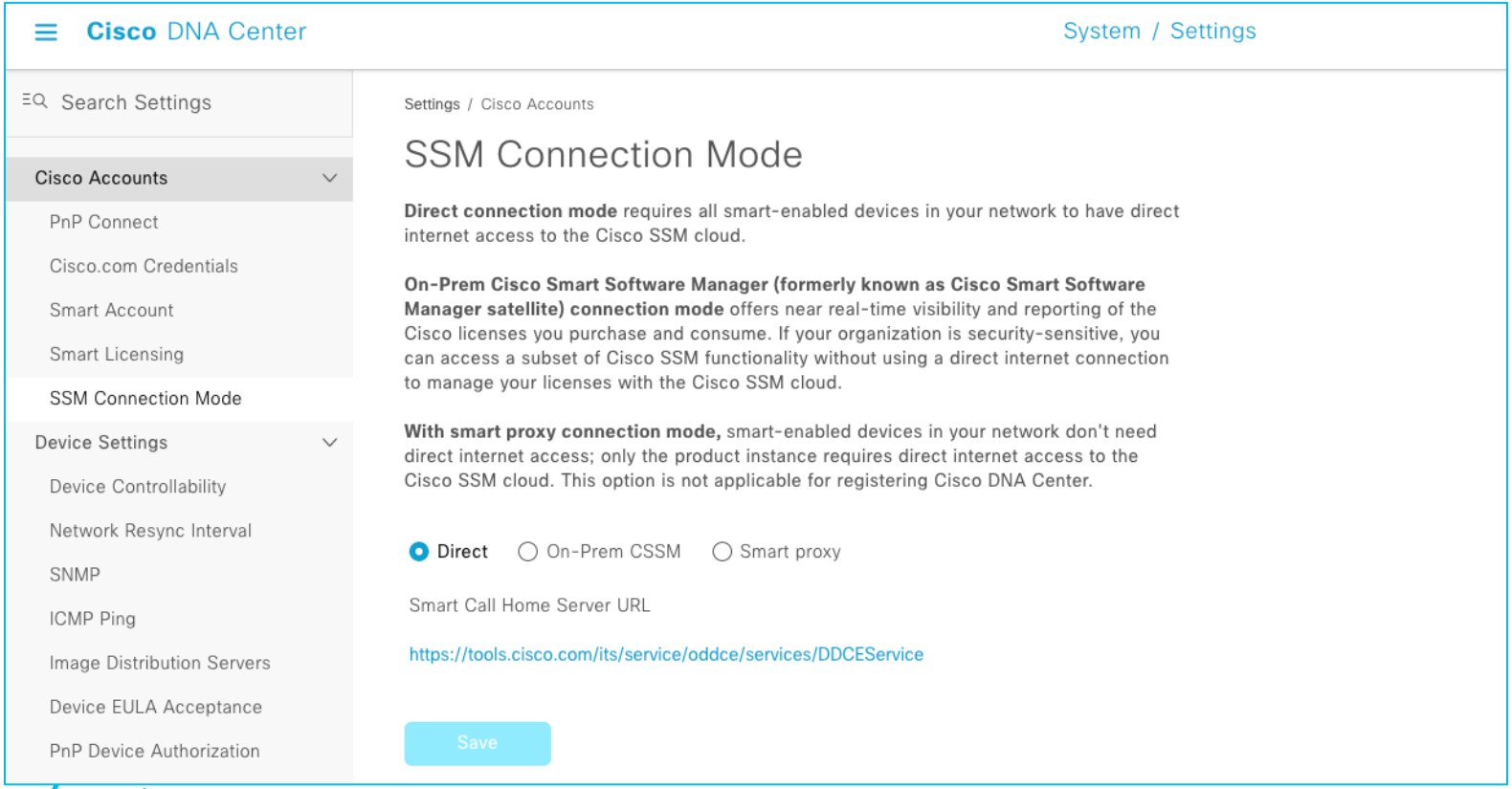
# Prep 3 - CSSM Connection Mode





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# Prep Check- Cisco DNA License Manager

1. Configure Smart Account for Cisco DNA Center
2. Register Smart Account with CSSM
3. CSSM Connection Mode
4. Auto-register smart-enabled devices


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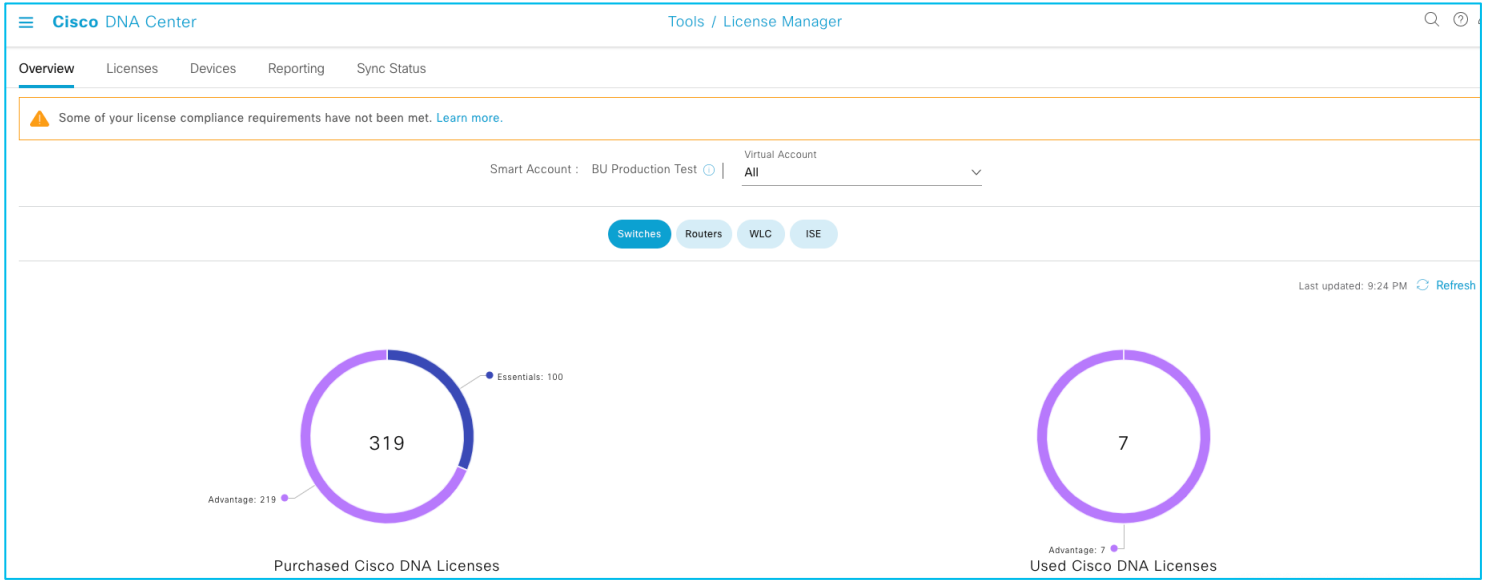
# View Cisco DNA Licenses

# License Manager Dashboard – Overview




- Aggregate purchased and used DNA licenses from Smart Account
- License details for Switches, Routers, Controllers and ISE
- Purchased and used licenses by device family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# License Manager Dashboard – Overview

Switch License Usage

| Device Series | Total Devices | Cisco DNA Licenses Purchased/Used/Available | Network/Legacy Licenses Purchased/Used/Available |
|---|---|---|---|
| Cisco Catalyst 1000 Series Switches | 1 | 0/0/0 | 0/0/0 Legacy |
| Cisco Catalyst 3850 Series Ethernet Stackable Switch | 1 | 50/1/49 | 0/1/1 Legacy |
| Cisco Catalyst 4500 Series Switches | 1 | 0/0/0 | 0/0/0 Legacy |
| Cisco Catalyst 6800 Series Switches | 1 | 0/0/0 | 0/0/0 Legacy |
| Cisco Catalyst 9200 Series Switches | 0 | 35/0/35 | 85/0/85 Network |

- License breakdown by device type
- License Timeline by device type


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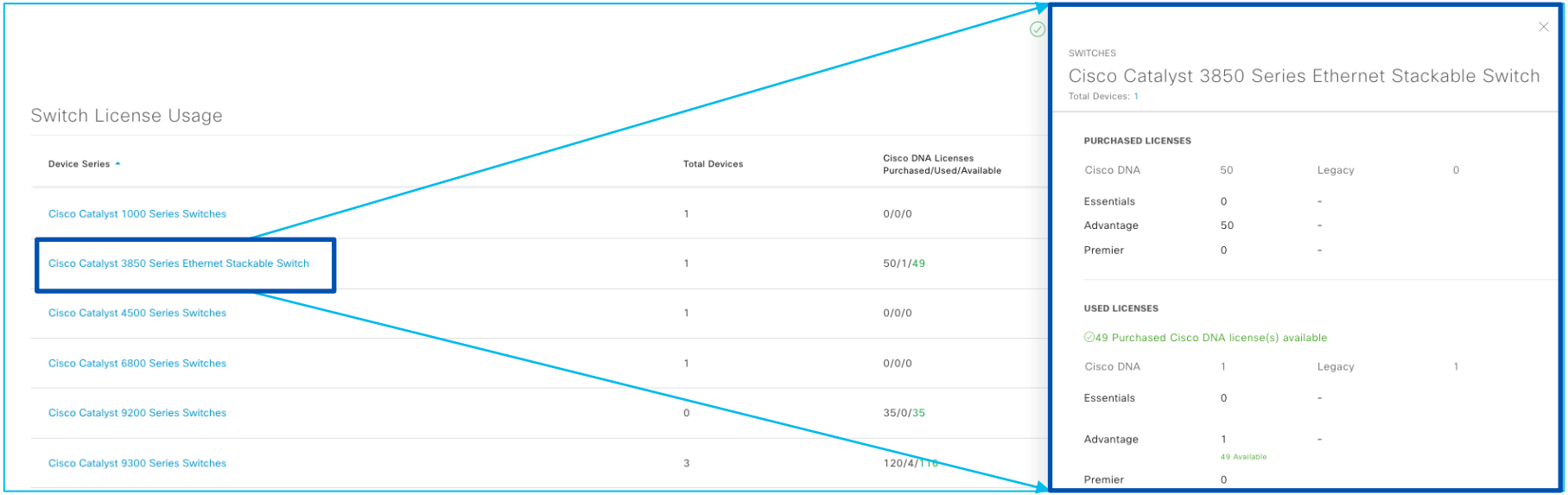
# Breakdown by device type





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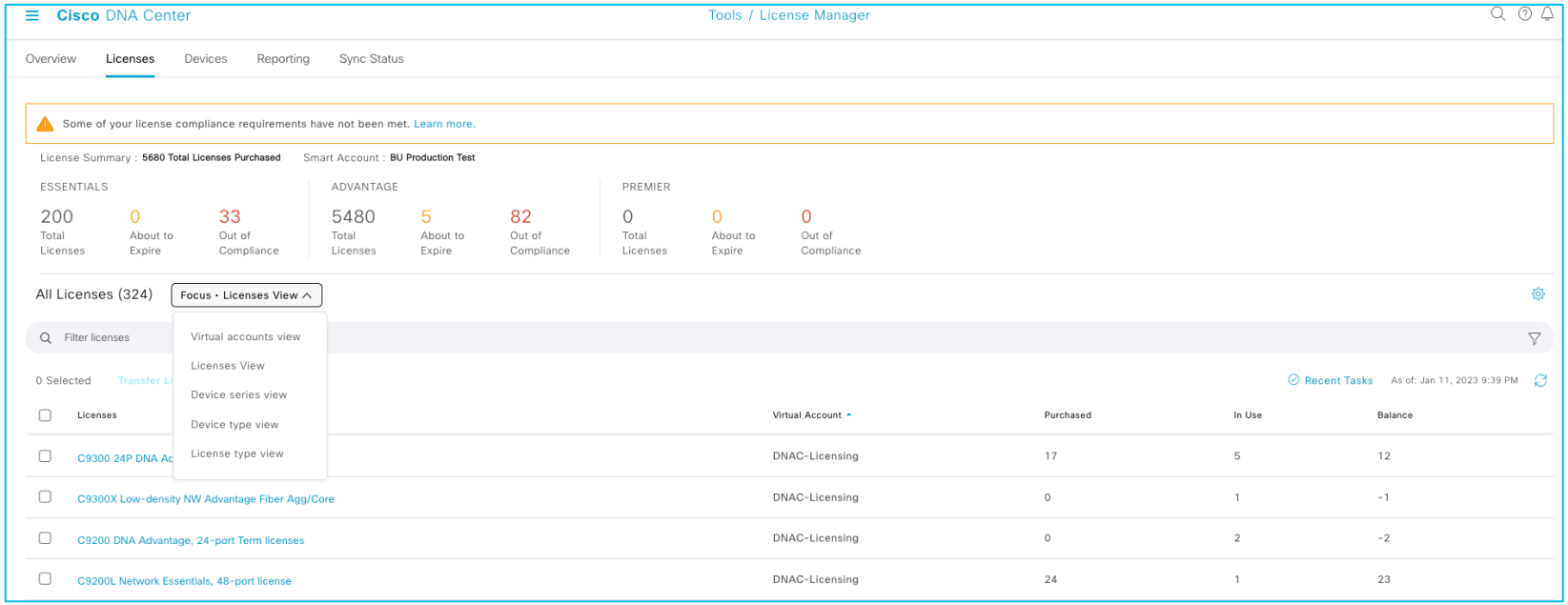
# License Manager Dashboard




- Aggregate count of DNA license types with expiry and compliance info
- License Timeline by device type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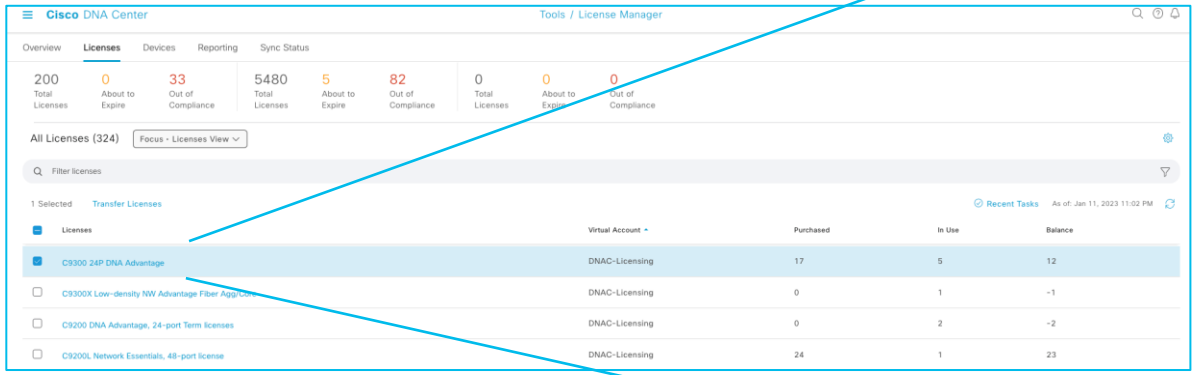
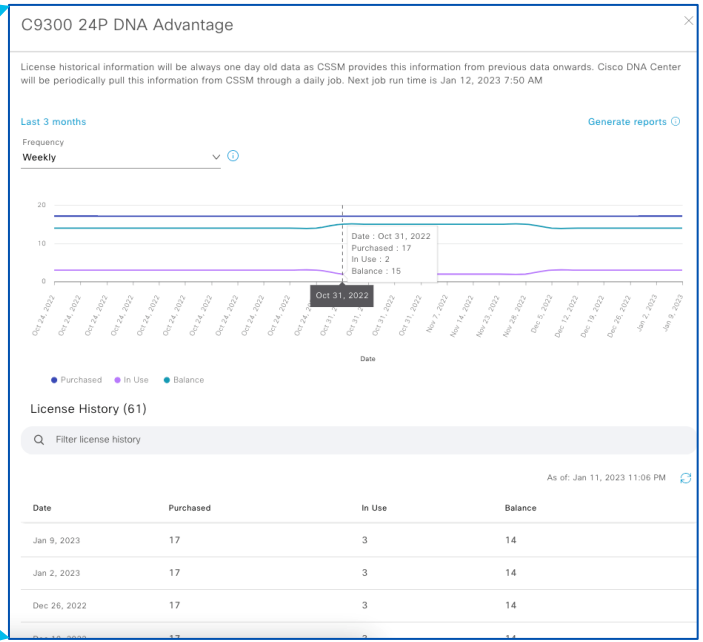
# Historical License Info – License View




- License historical info* – Daily, weekly, monthly frequency
- Timeline graph – Purchased, In Use, Balance Info

*License historical information is always one day old data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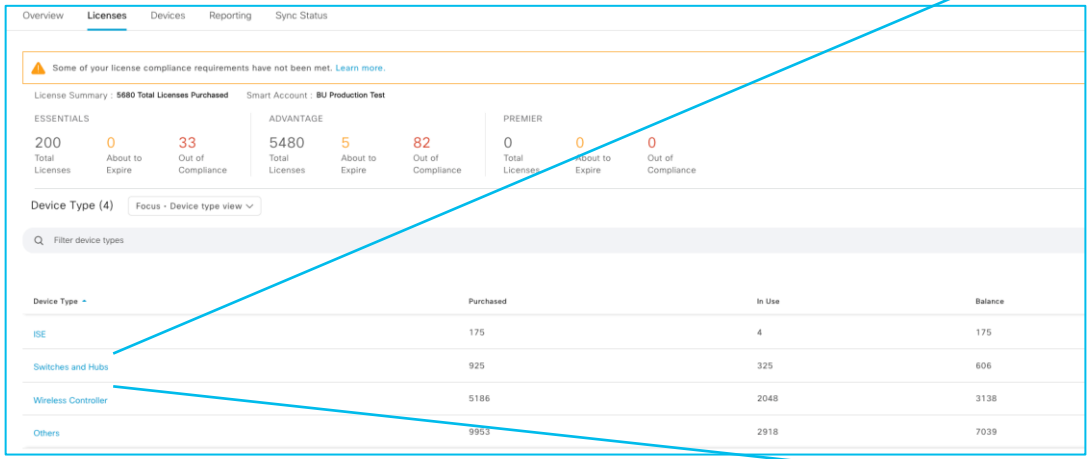
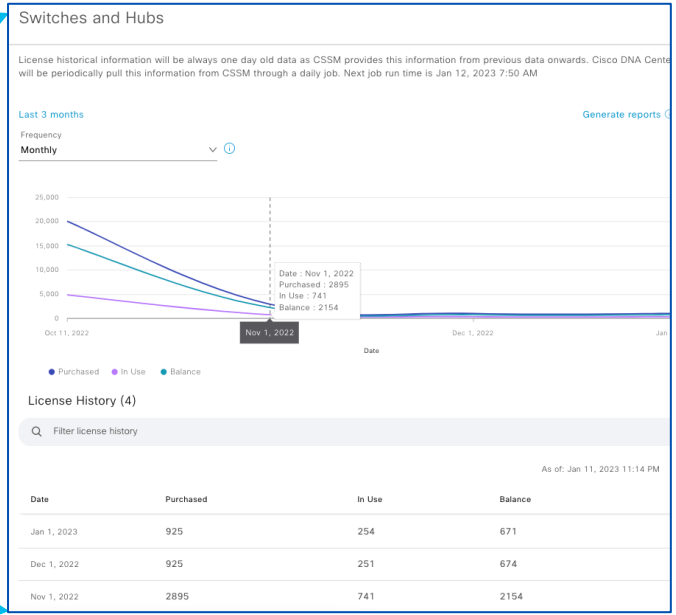
# Historical License Info – Device View




- License historical info* – Daily, weekly, monthly frequency
- Timeline graph – Purchased, In Use, Balance Info

*License historical information is always one day old data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# Manage Cisco DNA Licenses

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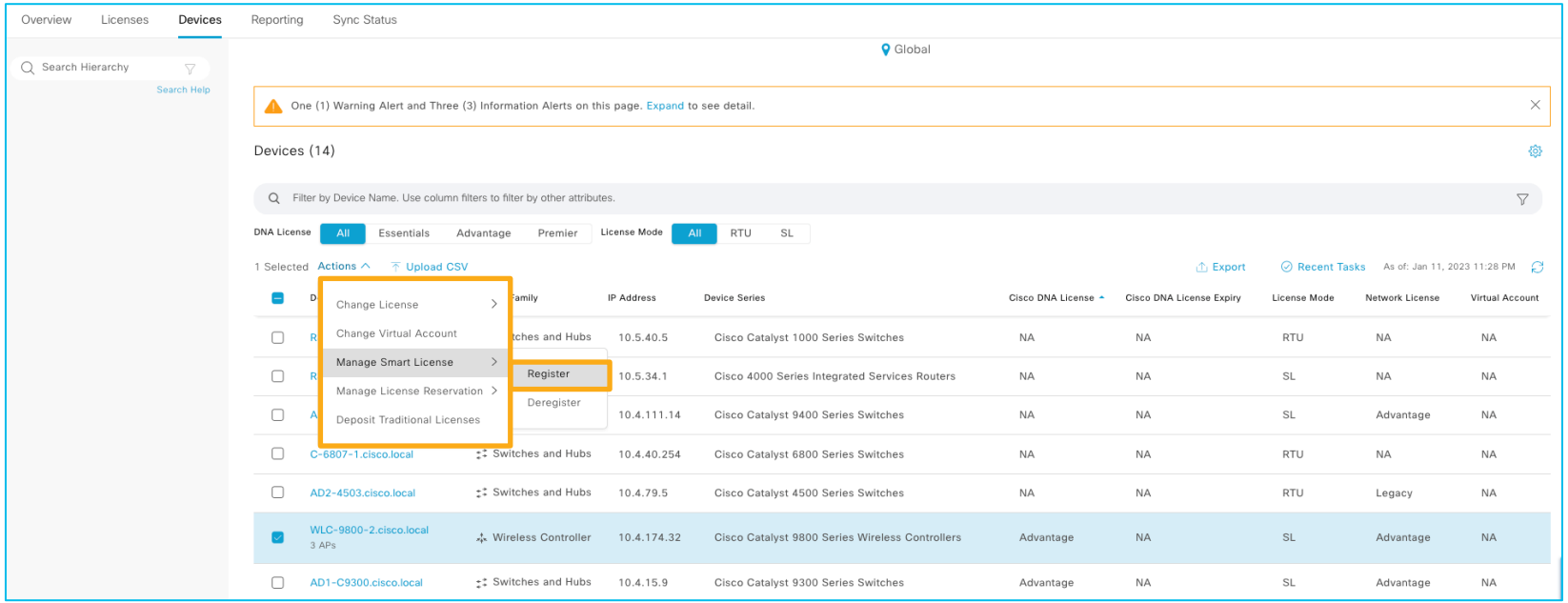
# Register Smart License

- Select device to register
- Auto-register smart enabled devices





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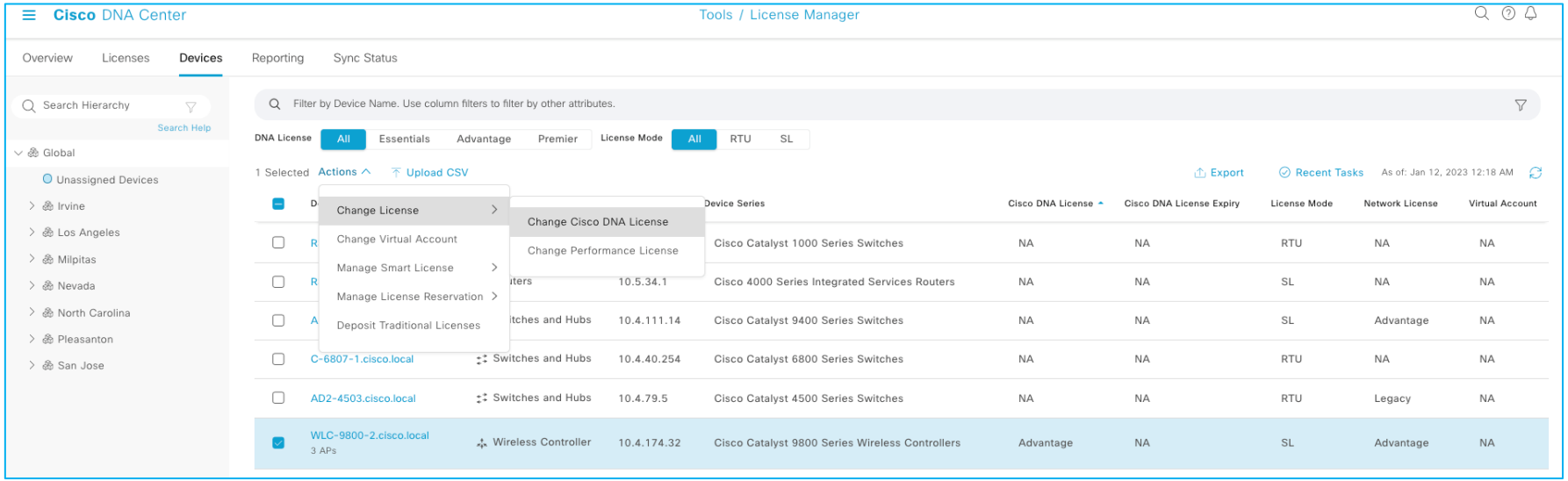
# Change Cisco DNA License Level

- Select device to change license level
- Upgrade or downgrade DNA subscription licenses





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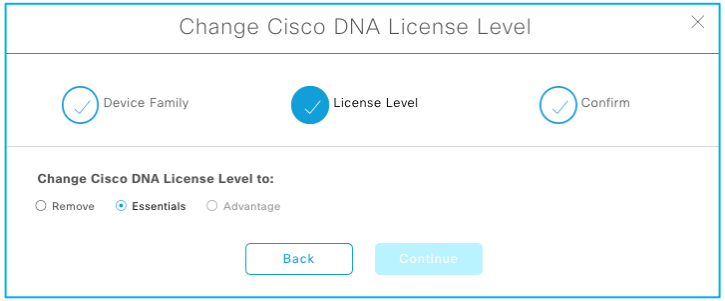
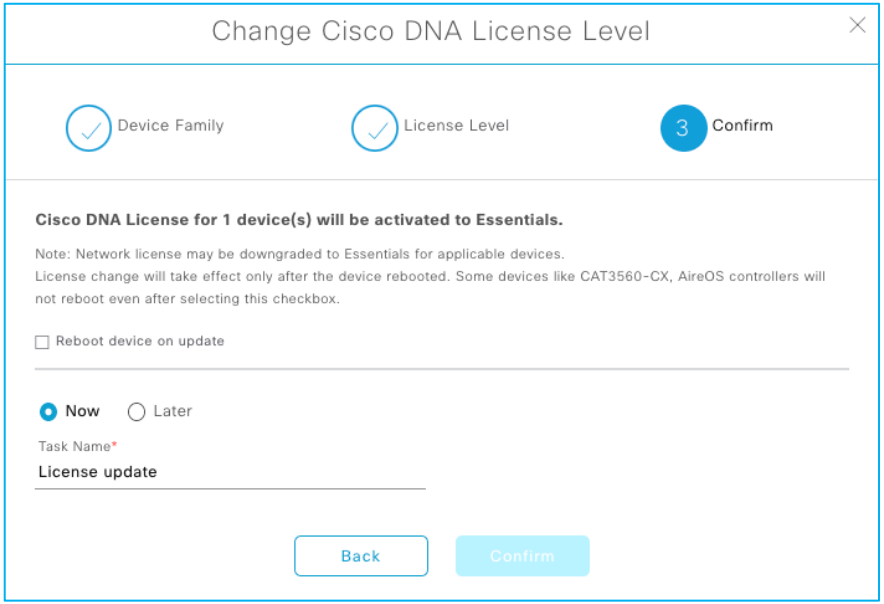
# Change Cisco DNA License Level

- Select desired subscription license
- On-demand or scheduled
- Reboot on update for changes to be in effect





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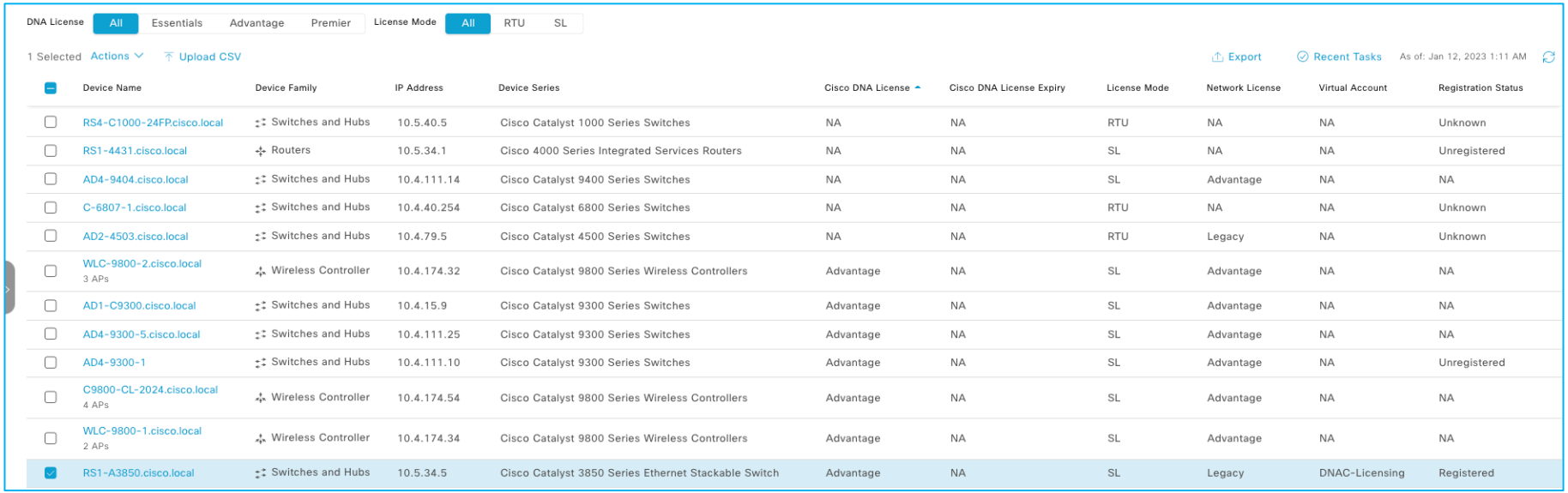
# Change Virtual Account

- Devices are managed with mapped Virtual Accounts
- Option to change VA




| Device Name | Device Family | IP Address | Device Series | Cisco DNA License | Cisco DNA License Expiry | License Mode | Network License | Virtual Account | Registration Status |
|---|---|---|---|---|---|---|---|---|---|
| RS4-C1000-24FP.cisco.local | Switches and Hubs | 10.5.40.5 | Cisco Catalyst 1000 Series Switches | NA | NA | RTU | NA | NA | Unknown |
| RS1-4431.cisco.local | Routers | 10.5.34.1 | Cisco 4000 Series Integrated Services Routers | NA | NA | SL | NA | NA | Unregistered |
| AD4-9404.cisco.local | Switches and Hubs | 10.4.111.14 | Cisco Catalyst 9400 Series Switches | NA | NA | SL | Advantage | NA | NA |
| C-6807-1.cisco.local | Switches and Hubs | 10.4.40.254 | Cisco Catalyst 6800 Series Switches | NA | NA | RTU | NA | NA | Unknown |
| AD2-4503.cisco.local | Switches and Hubs | 10.4.79.5 | Cisco Catalyst 4500 Series Switches | NA | NA | RTU | Legacy | NA | Unknown |
| WLC-9800-2.cisco.local 3 APs | Wireless Controller | 10.4.174.32 | Cisco Catalyst 9800 Series Wireless Controllers | Advantage | NA | SL | Advantage | NA | NA |
| AD1-C9300.cisco.local | Switches and Hubs | 10.4.15.9 | Cisco Catalyst 9300 Series Switches | Advantage | NA | SL | Advantage | NA | NA |
| AD4-9300-5.cisco.local | Switches and Hubs | 10.4.111.25 | Cisco Catalyst 9300 Series Switches | Advantage | NA | SL | Advantage | NA | NA |
| AD4-9300-1 | Switches and Hubs | 10.4.111.10 | Cisco Catalyst 9300 Series Switches | Advantage | NA | SL | Advantage | NA | Unregistered |
| C9800-CL-2024.cisco.local 4 APs | Wireless Controller | 10.4.174.54 | Cisco Catalyst 9800 Series Wireless Controllers | Advantage | NA | SL | Advantage | NA | NA |
| WLC-9800-1.cisco.local 2 APs | Wireless Controller | 10.4.174.34 | Cisco Catalyst 9800 Series Wireless Controllers | Advantage | NA | SL | Advantage | NA | NA |
| RS1-A3850.cisco.local | Switches and Hubs | 10.5.34.5 | Cisco Catalyst 3850 Series Ethernet Stackable Switch | Advantage | NA | SL | Legacy | DNAC-Licensing | Registered |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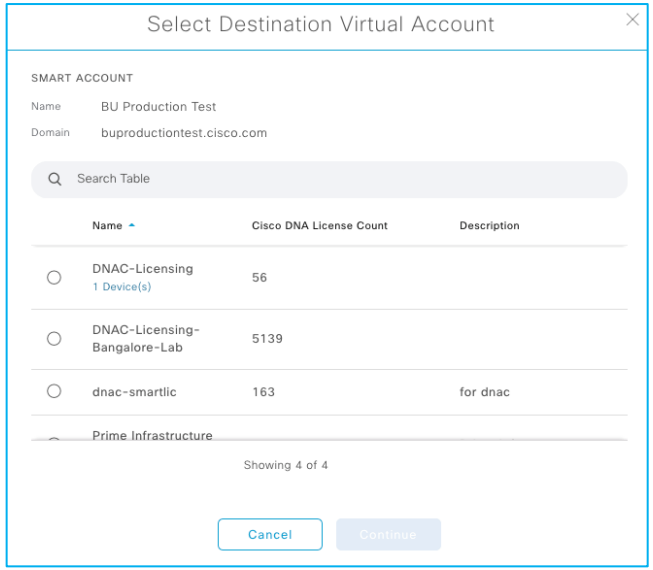
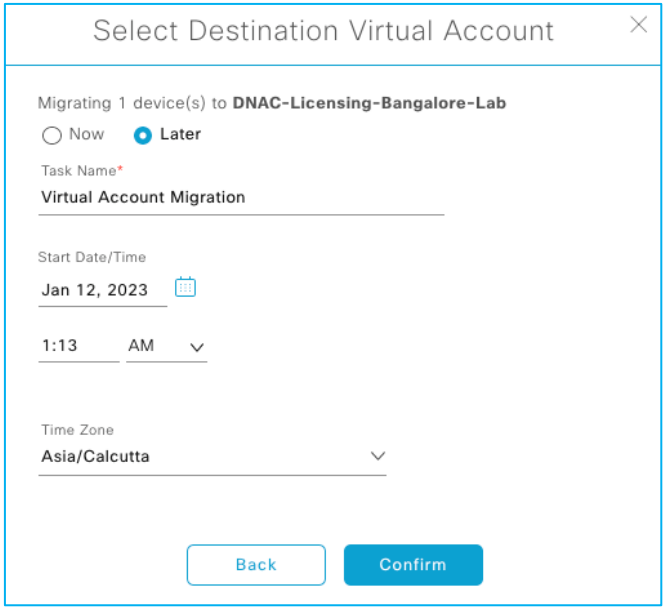
# Change Virtual Account

- Desired VA selection
- On-demand or scheduled change





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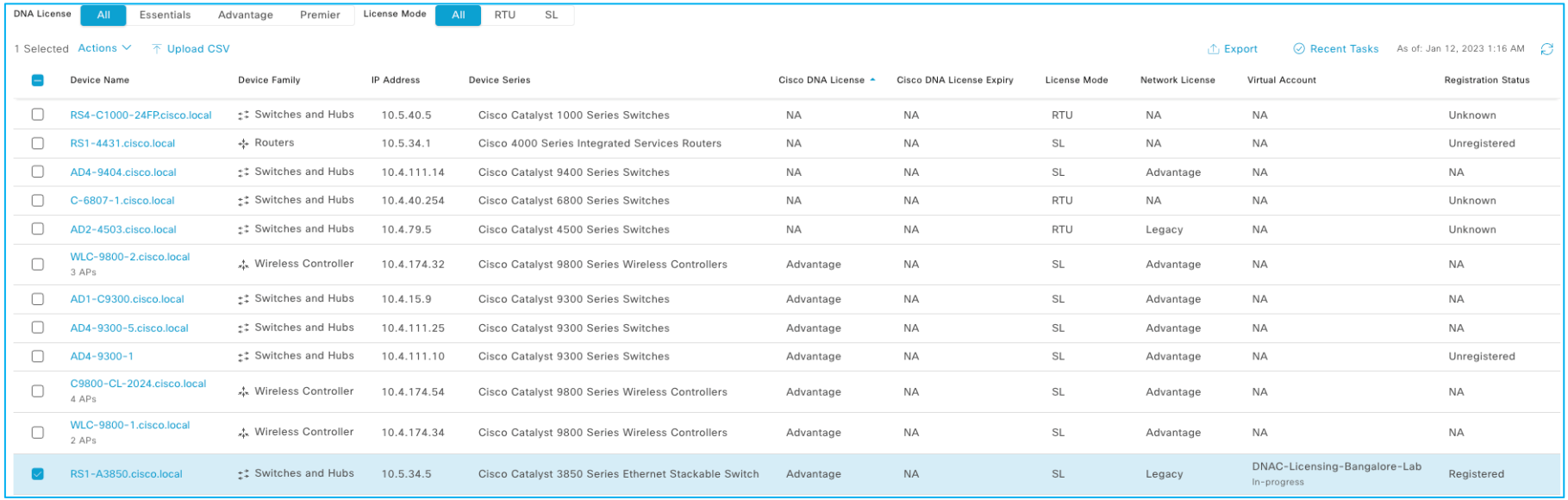
# Change Virtual Account

- Devices mapped to target Virtual Accounts



DNA License: All | Essentials | Advantage | Premier
License Mode: All | RTU | SL

1 Selected | Actions | Upload CSV | Export | Recent Tasks | As of: Jan 12, 2023 1:16 AM

| Device Name | Device Family | IP Address | Device Series | Cisco DNA License | Cisco DNA License Expiry | License Mode | Network License | Virtual Account | Registration Status |
|---|---|---|---|---|---|---|---|---|---|
| RS4-C1000-24FP.cisco.local | Switches and Hubs | 10.5.40.5 | Cisco Catalyst 1000 Series Switches | NA | NA | RTU | NA | NA | Unknown |
| RS1-4431.cisco.local | Routers | 10.5.34.1 | Cisco 4000 Series Integrated Services Routers | NA | NA | SL | NA | NA | Unregistered |
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| C-6807-1.cisco.local | Switches and Hubs | 10.4.40.254 | Cisco Catalyst 6800 Series Switches | NA | NA | RTU | NA | NA | Unknown |
| AD2-4503.cisco.local | Switches and Hubs | 10.4.79.5 | Cisco Catalyst 4500 Series Switches | NA | NA | RTU | Legacy | NA | Unknown |
| WLC-9800-2.cisco.local 3 APs | Wireless Controller | 10.4.174.32 | Cisco Catalyst 9800 Series Wireless Controllers | Advantage | NA | SL | Advantage | NA | NA |
| AD1-C9300.cisco.local | Switches and Hubs | 10.4.15.9 | Cisco Catalyst 9300 Series Switches | Advantage | NA | SL | Advantage | NA | NA |
| AD4-9300-5.cisco.local | Switches and Hubs | 10.4.111.25 | Cisco Catalyst 9300 Series Switches | Advantage | NA | SL | Advantage | NA | NA |
| AD4-9300-1 | Switches and Hubs | 10.4.111.10 | Cisco Catalyst 9300 Series Switches | Advantage | NA | SL | Advantage | NA | Unregistered |
| C9800-CL-2024.cisco.local 4 APs | Wireless Controller | 10.4.174.54 | Cisco Catalyst 9800 Series Wireless Controllers | Advantage | NA | SL | Advantage | NA | NA |
| WLC-9800-1.cisco.local 2 APs | Wireless Controller | 10.4.174.34 | Cisco Catalyst 9800 Series Wireless Controllers | Advantage | NA | SL | Advantage | NA | NA |
| RS1-A3850.cisco.local | Switches and Hubs | 10.5.34.5 | Cisco Catalyst 3850 Series Ethernet Stackable Switch | Advantage | NA | SL | Legacy | DNAC-Licensing-Bangalore-Lab In-progress | Registered |


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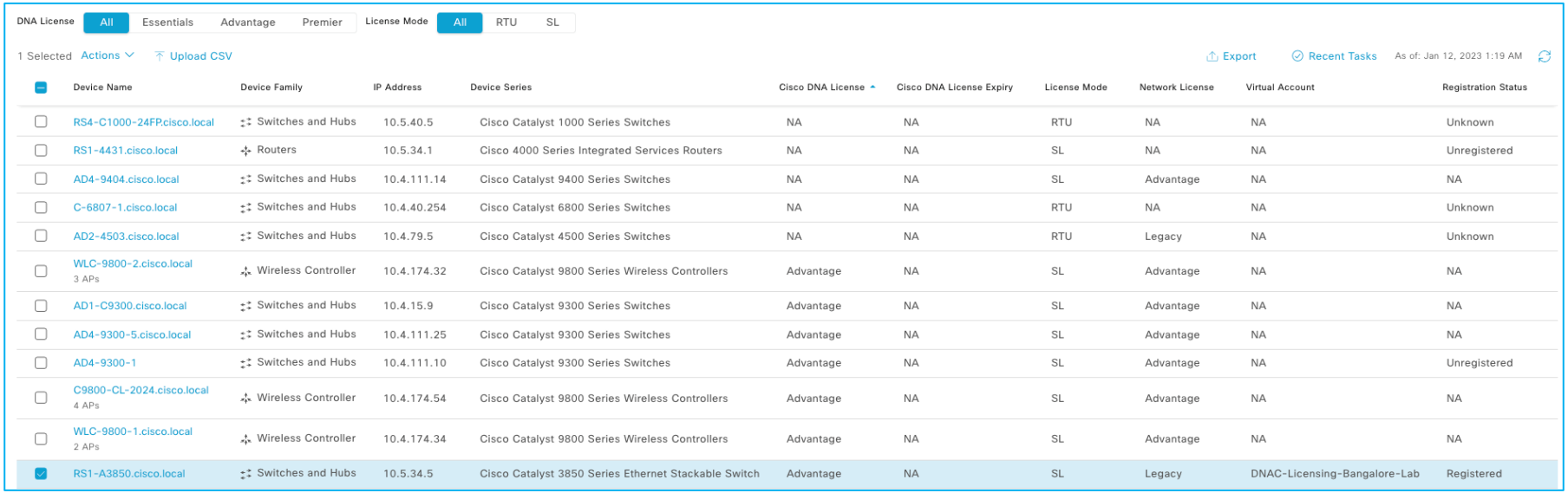
- Device registered to Smart Account



DNA License: All | Essentials | Advantage | Premier
License Mode: All | RTU | SL

1 Selected Actions Upload CSV Export Recent Tasks As of: Jan 12, 2023 1:19 AM

| Device Name | Device Family | IP Address | Device Series | Cisco DNA License | Cisco DNA License Expiry | License Mode | Network License | Virtual Account | Registration Status |
|---|---|---|---|---|---|---|---|---|---|
| RS4-C1000-24FP.cisco.local | Switches and Hubs | 10.5.40.5 | Cisco Catalyst 1000 Series Switches | NA | NA | RTU | NA | NA | Unknown |
| RS1-4431.cisco.local | Routers | 10.5.34.1 | Cisco 4000 Series Integrated Services Routers | NA | NA | SL | NA | NA | Unregistered |
| AD4-9404.cisco.local | Switches and Hubs | 10.4.111.14 | Cisco Catalyst 9400 Series Switches | NA | NA | SL | Advantage | NA | NA |
| C-6807-1.cisco.local | Switches and Hubs | 10.4.40.254 | Cisco Catalyst 6800 Series Switches | NA | NA | RTU | NA | NA | Unknown |
| AD2-4503.cisco.local | Switches and Hubs | 10.4.79.5 | Cisco Catalyst 4500 Series Switches | NA | NA | RTU | Legacy | NA | Unknown |
| WLC-9800-2.cisco.local 3 APs | Wireless Controller | 10.4.174.32 | Cisco Catalyst 9800 Series Wireless Controllers | Advantage | NA | SL | Advantage | NA | NA |
| AD1-C9300.cisco.local | Switches and Hubs | 10.4.15.9 | Cisco Catalyst 9300 Series Switches | Advantage | NA | SL | Advantage | NA | NA |
| AD4-9300-5.cisco.local | Switches and Hubs | 10.4.111.25 | Cisco Catalyst 9300 Series Switches | Advantage | NA | SL | Advantage | NA | NA |
| AD4-9300-1 | Switches and Hubs | 10.4.111.10 | Cisco Catalyst 9300 Series Switches | Advantage | NA | SL | Advantage | NA | Unregistered |
| C9800-CL-2024.cisco.local 4 APs | Wireless Controller | 10.4.174.54 | Cisco Catalyst 9800 Series Wireless Controllers | Advantage | NA | SL | Advantage | NA | NA |
| WLC-9800-1.cisco.local 2 APs | Wireless Controller | 10.4.174.34 | Cisco Catalyst 9800 Series Wireless Controllers | Advantage | NA | SL | Advantage | NA | NA |
| RS1-A3850.cisco.local | Switches and Hubs | 10.5.34.5 | Cisco Catalyst 3850 Series Ethernet Stackable Switch | Advantage | NA | SL | Legacy | DNAC-Licensing-Bangalore-Lab | Registered |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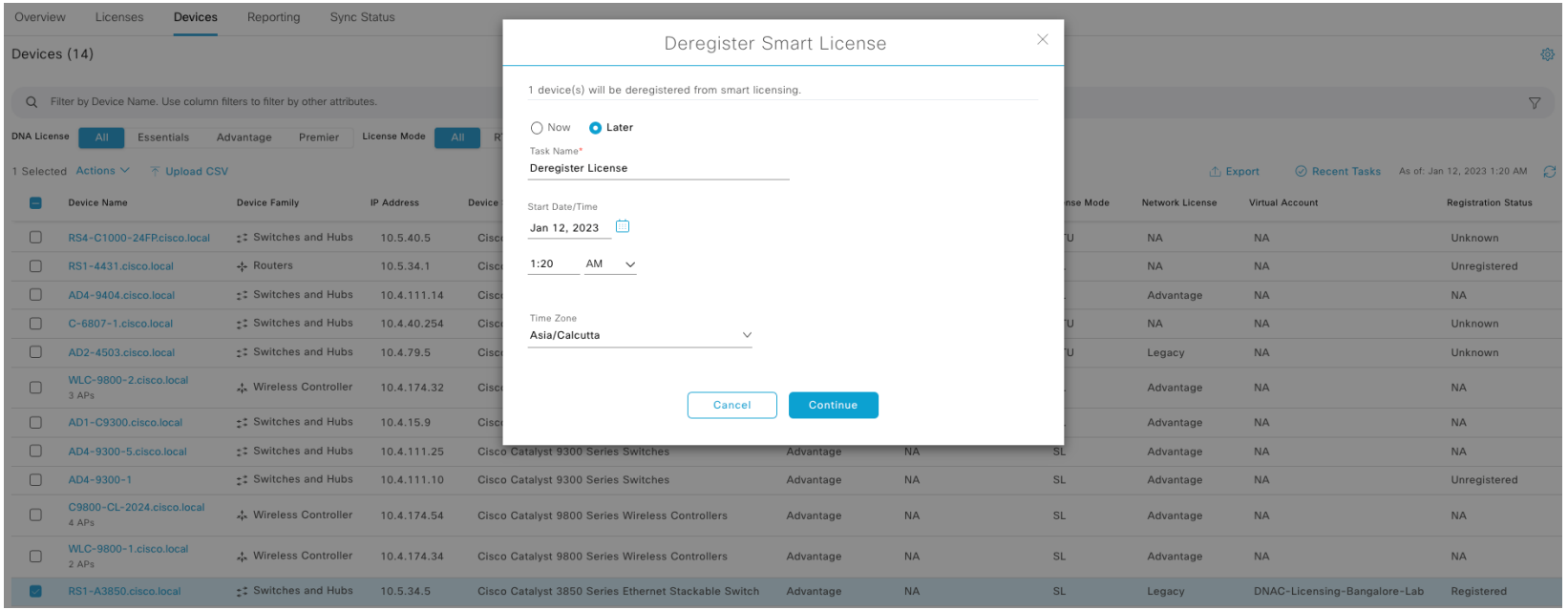



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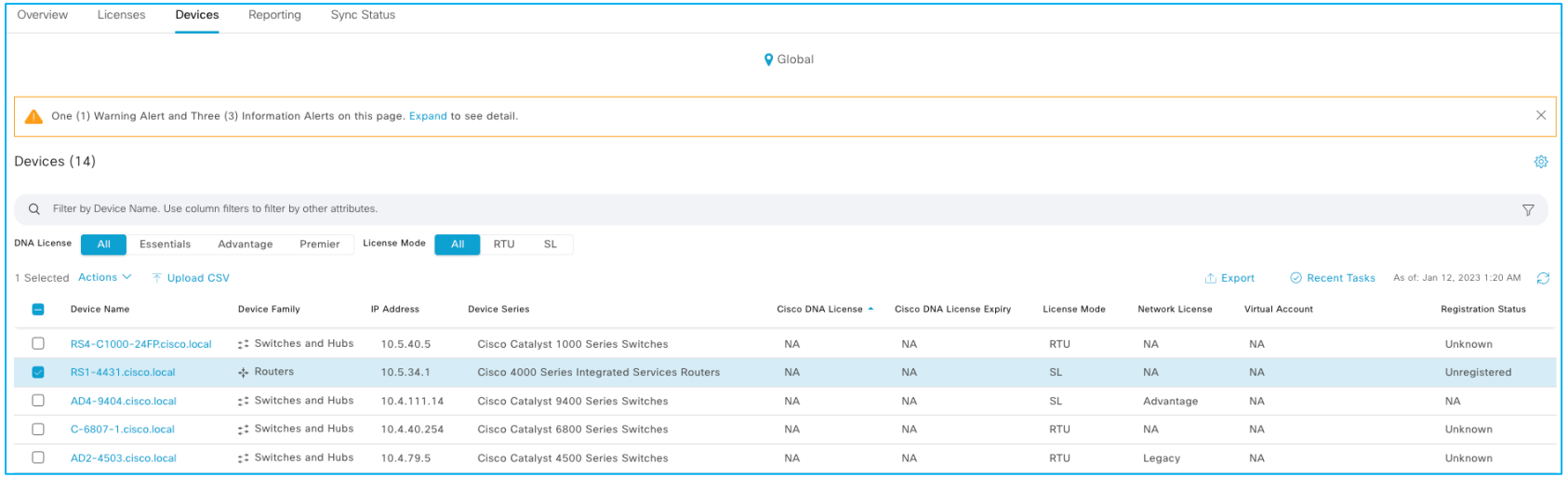



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# License Reservation

# License Reservation

- In highly secure networks with limited internet access and cannot regularly sync with CSSM
- Specific License Reservation (SLR) and Permanent License Reservation (PLR)
- Securely reserve licenses from CSSM using an API-based workflow
- Requires one-time connectivity to CSSM
- If no connectivity to CSSM ( Air-Gapped network), follow manual SLR/PLR workflow in CSSM


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# License Reservation

- Specific License Reservation
  - Install a node-locked license file (SLR authorization code) on a product instance
  - Enable individual licenses

- Permanent License Reservation
  - Install authorization code that enables all licensed features on product

- Supported Platforms: Catalyst IE 3400, 3650, 3850, 9300, 9400 , 9500 series switches and 9800 wireless controllers in SL unregistered mode or SLR/PLR is active


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# Demo

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- All surveys can be taken in the Cisco Events Mobile App or by logging in to the Session Catalog and clicking the " Attendee Dashboard" at https://www.ciscolive.com/emea/learn/sessions/session-catalog.html


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# Thank you

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