Cisco Catalyst Center: Built-In Integrations for Streamlined Network Operations

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BRKOPS-2609

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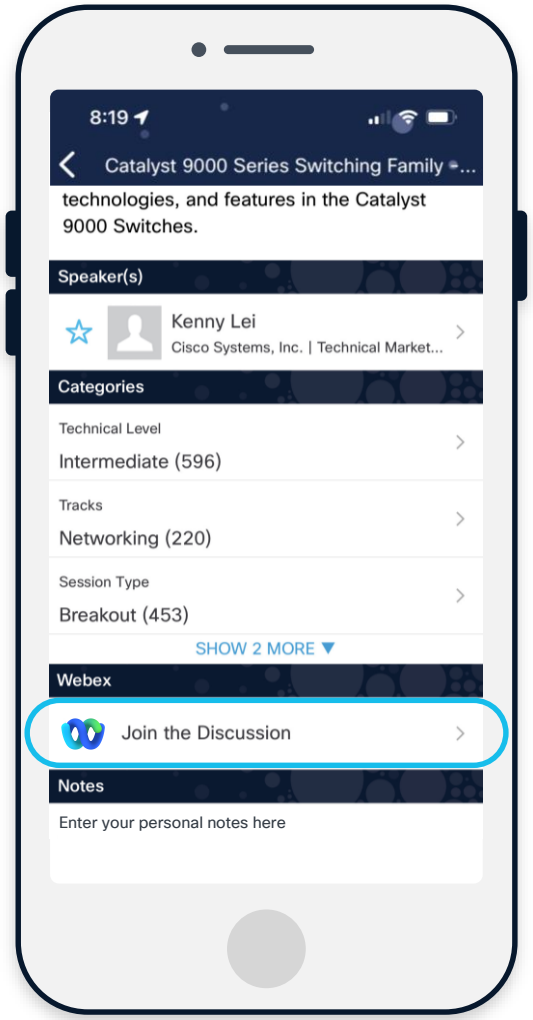

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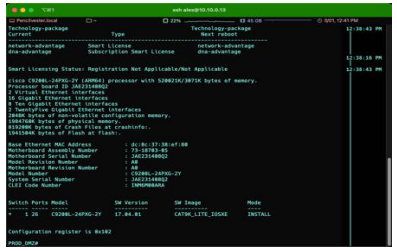
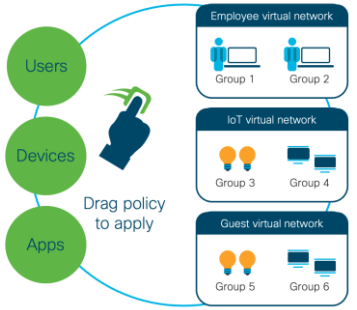
User Experience Matters





Location Tracking

Security

Application Issues

Ticketing

Here

To Here

User Experience

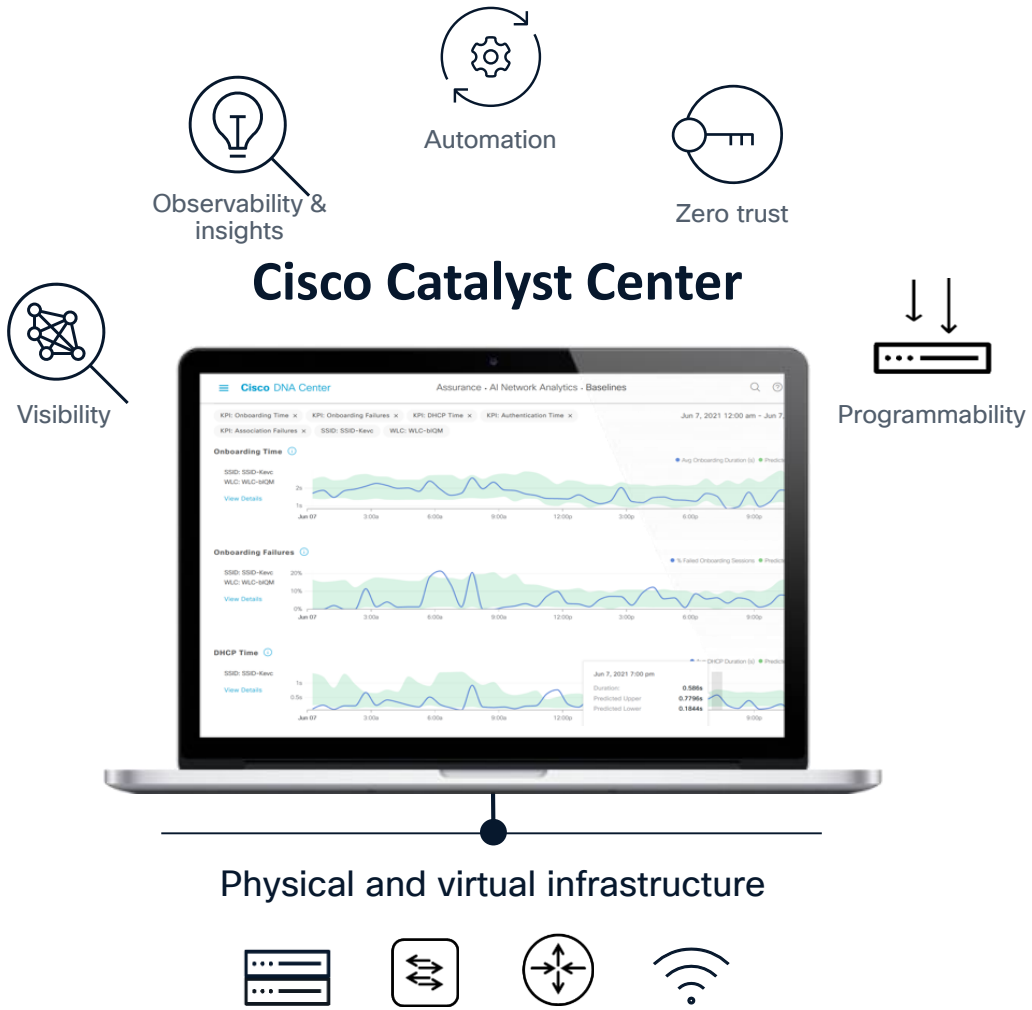
Goals:

- Security
- Visibility
- Accuracy

It's about **Simplifying Networking Operations**, with **Less** driving **Effort**.

Simplifying Network Operations

Facilitating the jobs your teams need to do



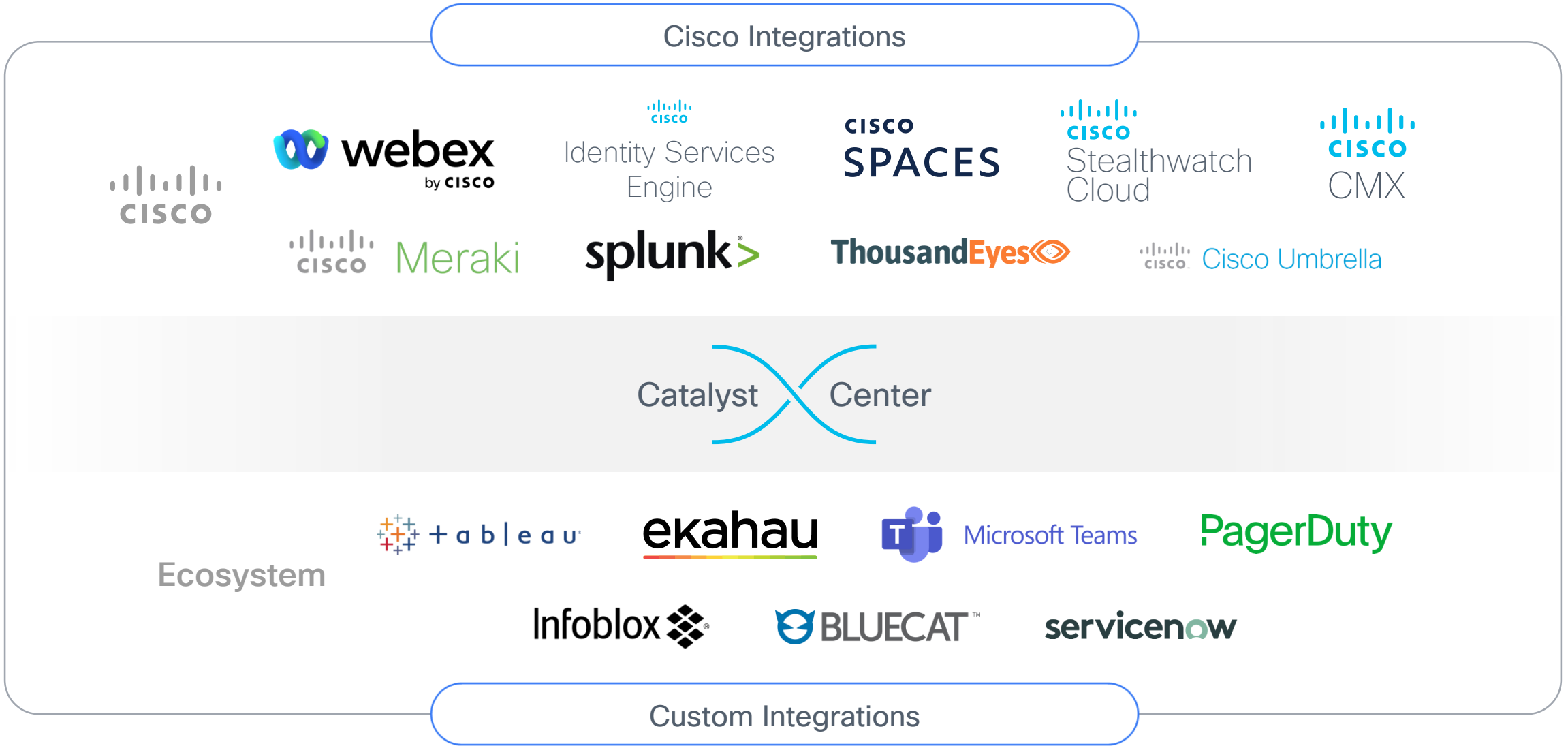
NetOps — **Automation and workflows** simplify building and maintaining large scale networks. AI/MR **streamlines and simplifies complex tasks**

AIOps — AI/ML and predictive insights for **proactive optimization** to ensure consistent performance and reliability and the **optimal user experience**

SecOps — AI/ML and DPI Identify and classify endpoints, enforce security policies and mitigate threats for a **complete workplace zero trust solution**

DevOps — Mature APIs, SDKs, and **closed-loop integrations**, untangle the complexities of interconnecting third party systems

Catalyst Center out-of-the-box API Integrations



Agenda

Integrations for Network Management

- Ekahau
- Cisco Spaces
- Cisco ISE
- Secure Analytics - Group based policy analytics & AI Endpoint analytics

Integrations for (Network) Assurance/Monitoring

- MS Teams
- Thousand Eyes
- SD-AVC (Infoblox DNS A-Records, NBAR Cloud, MS Feeds)

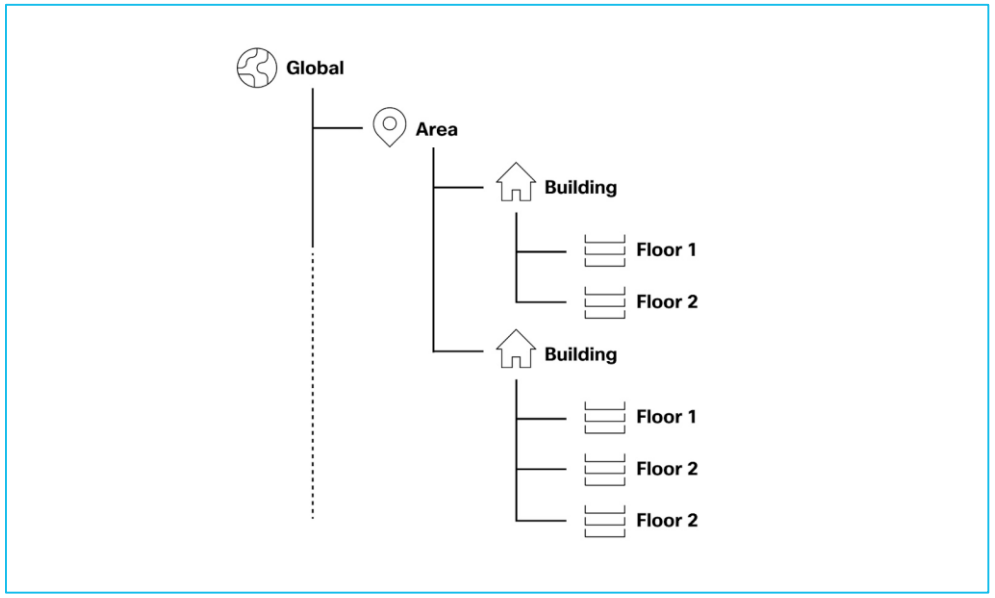
Integrations to Simplify Network Operations

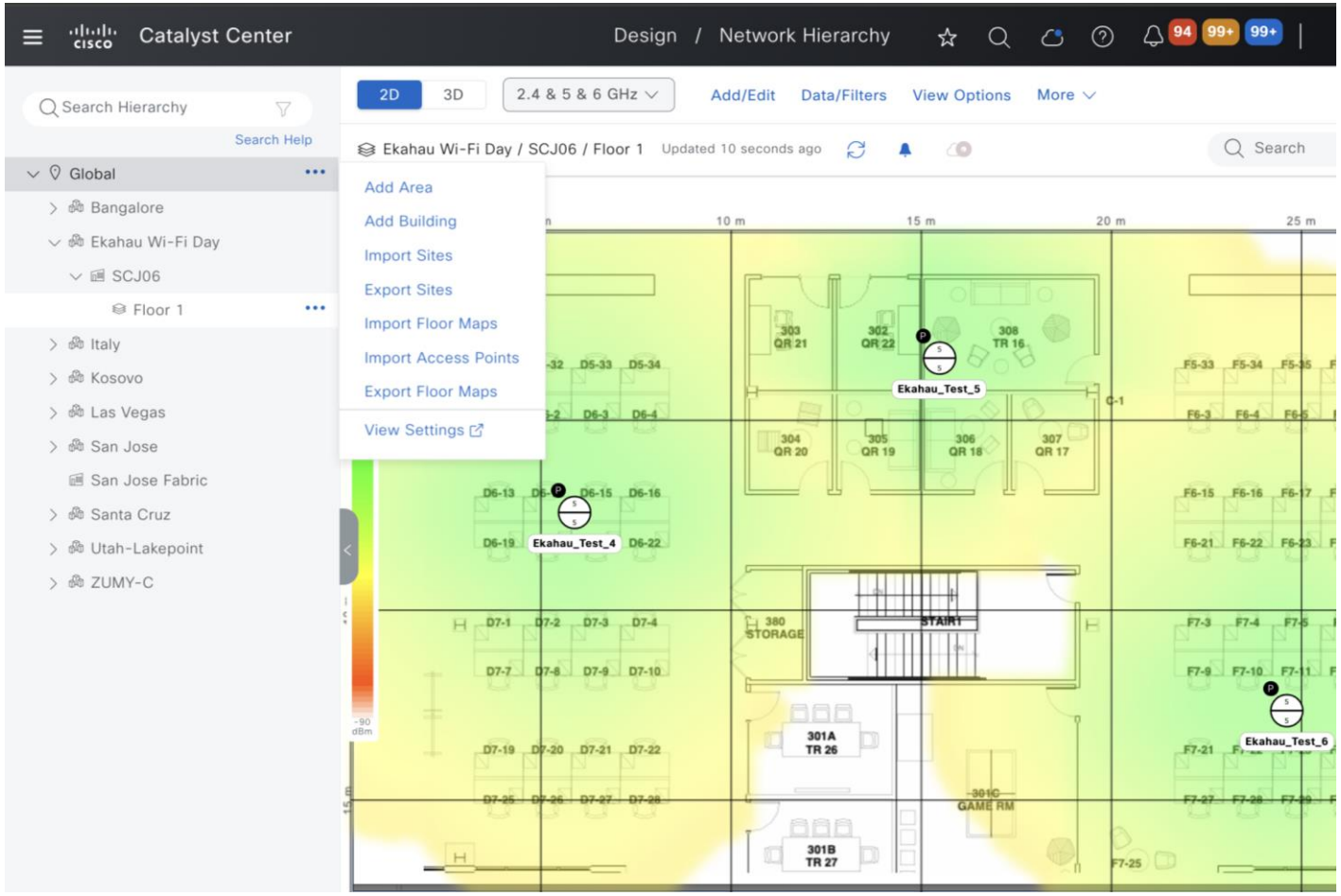
- ITSM (Change Management and Event Management)
- Event Notifications (SNMP/Syslog/SMTP/Webhooks)

Integrations for Network Management

Creating Site Hierarchy

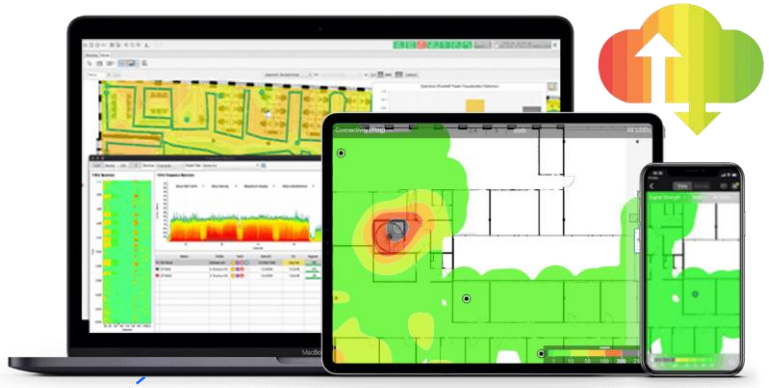
Create the structure and framework of your network, including the physical topology, network settings, and device type profiles that you can apply to devices throughout your network.



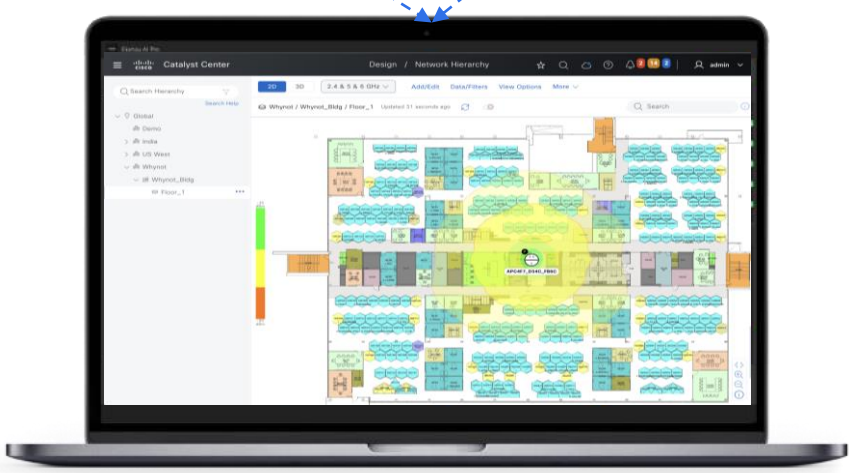


Importing Ekahau Projects to Catalyst Center

Ekahau Pro



Ekahau Cloud



Catalyst Center

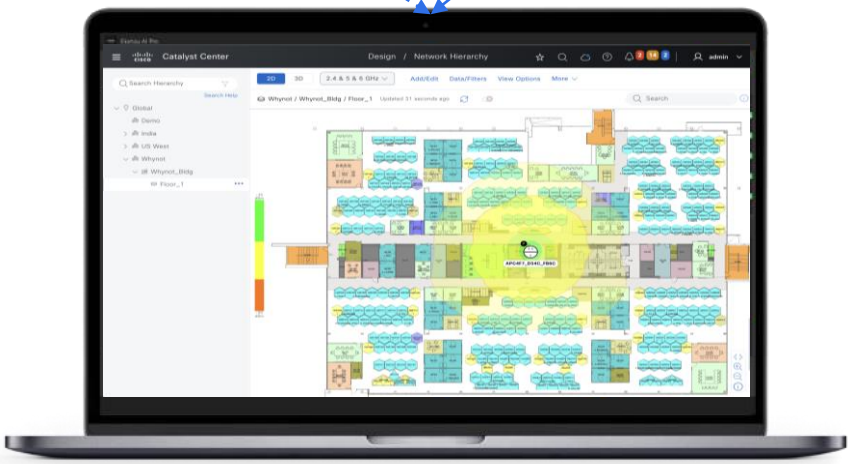
Ekahau Pro version 11 – Catalyst Center version 2.3.5.x

Ekahau cloud - Catalyst Center version 2.3.7.x

Importing Ekahau Projects to Catalyst Center

Ekahau Pro

Ekahau Cloud

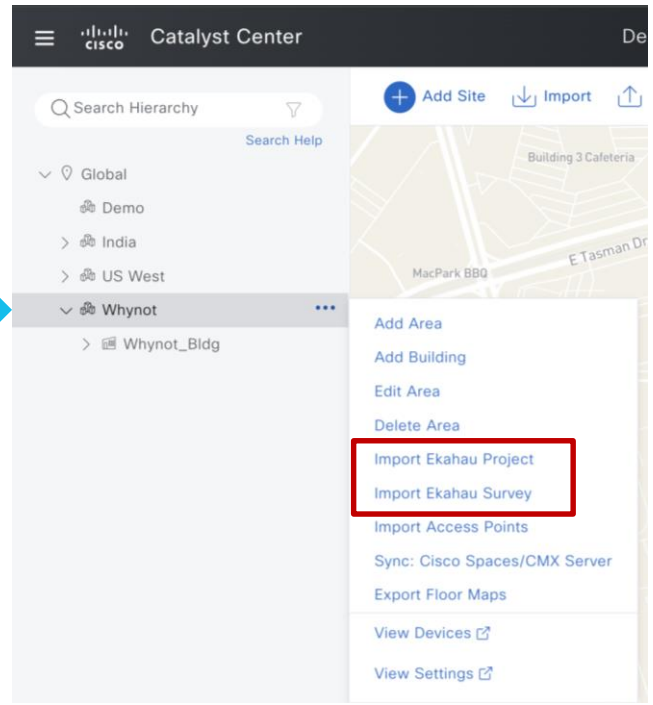


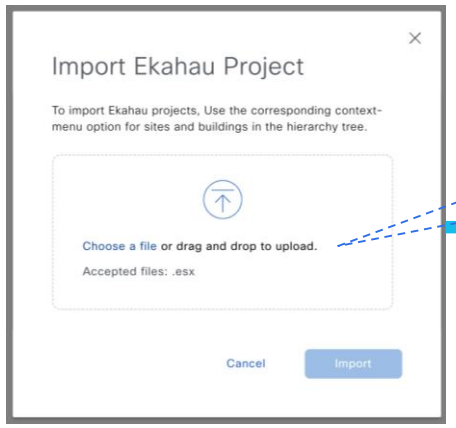
Catalyst Center

Ekahau Pro – Area name and Building Name created in Catalyst Center must be same as Ekahau Project Name or Building Name in Ekahau Project

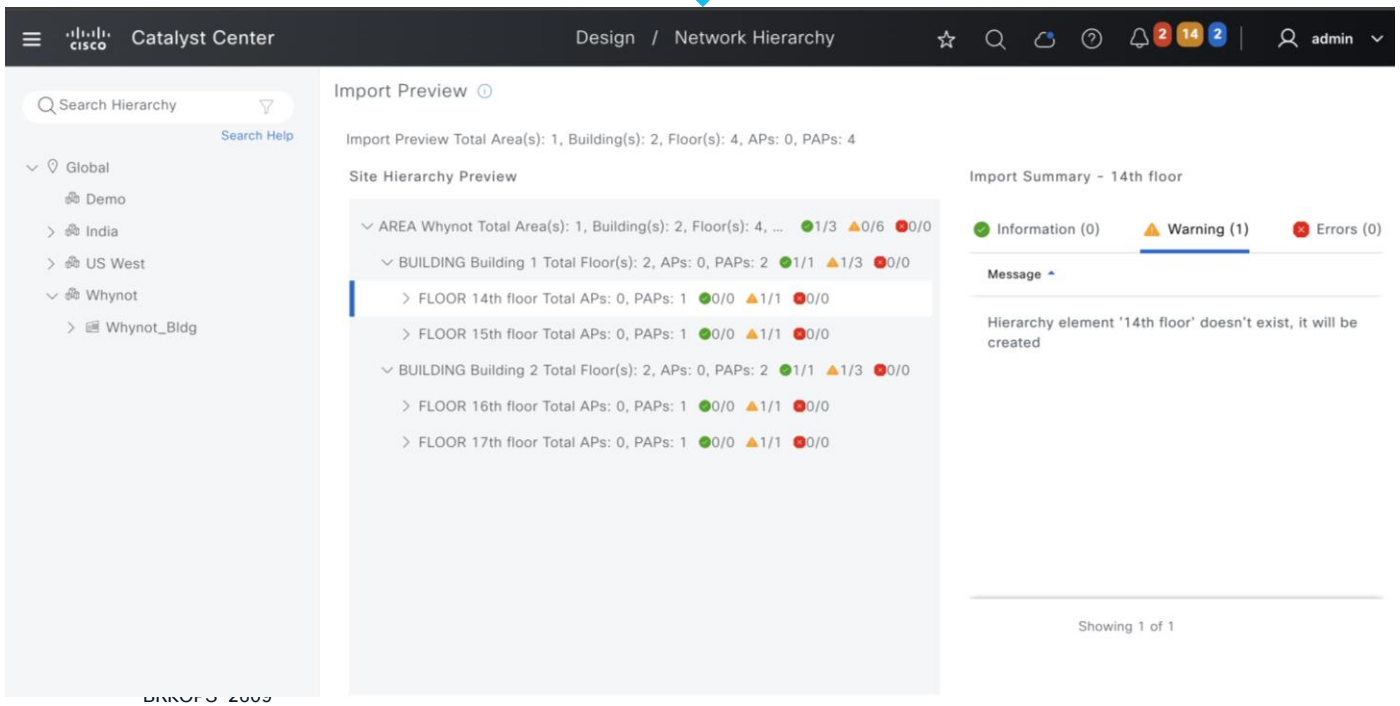
Ekahau Cloud – Mention Area/Sub-Area/Building name before exporting the Ekahau Project

Importing Ekahau Projects to Catalyst Center





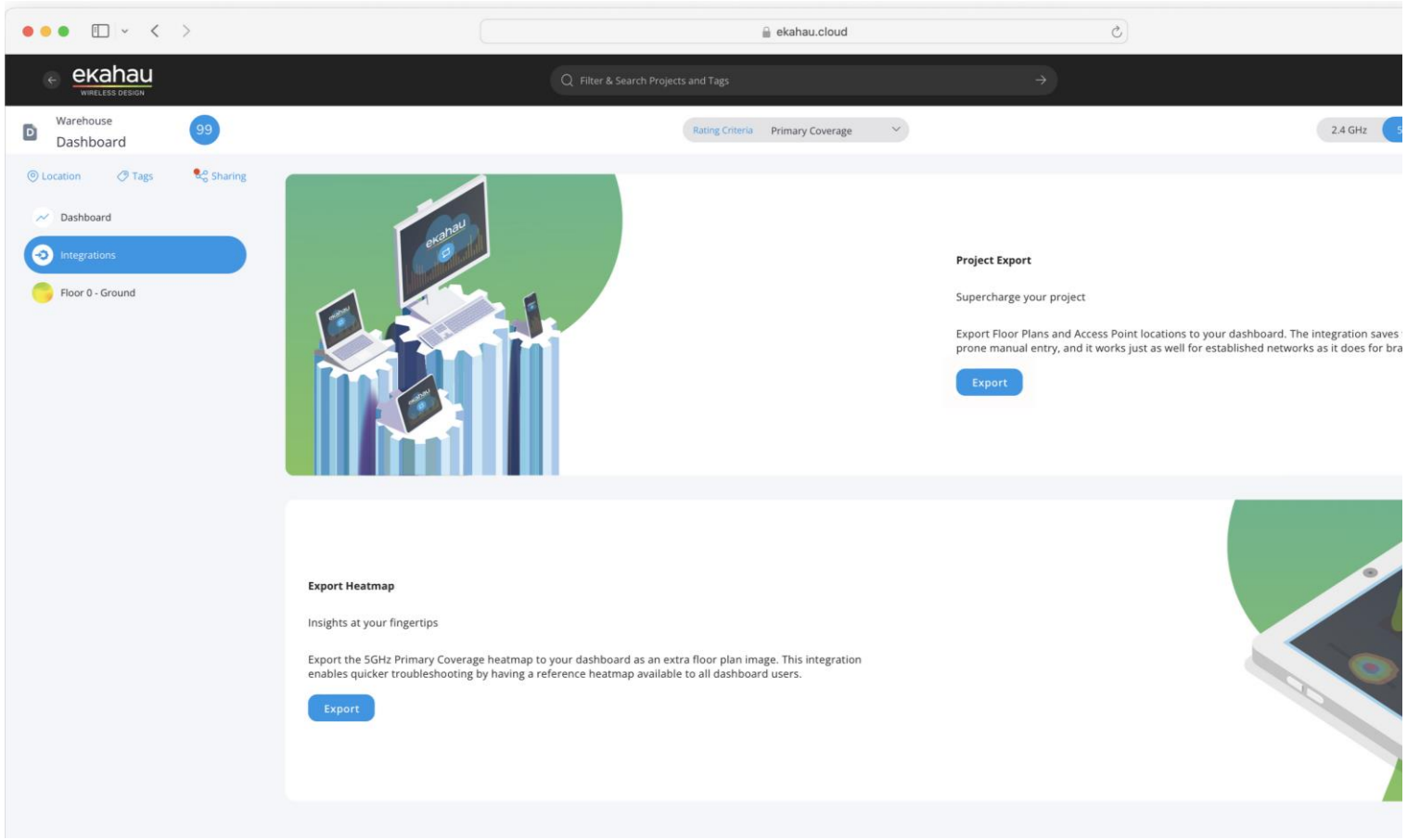
Drag and Drop Ekahau files (.esx) to import

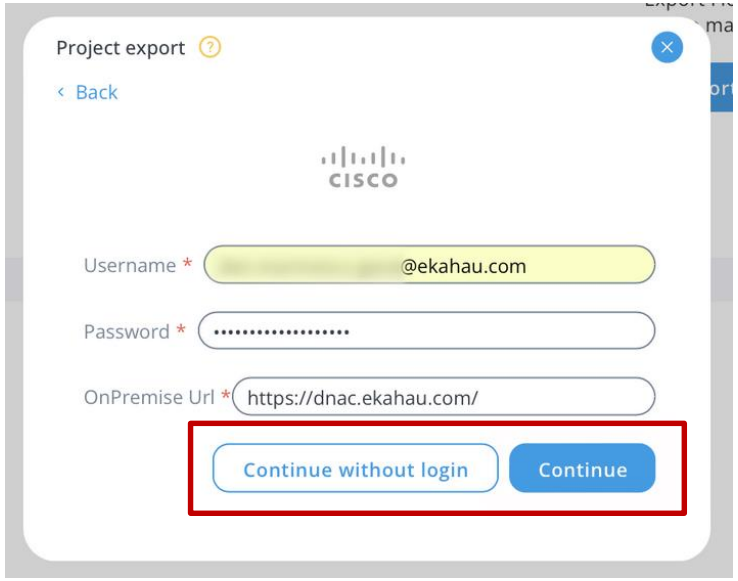


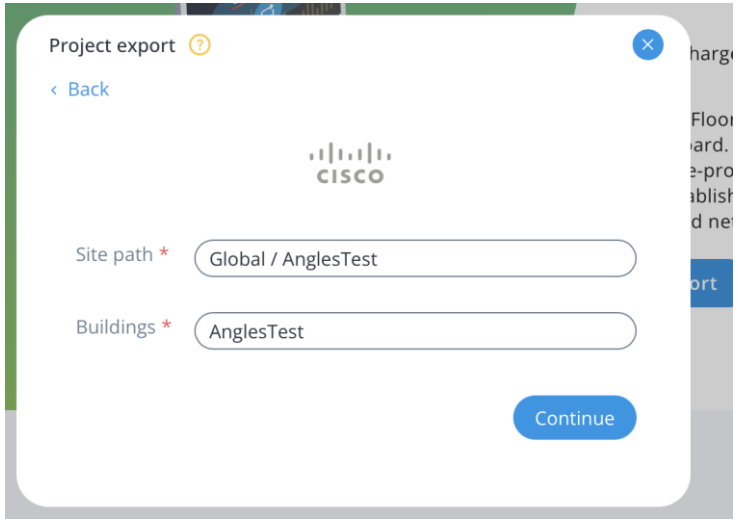
To import Ekahau Projects, select an Area/Building and Import Ekahau Project

Importing Ekahau Projects to Catalyst Center

Using API method

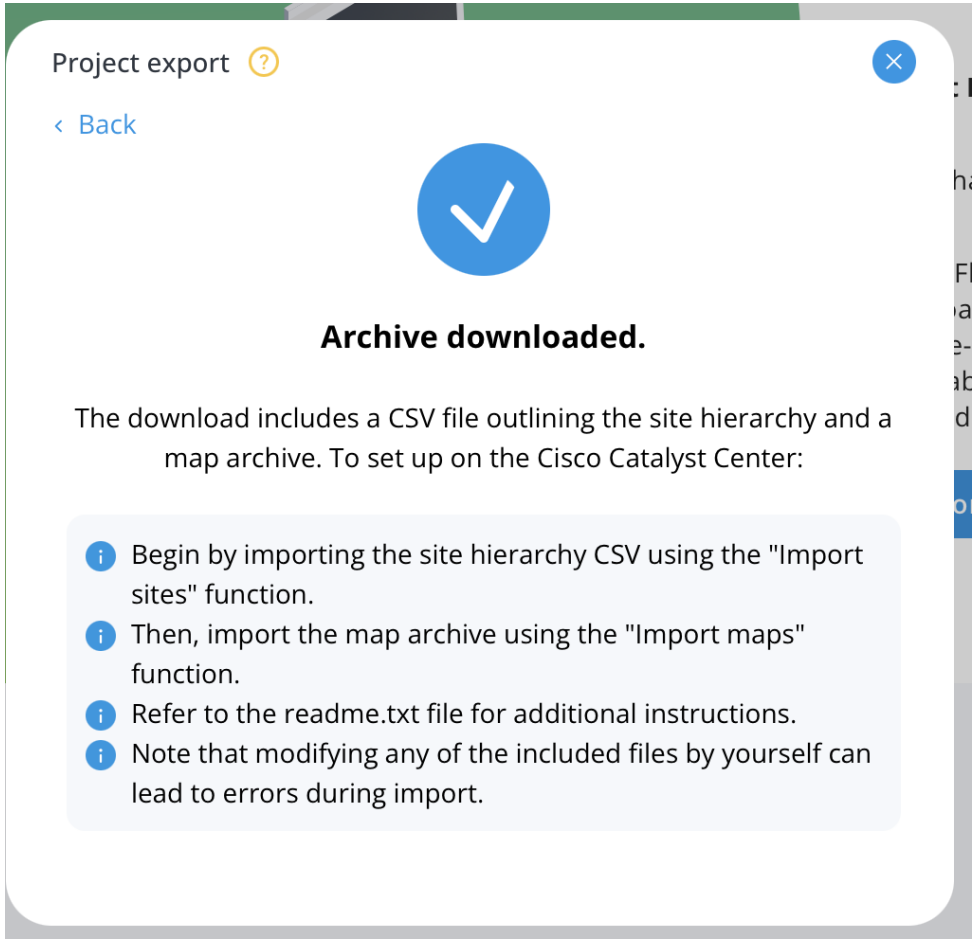




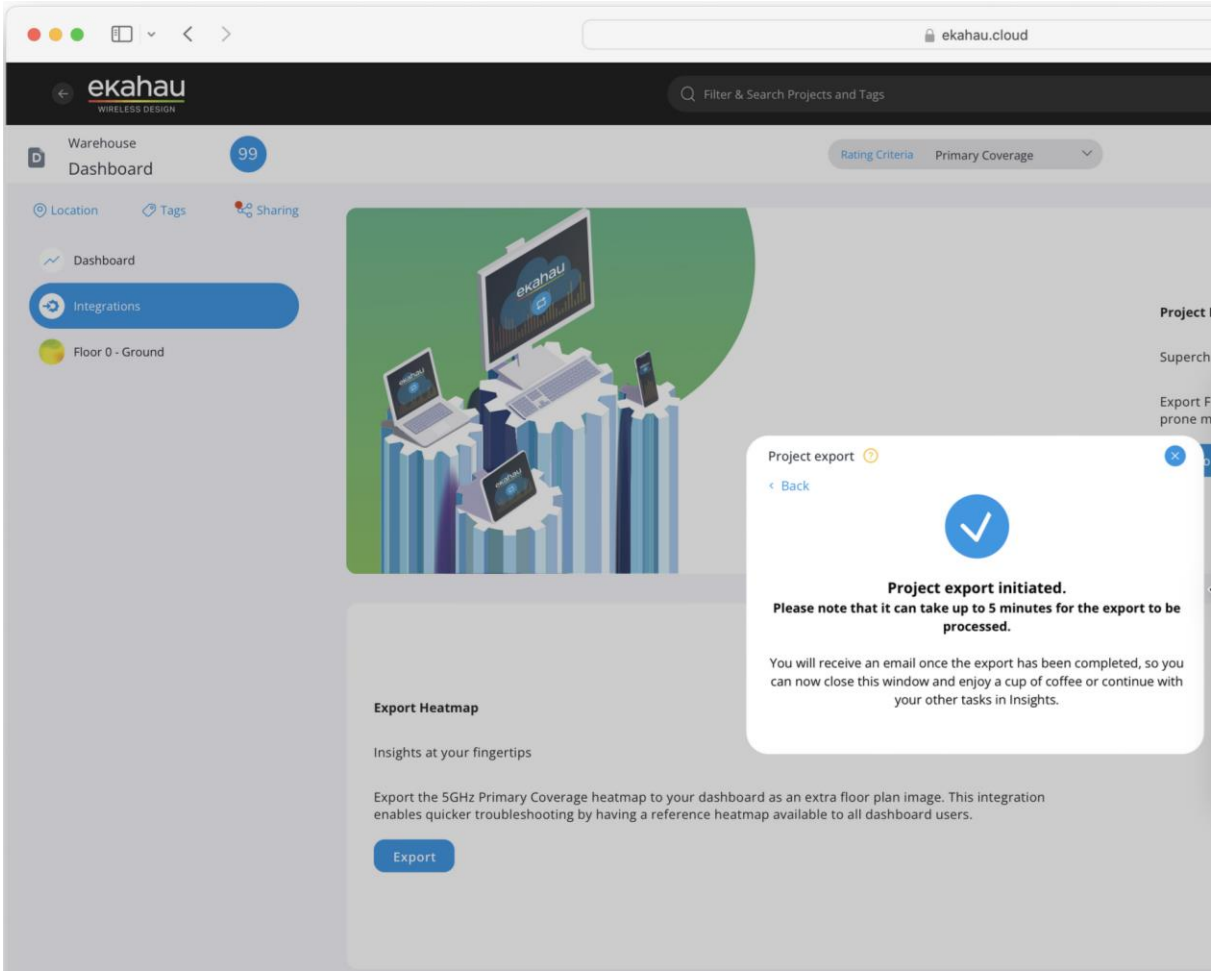


Importing Ekahau Projects to Catalyst Center

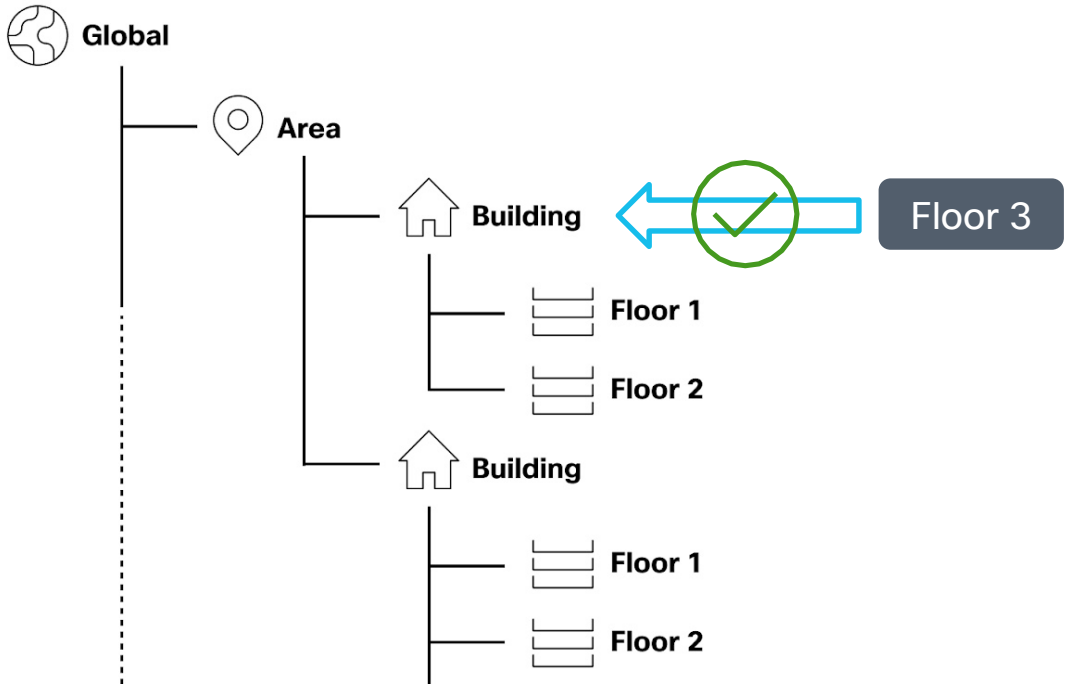
Without Login



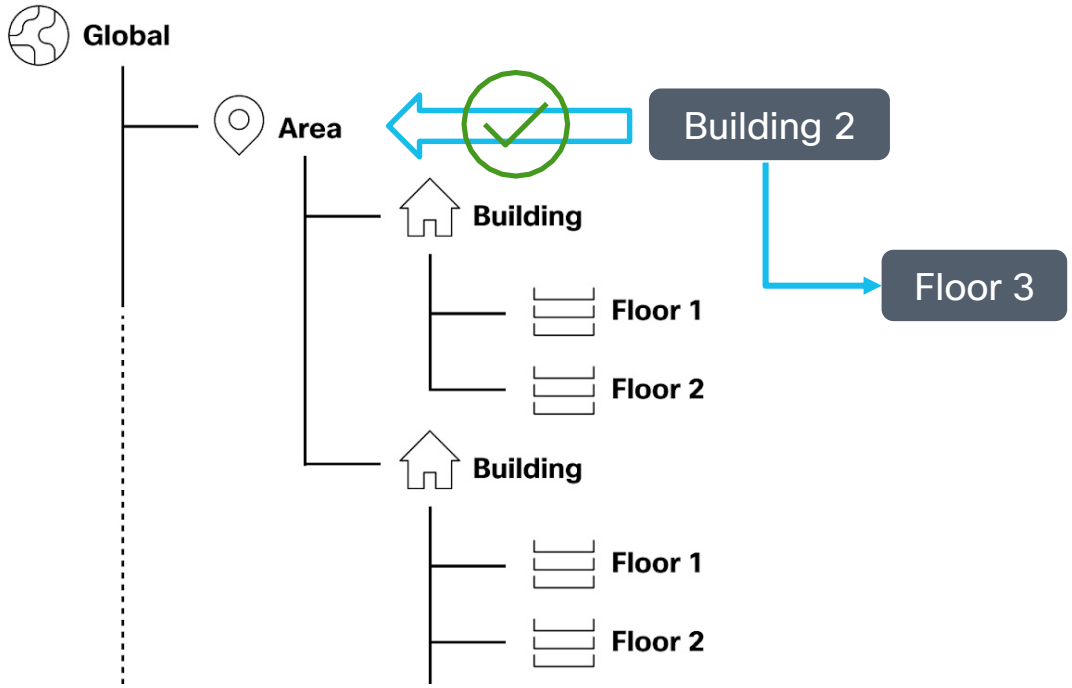
With Login



Catalyst Center–Ekahau Anchor Points

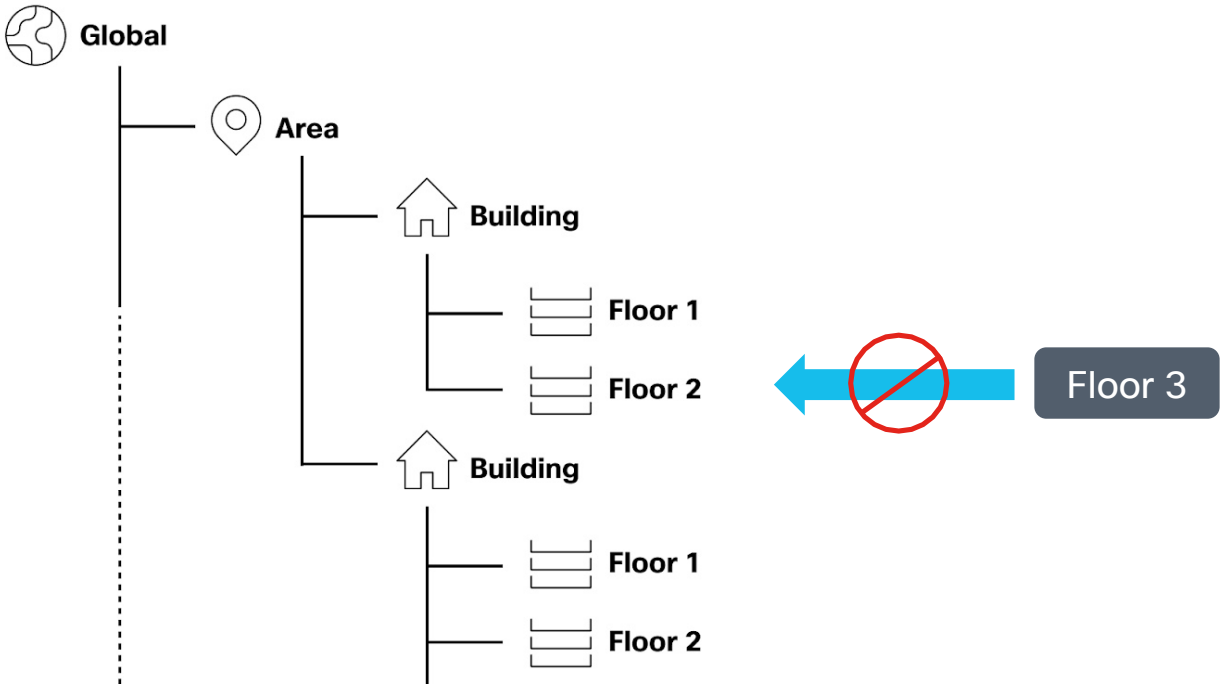


- If the floor already exist, then the floor is updated with changes
- If the floor does not exist, then a new floor is created.

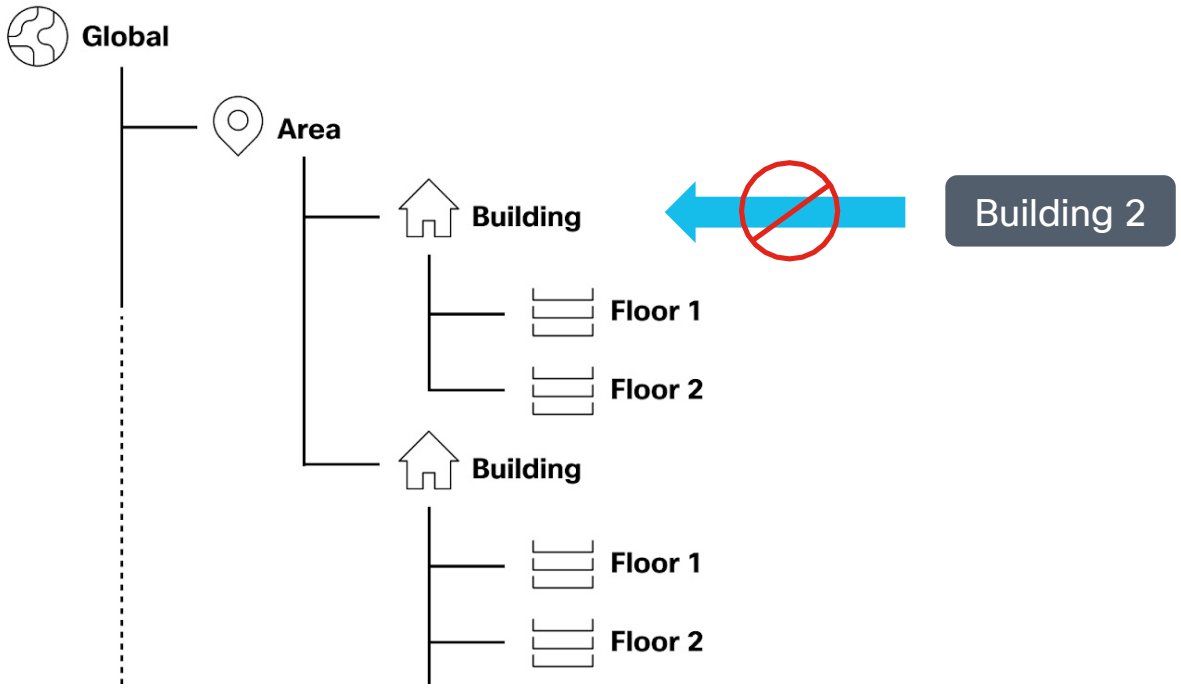


- If the building already exist, then the new floor is created
- If the building does not exist, then a new building is created with the floors

Catalyst Center–Ekahau Anchor Points



Floor is not an anchor point to import a new floor

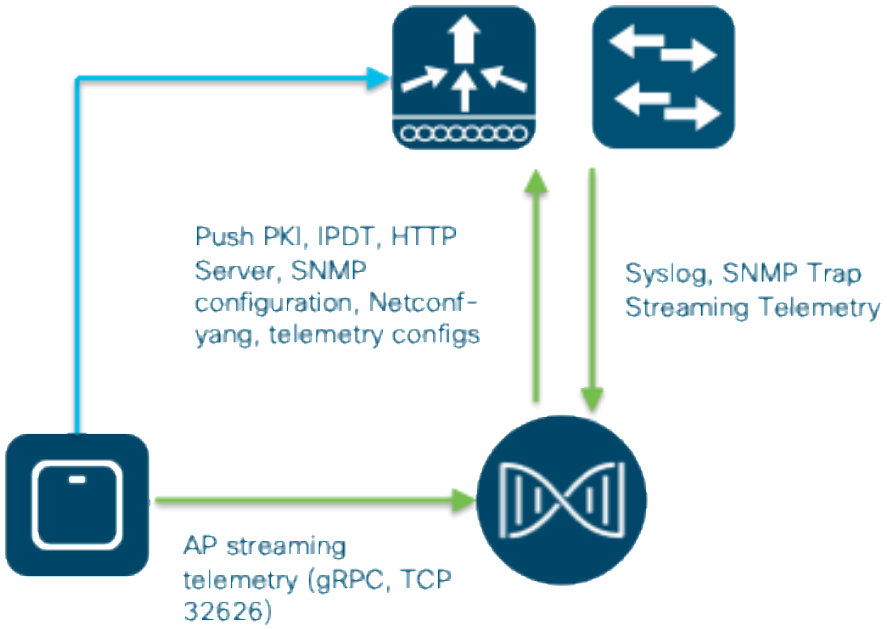


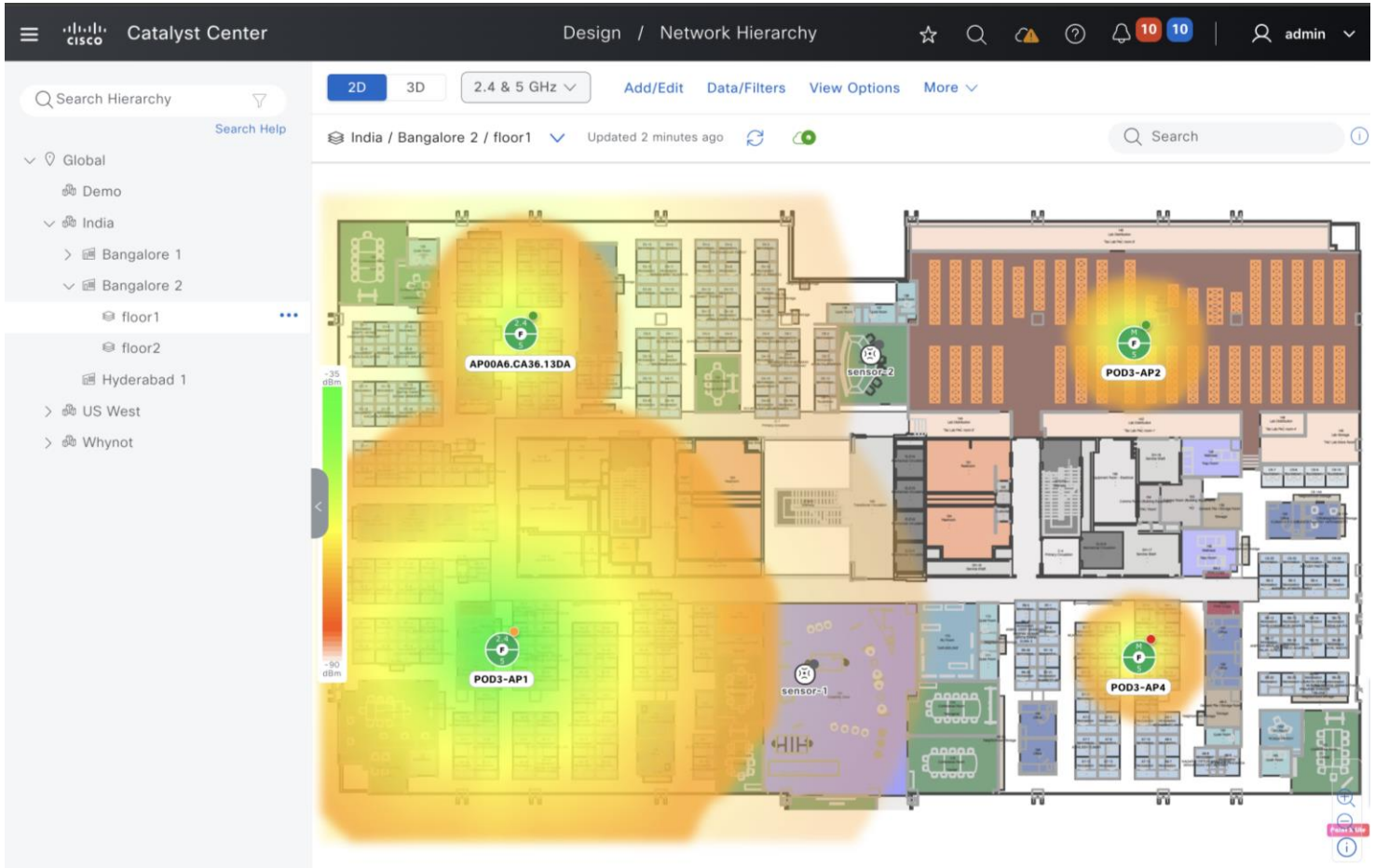
Building is not an anchor point to import a new building

“Anchor Point” is the site or building in Catalyst Center Site Hierarchy where an Ekahau Project may be imported

Catalyst Center- Network Heatmaps

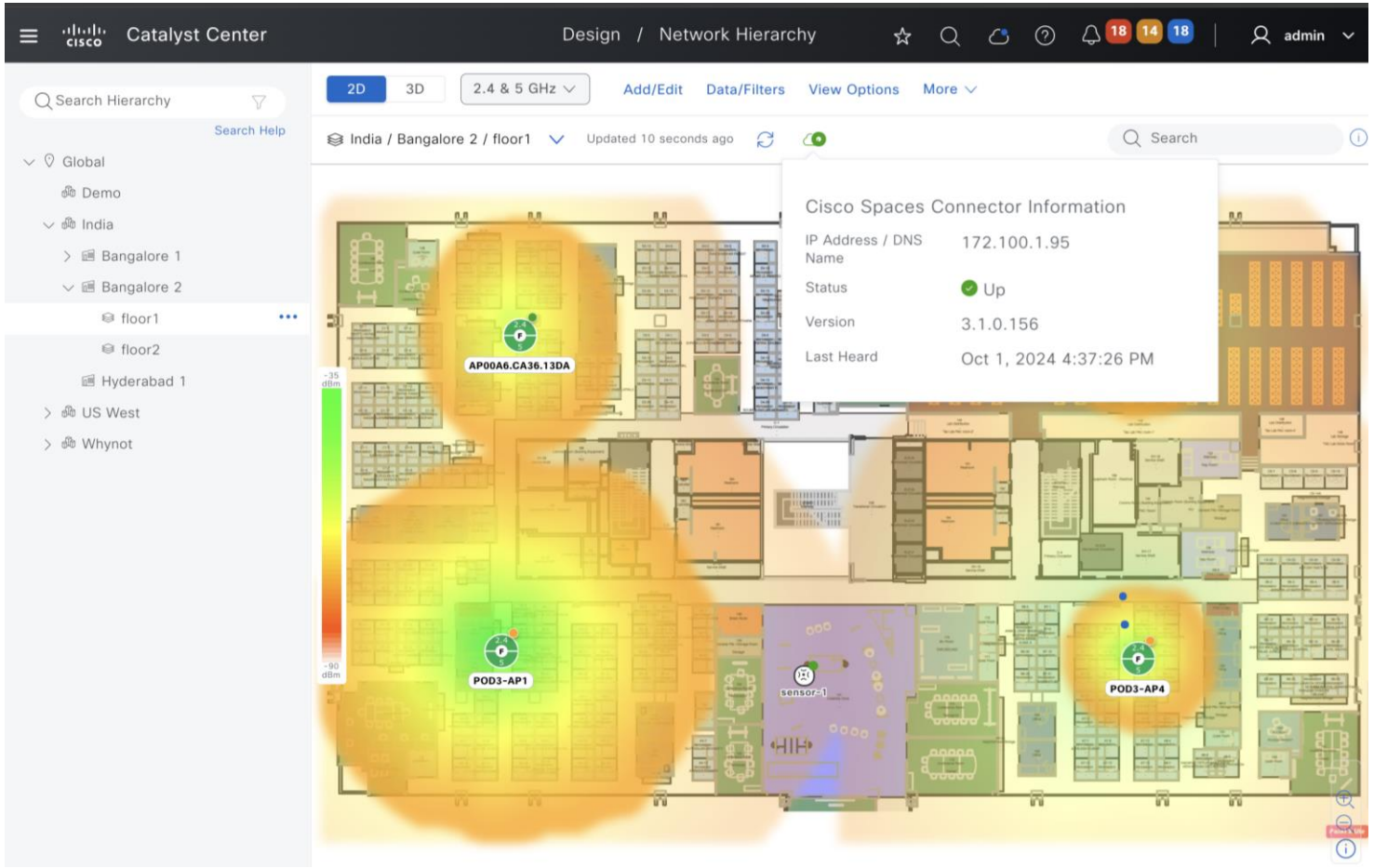
- Onboarding devices to Catalyst Center
- Assign devices to Sites
  Switches/WLC to Buildings
  AP to floor



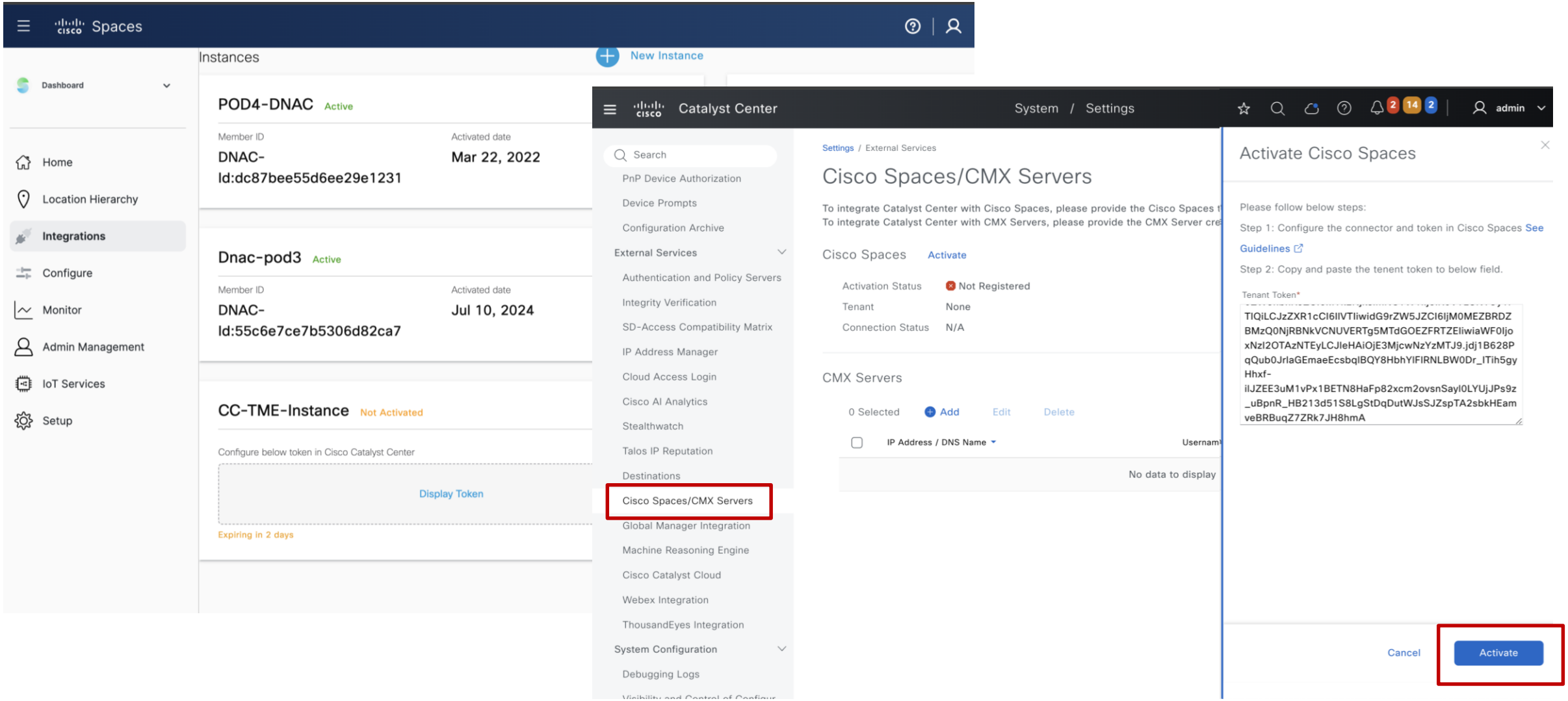


Integrating Cisco Spaces to Catalyst Center

- Maps uploaded from Catalyst Centre to Cisco spaces and visible in Cisco Spaces Map service.
- Subsequent changes on the floor plan automatically pushed from Catalyst Centre to Map service.
- Calculated locations of endpoints, rogues, interferers is continuously streamed from Cisco Spaces to Catalyst Centre

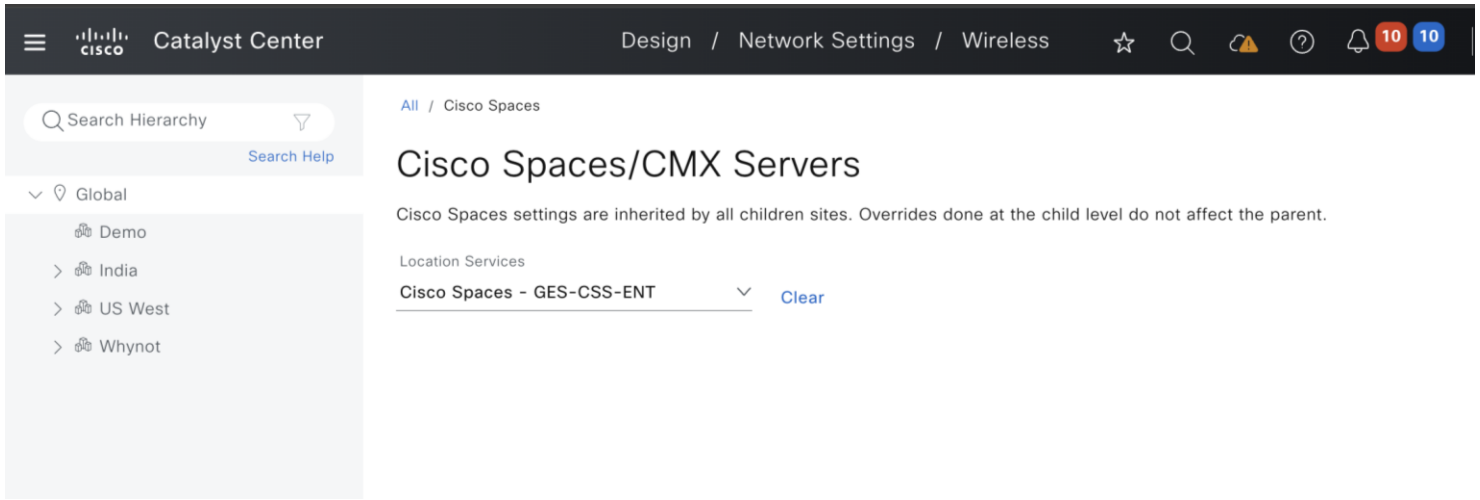


Integrating Cisco Spaces to Catalyst Center

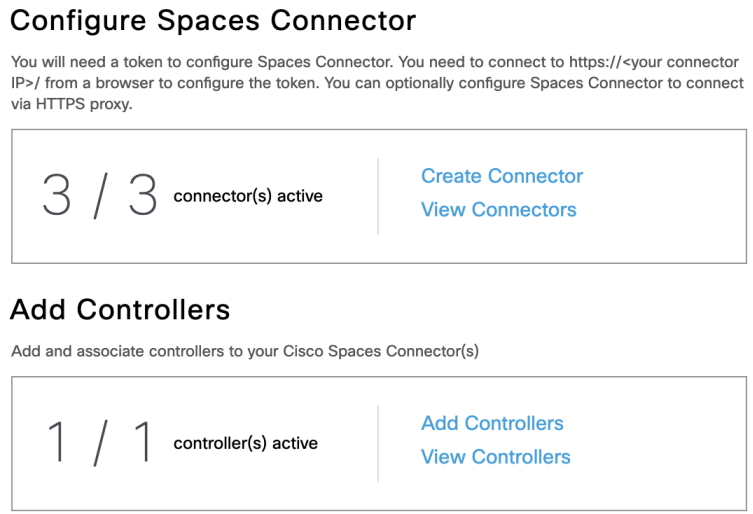


Adding WLC to Cisco Spaces

Map Spaces instance under Network Settings > Wireless

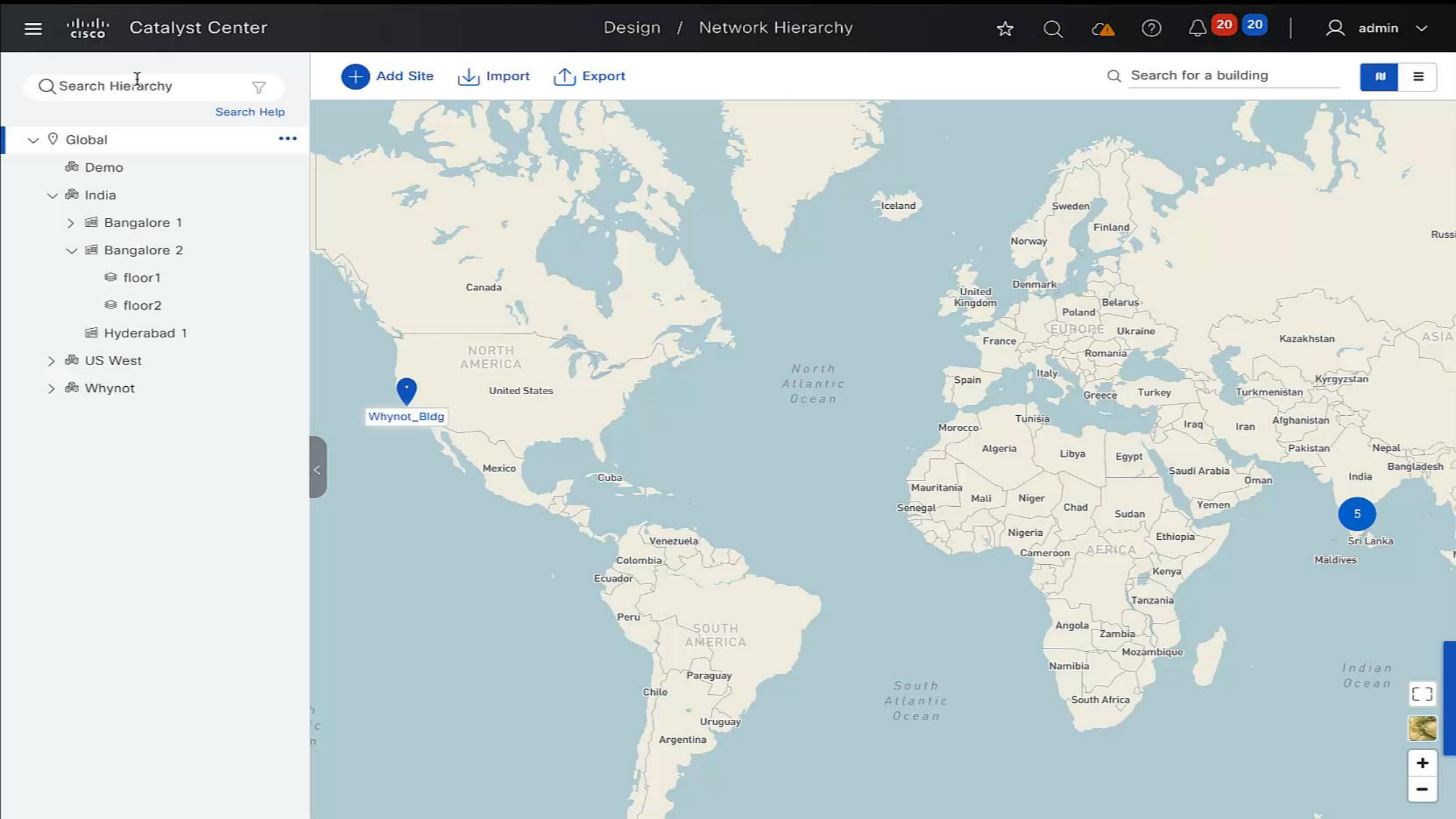


Add WLC and Spaces connector to Cisco Spaces



Sample WLC config for WLC to talk to Spaces connector

```
en
conf t
nmsp enable
aaa new-model
username 000C298E1E2D mac aaa attribute list cmx_000C298E1E2D
aaa attribute list cmx_000C298E1E2D
attribute type password 23ee446dbe498de8f0359728ccdb8bba529298663e0280a31d46dbb5a6c7dd81
aaa authorization credential-download wcm_loc_serv_cert local
```


Catalyst Center
Design / Network Hierarchy
20
20
admin
Search Hierarchy
Search Help
Global
Demo
India
Bangalore 1
Bangalore 2
floor1
floor2
Hyderabad 1
US West
Whynot
Add Site
Import
Export
Search for a building
Whynot_Bldg
5
Iceland
Sweden
Finland
Norway
Canada
Denmark
United Kingdom
Belarus
Poland
EUROPE
Ukraine
France
Kazakhstan
Romania
ASIA
Spain
Italy
Kyrgyzstan
Greece
Turkey
Turkmenistan
NORTH AMERICA
United States
North Atlantic Ocean
Tunisia
Iraq
Iran
Afghanistan
Morocco
Pakistan
Nepal
Algeria
Libya
Egypt
Saudi Arabia
Bangladesh
India
Oman
Mauritania
Mali
Niger
Chad
Sudan
Yemen
Senegal
Mexico
Cuba
Nigeria
Ethiopia
Sri Lanka
Cameroon
AFRICA
Maldives
Venezuela
Colombia
Kenya
Ecuador
Tanzania
Peru
Angola
Zambia
SOUTH AMERICA
Mozambique
Namibia
Indian Ocean
South Atlantic Ocean
Paraguay
Chile
South Africa
Uruguay
Argentina

Device visibility and Network Segmentation are Critical

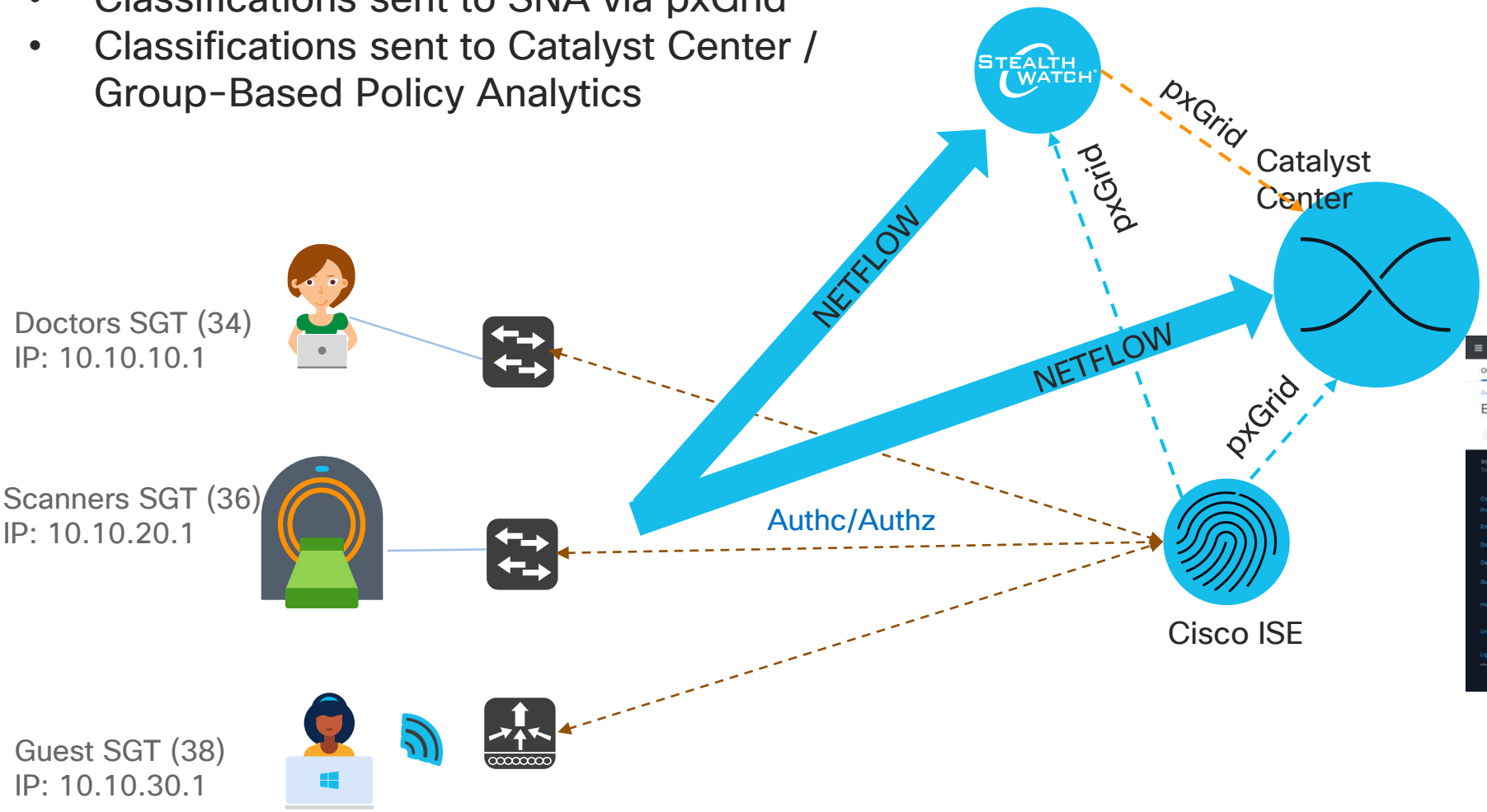
How do I know what's on my network?

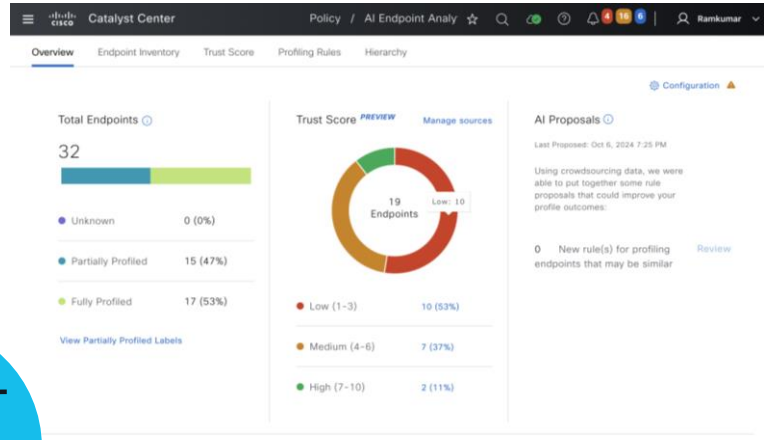
How do I make sure devices have right level of access?

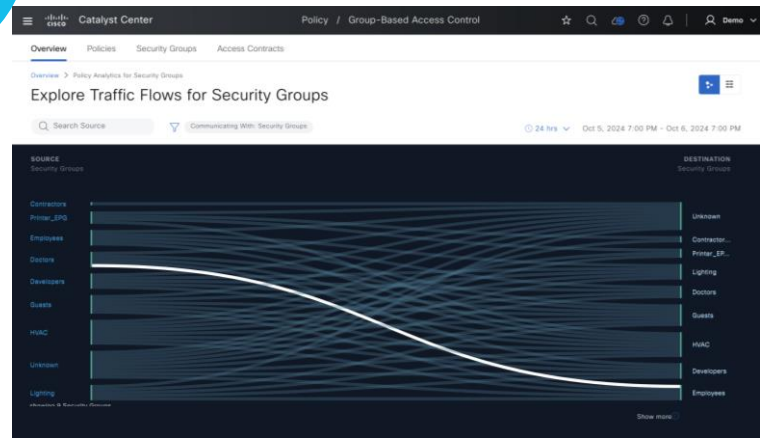
How do I detect endpoint threats and vulnerability and contain it?

Classification, Leading to Visibility & Enforcement

- Classification: Dynamic/ISE
- Classifications sent to SNA via pxGrid
- Classifications sent to Catalyst Center / Group-Based Policy Analytics





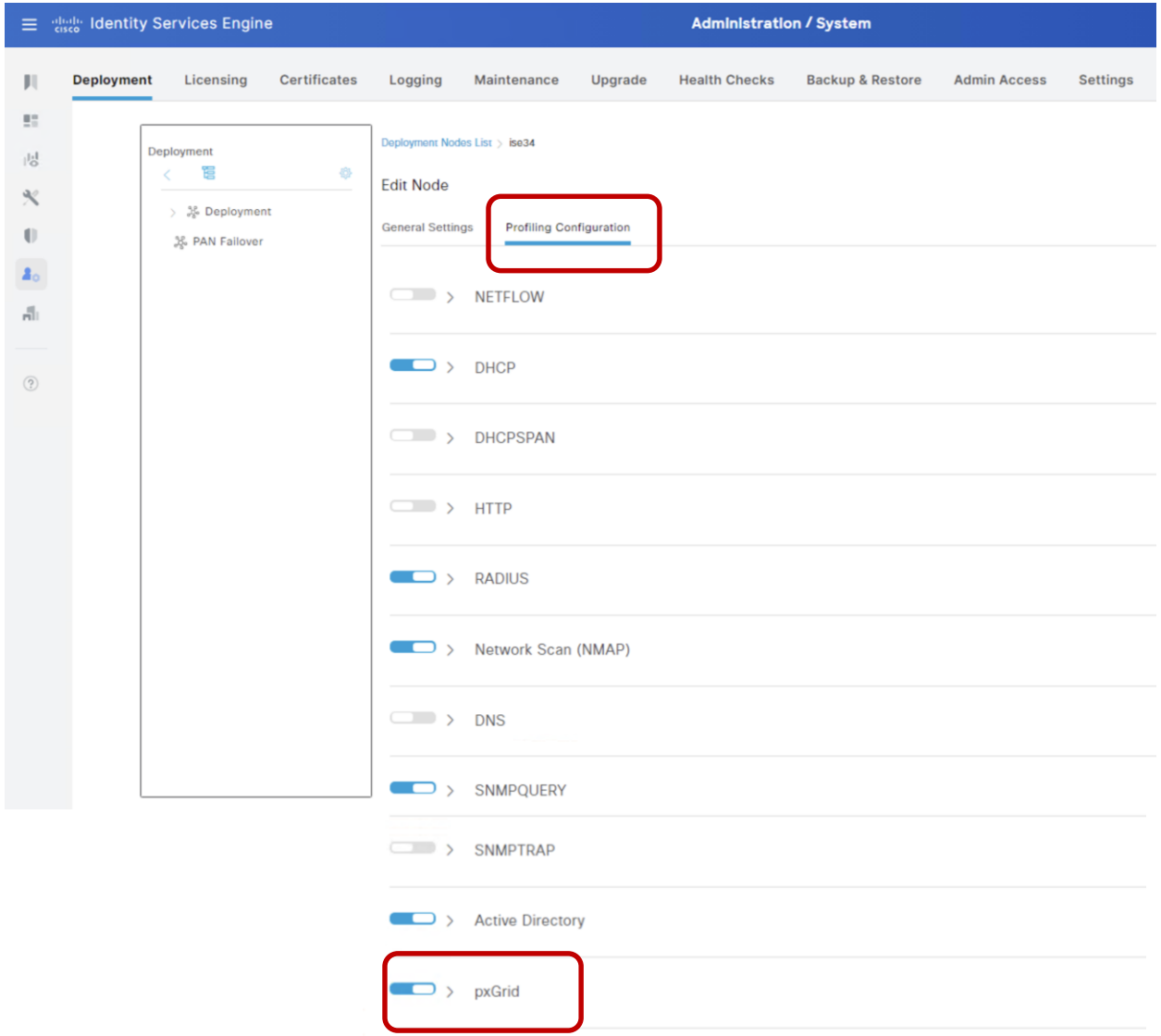


Pre-Requisites

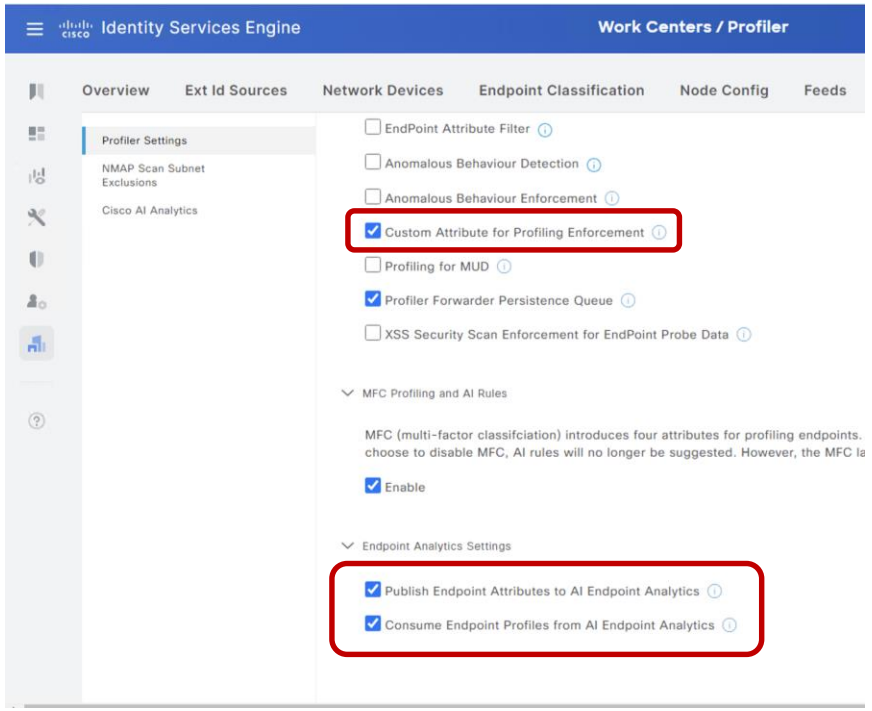
- ISE is Integrated in Catalyst Center
- AI Settings enabled on Catalyst Center for AI Endpoint Analytics and Talos settings
- Netflow is enabled on devices
- CBAR (SD-AVC) is enabled on devices
- Catalyst Center connected to Cisco Catalyst Cloud (Formerly Known as Cisco DNA Cloud).

Cisco ISE Integration – AI Endpoint Analytics

For your reference

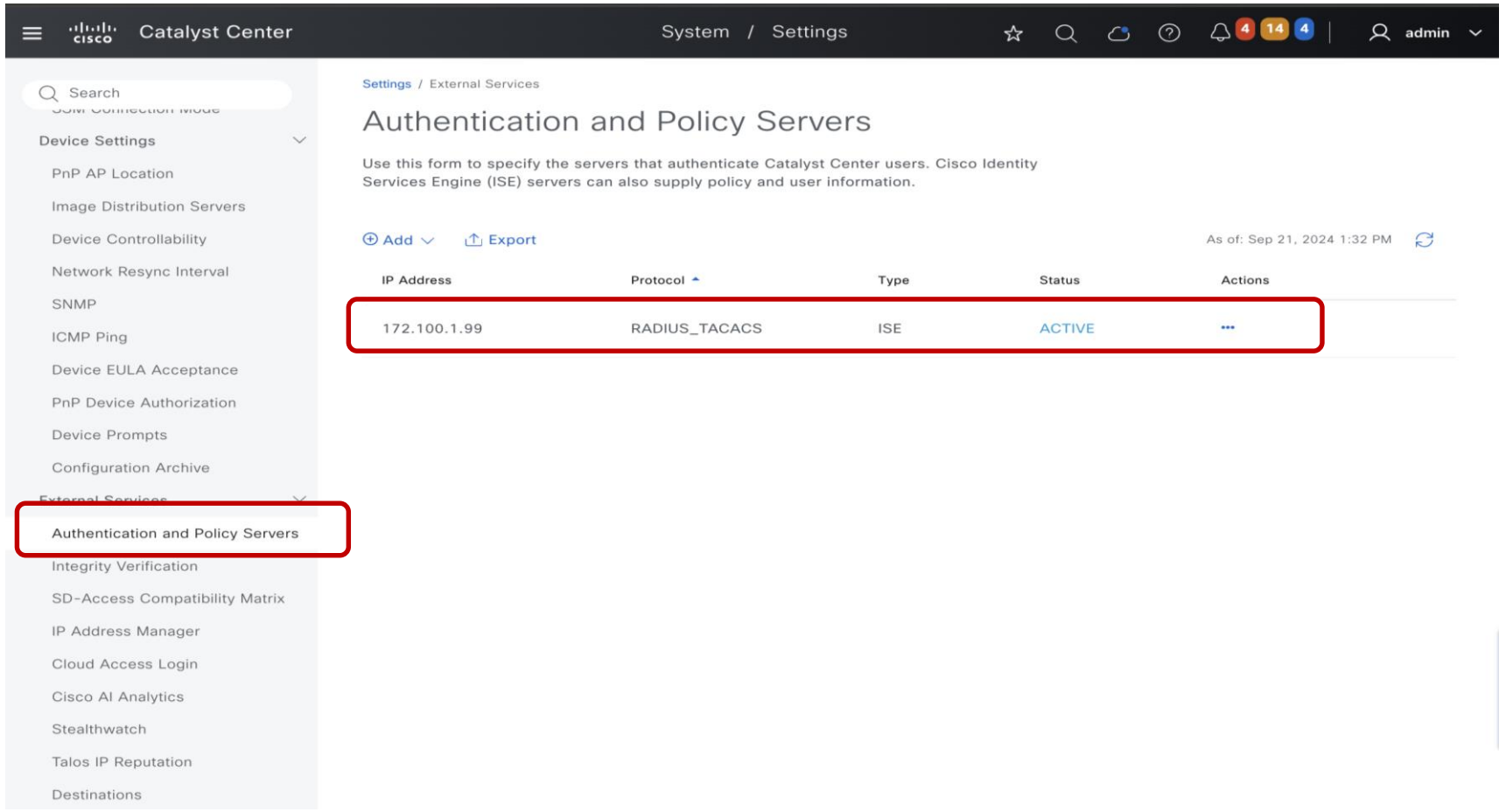


- Ensure that pxGrid is enabled under Profiling configuration in ISE
- Enable Custom Attribute for Profiling Enforcement
- Enable Publishing and Consumption of endpoint attributes, then Save



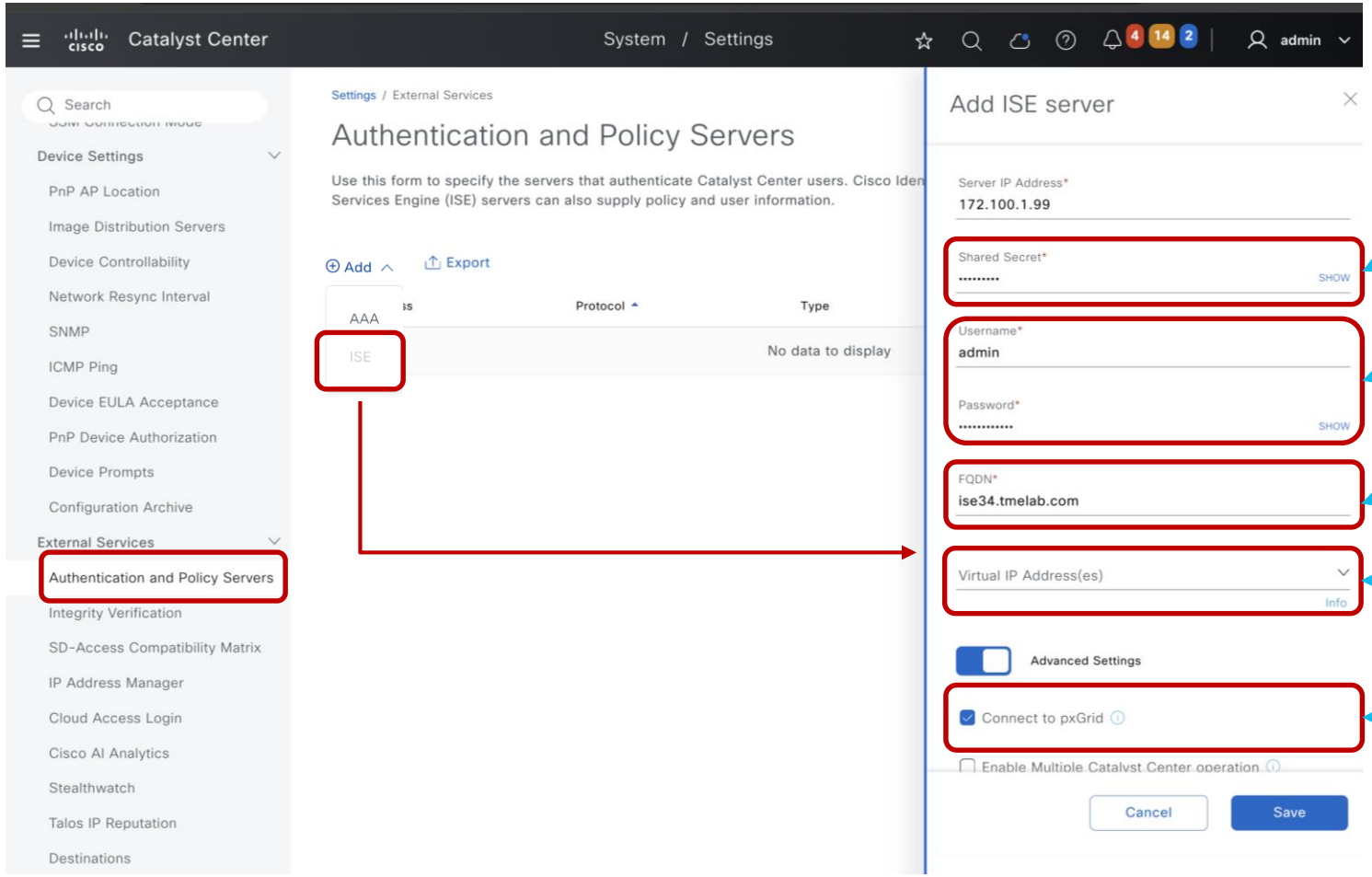
Cisco ISE Integration – AI Endpoint Analytics

Ensure Cisco ISE has been successfully added to Catalyst Center
(see next slide if adding ISE to Catalyst Center for the first time)



Cisco ISE Integration – AI Endpoint Analytics

For your reference



Global RADIUS shared secret to be provisioned to new devices

ISE WebUI admin credential (need not match SSH password)

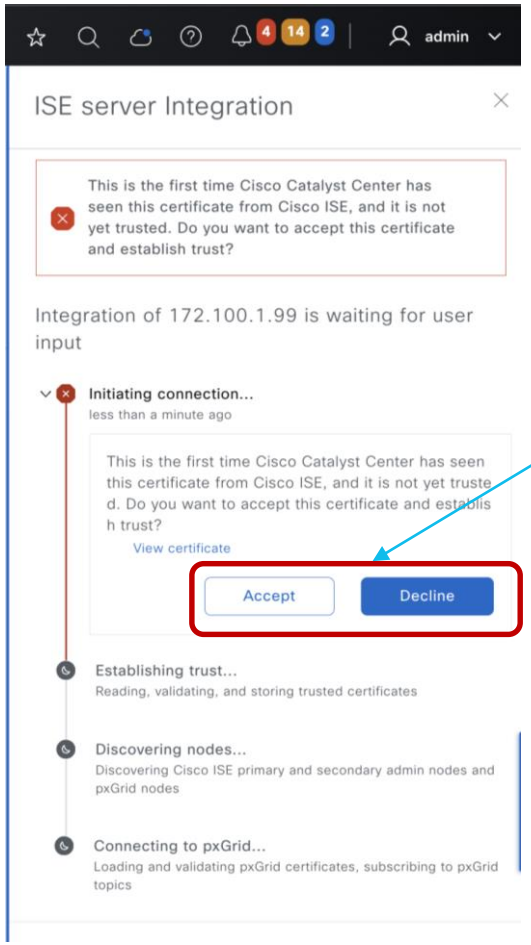
FQDN MUST match that on ISE admin settings page

Address for any load balancer used in front of ISE clusters

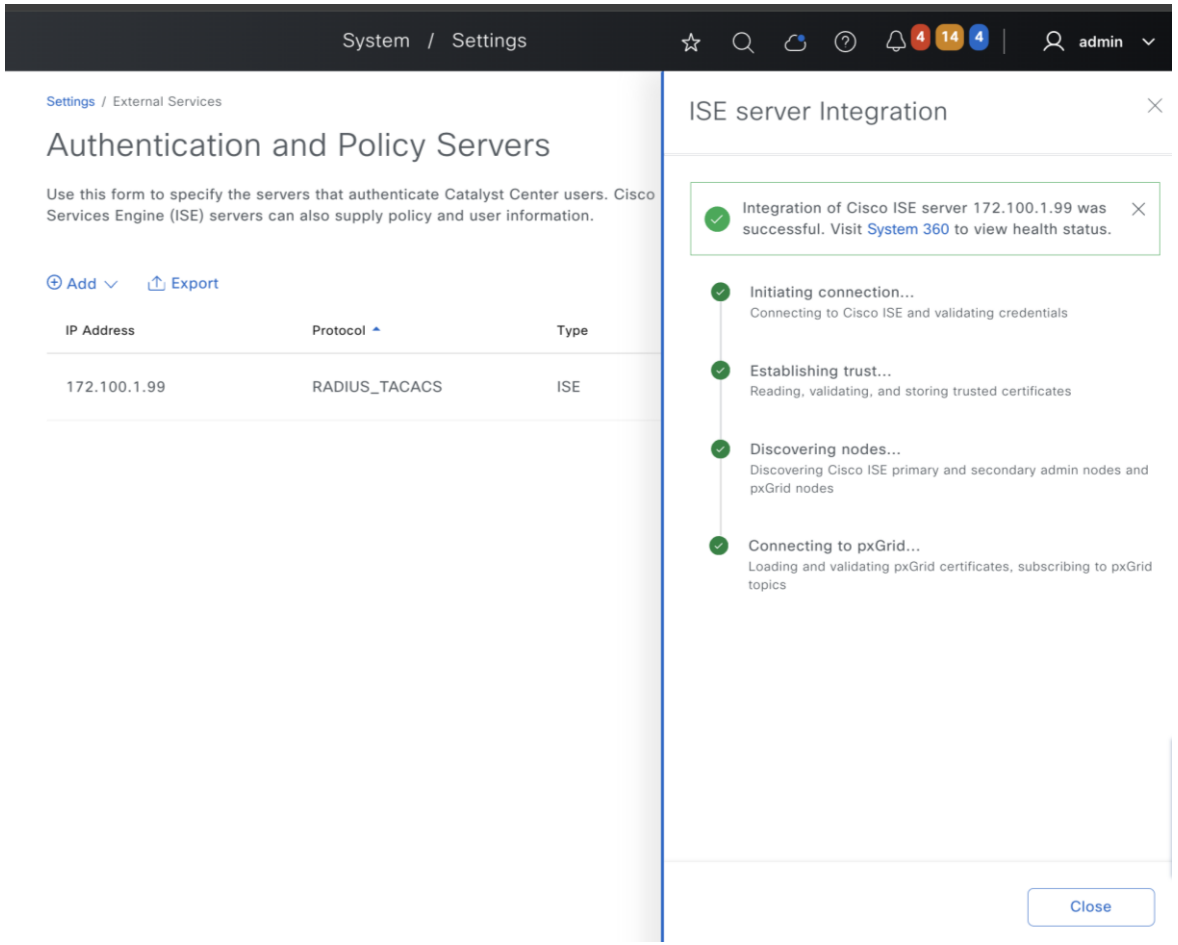
pxGrid required for SDA and EA

Cisco ISE Integration – AI Endpoint Analytics

For your reference

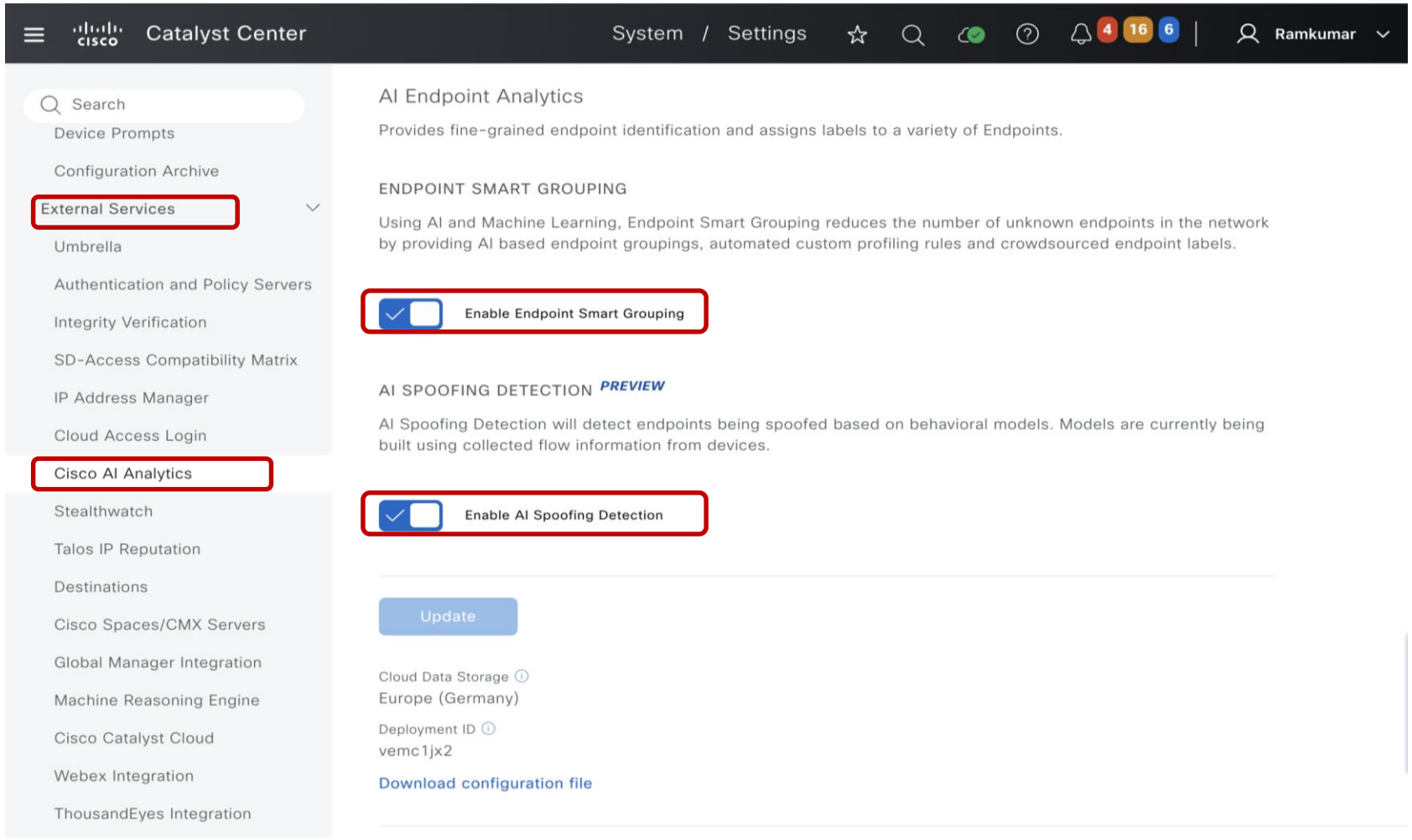


Click to Accept ISE Certificate



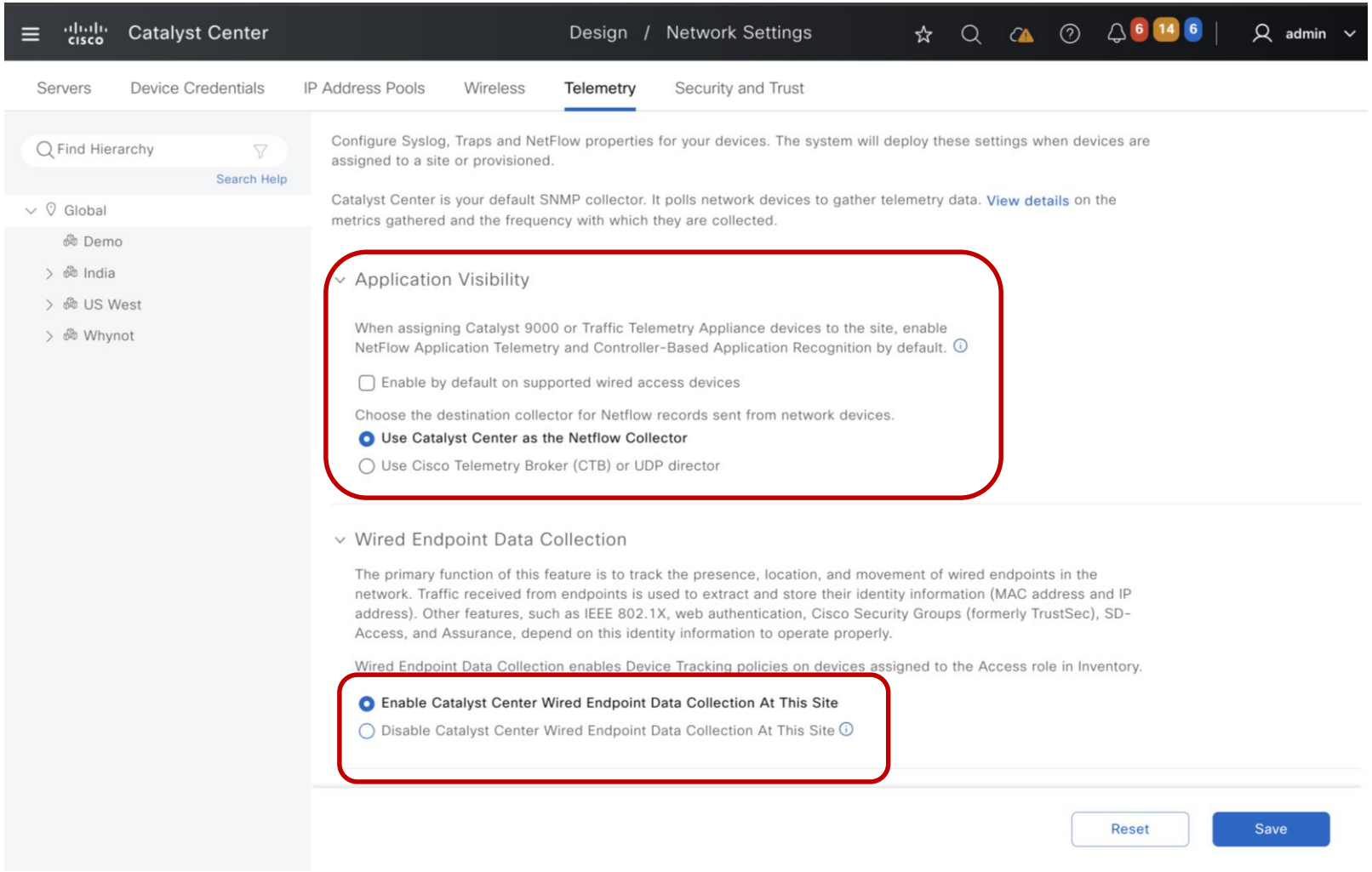
Enabling AI Endpoint Analytics on CC

On Catalyst Center, enable Endpoint Smart Grouping and AI Spoofing Detection under System -> Settings -> Cisco AI Analytics



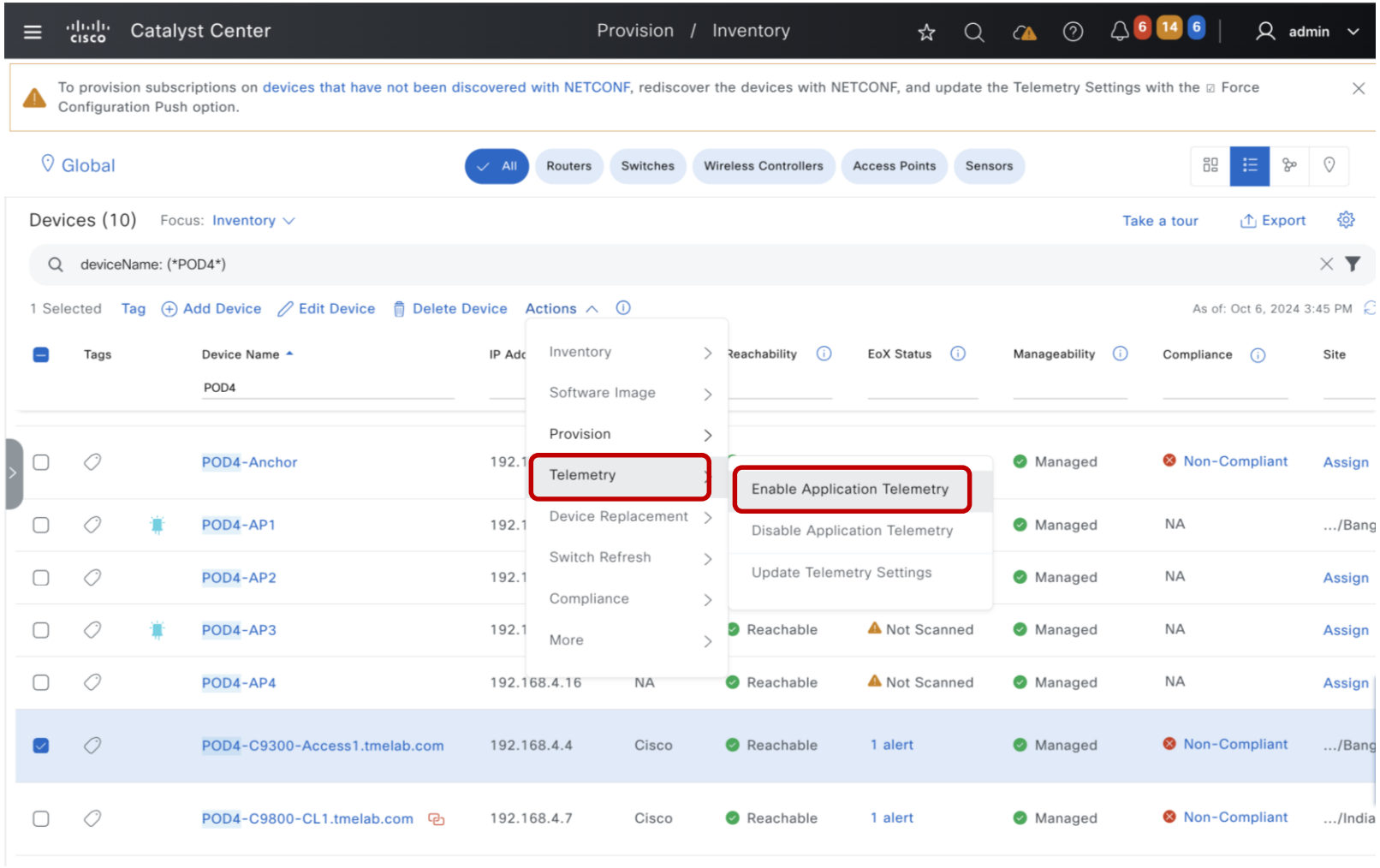
Network Settings Requirements for AI Endpoint Analytics

- Ensure Catalyst Center as Netflow collector under Design > Network Settings > Telemetry
- Alternative option is to use CTB as Netflow Destination
- Strongly recommend to enable Wired Endpoint Data Collection
  - Provides granular client information for Assurance, ISE accounting, and other features.
  - Required setting for Software-Defined Access (SDA) fabric deployment



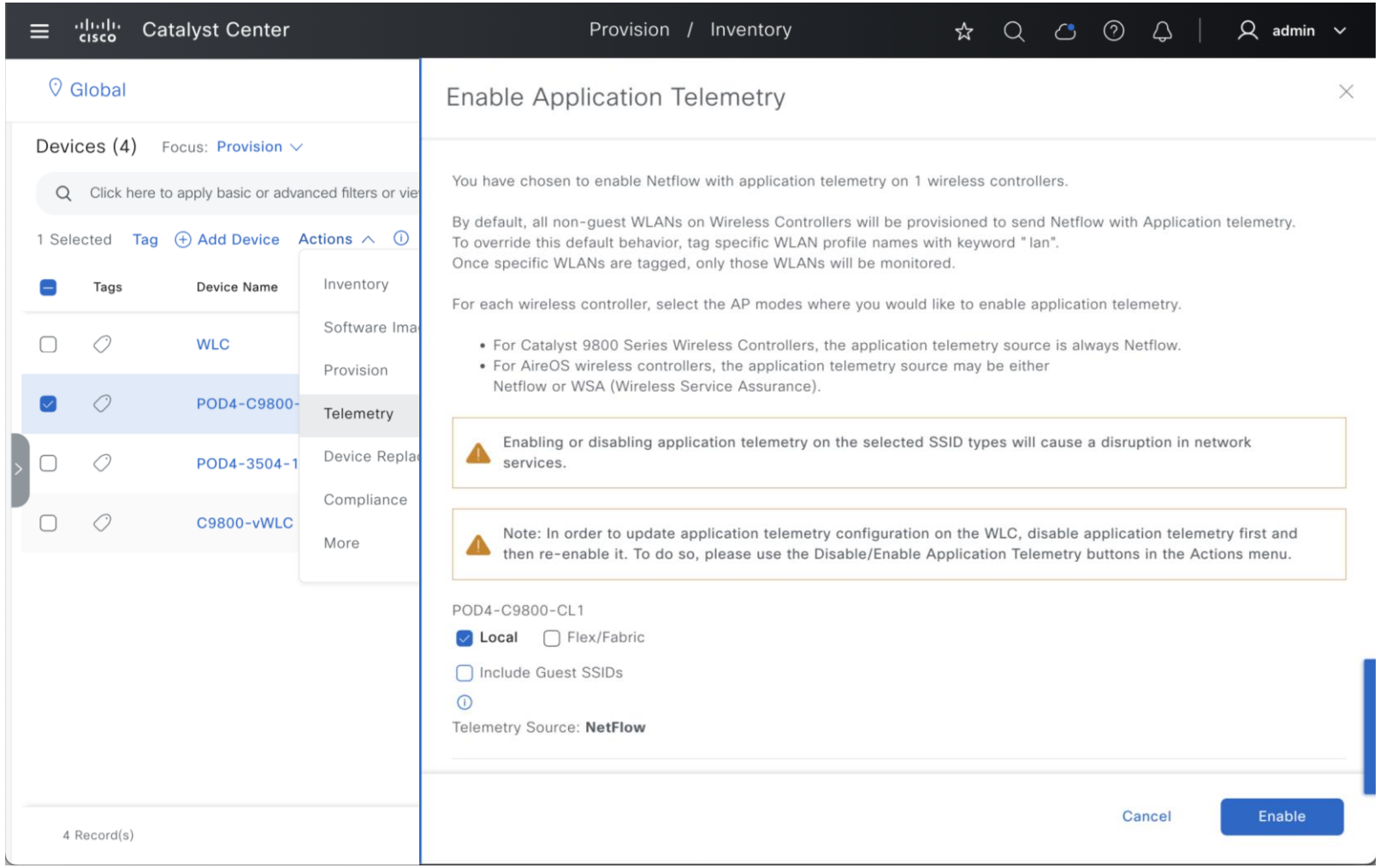
Enabling Netflow on Devices- Switches

- Enable Application Telemetry from Provision > Actions > Telemetry > Enable Application Telemetry



Enabling Netflow on Devices – WLC

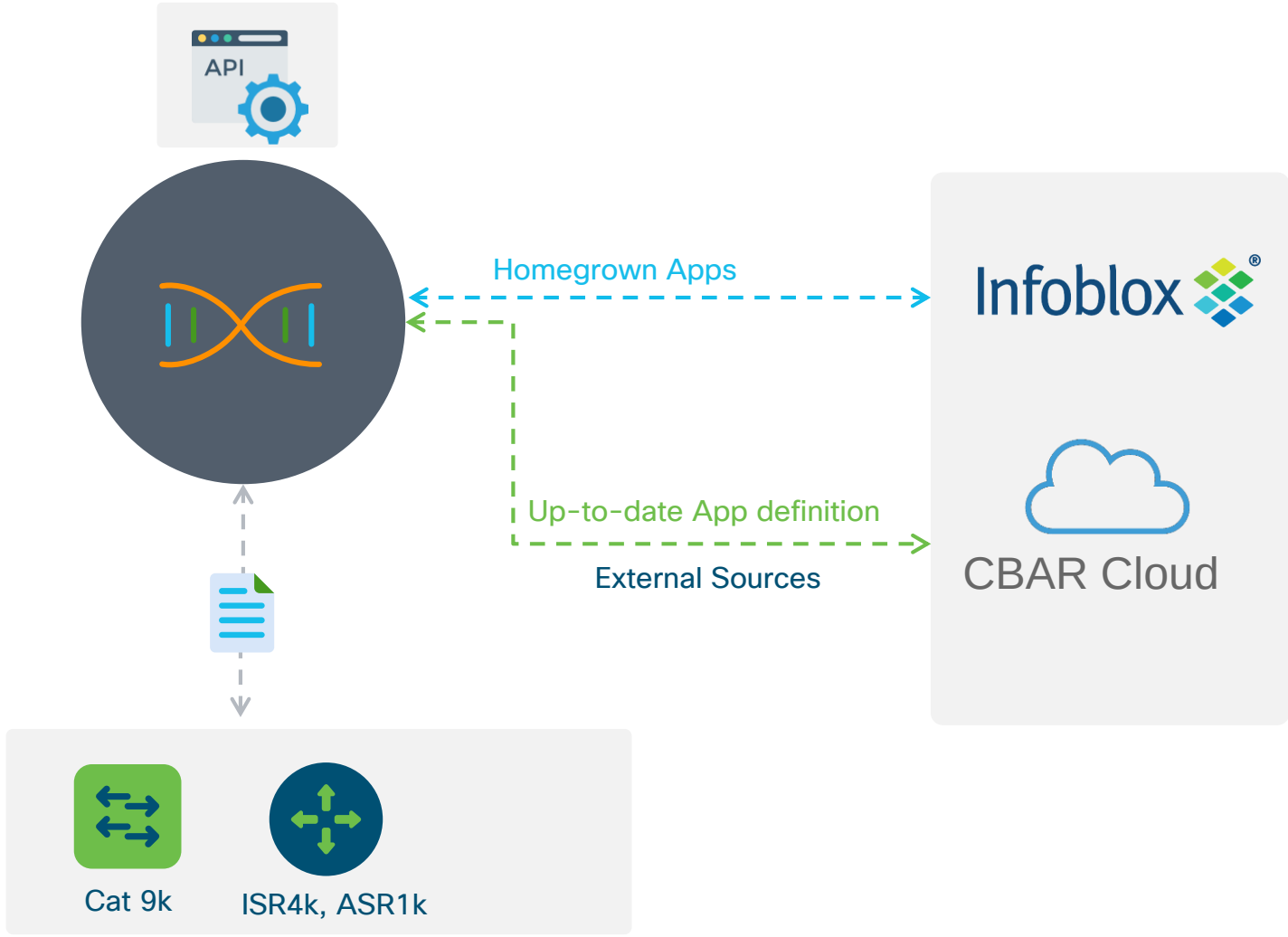
- Enable Application Telemetry from Provision > Actions > Telemetry > Enable Application Telemetry
- WLC need not be provisioned for enabling Application telemetry
- Supported for local, Flex/Fabric SSIDs



CBAR- Application Visibility Service

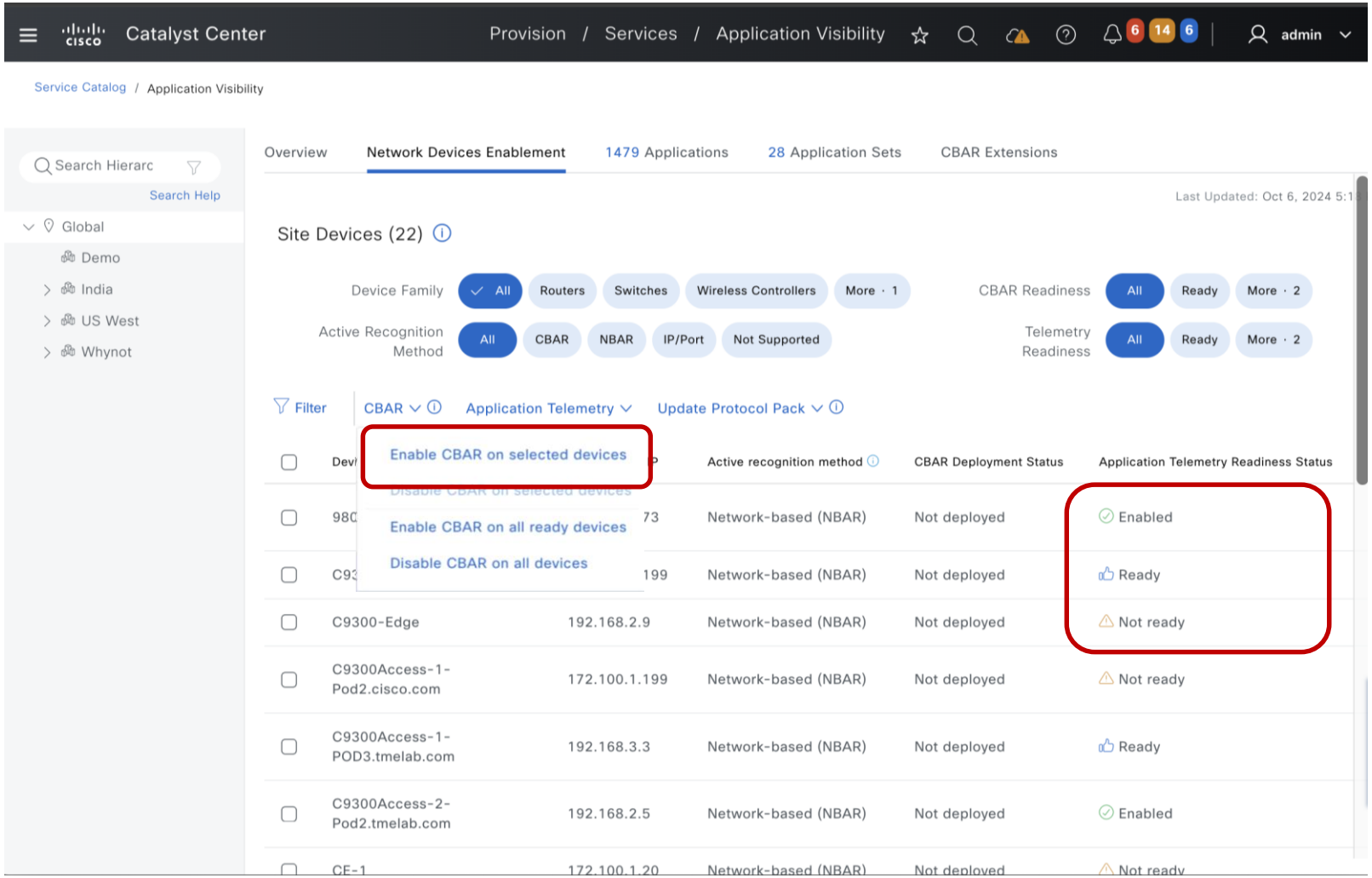
- Enrichment of Application Registry through exploration of un-classified applications
- Protocol Pack Updates for default NBAR application signatures and ports
- Connecting to external sources like Microsoft Endpoints to update Microsoft O365 Signatures

Identify voice and video, email, file sharing, gaming, peer-to-peer (P2P), and cloud-based applications.



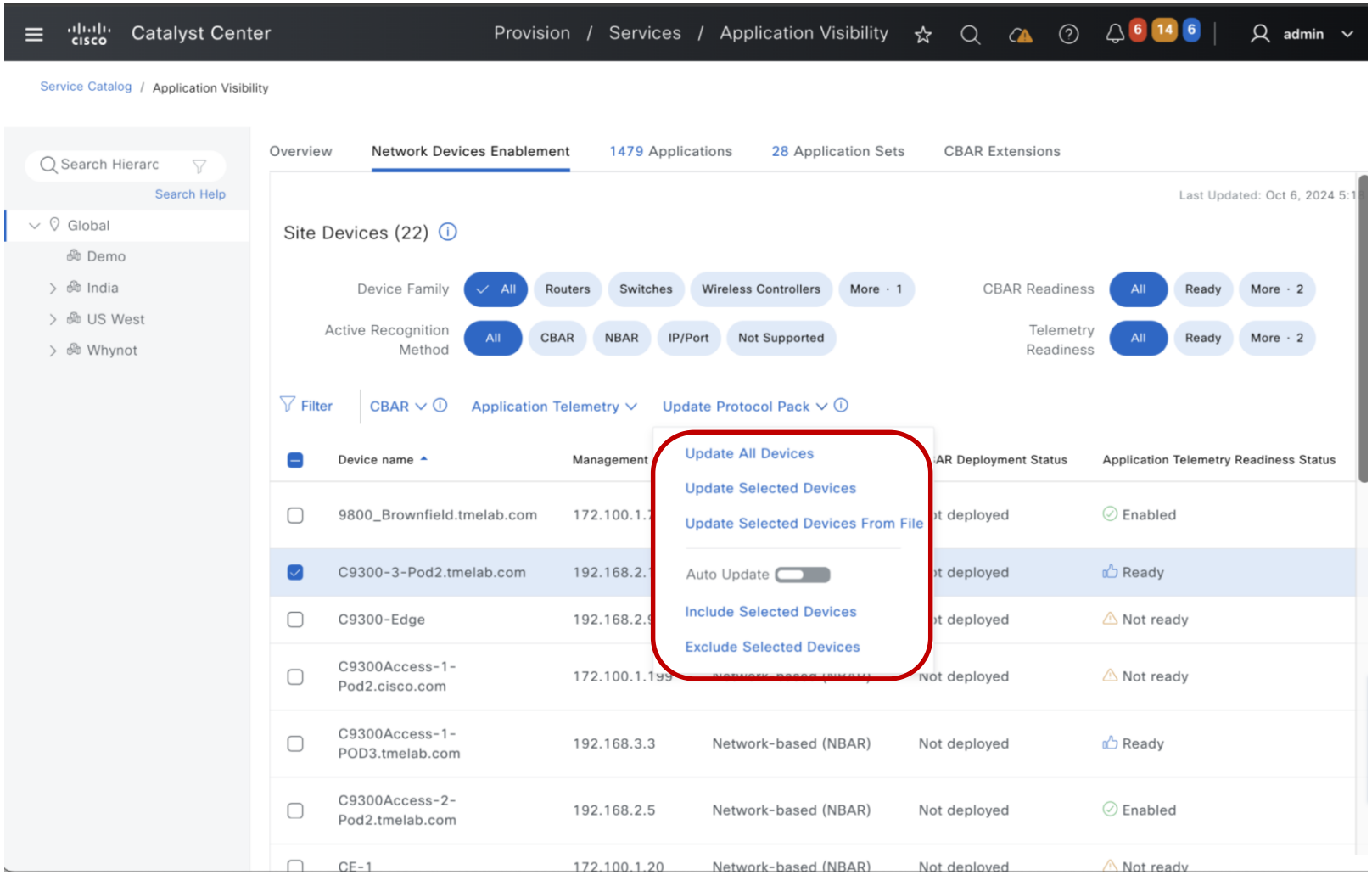
Enabling CBAR on Devices

- Enable CBAR from Provision > Application Visibility
- Device Role needs to be Access for it be Ready



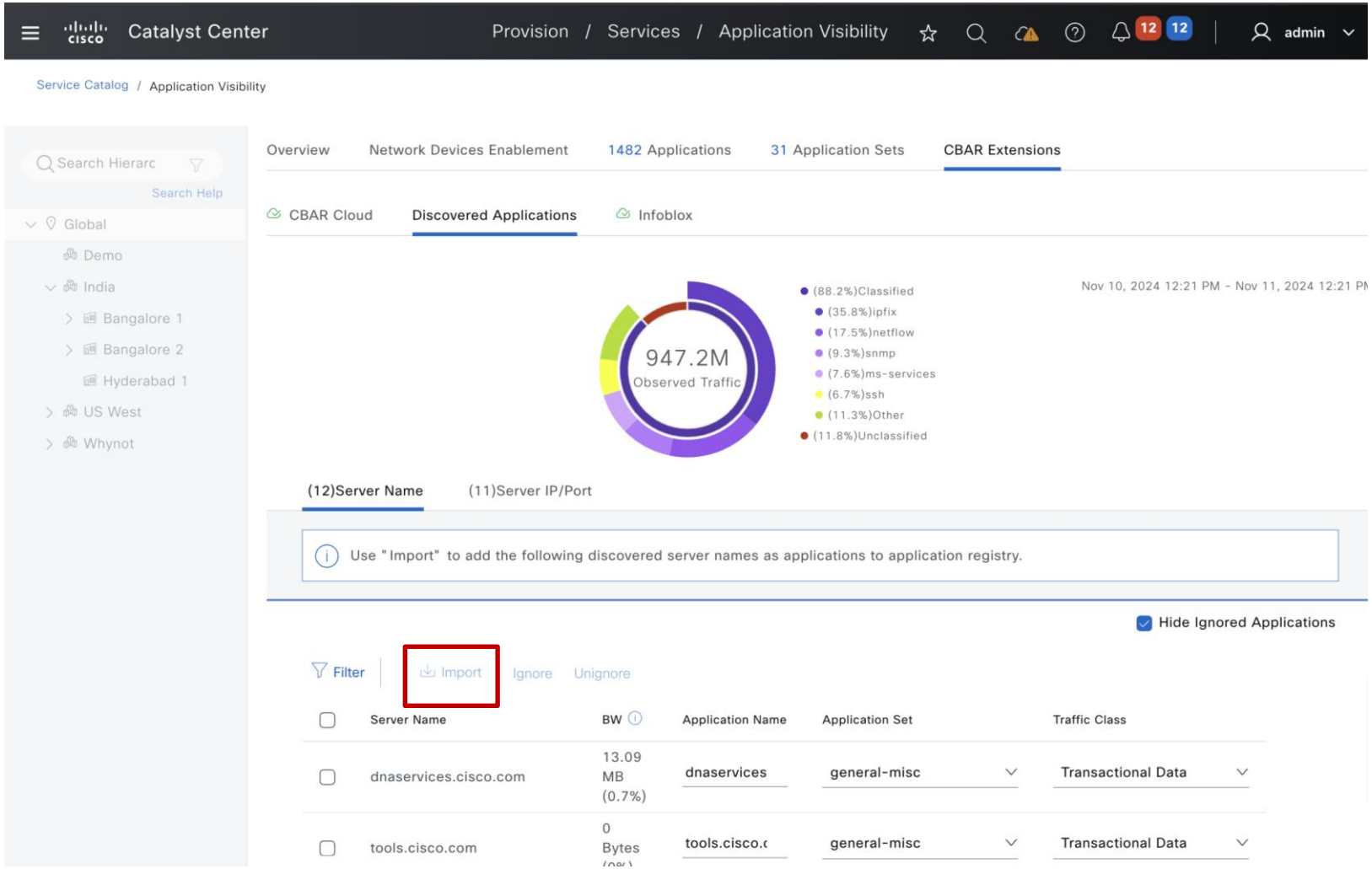
Enabling CBAR on Devices

- Enable CBAR from Provision > Application Visibility
- Device Role needs to be Access for it be Ready
- Protocol Pack with latest signatures can be updated



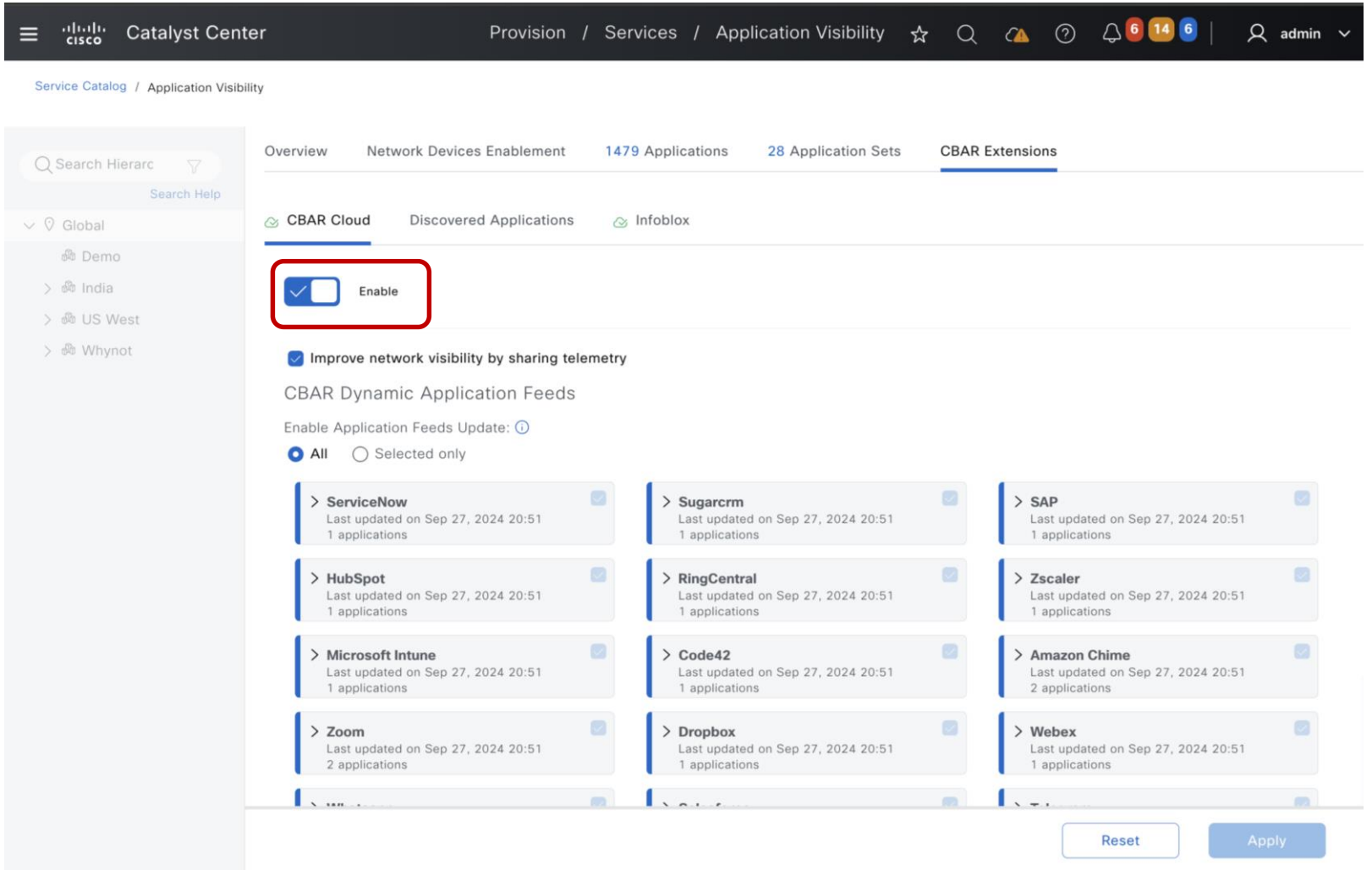
CBAR Application Classification

- Discovered Applications Classified and Unclassified are shown
- Discovered Applications automatically categorized under Traffic Class
- Use “Import” to add the discovered applications to application registry.



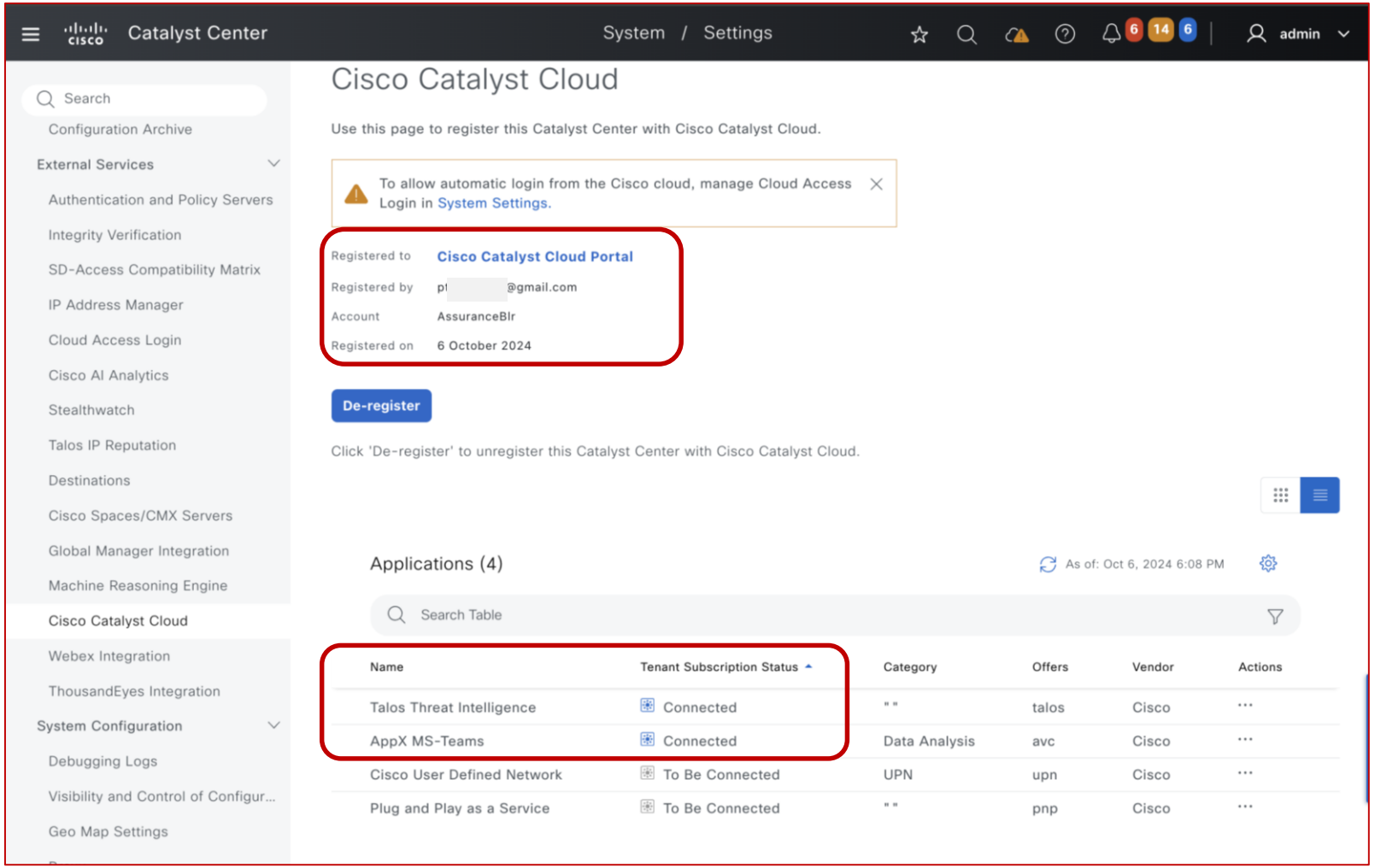
Integrating with CBAR Cloud

- Starting 2.3.7.6, CBAR Cloud can be enabled with a toggle button.
- Ensure, Catalyst Center is registered to Cisco Catalyst Cloud (see next slides for steps)



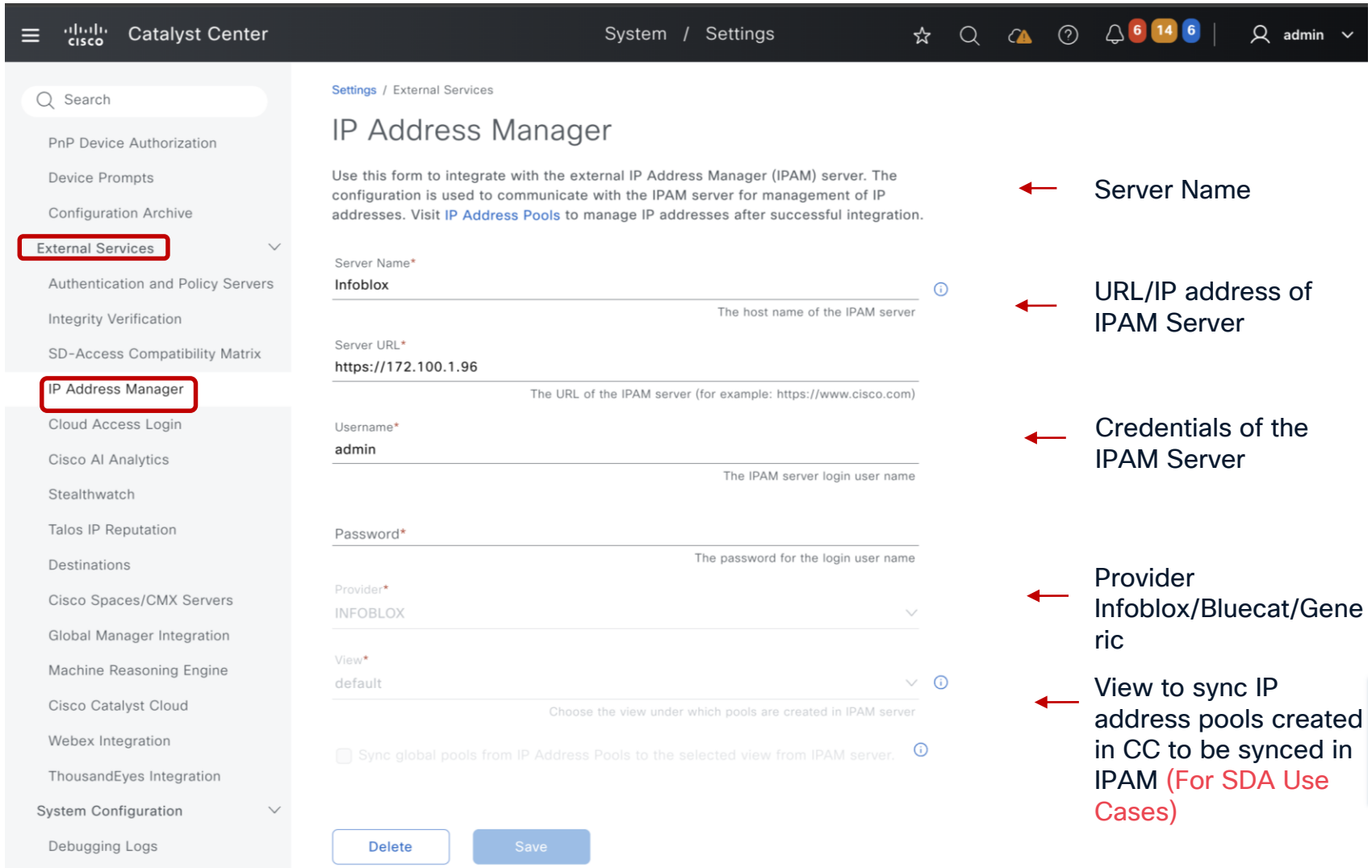
Integrating Cisco Catalyst Cloud with Catalyst Center (2.3.7.6)

- Once successfully integrated, connection status will be available under System > Settings > External Services > Cisco Catalyst Cloud
- All the Applications can be viewed and enabled from the same navigation path



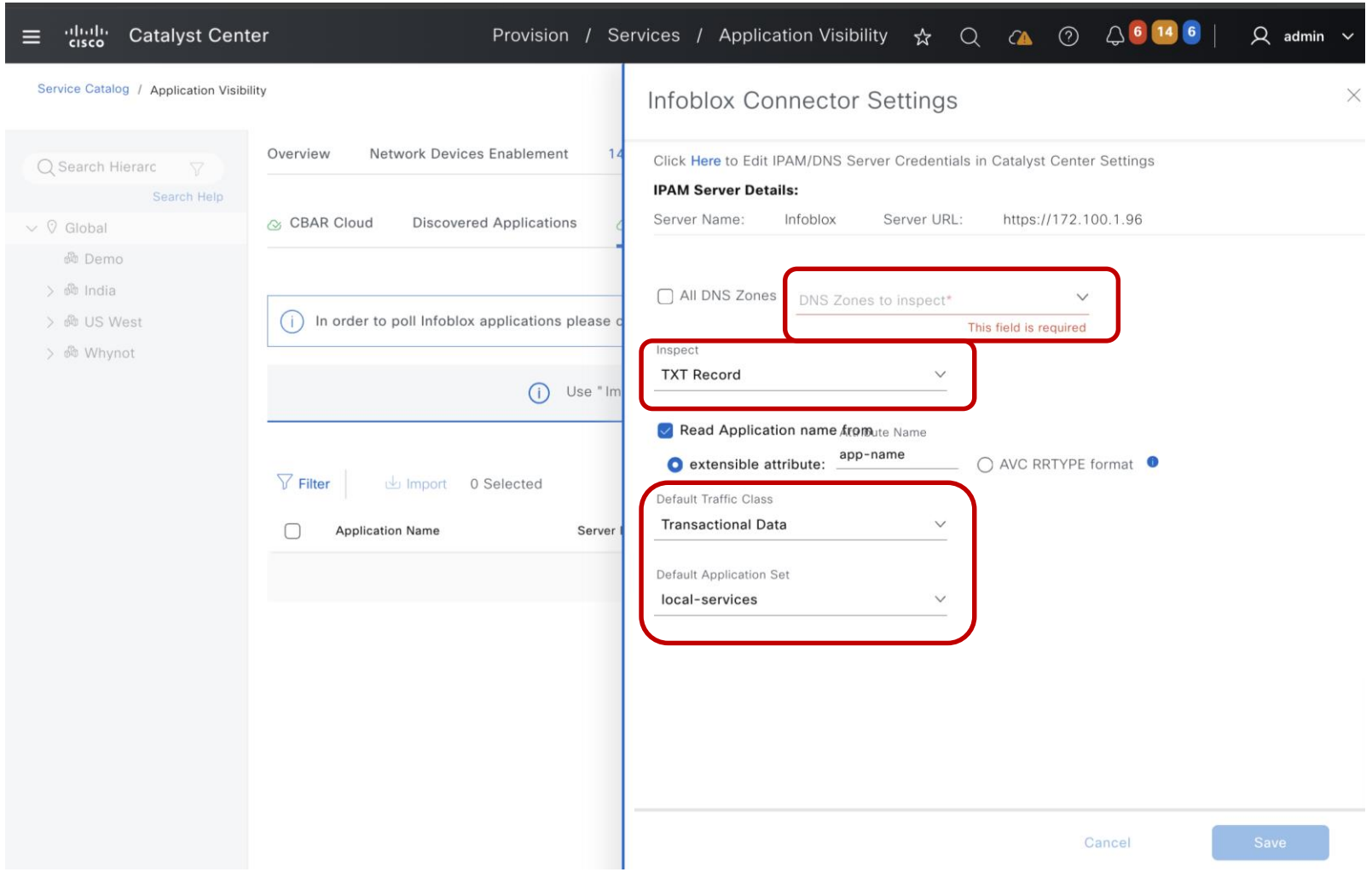
Integration Catalyst Center with Infoblox

Enable Infoblox from System > Settings > External Services > IP Address Manager



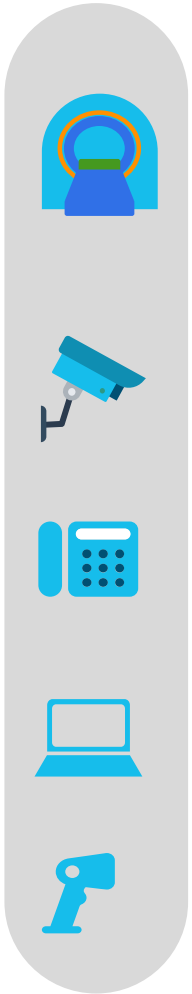
Enhancing CBAR with Infoblox DNS TXT/ A-Records

- Provide details on specific DNS Zones to inspect
- Inside the Zone, the inspection should happen on TXT Records/A Records
- Automatically add the resolved applications to Traffic Class and relevant Application set
- Once Classified the classified applications are pushed to devices for NBAR enrichment

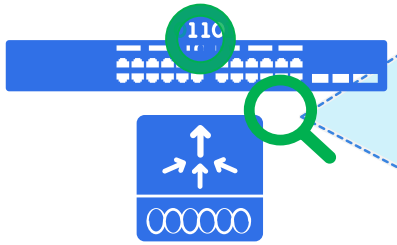


AI Endpoint Analytics

Endpoint profiling via CBAR and Application Telemetry



802.1x/MAB



Catalyst 9000 Switches and 9800 Wireless Controllers (CBAR and Application Telemetry Enabled)

Policy

Cisco ISE

Labels

Context

EA

Catalyst Center EA

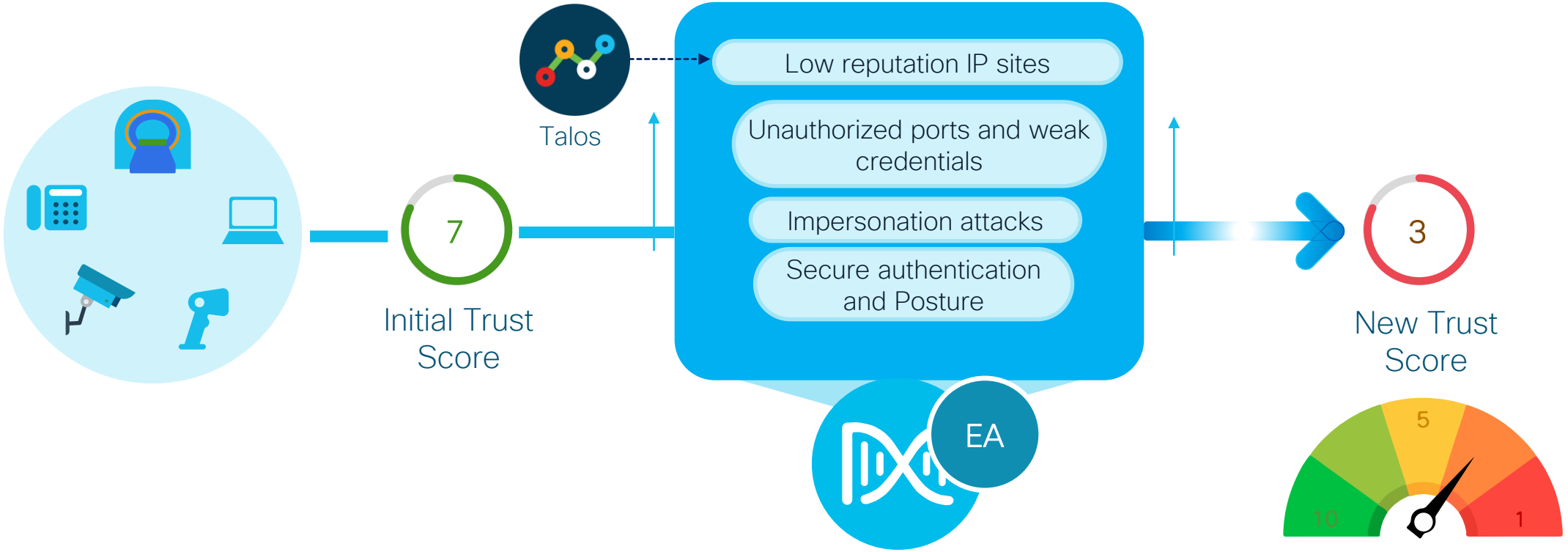
Endpoint Labels

Endpoint Type: **CT Scanner**	Manufacturer: **Globex Corp.**
Model: **Ultima**	Operating System: **MS Windows 7**

EA Dashboard

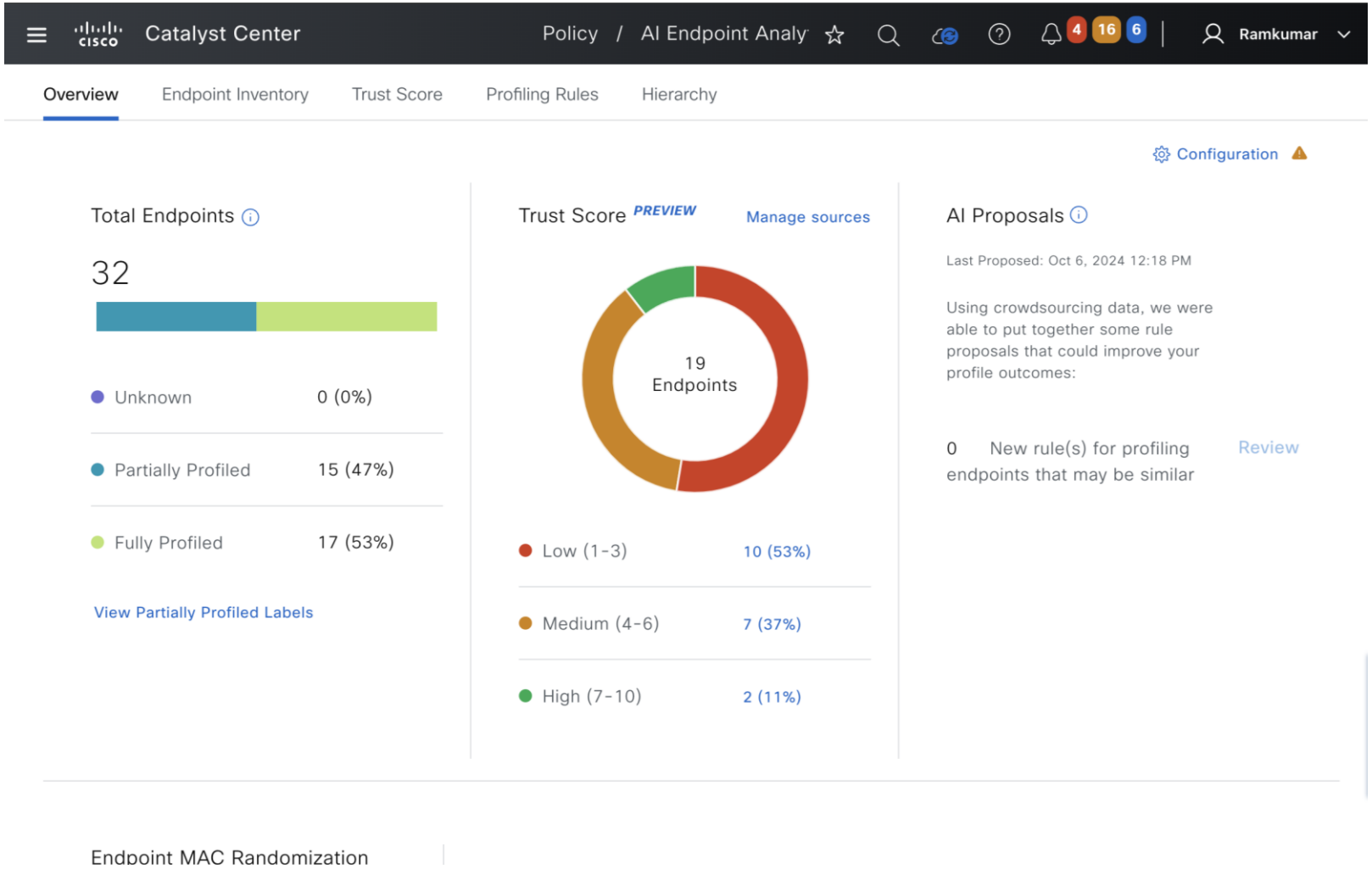
AI Endpoint Analytics

Continuous validation of endpoints for Trusted Access



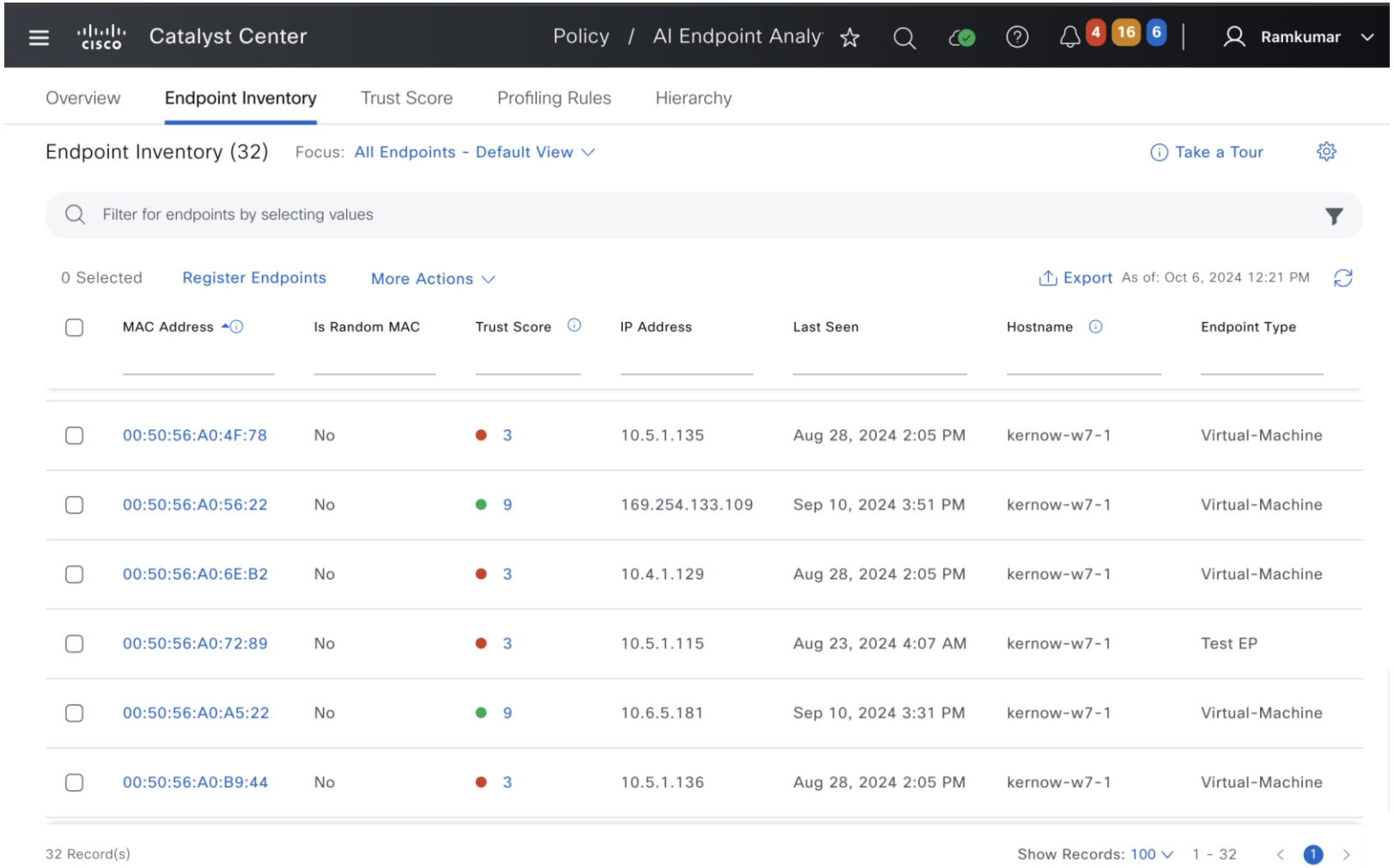
AI Endpoint Analytics

- Provides visibility on Endpoints which are Profiled and Unknown
- Provides Trust Score based on
  - Authentication Method
  - Posture
  - Endpoint Attribute Conflict
  - AI Spoofing Detection
  - Open Port Scan
  - Credential Vulnerabilities
  - NAT Mode Detection
  - Concurrent MAC Detection
  - Talos IP Reputation
- AI Proposals based on crowdsourced data for endpoint profiling



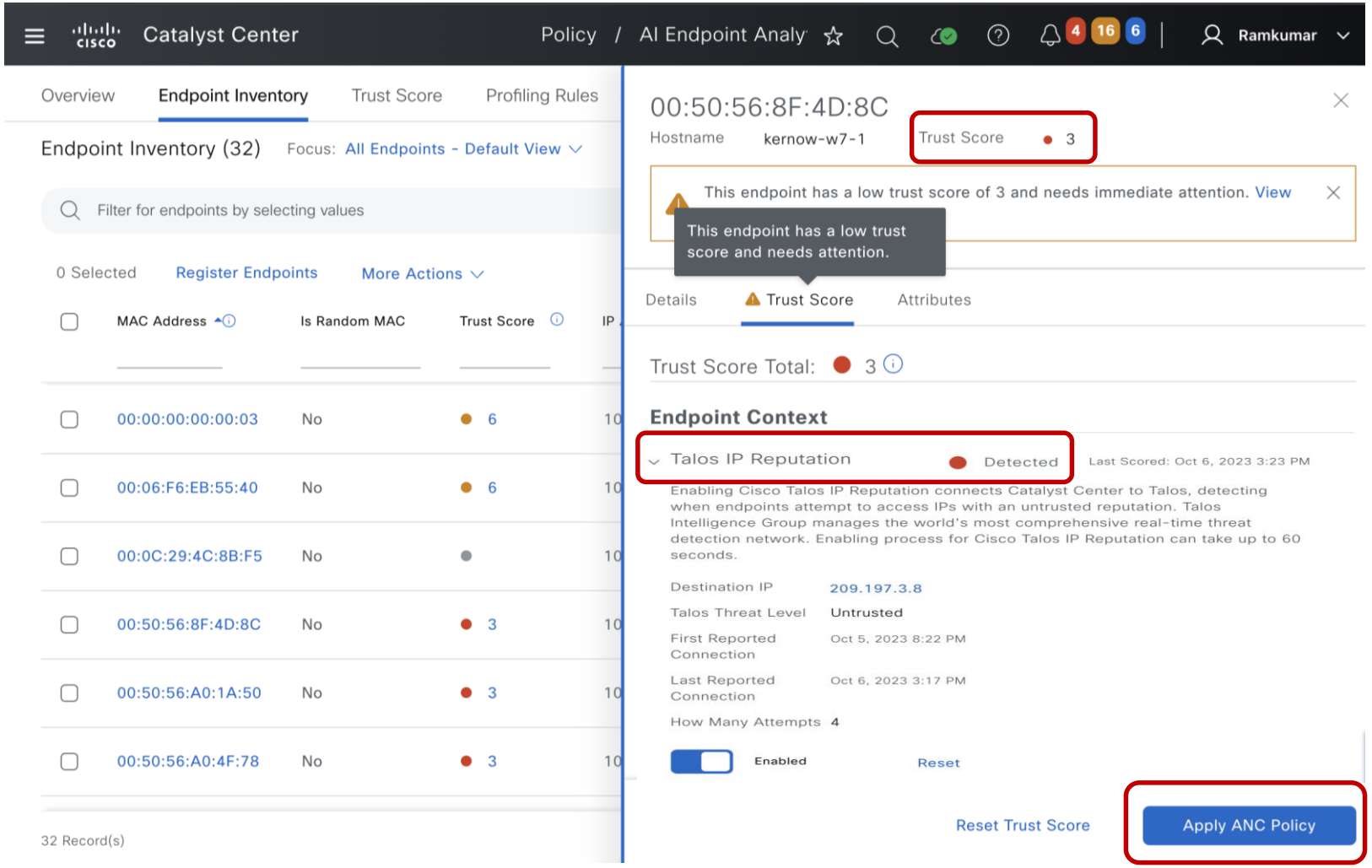
AI Endpoint Analytics

- Navigate to Endpoint Inventory to view the details on endpoints
- View the trust score of devices, endpoint type

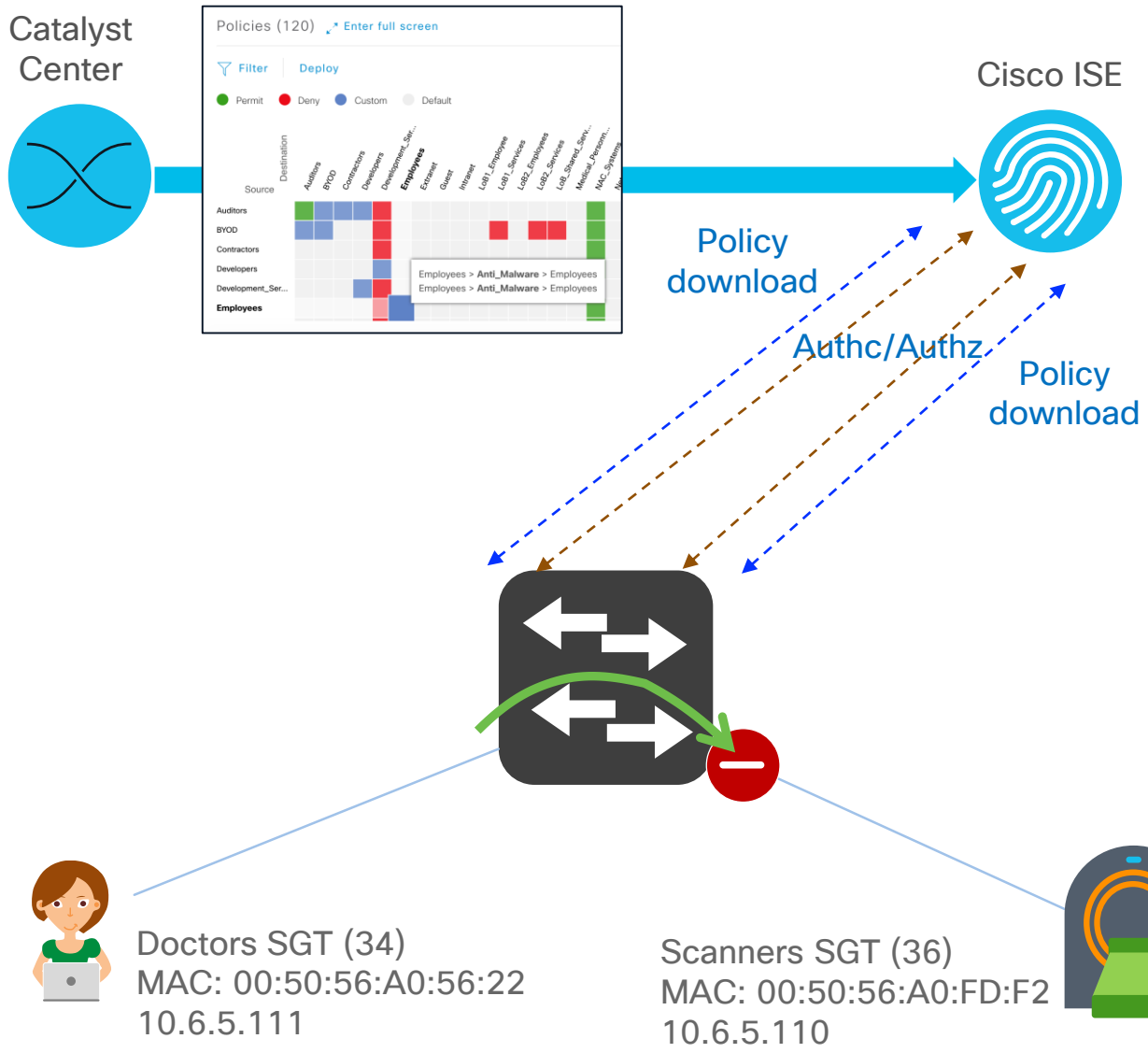


AI Endpoint Analytics

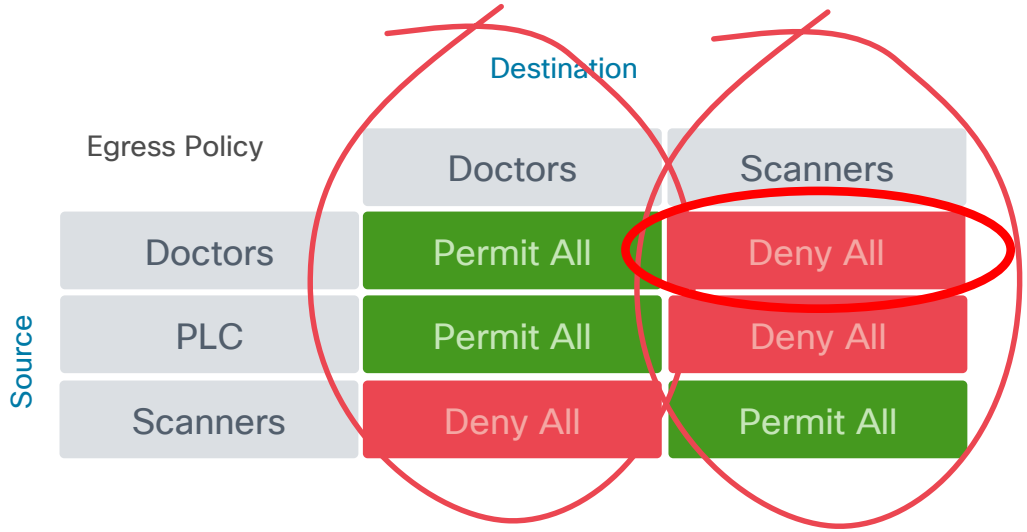
- Navigate to Endpoint Inventory to view the details on endpoints
- View the trust score of devices, endpoint type
- Select an endpoint to view Trust score context
- Use the ANC policy option to trigger a CoA for the endpoint and place in Quarantine policy



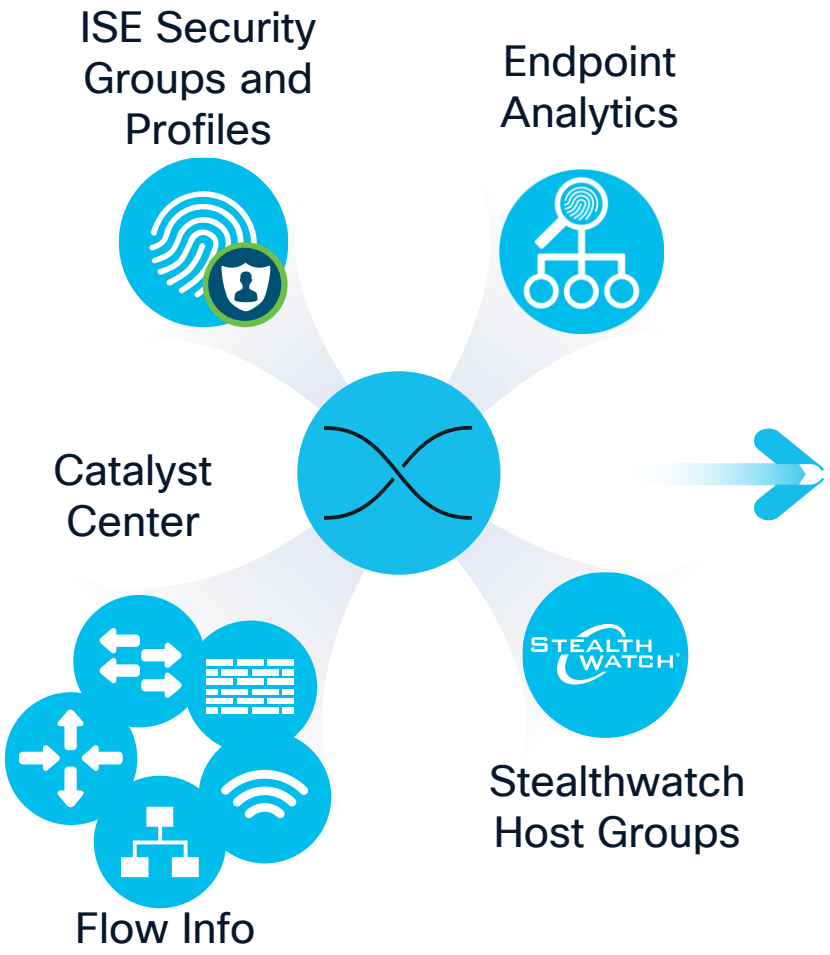
Classification, Leading to Visibility & Enforcement



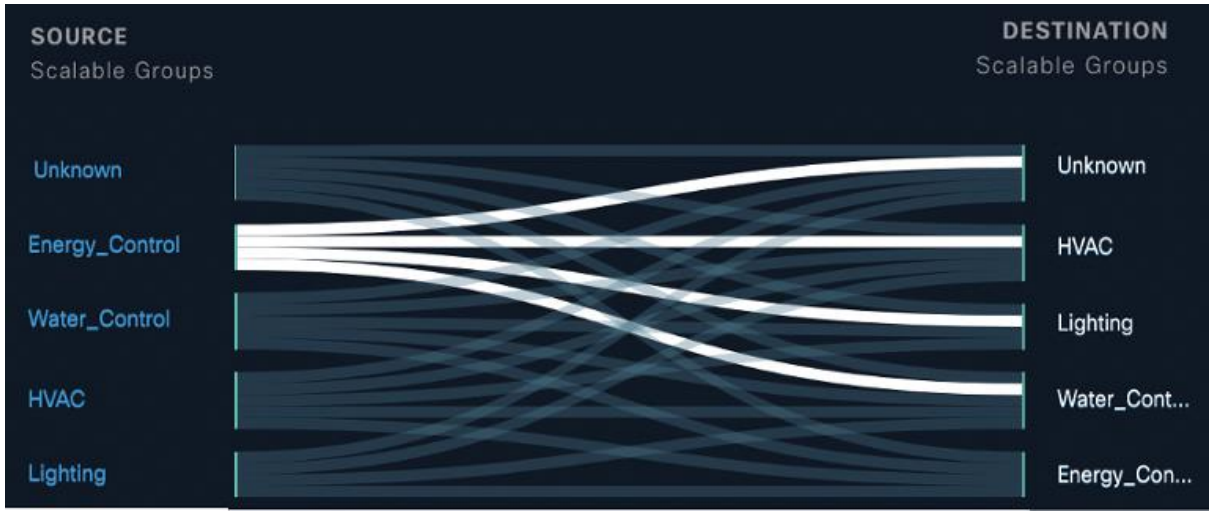
- Classification: Dynamic/ISE
- Src SGT found, Dst SGT found
- Enforcement: At Egress



Group-Based Policy Analytics



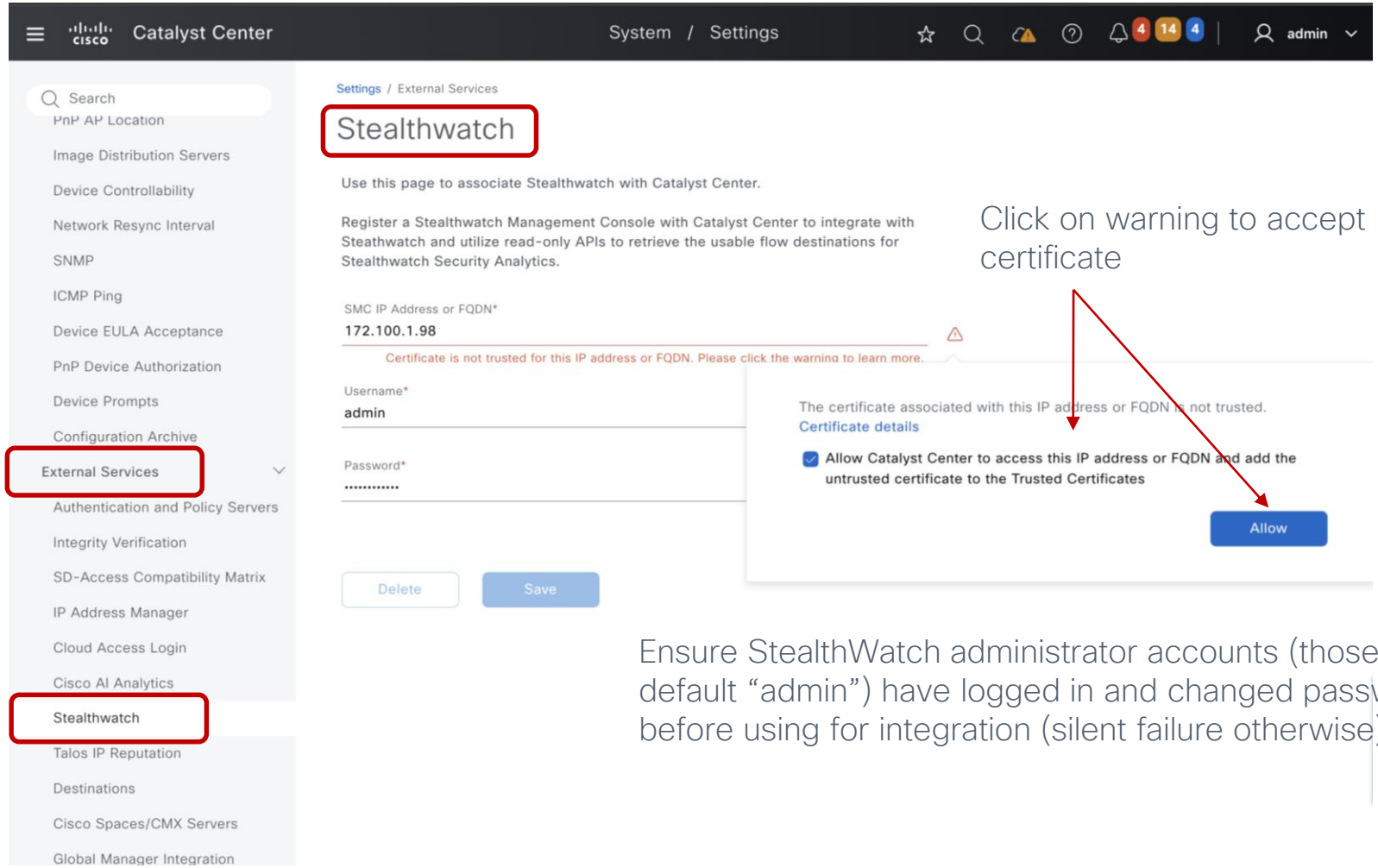
Group-Group Activity



Direction	Service Name ▲	Protocol	Port
⇄	3m-image-lm	TCP	1550
⇄	acr-nema	TCP	104
⇄	dicom	TCP	11112

Stealthwatch – Catalyst Center Integration

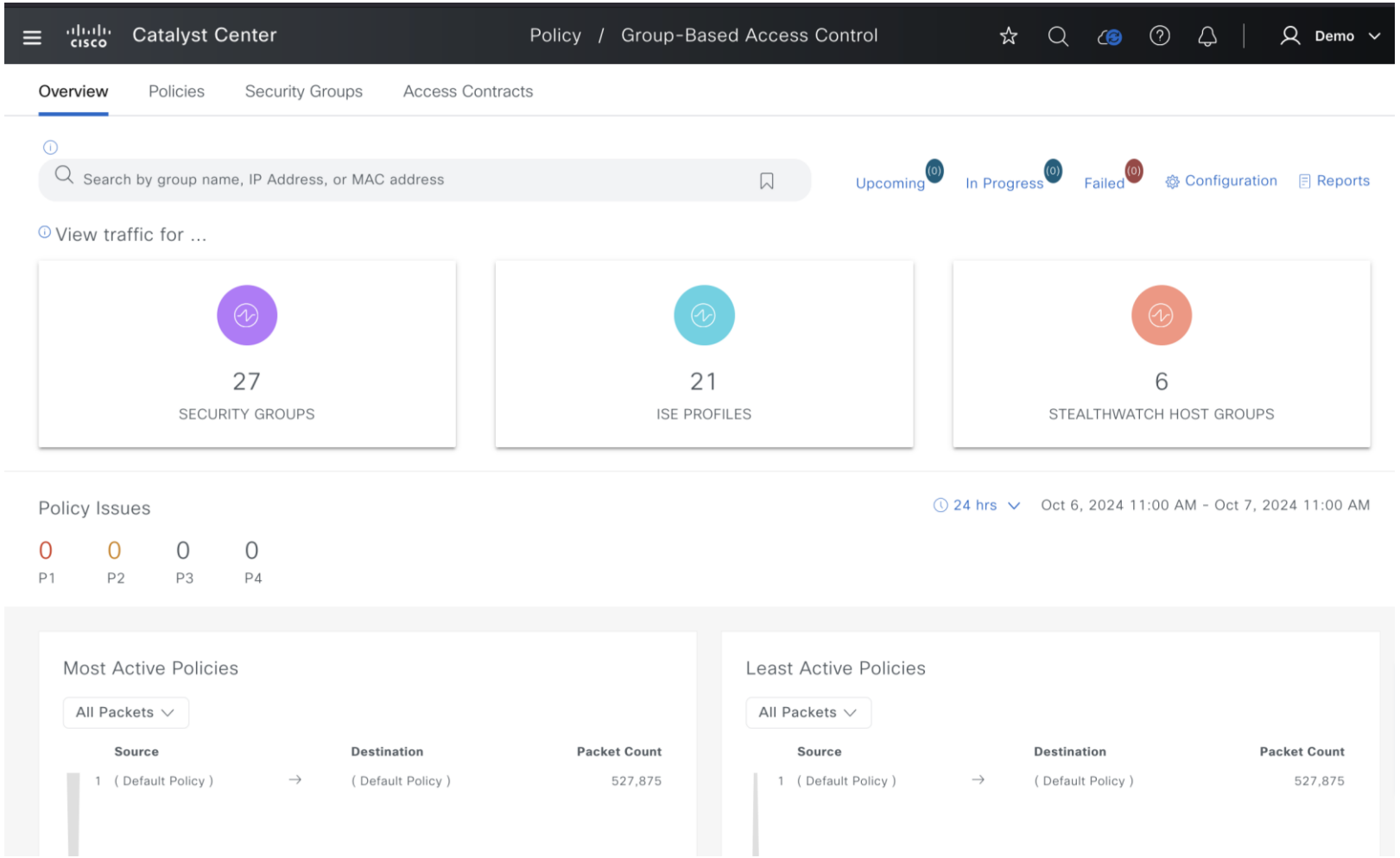
Integration with SNA Management Console through System → Settings



Ensure StealthWatch administrator accounts (those beside default “admin”) have logged in and changed password before using for integration (silent failure otherwise)

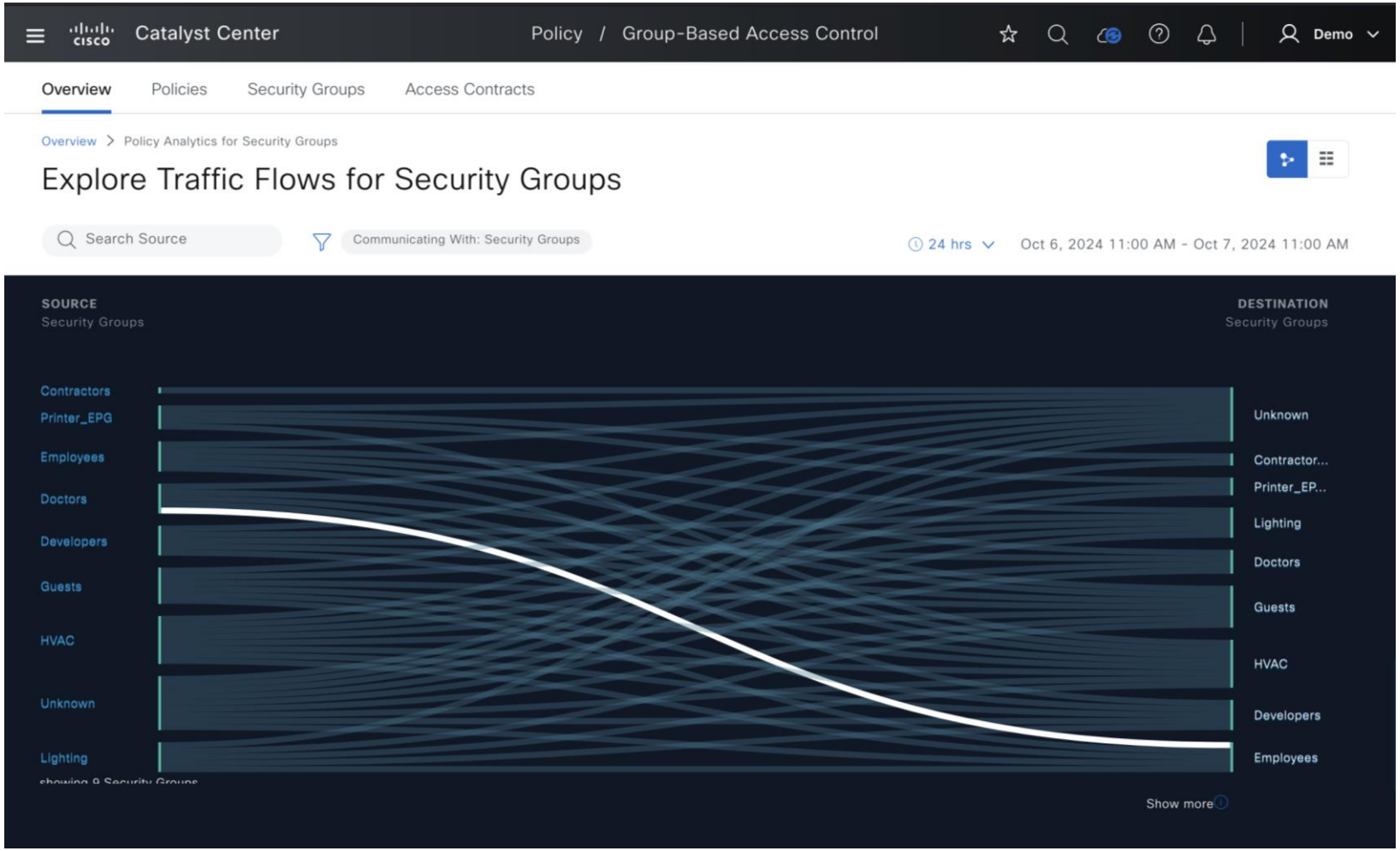
Group-Based Policy Analytics

- Visualization of Flow data based on Security Groups, ISE Profiles, Stealthwatch Host Groups



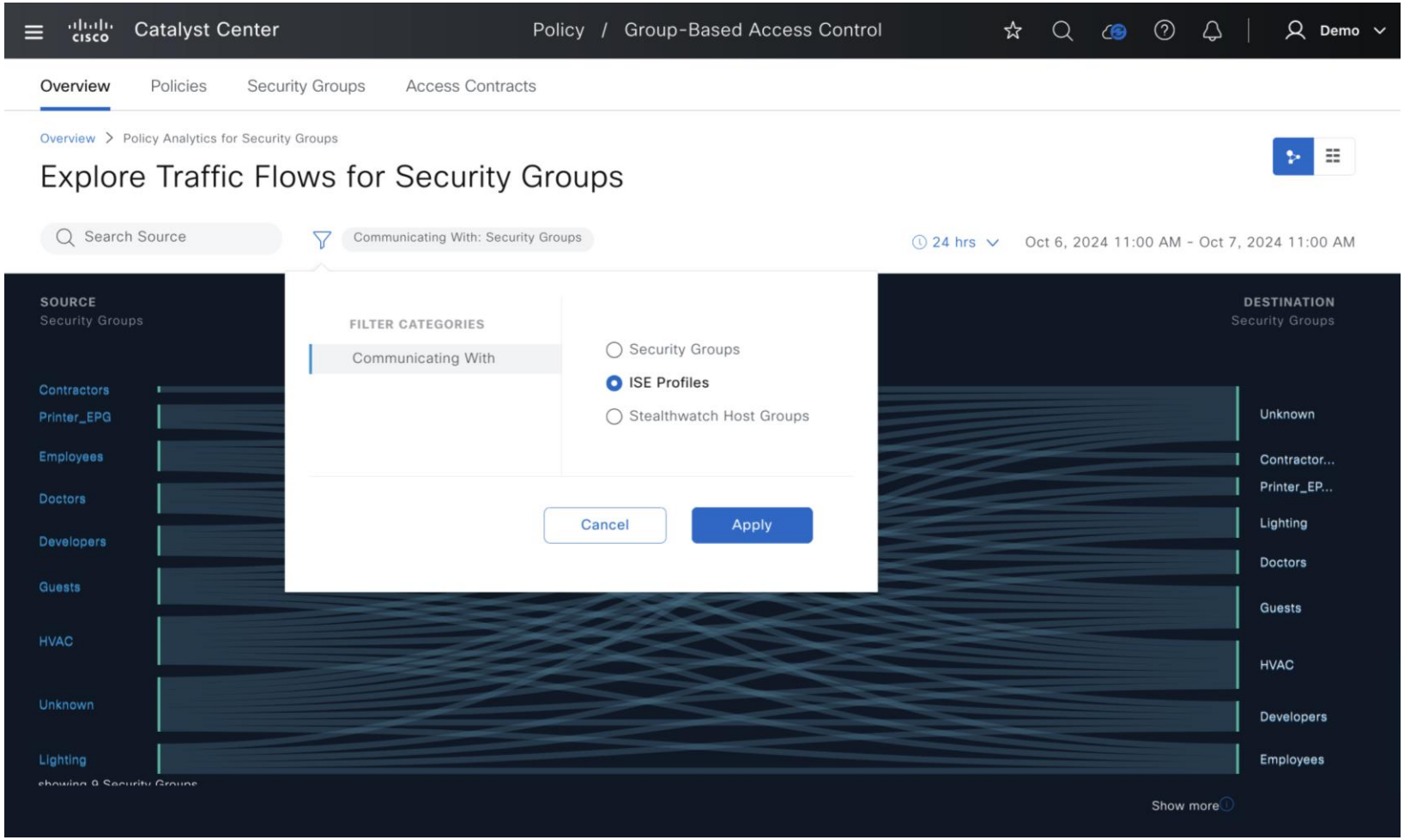
Group-Based Policy Analytics

- Visualization of Flow data based on Security Groups, ISE Profiles, Stealthwatch Host Groups
- Netflow export does not have SGT data.
- Relies on correlation of NetFlow data with mappings from ISE, EA, StealthWatch



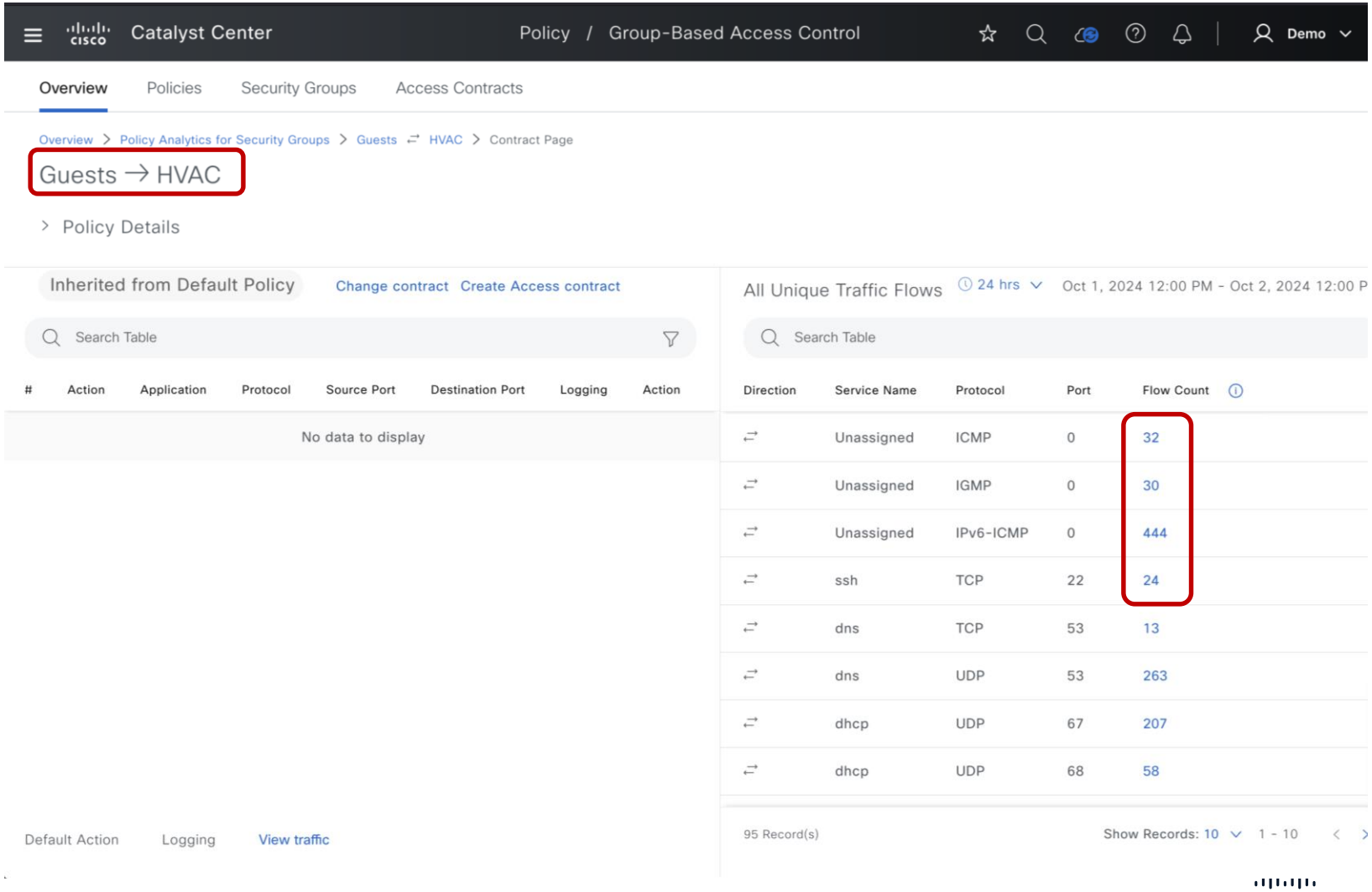
Group-Based Policy Analytics

- Visualization of Flow data based on Security Groups, ISE Profiles, Stealthwatch Host Groups
- Netflow export does not have SGT data.
- Relies on correlation of NetFlow data with mappings from ISE, EA, StealthWatch
- Visualization of Flows based on destination group types (Security Groups, ISE Profiles or Stealthwatch Host Groups)



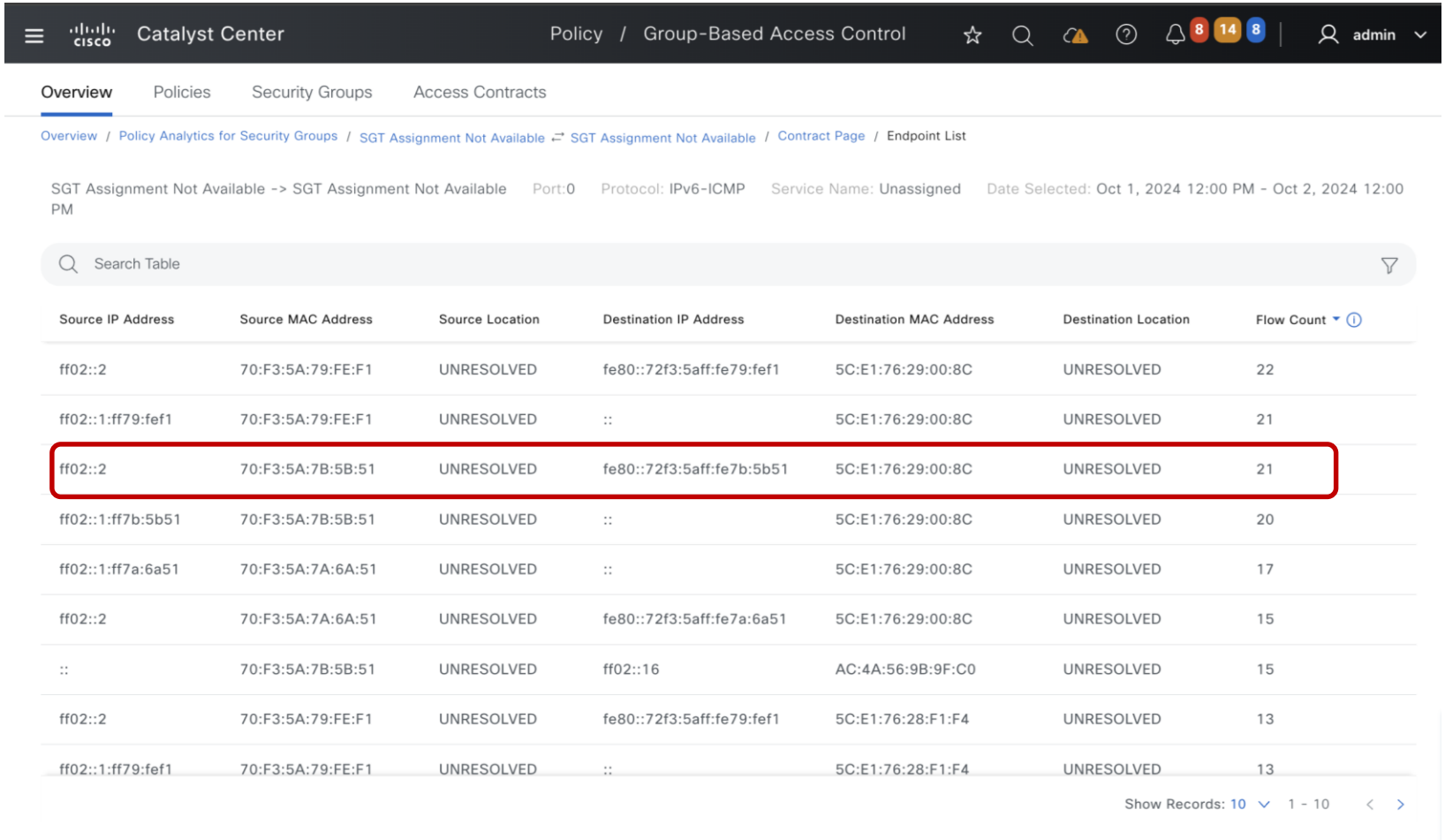
Group-Based Policy Analytics

- Visualization of services and flow count based on group to group communication



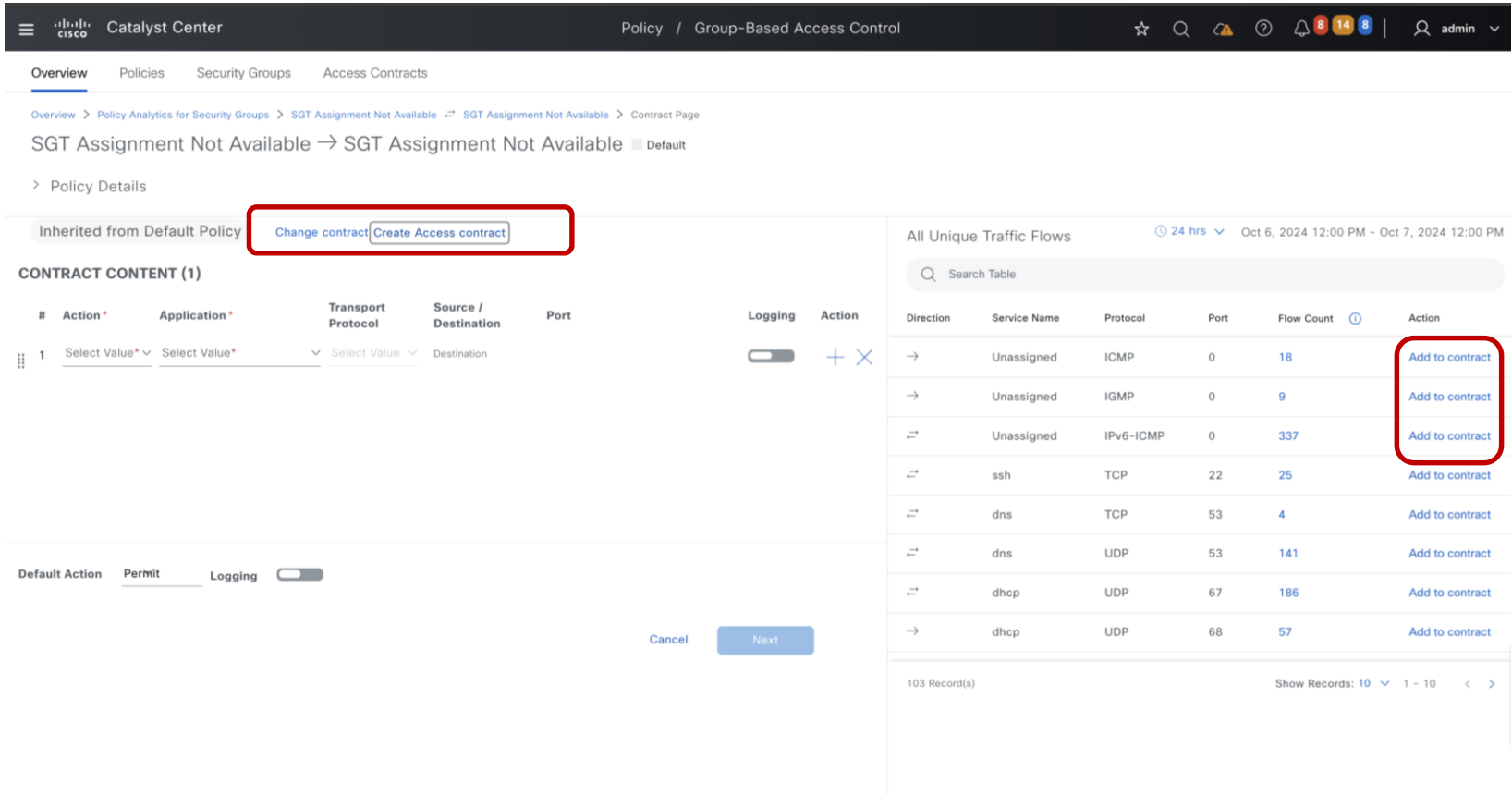
Group-Based Policy Analytics

- Visualization of services and flow count based on group-to-group communication
- Visualization of flows based on Netflow data



Group-Based Policy Analytics

- Visualization of services and flow count based on group to group communication
- Visualization of flows based on Netflow data
- Ability to add/modify contracts to be pushed to ISE for policy enforcement



Integrations for (Network) Assurance/Monitoring

Scenario- Application Experience

Not able to connect to my application

Helpdesk

Authentication Problem?, RF Issue or app problem?

Network is stable. Must be the app.

Network Ops

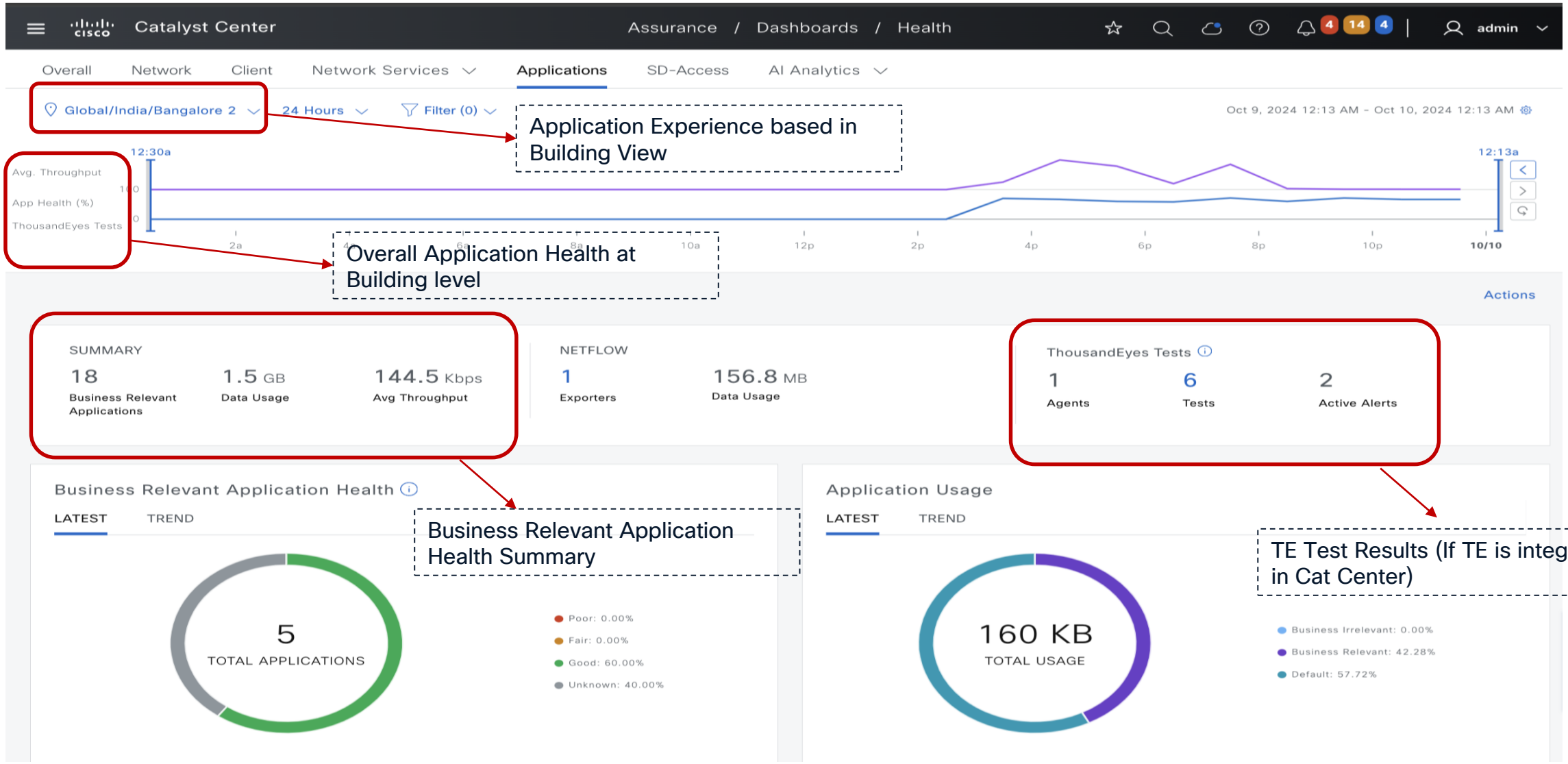
IT Routing Loop

Code is fine. Don't care about anything else

AppDev

Dear User: We do not have enough info/context to troubleshoot further and are thus wait/closing your case.

Application Experience Dashboard



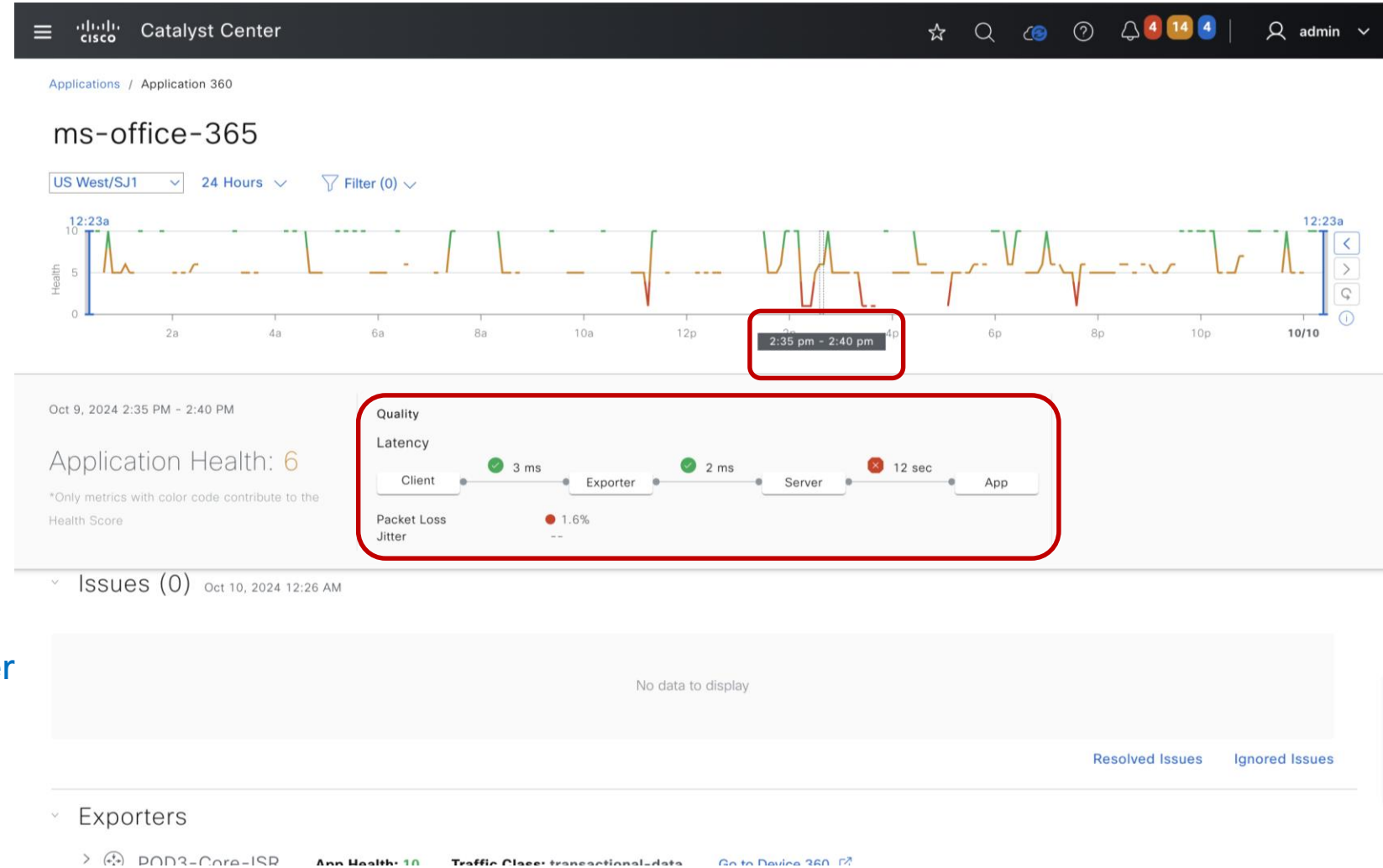
Application Experience- Application 360

- Application 360 provides details based on Packet Loss, Latency and Jitter (RTP)
- Latency metrics based on
  - Client to Exporter
  - Exporter to Server
  - Server to Application

Client Network Latency = Client to Exporter

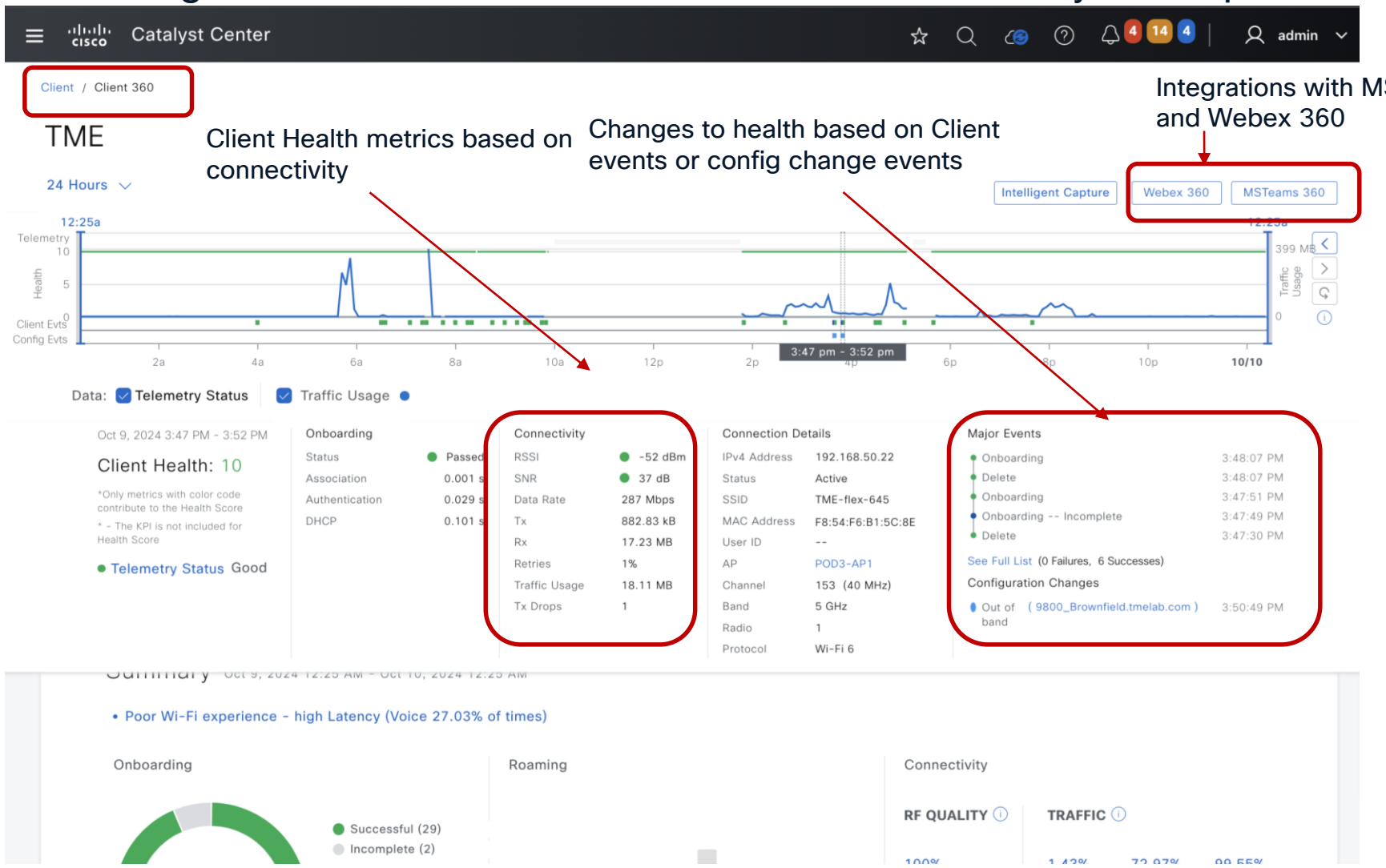
Server Network Latency = Exporter to Server

Application Server Latency = Server to Application



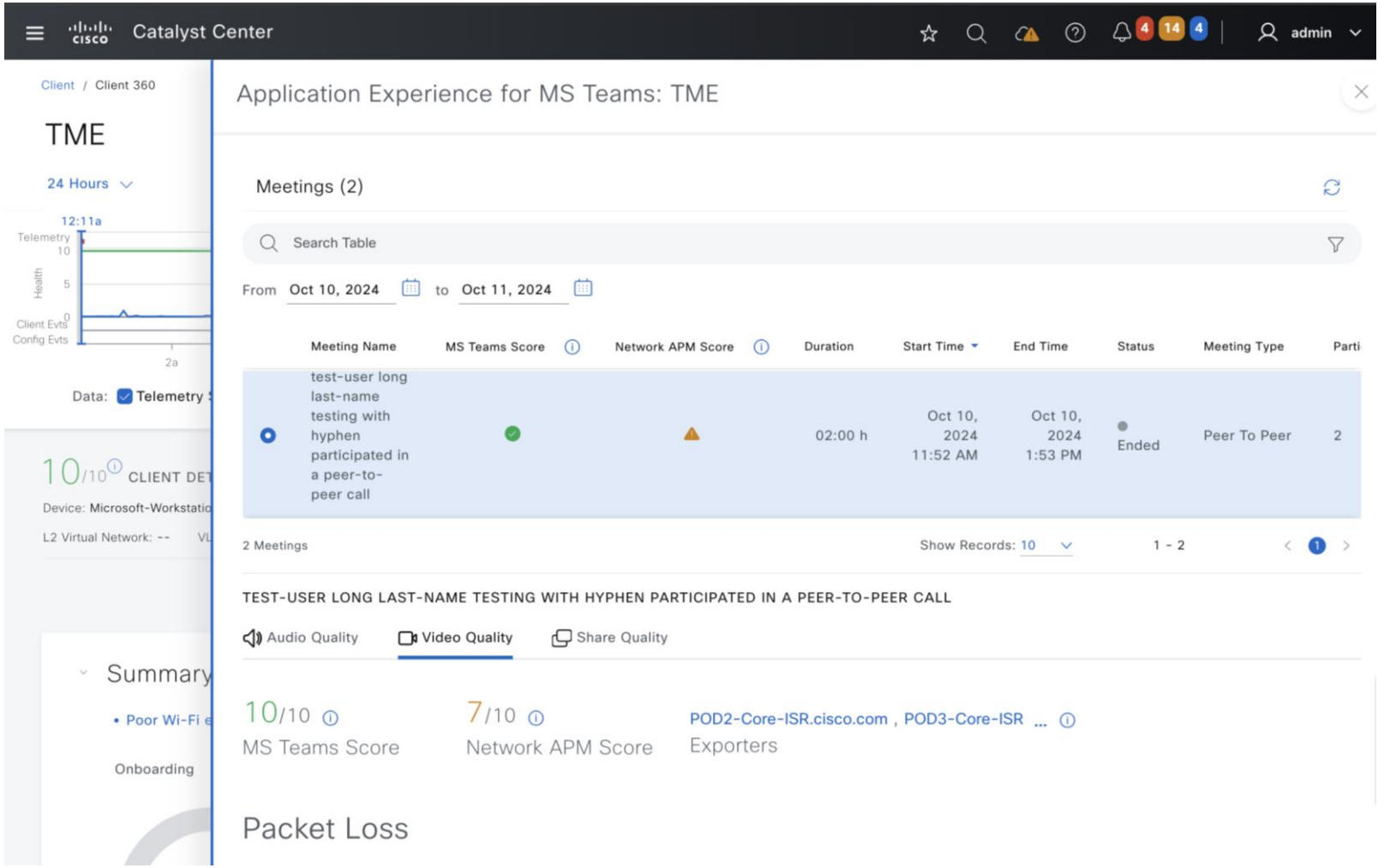
Client 360

Navigate to Client 360 to understand client connectivity and experience



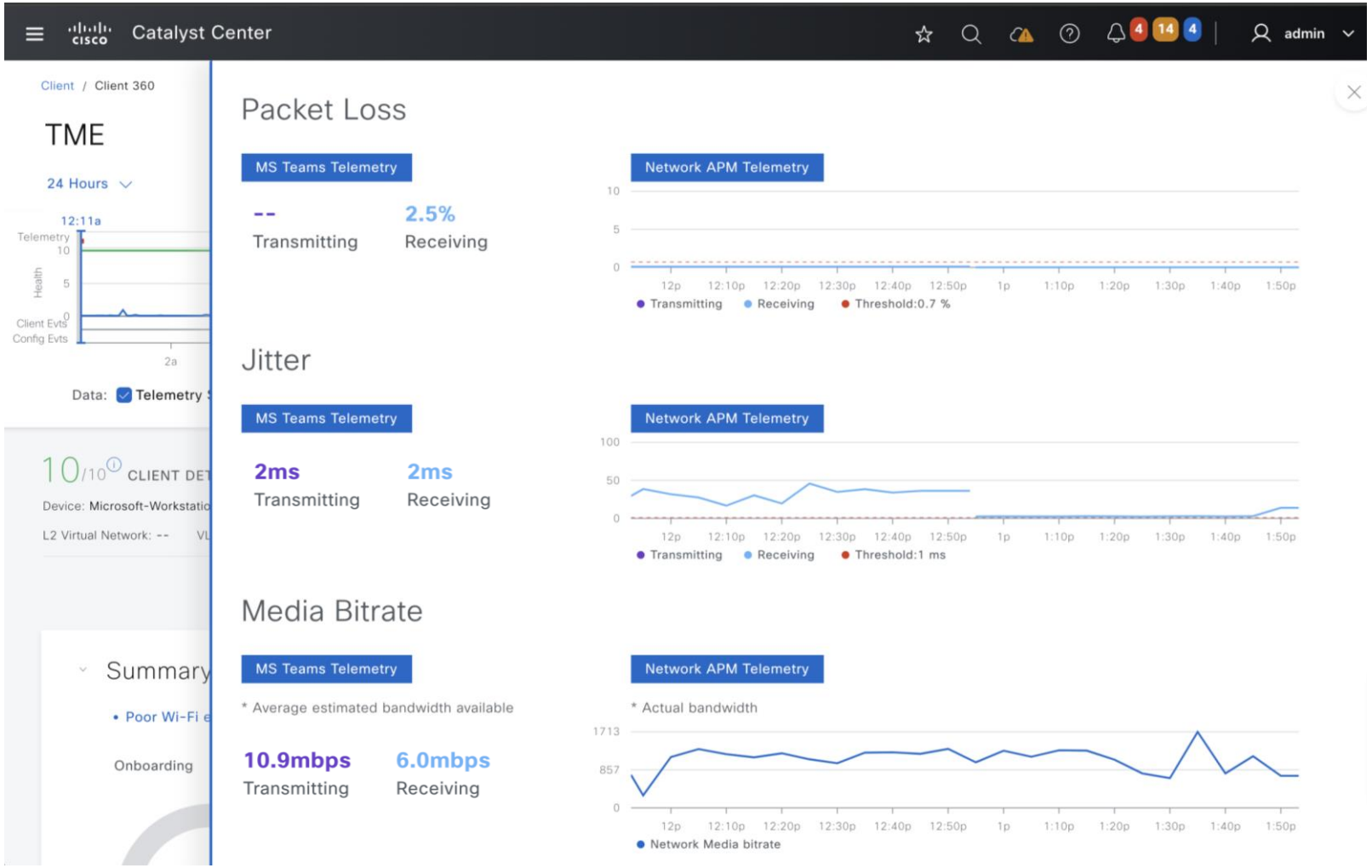
Catalyst Center MS-Teams Integration

- In Client 360 View > Click on MS Teams to view MS Teams Call records
- Call details contains MS Teams call score and Network APM Score
- Health scores based on Audio/Video/Share Quality to precisely understand the problem



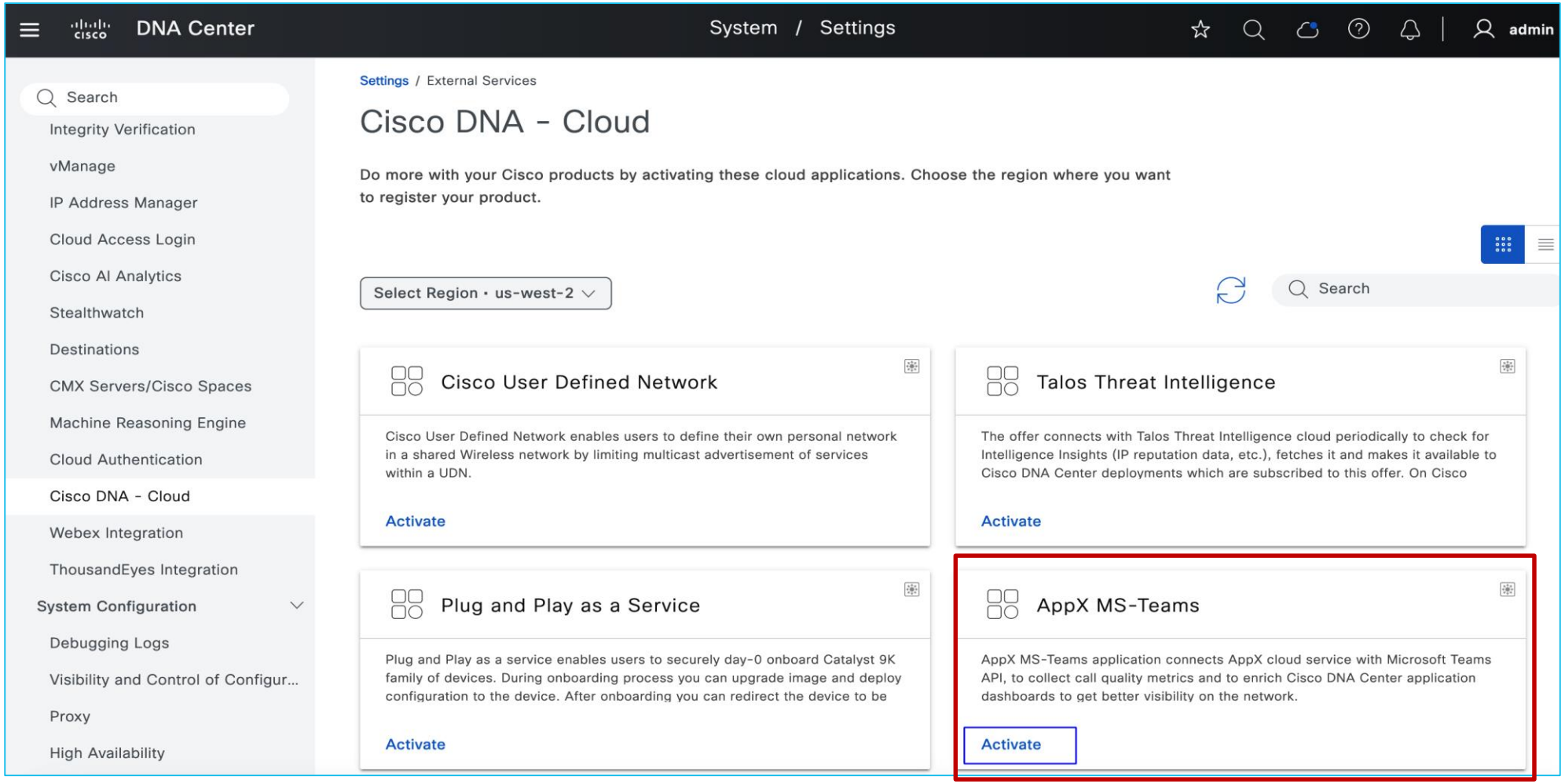
Catalyst Center MS-Teams Integration

- Packet Loss, latency, Jitter details collected from MS Teams and Network APM
- Once data is polled, Call records are stored in Catalyst Center for 14 days

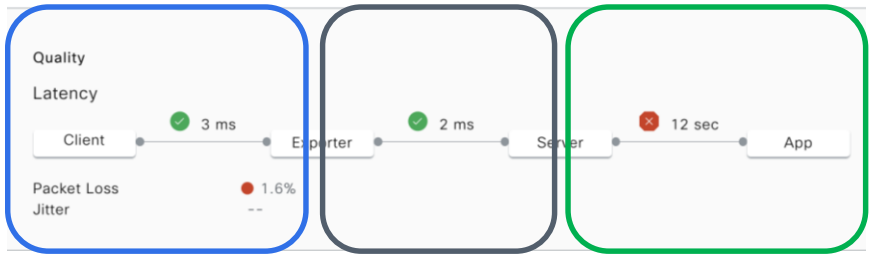


Catalyst Center MS-Teams Integration

MS-Teams can be integrated to Catalyst Center from the Cisco DNA-Cloud Portal

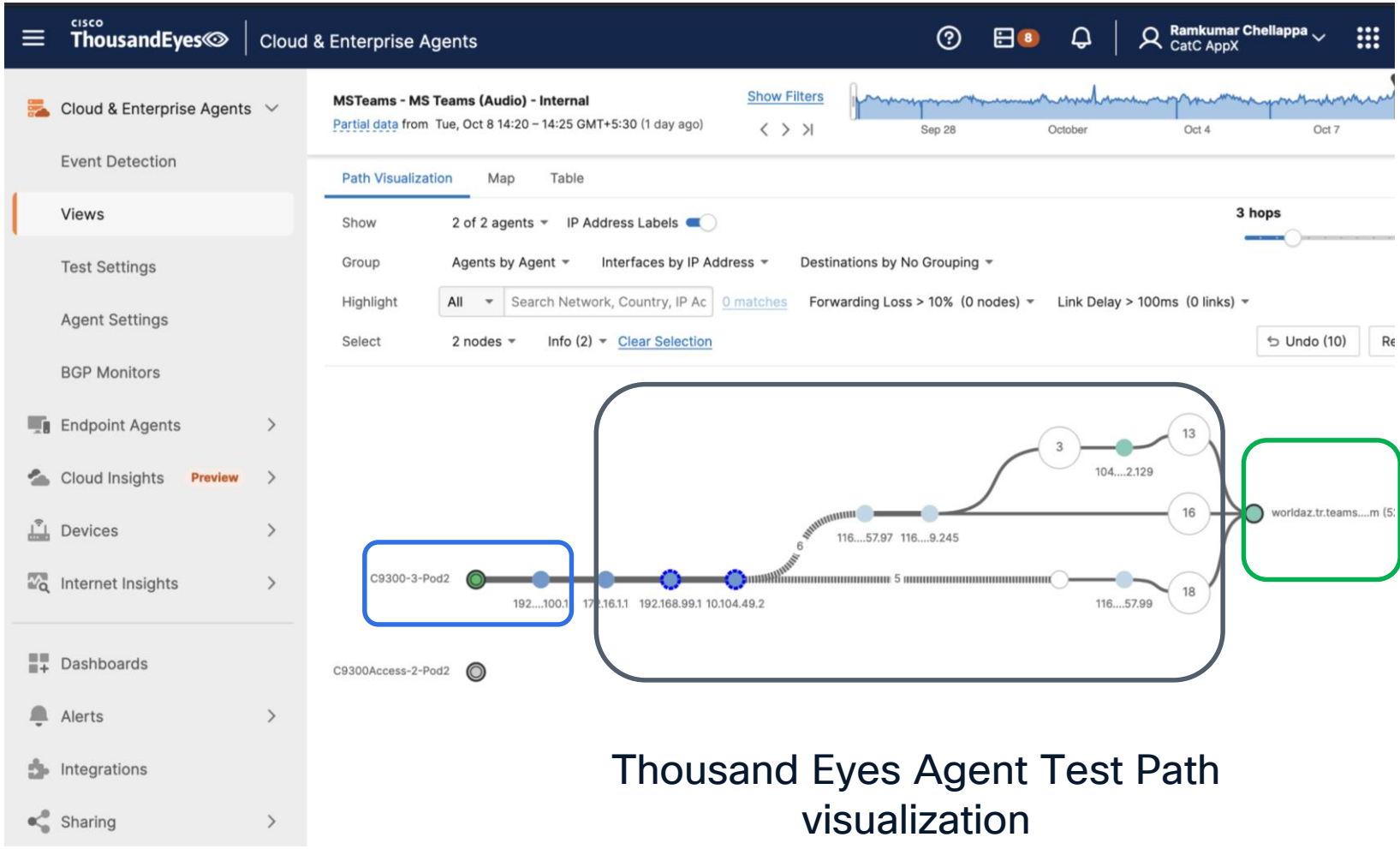


Catalyst Center- Thousand Eyes Integration



Catalyst Center App Ex 360 View

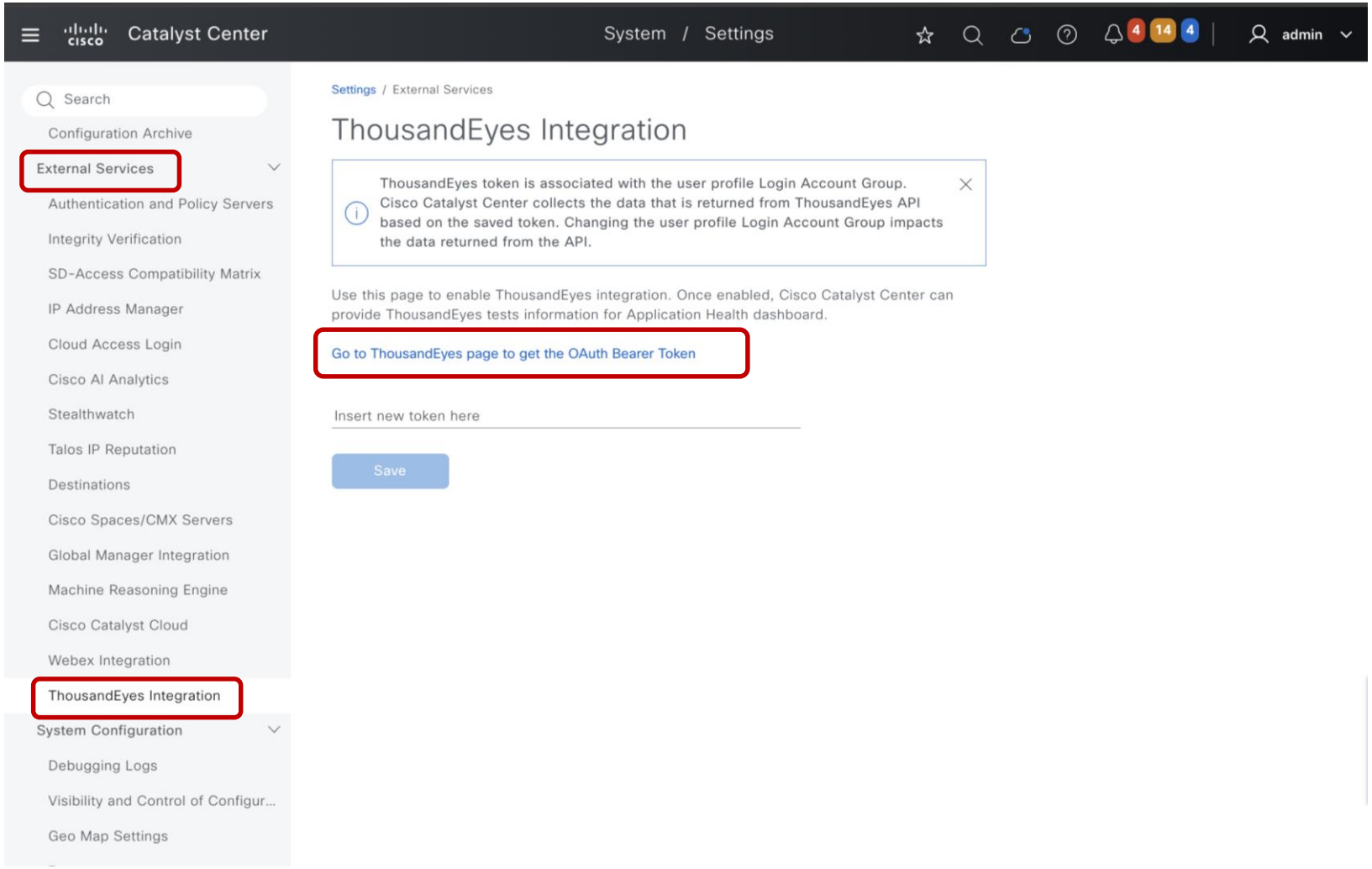
Agent Test Path visualization provide details on latency between routed hops



Thousand Eyes Agent Test Path visualization

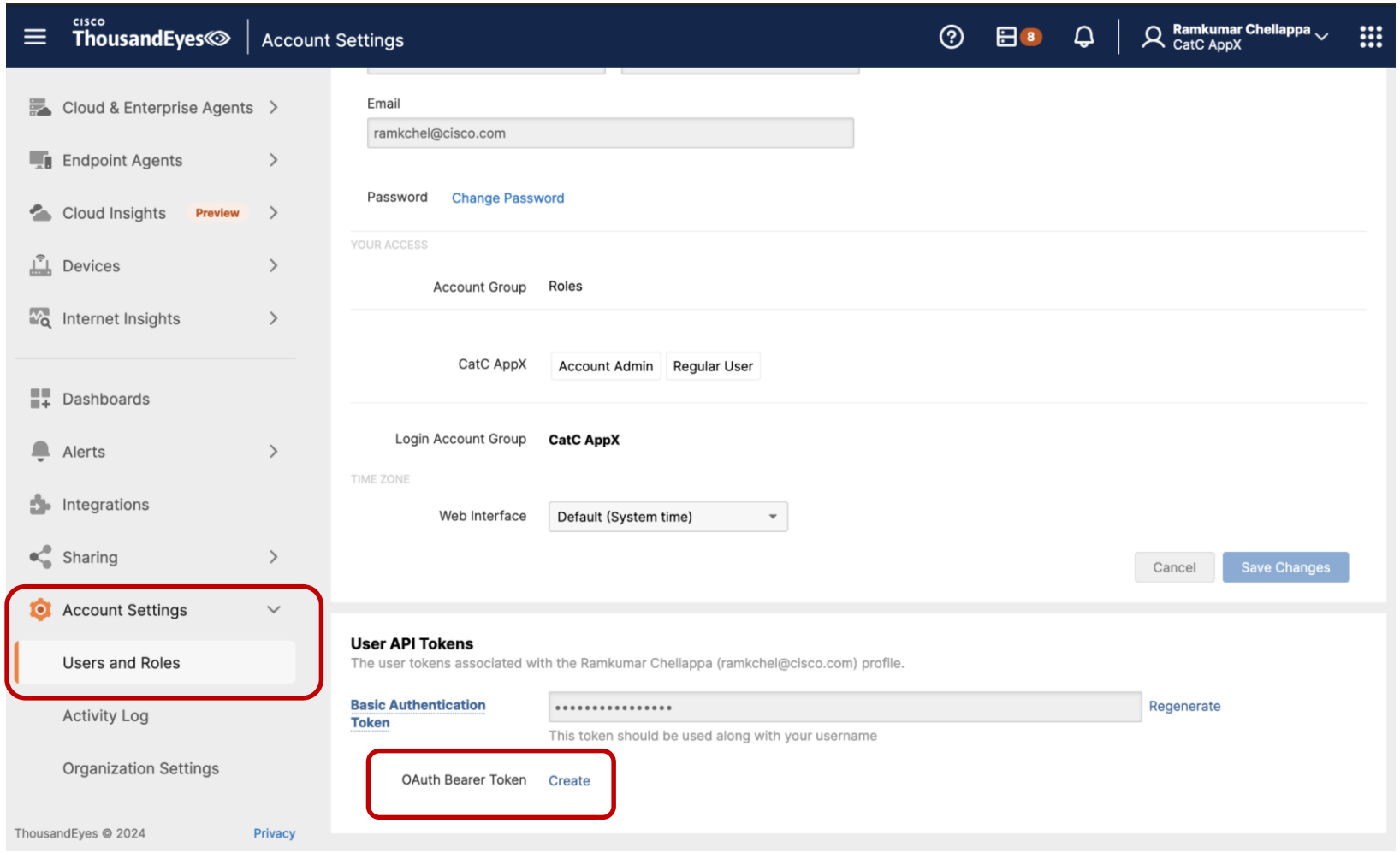
Catalyst Center- Thousand Eyes Integration

- Navigate to System > Settings > External Services > ThousandEyes Integration
- Use the link to cross launch to TE Dashboard to generate an Oauth Token



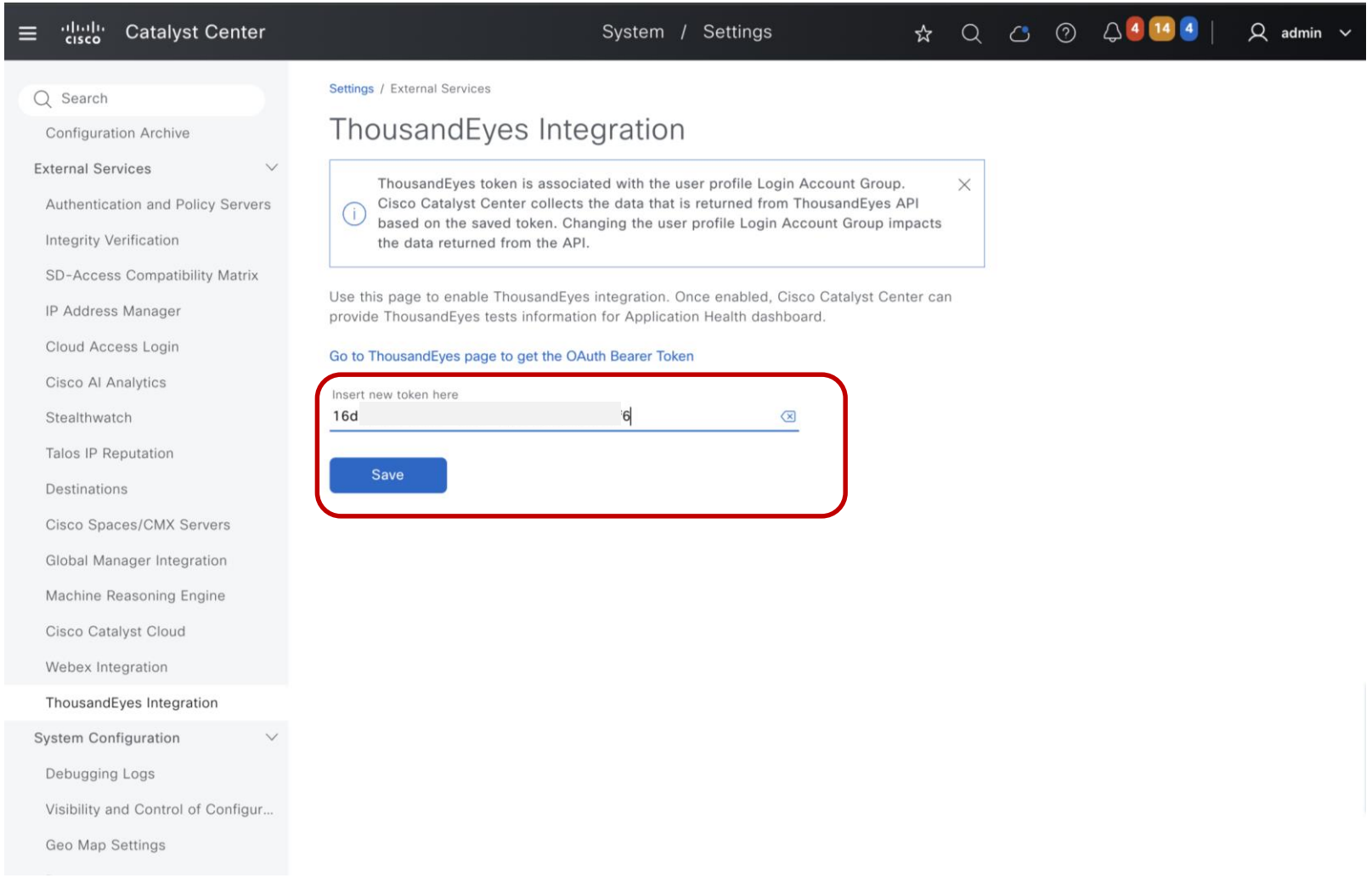
Catalyst Center- Thousand Eyes Integration

- Navigate to System > Settings > External Services > ThousandEyes Integration
- Use the link to cross launch to TE Dashboard to generate an Oauth Token
- In TE Dashboard, Navigate to Account Settings > Users & Roles

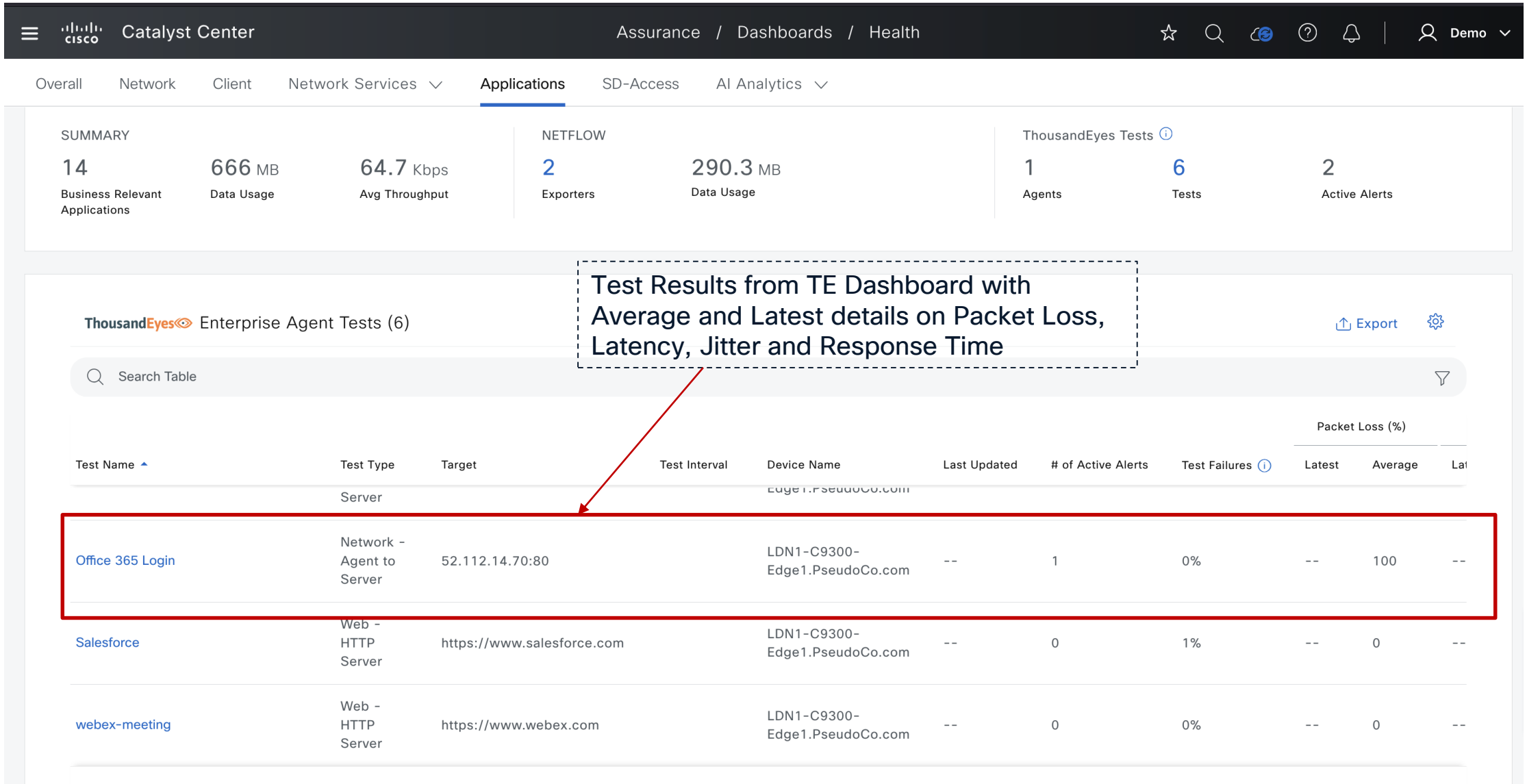


Catalyst Center- Thousand Eyes Integration

- Navigate to System > Settings > External Services > ThousandEyes Integration
- Use the link to cross launch to TE Dashboard to generate an Oauth Token
- In TE Dashboard, Navigate to Account Settings > Users & Roles
- Copy the token in Cat Center to integrate with TE Dashboard



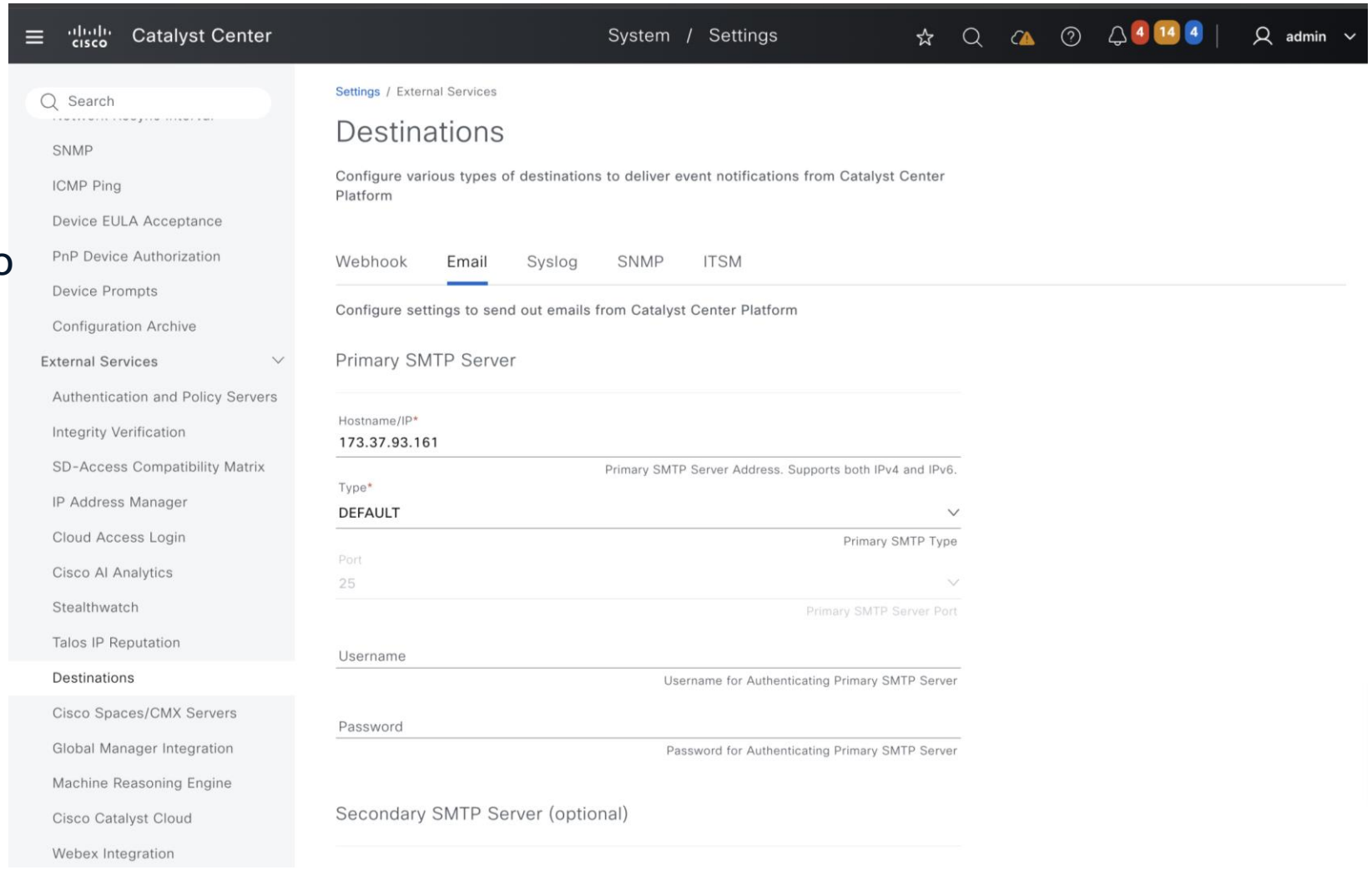
Catalyst Center – Thousand Eyes Test Results



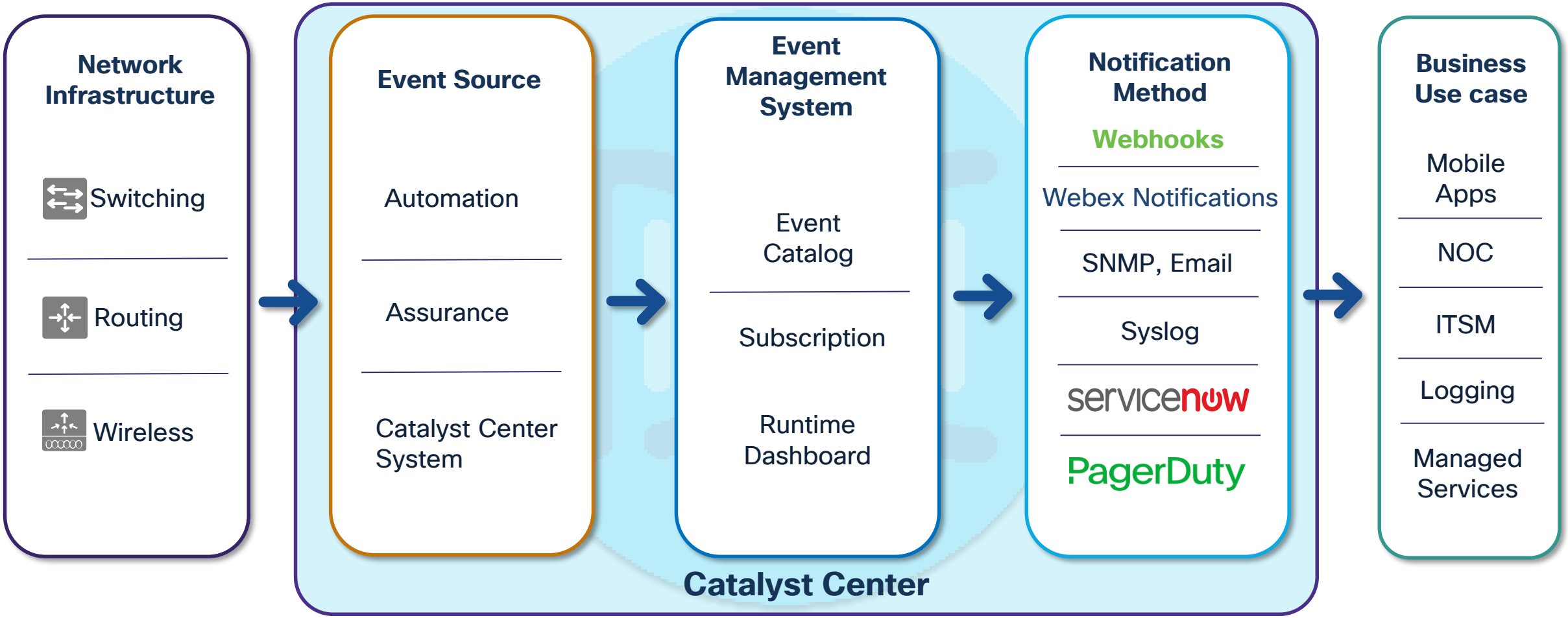
Integrations to Simplify Network Operations

Catalyst Center Destinations

- Navigate to System > Settings > External Services > Destination to add various destination for event notifications
- Configure various external destinations
  - Webhooks
  - Email
  - SNMP
  - Syslog
  - ITSM



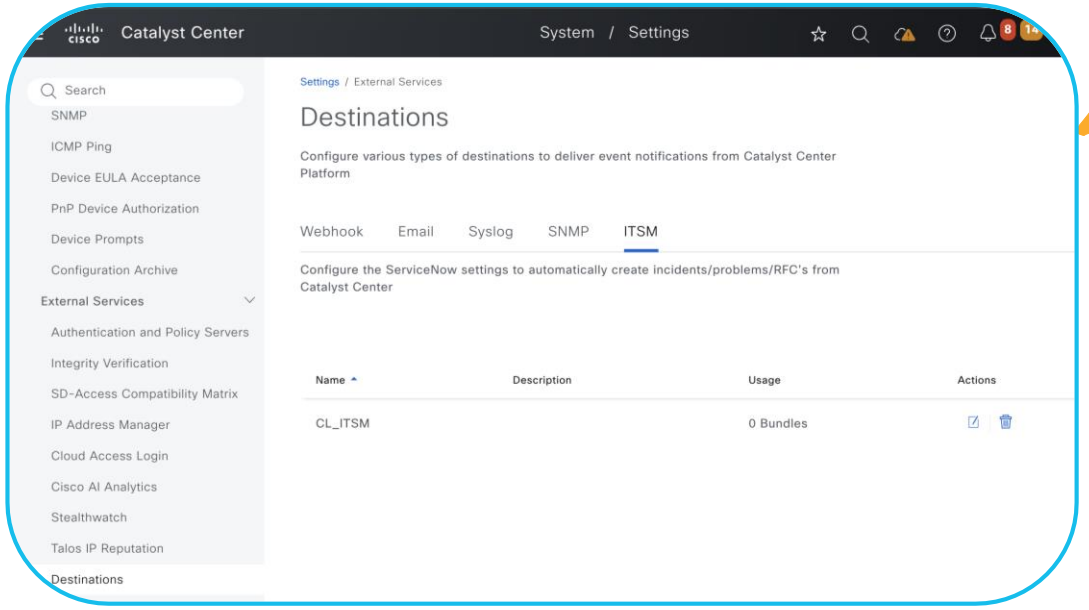
Catalyst Center Event Notification Framework



Catalyst Center ITSM Integration

Catalyst Center

+ servicenow

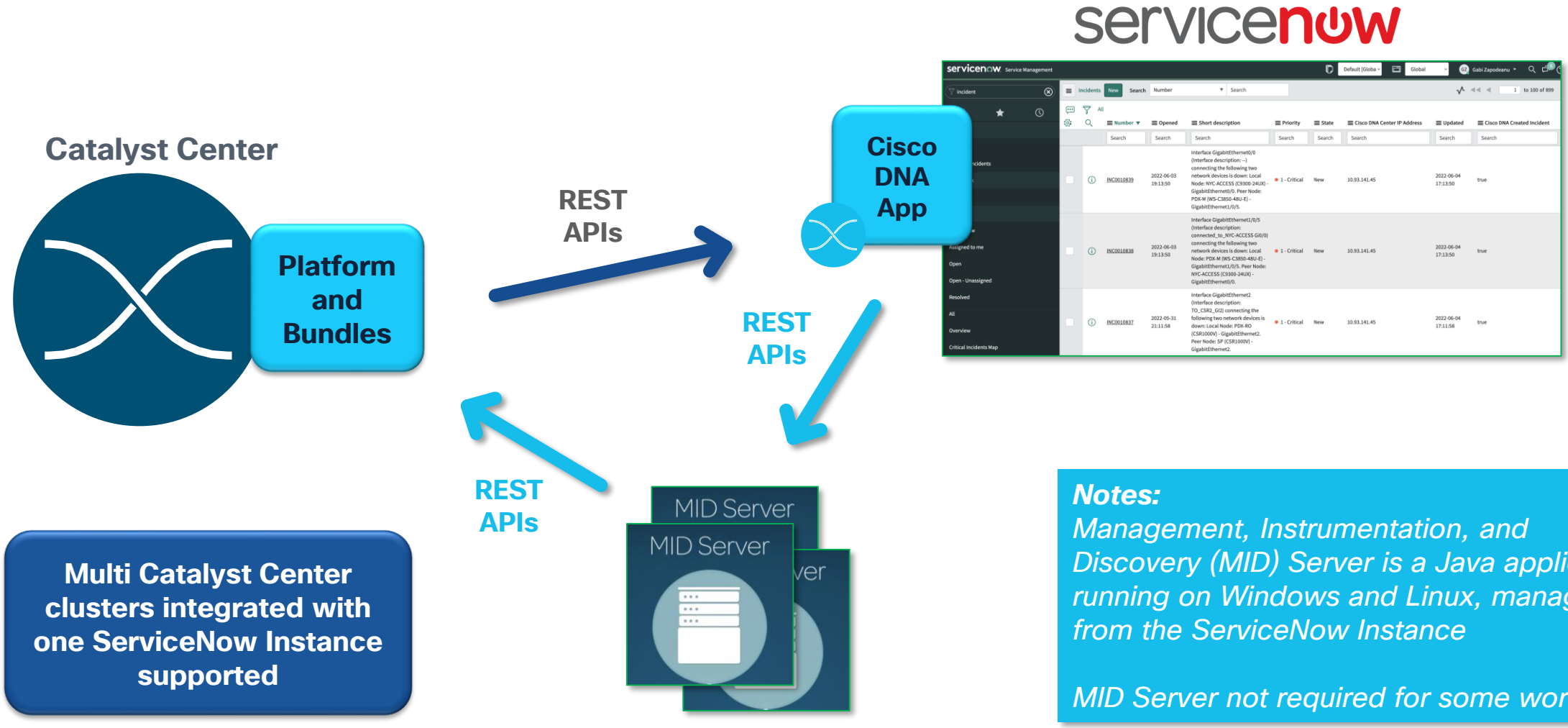


Catalyst Center ServiceNow Integration:

- Increased IT efficiency by streamlining and customizing processes
- Automated ServiceNow CMDB population with rich asset data
- Enhanced incident management with enriched issue data
- Simplified change management with closed loop functionality
- Endpoint attribute synchronization for client profiling

Catalyst Center ITSM Integration- Architecture

With the Cisco DNA App

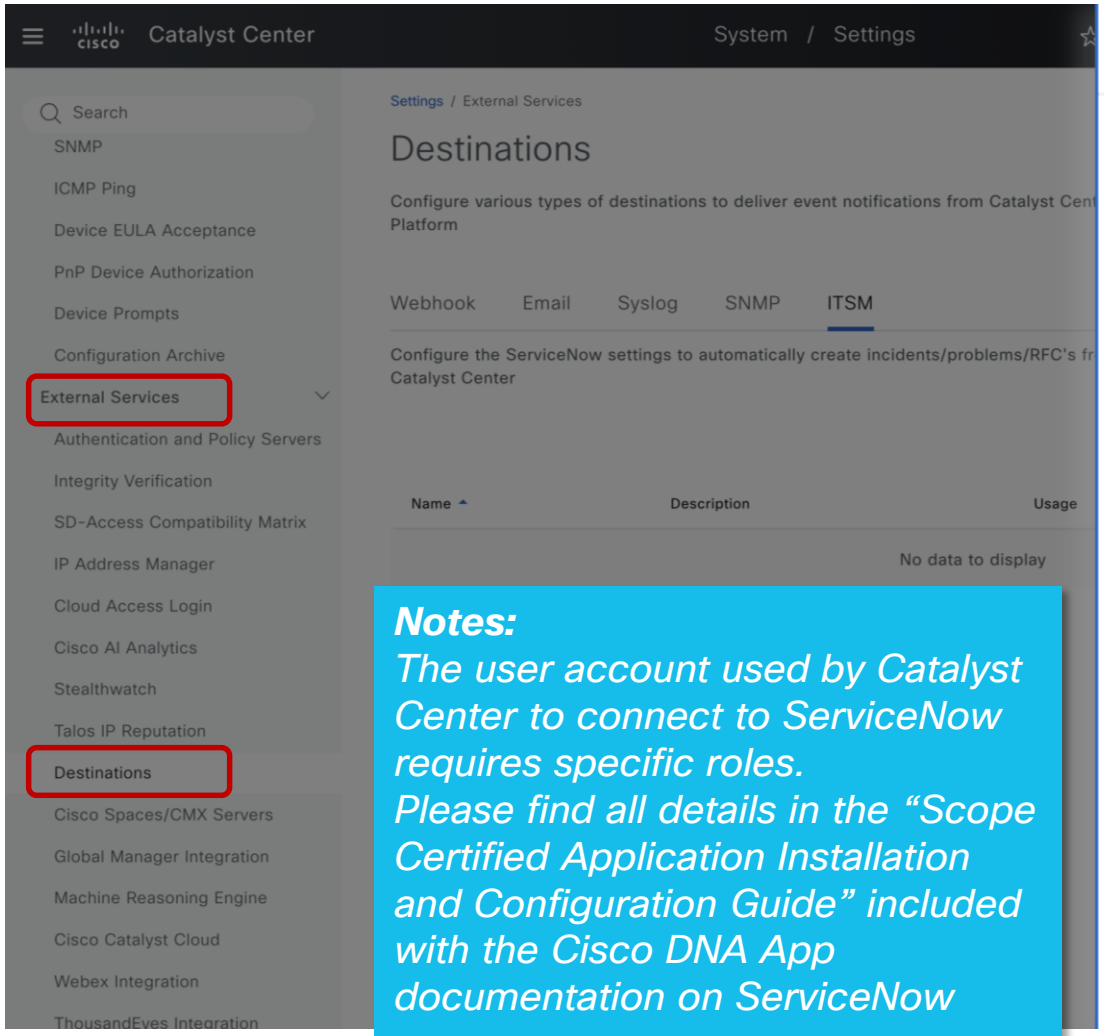


Notes:
Management, Instrumentation, and Discovery (MID) Server is a Java application running on Windows and Linux, managed from the ServiceNow Instance

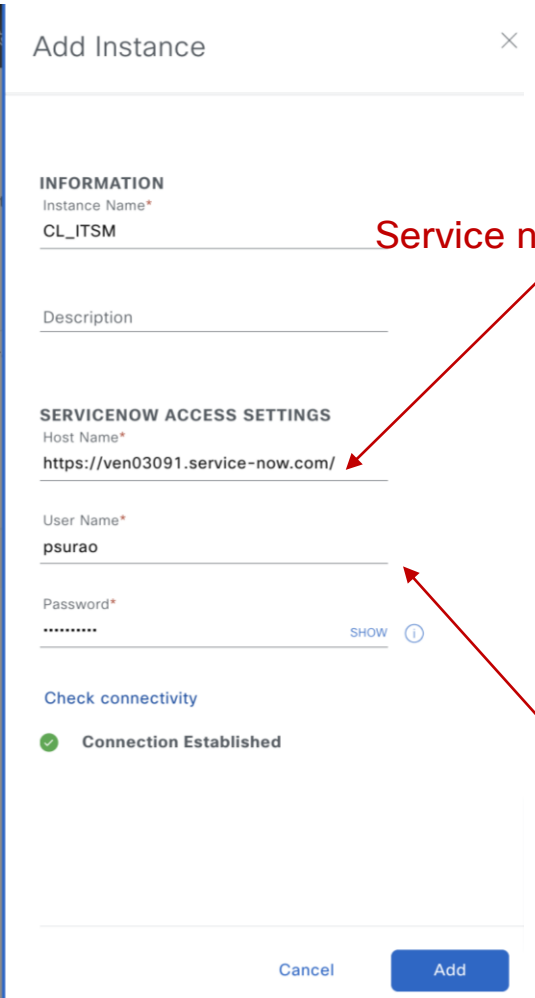
MID Server not required for some workflows

ITSM Integration Settings

Integration with ITSM through System → Settings



Notes:
The user account used by Catalyst Center to connect to ServiceNow requires specific roles.
Please find all details in the "Scope Certified Application Installation and Configuration Guide" included with the Cisco DNA App documentation on ServiceNow

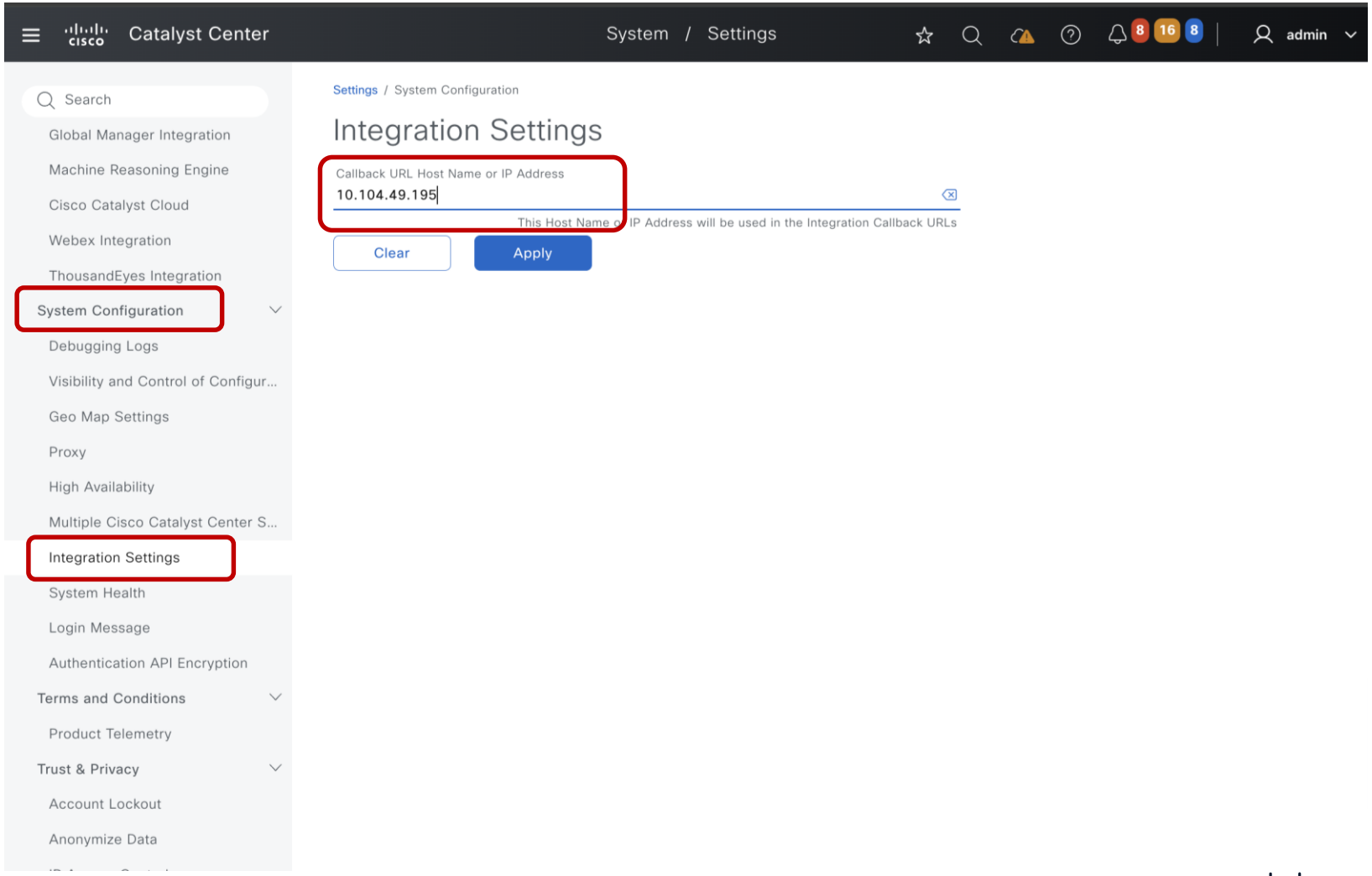


Service now instance URL

Username/Password of Service now instance

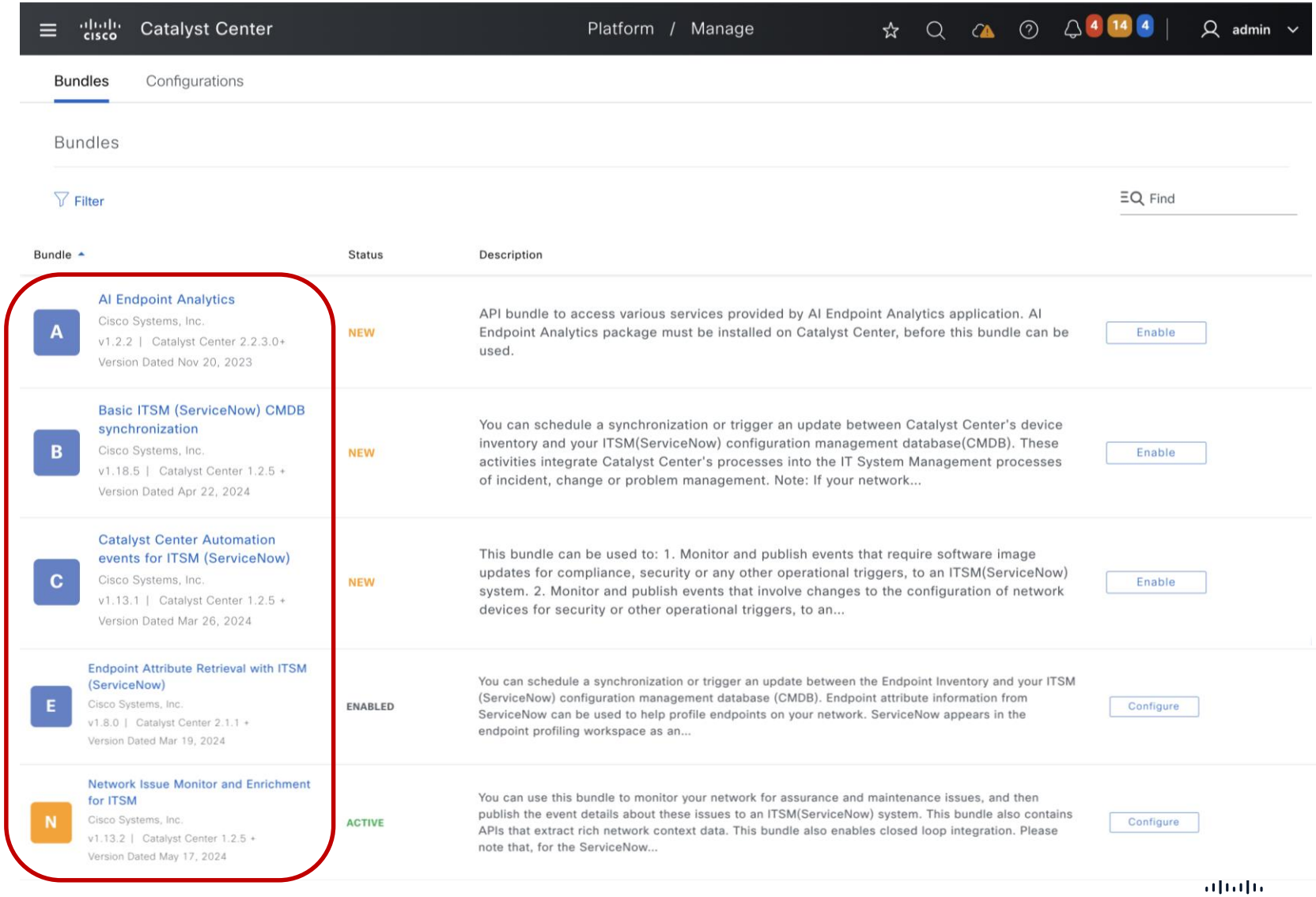
Integration Settings

- Navigate to System > Settings > System Configuration > Integration Setttings
- Configure the Callback URL Hostname/IP Address
- This Hostname/IP Address will be used to cross launch from external integrated systems to Catalyst Center



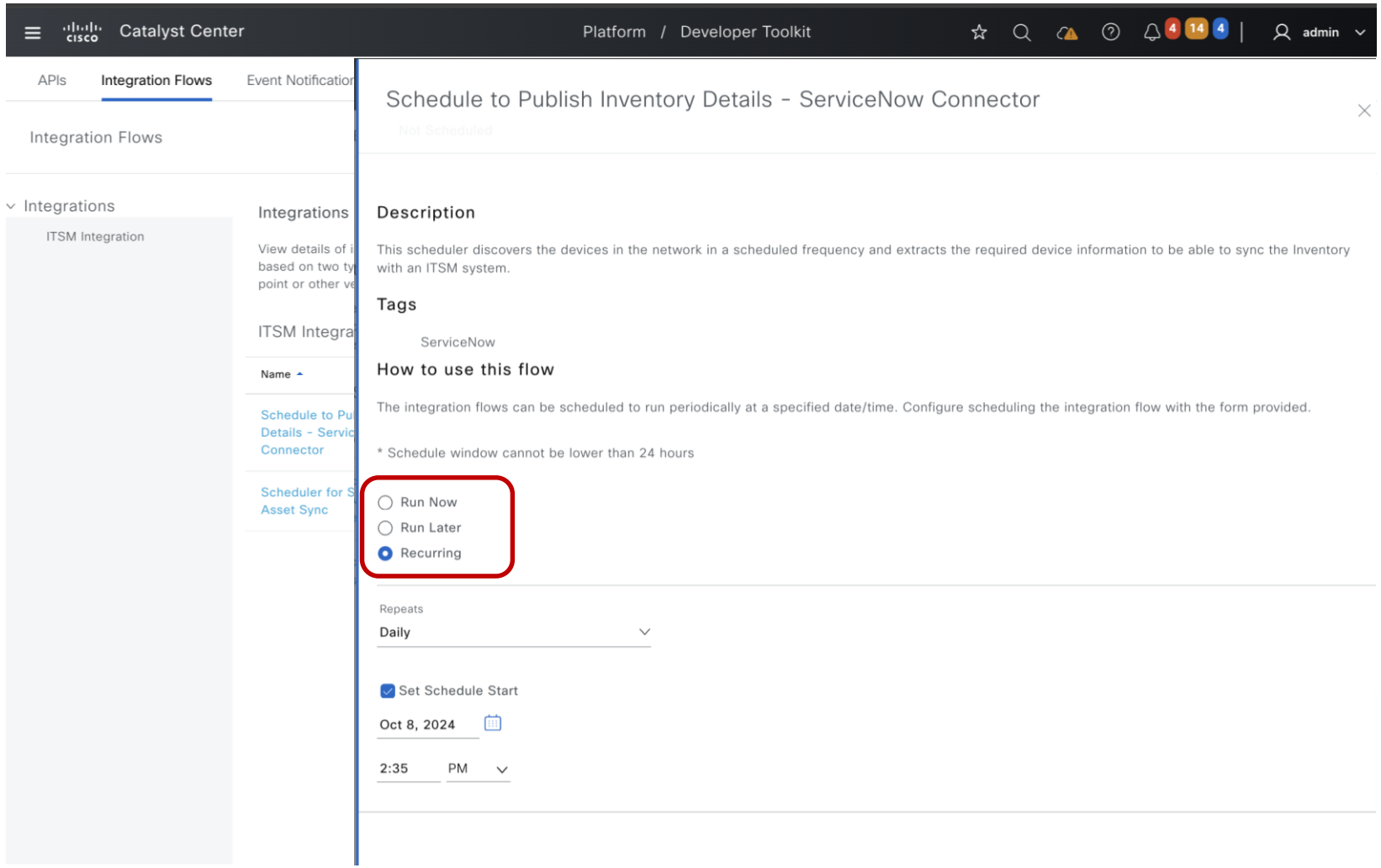
Configuring Bundles in Catalyst Center

- Navigate to Platform > Manage > Bundles to enable and configure bundles
- Select the necessary bundles to enable and configure



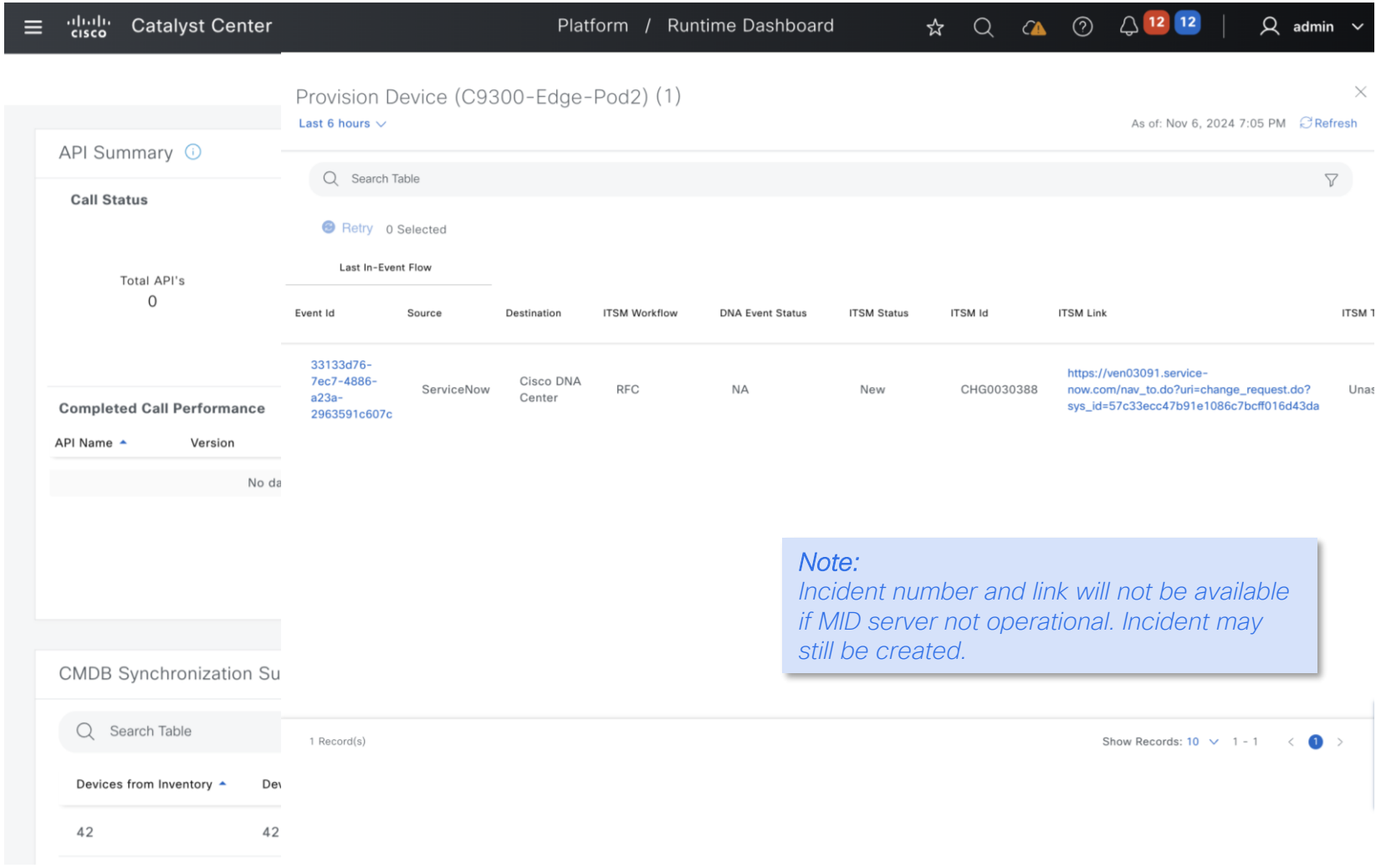
ITSM Integration- Scheduler

- Navigate to Platform > Developer Toolkit > Integrations to enable scheduler for ITSM CMDB sync
- CMDB/Asset Sync scheduler options include
  - Run Now
  - Run Later
  - Recurring

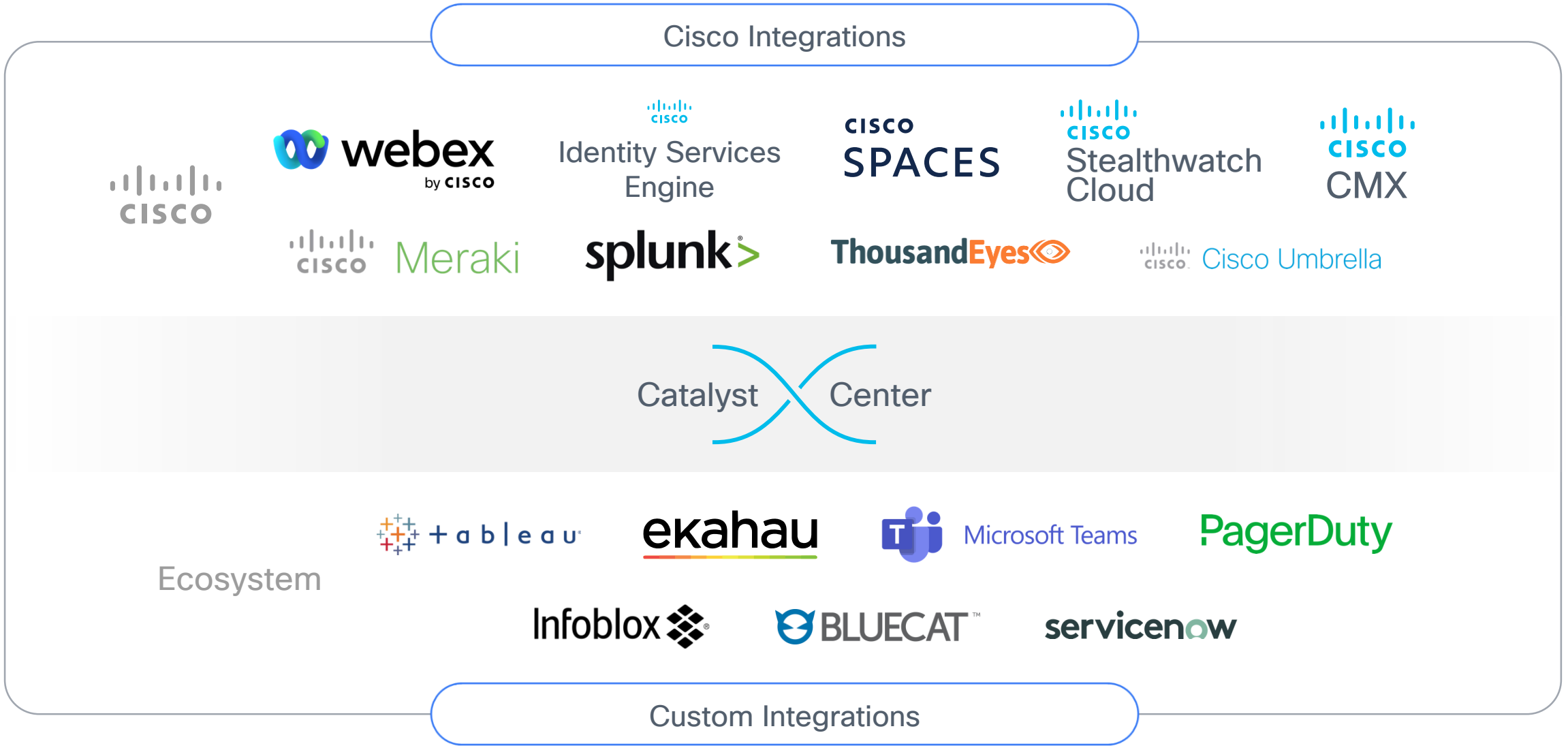


Runtime Dashboard

- Navigate to Platform > Runtime Dashboard
- Total number of devices in inventory and synchronized, errors (if any)
- Summary of all scheduled synchronizations, success/fail counts and length of time
- Details of change request created in ServiceNow



Recap- Catalyst Center Integrations



Cisco Live US Catalyst Center Learning Map

Sunday–8th

TECOPS-2001 9:00AM
The Ultimate Guide to Install, Onboard, and Operate Your Campus Network with Cisco Catalyst Center

LTRSEC-2005 9:00AM
Building Cisco SD-Access with Cisco Catalyst Center & ISE

TECENS-2680 2:00PM
BGP EPVN in Enterprise Campus with Catalyst 9000 Switching Platforms

Monday–9th

BRKOPS-2698 8:00AM
Choosing the Right Cisco Catalyst Center Deployment Model for Your Network

CIUG-1100 10:00AM
Cisco Catalyst Center: AI-Driven Switching: Revolutionizing Automation and Assurance

LTRXAR-3783 1:00PM
Cross-Architecture Integration Experience Lab

BRKENS-1601 1:30PM
Catalyst Center and Meraki Cloud: The Right Choice for your Catalyst 9000 Switch Management!

BRKOPS-2609 1:30PM
Cisco Catalyst Center: Built-In Integrations for Streamlined Network Operations

LTROPS-2341 2:00PM
Build a Flexible Network Automation Workflow with GitLab CI/CD, Catalyst Center, NetBox, and Ansible

IBOENS-1100 2:30PM
Cisco Catalyst Center and SD-Access Design Fundamentals

BRKEWN-2029 4:00PM
Separating hype from reality, real world use cases of AIOps and Assurance for wireless within Catalyst Center

BRKCOC-2483 4:00PM
Cisco IT: Streamlining Network Management and Decisions with Catalyst Center Automation and Splunk

CISCOU-3004 5:00PM
Configuring and Troubleshooting Catalyst Center Templates

Tuesday–10th

BRKEWN-2306 1:30PM
Wireless Network Automation and Assurance with Cisco Catalyst Center

IBOOPS-2391 1:30PM
AI/ML in Cisco Catalyst Center: Transforming Network Operations!

BRKOPS-2697 2:00PM
Unlocking the Automation Power in Catalyst Center for Wired and Wireless Networks

DEVWKS-1004 2:30PM
Deploy Cisco Catalyst Center with Rest-API's

Wednesday–11th

DEVNET-2660 10:00AM
Catalyst Center Network Operations Essentials using UI and APIs

DEVNET-2176 10:30AM
Deploying Cisco Catalyst Center with CICD

BRKTRS-2821 2:30PM
Troubleshooting Strategies for Cisco Catalyst Center & SD-Access

BRKXAR-1013 2:30PM
4 Ways to Streamline Your Licensing with Cisco's Networking Subscription Across Your Portfolio

BRKOPS-2379 3:30PM
Automate Catalyst Center with Cisco Workflows

BRKOPS-2835 4:00PM
5 new things you need to know about Catalyst Center licensing

Thursday–12th

BRKIOT-2016 8:30AM
Streamline Your Success: Automating OT Services with Cisco Catalyst Center Best Practices

BRKOPS-2442 8:30AM
Leveraging Digital Twin for Advanced Network Management with Cisco Catalyst Center

DEVNET-3000 9:30AM
Open-Source GenAI Bot for Catalyst Center

BRKOPS-2570 10:30AM
AI-Powered Automation: Building Smarter Apps for Cisco Catalyst Center Operations

BRKOPS-2492 10:30AM
Let's Deploy Catalyst Center Global Manager (CCGM): Single Pane of Glass for Multiple Catalyst Centers

BRKOPS-2343 10:30AM
Decoding Site Reliability Engineering Through Catalyst Center

BU-led sessions

Catalyst Center

Complete your session evaluations

Complete a minimum of 4 session surveys and the Overall Event Survey to be entered in a drawing to win 1 of 5 full conference passes to Cisco Live 2026.

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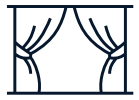

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