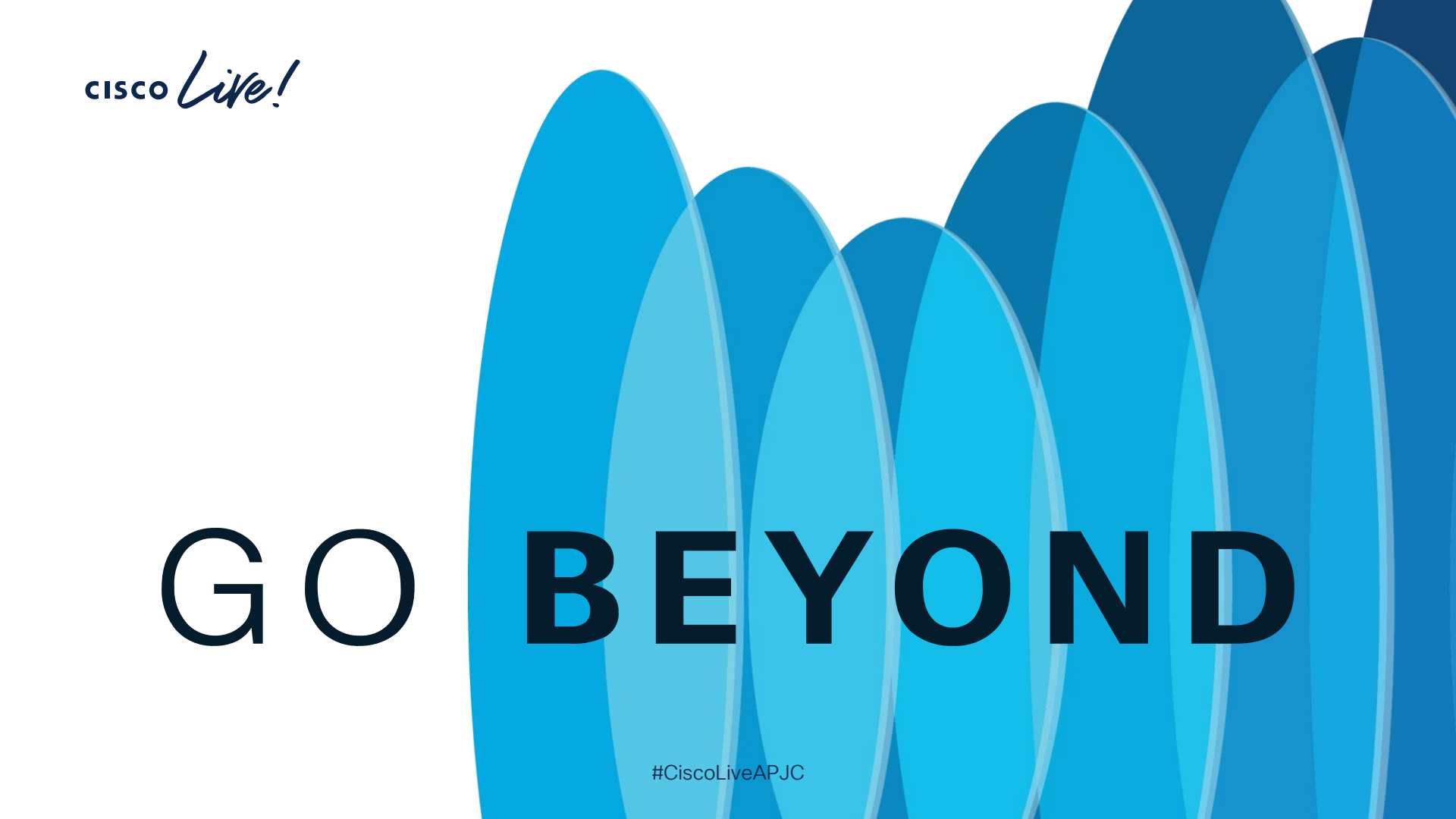
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GO BEYOND
#CiscoLiveAPJC

Making SD-WAN Easy

Operational Simplification and User Experience

Prashanth Raghavendra
Secure WAN Technical Marketing

BRKENT-1313

Setting the stage

This is an Introductory level session on Cisco Catalyst SD-WAN.

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Agenda

- Introduction
- Simplified Configuration & Policies
- Monitoring, Analytics and Troubleshooting
- AI
- User Interface
- SD-Routing
- Conclusion

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3 Things to Remember

1. Workflows and Catalog
2. Configuration Groups and Policy Groups
3. Network-Wide Path Insights (NWPI)

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Speaker introduction

Secure WAN
Technical Marketing
since 2020

Prashanth
Raghavendra

Focus areas:
- **Operational Simplification**
- **User & Application Experience**
- Analytics & AI
- Observability & Assurance

Presented sessions at:
- Cisco Live Melbourne/Amsterdam
- APJC SD-WAN Roadshows
- APJC NX Champions

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Cisco Webex App

https://ciscolive.ciscoevents.com/ciscolivebot/#BRKENT-1313

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 by the speaker until November 15, 2024.

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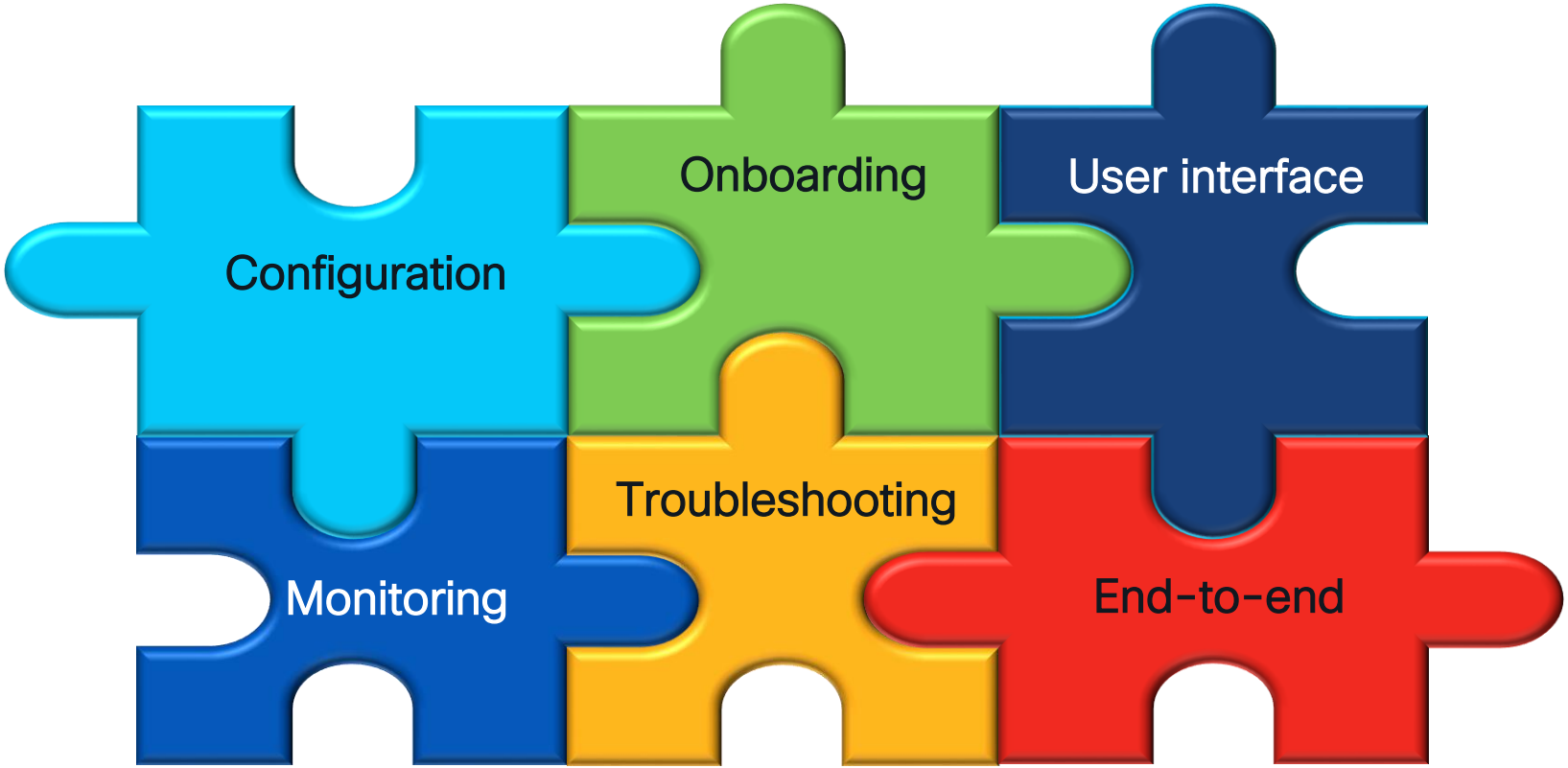
Simple SD-WAN: Key Pieces of the Puzzle



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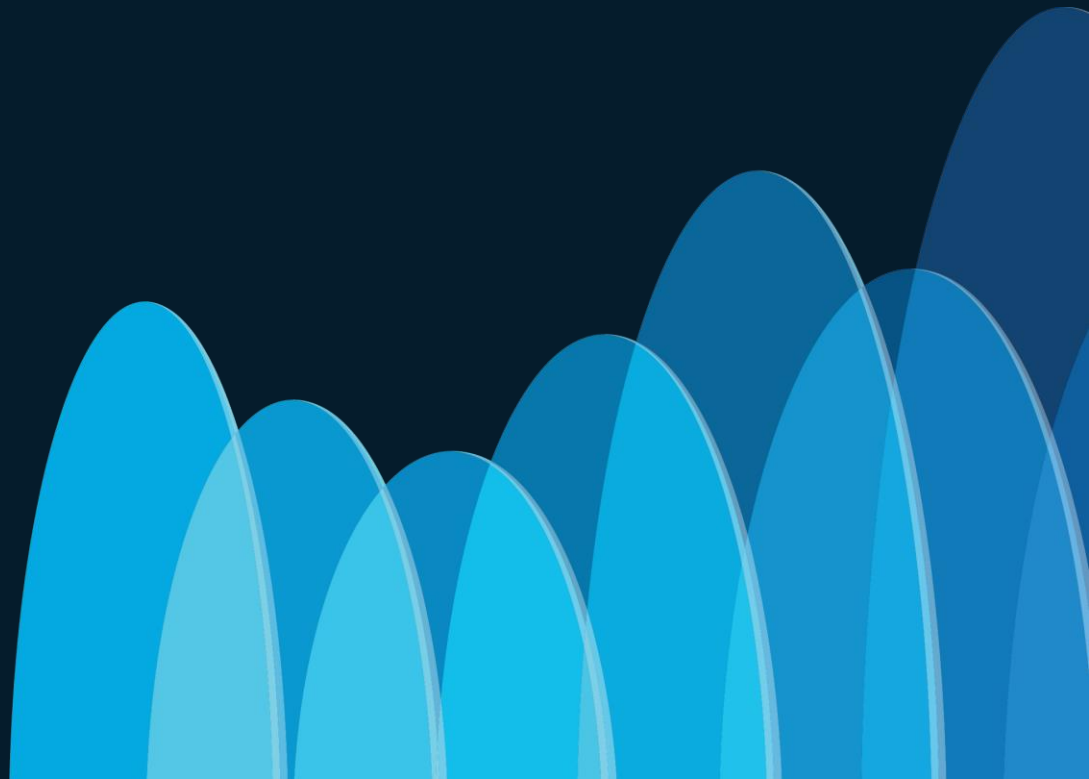
Configuration made easy



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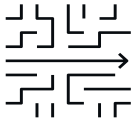
New approach to configuration



Simplicity

Workflows that guides the user step-by-step.

Clearly identifies what is necessary, what is optional, and what is the Cisco recommended best practice.

Configuration catalog hosted and managed by Cisco

Structure

Group devices based on a shared configuration.

This structure can be used by other features such as onboarding, monitoring and troubleshooting.

Re-usability

Re-use configuration components across devices instead of being specific to one device model.

Share configuration blocks across groups of devices.

Device specific configuration variables.

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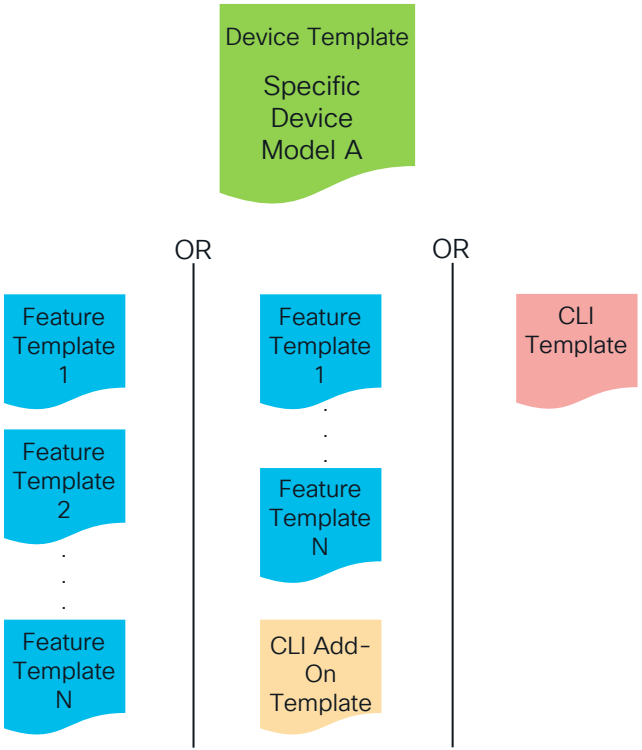
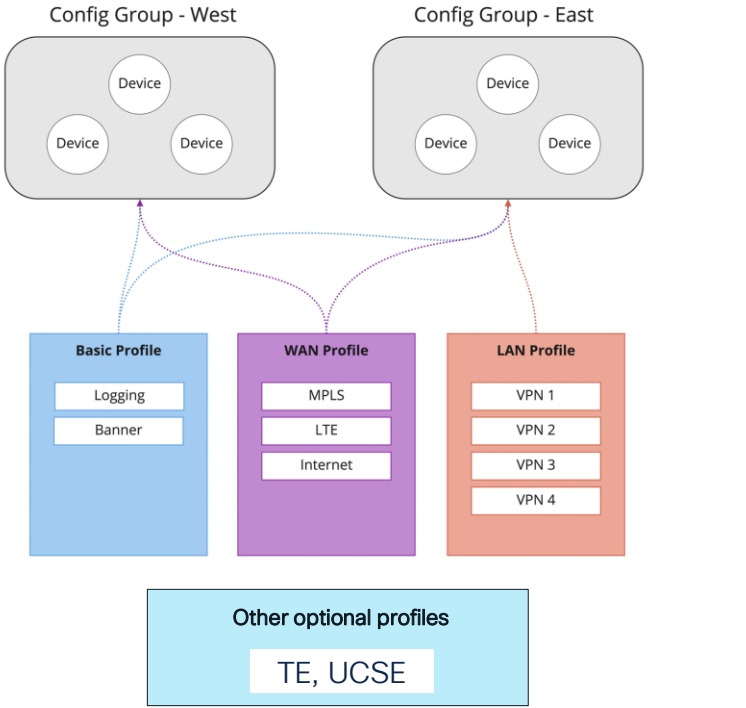
Configuration – classic vs new structure

Classic (templates)



New (configuration groups)



* CLI configuration group (like a CLI device template) is also available

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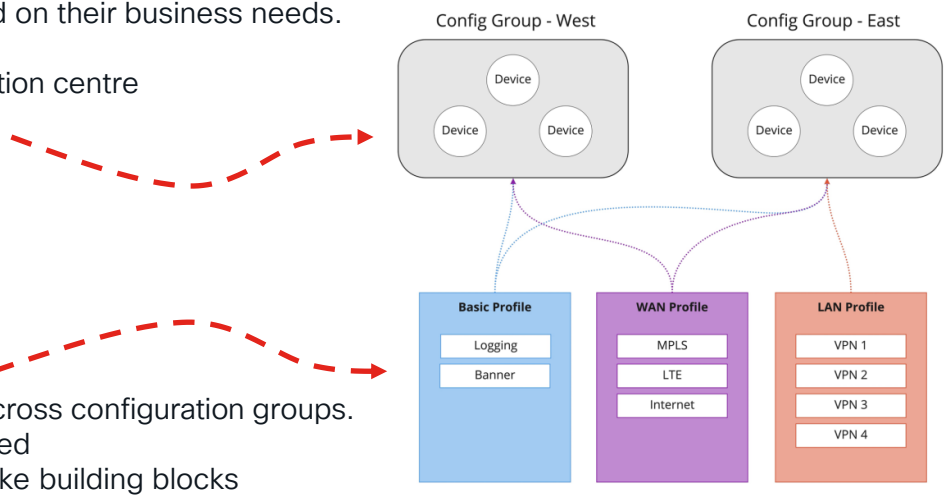
Terminology

Configuration groups

- Logical grouping of devices that share a common purpose within the WAN.
- The user defines and can customise this grouping based on their business needs.

Ex: East/West, Americas/APJC/EMEAR, retail store / distribution centre



Feature profiles

- Flexible “buckets” of configuration that can be shared across configuration groups.
- Create feature profiles based on features that are required
- Put profiles together to complete device configuration, like building blocks
- Build, save, and reuse

Ex: Basic profile, WAN profile, LAN profile

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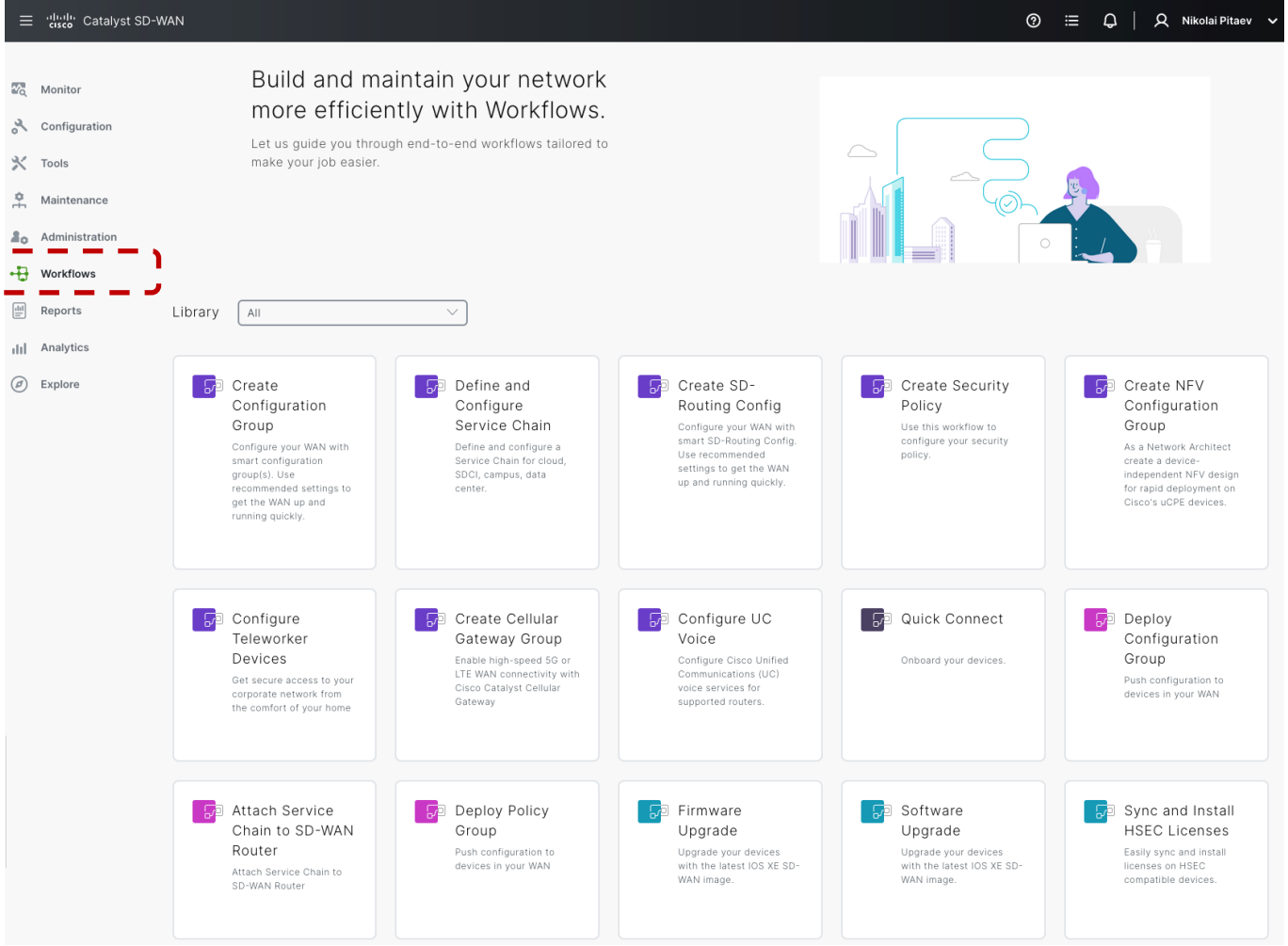
Workflow Library



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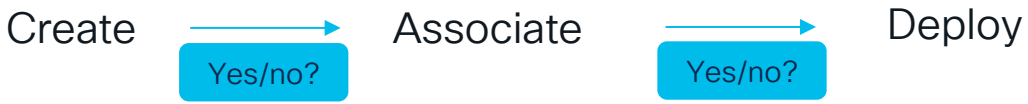
Workflows for device configuration

Create Configuration Group

Configure your WAN with smart configuration group(s). Use recommended settings to get the WAN up and running quickly.

Deploy Configuration Group

Push configuration to devices in your WAN



Deploy

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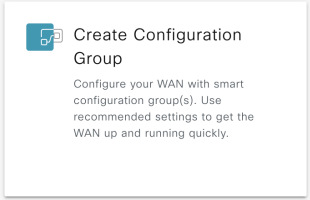
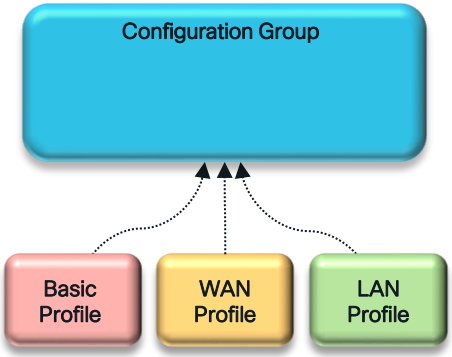
Create Configuration Group Workflow



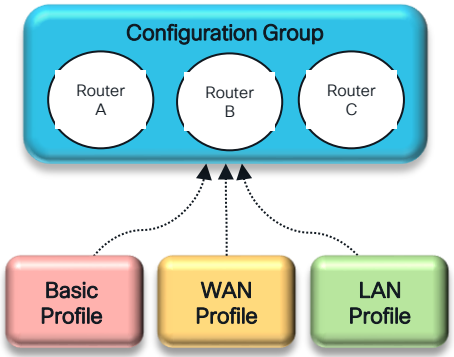
Create

1. Specify a name for the Configuration Group
2. Specify the site/device configuration / leave it as default (Cisco recommended)
3. Review the summary. Edit if required.
4. Configuration group created



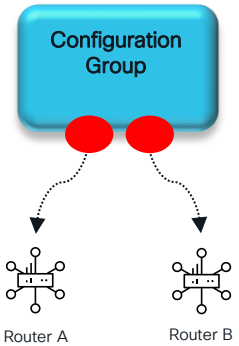
Associate

5. Select devices to associate with the configuration group
6. Review the summary. Edit if required.
7. Devices associated to Configuration group.



Deploy

8. Select devices to deploy the configuration group to
9. Specify device specific values for variables
10. Review the summary. Edit if required.
11. Configuration group deployed to devices



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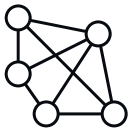
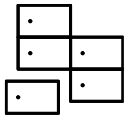
Simplify Association and Deployment



Network Hierarchy and Resource Pool Manager



Tagging

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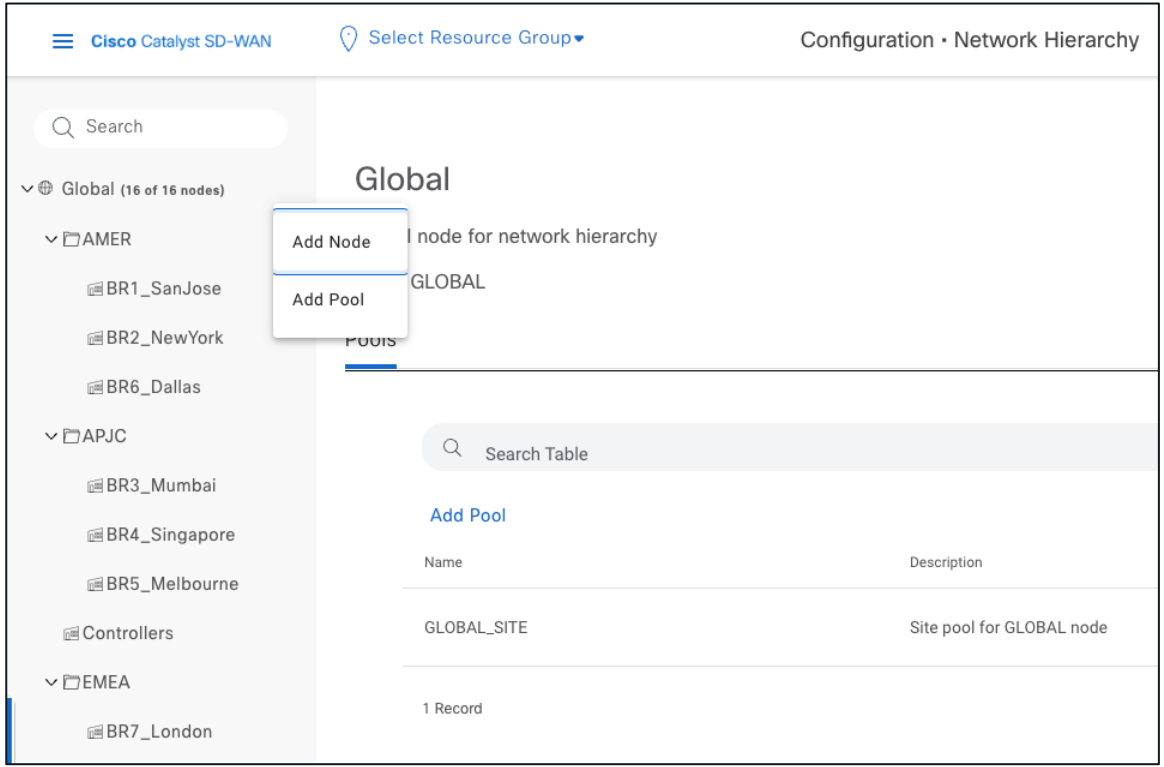
Network Hierarchy and Resource Pool Manager

Organize your network with user-friendly site names

Pre-define constructs like IP pools

Use these during site/device configuration & policies deployment and for Monitoring & Troubleshooting



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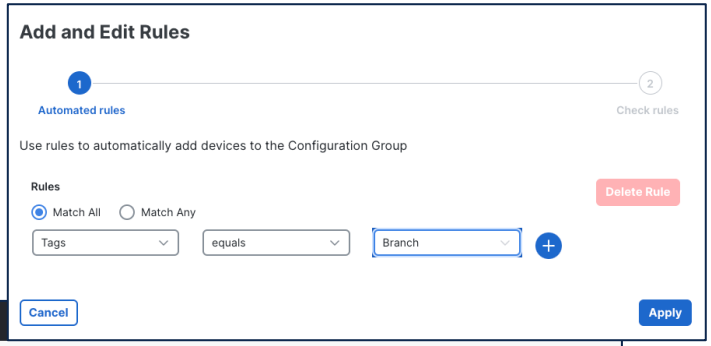
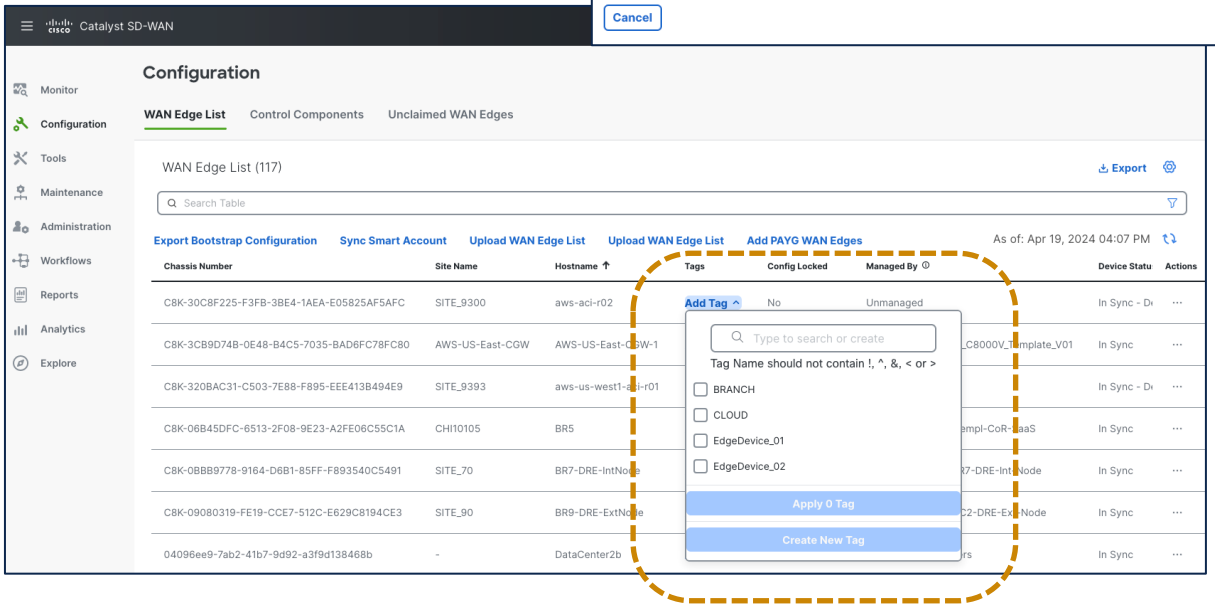
Tagging Sites and Devices

Labels that you associate to sites/devices

Add a Tag Rule to a Configuration Group.



Associate new Devices to the Configuration Group just by adding Tag!



In Future: Tags for Policies and more.

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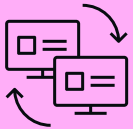
Other ways to create Site / Device Configuration

Workflow

Manual



Export / Import

Catalog

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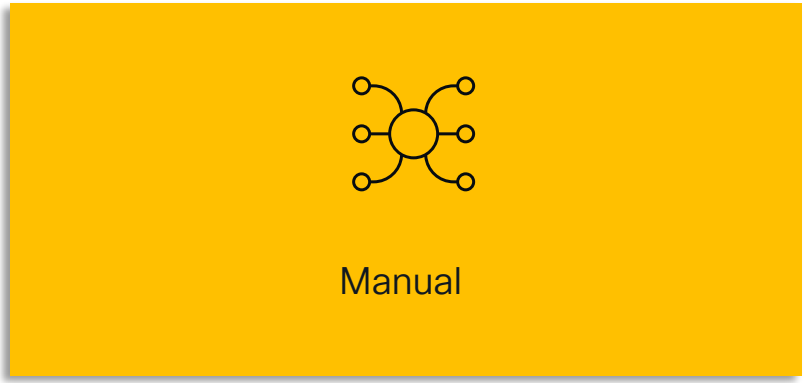
Create Configuration – Manually



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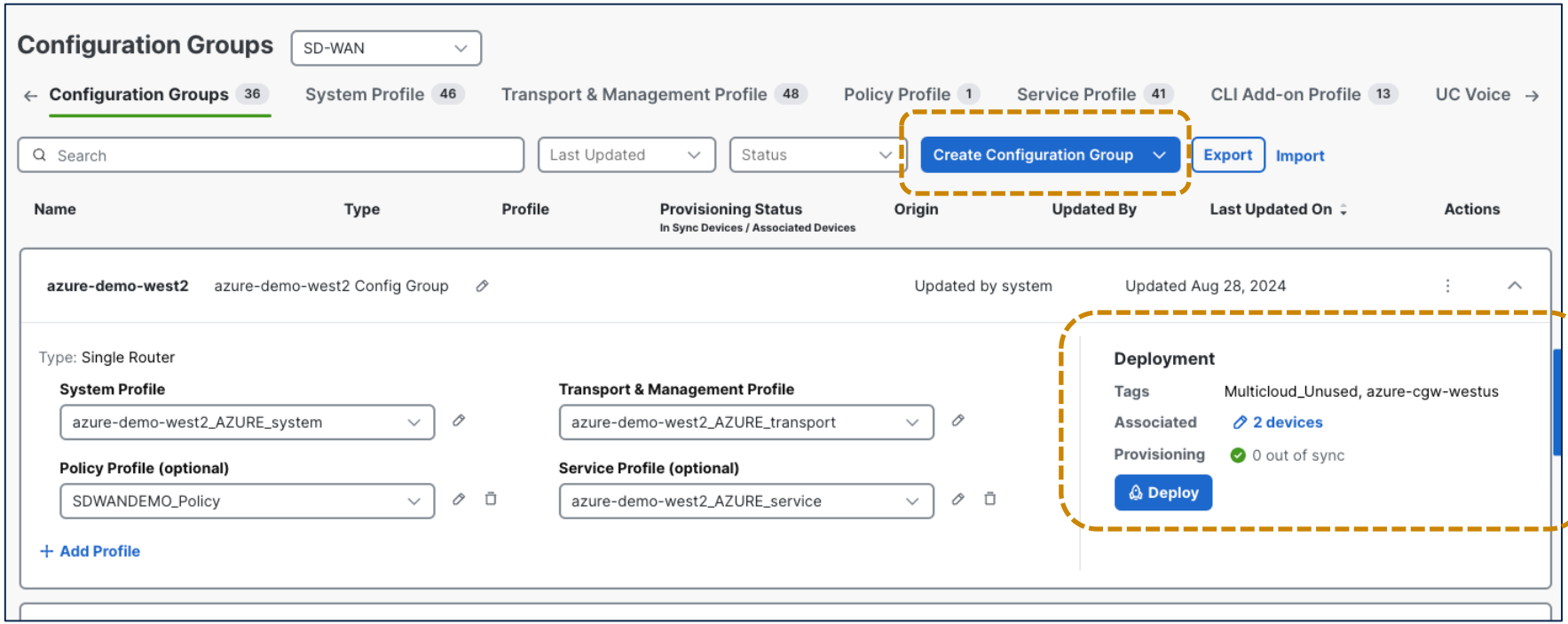
Create Configuration – Manually (from scratch)

Manual

Options: CLI-based or GUI-based Configuration Group



Quick access to Associate and Deploy

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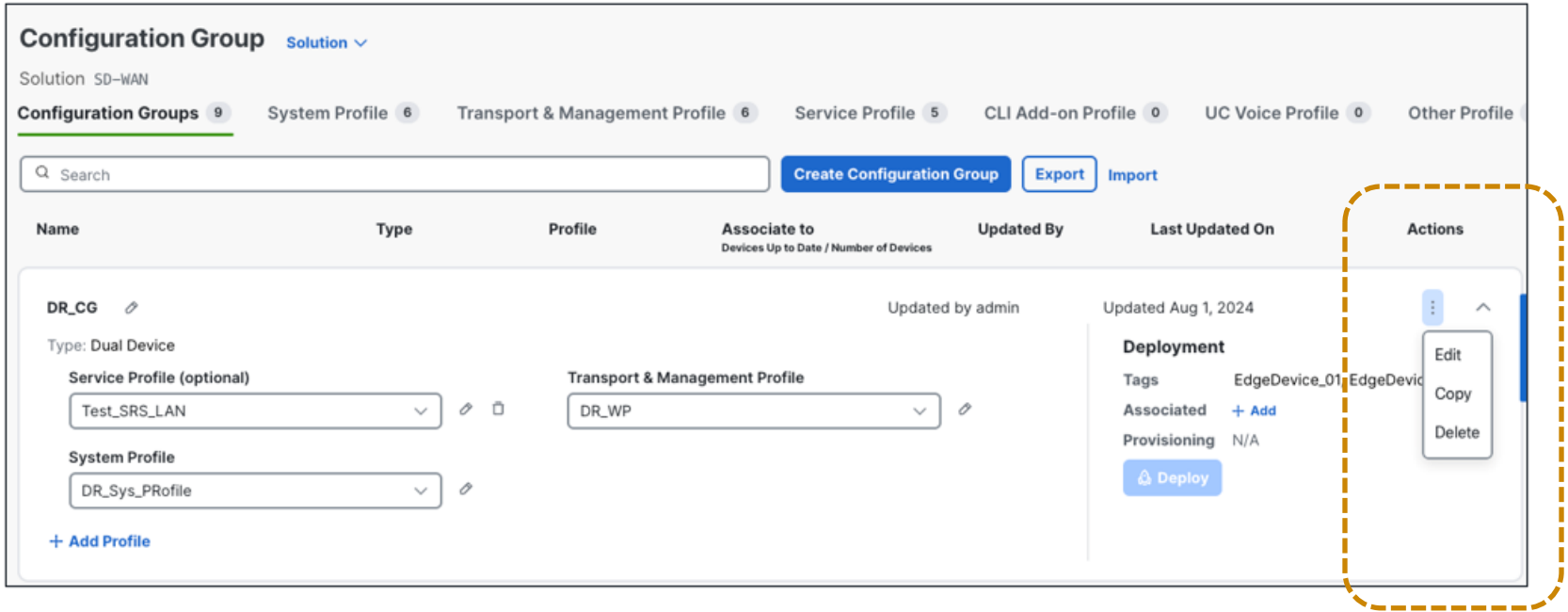
Create Configuration – Manually (by copying)

Manual



Copy an existing Configuration Group and its Feature Profiles

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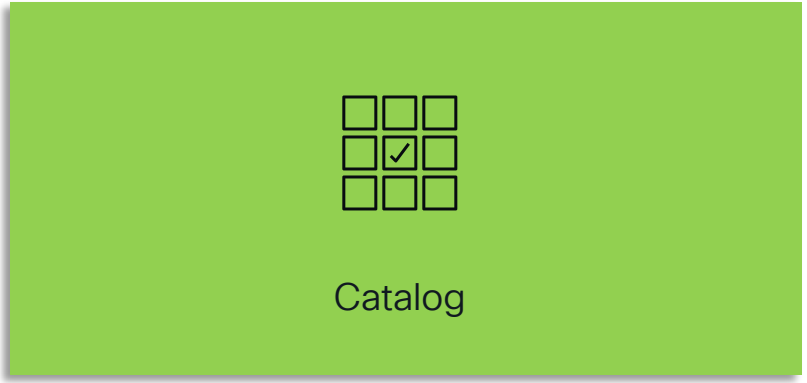
Create Configuration – Using Catalog



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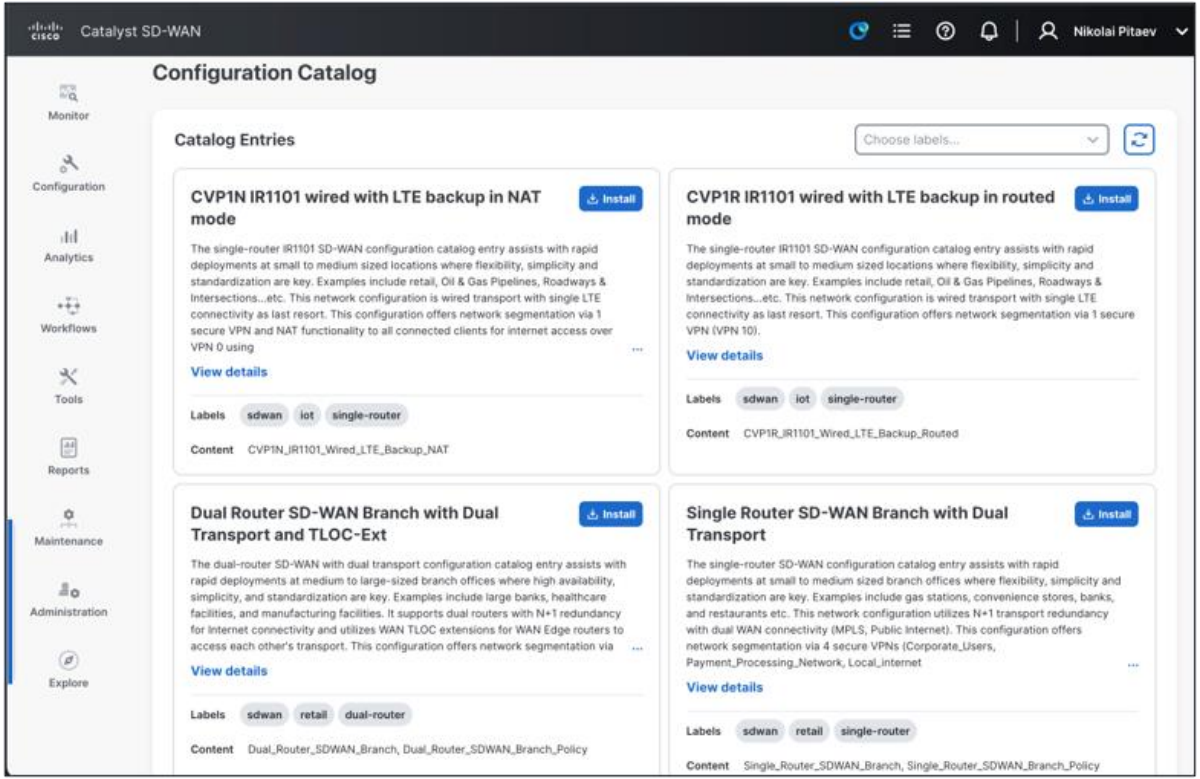
Create Configuration – Using Catalog

Catalog



- A Cisco validated and hosted catalog containing various device configuration intent.
- Available to all customers who have enabled *Cloud services.*
- As an analogy, one can think of this catalog as a “Netflix-like movie selection”, categorized by use-cases for SD-WAN deployments.
- Offers a simple way for customers to consume Cisco hosted configuration.

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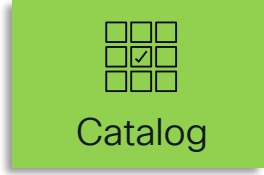
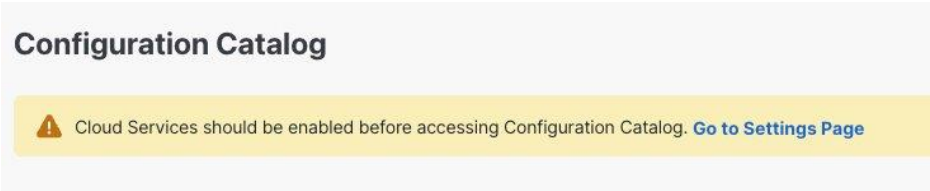
4 simple steps to use Configuration Catalog



1. Enable Cloud Services in Settings (Smart Account needed)
2. Select the Catalog item
3. Modify before install (change variables if needed)
4. Push the Configuration to devices



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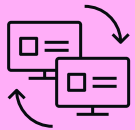
Create Configuration – Export / Import



Export / Import

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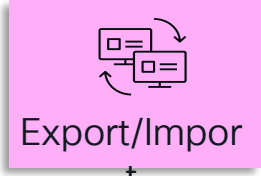
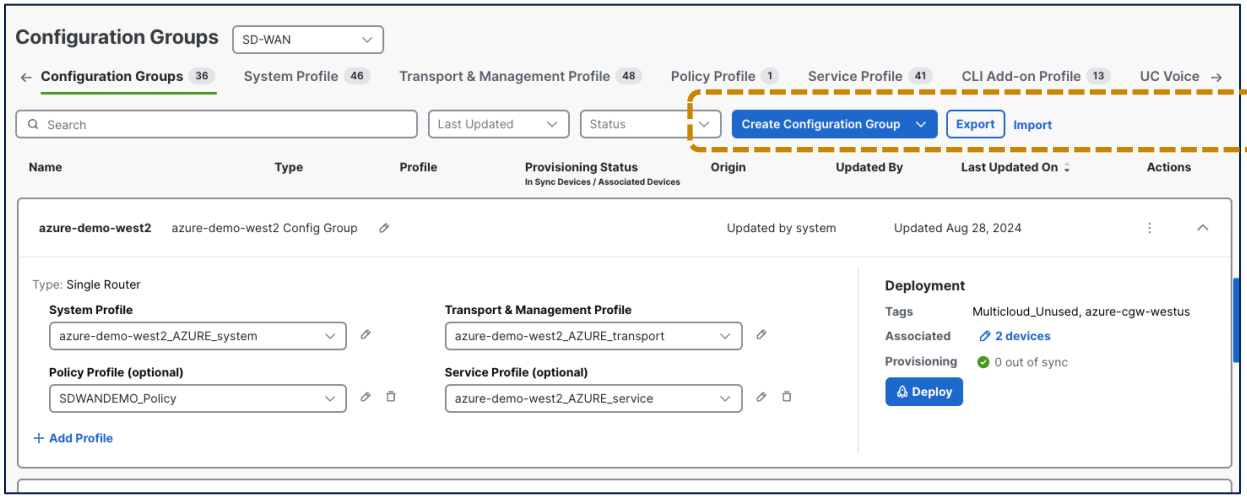
Create Configuration – Export / Import





- Export on one SD-WAN Manager
- Import on another SD-WAN Manager
- Change variables and deploy

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Policies made easy

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Policy Group

- Simplified policy creation, with Intent-based approach
- Simplified policy deployment

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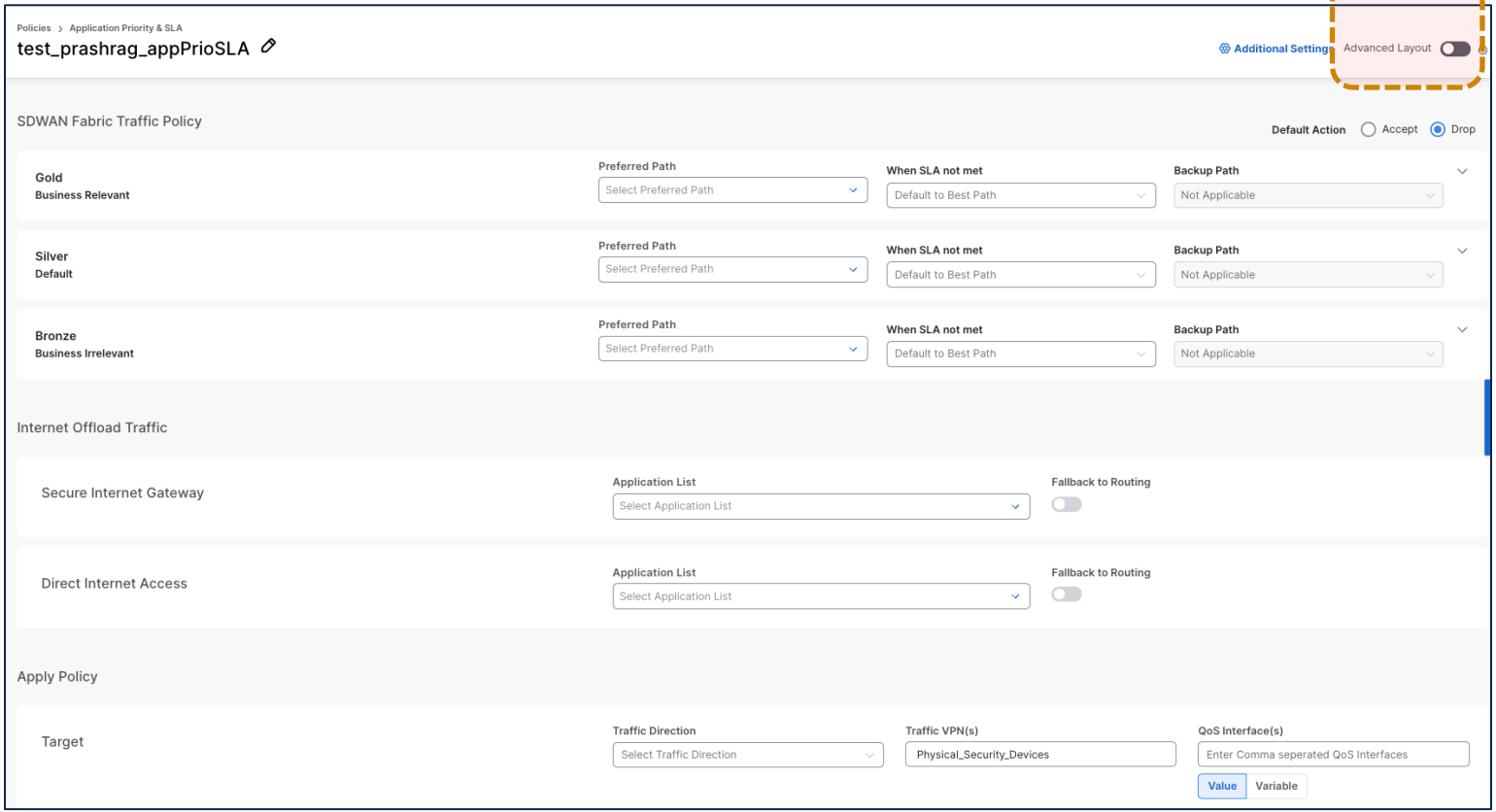
Application Priority & SLA policy

Simple and Advanced modes

- Application Aware Routing
- QoS
- DIA
- Traffic & Data



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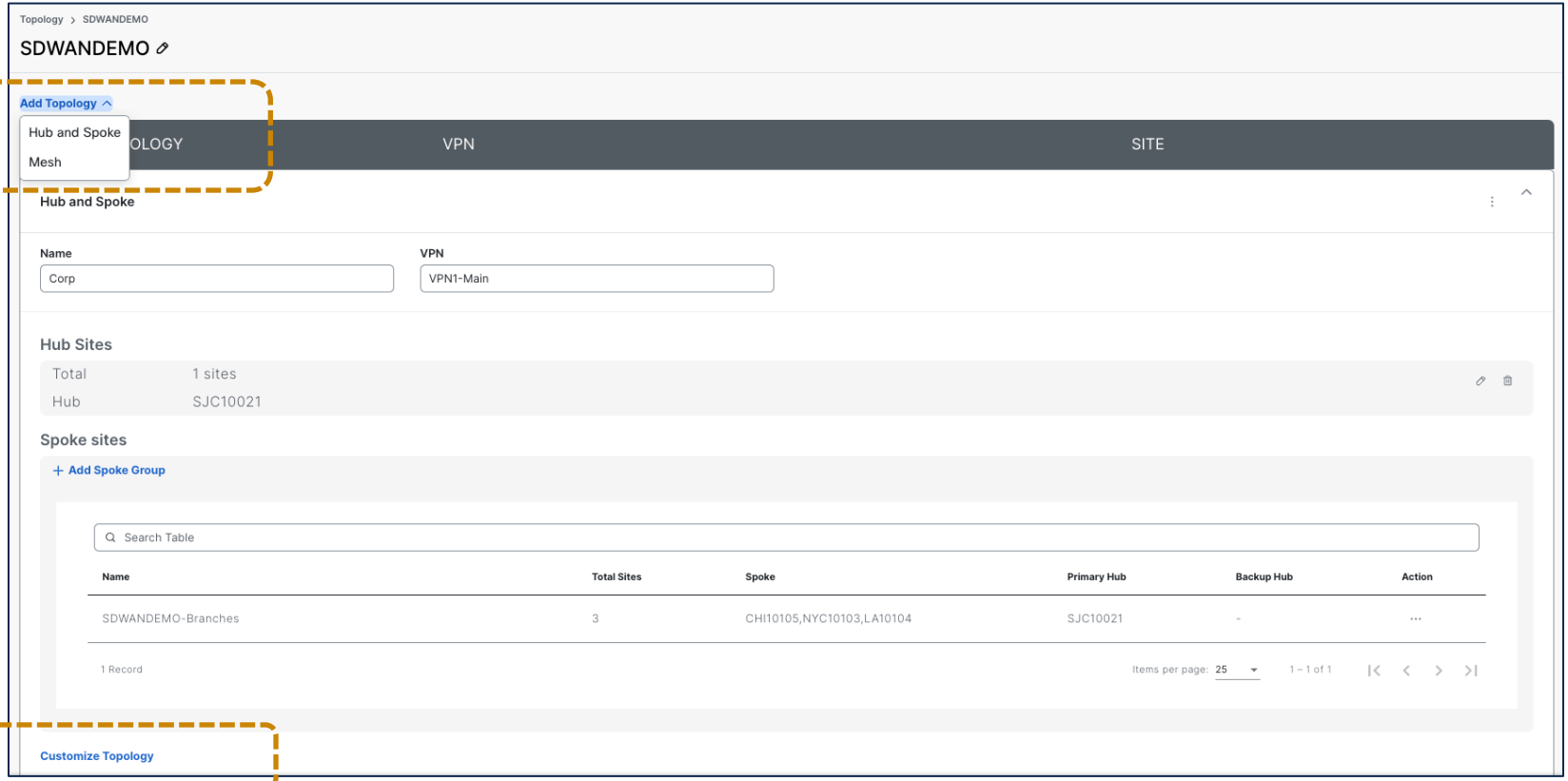
Topology

➢ Simplified Topology creation and deployment



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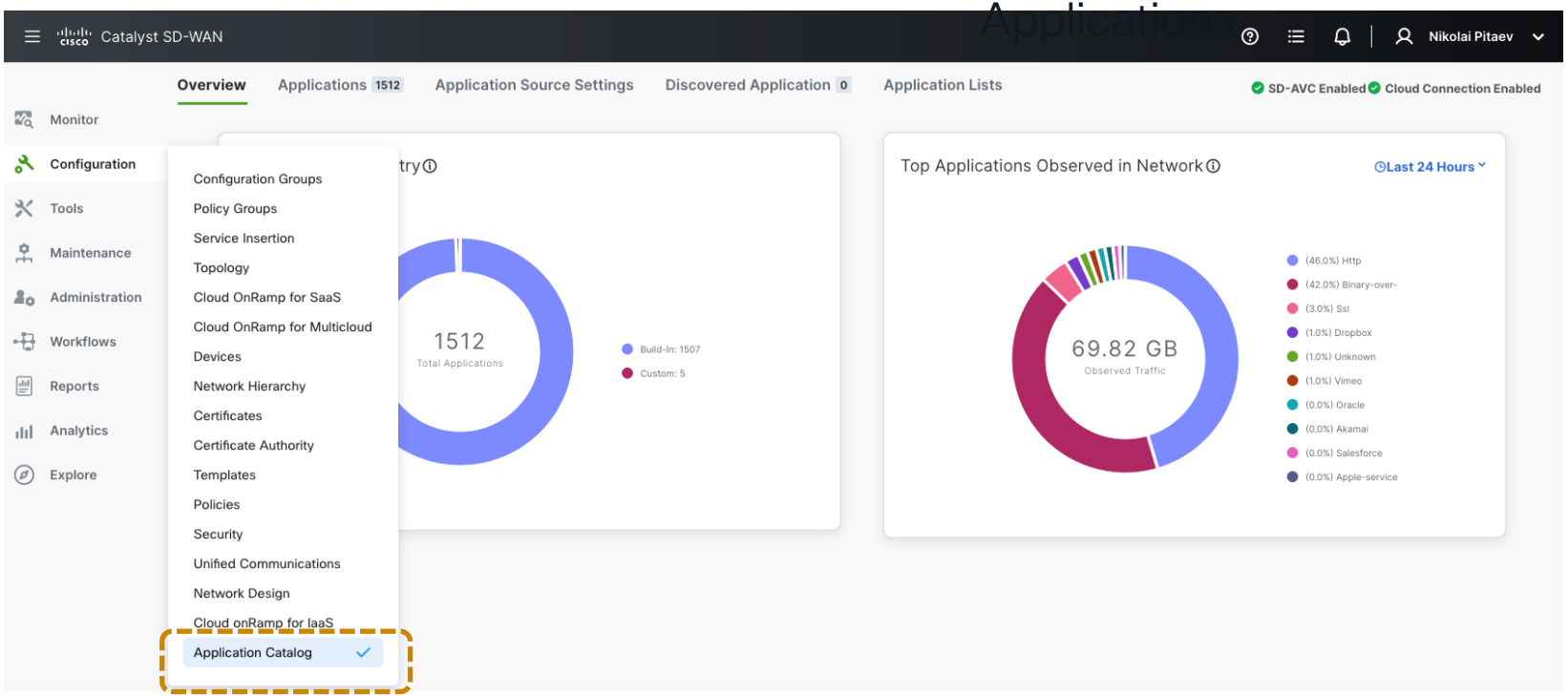
Application Catalog

Define / Manage Custom Applications



Shows Signature Pack Update and even recommends to update the policies!

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3 Things to Remember

1. Workflows and Catalog

2. Configuration Groups and Policy Groups

3. Network-Wide Path Insights (NWPI)

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Adoption made easy

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Adoption

Existing Customers

Running 20.9?

- Continue using Classic approach (templates) for current and new features
- Evaluate New approach (configuration/policy groups) and provide feedback

Running 20.12?

- Continue using Classic approach (templates) for current and new features
- Assess New approach (configuration/policy groups) and Consider adopting it

New Customers

From 20.12

- Proof of Concept with New approach (configuration/policy groups) and Assess
- Deploy with New approach (configuration/policy groups)

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Quick Start Guide

https://www.cisco.com/c/en/us/support/docs/routers/sd-wan/222297-quick-start-guide-simplified-configura.html

- With Cisco Catalyst SD-WAN Software Release 20.12/17.12, it is recommended that users evaluate and start migration from the Classic configuration, based on device and feature templates, to the new configuration approach based on Configuration Groups and Policy Groups.

- The main goal of this document is to serve as a guide for starting with using new constructs for Configuration, Policies and Onboarding, with the 20.12 gold star release.

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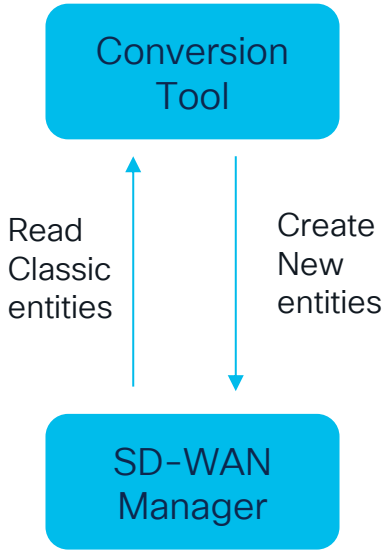
Conversion Tool

Read the **Quick Start Guide** first!

- External tool outside of SD-WAN Manager (20.12+)
- **Goal**: convert Classic configuration templates and policies to new configuration groups, policy groups, and topology.
- 20.12 entities supported. 20.13 onwards upcoming.
- Targeted for Early 2025
- Policy conversion is NOT a 1:1 process
- Beta version available for testing. Contact sdwan-ux-conversion-tool@cisco.com



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Catalyst SD-WAN Conversion Tool

Collect

Collect Templates and Policies from the Catalyst SD-WAN Manager or import from a file.

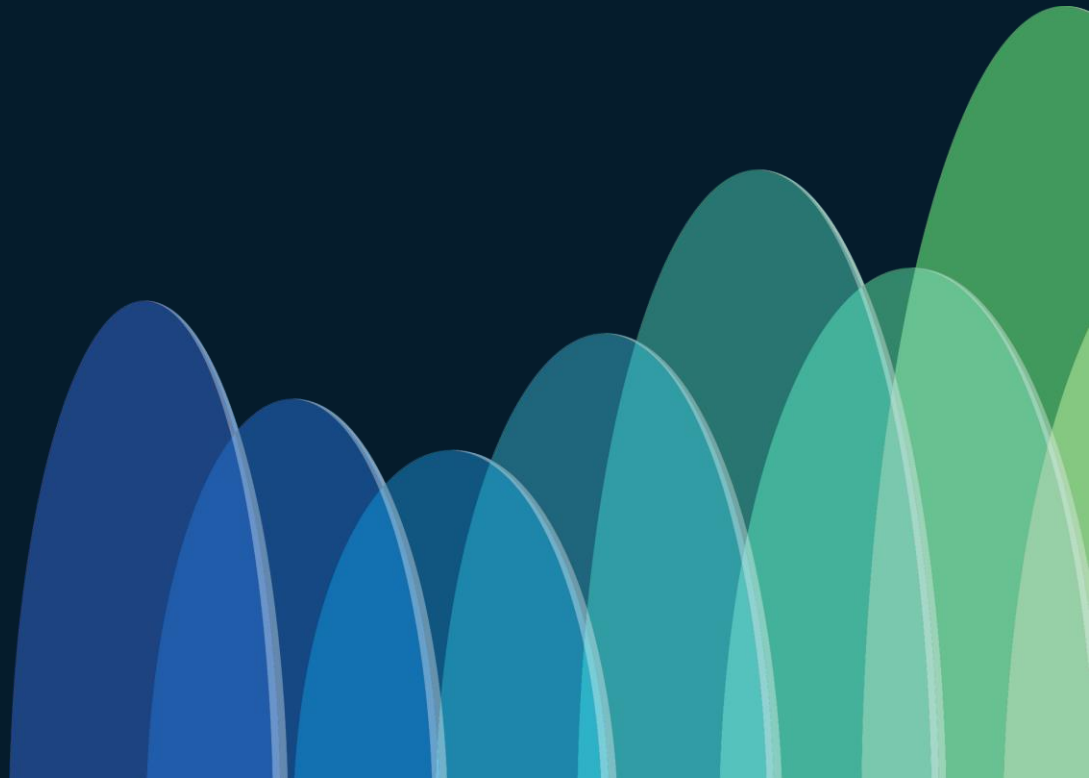
Convert

Transform Device Templates, Feature Templates and Policies to their corresponding Configuration Groups, Policy Groups, Topology Groups, Feature Profiles and Profile Parcels.

Upload

Upload the transformed configurations to the Catalyst SD-WAN Manager instance.

Monitoring, Analytics and Troubleshooting



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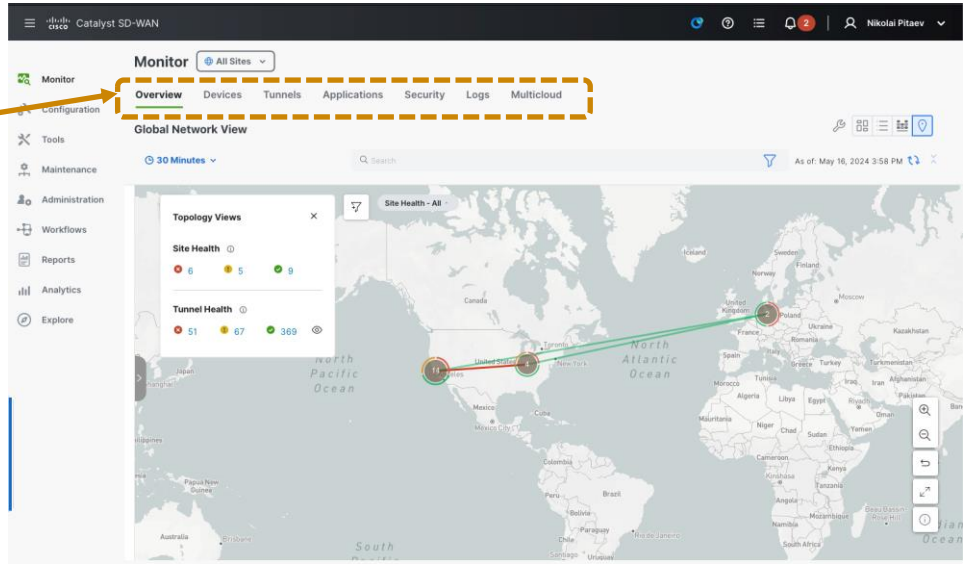
New Dashboards

Toggle between different dashboards such as Security, Devices, Tunnels, and Applications



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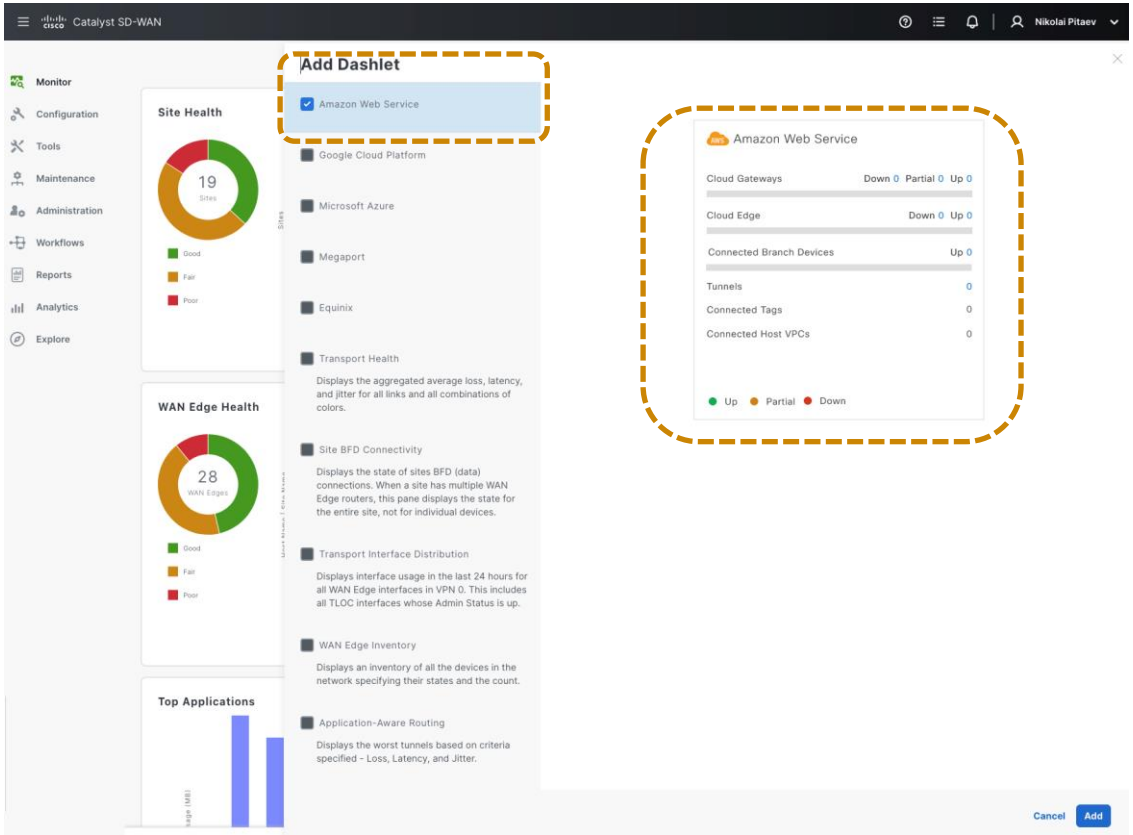
Customize Your Dashboard

Smart: AWS suggested because cloud credentials detected.

10+ different Dashlets from Inventory to App-aware Routing.



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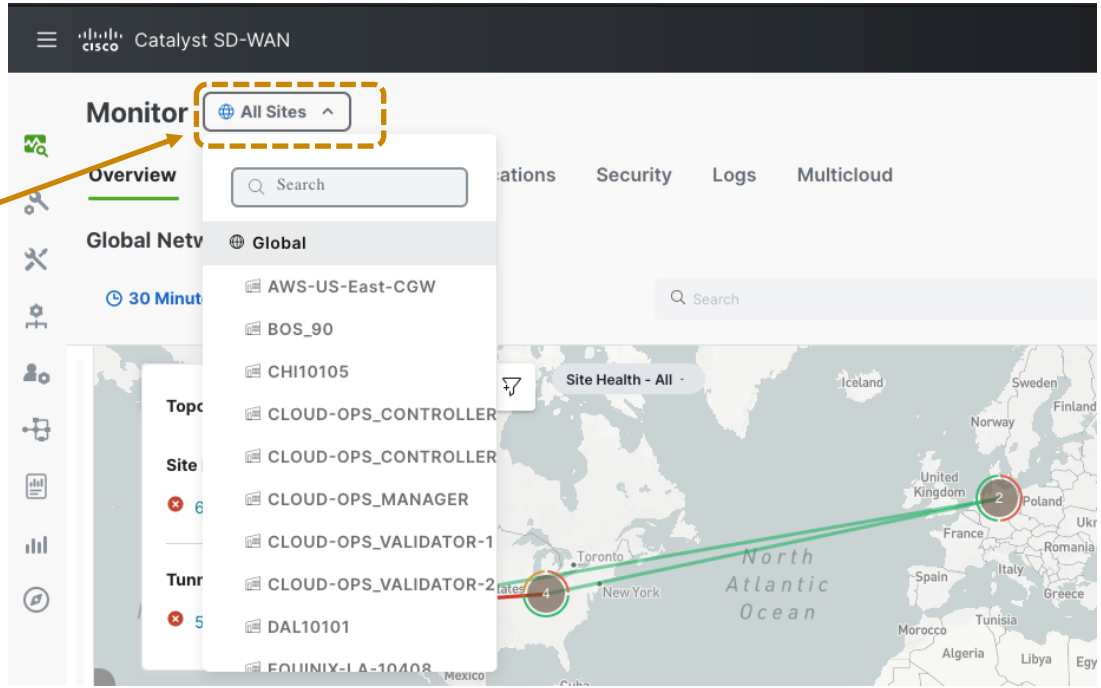
Drill down From Global View to a Single Site Dashboard

Change the context of your global view to that of any site.

Example: from global view to Denver Site.



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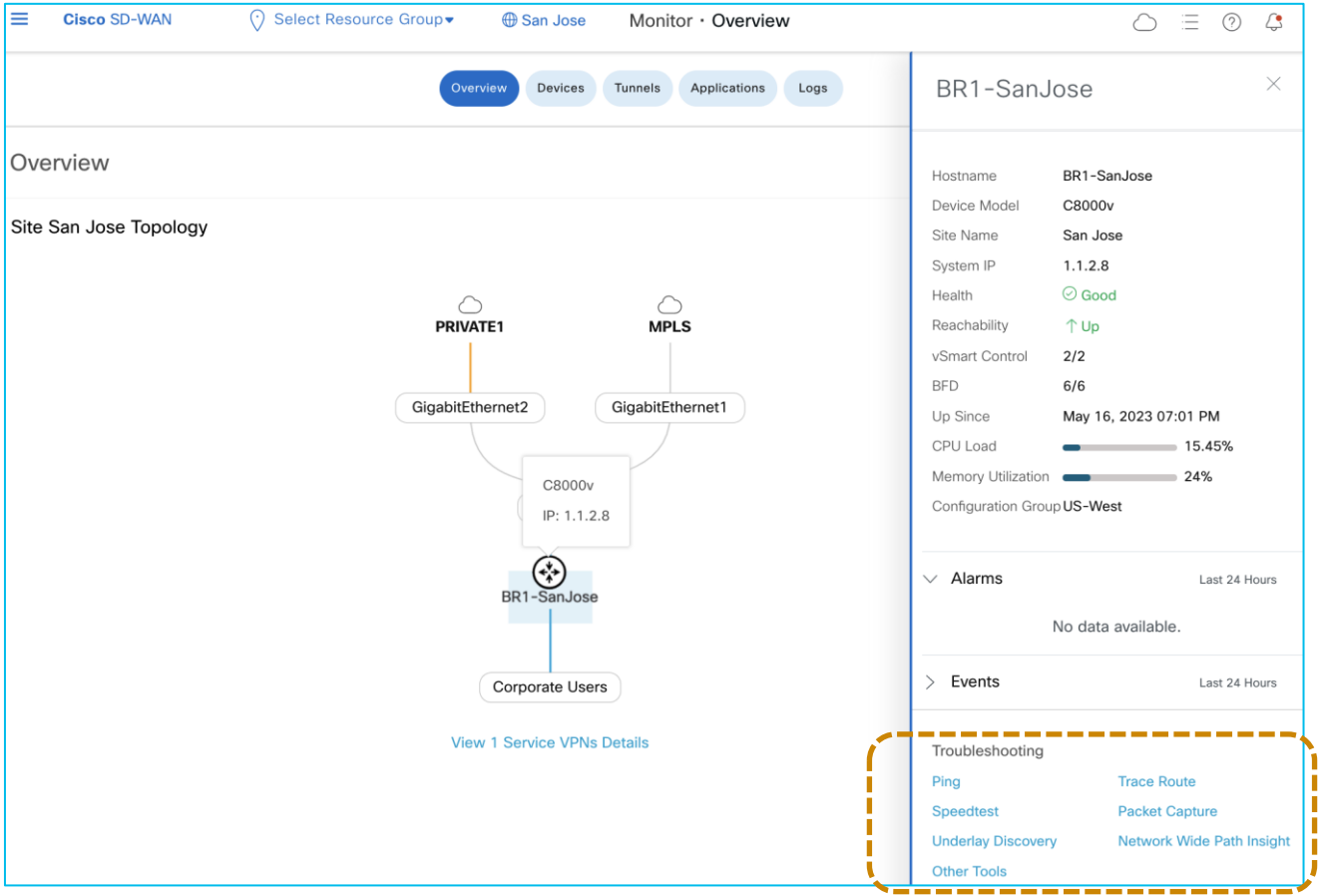
Site Topology View

Dynamic status of transport circuits, devices and service VPNs.

Troubleshooting tools at your fingertips

Video on YouTube



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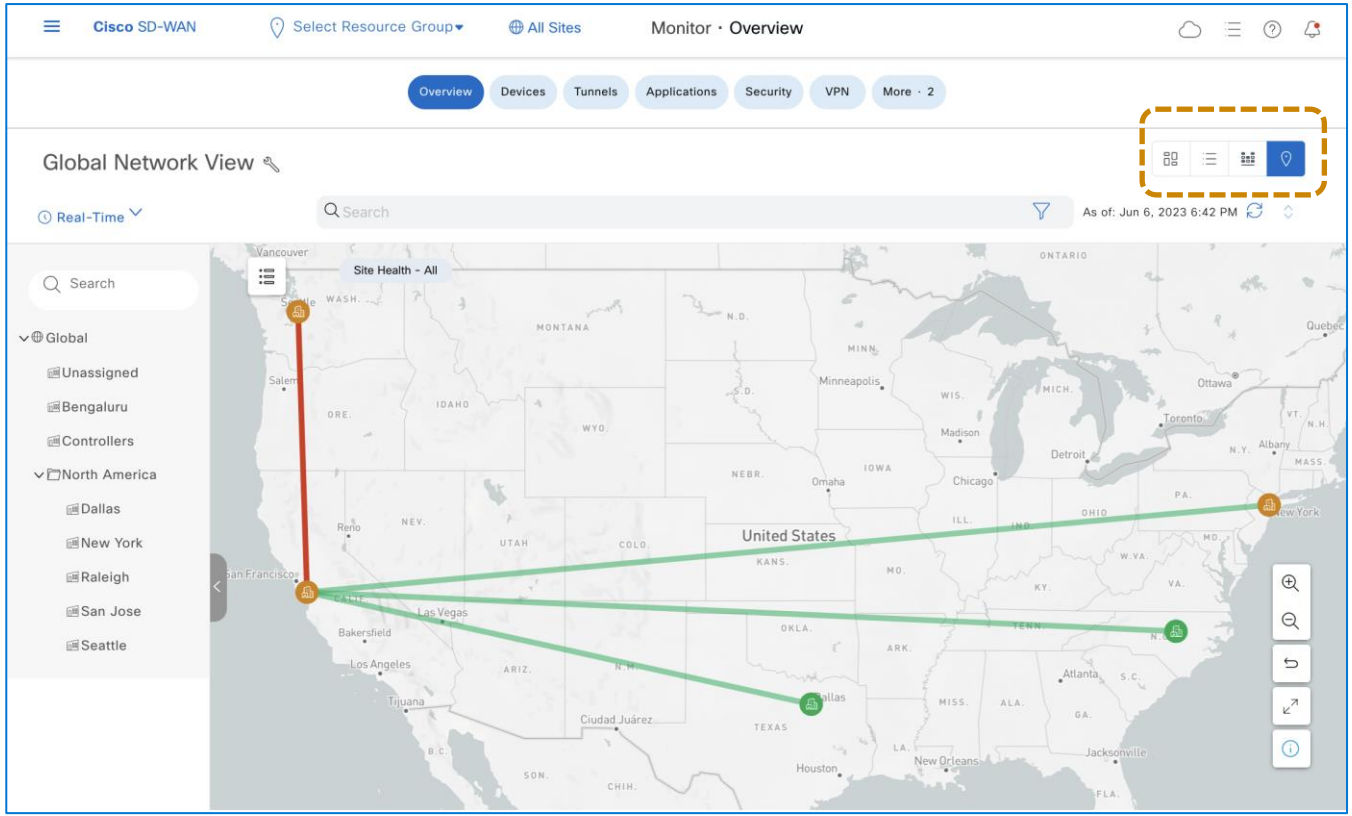
Global Topology View

Interactive global topology with live health information.

Drill down to a specific site and receive a detailed summary of its performance.



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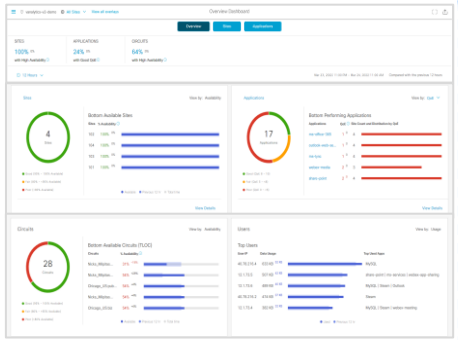
Cisco SD-WAN Analytics

Visibility into Network & App Performance



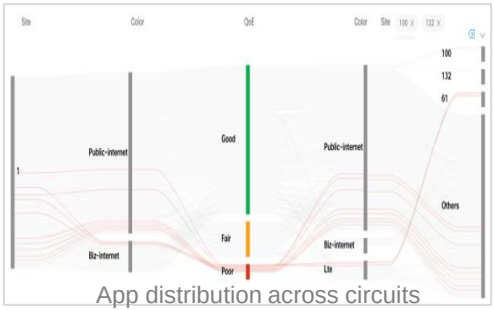
Application Experience

Scheduled Reports

Historical Trends & Daily/Weekly/Monthly Aggregates

Troubleshooting w/ Extensive Traffic Analysis

Traffic flow patterns



App distribution across circuits

Underlay path tracing

Adaptive & Predictive Networking

Predictive Path Recommendations

AIOps use-cases

SaaS Traffic Optimization

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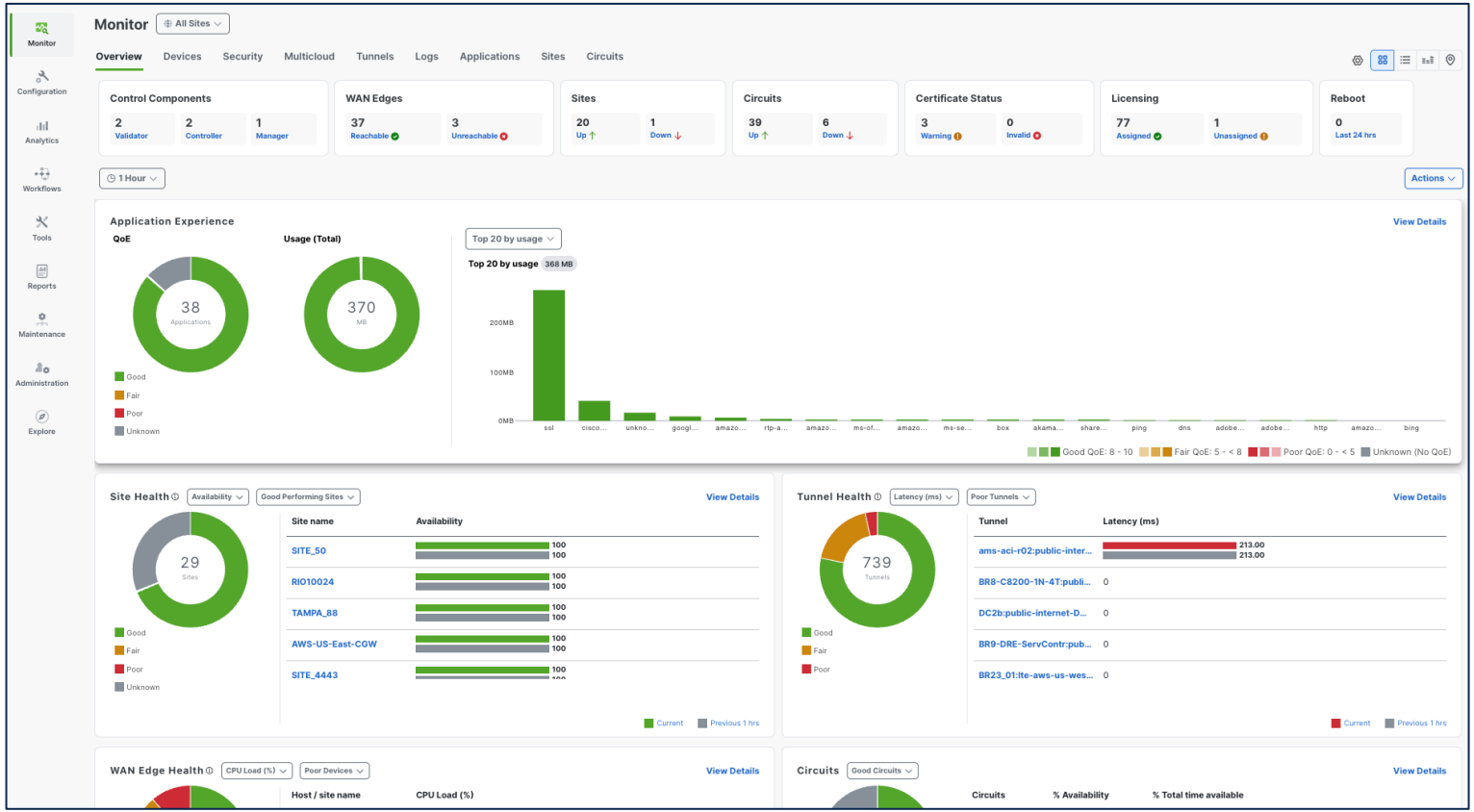
Converged Dashboard – Manager and Analytics

Unified SD-WAN Assurance



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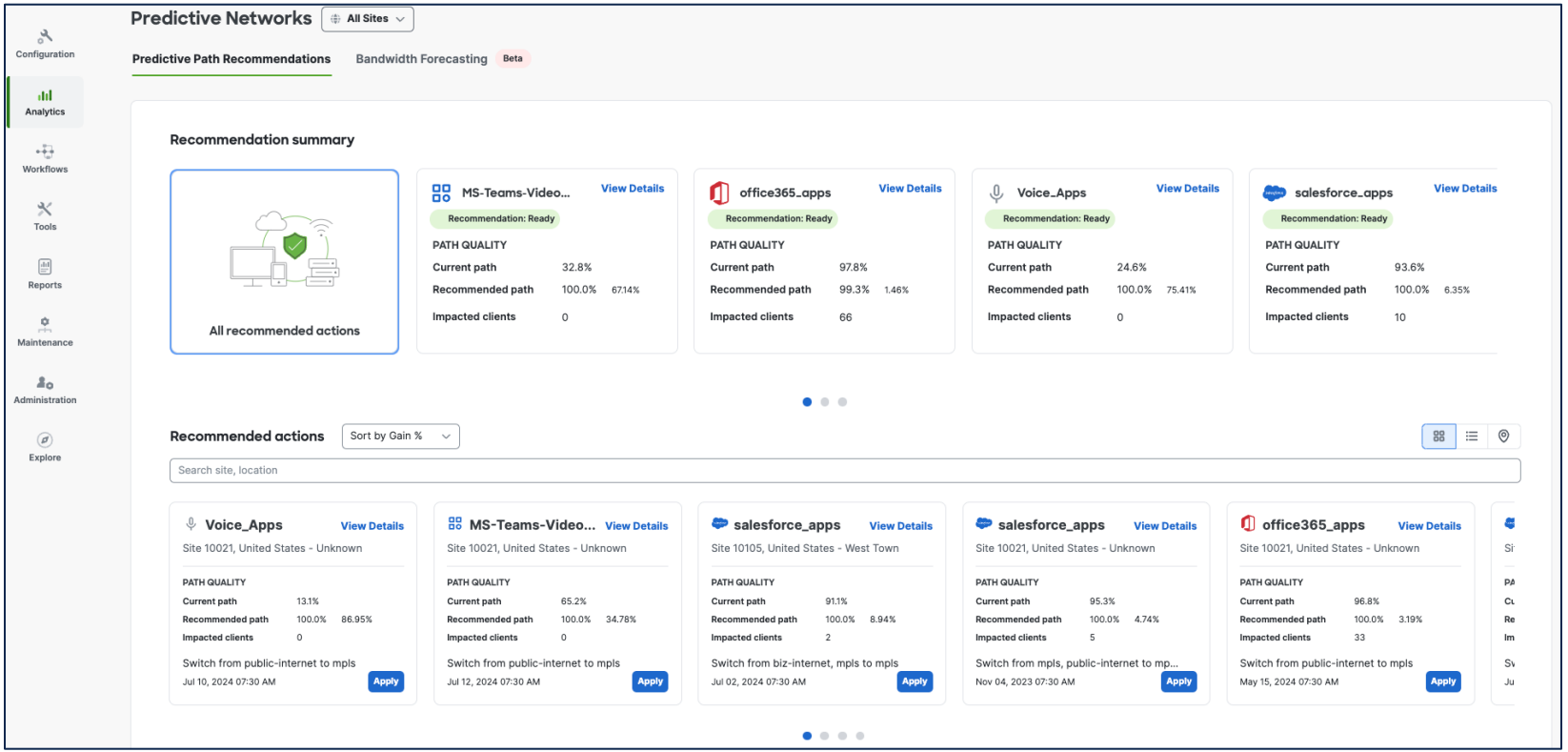
Predictive Networks – Path recommendations

with closed-loop Automation

Powered by Thousand Eyes WAN Insights



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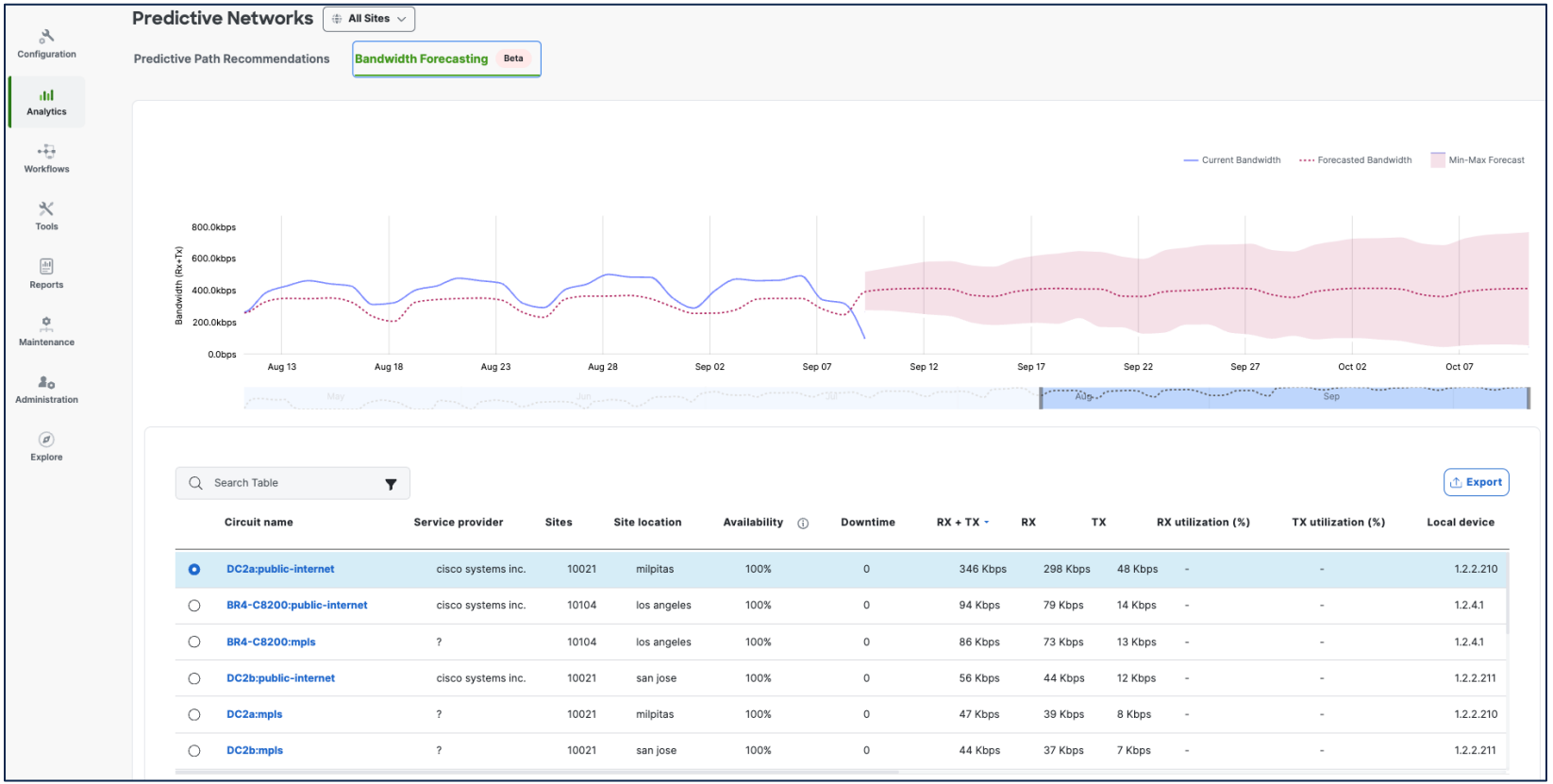
Predictive Networks – Bandwidth Forecasting



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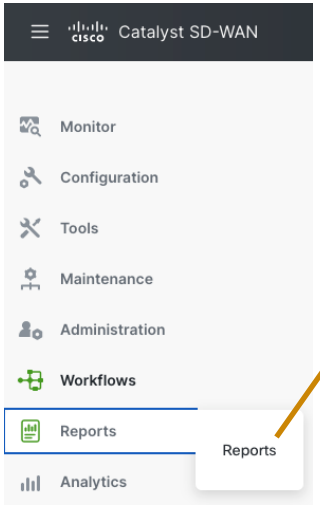
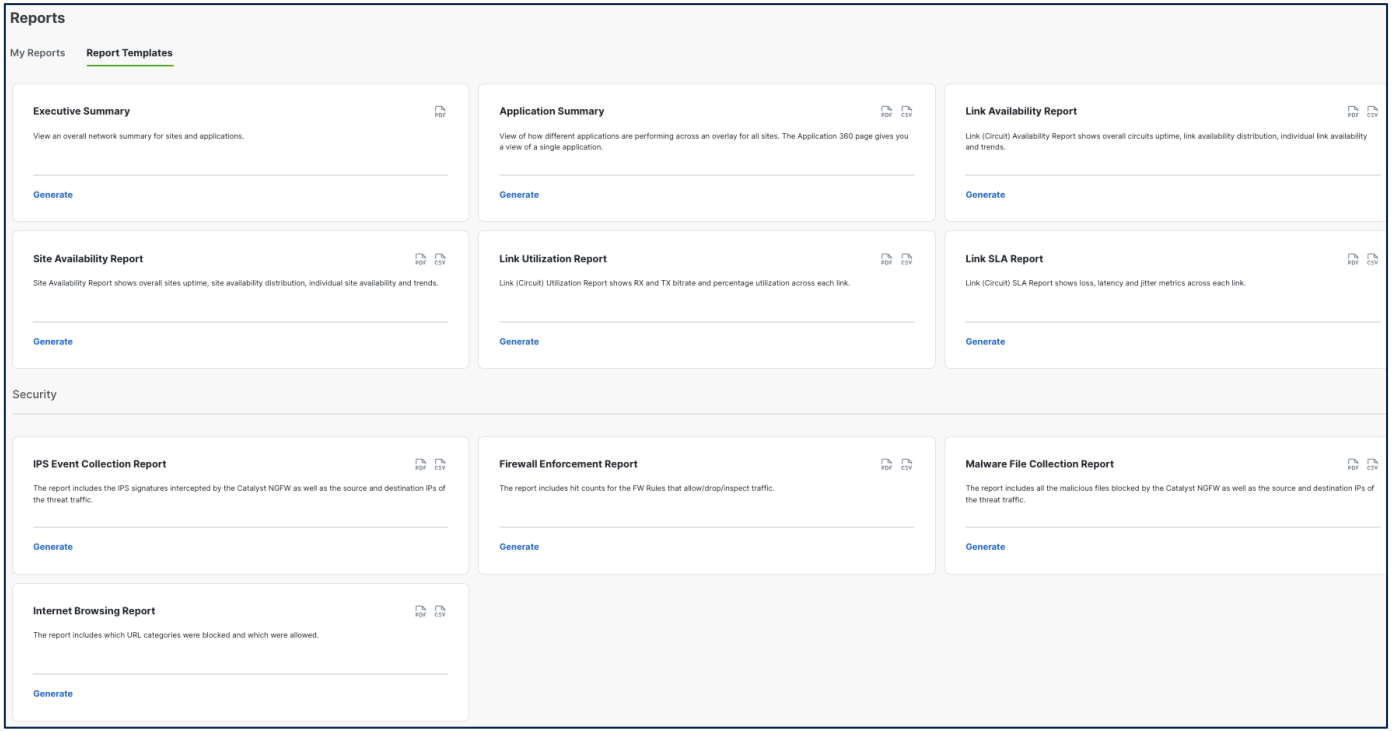
Reports

Receive reports of WAN performance, on a scheduled basis.





- Executive Summary
- Application Summary
- Link Availability
- Site Availability
- Link Utilization
- Link SLA

- IP event collection
- Firewall enforcement
- Malware file collection
- Internet browsing

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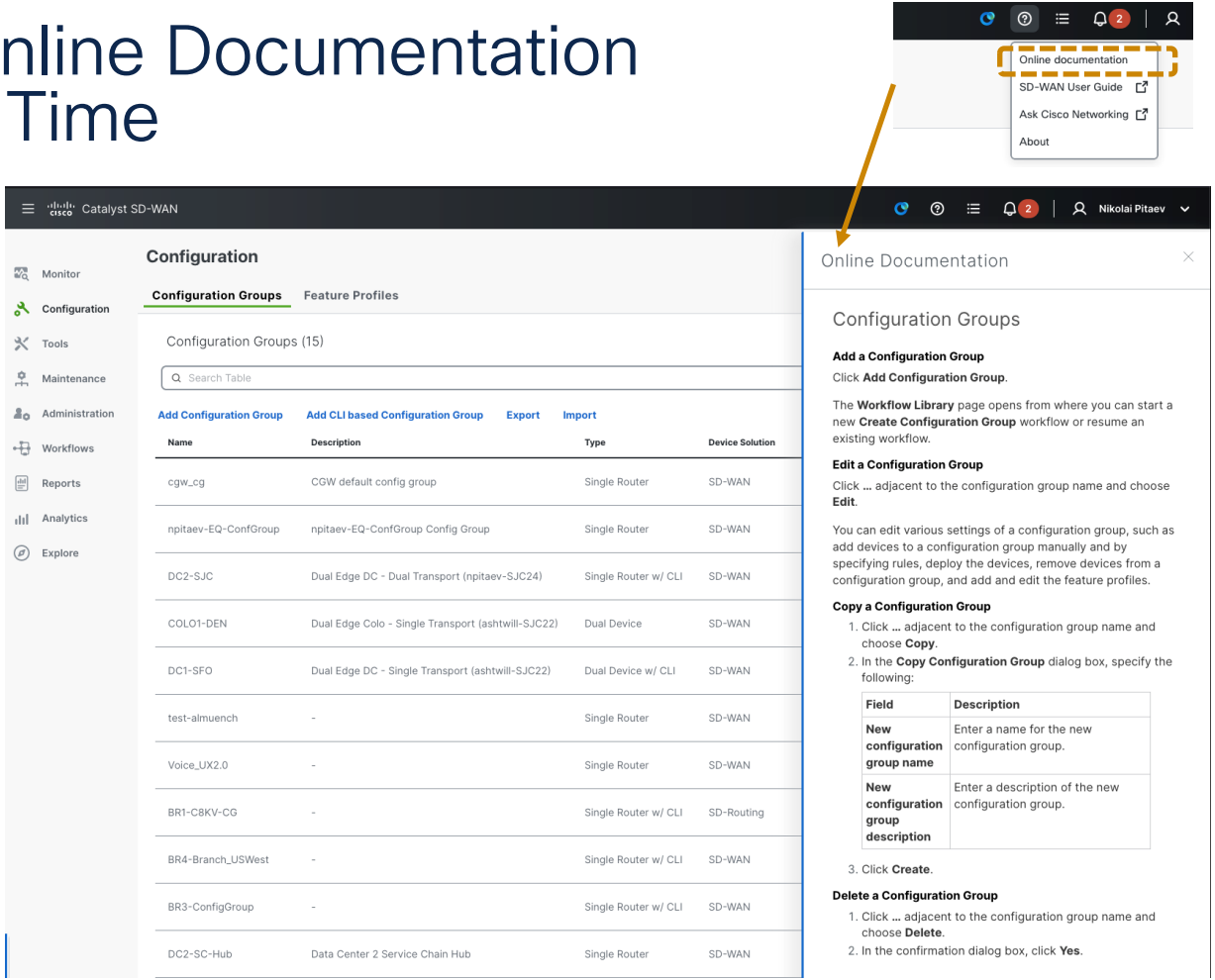
Context-Aware Online Documentation reduces Learning Time

Cloud-Delivered technical documentation.

Intelligence to correlate content to the screen makes it easy to read related only content.



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Network-Wide Path Insights (NWPI) Tool

NWPI is a lightweight tool that can be used proactively and reactively to quickly find & resolve network/application issues and do policy validation - and it is built right into the Cisco SD-WAN Manager

US 20220045927A1

(19) **United States**

(12) **Patent Application Publication**
Liu et al.

(10) **Pub. No.: US 2022/0045927 A1**
(43) **Pub. Date: Feb. 10, 2022**

(54) **SYSTEMS AND METHODS FOR DETERMINING A NETWORK PATH TRACE**

(71) Applicant: **Cisco Technology, Inc.**, San Jose, CA (US)

(72) Inventors: **Jianda Liu**, Shanghai (CN); **Xiaorong Wang**, Shanghai (CN); **Shen Yong Qing**, Shanghai (CN); **Olivier Patrick Jean Pelerin**, Holsbeek (BE); **Frederic René Philippe Detienne**, Harze (BE); **Pritam Baruah**, Fremont, CA (US); **Ruchir Jain**, Bangalore (IN)

(21) Appl. No.: **16/988,920**

(22) Filed: **Aug. 10, 2020**

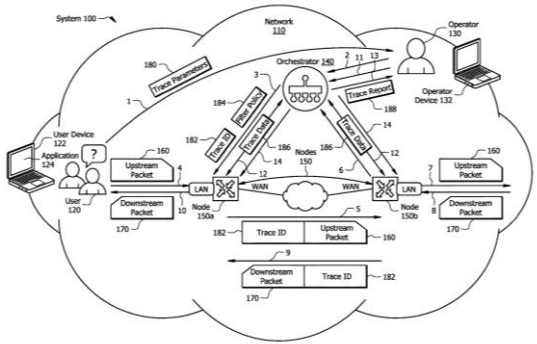
Publication Classification

(51) **Int. Cl.**
H04L 12/26 (2006.01)

(52) **U.S. Cl.**
CPC *H04L 43/10* (2013.01); *H04L 43/062* (2013.01)

(57) **ABSTRACT**

In one embodiment, a method includes receiving, by a network orchestrator, trace parameters from a user device. The method also includes determining, by the network orchestrator, to initiate a network path trace for the application, generating, by the network orchestrator, a filter policy for the network path trace using the trace parameters, and allocating, by the network orchestrator, a trace identification to the network path trace. The method also includes initiating, by the network orchestrator, the network path trace within a network by communicating the filter policy and the trace identification to a first node of the network and receiving, by the network orchestrator, network path trace data from a plurality of nodes of the network. The method further includes generating, by the network orchestrator, a trace report for the application using the network path trace data.



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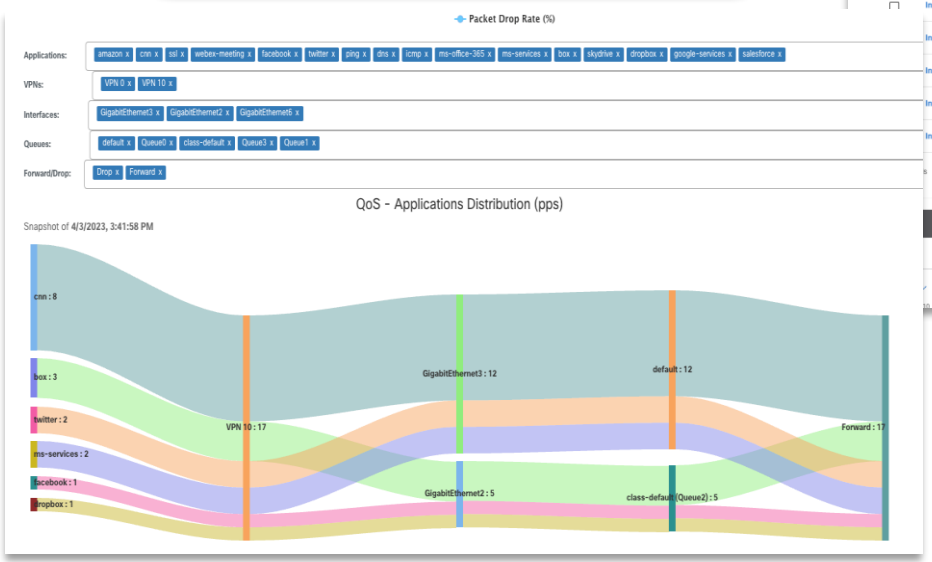
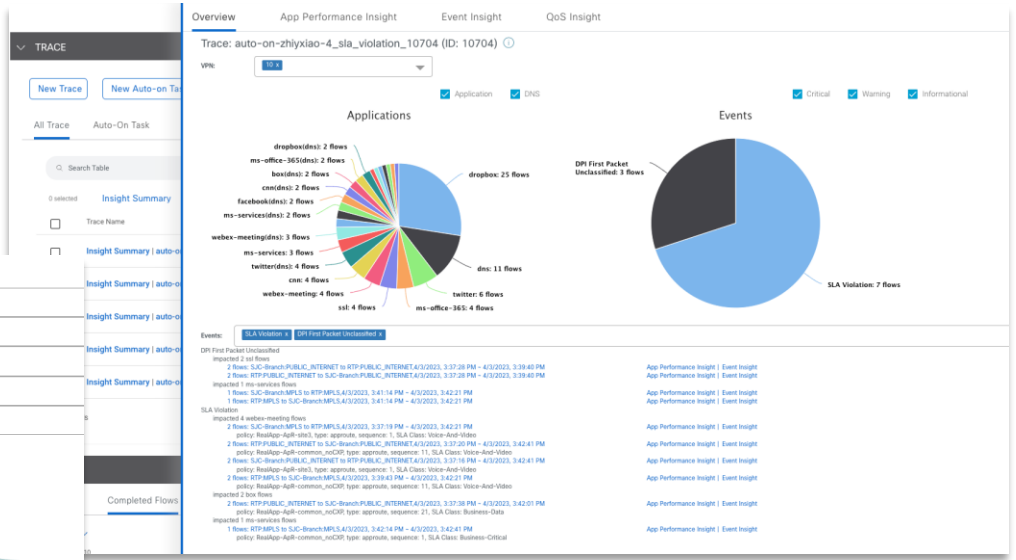
Troubleshooting Application and Network

Deep insights into application and network performance





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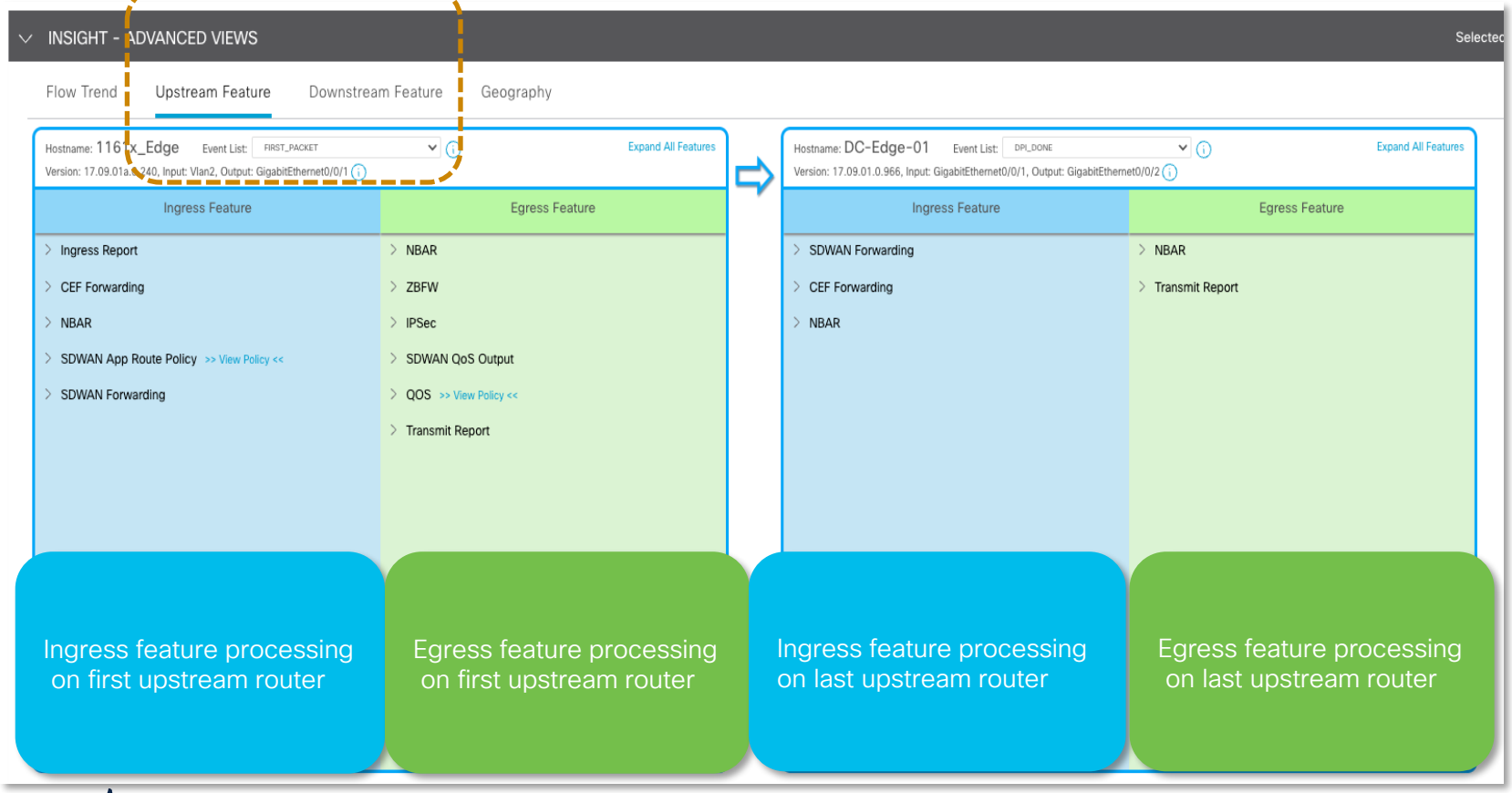
Policy Validation



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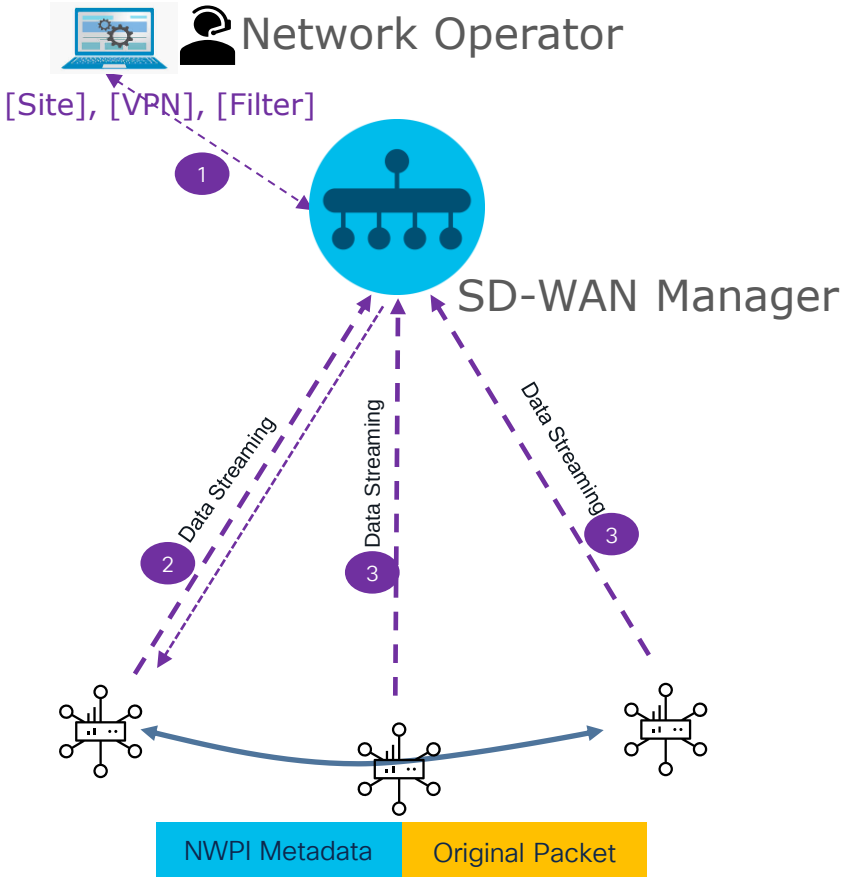
How NWPI Works

1. Network operator creates trace
2. SD-WAN Manager instructs first router to write NWPI metadata into SD-WAN header
3. Subsequent routers in path use NWPI metadata to send flow information to SD-WAN Manager
4. SD-WAN Manager correlates into a single view



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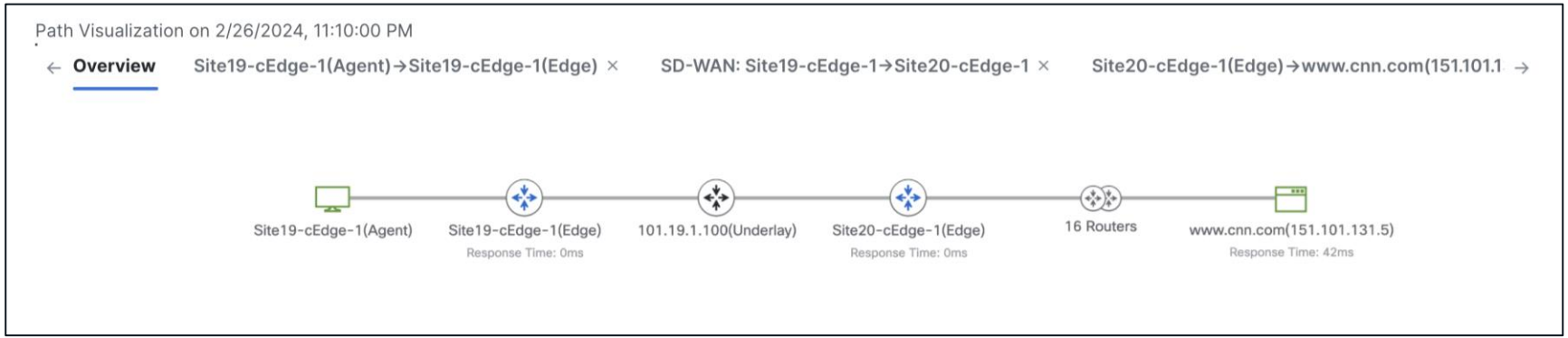
NWPI with TE and ISE

NWPI can enrich ThousandEyes path visualization data by integrating with Underlay Measurement & Tracing Service.



With ISE integration, NWPI trace can be triggered for specific user and group Insight summary based on user filter.

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3 Things to Remember

1. Workflows and Catalog

2. Configuration Groups and Policy Groups

3. Network-Wide Path Insights (NWPI)

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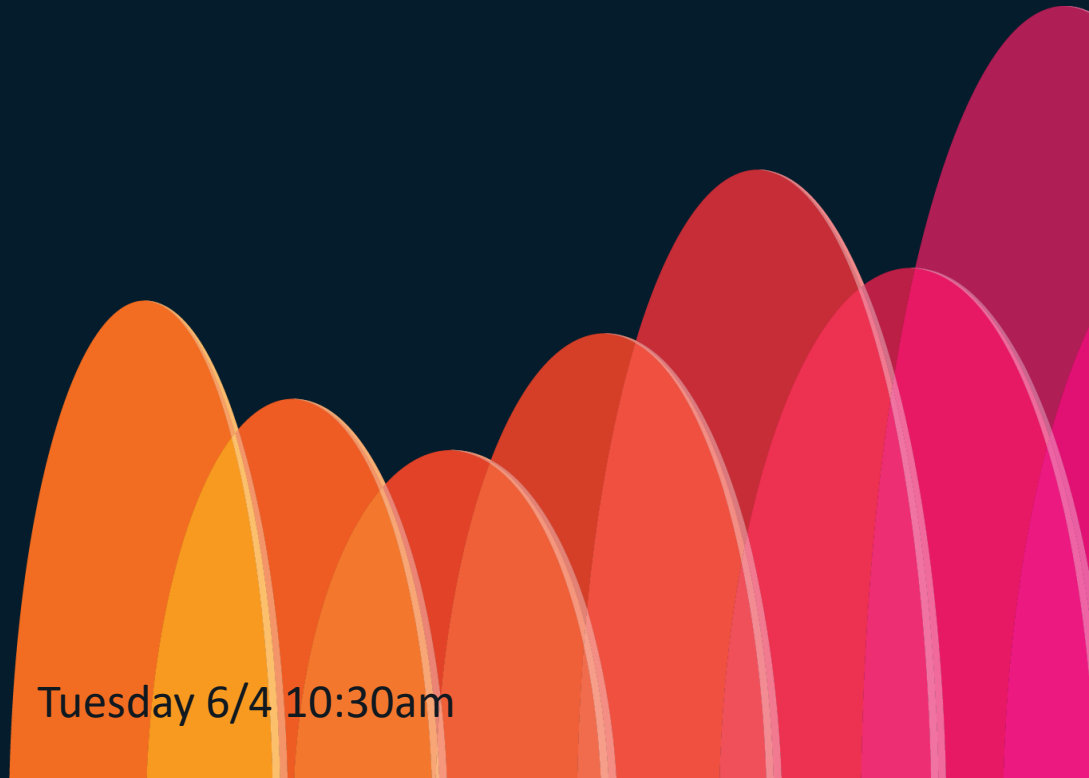
AI



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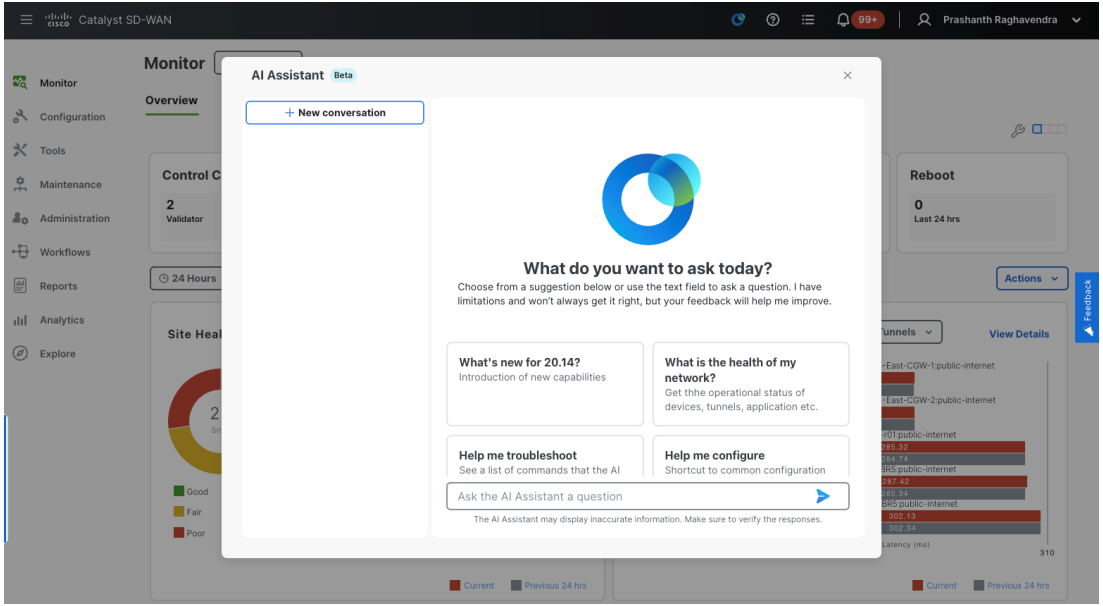
AI Assistant for Networking

PRIVATE BETA



Cloud delivered service powered by a Large Language Model (LLM) with Cisco Vector DB and MRE workflows.

Use cases:

- Integration with documentation
(ex: How to configure Cloud OnRamp?)

- Navigation Aid
(ex: How to run on-demand troubleshooting?)

- Intent based use cases using operational data
(How are tunnels performing in our fabric?)

For each response, you can vote Thumbs Up/Down, which will help train the AI model.

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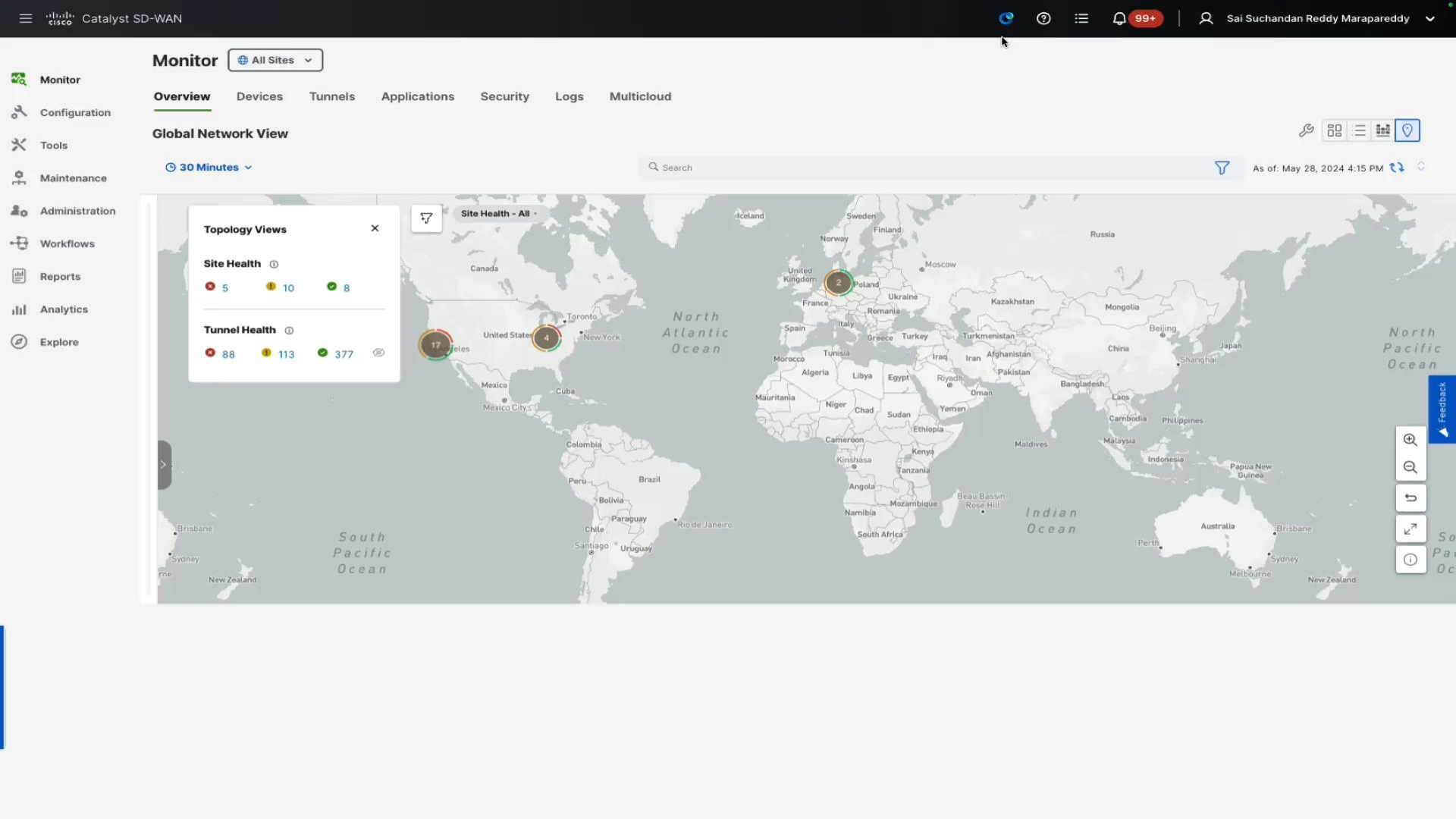
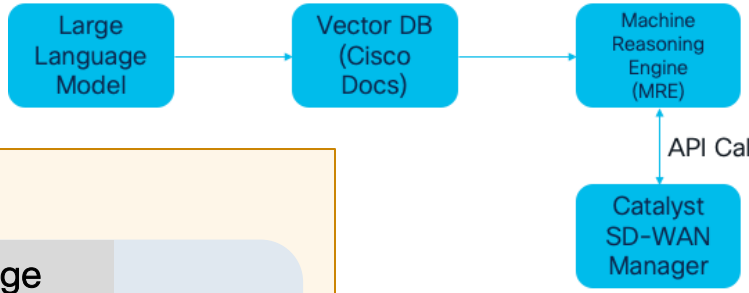
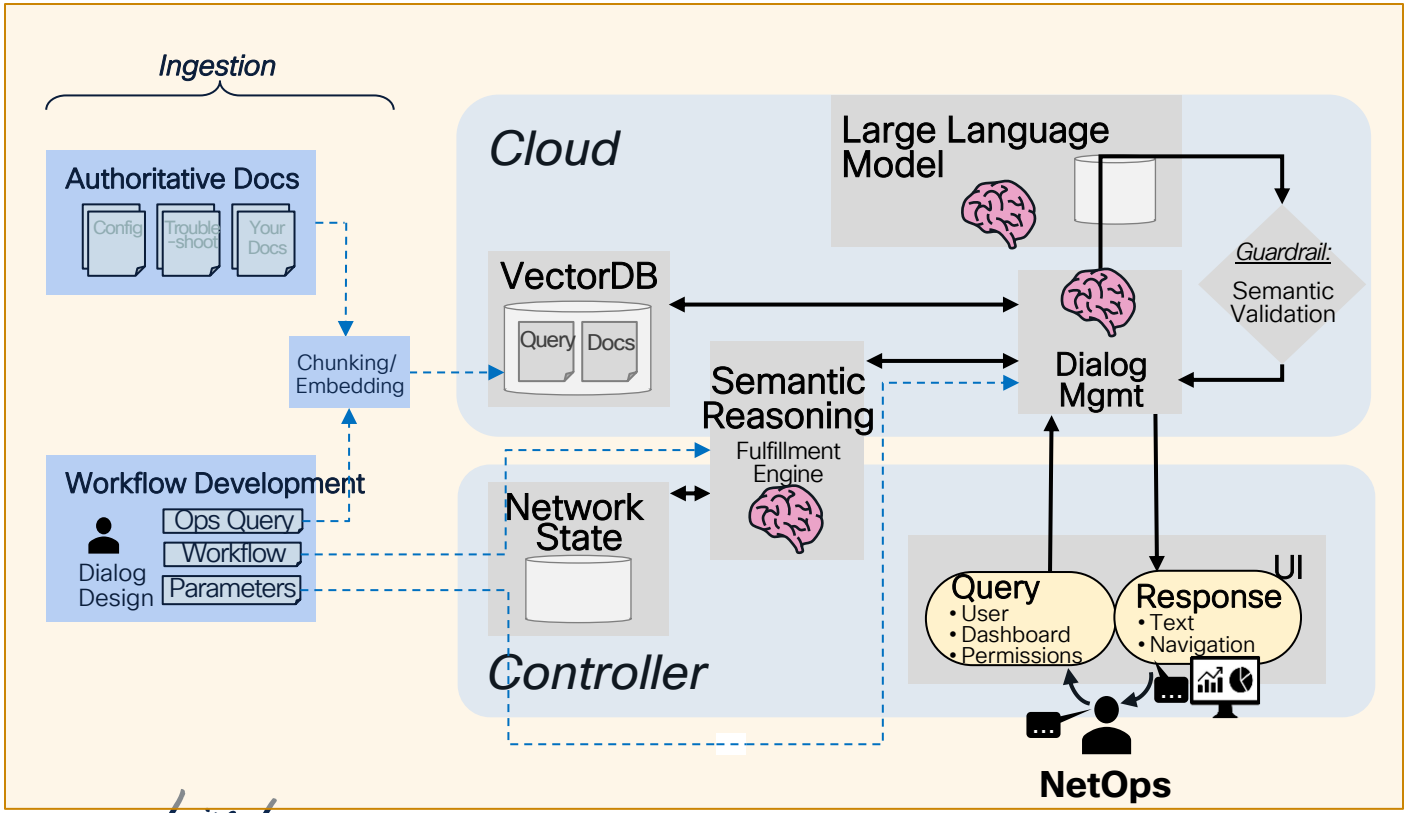

Catalyst SD-WAN
99+
Sai Suchandan Reddy Maraparedy
Monitor
All Sites
Monitor
Configuration
Tools
Maintenance
Administration
Workflows
Reports
Analytics
Explore
Overview
Devices
Tunnels
Applications
Security
Logs
Multicloud
Global Network View
30 Minutes
Search
As of: May 28, 2024 4:15 PM
Topology Views
Site Health
5
10
8
Tunnel Health
88
113
377
Site Health - All
North Atlantic Ocean
North Pacific Ocean
Indian Ocean
South Pacific Ocean
Feedback

System Architecture

Key Building Blocks:





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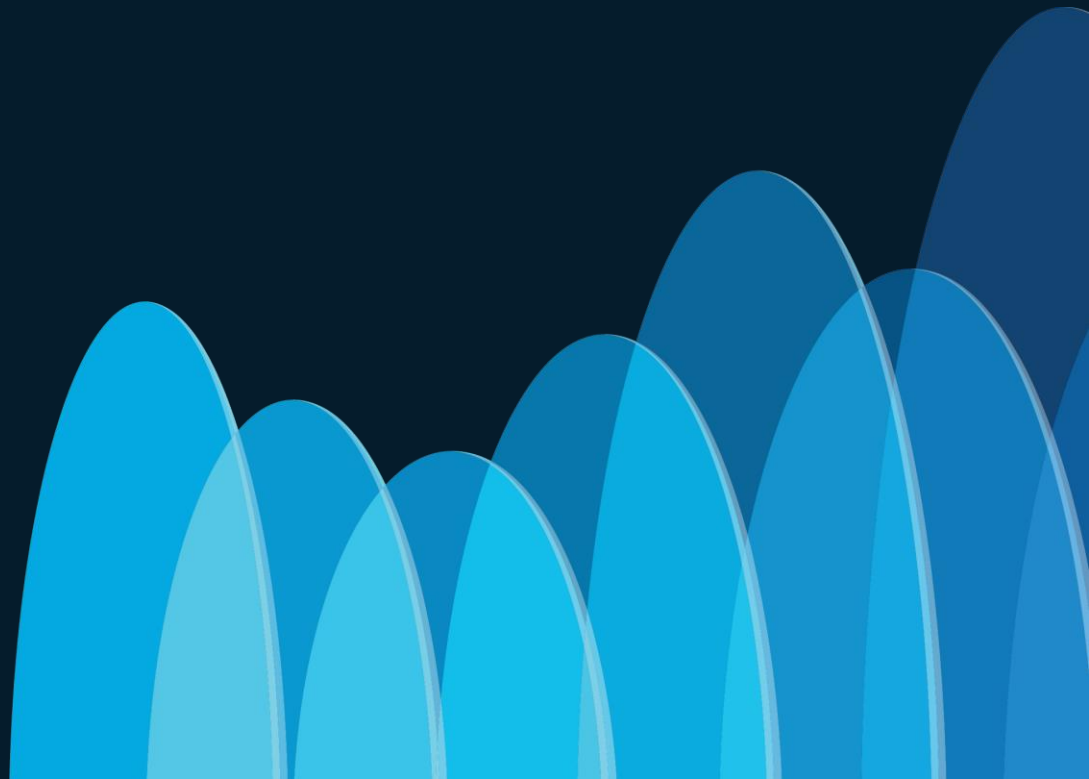
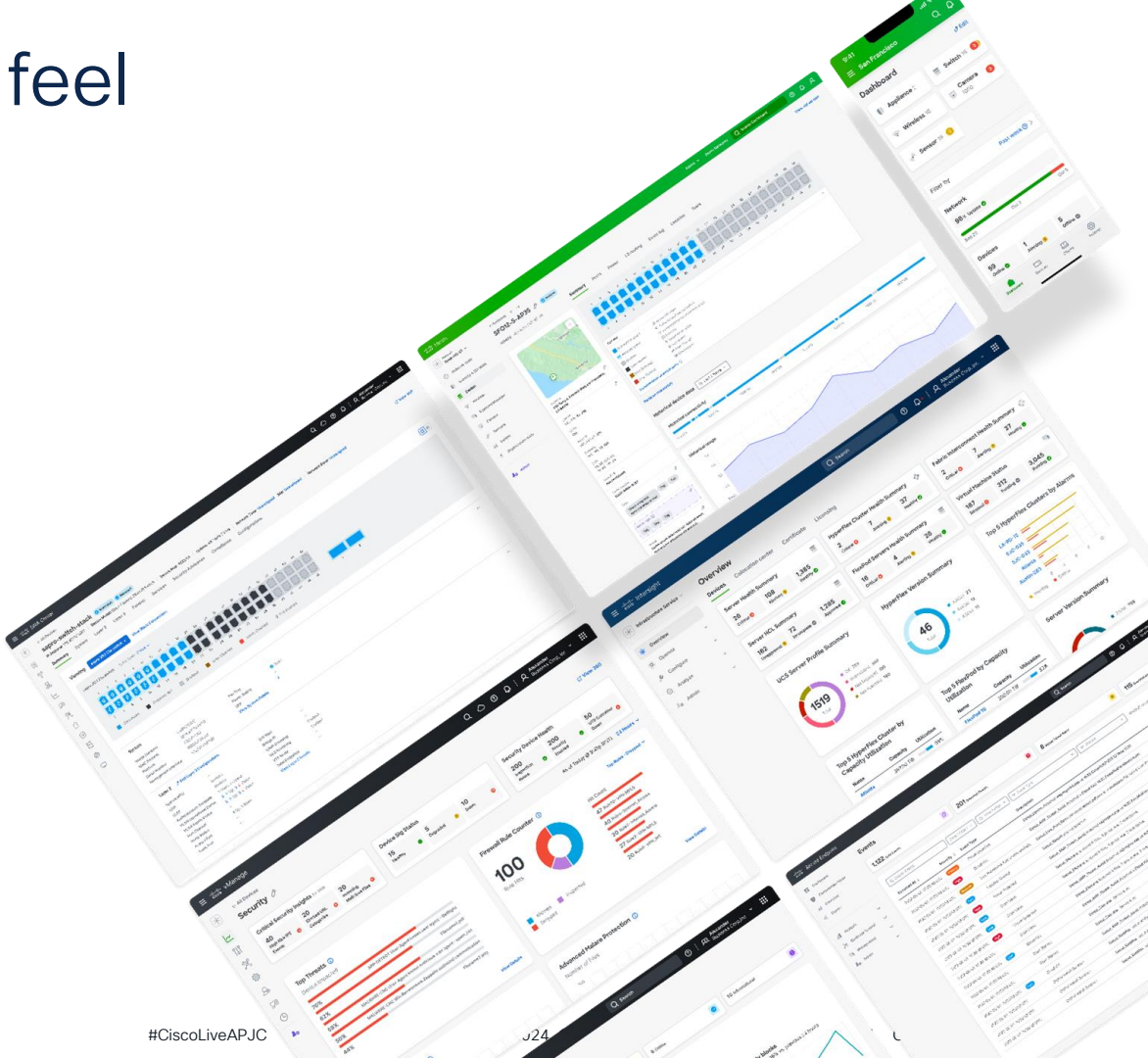
User Interface



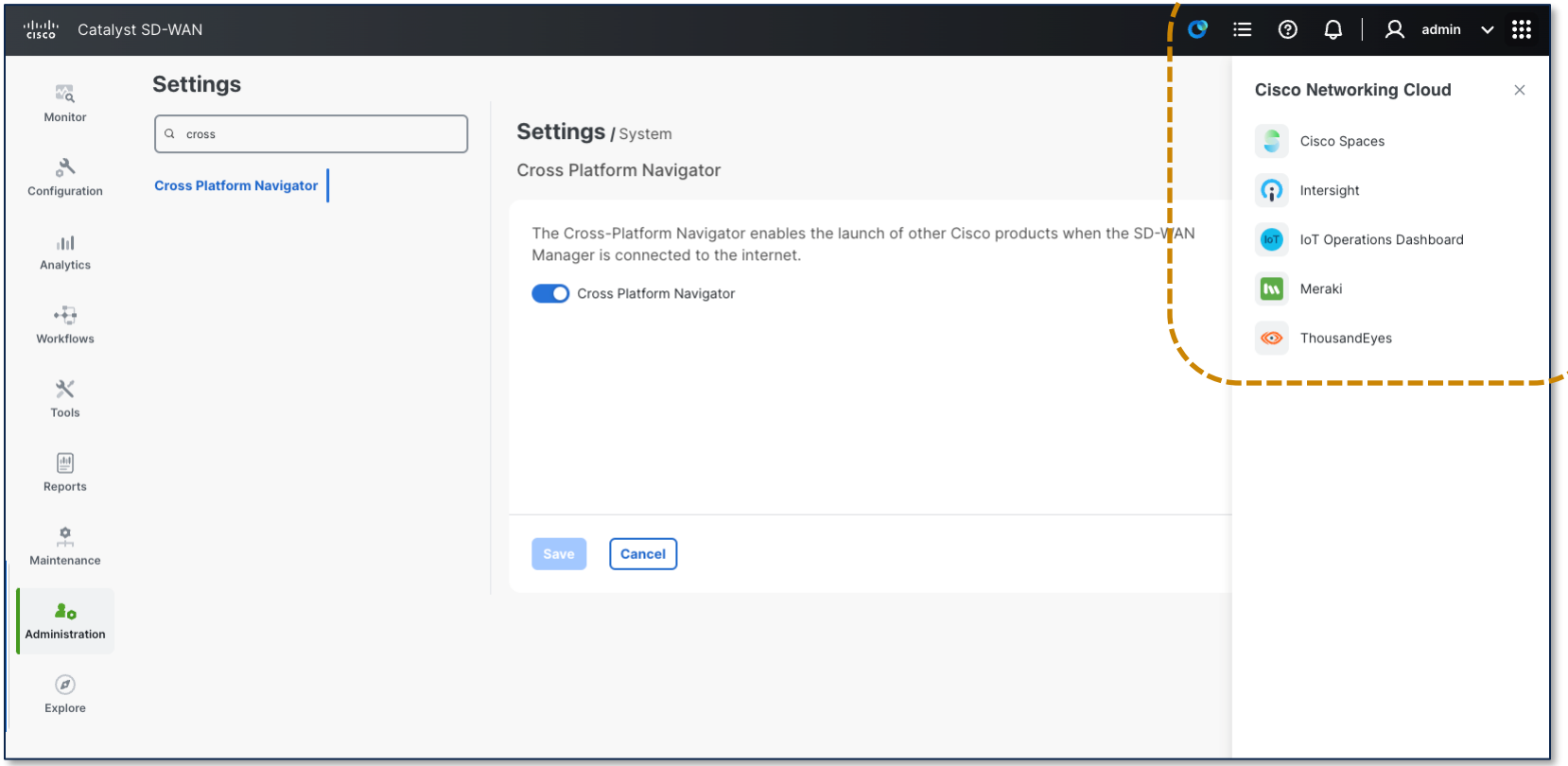
Common look and feel

Unified experience across

Networking & Security



Cisco Networking Cloud



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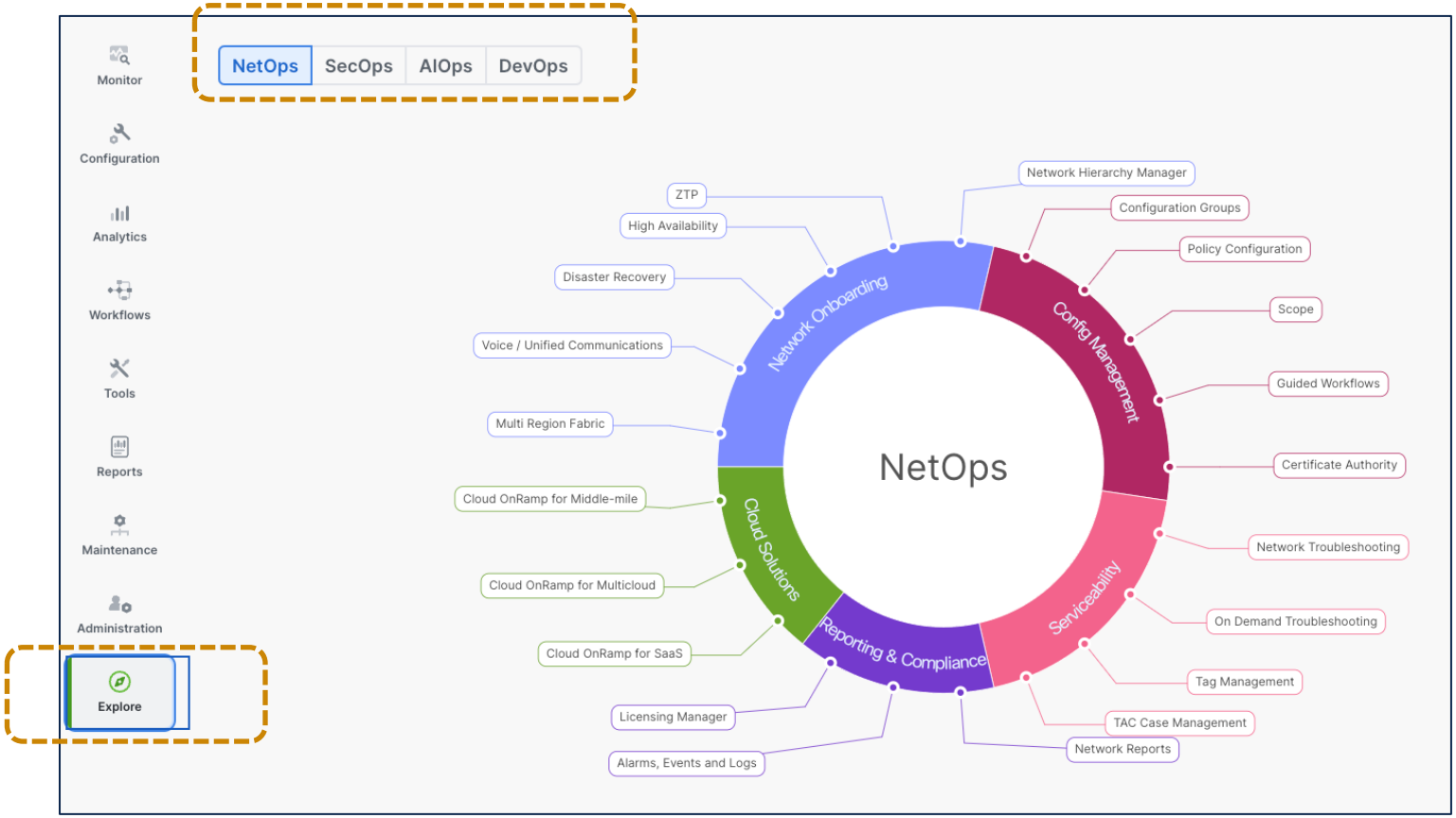
Explorer wheel



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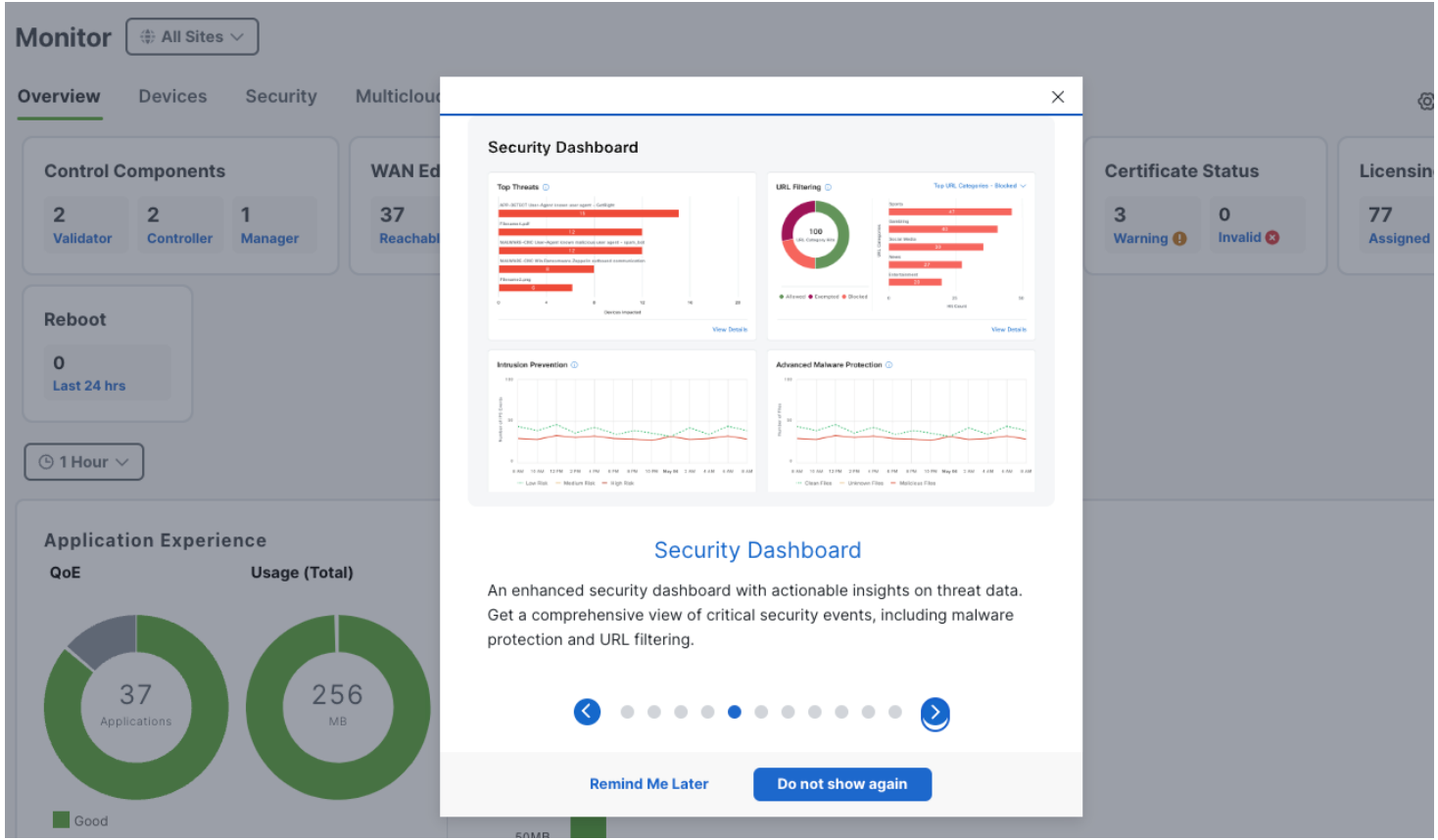
Spotlight



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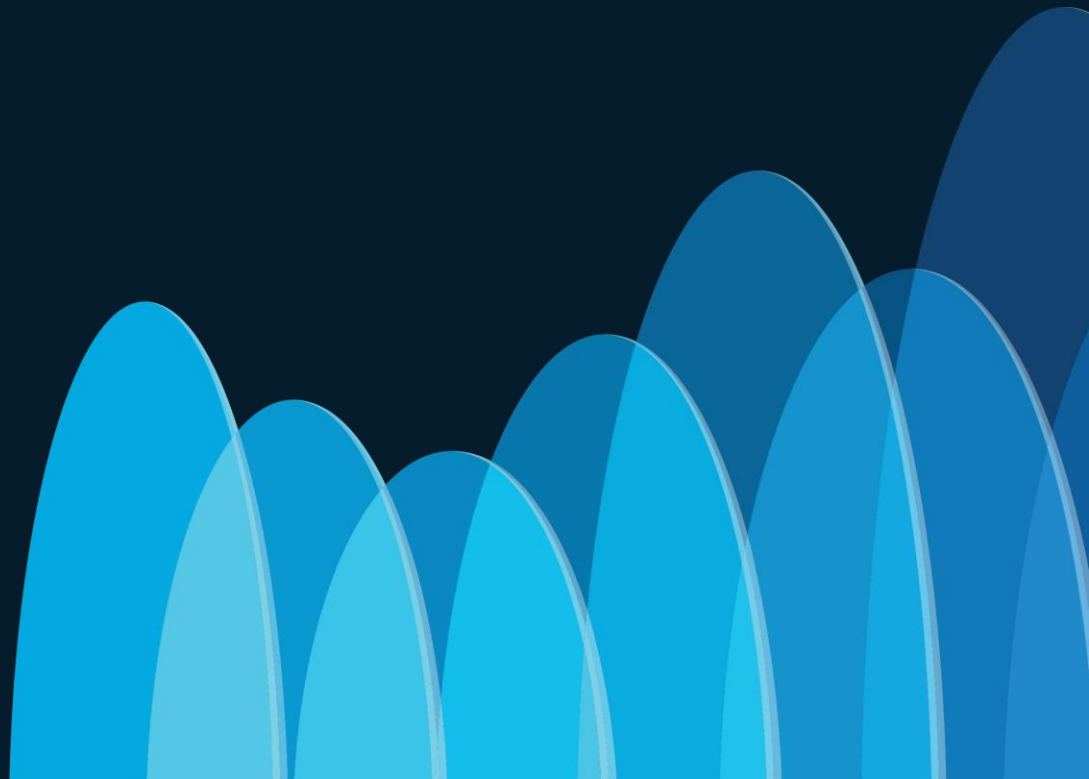
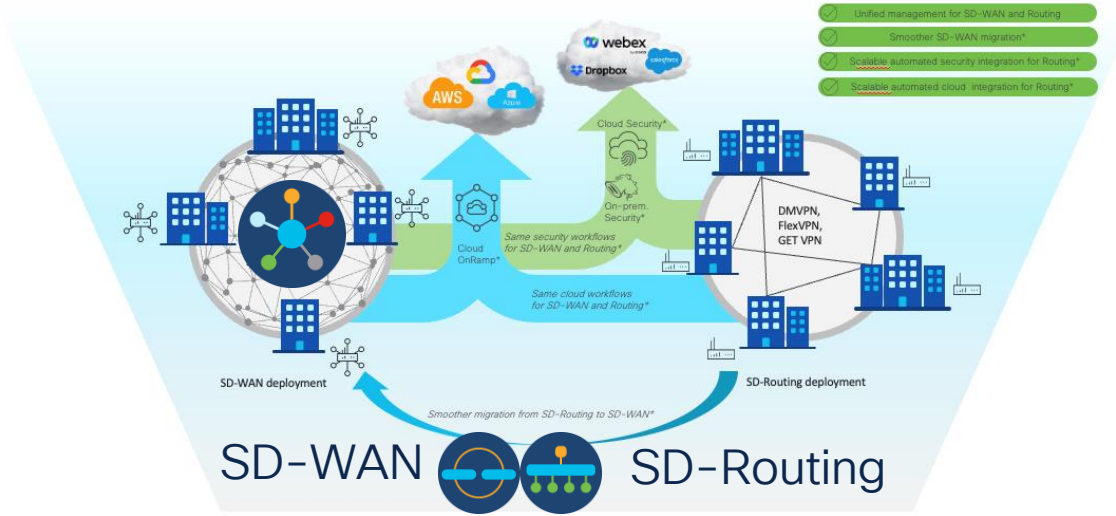
SD-Routing



SD-Routing

SD-WAN Manager – Unified Management for SD-WAN & SD-Routing (non-SD-WAN) Routers



Energize Routing customer base with innovation
- *Accelerate journey to cloud and security*

Easier migration to SD-WAN
- *Migration capabilities from Routing to SD-WAN*

One management for all WAN use cases
- *Same workflows, tools, UI for SD-WAN and Routing*

Onboarding including PnP

Monitoring, Troubleshooting:
- Logs
- Device dashboard – CPU / Disk, Interfaces / Real-time commands, Ping / Speed test / Capture
- Application performance
- NWPI

Lifecycle management:
- Scheduled software upgrade

Configuration:
- Configuration groups: GUI based or CLI based

Security:
- Policy Groups
- Embedded Security policy – ZBFW, URL-F, IPS/IDS, AMP, DNS Security
- Cloud Security - SSE policy
- Logs and Dashboards

Cloud on-Ramp Multi-cloud:
- Branch connect with Segmentation

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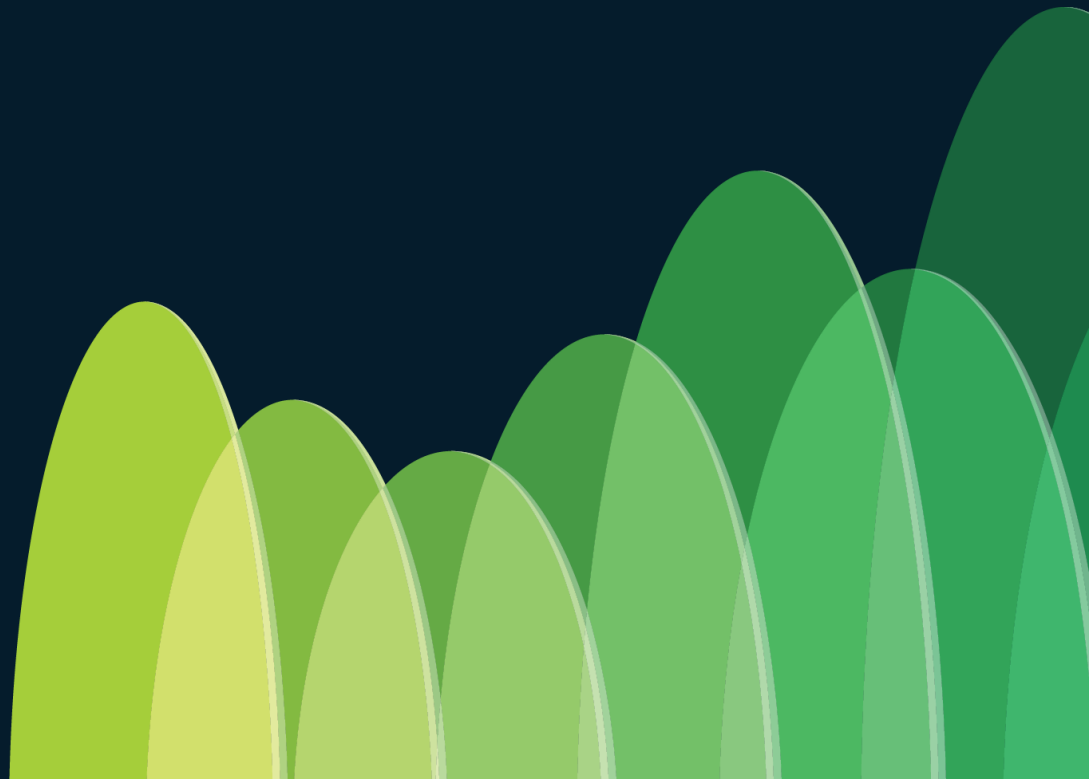
Conclusion



Conclusion

Intuitive and Guided workflows

Reduced Configuration sprawl
(model agnostic, re-use, structure)

Quicker and easier with smart defaults

Modify now, deploy selectively later

New and Customizable Dashboards

Site and Global Topology,
Troubleshooting tools guidance

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3 Things to Remember

1. Workflows and Catalog
2. Configuration Groups and Policy Groups
3. Network-Wide Path Insights (NWPI)

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Call to Action

Read the Quick Start Guide now!

https://www.cisco.com/c/en/us/support/docs/routers/sd-wan/222297-quick-start-guide-simplified-configura.html

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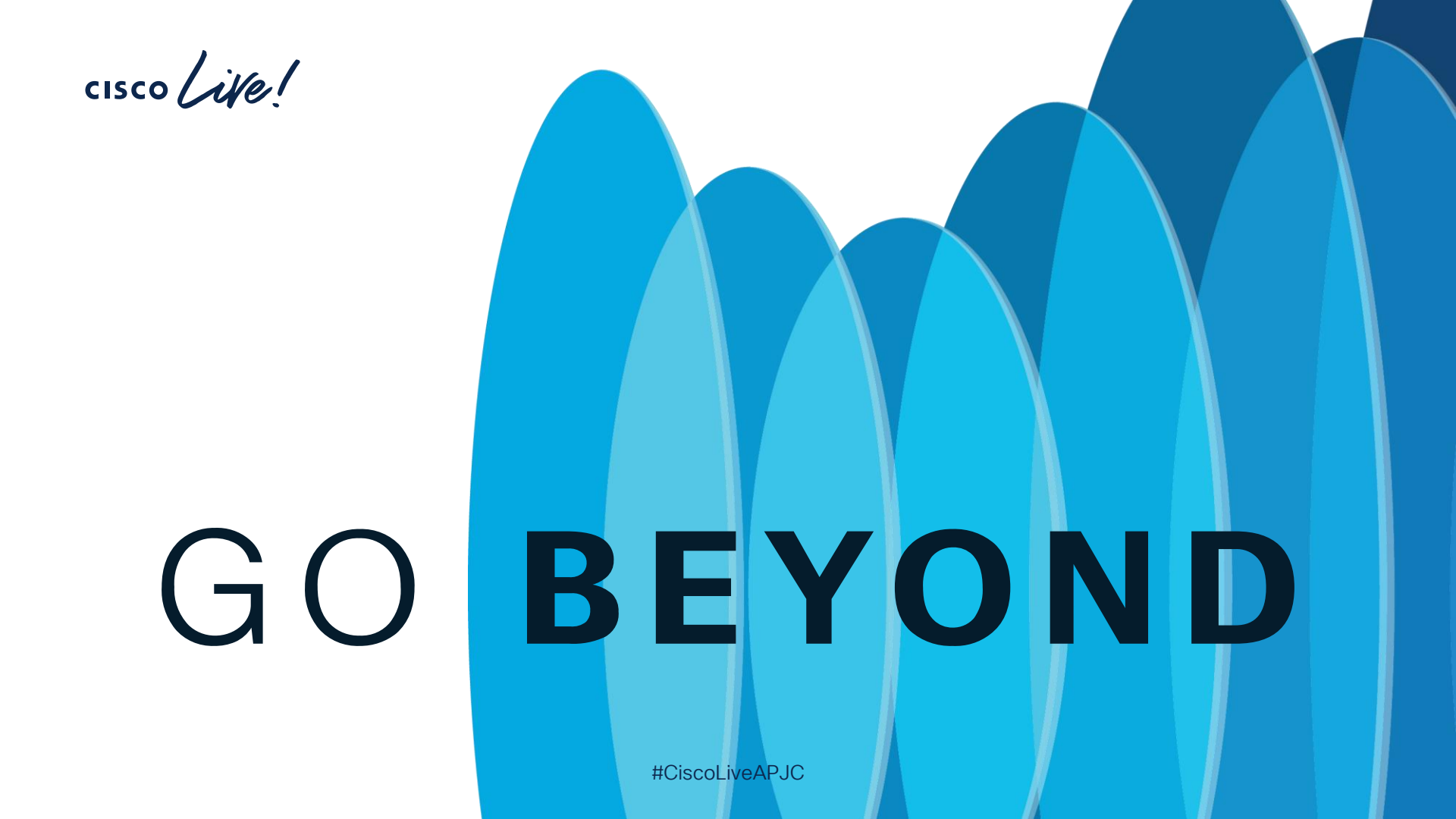
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