

CISCO *Live!*

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.



Agenda

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

3 Things to Remember

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

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

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

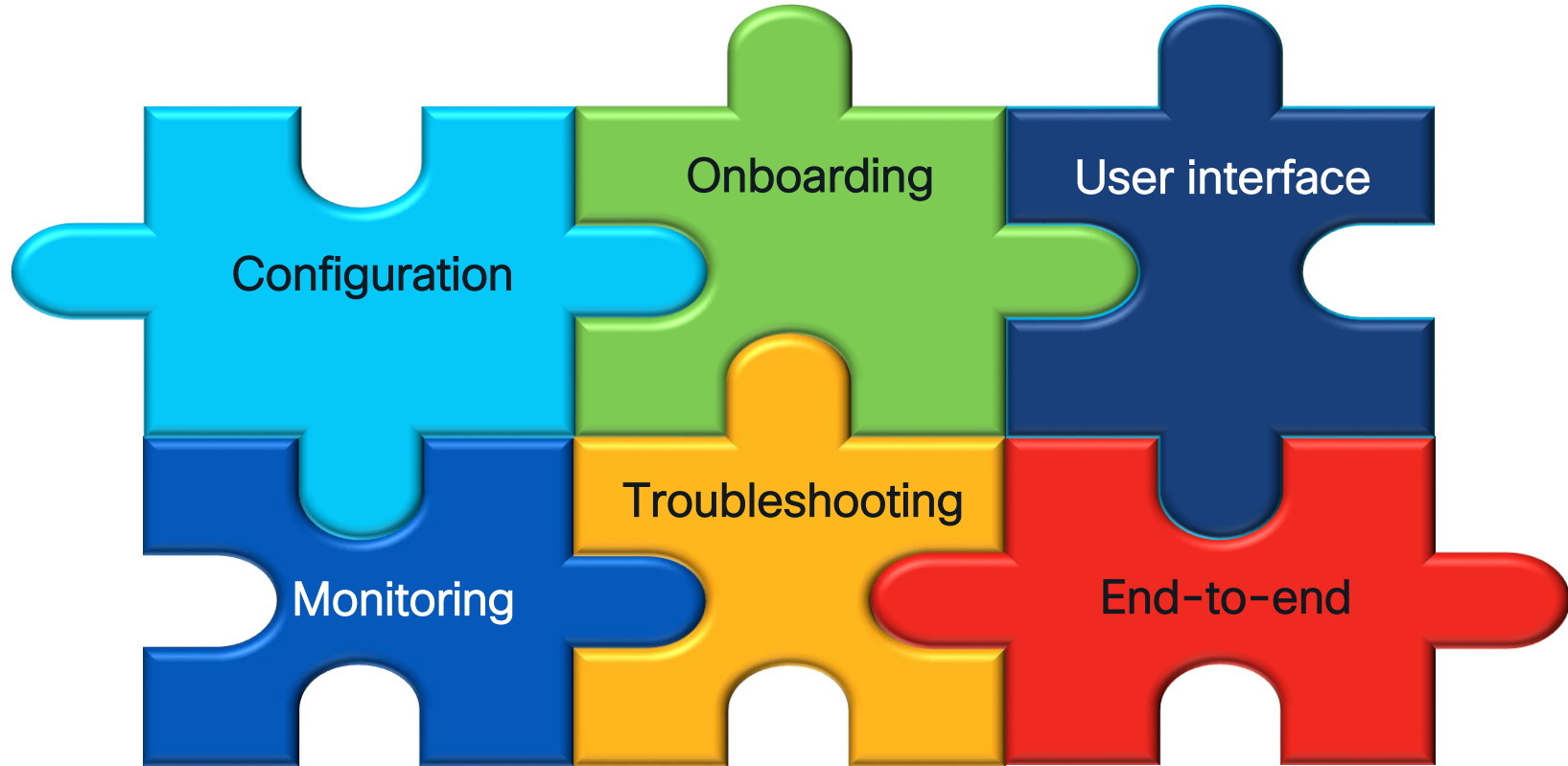
Webex spaces will be moderated by the speaker until November 15, 2024.



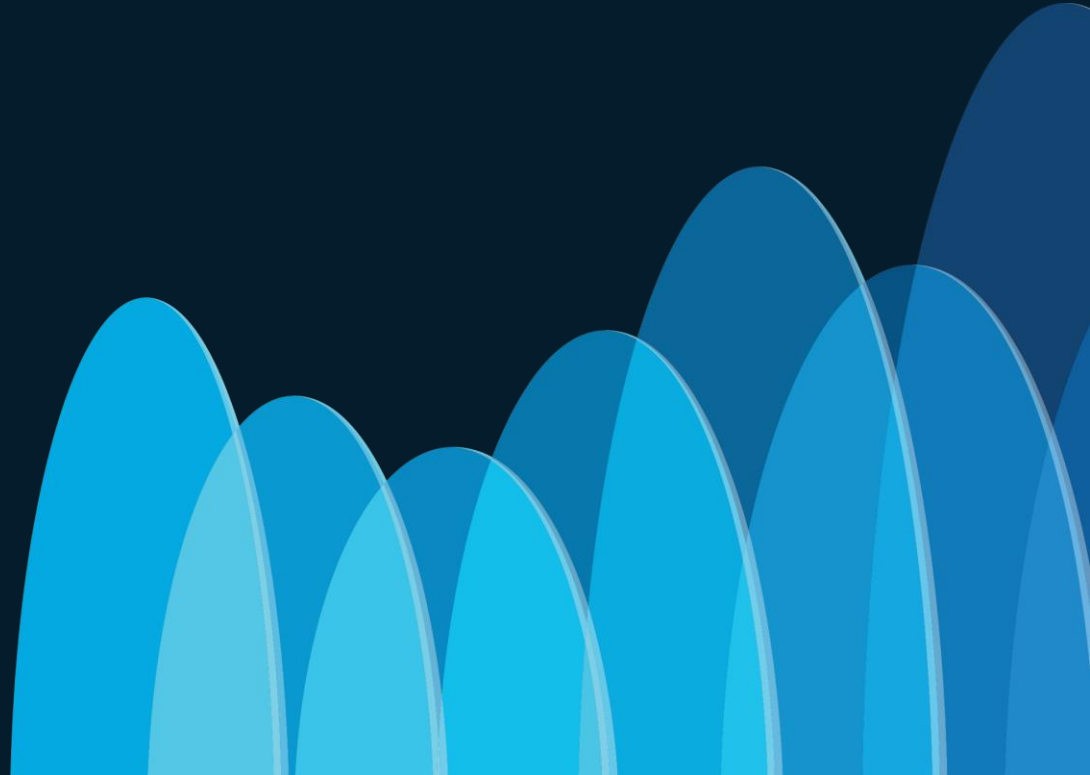
<https://ciscolive.ciscoevents.com/ciscolivebot/#BRKENT-1313>



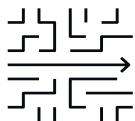
Simple SD-WAN: Key Pieces of the Puzzle



Configuration
made easy



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

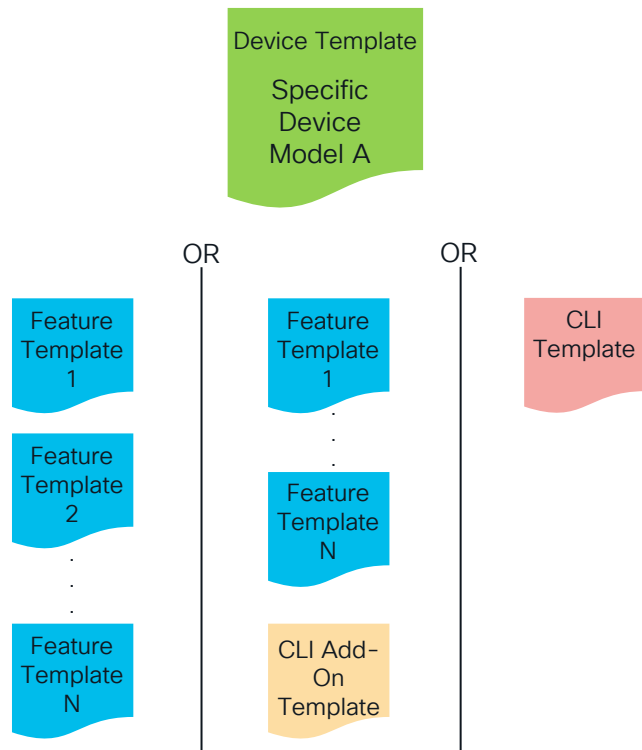
Re-use configuration components across devices instead of being specific to one device model.

Share configuration blocks across groups of devices.

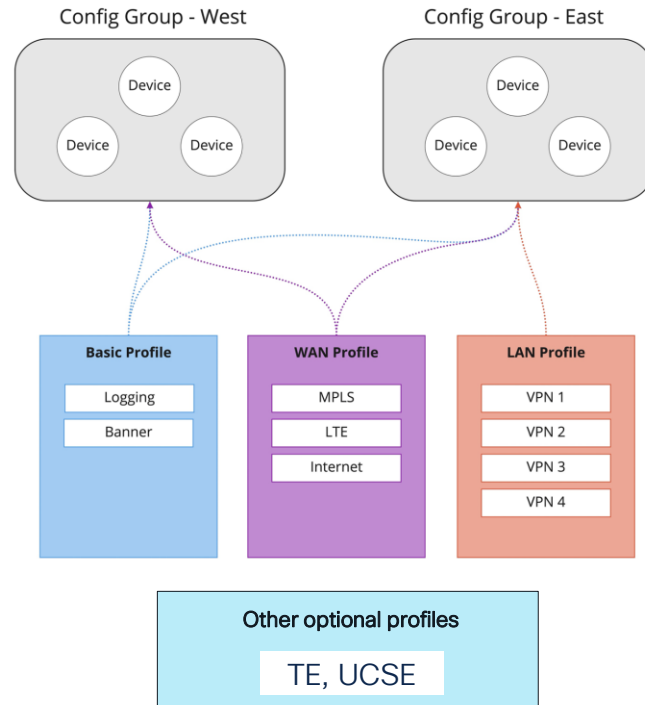
Device specific configuration variables.

Configuration – classic vs new structure

Classic (templates)



New (configuration groups)



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

Terminology

Configuration groups

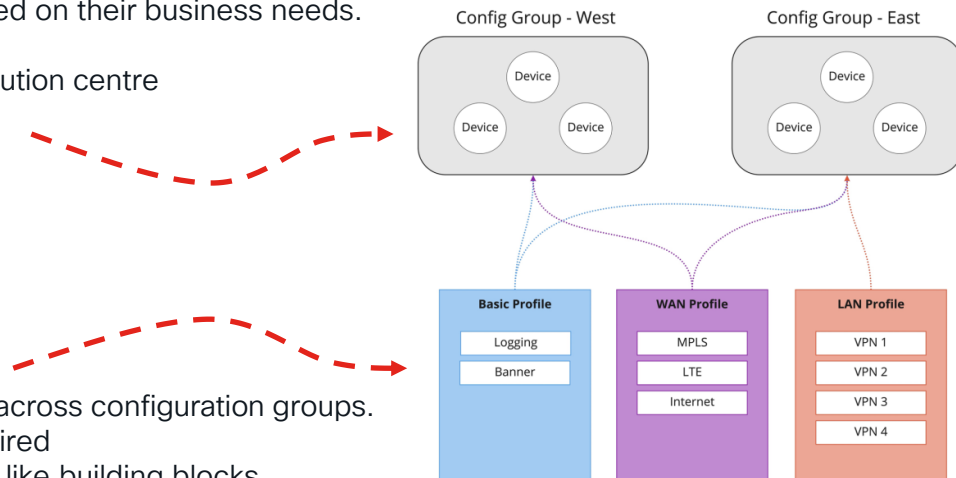
- Logical grouping of devices that share a common purpose within the WAN.
- The user defines and can customise this grouping based on their business needs.

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



Workflow Library



Monitor

Configuration

Tools

Maintenance

Administration

Workflows

Reports

Analytics

Explore

Build and maintain your network more efficiently with Workflows.

Let us guide you through end-to-end workflows tailored to make your job easier.

Library

All

Create Configuration Group

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

Define and Configure Service Chain

Define and configure a Service Chain for cloud, SDCI, campus, data center.

Create SD-Routing Config

Configure your WAN with smart SD-Routing Config. Use recommended settings to get the WAN up and running quickly.

Create Security Policy

Use this workflow to configure your security policy.

Create NFV Configuration Group

As a Network Architect create a device-independent NFV design for rapid deployment on Cisco's uCPE devices.

Configure Teleworker Devices

Get secure access to your corporate network from the comfort of your home

Create Cellular Gateway Group

Enable high-speed 5G or LTE WAN connectivity with Cisco Catalyst Cellular Gateway

Configure UC Voice

Configure Cisco Unified Communications (UC) voice services for supported routers.

Quick Connect

Onboard your devices.

Deploy Configuration Group

Push configuration to devices in your WAN

Attach Service Chain to SD-WAN Router

Attach Service Chain to SD-WAN Router

Deploy Policy Group

Push configuration to devices in your WAN

Firmware Upgrade

Upgrade your devices with the latest IOS XE SD-WAN image.

Software Upgrade

Upgrade your devices with the latest IOS XE SD-WAN image.

Sync and Install HSEC Licenses

Easily sync and install licenses on HSEC compatible devices.

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

Create



Yes/no?

Associate



Yes/no?

Deploy

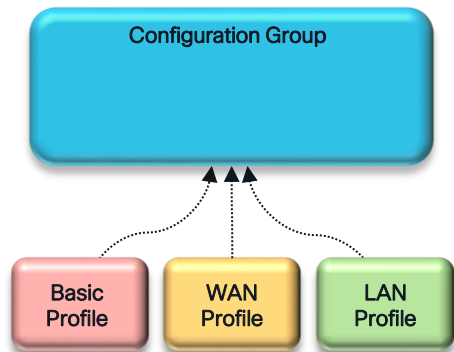
Deploy

Create Configuration Group Workflow

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

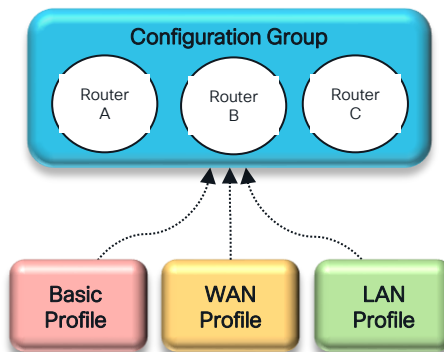
Create

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



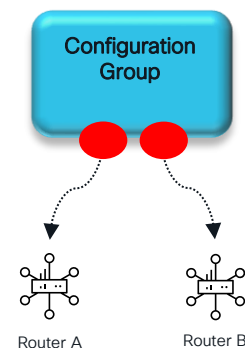
Associate

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

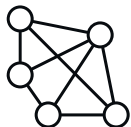


Deploy

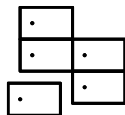
8. Select devices to deploy the configuration group to
9. Specify device specific values for variables
10. Review the summary. Edit if required.
11. Configuration group deployed to devices



Simplify Association and Deployment



Network Hierarchy and Resource Pool Manager



Tagging

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

The screenshot shows the Cisco Catalyst SD-WAN configuration interface for Network Hierarchy. The left sidebar displays a tree view of the network hierarchy. The 'Global' node is selected, and a context menu is open, showing 'Add Node' and 'Add Pool' options. The main panel displays the 'Global' node details, including a search bar, a table of resource pools, and an 'Add Pool' button. The table shows a single record for 'GLOBAL_SITE' with the description 'Site pool for GLOBAL node'.

Name	Description
GLOBAL_SITE	Site pool for GLOBAL node

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.

Add and Edit Rules

1 Automated rules 2 Check rules

Use rules to automatically add devices to the Configuration Group

Rules

☒ Match All ☐ Match Any

Tags equals Branch +

Cancel Apply

Delete Rule

Cisco Catalyst SD-WAN

Configuration

WAN Edge List Control Components Unclaimed WAN Edges

WAN Edge List (117)

Search Table

Export Bootstrap Configuration Sync Smart Account Upload WAN Edge List Upload WAN Edge List Add PAYG WAN Edges As of: Apr 19, 2024 04:07 PM

Chassis Number	Site Name	Hostname	Tags	Config Locked	Managed By	Device Status	Actions
C8K-30C8F225-F3FB-3BE4-1AEA-E05825AF5AFC	SITE_9300	aws-aci-r02		No	Unmanaged	In Sync - Di	...
C8K-3CB9D74B-0E48-B4C5-7035-BAD6FC78FC80	AWS-US-East-CGW	AWS-US-East-CGW-1				In Sync	...
C8K-320BAC31-C503-7E88-F895-EEE413B494E9	SITE_9393	aws-us-west1-ec2-r01				In Sync - Di	...
C8K-06B45DFC-6513-2F08-9E23-A2FE06C55C1A	CHI10105	BR5				In Sync	...
C8K-0BBB9778-0164-D6B1-85FF-F893540C5491	SITE_70	BR7-DRE-IntNode				In Sync	...
C8K-09080319-FE19-CCE7-512C-E629C8194CE3	SITE_90	BR9-DRE-ExtNode				In Sync	...
04096ee9-7ab2-41b7-9d92-a3f9d138468b	-	DataCenter2b				In Sync	...

Add Tag

Type to search or create

Tag Name should not contain !, ^, &, < or >

☐ BRANCH

☐ CLOUD

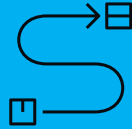
☐ EdgeDevice_01

☐ EdgeDevice_02

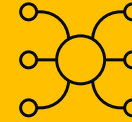
Apply 0 Tag

Create New Tag

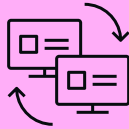
Other ways to create Site / Device Configuration



Workflow



Manual

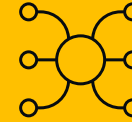


Export / Import



Catalog

Create Configuration – Manually



Manual

Create Configuration – Manually (from scratch)



Manual

Options: CLI-based or GUI-based Configuration Group

Configuration Groups SD-WAN

← **Configuration Groups** 36 System Profile 46 Transport & Management Profile 48 Policy Profile 1 Service Profile 41 CLI Add-on Profile 13 UC Voice →

Q Search Last Updated Status Create Configuration Group Export Import

Name	Type	Profile	Provisioning Status In Sync Devices / Associated Devices	Origin	Updated By	Last Updated On	Actions
azure-demo-west2	azure-demo-west2 Config Group			Updated by system	Updated Aug 28, 2024		

Type: Single Router

System Profile

azure-demo-west2_AZURE_system

Policy Profile (optional)

SDWANDEMO_Policy

[+ Add Profile](#)

Transport & Management Profile

azure-demo-west2_AZURE_transport

Service Profile (optional)

azure-demo-west2_AZURE_service

Deployment

Tags Multicloud_Unused, azure-cgw-westus

Associated [2 devices](#)

Provisioning 0 out of sync

Deploy

Quick access to Associate and Deploy

Create Configuration – Manually (by copying)



Manual

Configuration Group [Solution](#) ▼

Solution SD-WAN

Configuration Groups 9 System Profile 6 Transport & Management Profile 6 Service Profile 5 CLI Add-on Profile 0 UC Voice Profile 0 Other Profile 0

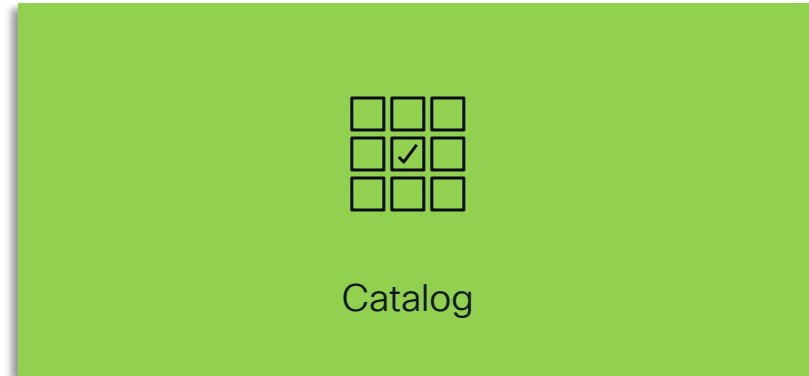
Search [Create Configuration Group](#) [Export](#) [Import](#)

Name	Type	Profile	Associate to Devices Up to Date / Number of Devices	Updated By	Last Updated On	Actions
DR_CG ✎	Type: Dual Device			Updated by admin	Updated Aug 1, 2024	⋮ ^
<div><div>Service Profile (optional) <div>Test_SRS_LAN ✎ ✕</div></div><div>System Profile <div>DR_Sys_PProfile ✎</div></div><div>+ Add Profile</div></div> <div>Transport & Management Profile <div>DR_WP ✎</div></div>						

Deployment
Tags EdgeDevice_01 EdgeDevice_02
Associated [+ Add](#)
Provisioning N/A
[Deploy](#)

Copy an existing Configuration Group and its Feature Profiles

Create Configuration – Using Catalog



Create Configuration – Using Catalog



Catalog

Configuration Catalog

Catalog Entries

Choose labels...

CVP1N IR1101 wired with LTE backup in NAT mode [Install]

The single-router IR1101 SD-WAN configuration catalog entry assists with rapid deployments at small to medium sized locations where flexibility, simplicity and standardization are key. Examples include retail, Oil & Gas Pipelines, Roadways & Intersections... etc. This network configuration is wired transport with single LTE connectivity as last resort. This configuration offers network segmentation via 1 secure VPN and NAT functionality to all connected clients for internet access over VPN 0 using

[View details](#)

Labels: sdwan, lot, single-router

Content: CVP1N_IR1101_Wired_LTE_Backup_NAT

CVP1R IR1101 wired with LTE backup in routed mode [Install]

The single-router IR1101 SD-WAN configuration catalog entry assists with rapid deployments at small to medium sized locations where flexibility, simplicity and standardization are key. Examples include retail, Oil & Gas Pipelines, Roadways & Intersections... etc. This network configuration is wired transport with single LTE connectivity as last resort. This configuration offers network segmentation via 1 secure VPN (VPN 10).

[View details](#)

Labels: sdwan, lot, single-router

Content: CVP1R_IR1101_Wired_LTE_Backup_Routed

Dual Router SD-WAN Branch with Dual Transport and TLOC-Ext [Install]

The dual-router SD-WAN with dual transport configuration catalog entry assists with rapid deployments at medium to large-sized branch offices where high availability, simplicity, and standardization are key. Examples include large banks, healthcare facilities, and manufacturing facilities. It supports dual routers with N+1 redundancy for internet connectivity and utilizes WAN TLOC extensions for WAN Edge routers to access each other's transport. This configuration offers network segmentation via

[View details](#)

Labels: sdwan, retail, dual-router

Content: Dual_Router_SDWAN_Branch, Dual_Router_SDWAN_Branch_Policy

Single Router SD-WAN Branch with Dual Transport [Install]

The single-router SD-WAN configuration catalog entry assists with rapid deployments at small to medium sized branch offices where flexibility, simplicity and standardization are key. Examples include gas stations, convenience stores, banks, and restaurants etc. This network configuration utilizes N+1 transport redundancy with dual WAN connectivity (MPLS, Public Internet). This configuration offers network segmentation via 4 secure VPNs (Corporate_Users, Payment_Processing_Network, Local_Internet)

[View details](#)

Labels: sdwan, retail, single-router

Content: Single_Router_SDWAN_Branch, Single_Router_SDWAN_Branch_Policy

- 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.

4 simple steps to use Configuration Catalog



Catalog

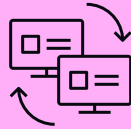
1. Enable Cloud Services in Settings (Smart Account needed)
2. Select the Catalog item
3. Modify before install (change variables if needed)
4. Push the Configuration to devices

Configuration Catalog



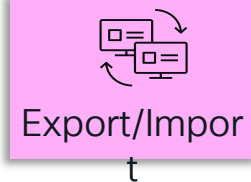
Cloud Services should be enabled before accessing Configuration Catalog. [Go to Settings Page](#)

Create Configuration – Export / Import



Export / Import

Create Configuration – Export / Import



Configuration Groups SD-WAN

← **Configuration Groups** 36 System Profile 46 Transport & Management Profile 48 Policy Profile 1 Service Profile 41 CLI Add-on Profile 13 UC Voice →

Q Search Last Updated Status Create Configuration Group Export Import

Name	Type	Profile	Provisioning Status <small>In Sync Devices / Associated Devices</small>	Origin	Updated By	Last Updated On	Actions
azure-demo-west2	azure-demo-west2 Config Group		Updated by system	Updated Aug 28, 2024			

Type: Single Router

System Profile

azure-demo-west2_AZURE_system

Policy Profile (optional)

SDWANDemo_Policy

[+ Add Profile](#)

Transport & Management Profile

azure-demo-west2_AZURE_transport

Service Profile (optional)

azure-demo-west2_AZURE_service

Deployment

Tags Multicloud_Unused, azure-cgw-westus

Associated [2 devices](#)

Provisioning 0 out of sync

[Deploy](#)

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

Policies
made easy

CISCO *Live!*



Policy Group

➤ Simplified policy creation, with Intent-based approach

➤ Simplified policy deployment

Policy Groups

Policy Group 8

Application Priority & SLA 17

NGFW 2

Secure Internet Gateway / Secure Service Edge 5

DNS Security 0

Group of Interest

+ Add Policy Group

Export

Import

As of: 9 September 2024 at 10:34

Q DC1

Name	Description	Number of Policies	Number of Devices	Devices Up to Date	Updated By	Last Updated On	Actions
<div><div>DC1-PolicyGroup</div><div><div><div>Policy Group Name</div><div>DC1-PolicyGroup</div></div><div><div>Description(optional)</div><div></div></div><div><div>Application Priority</div><div>Please Select one</div></div><div><div>Secure Internet Gateway / Secure Service Edge</div><div>Please Select one</div></div><div><div>NGFW</div><div>SecPolicy-npitaev</div></div><div><div>DNS Security</div><div>Please Select one</div></div><div><div>Device Solution</div><div>Type sdwan</div><div>Deployment</div><div>Associated 2 devices</div><div><div>Save</div><div>Deploy</div></div></div></div></div>							

Application Priority & SLA policy

Simple and
Advanced modes

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

Policies > Application Priority & SLA
test_prashrag_appPrioSLA 

[Additional Settings](#) [Advanced Layout](#) 

SDWAN Fabric Traffic Policy

Default Action ☐ Accept ☒ Drop

Gold Business Relevant	Preferred Path <input type="text" value="Select Preferred Path"/>	When SLA not met <input type="text" value="Default to Best Path"/>	Backup Path <input type="text" value="Not Applicable"/>
Silver Default	Preferred Path <input type="text" value="Select Preferred Path"/>	When SLA not met <input type="text" value="Default to Best Path"/>	Backup Path <input type="text" value="Not Applicable"/>
Bronze Business Irrelevant	Preferred Path <input type="text" value="Select Preferred Path"/>	When SLA not met <input type="text" value="Default to Best Path"/>	Backup Path <input type="text" value="Not Applicable"/>

Internet Offload Traffic

Secure Internet Gateway	Application List <input type="text" value="Select Application List"/>	Fallback to Routing ☐
Direct Internet Access	Application List <input type="text" value="Select Application List"/>	Fallback to Routing ☐

Apply Policy

Target	Traffic Direction <input type="text" value="Select Traffic Direction"/>	Traffic VPN(s) <input type="text" value="Physical_Security_Devices"/>	QoS Interface(s) <input type="text" value="Enter Comma separated QoS Interfaces"/> <input type="button" value="Value"/> <input type="button" value="Variable"/>
---------------	---	---	--

Topology

➤ Simplified Topology creation and deployment

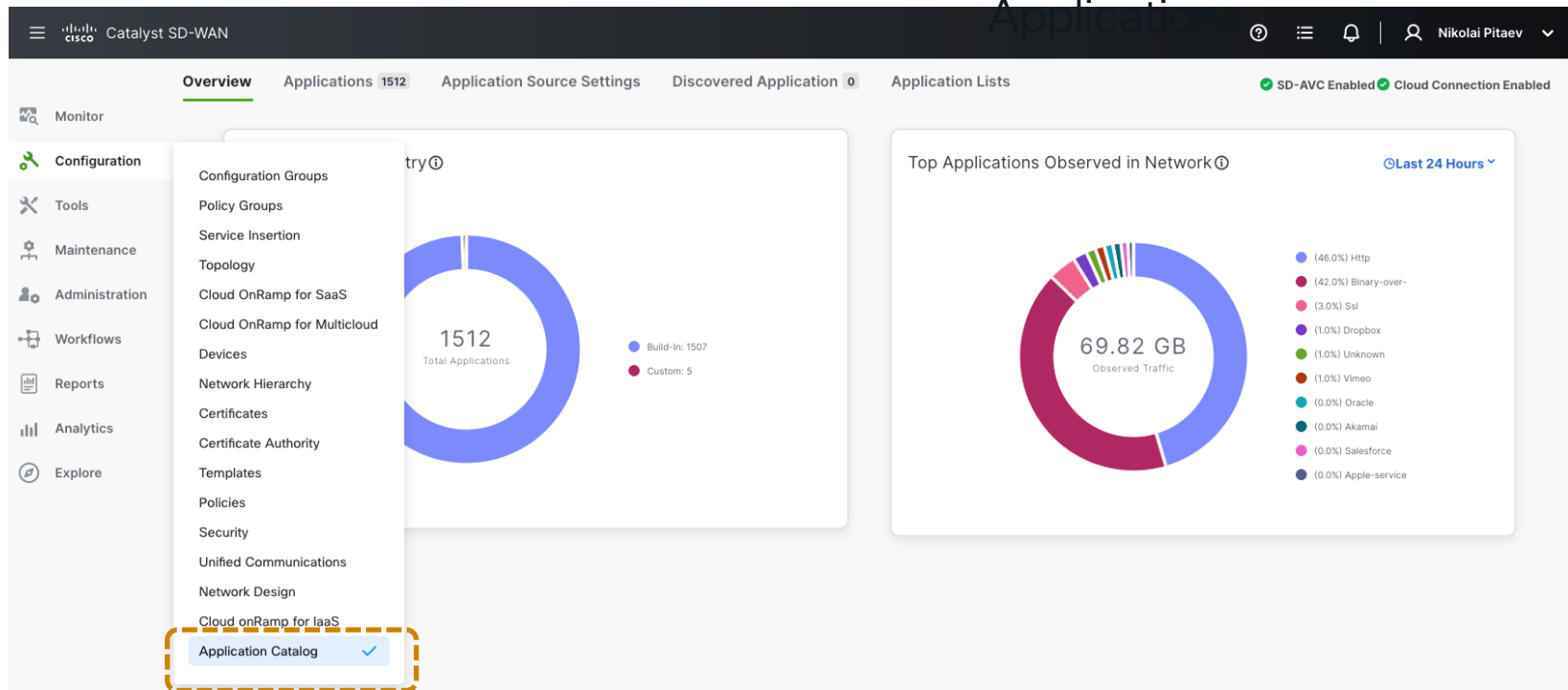
The screenshot displays the SD-WAN configuration interface for a topology named "SDWANDEMO". At the top, there is a navigation bar with "Topology" and "SDWANDEMO". Below this, a tabbed interface shows "TOPOLOGY", "VPN", and "SITE". The "TOPOLOGY" tab is active, and a dropdown menu is open, showing options: "Add Topology", "Hub and Spoke", and "Mesh". The "Hub and Spoke" option is selected. Below the tabs, there are input fields for "Name" (set to "Corp") and "VPN" (set to "VPN1-Main"). Under the "Hub Sites" section, it shows "Total: 1 sites" and "Hub: SJC10021". The "Spoke sites" section has a "+ Add Spoke Group" button and a table with the following data:

Name	Total Sites	Spoke	Primary Hub	Backup Hub	Action
SDWANDEMO-Branches	3	CHI10105, NYC10103, LA10104	SJC10021	-	...

At the bottom of the table, it indicates "1 Record" and "Items per page: 25". A "Customize Topology" button is located at the bottom left of the interface.

Application Catalog

Define / Manage Custom Application



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

3 Things to Remember



1. Workflows and Catalog



2. Configuration Groups and Policy Groups

3. Network-Wide Path Insights (NWPI)

Adoption
made easy

CISCO *Live!*



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)

Quick Start Guide

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

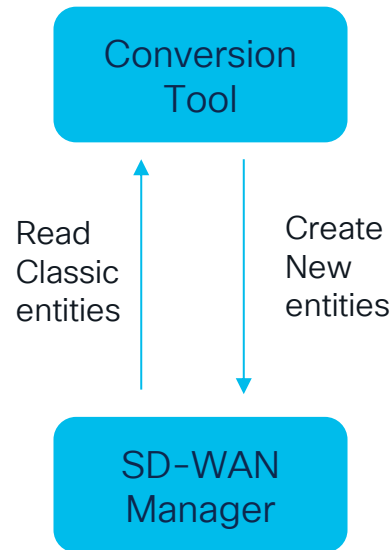
- With Cisco Catalyst SD-WAN Software Release 20.12/17.12, it is recommended that users evaluate and start migration from the Classic configuration, based on device and feature templates, to the new configuration approach based on Configuration Groups and Policy Groups.
- The main goal of this document is to serve as a guide for starting with using new constructs for Configuration, Policies and Onboarding, with the 20.12 gold star release.



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



Catalyst SD-WAN Conversion Tool



Collect

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



Convert

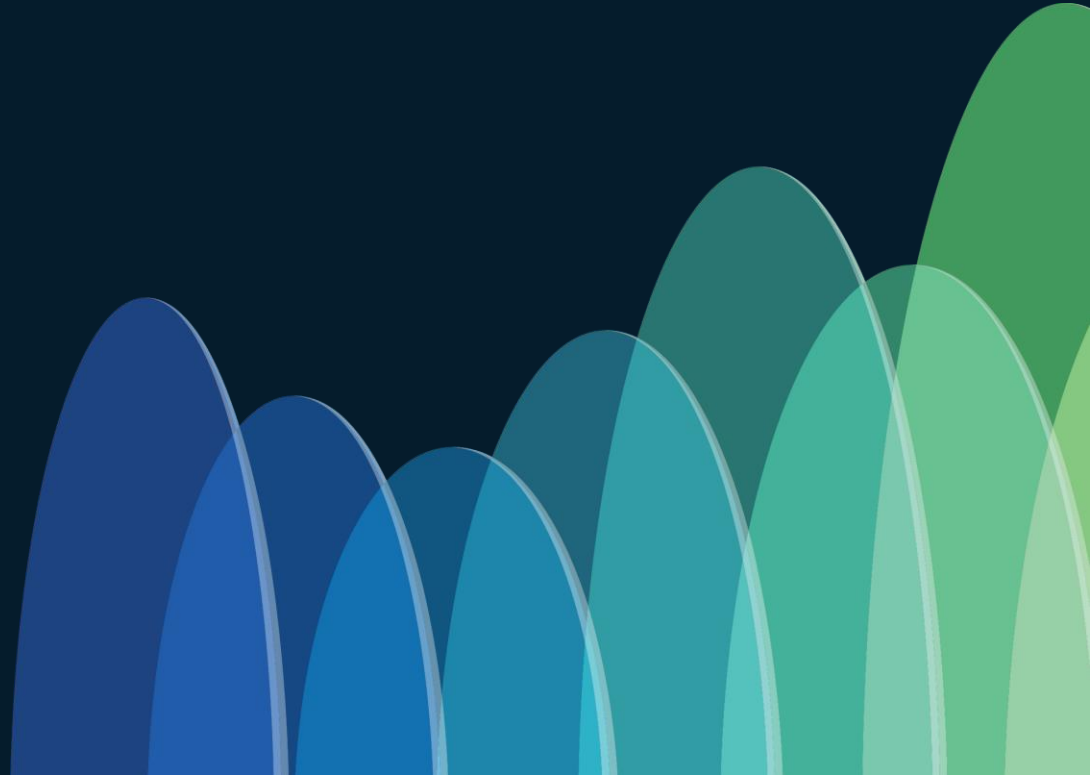
Transform Device Templates, Feature Templates and Policies to their corresponding Configuration Groups, Policy Groups, Topology Groups, Feature Profiles and Profile Parcels.



Upload

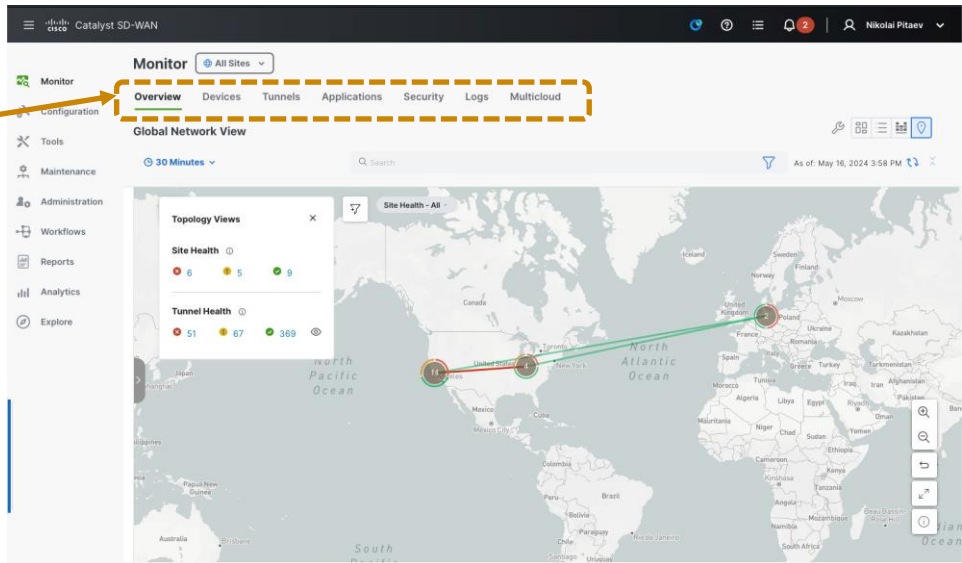
Upload the transformed configurations to the Catalyst SD-WAN Manager instance.

Monitoring, Analytics and Troubleshooting



New Dashboards

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



Customize Your Dashboard

Smart: AWS suggested because cloud credentials detected.

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

The screenshot shows the Cisco Catalyst SD-WAN dashboard interface. On the left is a navigation menu with options: Monitor, Configuration, Tools, Maintenance, Administration, Workflows, Reports, Analytics, and Explore. The main content area displays several dashlets: 'Site Health' (a donut chart showing 19 sites in 'Good' status), 'WAN Edge Health' (a donut chart showing 28 WAN edges in 'Good' status), and 'Top Applications' (a bar chart). A 'Add Dashlet' dialog box is open, listing various dashlets with 'Amazon Web Service' selected. To the right of the dialog, a preview of the 'Amazon Web Service' dashlet is shown, displaying metrics for Cloud Gateways, Cloud Edge, Connected Branch Devices, Tunnels, Connected Tags, and Connected Host VPCs. The dashboard header includes the Cisco logo, 'Catalyst SD-WAN', and a user profile for 'Nikolai Pitaev'.

Add Dashlet

- ☒ Amazon Web Service
- ☐ Google Cloud Platform
- ☐ Microsoft Azure
- ☐ Megaport
- ☐ Equinix
- ☐ Transport Health
 - Displays the aggregated average loss, latency, and jitter for all links and all combinations of colors.
- ☐ Site BFD Connectivity
 - Displays the state of sites BFD (data) connections. When a site has multiple WAN Edge routers, this pane displays the state for the entire site, not for individual devices.
- ☐ Transport Interface Distribution
 - Displays interface usage in the last 24 hours for all WAN Edge interfaces in VPN 0. This includes all TLOC interfaces whose Admin Status is up.
- ☐ WAN Edge Inventory
 - Displays an inventory of all the devices in the network specifying their states and the count.
- ☐ Application-Aware Routing
 - Displays the worst tunnels based on criteria specified - Loss, Latency, and Jitter.

Amazon Web Service

Cloud Gateways	Down 0	Partial 0	Up 0
Cloud Edge	Down 0	Partial 0	Up 0
Connected Branch Devices	Up 0		
Tunnels	0		
Connected Tags	0		
Connected Host VPCs	0		

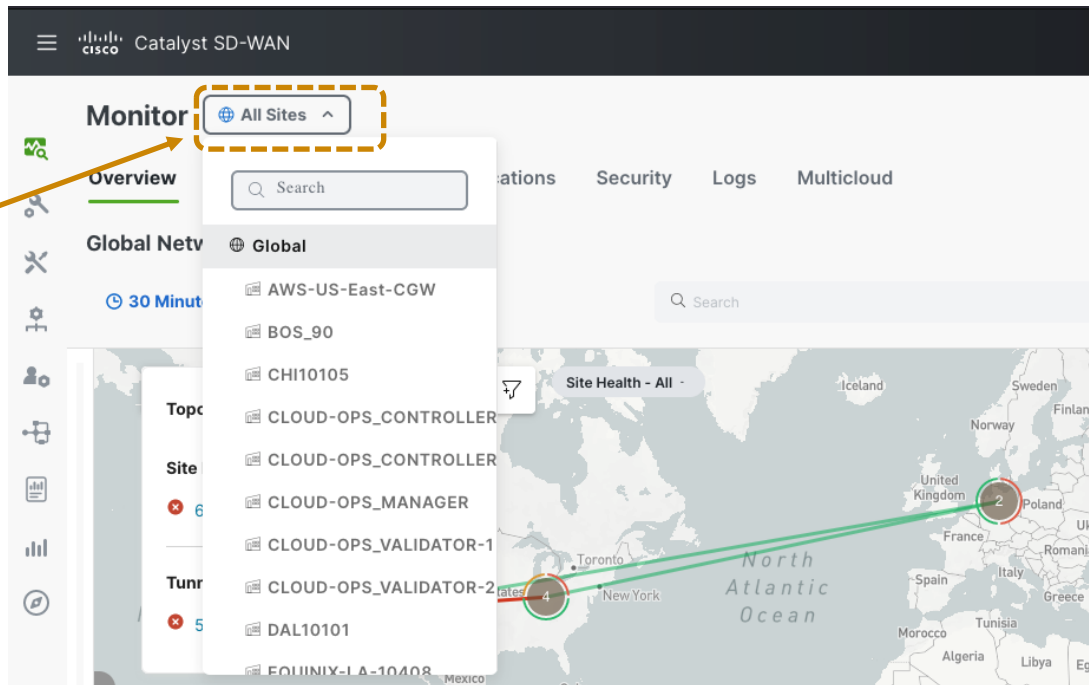
Legend: Up (Green), Partial (Yellow), Down (Red)

Buttons: Cancel, Add

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.

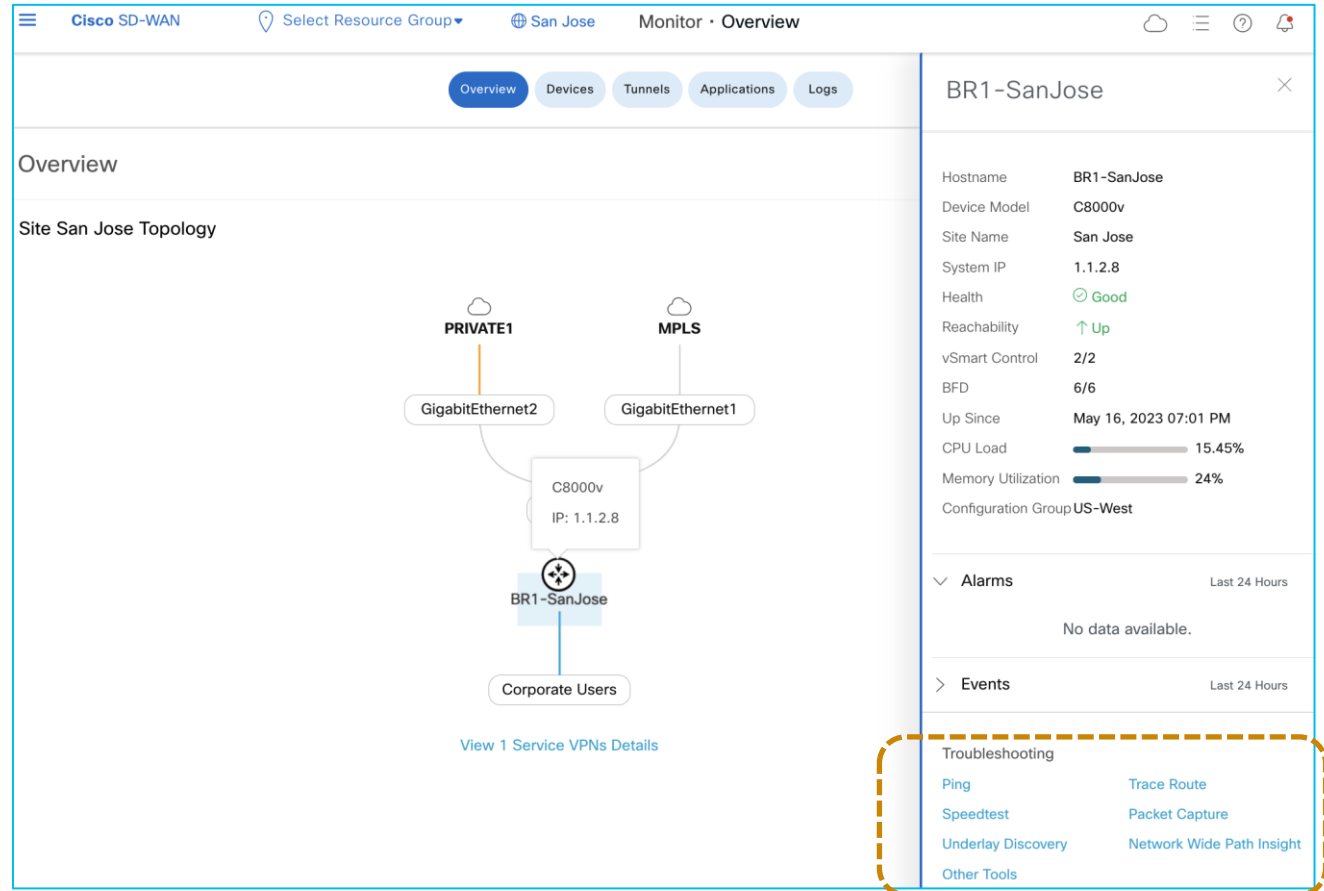


Site Topology View

Dynamic status of
transport circuits,
devices and service
VPNs.

Troubleshooting
tools at your
fingertips

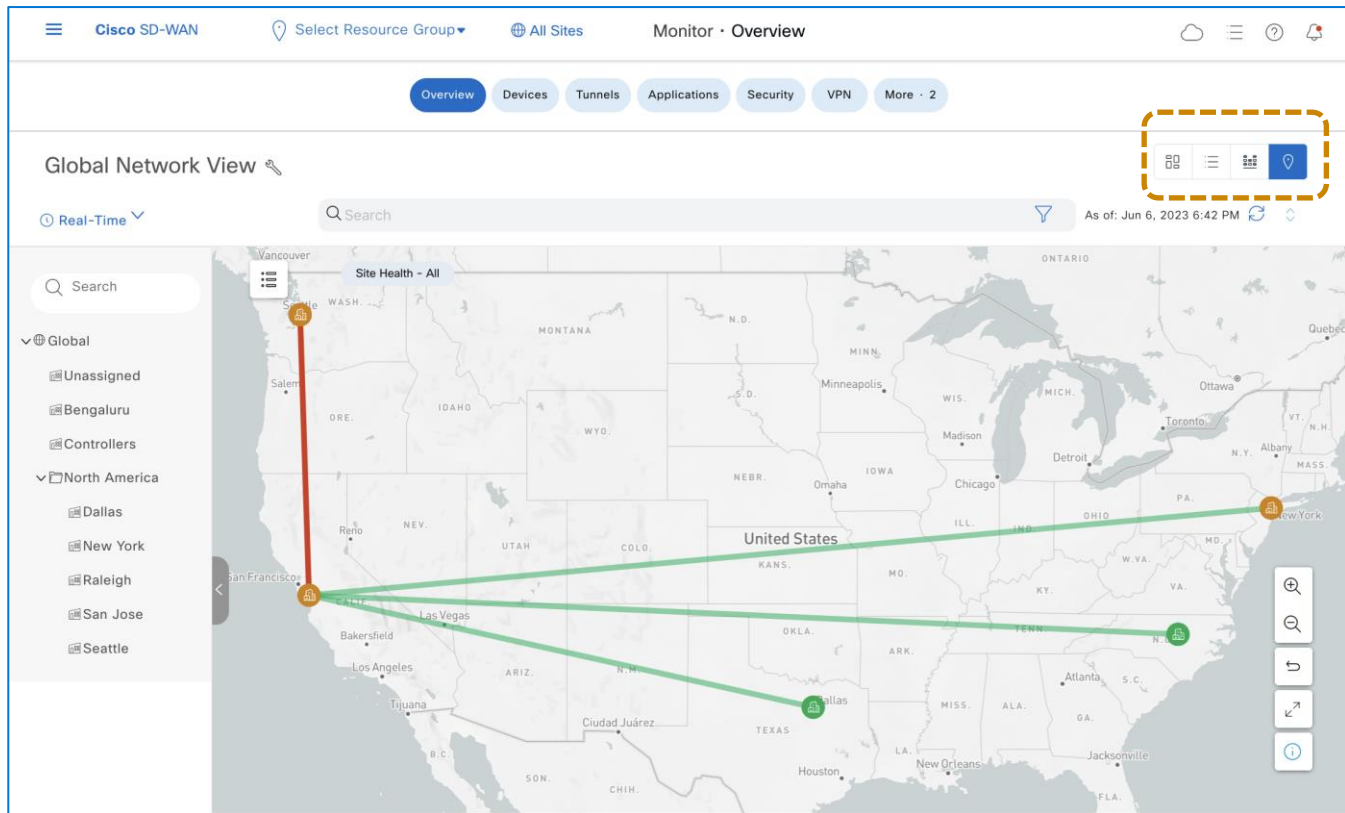
Video on [YouTube](#)



Global Topology View

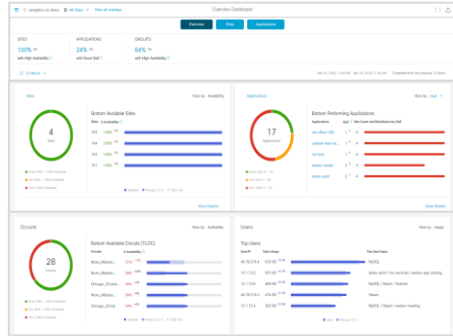
Interactive global topology with live health information.

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



Cisco SD-WAN Analytics

Visibility into Network & App Performance



Application Experience

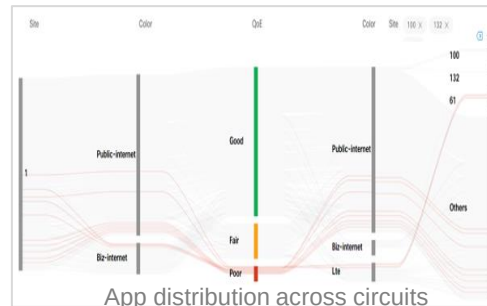
Scheduled Reports

Historical Trends &
Daily/Weekly/Monthly Aggregates



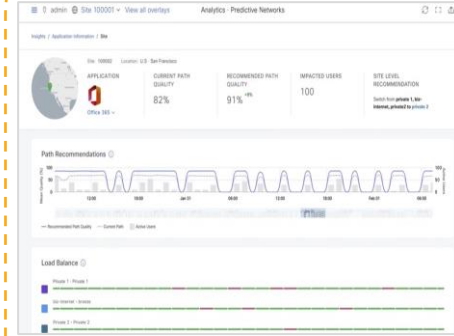
Troubleshooting w/ Extensive Traffic Analysis

Traffic flow
patterns



Underlay path
tracing

Adaptive & Predictive Networking



Predictive Path Recommendations

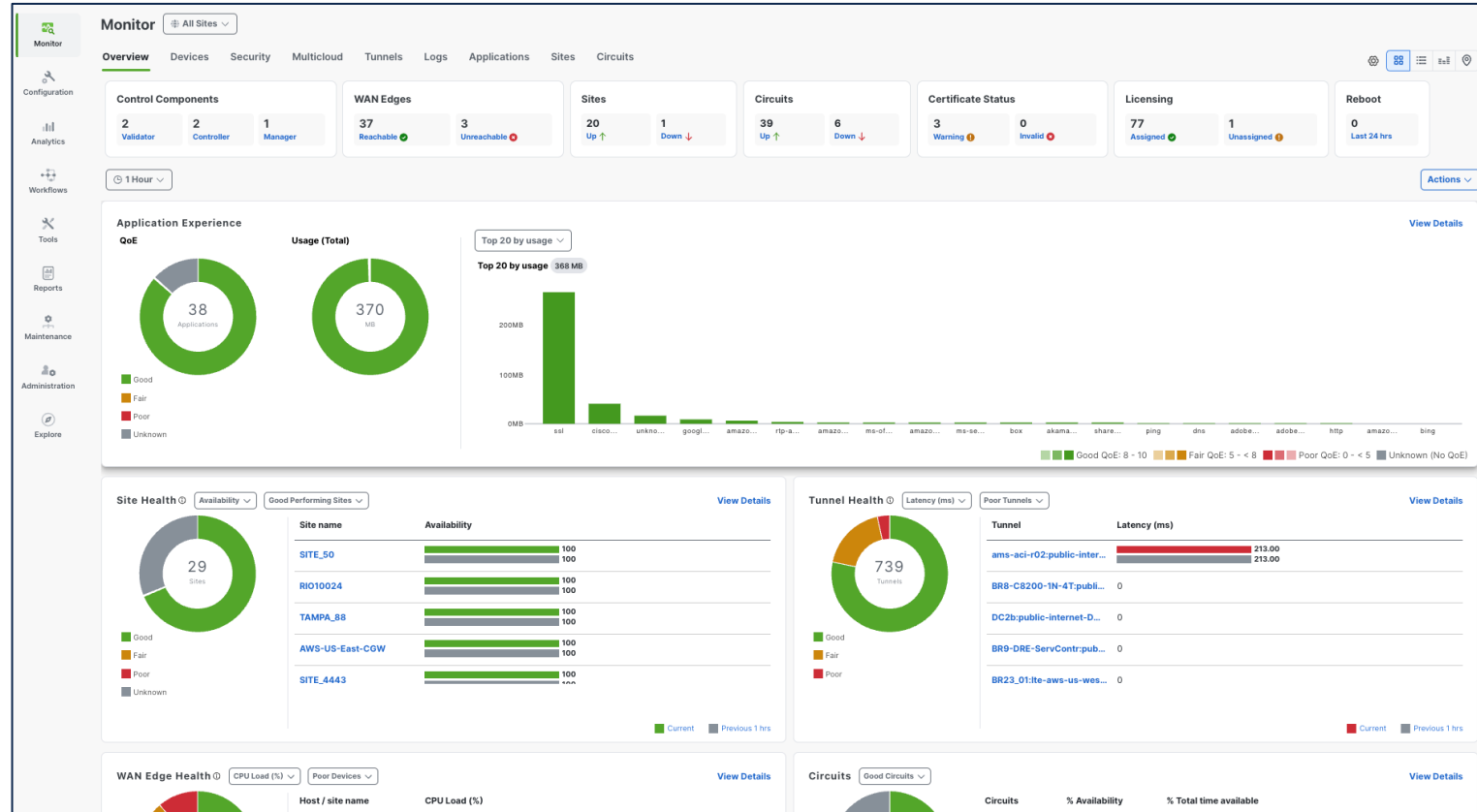
AIOps use-cases

SaaS Traffic Optimization

CISCO Live!

Converged Dashboard – Manager and Analytics

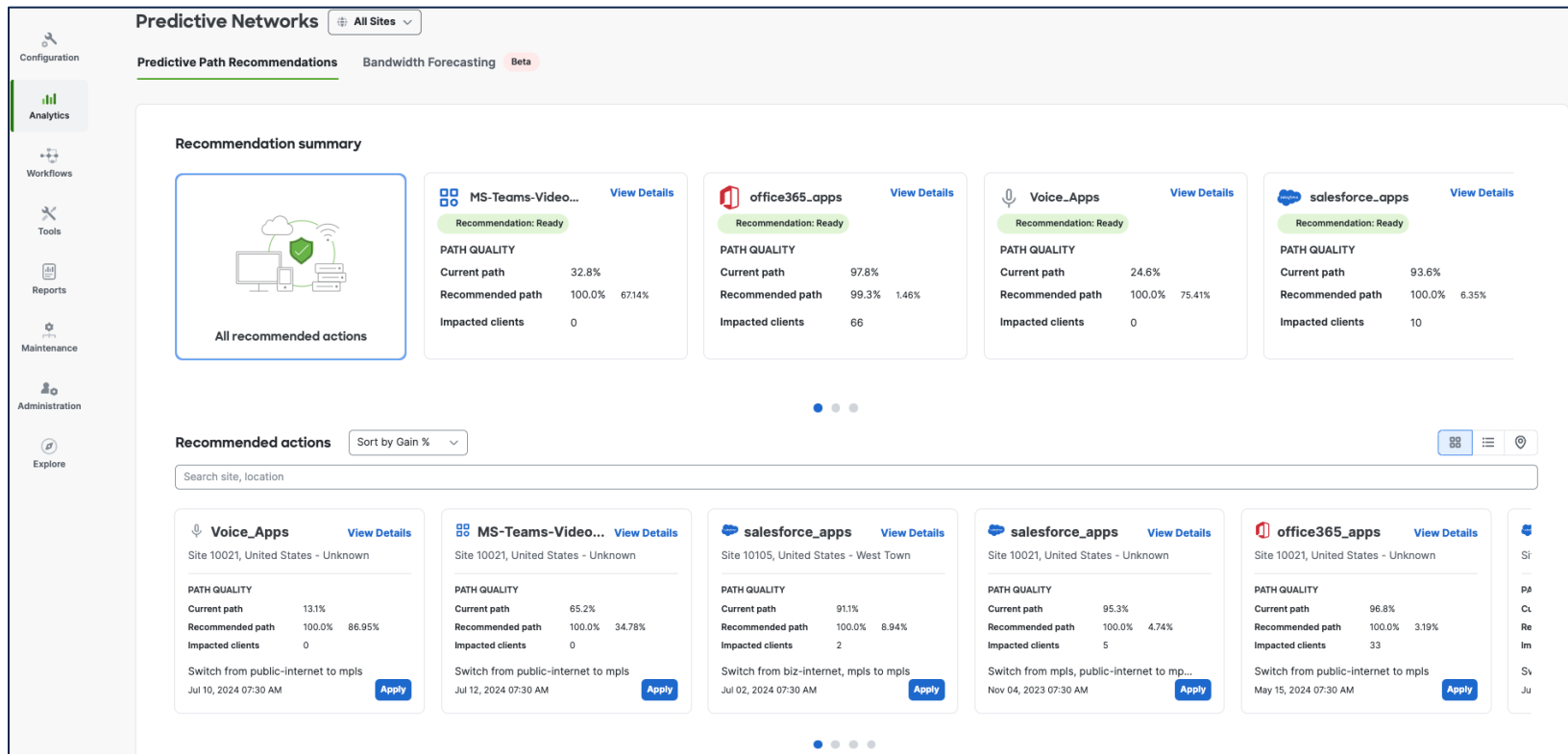
Unified SD-WAN Assurance



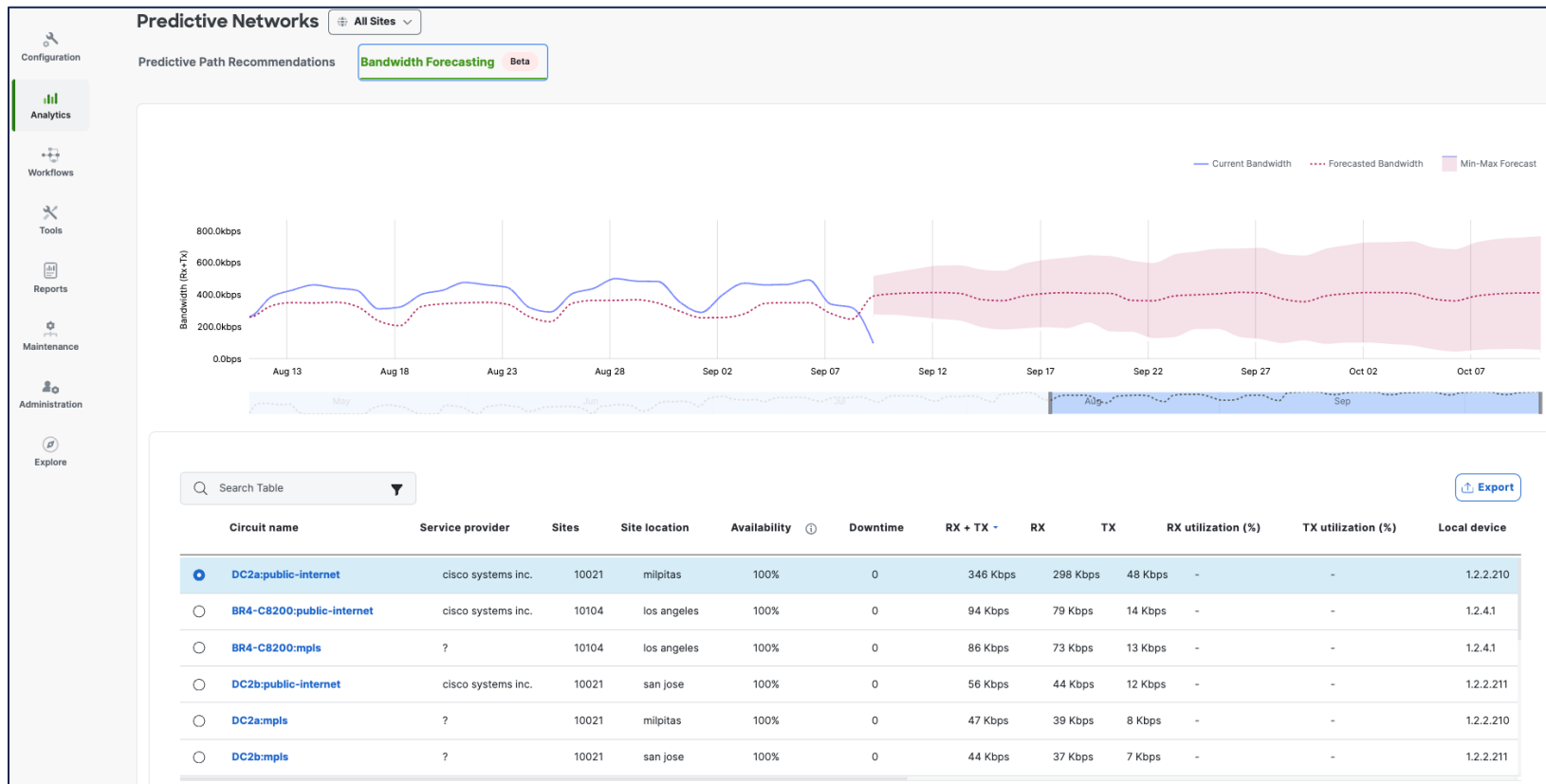
Predictive Networks – Path recommendations

with closed-loop Automation

Powered by Thousand Eyes WAN Insights

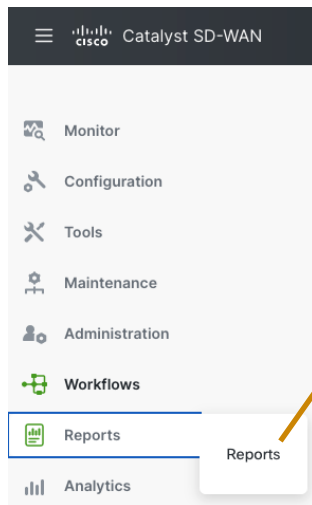


Predictive Networks – Bandwidth Forecasting



Reports

Receive reports of WAN performance, on a scheduled basis.



cisco Live!

A screenshot of the 'Reports' page in the Cisco Catalyst SD-WAN interface. The page has a header with 'Reports' and tabs for 'My Reports' and 'Report Templates'. Below the header, there are two main sections: 'Reports' and 'Security'. The 'Reports' section contains six report templates: Executive Summary, Application Summary, Link Availability Report, Site Availability Report, Link Utilization Report, and Link SLA Report. The 'Security' section contains three report templates: IPS Event Collection Report, Firewall Enforcement Report, and Malware File Collection Report. Each report template has a brief description, a 'Generate' button, and icons for PDF and CSV export.

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

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

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.

The screenshot shows the Cisco Catalyst SD-WAN configuration interface. On the left is a sidebar with navigation options: Monitor, Configuration, Tools, Maintenance, Administration, Workflows, Reports, Analytics, and Explore. The main panel is titled 'Configuration' and has two tabs: 'Configuration Groups' (active) and 'Feature Profiles'. Below the tabs is a search bar and a table of configuration groups. An 'Online Documentation' overlay is open on the right, showing a list of links (Online documentation, SD-WAN User Guide, Ask Cisco Networking, About) and a detailed view for 'Configuration Groups'. The detailed view includes instructions on how to add, edit, and copy configuration groups, and a table for creating a new configuration group.

Name	Description	Type	Device Solution
cgw_cg	CGW default config group	Single Router	SD-WAN
npitaev-EQ-ConfigGroup	npitaev-EQ-ConfigGroup Config Group	Single Router	SD-WAN
DC2-SJC	Dual Edge DC - Dual Transport (npitaev-SJC24)	Single Router w/ CLI	SD-WAN
COL01-DEN	Dual Edge Colo - Single Transport (ashtwill-SJC22)	Dual Device	SD-WAN
DC1-SFO	Dual Edge DC - Single Transport (ashtwill-SJC22)	Dual Device w/ CLI	SD-WAN
test-almuench	-	Single Router	SD-WAN
Voice_UX2.0	-	Single Router	SD-WAN
BR1-C8KV-CG	-	Single Router w/ CLI	SD-Routing
BR4-Branch_USWest	-	Single Router w/ CLI	SD-WAN
BR3-ConfigGroup	-	Single Router w/ CLI	SD-WAN
DC2-SC-Hub	Data Center 2 Service Chain Hub	Single Router	SD-WAN

Online Documentation

Configuration Groups

Add a Configuration Group
Click **Add Configuration Group**.
The **Workflow Library** page opens from where you can start a new **Create Configuration Group** workflow or resume an existing workflow.

Edit a Configuration Group
Click ... adjacent to the configuration group name and choose **Edit**.
You can edit various settings of a configuration group, such as add devices to a configuration group manually and by specifying rules, deploy the devices, remove devices from a configuration group, and add and edit the feature profiles.

Copy a Configuration Group
1. Click ... adjacent to the configuration group name and choose **Copy**.
2. In the **Copy Configuration Group** dialog box, specify the following:

Field	Description
New configuration group name	Enter a name for the new configuration group.
New configuration group description	Enter a description of the new configuration group.

3. Click **Create**.

Delete a Configuration Group
1. Click ... adjacent to the configuration group name and choose **Delete**.
2. In the confirmation dialog box, click **Yes**.

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** (10) Pub. No.: US 2022/0045927 A1
Liu et al. (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); **Oliver 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

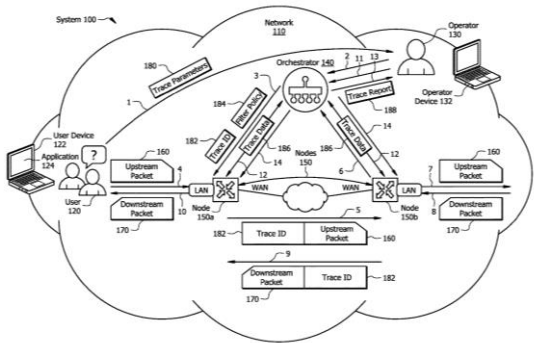
Publication Classification

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

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

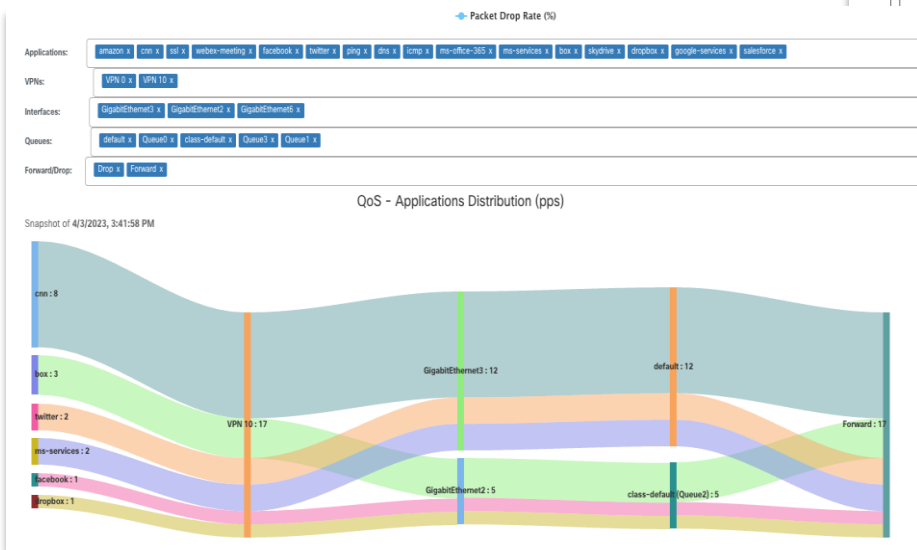
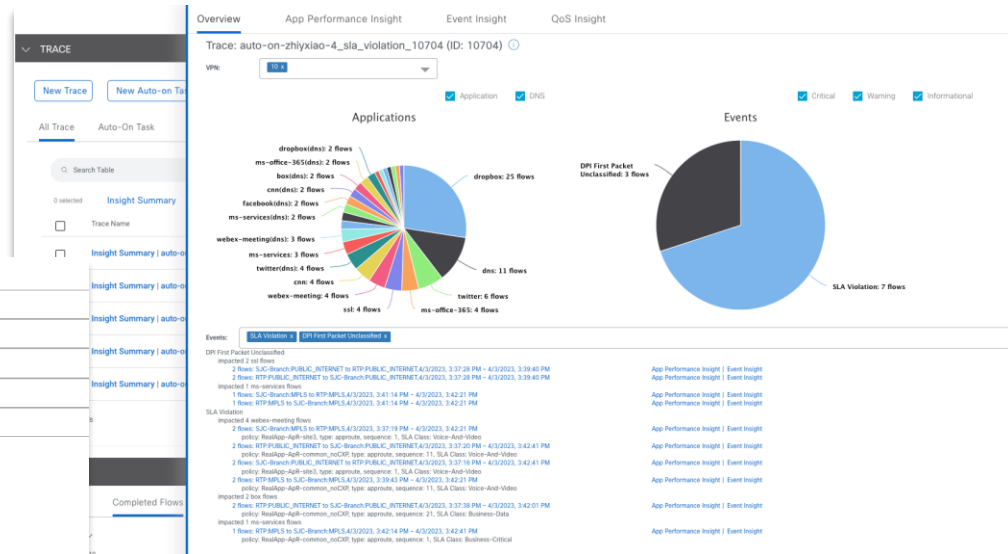
(57) ABSTRACT

In one embodiment, a method includes receiving, by the 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.



Troubleshooting Application and Network

Deep insights into
application and network
performance



Policy Validation

INSIGHT - ADVANCED VIEWS

Flow Trend Upstream Feature Downstream Feature Geography

Hostname: 116x_Edge Event List: FIRST_PACKET Expand All Features

Version: 17.09.01a.0.240, Input: Vlan2, Output: GigabitEthernet0/0/1

Ingress Feature	Egress Feature
<ul style="list-style-type: none">> Ingress Report> CEF Forwarding> NBAR> SDWAN App Route Policy >> View Policy <<> SDWAN Forwarding	<ul style="list-style-type: none">> NBAR> ZBFW> IPSec> SDWAN QoS Output> QOS >> View Policy <<> Transmit Report

Ingress feature processing on first upstream router

Egress feature processing on first upstream router

Hostname: DC-Edge-01 Event List: DPI_DONE Expand All Features

Version: 17.09.01.0.966, Input: GigabitEthernet0/0/1, Output: GigabitEthernet0/0/2

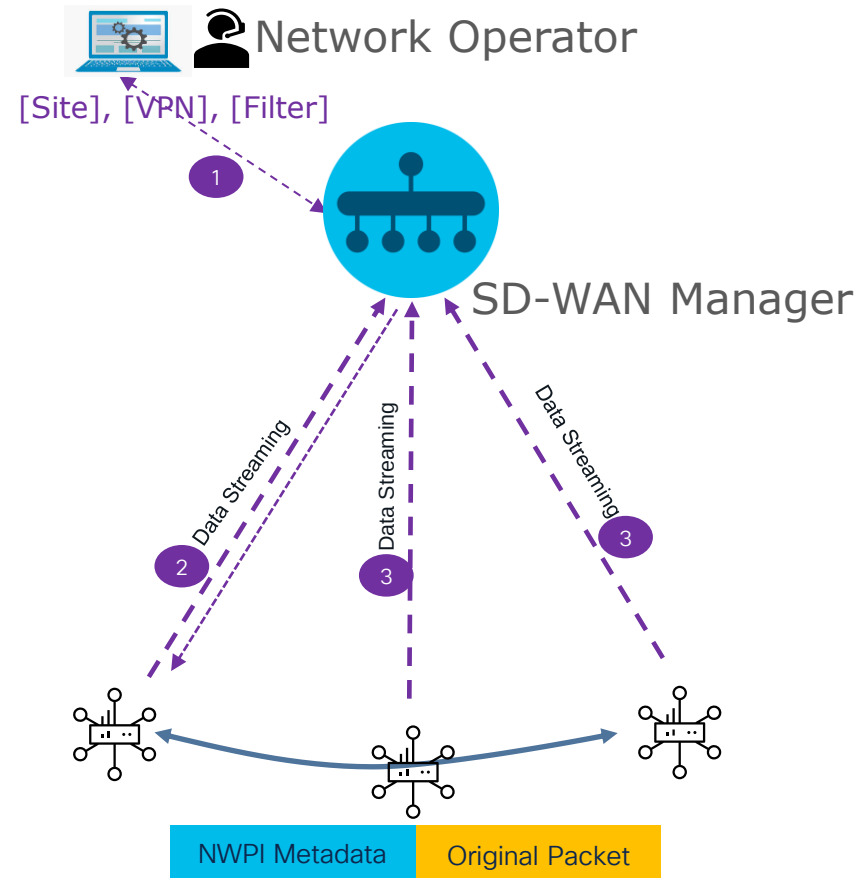
Ingress Feature	Egress Feature
<ul style="list-style-type: none">> SDWAN Forwarding> CEF Forwarding> NBAR	<ul style="list-style-type: none">> NBAR> Transmit Report

Ingress feature processing on last upstream router

Egress feature processing on last upstream router

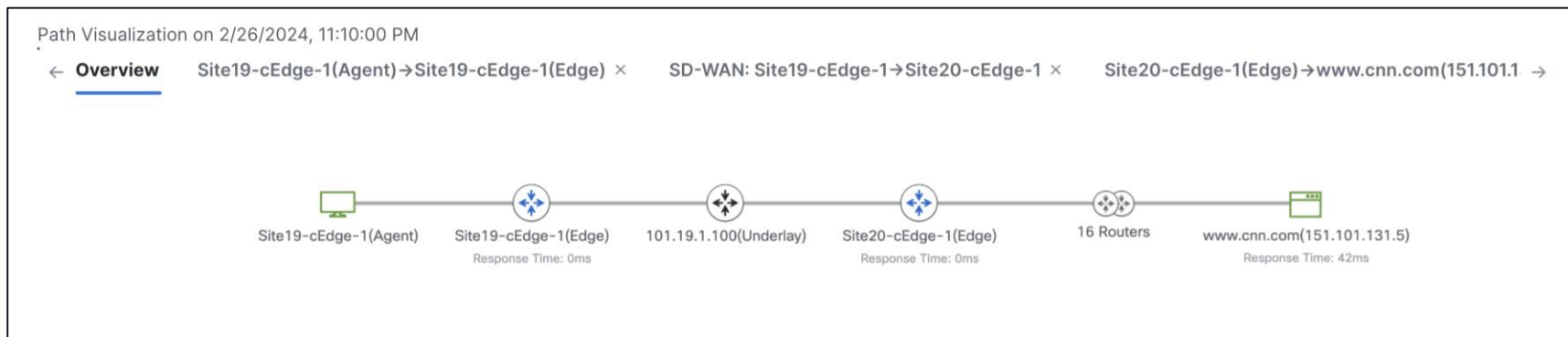
How NWPI Works

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



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.

3 Things to Remember



1. Workflows and Catalog



2. Configuration Groups and Policy Groups



3. Network-Wide Path Insights (NWPI)

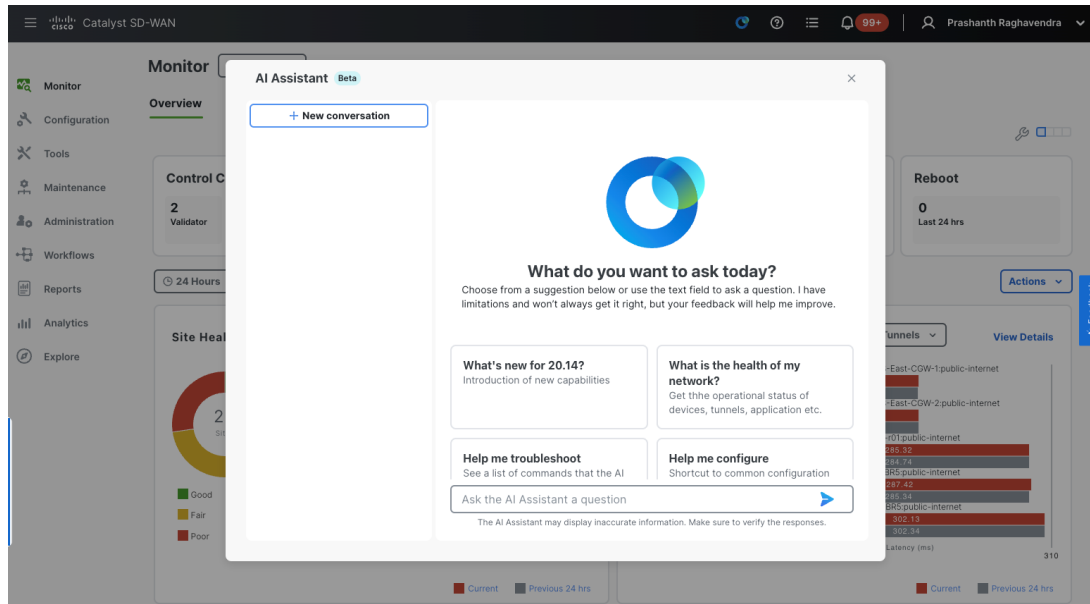
AI

CISCO *Live!*

Tuesday 6/4 10:30am

AI Assistant for Networking

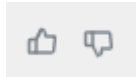
PRIVATE BETA



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.

Monitor

All Sites

Overview

Devices

Tunnels

Applications

Security

Logs

Multicloud

Global Network View

30 Minutes

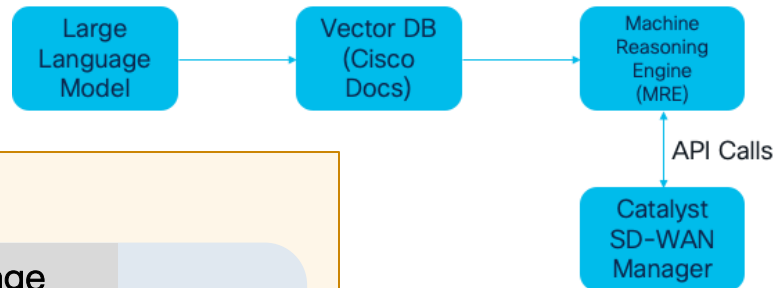
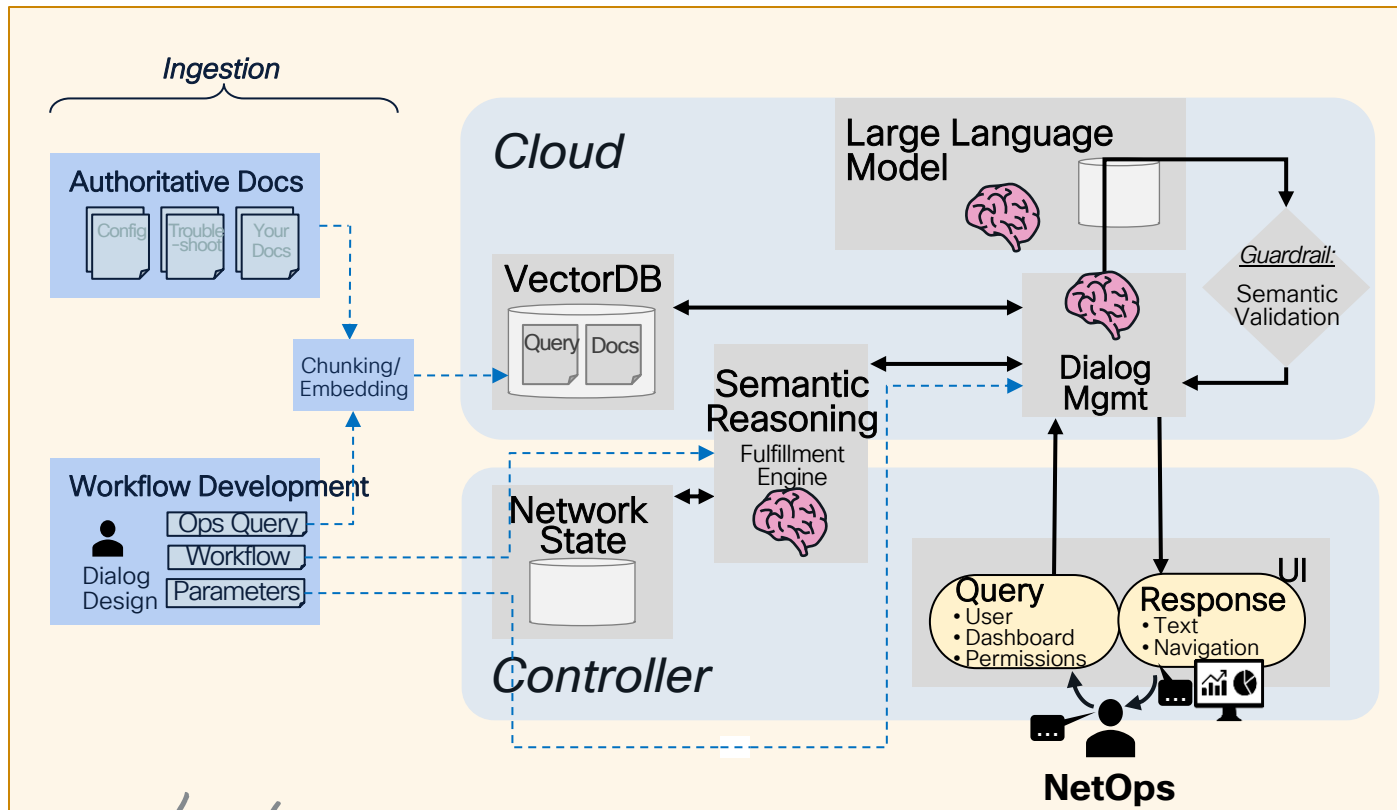
Search

As of: May 28, 2024 4:15 PM

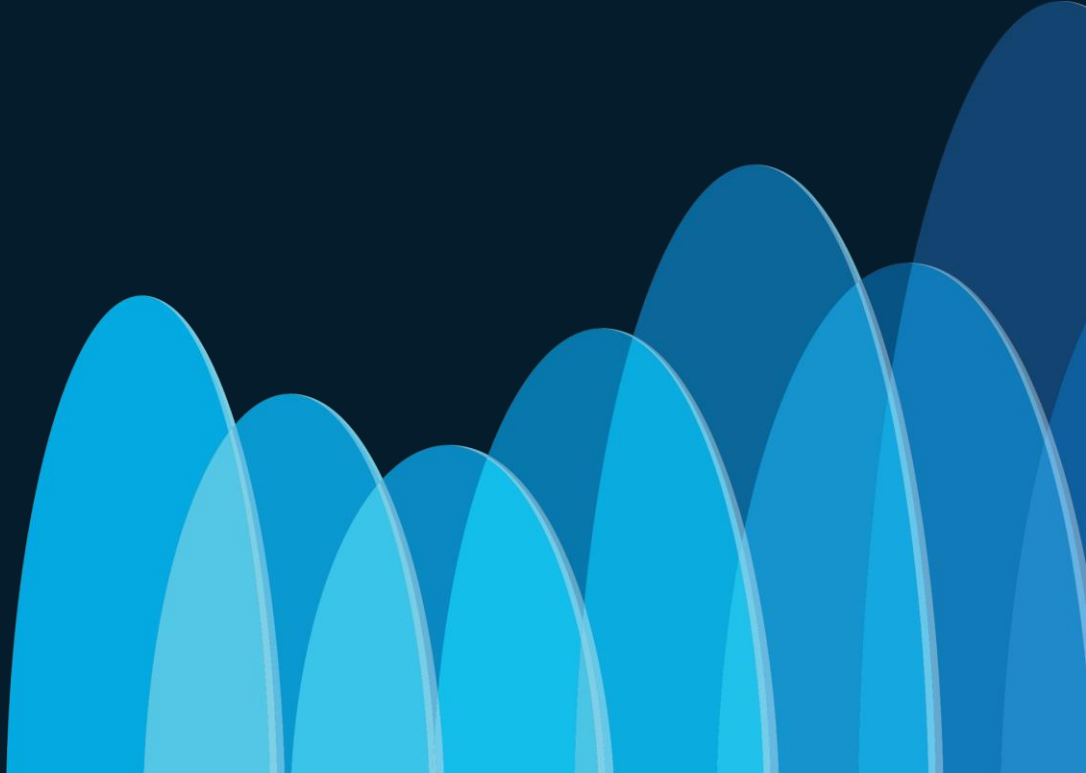


System Architecture

Key Building Blocks:



User Interface



Common look and feel

Unified experience across
Networking & Security



Cisco Networking Cloud

The screenshot shows the Cisco Catalyst SD-WAN web interface. The left sidebar contains navigation links: Monitor, Configuration, Analytics, Workflows, Tools, Reports, Maintenance, Administration (highlighted), and Explore. The main content area is titled 'Settings' and shows the 'Cross Platform Navigator' settings. A search bar with the text 'cross' is visible. The settings for the Cross Platform Navigator are shown, including a description and a toggle switch that is currently turned on. A 'Cisco Networking Cloud' menu is open on the right, listing various Cisco products: Cisco Spaces, Intersight, IoT Operations Dashboard, Meraki, and ThousandEyes. The menu is highlighted with a dashed orange border.

Settings

Monitor

Configuration

Analytics

Workflows

Tools

Reports

Maintenance

Administration

Explore

Settings / System

Cross Platform Navigator

The Cross-Platform Navigator enables the launch of other Cisco products when the SD-WAN Manager is connected to the internet.

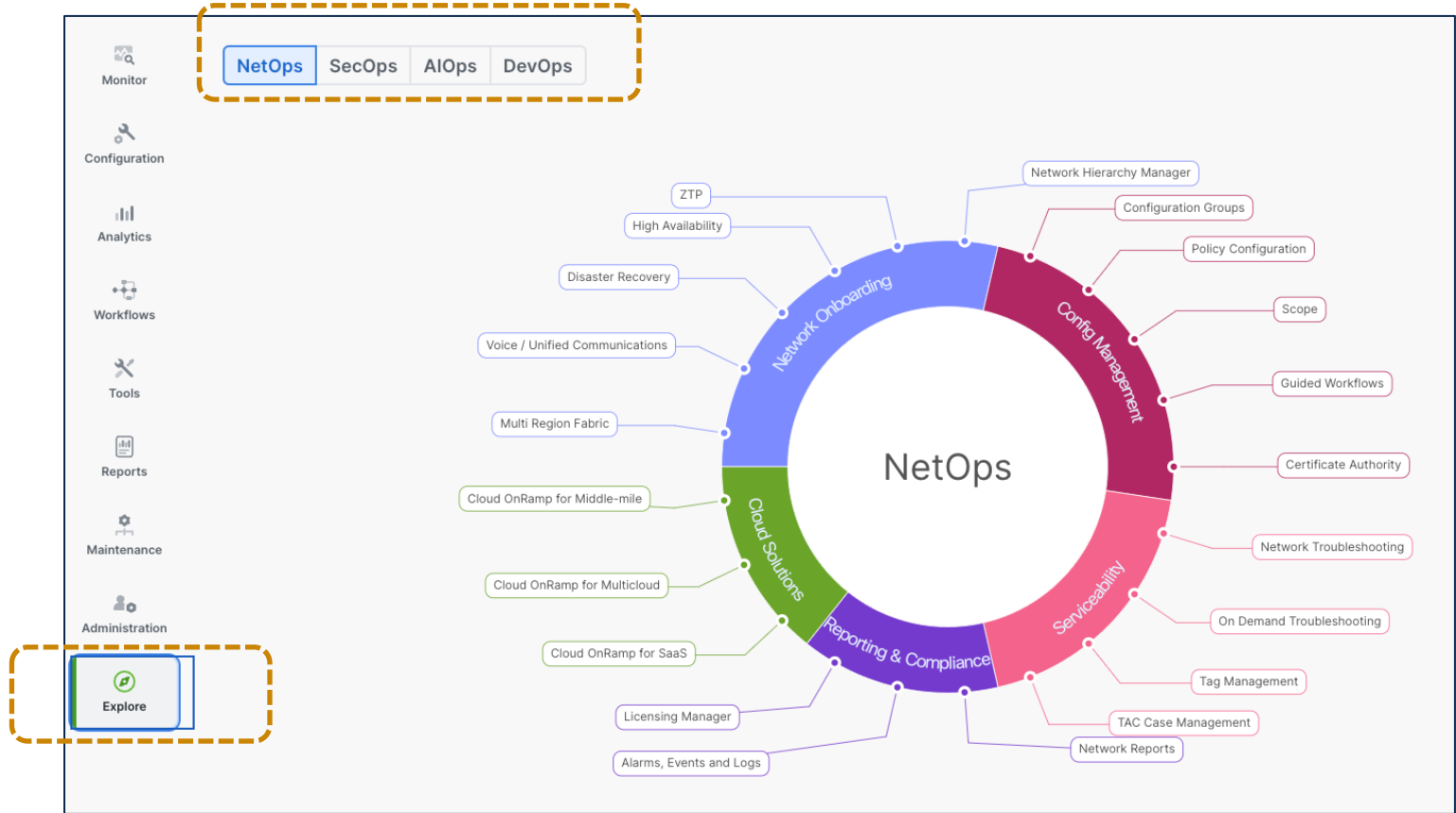
☒ Cross Platform Navigator

[Save](#) [Cancel](#)

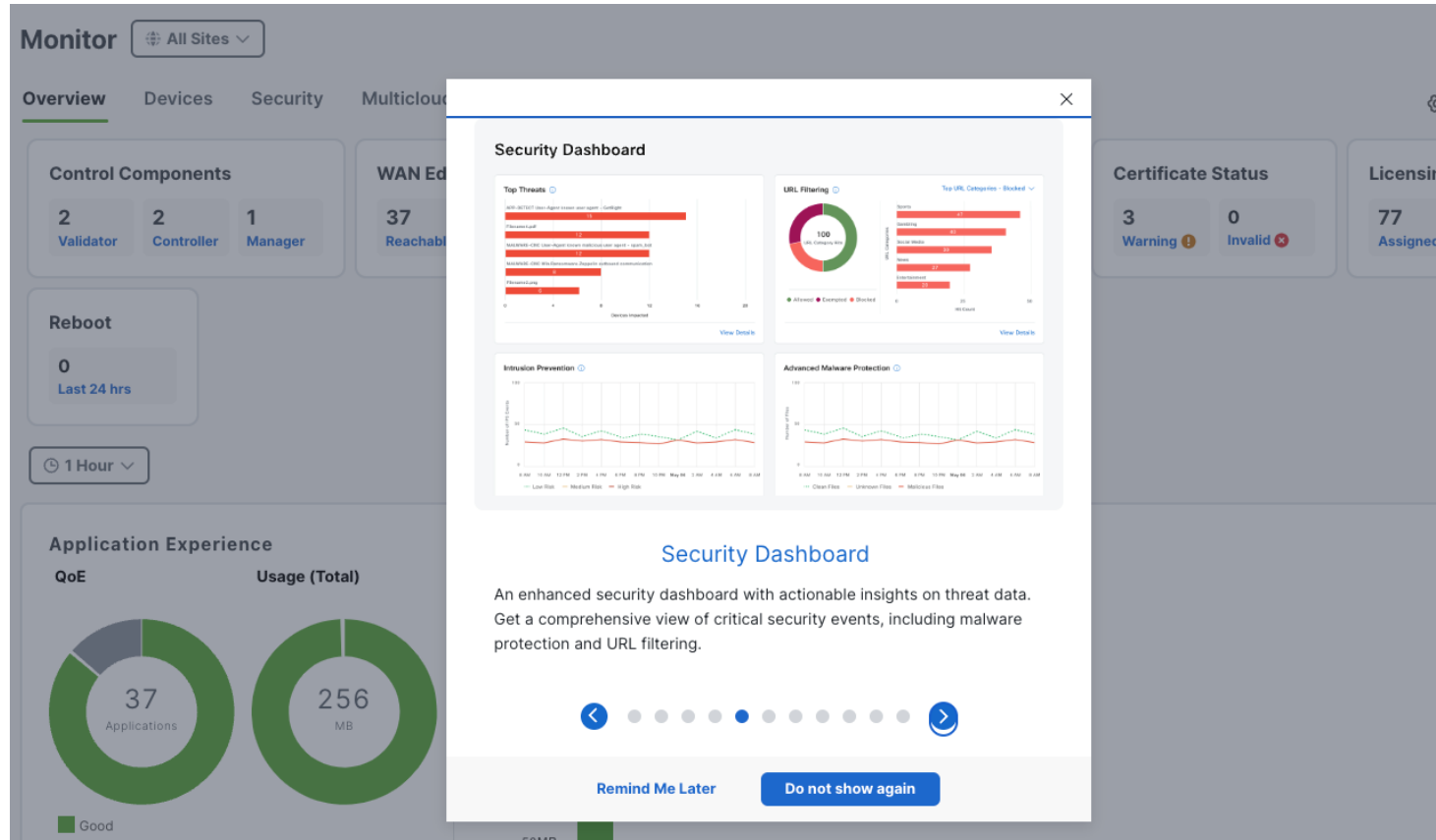
Cisco Networking Cloud

- Cisco Spaces
- Intersight
- IoT Operations Dashboard
- Meraki
- ThousandEyes

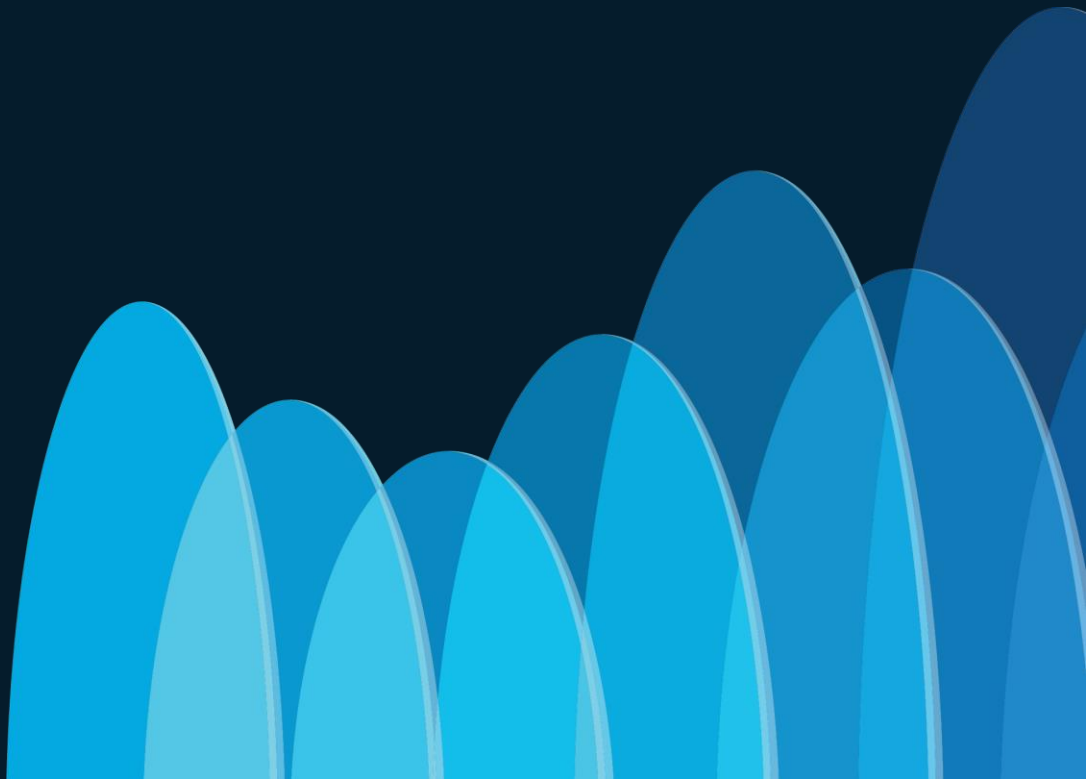
Explorer wheel



Spotlight

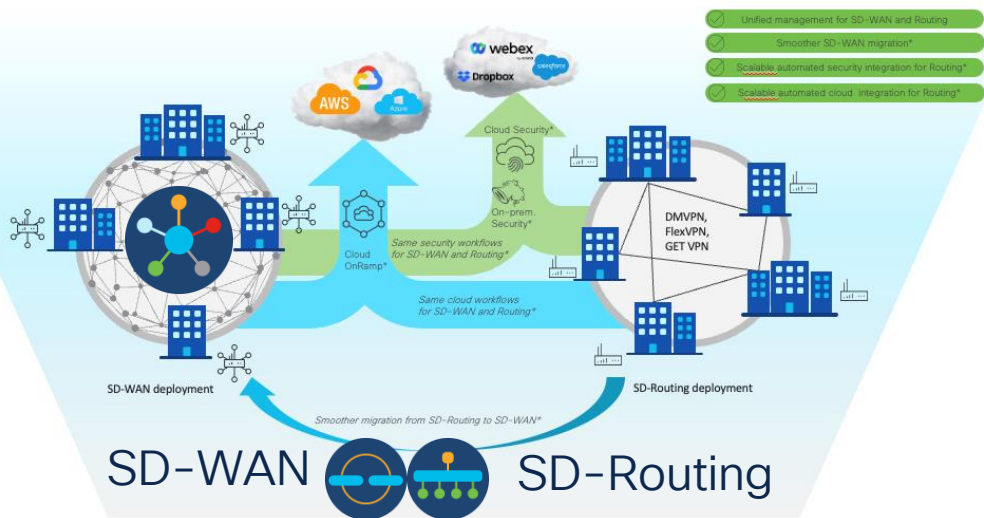


SD-Routing



SD-Routing

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



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

- 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

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

3 Things to Remember

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

Complete Your Session Evaluations



Complete a minimum of 4 session surveys and the Overall Event Survey to claim a **Cisco Live T-Shirt**.



Complete your surveys in the **Cisco Live mobile app**.



Continue your education

- Visit the Cisco Showcase for related demos
- Book your one-on-one Meet the Engineer meeting
- Attend the interactive education with DevNet, Capture the Flag, and Walk-in Labs
- Visit the On-Demand Library for more sessions at www.CiscoLive.com/on-demand

Contact me at: Session's Webex Space
<https://ciscolive.ciscoevents.com/ciscolivebot/#BRKENT-1313>

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>



Thank you

CISCO *Live!*

#CiscoLiveAPJC

CISCO *Live!*

GO BEYOND

#CiscoLiveAPJC