



BRKENT-1039: Power Your WAN with Cisco SD-Routing

Modernizing Routing for Digital Transformation

Lars Granberg - Technical Leader, Technical Marketing
Engineering
BRKENT-1039

Webex App

Questions?

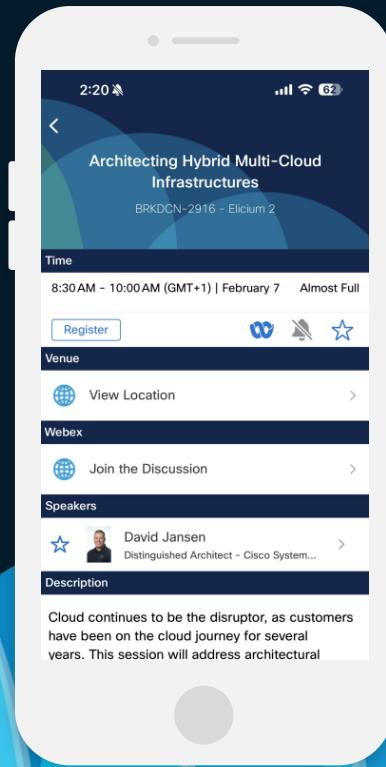
Use the Webex app to chat with the speaker after the session

How

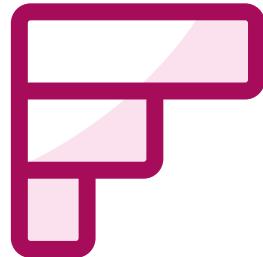
- 1 Find this session in the Cisco Events mobile app
- 2 Click “Join the Discussion”
- 3 Install the Webex app or go directly to the Webex space
- 4 Enter messages/questions in the Webex space

Webex spaces will be moderated by the speaker until February 28, 2025.

CISCO Live!



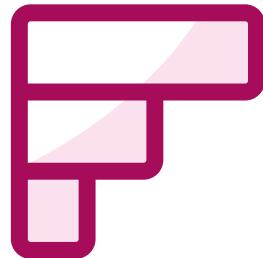
Please download and install the
Slido app on all computers you
use



I know what SD-WAN Manager is?

- ① Start presenting to display the poll results on this slide.

Please download and install the
Slido app on all computers you
use



I know what SD-Routing is?

- ① Start presenting to display the poll results on this slide.

The background features a large, stylized graphic of overlapping circles in various shades of green and blue, creating a wave-like pattern.

Agenda

- Introduction
- What is SD-Routing
- Why SD-Routing
- Features & Roadmap
- Licensing
- Demo
- Takeaway

Introduction

Infrastructure has
become more
**complex &
vulnerable**

Distributed Applications

Public Cloud | Private Cloud | Datacenter | Edge |
Colo

Security at Risk

Increased attack surface

Operational Complexity

Performance | Observability

Why Cisco is so powerful

Multiple solution choices

The right solution for each of our customers' challenges

On-Box & Cloud Security

Robust security embedded into networking portfolio

Digital resilience, cloud, & assurance

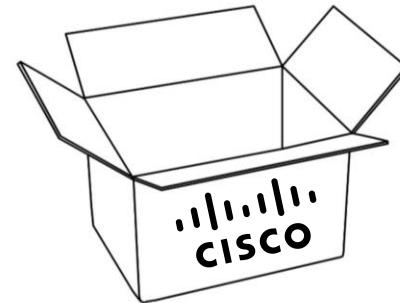
Cloud on Ramp | Thousand Eyes | Splunk | AIOps

What is SD-Routing ?

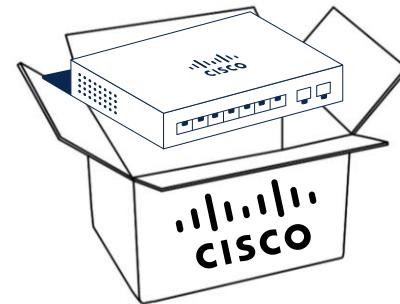
Bob the Network Engineer



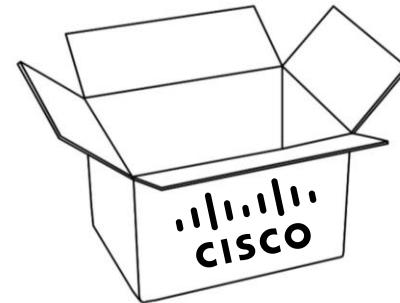
Bob the Network Engineer



Bob the Network Engineer



Bob the Network Engineer



Bob the Network Engineer



Bob the Network Engineer

Bob is wondering:



Bob the Network Engineer



Bob is wondering:

How can I do this easier?

Bob the Network Engineer



Bob is wondering:

How can I do this easier?

There must be a dashboard that I
can use for my wan?

Bob the Network Engineer



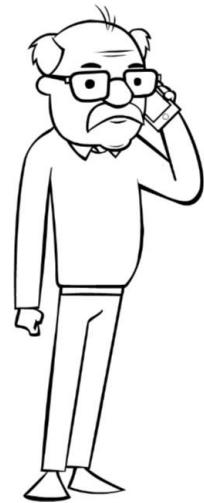
Bob is wondering:

How can I do this easier?

There must be a dashboard that I can use for my wan?

SD-WAN is not for me right now

Bob the Network Engineer



Bob the Network Engineer

Bob is calling his Cisco
Partner



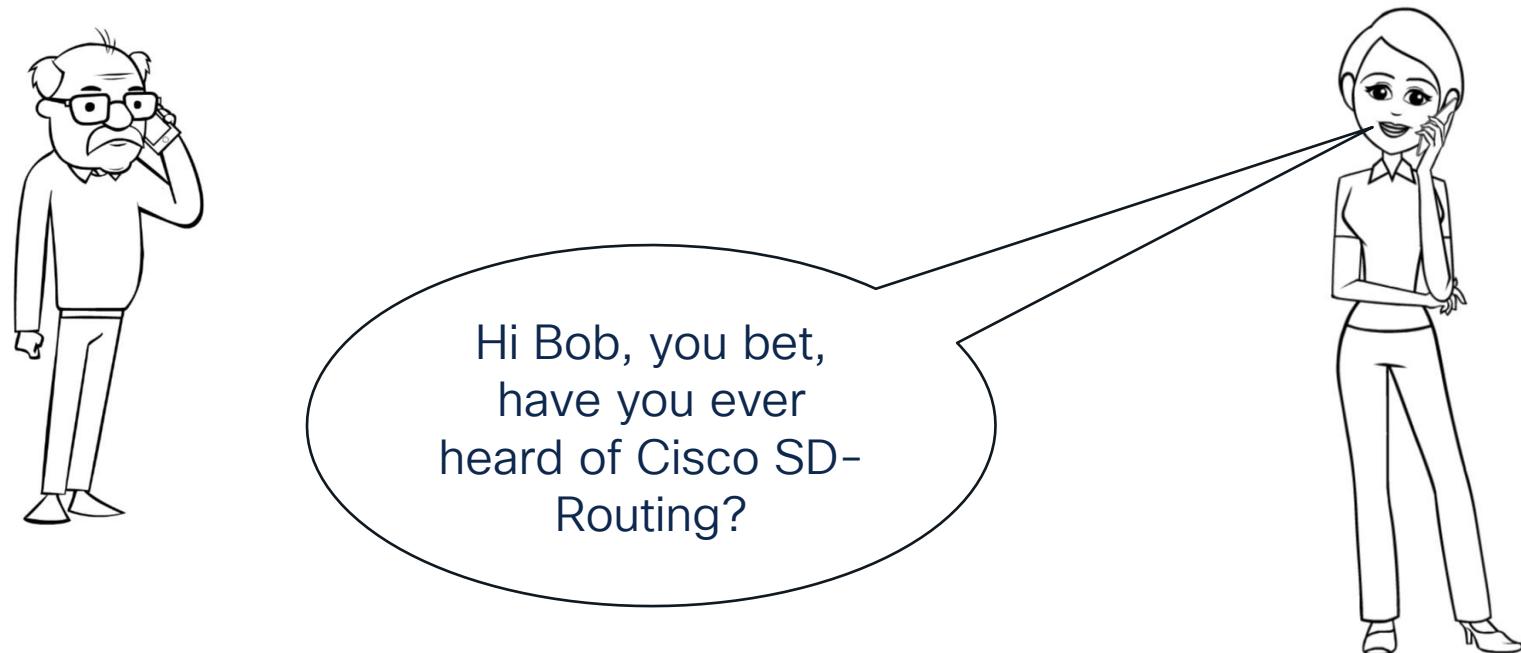
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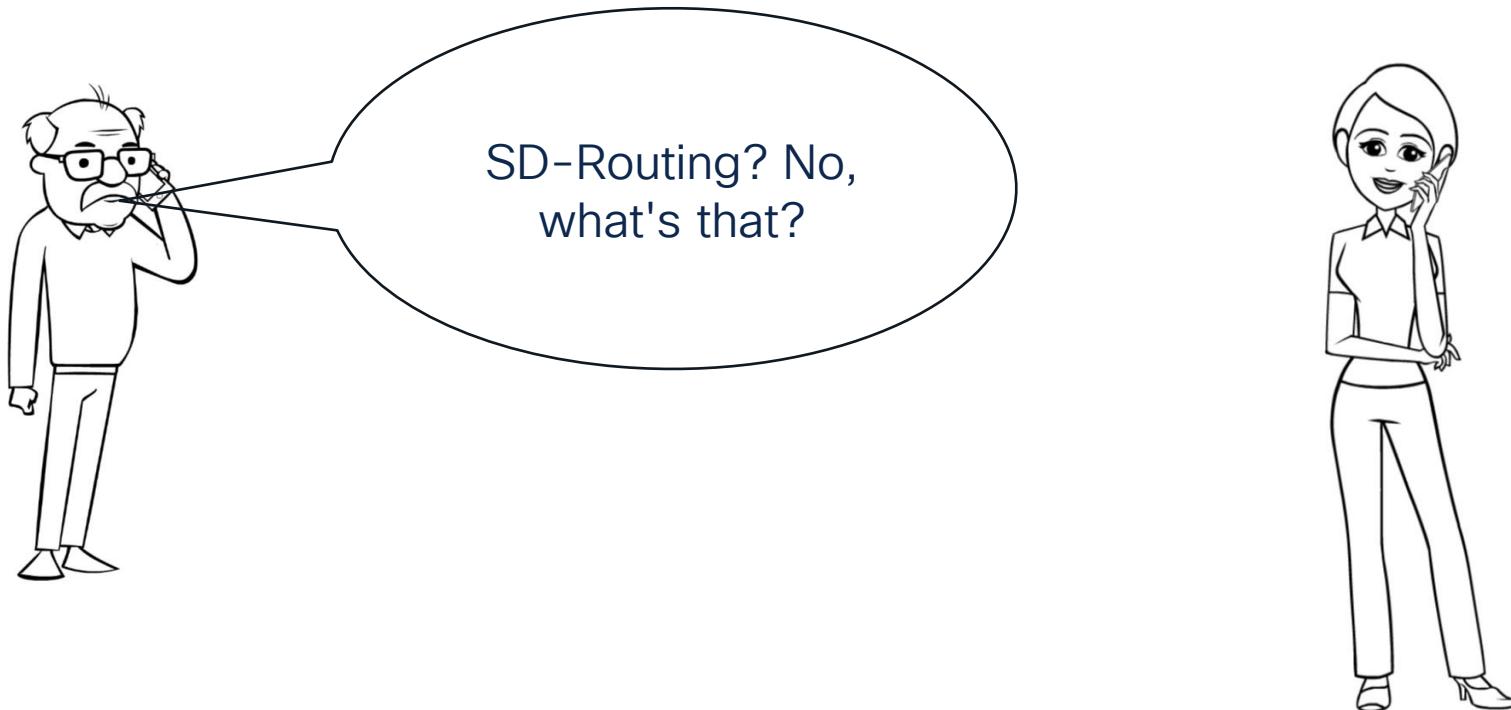
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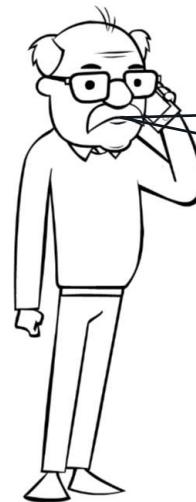
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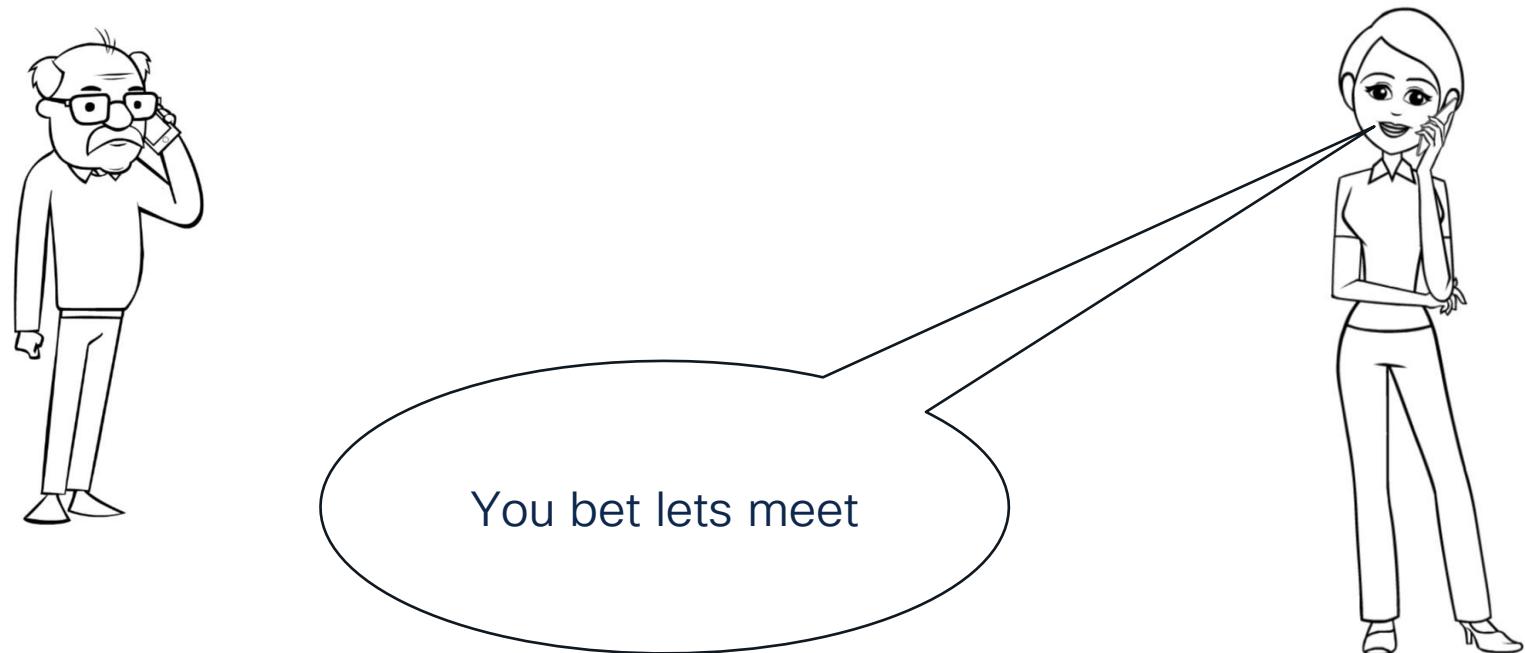
Bob the Network Engineer



That sounds very interesting can you stop by and show me a demo.



Bob the Network Engineer

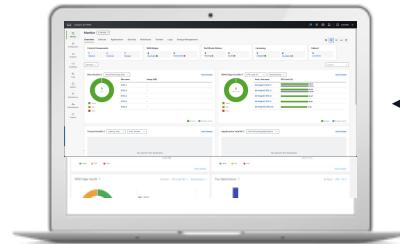


Bob the Network Engineer

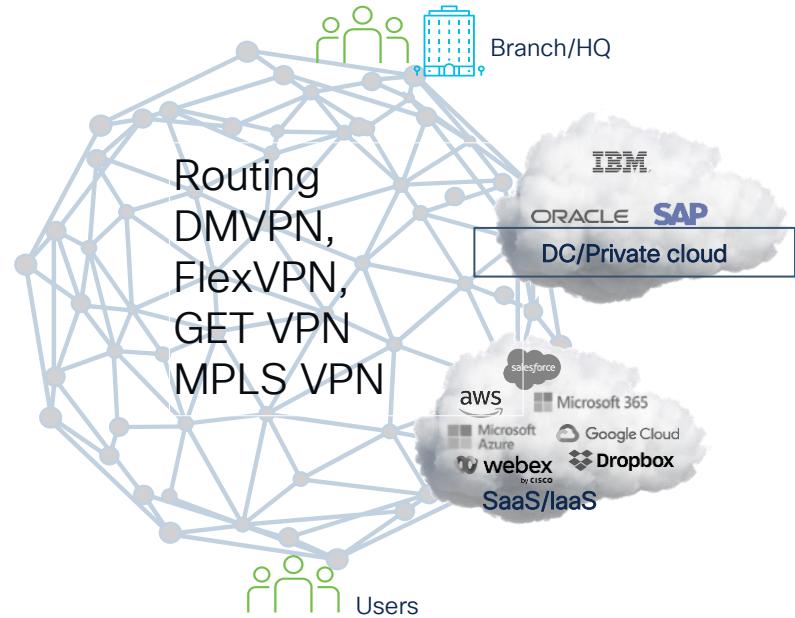
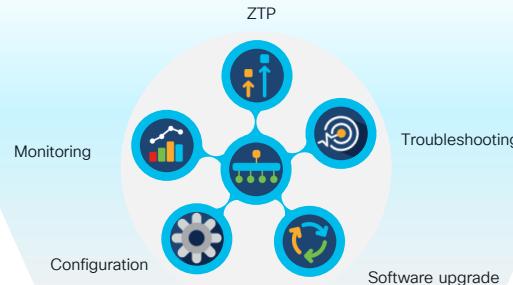


SD-Routing

Transform the platform experience



Catalyst SD-WAN Manager



Simplicity and Agility

OpEx Reduction

Future-Ready WAN

Multi-layered Security

SD-WAN vs SD-Routing

Architecture Components

SD-WAN deployment



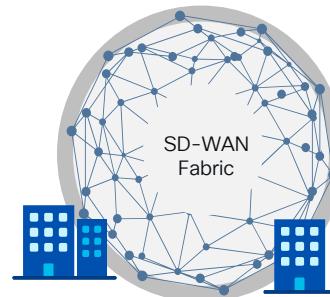
SD-WAN Validator



SD-WAN Manager



SD-WAN Controller



SD-WAN Fabric

SD-Routing deployment



SD-ROUTING Validator



SD-ROUTING Manager



DMVPN,
FlexVPN,
GET VPN
MPLS VPN



ISR 1000



Catalyst 8000V



Catalyst 8200 uCPE



C8300-uCPE



Catalyst 8200, 8200L



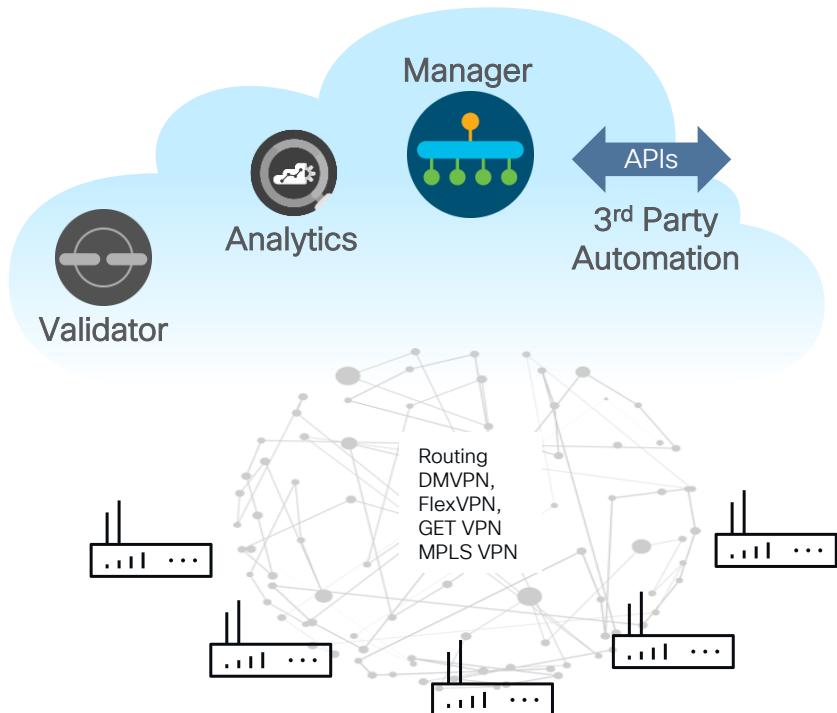
Catalyst 8300



Catalyst 8500, 8500L



Cisco Catalyst SD-WAN Controller Elements



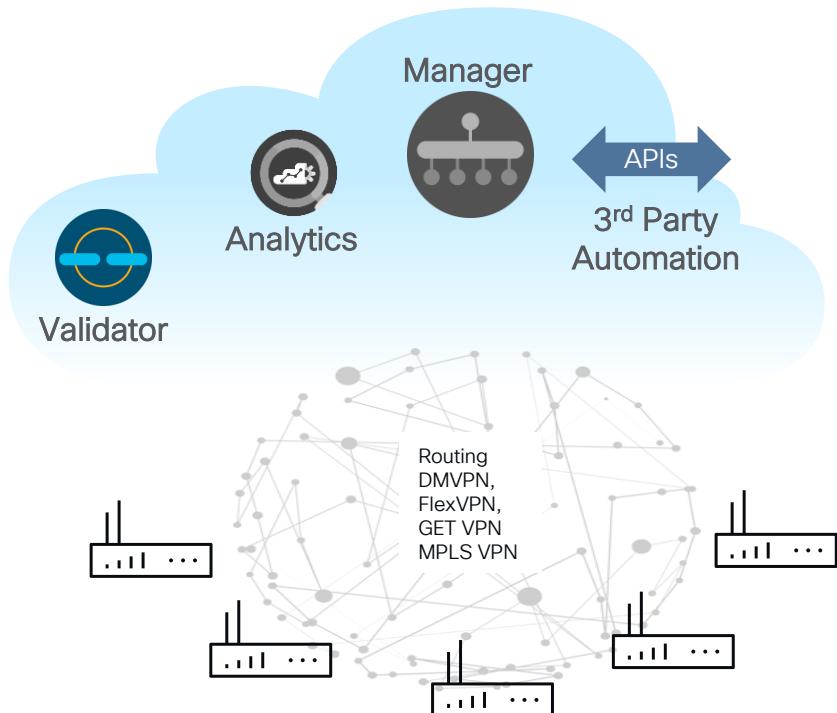
Management Plane



Cisco Catalyst
SD-wan Manager

- Single pane of glass for Day0, Day1 and Day2 operations
- Multitenant with web scale
- Centralized provisioning
- Policies and Templates
- Troubleshooting and Monitoring
- Software upgrades
- GUI with RBAC
- Programmatic interfaces (REST, NETCONF)
- Highly resilient

Cisco Catalyst SD-WAN Controller Elements



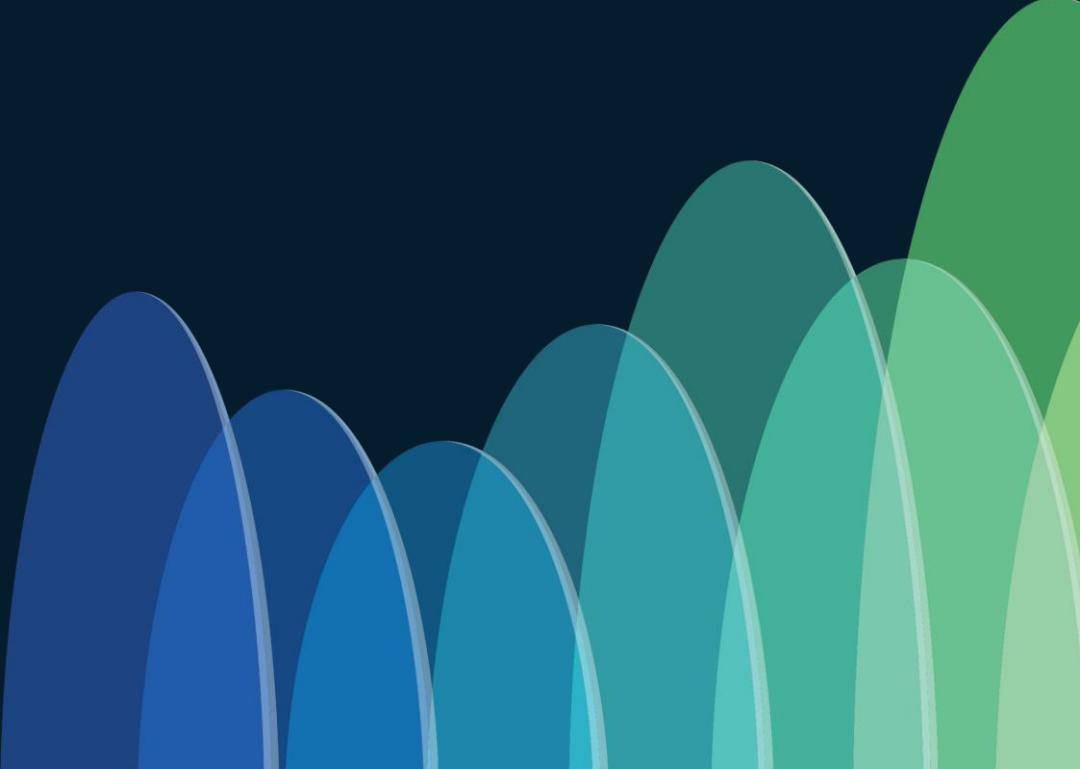
Orchestration Plane



Cisco Catalyst
SD-WAN Validator

- Orchestrates control and management plane
- First point of authentication (white-list model)
- Distributes list of Controllers/Manager to all WAN Edge routers
- Facilitates NAT traversal
- Requires public IP Address [could sit behind 1:1 NAT]
- Highly resilient

Why SD-Routing



- SD-Routing value proposition

SD-Routing

Will enable following capabilities for Routing devices:

- Secure lifecycle management
- Monitoring and assurance
- Software-defined security policy workflows
- Software-defined cloud integration workflows



Unified management for all WAN use cases

- *Same workflows, tools, UI for SD-WAN and Routing*



Reduce Operational expenditure

- *Secure device on-boarding, troubleshooting, SWIM*



Support Routing customer journey to Multicloud

- *Continued innovation towards cloud integration*



Support Multi-layered Security

- *Configuration and management for on-prem security, Cisco Secure Access and third-party SSE*



Easier migration to SD-WAN

- *Migration capabilities from Routing to Catalyst SD-WAN*



Service Assurance

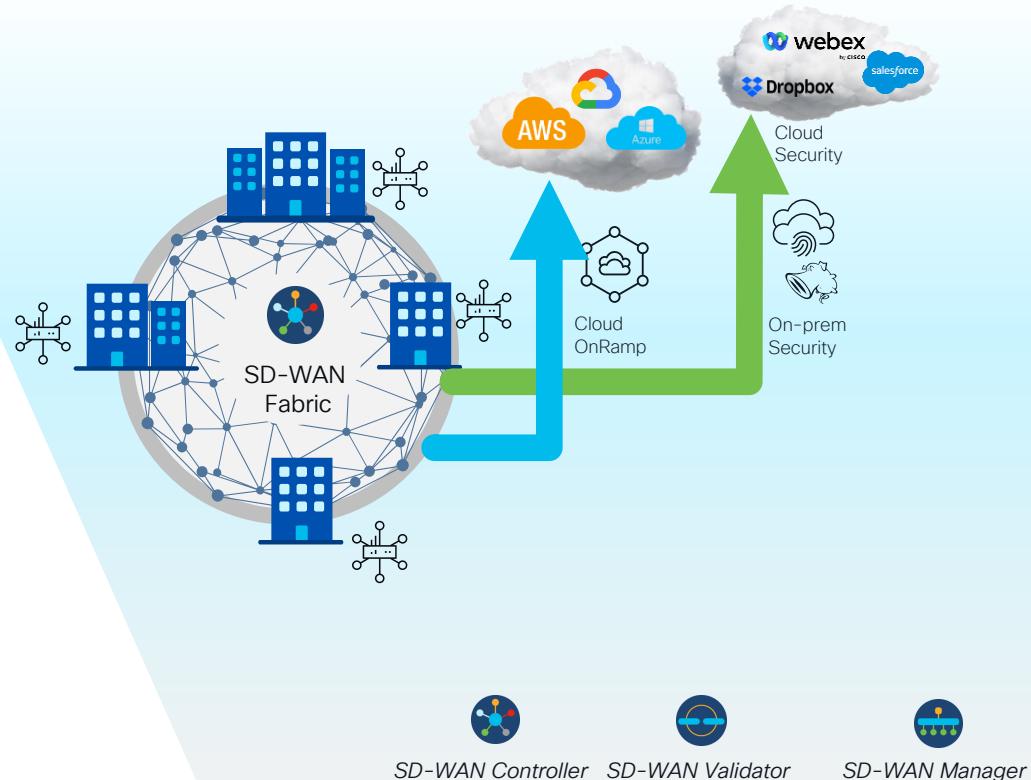
- *Monitoring, Application Performance Monitoring, Network wide path insights, vAnalytics, ThousandEyes*



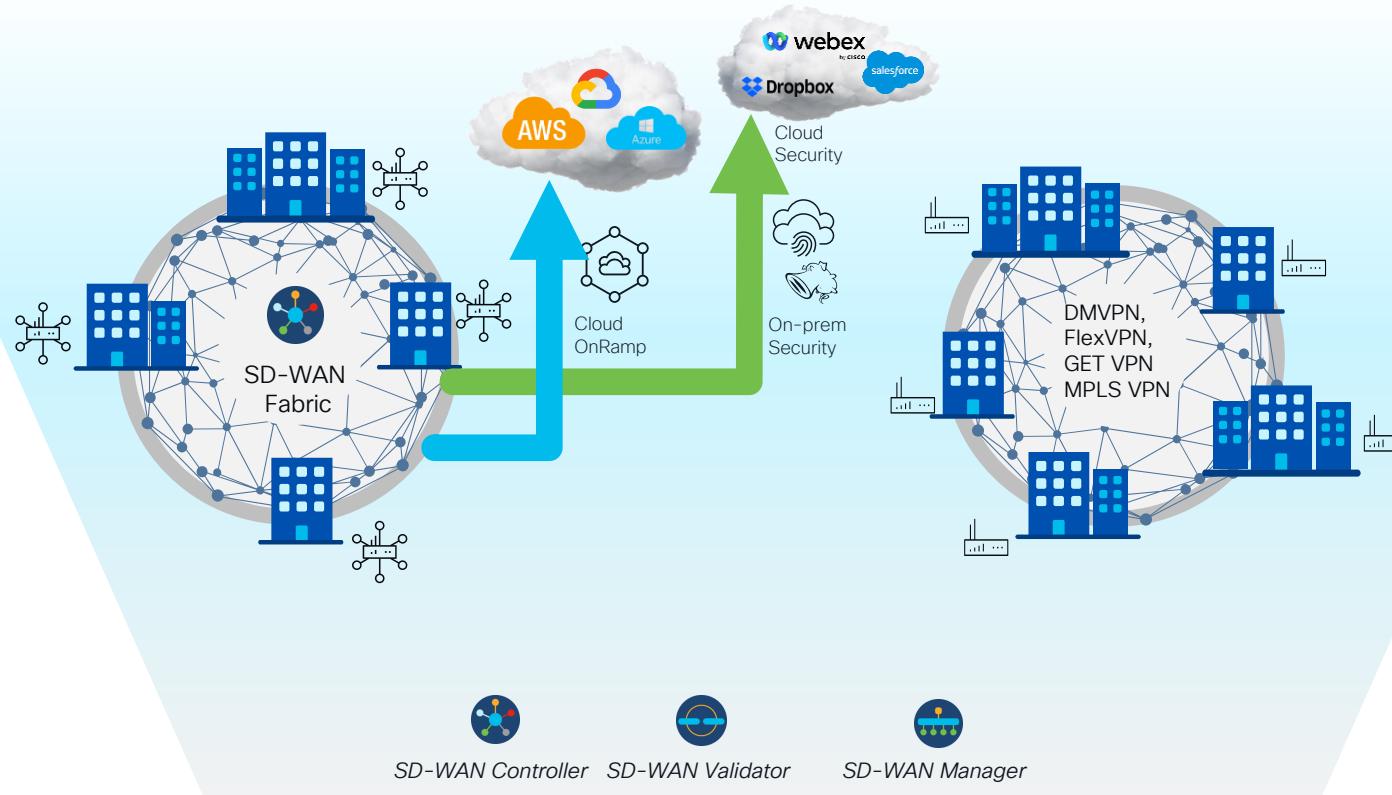
Ease of migration across generations

- *Migration capabilities from legacy platforms to Cat8K*

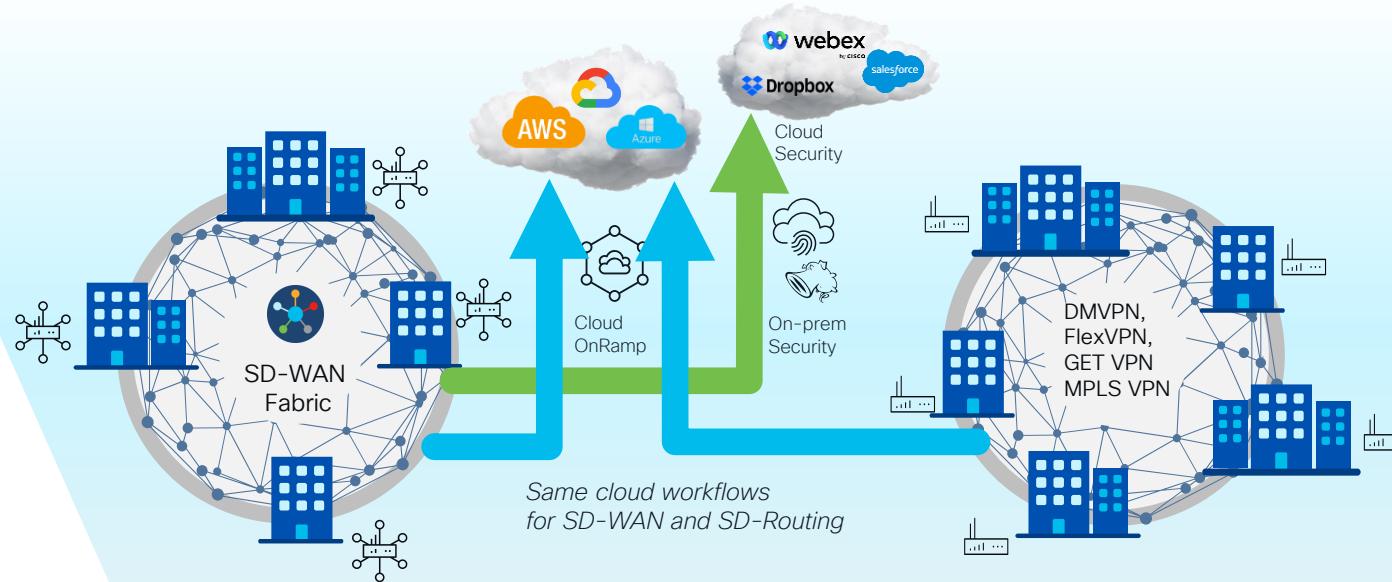
Single Management for your Secure WAN



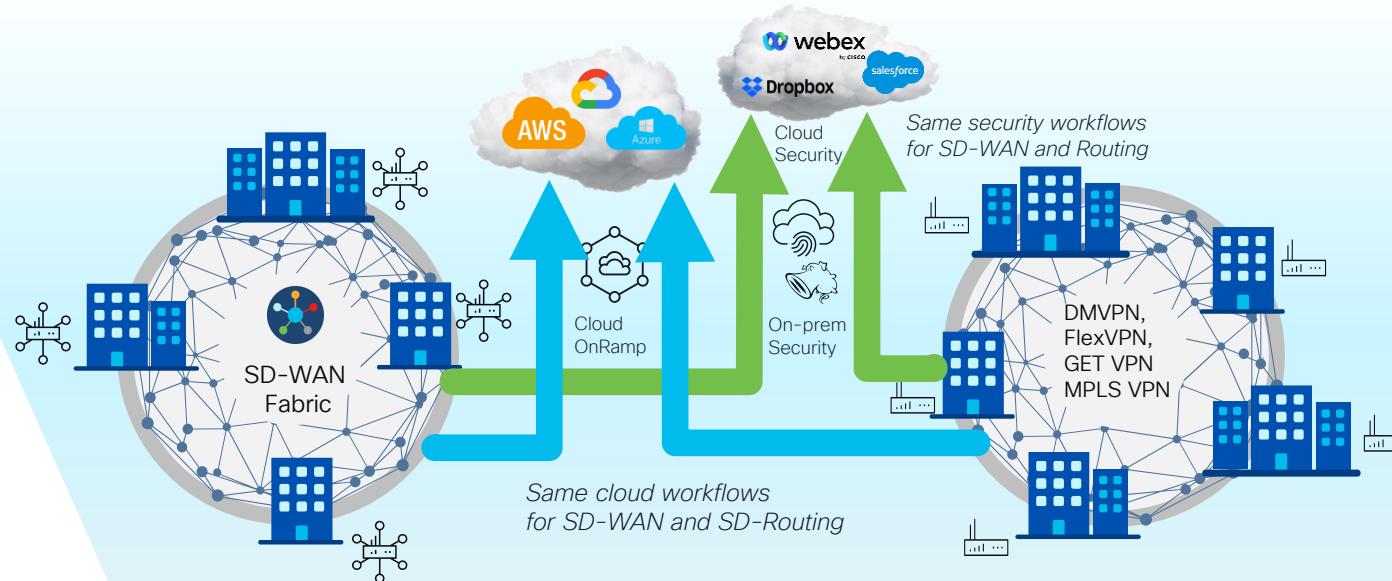
Single Management for your Secure WAN



Single Management for your Secure WAN



Single Management for your Secure WAN



SD-WAN Controller

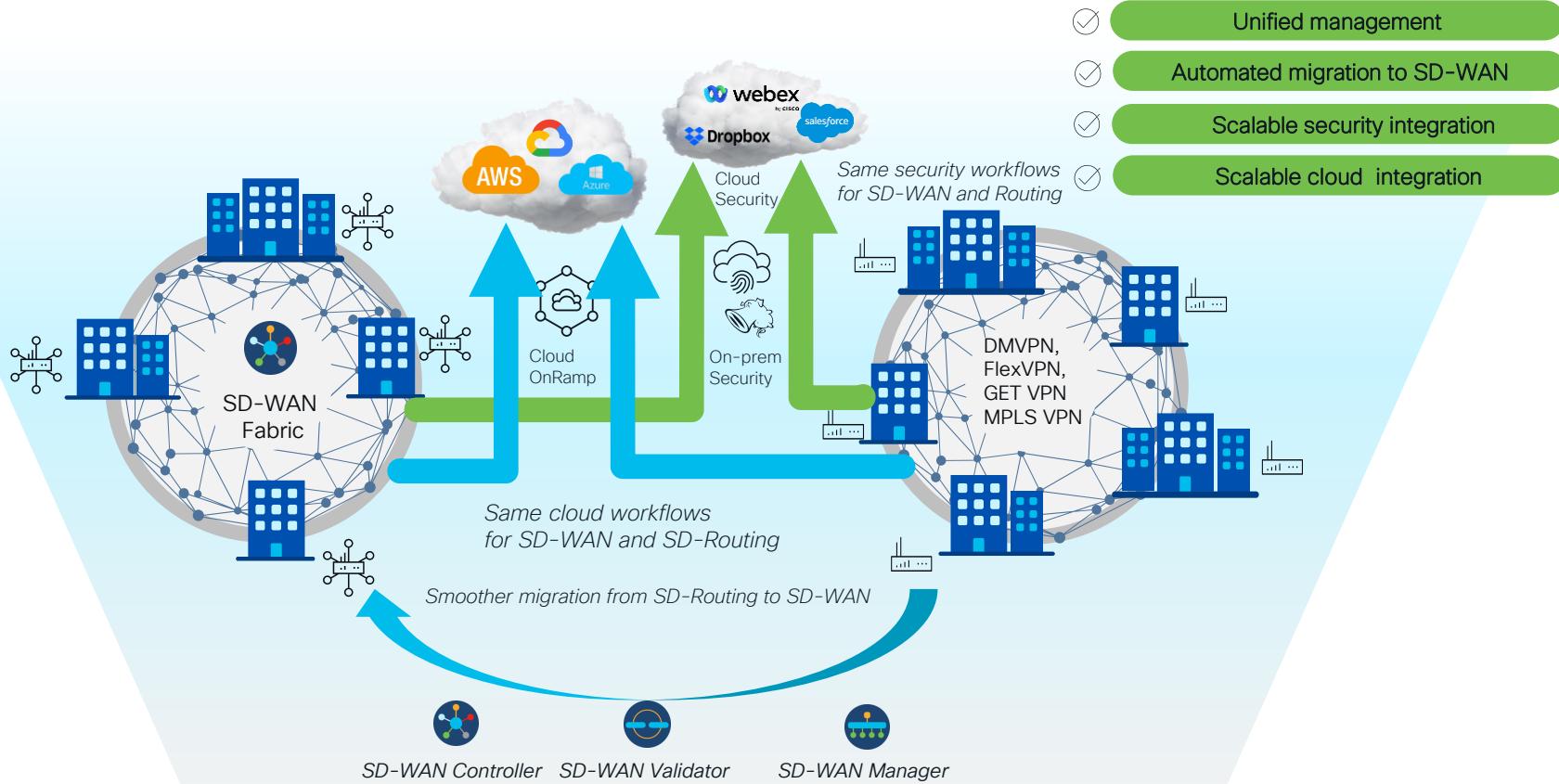


SD-WAN Validator



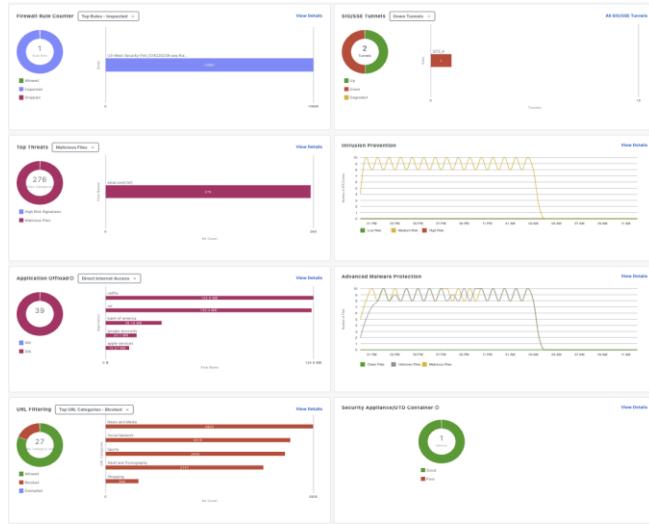
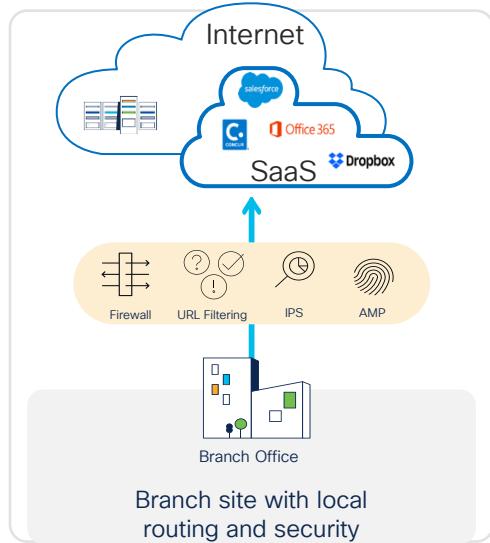
SD-WAN Manager

Single Management for your Secure WAN



Centralized management of advanced security

Eliminate truck rolls to enforce distributed security policies at remote sites



Nex Gen Firewall

Guided workflows

Unified management

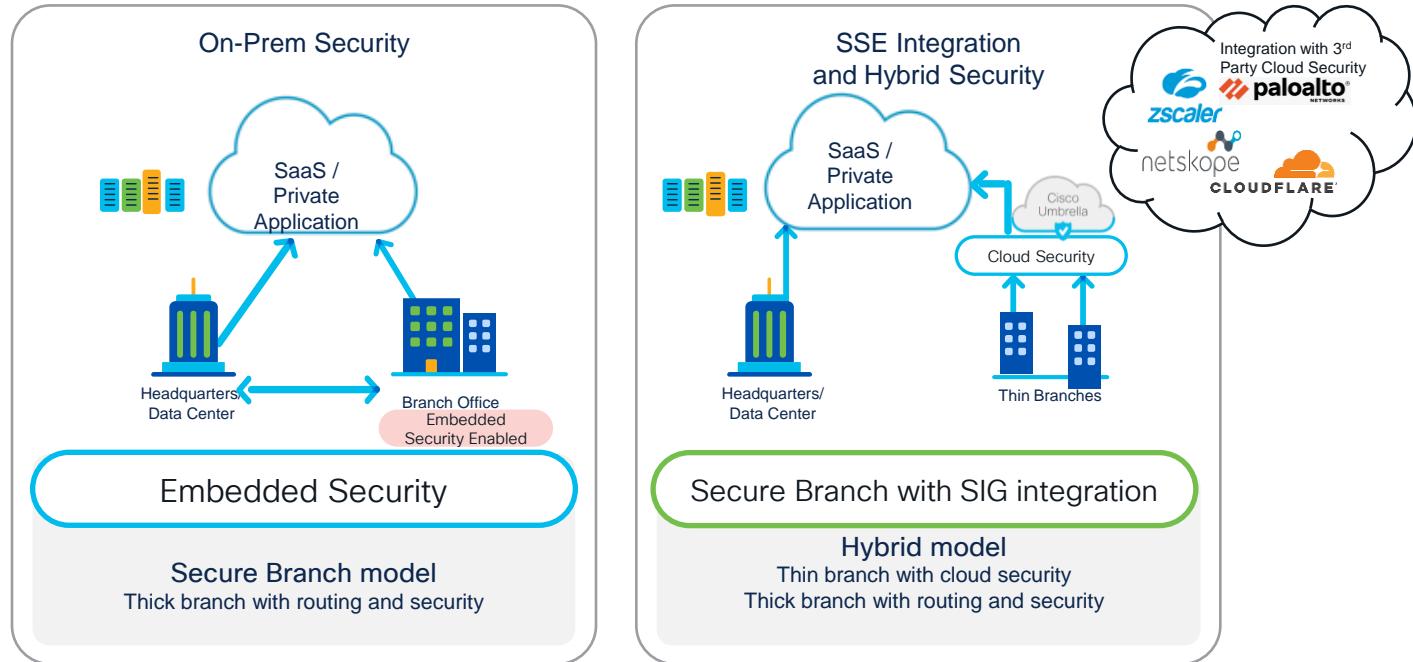
Automated SSE connectivity

See It All, Manage It All

Reduce Security Cost

Unleash Faster Apps

Consistent Security Across SD-WAN and SD-Routing



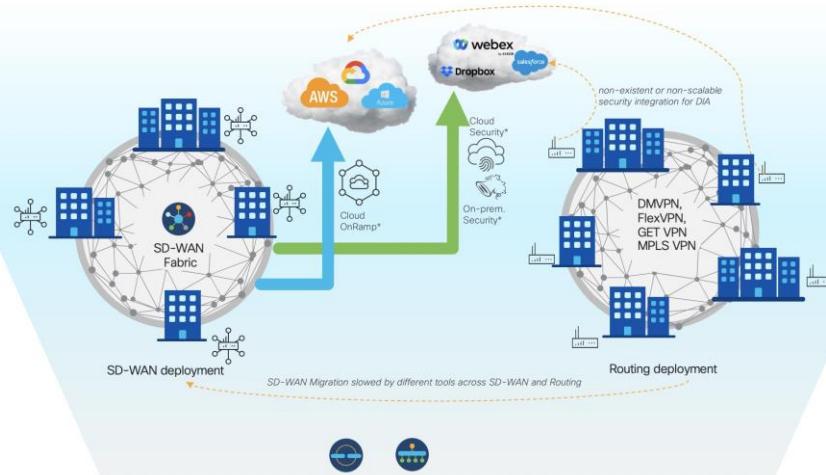
Use Case 1: Device Management

Scenario

- Some Customers are comfortable with Autonomous routing facilities and have over many years created process', scripts and management techniques they wish to retain.
- It is however useful to have a management platform that will complement those efforts and simplify elements of management (possibly filling gaps in customer tooling) and likely for most, centralized and increased visibility.
- Additionally, some features that would be challenging to configure in autonomous mode (Cloud/SASE and embedded security, UTM) will be introduced to aid autonomous simplicity, leveraging engineering efforts from SD-WAN
- **Customer can move from DIY, to an automated Turn-key solution, using workflows etc.**

SD-Routing Mode

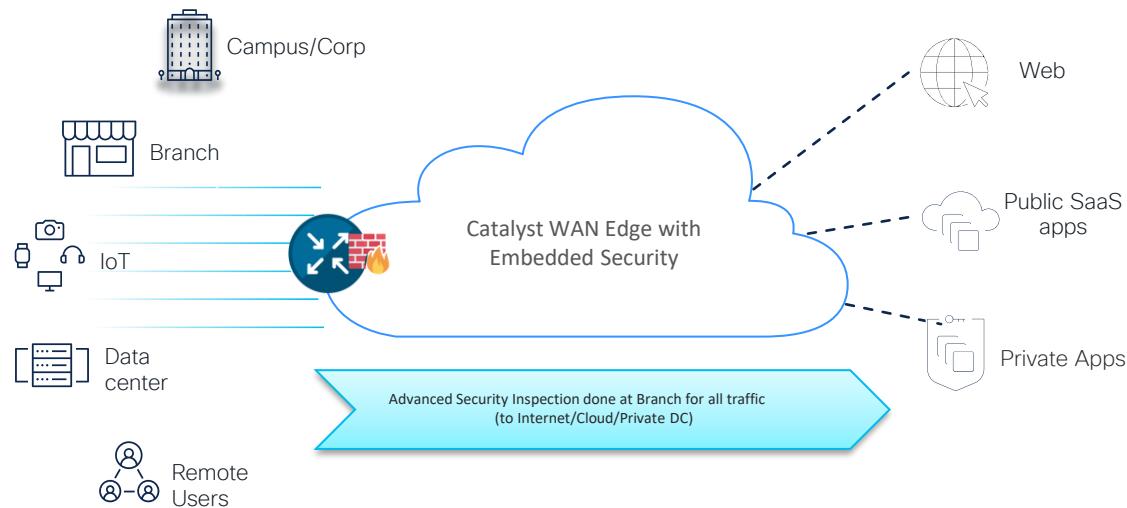
- Autonomous mode device authenticated by SD-WAN Validator, Managed by SD-WAN Manager
- No control connections to SD-WAN Controller
- Helps with Managing, Monitoring and Troubleshooting all from one place



Use Case 2: Distributed Security Policy Enforcement

Scenario

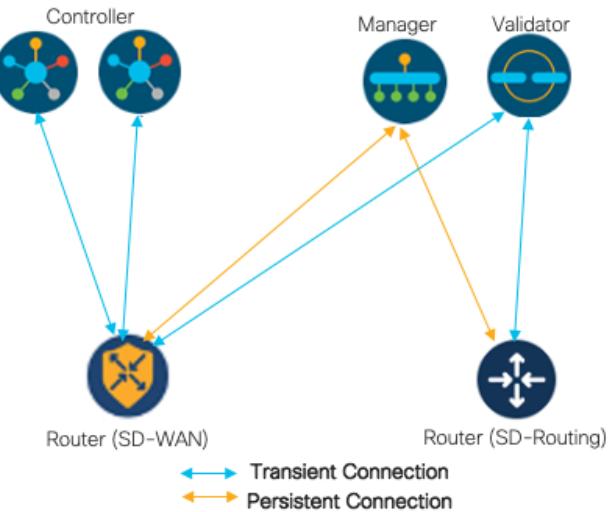
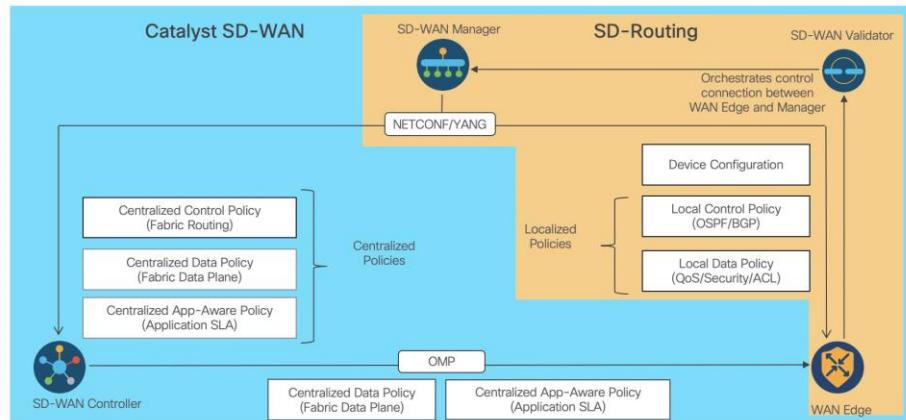
- Give our customers the power to manage and push security Policy to WAN Edge devices.
- OpEx Reduction – Cut-down the costs attached to SIG/SSE services by enabling Embedded Security on WAN Edges (DNA Essentials)
- Enhanced SecOps Dashboard For Visibility, Monitoring & Reporting the Security Threats & Stats
- Better User App Experience and latency reduction by directly breaking out to Internet



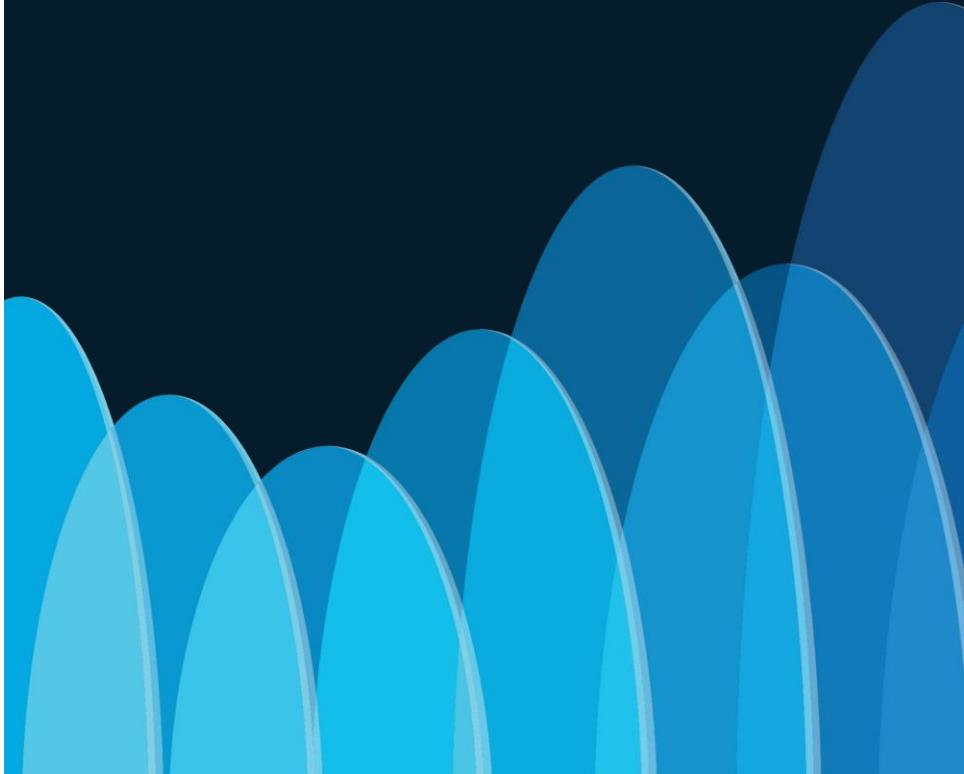
Use Case 3: Unified Management

Scenario

- Currently, IOS-XE routers are operated either in controller or autonomous mode but SD-WAN Manager is used **only** to manage and monitor IOS-XE routers operating in controller mode.
- It is desirable to use SD-WAN Manager to monitor non-SDWAN routers (autonomous mode) as well.
- Using a single NMS for all IOS-XE routers will help in simplifying solution monitoring and give a single operational dashboard helping to simplify operational procedure. In future this will also facilitate deployment, configuration and monitoring

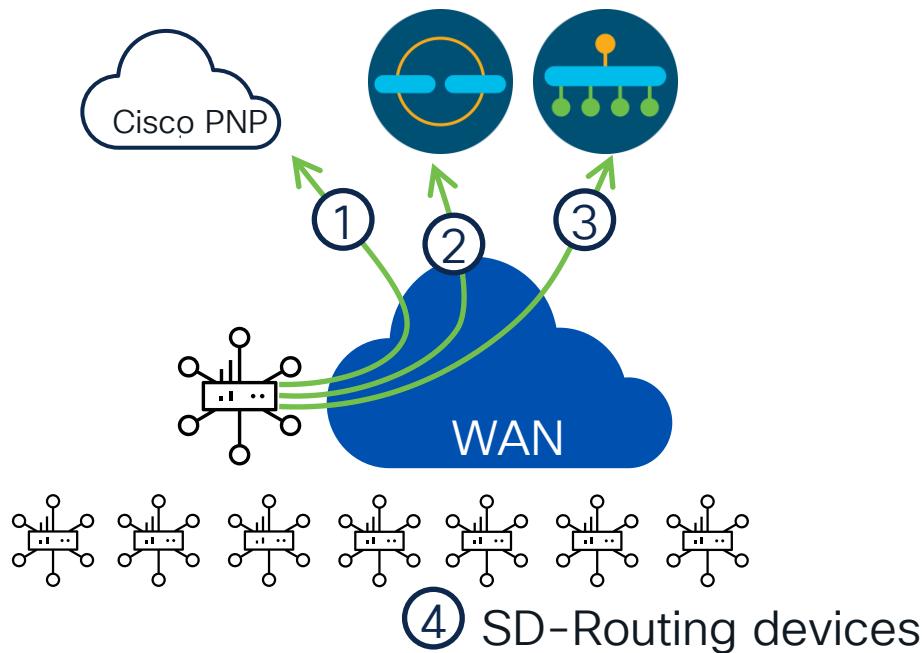


Live Demo



Features

Automated, Zero-Touch Onboarding



- SD-Routing Edges will onboard itself into the SD-WAN Manager automatically with no administrative intervention.
- Connect the SD-Routing Edges to a WAN transport that can provide a dynamic IP address, default-gateway and DNS information.
- If no DHCP service is available then bootstrap file is an option either on USB or Bootflash

SD-Routing Mode

SD-Routing Mode

- Autonomous mode device authenticated by SD-WAN Validator, Managed by SD-WAN Manager
- No control connections to SD-WAN Controller
- Helps with Managing, Monitoring and Troubleshooting all from one place

```
netconf-yang
sd-routing
organization-name <org_name>
site-id <site_id>
system-ip <system_ip>
vbond ip <vbond_ip>
vbond port <vbond_port>
wan-interface <wan-interface>
```

Basic features

The screenshot shows the Cisco Catalyst SD-WAN Monitor interface. The left sidebar includes links for Configuration, Analytics, Tools, Reports, Maintenance, Administration, and Explore. The main dashboard has a navigation bar with tabs: Overview, Devices, Applications, Security, Multicloud, Tunnels, Logs, and Energy Management. The Overview tab is selected. It displays several key metrics:

- Control Components:** 1 Validator, 1 Controller, 1 Manager.
- WAN Edges:** 8 Reachable (green), 0 Unreachable (red).
- Certificate Status:** 0 Warning (yellow), 0 Invalid (red).
- Licensing:** 0 Assigned (green), 8 Unassigned (blue).
- Reboot:** 0 Last 24 hrs.

Below these are two main sections:

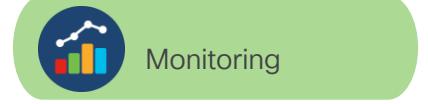
- Site Health:** Shows 9 sites, all in the "Good" category (green). A table lists Site names (SITE_7, SITE_4, SITE_3, SITE_2, SITE_5) and Usage (GB) for each.
- WAN Edge Health:** Shows 8 WAN edges, all in the "Good" category (green). A table lists Host / site name and CPU Load (%):

Host / site name	CPU Load (%)
SD-Edge7 SITE_7	18.51
SD-Edge7 SITE_7	18.54
SD-Edge2 SITE_2	18.33
SD-Edge2 SITE_2	18.54
SD-Edge8 SITE_8	18.27
SD-Edge5 SITE_5	18.18
SD-Edge10 SITE_10	17.43

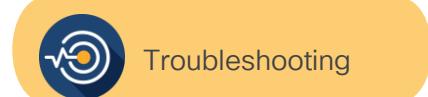
At the bottom, there are sections for Tunnel Health and Application Health, both indicating "No data for this timeframe".



Device onboarding



Monitoring



Troubleshooting



Lifecycle management

[Configuration Guide](#)

CISCO Live!

Device & Lifecycle Management

- Monitor Device
- SSH Terminal
- Ping
- Traceroute
- Real Time Data
- Admin Tech
- Notifications / Alarms/ Events
- Software Management

Device & Lifecycle Management

- Monitor Device
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The screenshot shows the Catalyst SD-WAN interface. On the left, there's a sidebar with navigation icons for Monitor, Configuration, Analytics, Workflows, Tools, Reports, Maintenance, Administration, and Explore. The main area is titled 'Monitor' and has tabs for Overview, Devices, Applications, Security, Multicloud, Tunnels, Logs, and Energy Management. The 'Devices' tab is selected. A red banner at the top says 'The network is out of compliance due to licensing, please click here for more actions.' Below this, there's a search bar with 'SD-rou' and a table of devices. The table columns include Hostname, Device Model, Site Name, System IP, Health, Reachability, Control, BFD, TLOC, Up Since, CPU Load, Memory utilization, Cell, and Action. Three devices are listed: Router (C1131-BPLTEPW), SD-Routing_IR1101-dual (IR1101), and SD-RoutingDemo (CB300-1NTS-6T). Each row shows status indicators and performance metrics like CPU load and memory utilization.

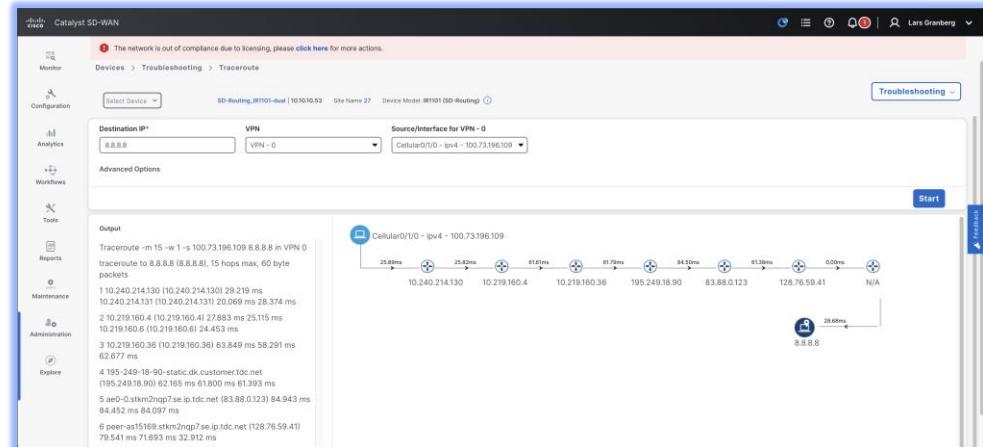
Hostname	Device Model	Site Name	System IP	Health	Reachability	Control	BFD	TLOC	Up Since	CPU Load	Memory utilization	Cell	Action
Router	C1131-BPLTEPW (SD-Routing)	SITE_58	11.30.9	●	↓	0 / -	0 / -	N/A	Feb 28, 2024 11:11 PM	<div style="width:28.18%;">28.18%</div>	<div style="width:69%;">69%</div>	N/...	...
SD-Routing_IR1101-dual	IR1101 (SD-Routing)	SITE_27	10.10.10.53	●	↑	1 / 1	0 / 0	N/A	Jan 07, 2025 03:08 PM	<div style="width:54.58%;">54.58%</div>	<div style="width:68%;">68%</div>	4G 5G	...
SD-RoutingDemo	CB300-1NTS-6T (SD-Routing)	SITE_12345	10.100.30.99	●	↑	1 / 1	0 / 0	N/A	Jan 06, 2025 12:48 PM	<div style="width:12.08%;">12.08%</div>	<div style="width:42%;">42%</div>	N/...	...

Device & Lifecycle Management

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Device & Lifecycle Management

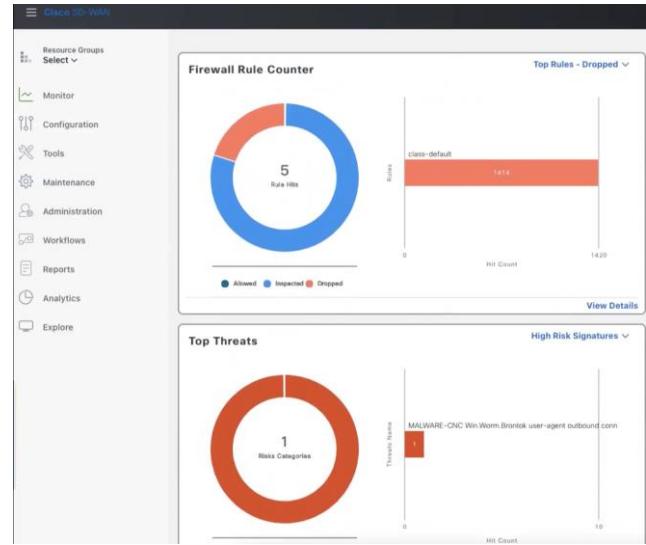
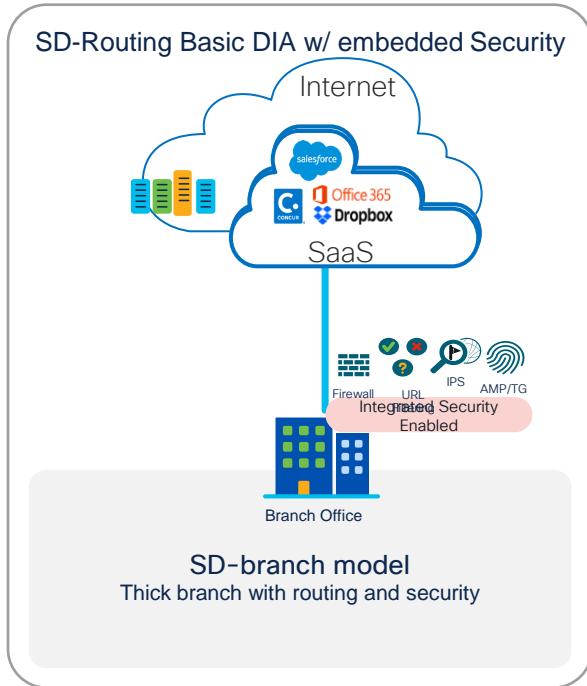
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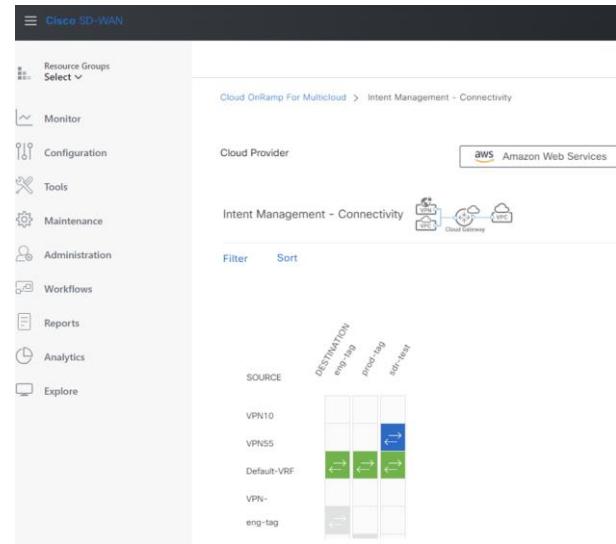
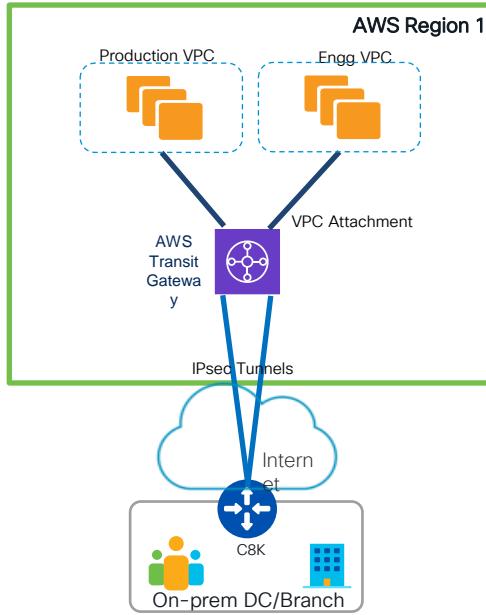
Device & Lifecycle Management

- Monitor Device
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DIA with Embedded Security



Multi-Cloud Access - AWS Branch Connect



Azure vHUB with VPN is also supported

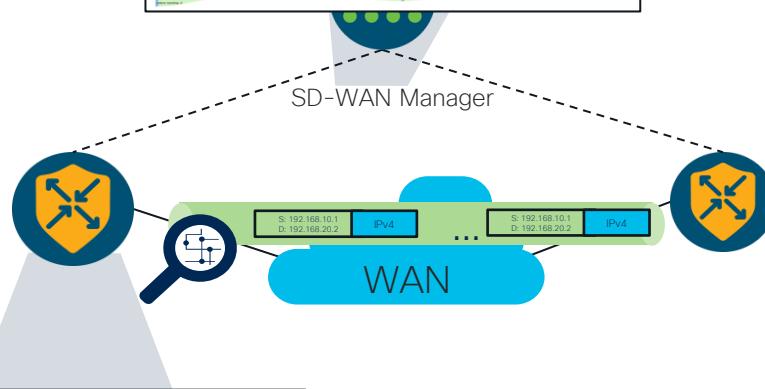
Network Wide Path Insights



NWPI provides Network Wide Insights such as

- Path Insight overview,
- Application Performance Insight
- Event Insight, QoS Insight etc.

However, it is not supported in SD-Routing Mode



NWPI Trace

- Insight Summary
- Application Performance Insight
- Event & QoS Insight

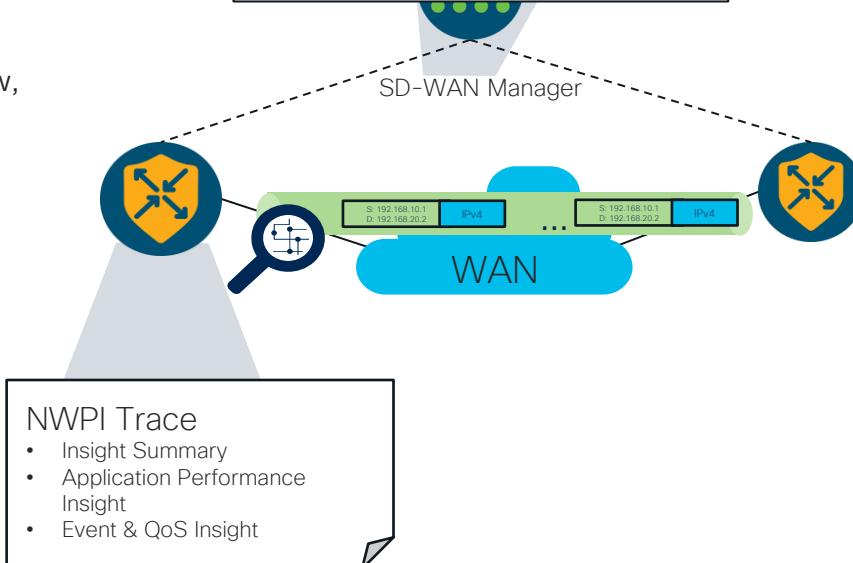
Network Wide Path Insights

Problem

NWPI provides Network Wide Insights such as

- Path Insight overview,
- Application Performance Insight
- Event Insight, QoS Insight etc.

However, it is not supported in SD-Routing Mode



Solution

- In 20.15/17.15, NWPI support is introduced for SD-Routing.
- NWPI works in 2 modes as below.
 - Standalone Mode – with first hop router's insights
 - Network Wide Mode – End to end path across multiple sites with network wide correlation

Caveats / Limitations

Auto-on NWPI, ISE Integration, ThousandEyes Integration are not supported

Application Performance Monitoring

Verification from the SD-WAN Manager, navigate to Monitor > Applications

Application Performance Monitoring

Verification from the SD-WAN Manager, navigate to Monitor > Applications

The screenshot shows the Cisco Catalyst SD-WAN Monitor interface. The top navigation bar includes 'Cisco Catalyst SD-WAN', a search bar, and a user dropdown for 'admin'. Below the header, there are several icons for monitoring, followed by a main menu with 'Monitor' and 'All Sites' selected. The 'Applications' tab is highlighted with a green underline. Other tabs include 'Overview', 'Devices', 'Tunnels', 'Security', 'Logs', and 'Multicloud'. The main content area is titled 'Monitored Applications (3)'. It displays a table with the following data:

Application Name	Health	Good Sites	Fair Sites	Poor Sites	Application Family	Action
amazon-s3	Green	1	0	0	web	...
google-services	Green	1	0	0	file-server	...
yahoo	Green	1	0	0	forum	...

Below the table, it says 'As of: Nov 07, 2023 04:18 PM'. At the bottom, there is a pagination control with 'Items per page: 25' and '1 ~ 3 of 3'.

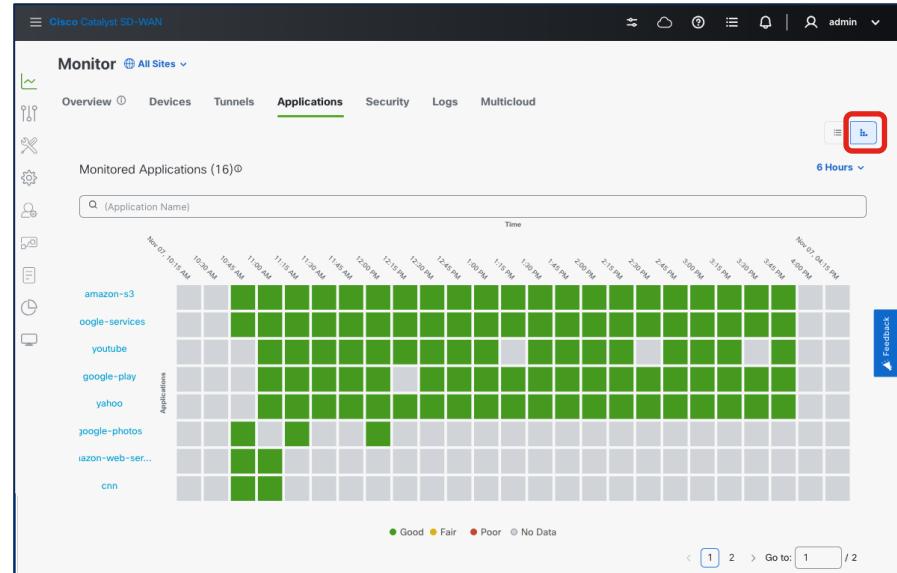
Application Performance Monitoring

Verification from the SD-WAN Manager, navigate to Monitor > Applications

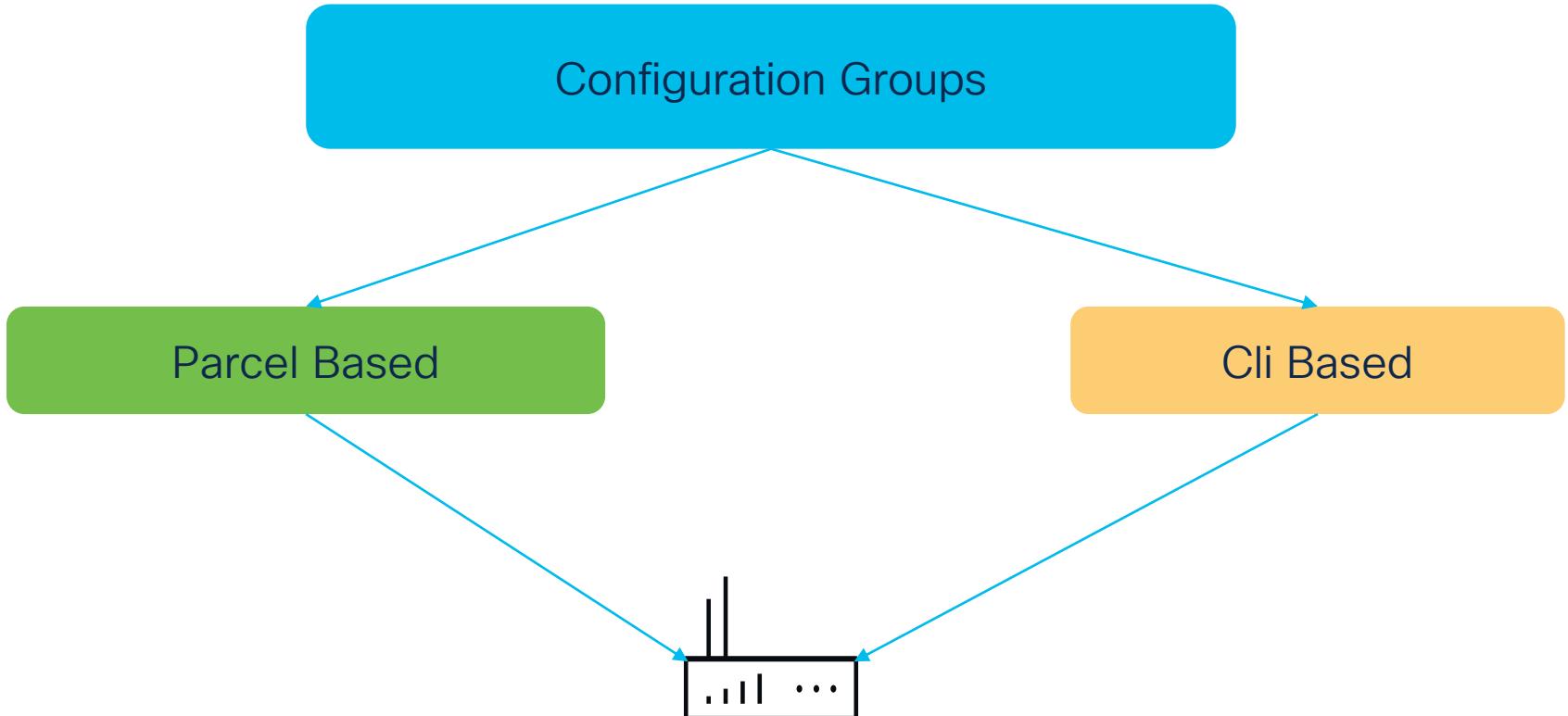
The screenshot shows the Cisco Catalyst SD-WAN Monitor Applications page. The top navigation bar includes links for Overview, Devices, Tunnels, Applications (which is highlighted in green), Security, Logs, and Multicloud. Below the navigation is a search bar labeled "Search Table". The main content area displays a table titled "Monitored Applications (3)". The columns are Application Name, Health, Good Sites, Fair Sites, Poor Sites, Application Family, and Action. The data rows are:

Application Name	Health	Good Sites	Fair Sites	Poor Sites	Application Family	Action
amazon-s3	Green	1	0	0	web	...
google-services	Green	1	0	0	file-server	...
yahoo	Green	1	0	0	forum	...

At the bottom, there is a pagination section with "Items per page: 25" and "1 ~ 3 of 3".



Configuration options



Once a configuration group is pushed the device Config is owned by the manager.

Configuration Groups – Parcel based

SDR_IR1101_Dual_Cell 

Type: Single Router Updated by lagranbe Updated Dec 18, 2024, 3:35:06 PM  

System Profile
SDR_IR1101_Dual_Cell_SDR_IR1101_SDR_ISR1K_Basic 

Service Profile (optional)
SDR_IR1101_Dual_Cell_SDR_IR1101_SDR_ISR1K_Service  

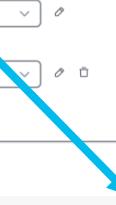
Transport & Management Profile (optional)
SDR_IR1101_Dual_Cell_SDR_IR1101_SDR_ISR1K_Transport  

CLI Add-on Profile (optional)
SDR_IR1101_Dual_Cell_Connection  

Deployment

Associated  1 device
Provisioning  0 out of sync





SDR_IR1101_Dual_Cell_SDR_IR1101_SDR_ISR1K_Basic

DEVICE SOLUTION MODIFIED BY LAST UPDATED SHARED
SD Routing Lagranbe Dec 18, 2024 03:44:56 1 Group

 Search

Profile Features

AAA

AAA 

Logging

Logging 

NTP

NTP 

Global

Global 

Banner

Banner 

Configuration Groups – CLI Based

The screenshot shows a configuration group named "SJC24-TSGconfig" which is a "CLI based config for TSG in SJC24 A05". It was last updated by "lagranbe" on "Jan 21, 2025, 10:39:56 AM". The "Deployment" section indicates it is associated with 1 device and has 0 out of sync. A blue "Deploy" button is visible. The "Type: CLI" and "CLI Profile" dropdown are also shown.

Associated	1 device
Provisioning	0 out of sync

Type: CLI
CLI Profile
SJC24-TSGconfig

Deployment

Associated 1 device
Provisioning 0 out of sync

Deploy

Supports both modelled and non modelled configs

Configuration Groups – CLI Based

← Configuration Groups (SJC24-TSGconfig - CLI Add-on Profile)

SJC24-TSGconfig [Edit](#)

Description: CLI based config for TSG in SJC24 A05

DEVICE SOLUTION	MODIFIED BY	LAST UPDATED	SHARED
SD Routing	Lagranbe	Jan 21, 2025 10:40:12	1 Group

Load Running config from reachable device:

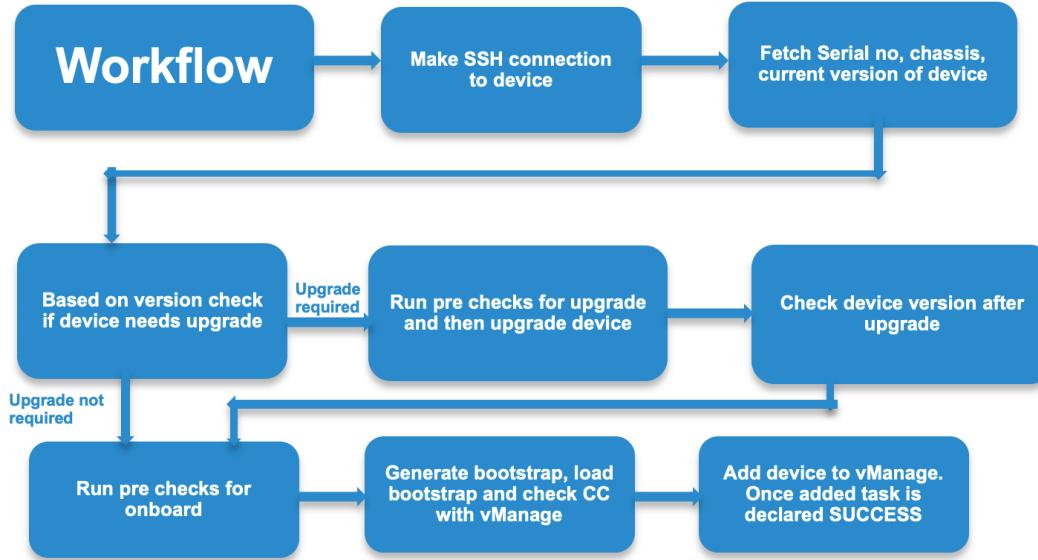
[Actions](#) ▾

Config Preview [\(1\)](#)

```
1 sd-routing
2 enable
3 system-ip      10.254.254.1
4 site-id        16
5 organization-name EFT-CISCOLABDK
6 sp-organization-name EFT-CISCOLABDK
7 vbond port 12346
8 vbond name test.ciscolab.dk
9 wan-interface GigabitEthernet0/0/0
10 !
11 !
12 memory free low-watermark processor 130416
13 service timestamps debug datetime msec
14 service timestamps log datetime msec
15 no service tcp-small-servers
16 no service udp-small-servers
17 hostname SJC24-LG-TSG01
18 enable password 7 122A2F34405F4110272E652C3E2F
19 control-plane
20 !
21 login on-success log
22 subscriber templating
23 vtp mode server
24 fhrp version vrrp v2
25 platform qfp utilization monitor load 80
26 username admin privilege 15 secret 9 $9$RpScs15nPppk$j41QXY9s1Kipno6PrxdhlnkjAcL0KPjbSan.wBm55jk
```

Supports both modelled and non modelled configs

Easy upgrade and onboarding



To onboard the device to SD-WAN Manager, we need to first upgrade the device to 17.12 (minimum) version manually and only then we will be able to onboard the device automatically.

SD-Routing Release overview

17.13/20.13

- Security: NextGen firewall (ZBFW, AMP, TG, IPS/IDS) with security policy workflows
- Security: Events monitoring
- Multicloud: Branch connect to AWS TGW & Azure vHub
- Add-on CLI config-group, UI parcels for system config
- Application visibility

17.15/20.15

- Full CLI config support using Config Groups (including WAN VPN use cases DMVPN, FlexVPN, BGP, etc.) & select UI Parcels (DMVPN)
- NWPI support
- Monitoring enhancements
- SD-Routing license management
- SWIM enhancements
- Security enhancements: unified logging

Aug 2023

Dec 2023

Apr 2024

Aug 2024

Dec 2024

17.12/20.12

- Device lifecycle management
- Monitoring (CPU, memory, stats, events)
- Troubleshooting (ping, traceroute, admin-tech)
- On-premise controllers
- Cloud-delivered (CD-SDR) target Q3FY24*
- Platform support: C8K, ISR1K/4K, ASR1002-HX, ASR1001-HX

17.14/20.14

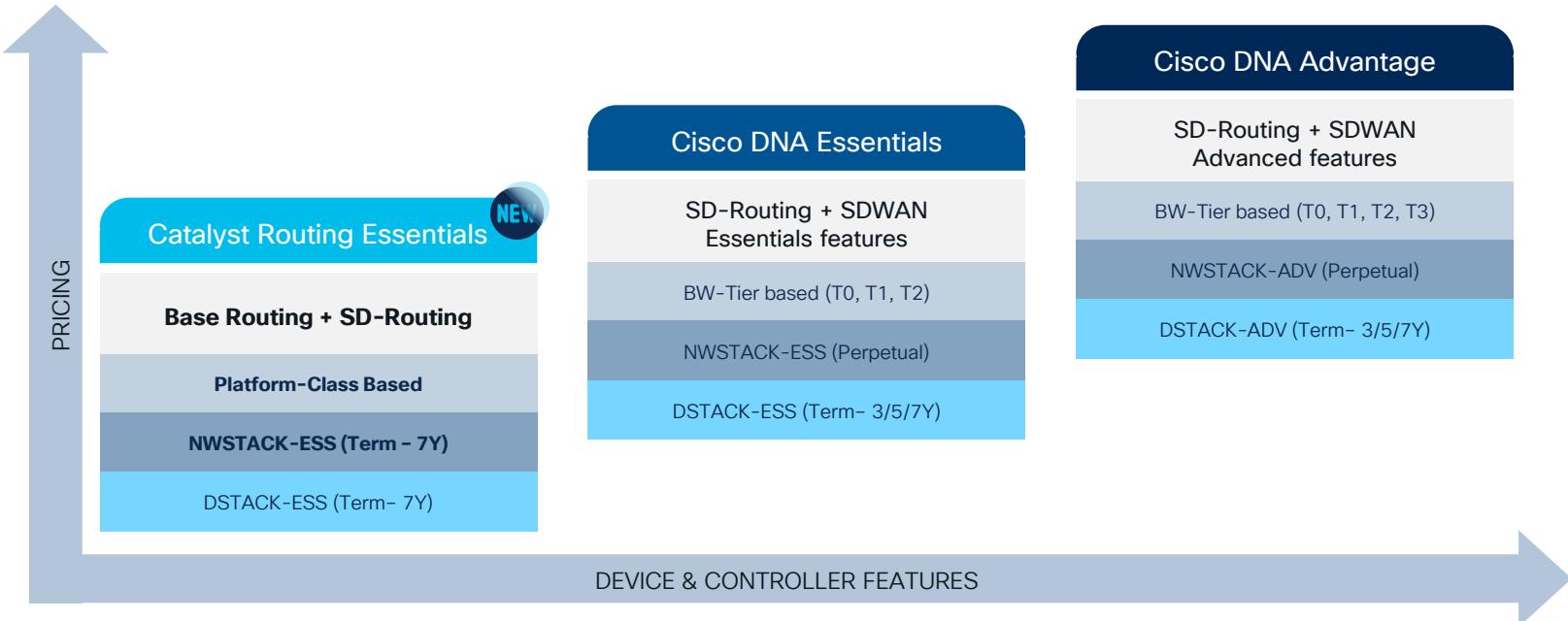
- Security: TLS/SSL Proxy via unified security policy workflow
- Security: Cisco Secure Access (SSE) integration
- Config enhancements - ACL etc.

17.16/20.16

- Cellular Monitoring
- Crypto VPN monitoring

Licensing

Catalyst Routing Essentials on C8200/8300



Catalyst Routing
Essentials

Targeted at Routing Base CPE use-cases managed by CLI/SD-Routing

- ✓ All Routing IPBase features + ZBFW, MACSEC & P2P-IPSec
- ✓ IP-CEF/IPSec throughput upto max platform capacity

DNA Software Matrix

Cisco DNA Software
SD-WAN and Routing Matrices

Download as PDF



Cisco DNA Software for SD-WAN Feature Matrix

https://www.cisco.com/c/m/en_us/products/software/sd-wan-routing-matrix.html

DNA Software Matrix

Cisco DNA Software for Routing Feature Matrix

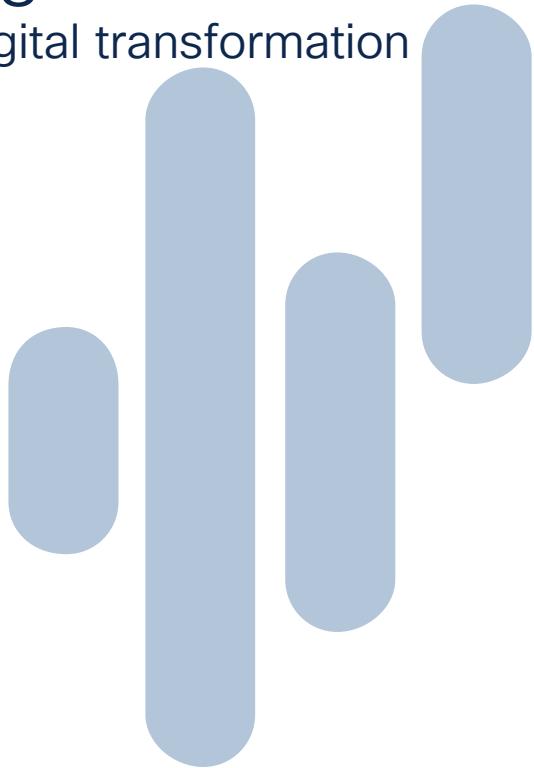
	Catalyst Routing Essentials	Cisco DNA Essentials	Cisco DNA Advantage
Subscription license	7-year term only	3-, 5-, or 7-year	3-, 5-, or 7-year
Network stack	Term based	Perpetual	Perpetual
Management options	CLI, Web UI, Cisco Catalyst SD-WAN Manager, Cisco Catalyst Center	CLI, Web UI, Cisco Catalyst SD-WAN Manager, Cisco Catalyst Center	CLI, Web UI, Cisco Catalyst SD-WAN Manager, Cisco Catalyst Center
Cisco Catalyst SD-WAN Manager⁵ (SD-Routing)	On-Prem	On-Prem/Cloud	On-Prem/Cloud
Cisco Catalyst Center	On-Prem	On-Prem	On-Prem

Platform based routing features (Most features included with the perpetual network stack)	Catalyst Routing Essentials	Cisco DNA Essentials	Cisco DNA Advantage
Routing and protocols RIP, OSPF, BGP, EIGRP, IGRP, IS-IS, On-Demand Routing (ODR), Point-to-Point Protocol (PPP), Multi-Link PPP (MLP), TR-069, TR069-CWMP, TCP (ECN, Window scaling, MSS) Stream Control Transmission Protocol (SCTP).	✓	✓	✓
Link capabilities LACP, PAgP, EtherChannel, LLDP, 802.1Q.	✓	✓	✓
High availability HSRP, FHRP, GLBP (global load balancing).	✓	✓	✓
Essential application experience IPSLA initiator/responder, echo, jitter, path (ICMP, UDP, and multicast), TCP connect, HTTP, FTP, DHCP, MQC including classification, policing, re-marking, scheduling; HQoS, NBAR2 (standard protocol packs).	✓	✓	✓
System control capabilities DNS, Dynamic DNS, NTPv4, Cisco Discovery Protocol, Control Plane Policing (CoPP).	✓	✓	✓
Essential traffic management capabilities NetFlow, Flexible NetFlow (FNF), IPFIX, performance monitoring, Flexible Packet Matching (FPM), Policy-Based Routing (PBR), ACL, ARP, DHCP, BDI, NAT, PAT – IPv4/v6, Reverse Path Forwarding (URPF), 802.1P.	✓	✓	✓

Takeaway

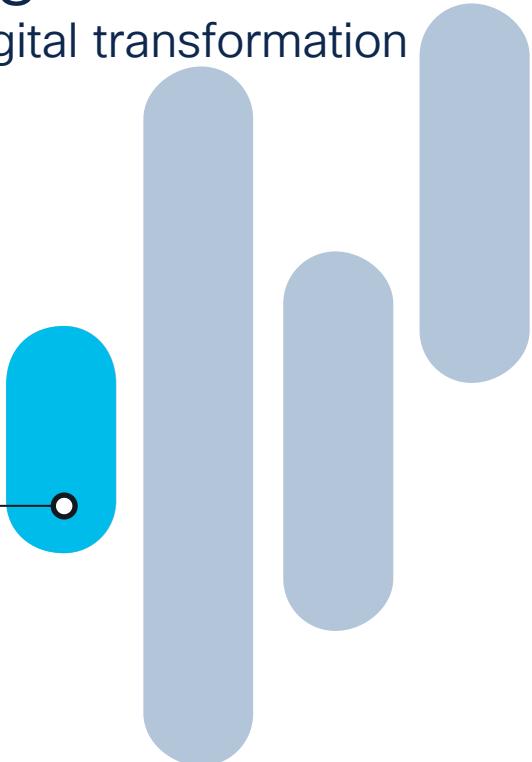
Cisco SD-Routing

Modernizing routing for digital transformation



Cisco SD-Routing

Modernizing routing for digital transformation



OpEx reduction

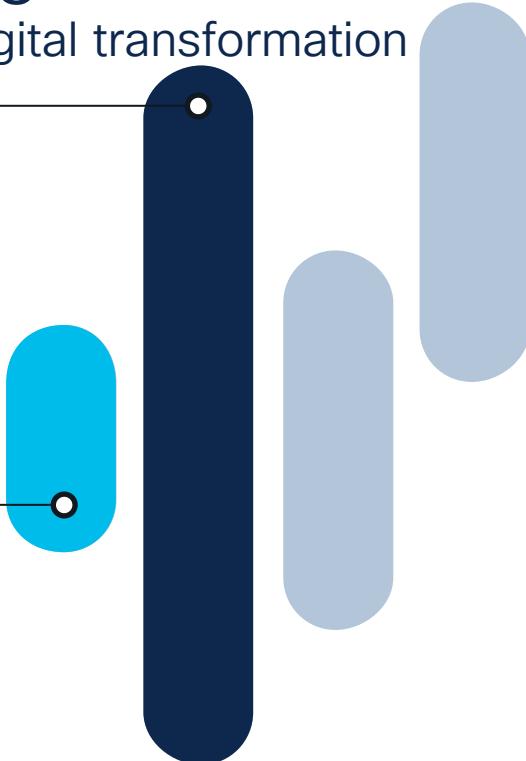
- Unified management for Catalyst SD-WAN and routing

Cisco SD-Routing

Modernizing routing for digital transformation

Simplicity and agility

- Intuitive automated device lifecycle orchestration
- No truck rolls for routine device management



OpEx reduction

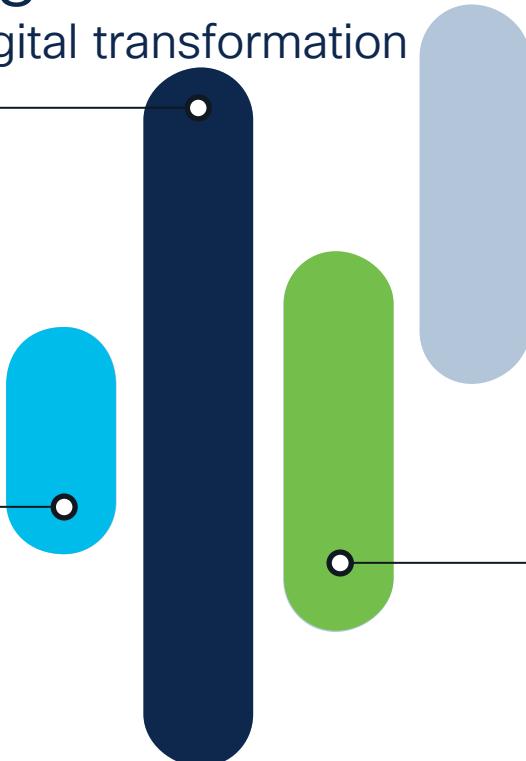
- Unified management for Catalyst SD-WAN and routing

Cisco SD-Routing

Modernizing routing for digital transformation

Simplicity and agility

- Intuitive automated device lifecycle orchestration
- No truck rolls for routine device management



OpEx reduction

- Unified management for Catalyst SD-WAN and routing

Open ecosystem

- APIs for integration with third parties
- Third-party identity provider

Cisco SD-Routing

Modernizing routing for digital transformation

Simplicity and agility

- Intuitive automated device lifecycle orchestration
- No truck rolls for routine device management

OpEx reduction

- Unified management for Catalyst SD-WAN and routing

Future-ready WAN

- Simplify migration to SD-WAN
- Upcoming cloud and security integrations

Open ecosystem

- APIs for integration with third parties
- Third-party identity provider

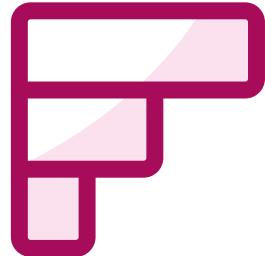
References

- [Ordering Guide](#)
- [Solution Brief](#)
- [SD-Routing Configuration Guide](#)
- [Cisco Routing DNA Matrix](#)



<http://www.cisco.com/go/sdwan>

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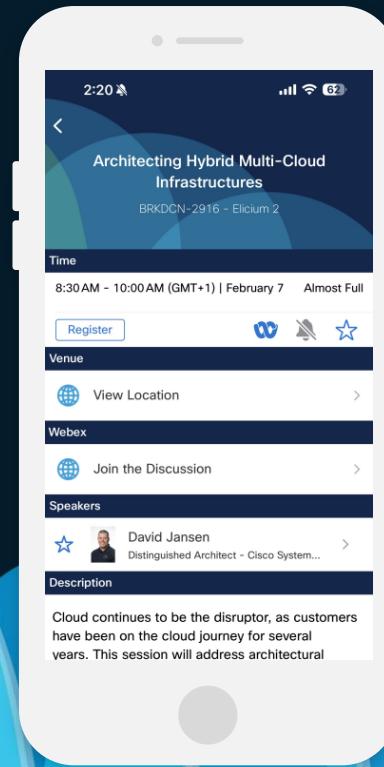
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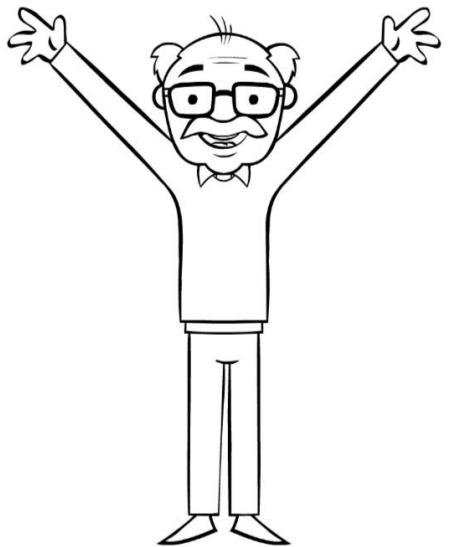
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Contact me at: lagranbe@cisco.com or webex



Thank you



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GO BEYOND