Campus Switching Innovations for Future Proofed Workspaces

Cisco 9000 Series Campus Switches

Minhaj Uddin
Leader Technical Marketing

Session ID: BRKENS-2609

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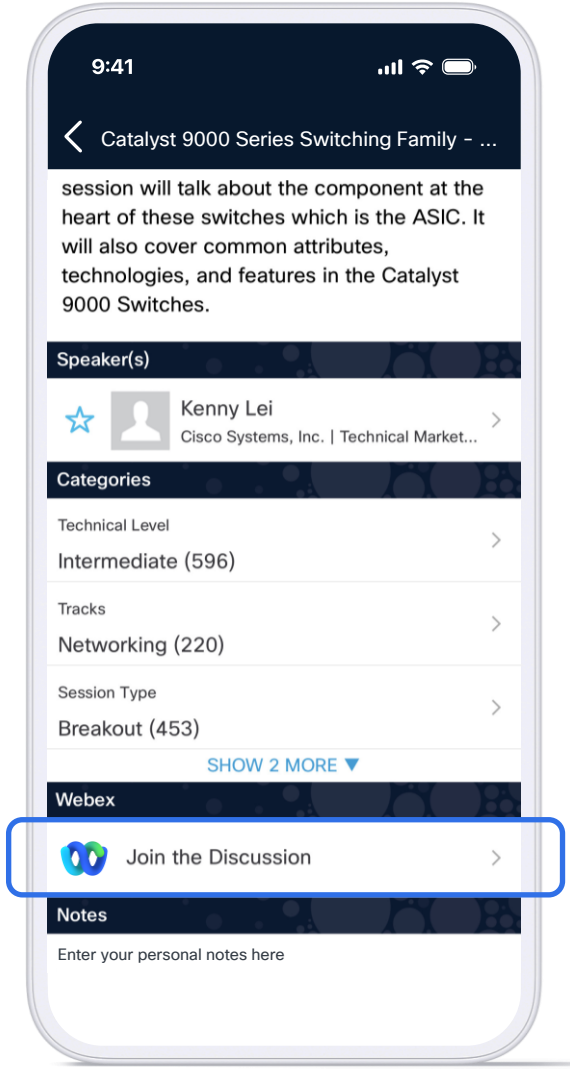

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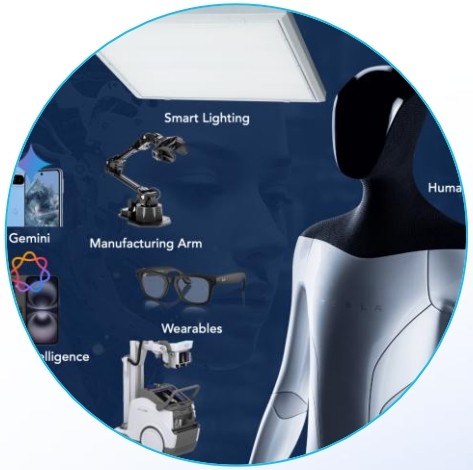
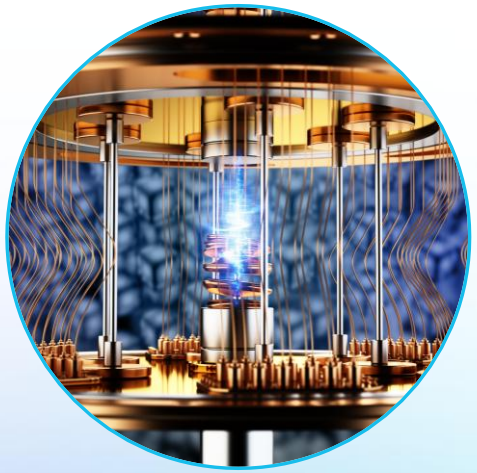
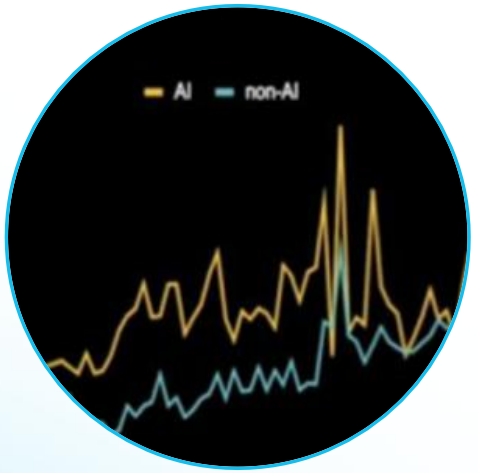
New Endpoints & Wi-Fi 7



Quantum Computing & New Threats



AI Applications & New Traffic Patterns



Latest trends & technologies in Enterprise Networks

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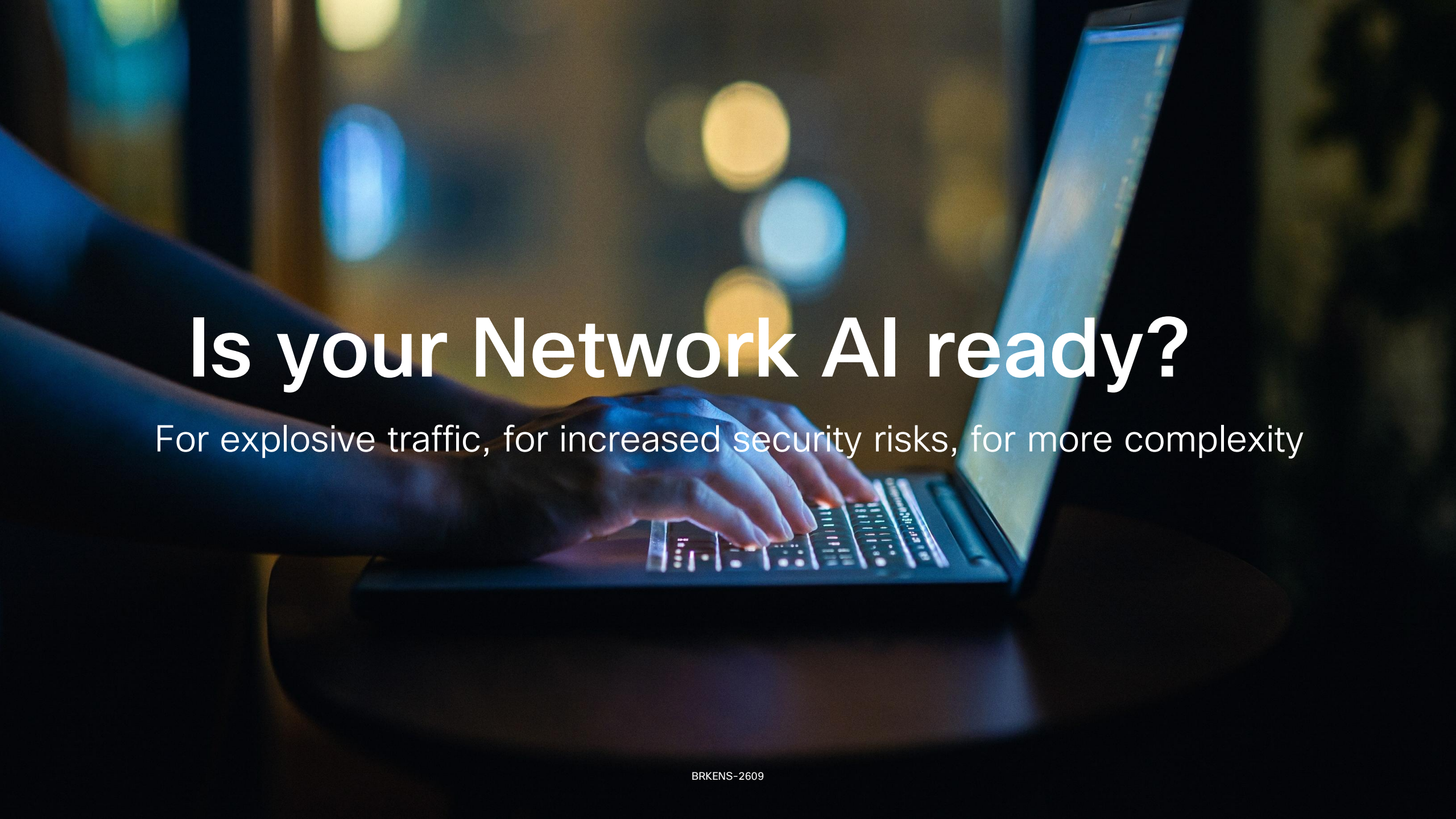

Is your Network AI ready?
For explosive traffic, for increased security risks, for more complexity

Considerations for a future-proofed campus network

Wi-Fi 7 and Smart Spaces

10Gbps port throughput

UPoE+ Power requirements

Increased uplink and stack bandwidth

Scaling MAC address density

Universal Zero Trust

Seamless zero trust network access

Least-privilege MFA & identity services

Fabric architecture and scaled policy

Rich telemetry and distributed enforcement

Campus Edge AI

Move AI and ML workloads closer to client and data

Minimize latency

Defend against data export.

Network-wide visibility and control

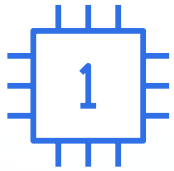
Future-proofed Scale

Modern apps and clients are driving massive client growth

6Ghz Wireless, 4K/8K video, IoT, Sensors and autonomous robots

Higher scale requirements for L2, L3, ACL, FNF, across Access and Core

Architecture for the AI-Ready Secure Campus

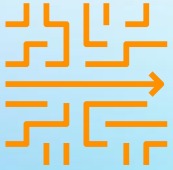


Scalable devices

ready for AI

Security

fused into the network



Operational simplicity

powered by AI

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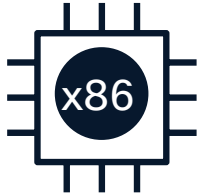
What does it mean to build hardware for the AI era?

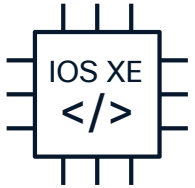
Silicon

- Massive packet bandwidth
- High forwarding performance
- Large forwarding info base
- P4 programmable for future protocols



System

- Integrated application hosting
- AI-driven visibility
- Programmable open ecosystem
- Power Efficient



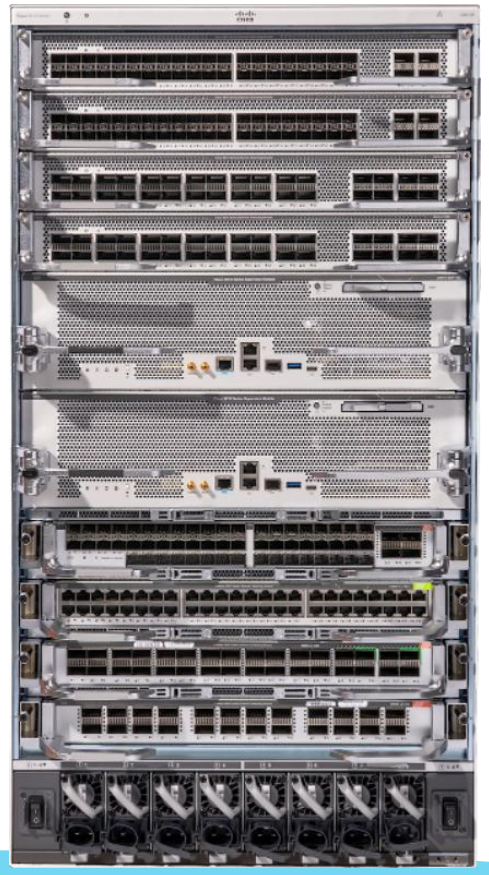
OS

- Pervasive programmability
- Deep observability
- Highly scalable
- Near-zero downtime architecture

Sustainable

Smart Power, PoE Assurance and Energy dashboard

Cisco C9610



Cisco C9350

Cisco C9000 Smart Switches

AI-Ready Hardware
C9350, C9610, Silicon One, IOS XE

Security fused into the network
PQC Compliant, Hypershield Ready, Cisco Live Protect

Operational Simplicity with Platform Flexibility
One hardware, your choice of management platform

Architecture for the AI-Ready Secure Networks

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Introducing C9350 Series

New Hardware launch

17.18.1

Higher Bandwidth
1.3 TERABYTES

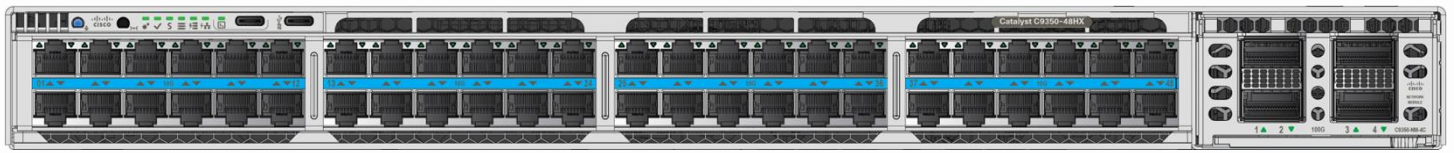
Cisco IOS XE

X86 CPU

Flexible Speeds
10M/100M/1/2.5/5/10/25/50/100G

Silicon One A100

Higher Scale
4 X MAC Scale
4 X ACL Scale
6 X Route Scale



Advanced Security
Crypto-Ready*, PQC Resistant

Highly Resilient
NG-StackWise, StackPower,
Redundant PS/Fan's & xFSU*

48 x mGig & 10G + 90W PoE

Flexible Uplink Options

Smarter & Intelligent
Enh. App-Hosting, Unified
Management

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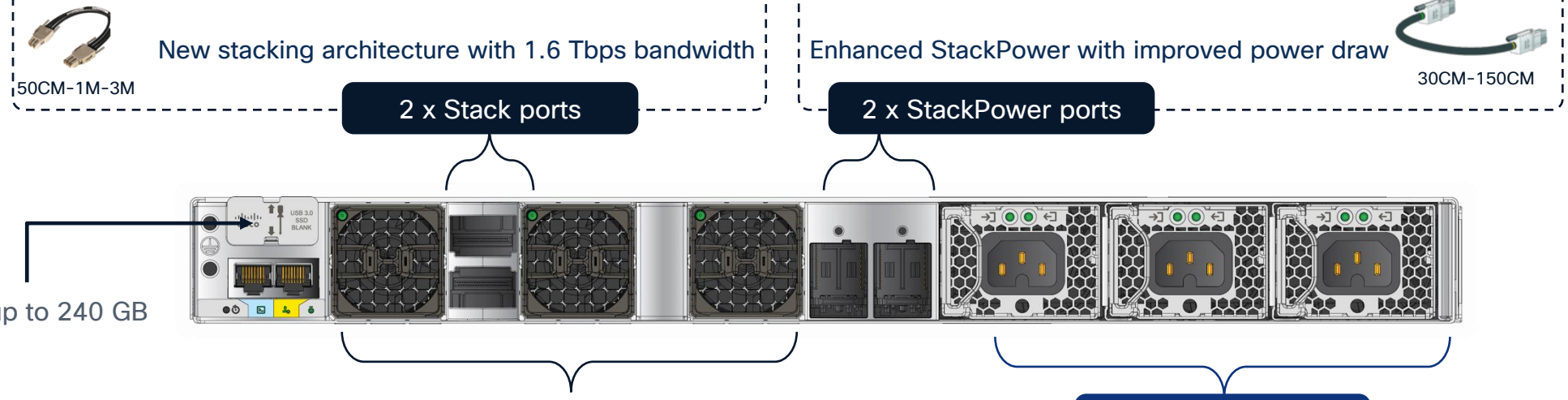
Introducing C9350

Re-designed for flexibility



*Applicable for the data only skus

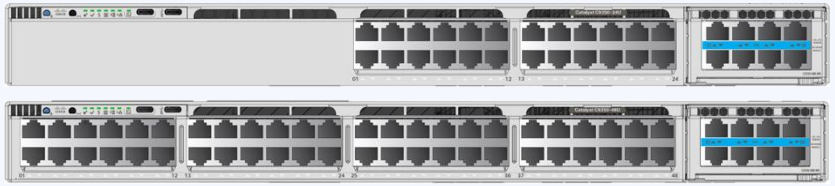
Fan Options for Flexible Deployments

Up to 4800 Watts.
Highest Power Budget in the Industry

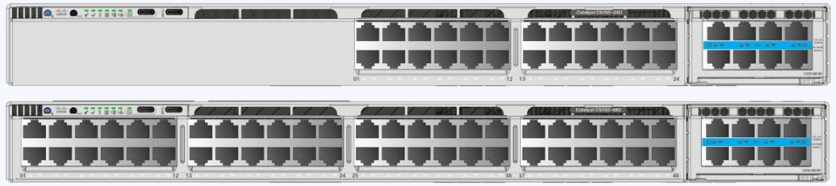
Cold redundant mode ‘hibernates’ redundant power supply when power requirement is low <5W consumption

Cisco 9350 Series

Gigabit SKUs



C9350-24P/48P
24/48x 1G/100M/10M copper
30W PoE+



C9350-24U/48U
24/48x 1G/100M/10M copper
60W UPoE

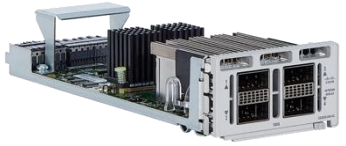
C9350-24T/48T
24/48x 1G/100M/10M copper
Data only

MultiGigabit SKUs

C9350-48HX
48x 10G mGig
90W UPOE+

C9350-48TX
24/48x 10G mGig
Data only

Modular Uplink 50G at access



C9350-NM-4C
4x40/100G

C9350-NM-2C
2x40/100G

C9350-NM-8Y
8x10/25G or 4x50G

Note: Uplinks/PSU's/Stack Cables are not backward compatible with C9300(X) series

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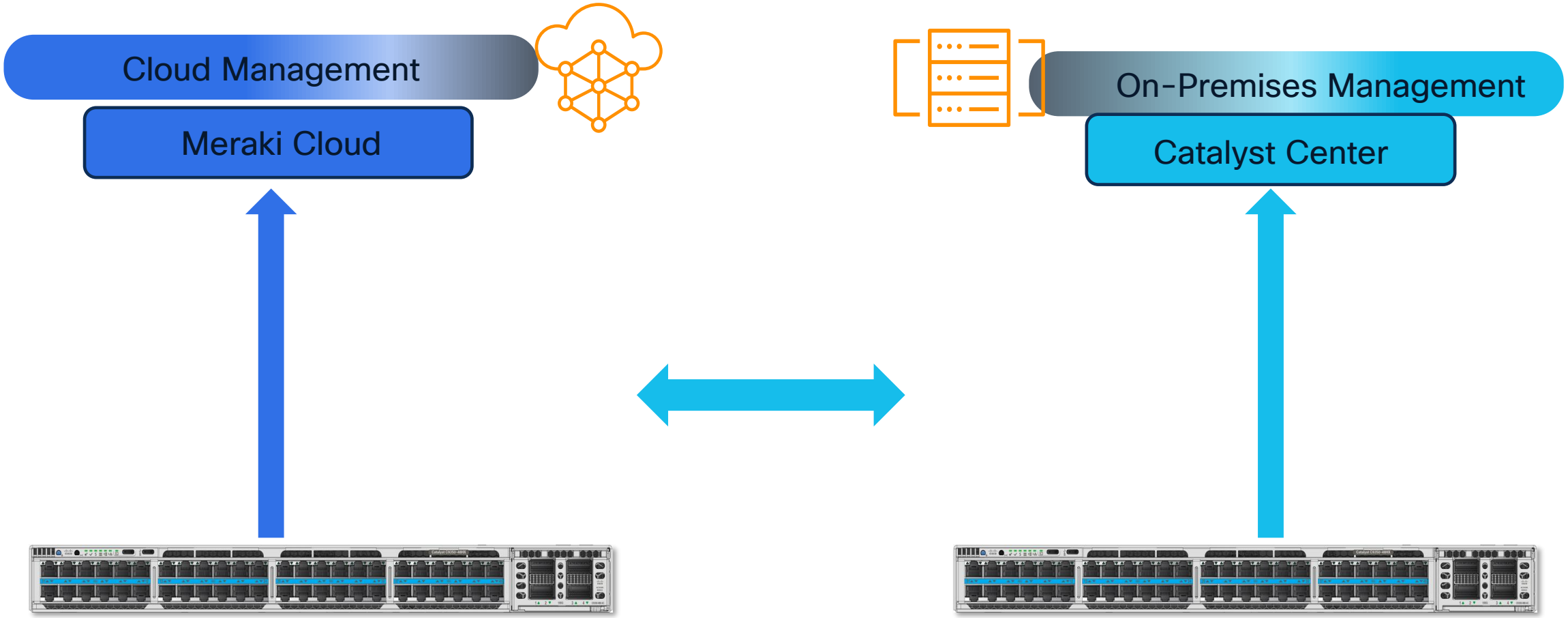
Unified Experience: The New out-of-box Experience

Effortless Onboarding: Catalyst **or** Meraki mode**, hands-free!**



One box, your choice, hands free
No CLI conversion or -M SKUs needed!

Single Unified Product

```
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valid license isoobnd0: entered allmulticast mode
 not permitted aoobnd0: entered promiscuous mode
nd may result inmgmtbr: port 1(oobnd0) entered blocking state

fees charged tmgmtbr: port 1(oobnd0) entered forwarding state
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```
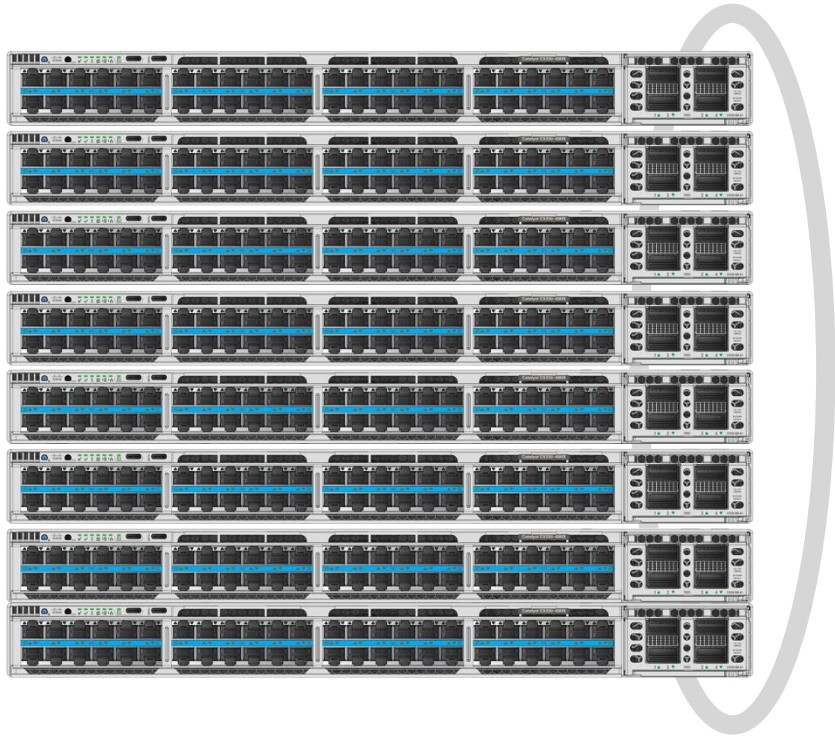

Secure Shell Xterm Zmodem ZOC2505_r07r12-ts0104.log

Cisco C9350 Series Switches

New stacking architecture for the new generation of campus access

Redesigned stacking architecture from the ground-up for the new generation of access switches.



- NEW 1.6T Guaranteed Stacking bandwidth
- NEW User friendly Stacking design
- NEW Isolated bandwidth loss in event of failure
- NEW Enhanced Stackpower
  More power draw per cable

Standards-based Ethernet Stacking Architecture

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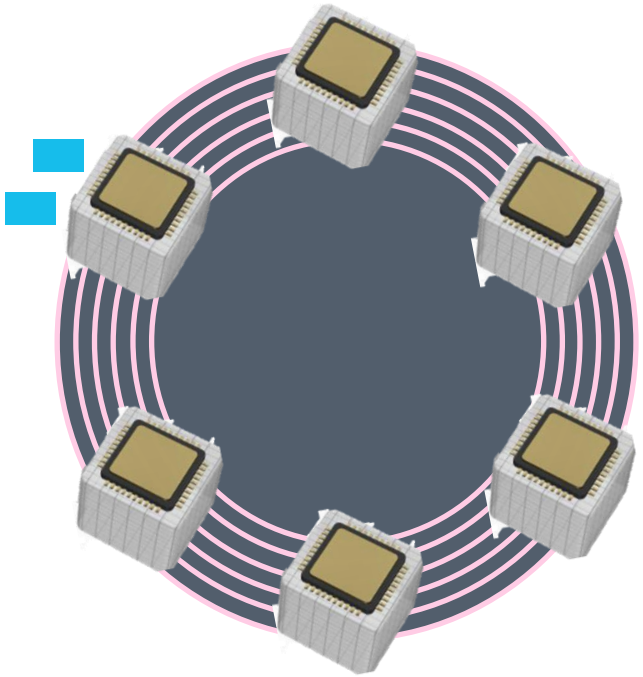
New Architecture for StackWise

Example – 6-member stack

Current StackWise architecture

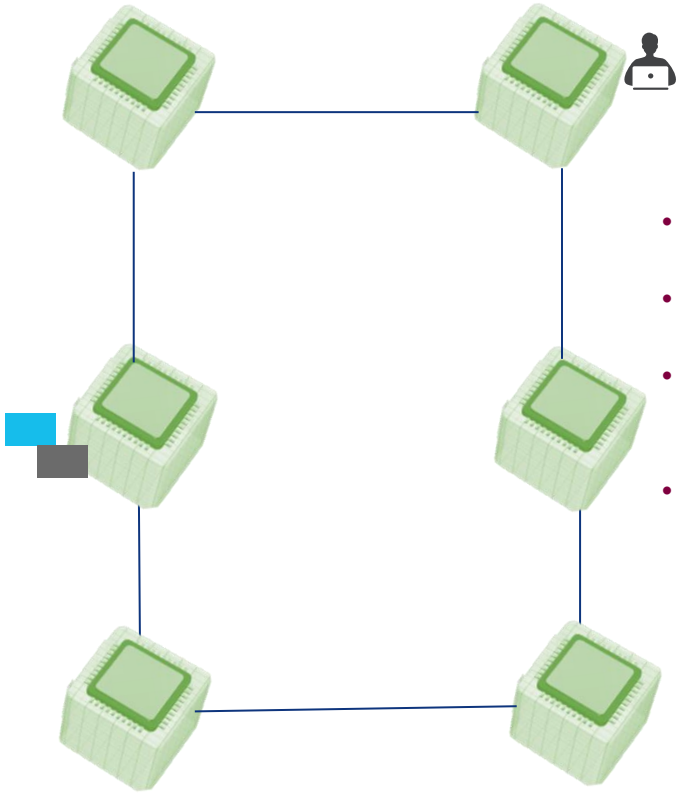
Ring-based stacking



- Spatial Re-Use Algorithm
- Best Effort Bandwidth
- Non-Flexible Cabling Configuration

Next Generation StackWise architecture

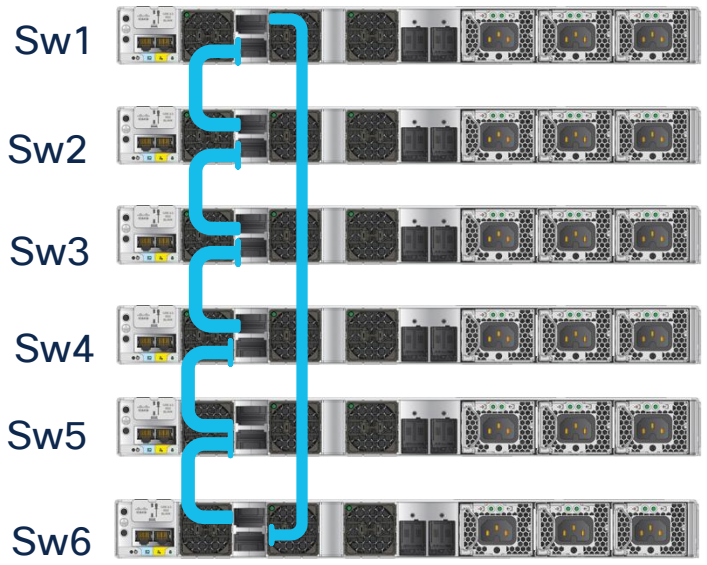
Standard SPF/VXLAN based stacking



- Flexible Cabling Design
- Guaranteed Bandwidth
- Based on Proven L3 SPF Algorithm & VXLAN
- ECMP & Low Latency

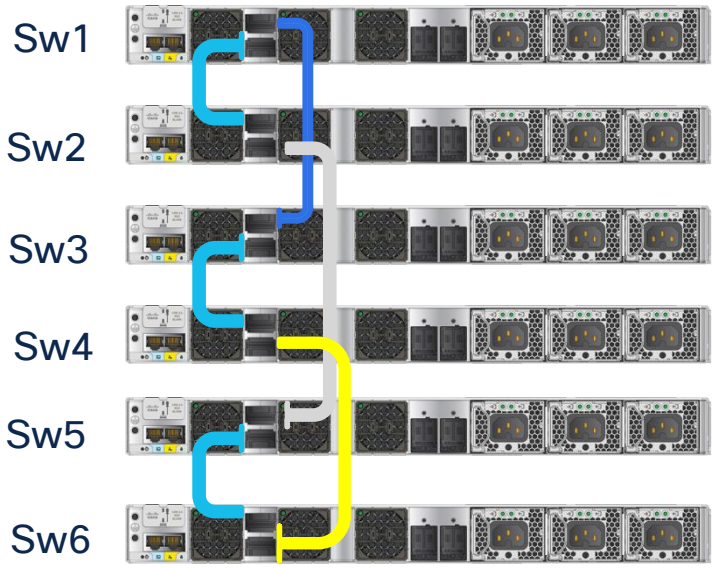
Ensures minimal latency, high throughput, and consistent Packet forwarding

Cisco C9350 StackWise Configurations options

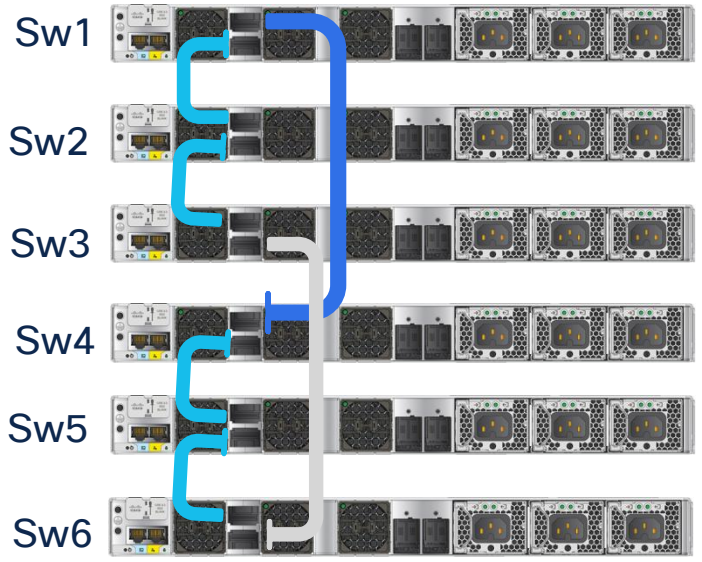


Typical Stack Cables Configurations

Sw1 Port1- Sw2 Port0
Sw2 Port1- Sw3 Port0
Sw3 Port1- Sw4 Port0
Sw4 Port1- Sw5 Port0
Sw5 Port1- Sw6 Port0
Sw6 Port1- Sw1 Port0



Sw1 Port0- Sw3 Port0
Sw1 Port1- Sw2 Port0
Sw2 Port1- Sw5 Port0
Sw3 Port1- Sw4 Port0
Sw4 Port1- Sw6 Port1
Sw5 Port1- Sw6 Port0



Sw1 Port0- Sw4 Port0
Sw1 Port1- Sw2 Port0
Sw2 Port1- Sw3 Port0
Sw3 Port1- Sw6 Port1
Sw4 Port1- Sw5 Port0
Sw5 Port1- Sw6 Port0

As stack grows, it provides greater flexibility in connecting cables in different configurations with shorter stack cables. No restrictions on how or where you connect to form a full ring.

Considering 6 x C9350 Switches in Stack

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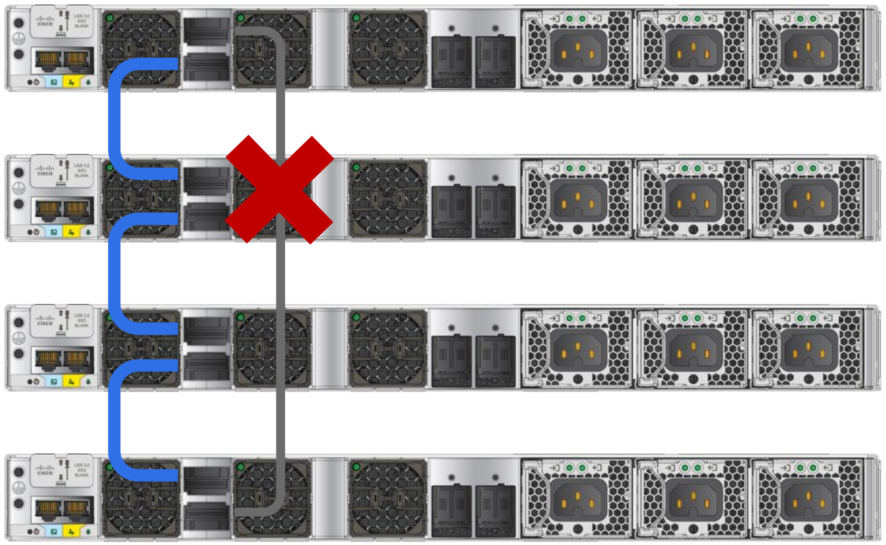
Enhanced stacking architecture

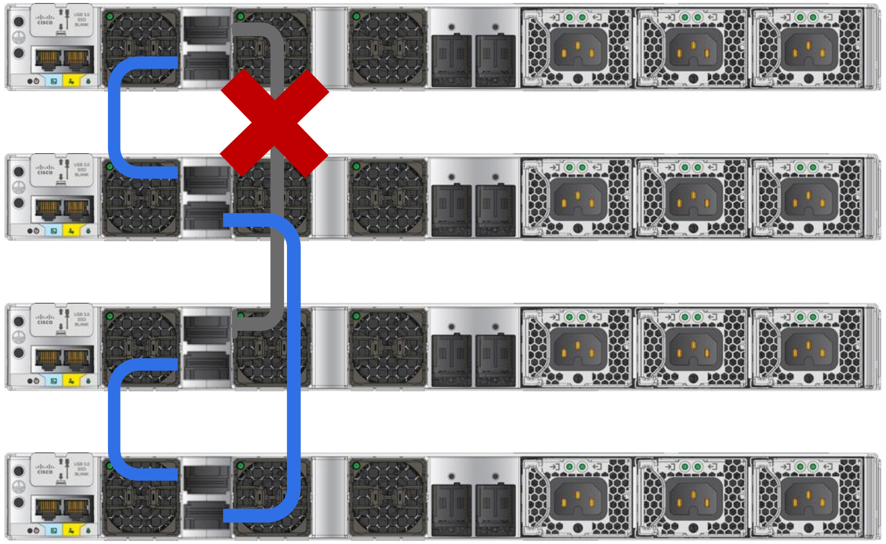
Failure handling

Current StackWise architecture



Packets are fragmented and load-balanced between stack ports, a single failure will effectively **halve the bandwidth for the full stack.**

Next Generation StackWise architecture

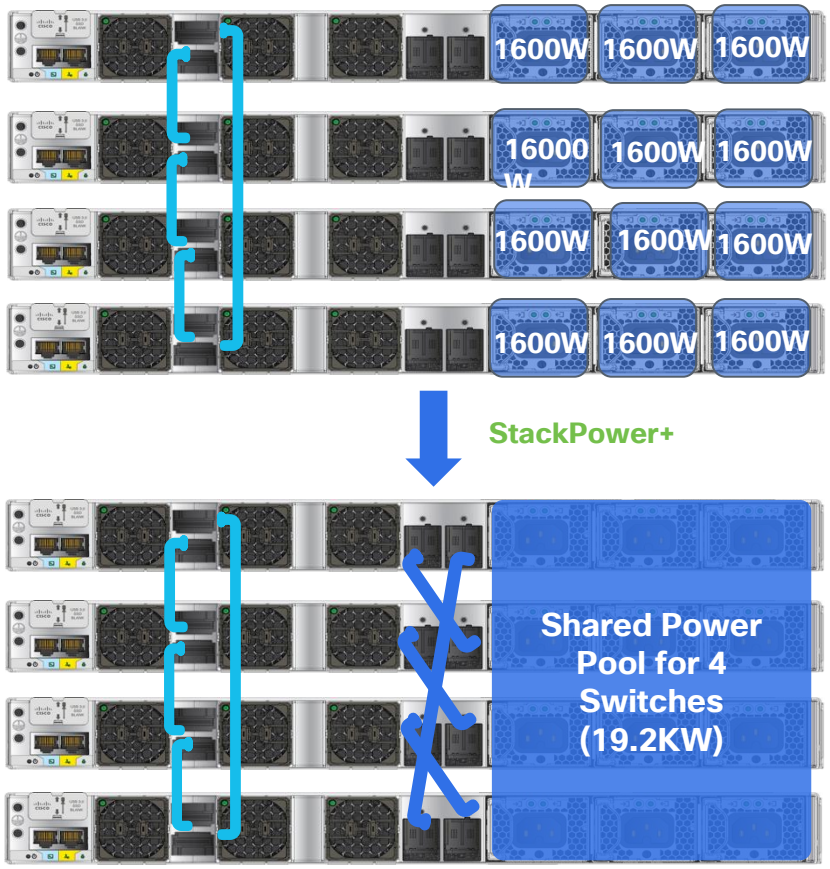


Switch 1 to 3 bandwidth is halved. **Other switches operate at full bandwidth.**

```
Switch#sh switch stack-bandwidth
                  Stack       Current
Switch#   Role       Bandwidth   State
--------------------------------------
*1        Active       800G       Ready
 2        Standby     1600G       Ready
 3        Member       800G       Ready
 4        Member      1600G       Ready
```

A link failure only affects bandwidth for directly connected switches, all other switches operate at full bandwidth

Cisco C9350 Series – Enhanced StackPower+



New Stack Cables Capable of Handling **Higher Current** (55A)

Enhanced **Stackport Circuitry** for reliable power distribution

Support for up to **4 Switches** in a single StackPower Group

Zero-Footprint RPS
Built-in power redundancy, without extra hardware

Power Pooling
Shared power across switches for efficient use

1+N Redundancy
Inline PSU backup for higher reliability and uptime

Priority Power Allocation
with unused PSUs on standby

StackPower+ delivers over 30% more power via StackPower ports

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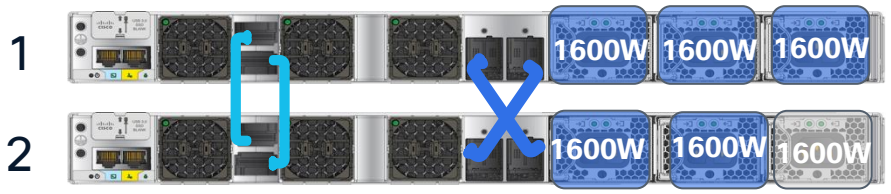
Cisco C9350 Series Smart Switches

Enhanced Power Designs with StackPower+

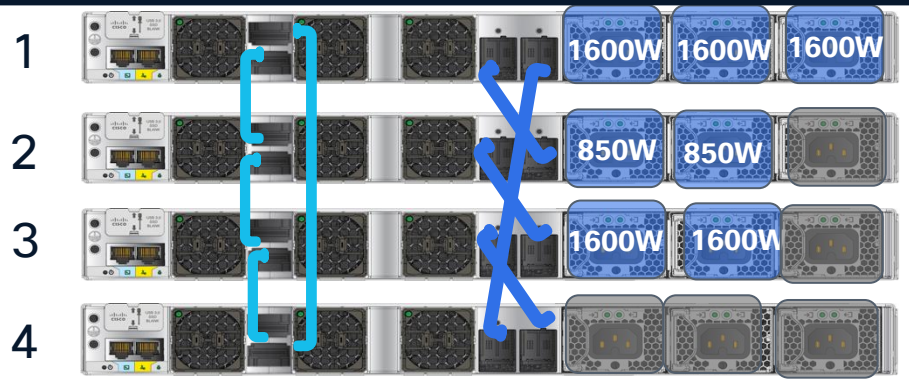
Scenario 1: No redundant power supply on second switch



	Input Power	PoE Required	System Power
C9350-48HX	3 x1600W 4800W	90W x 48 4320W	480W
C9350-48U	3 x1600W 4800W	60W x48 2880W	280W

Outcome N+1 redundancy across entire stack without fully loading power supplies.

Scenario 2: One switch with no power supply



	Input Power	PoE Required	System Power
C9350-48HX	3 x1600W 4800W	90W x 32 2880W	480W
C9350-48P	2 x 850W 1700W	30W x24 720W	280W
C9350-48U	2 x 1600W 3200W	60W x 48 2880W	280W
C9350-24U	0	24 x 60W 1440W	260W

Outcome Powering switch and providing PoE without local PSU

Reliable, Uninterrupted Power with StackPower+

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C9350 Smart Switch Reload Enhanced

Improving **Boot times** with Kernal-exec Reload

C9350# `reload`

- Performs a kexec-based reload by loading the IOS XE kernel directly, bypassing ROMMON
- Use for normal reloads when no firmware/ROMMON reinitialization is required – ***saves ~44+ sec***

C9350# `reload firmware`

- Forces a full ROMMON based reload with complete hardware and firmware bring-up
- Use when ROMMON, FPGA, MCU, or PHY components need full reinitialization

Tested Boot Time*

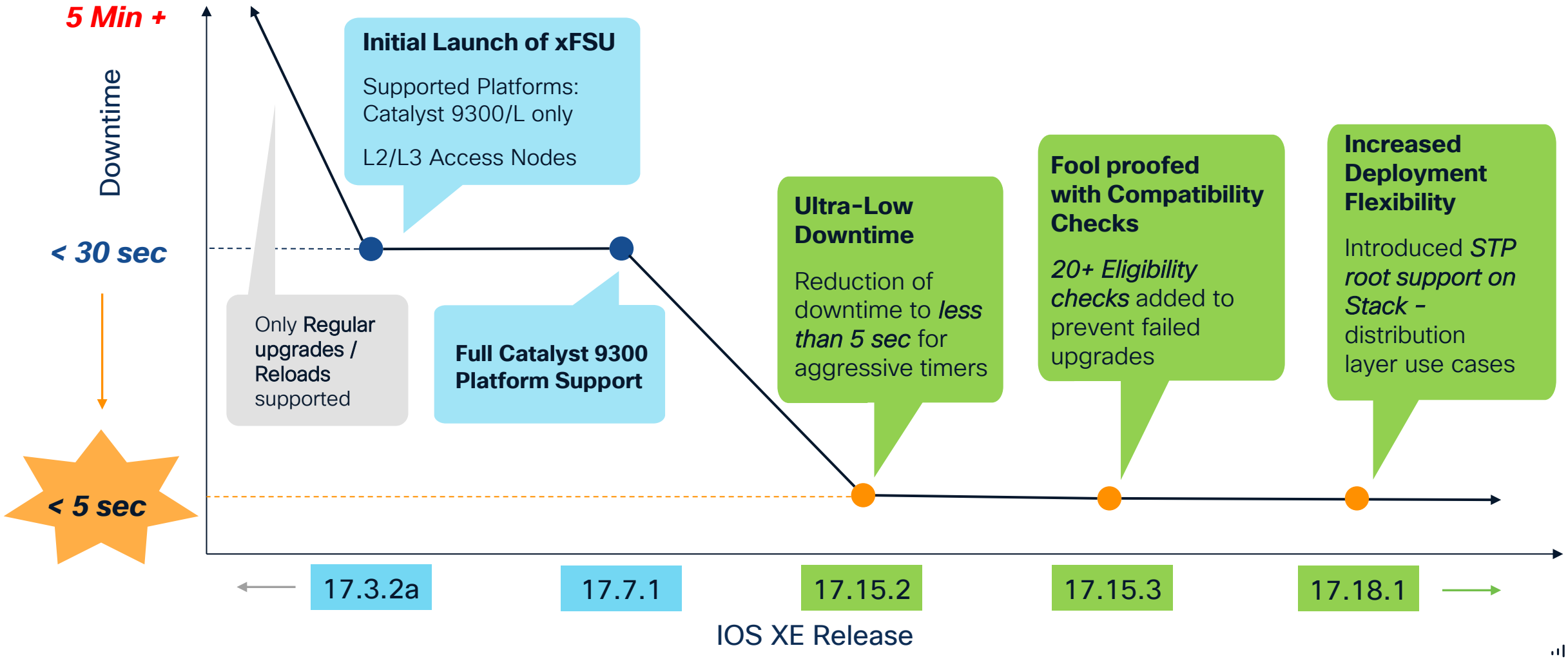
*Boot Time – Timer starts from “reload” to timer ends at “Press RETURN”

Reload	Reload Firmware	**Reload**	Reload Firmware	Reload
C9350 – 24/48/ U/P/T		C9350 – 24/48/ HX/TX		Catalyst 9300X
71 sec	121 sec	**78 sec**	157 sec	197 sec

Default `reload` : **Catalyst 9300** → ROMMON boot | **Cisco C9350** → Kexec based boot
Use `reload firmware` on **Cisco C9350** for ROMMON boot

xFSU Evolution on Catalyst 9300 Series

From **Downtime Reduction** to more **Flexibility**



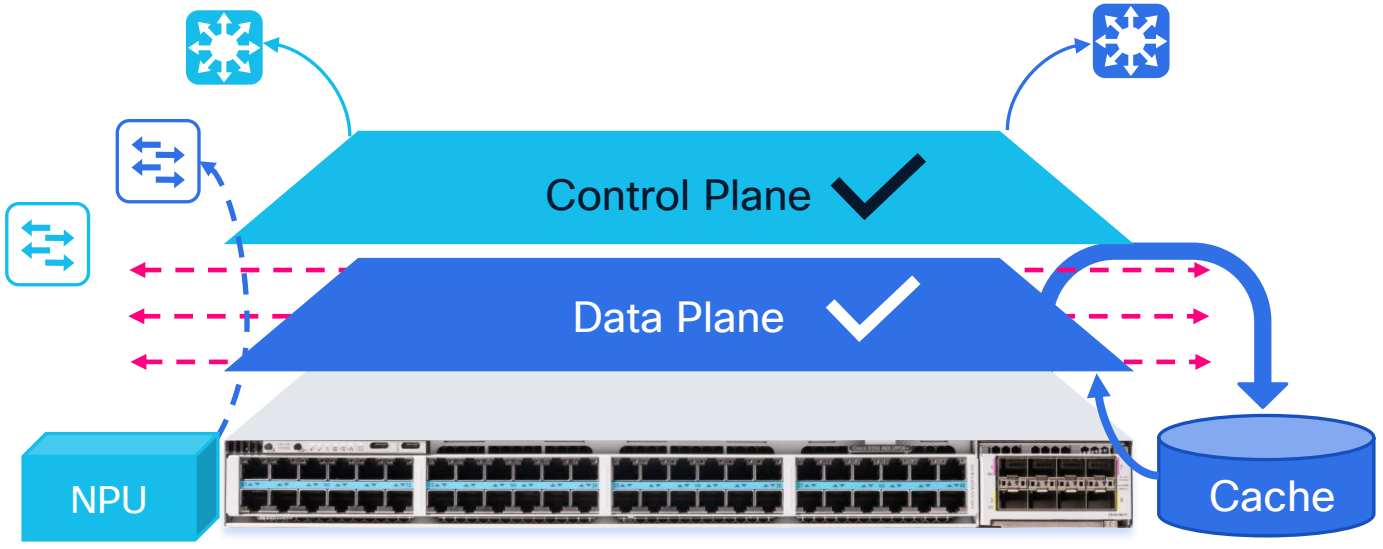
The Next Gen xFSU on C9350 Smart Switches

Achieving Sub-seconds downtime for upgrades and reloads

Upcoming Support
Standalone IOS XE 26.1.1
Stack CY26Q3

- Control Plane handles graceful restart
- Selective non-GR protocols stay active via offload

- Control Plane upgrades from ***IOS XE V1 → V2***
- Data Plane keeps forwarding using V1 FIB entries



- Control Plane upgraded to ***IOS XE V2***
- All ASIC TCAM/Register entries are ***cached*** in the memory
- Data Plane goes for an upgrade ***V1 → V2***
- ***Selective*** update on registers based on the enabled features
- Data Plane upgraded to ***IOS XE V2***

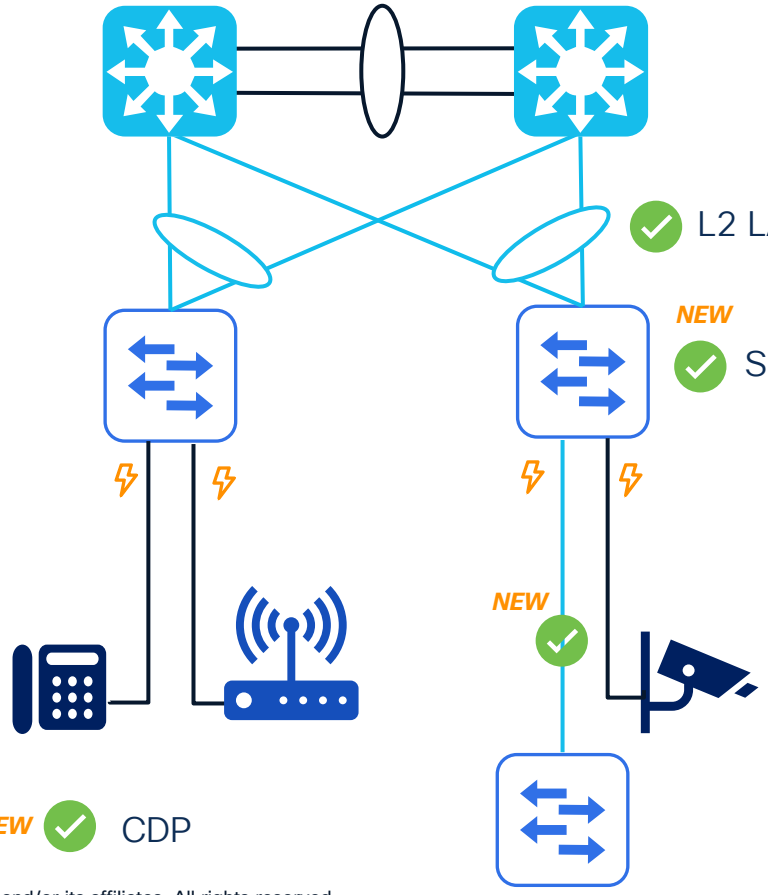
Total Traffic Downtime
< 1 sec

Flexible xFSU Implementation (Standalone)

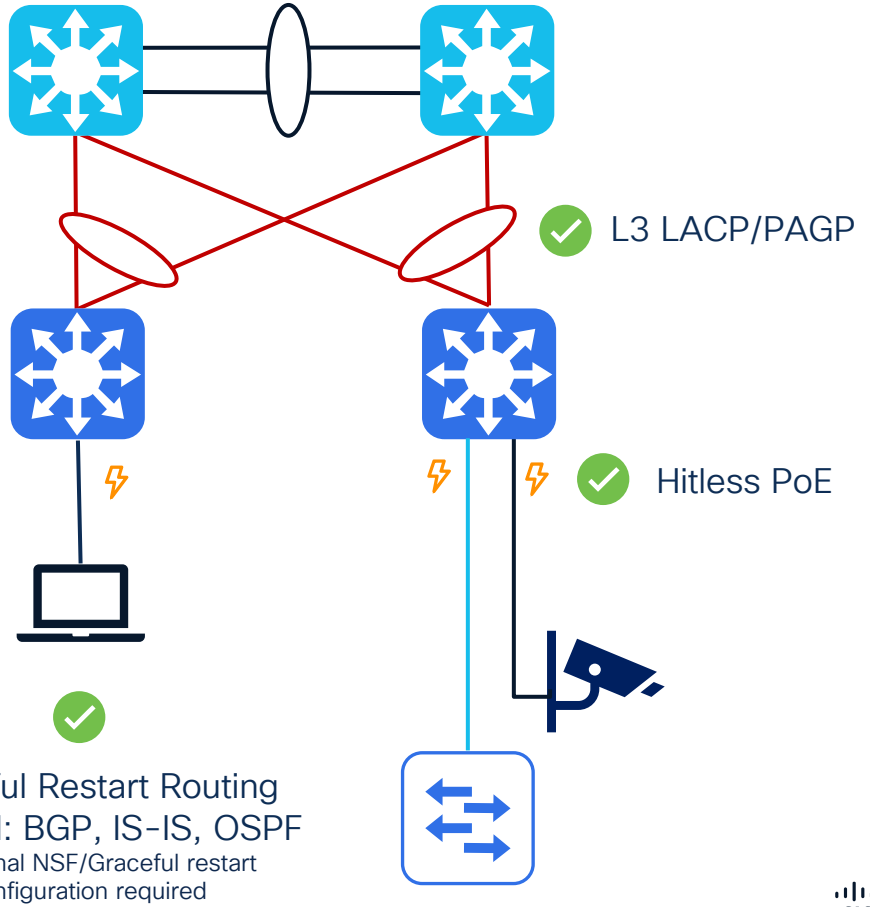
No Topology Modification Needed

Upcoming Support
Standalone IOS XE 26.1.1
Stack CY26Q3

L2 Access/Distribution Node



L3 Routed Access Node



Graceful Restart Routing Protocol: BGP, IS-IS, OSPF
Additional NSF/Graceful restart configuration required

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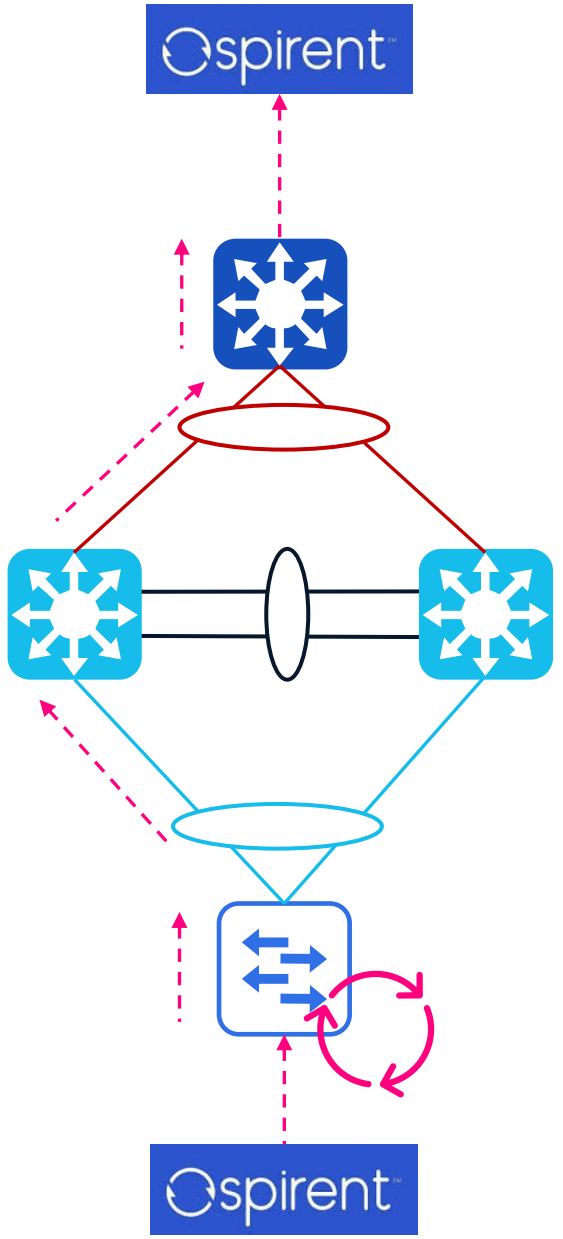
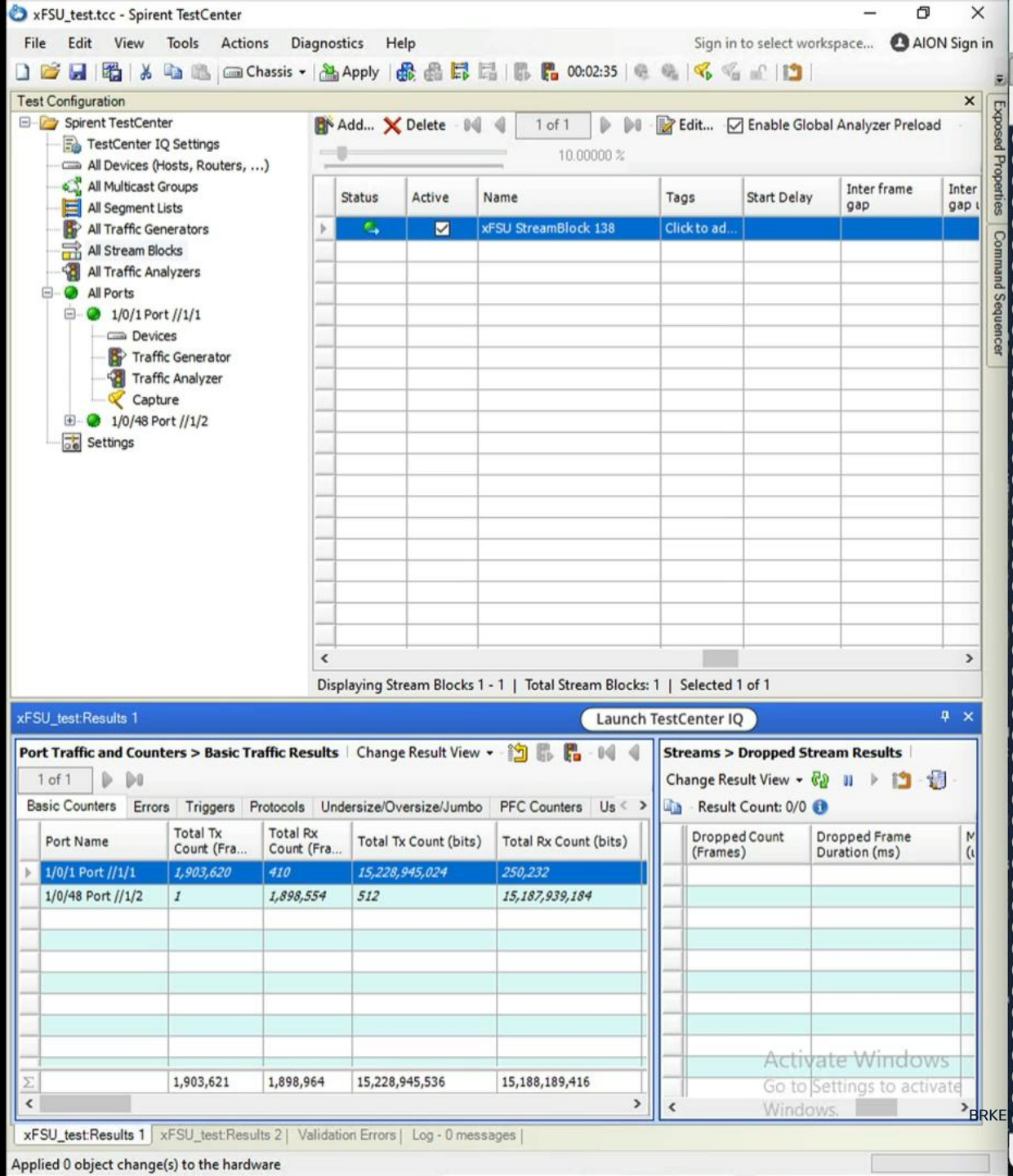
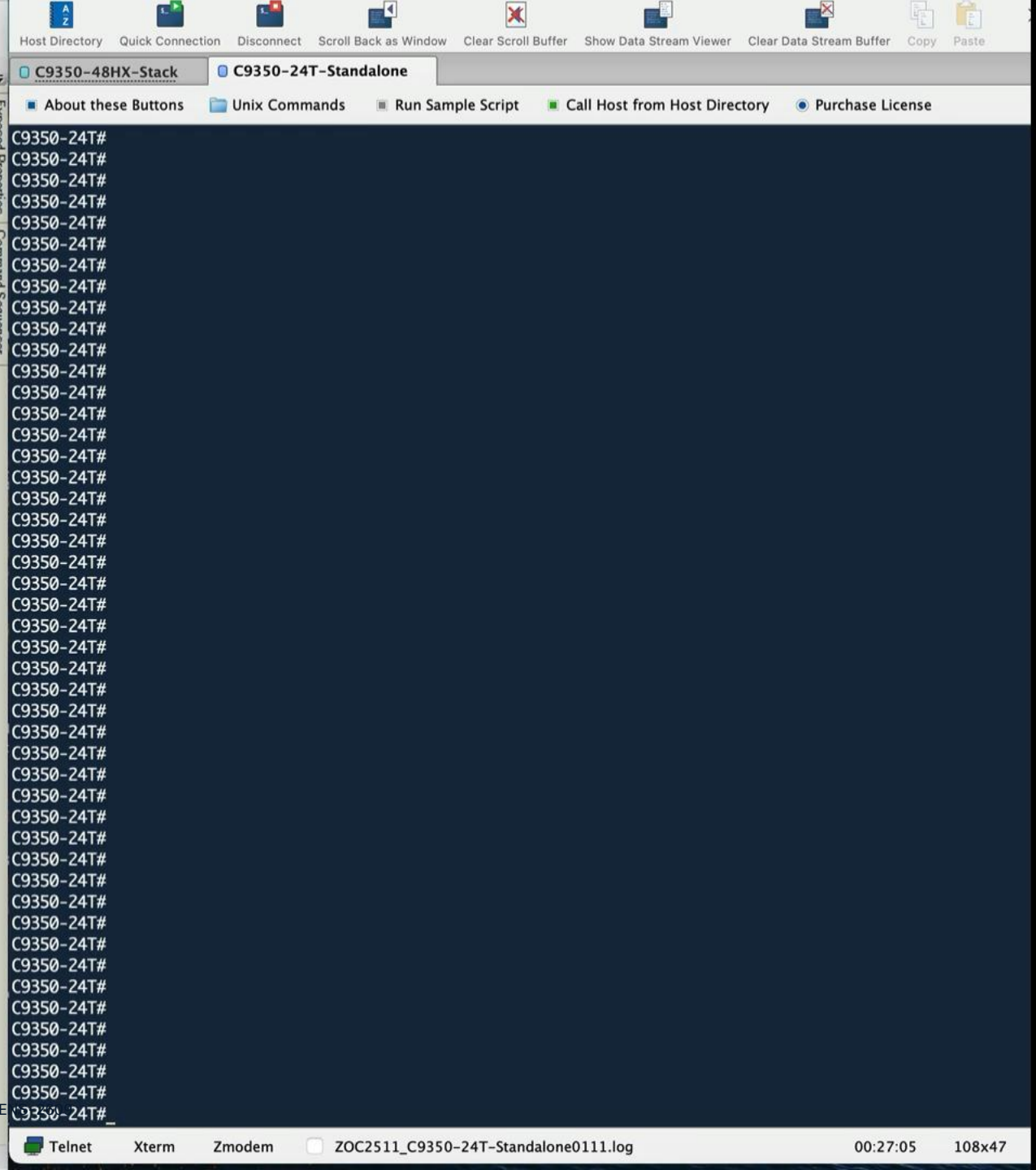
xFSU Demo Topology

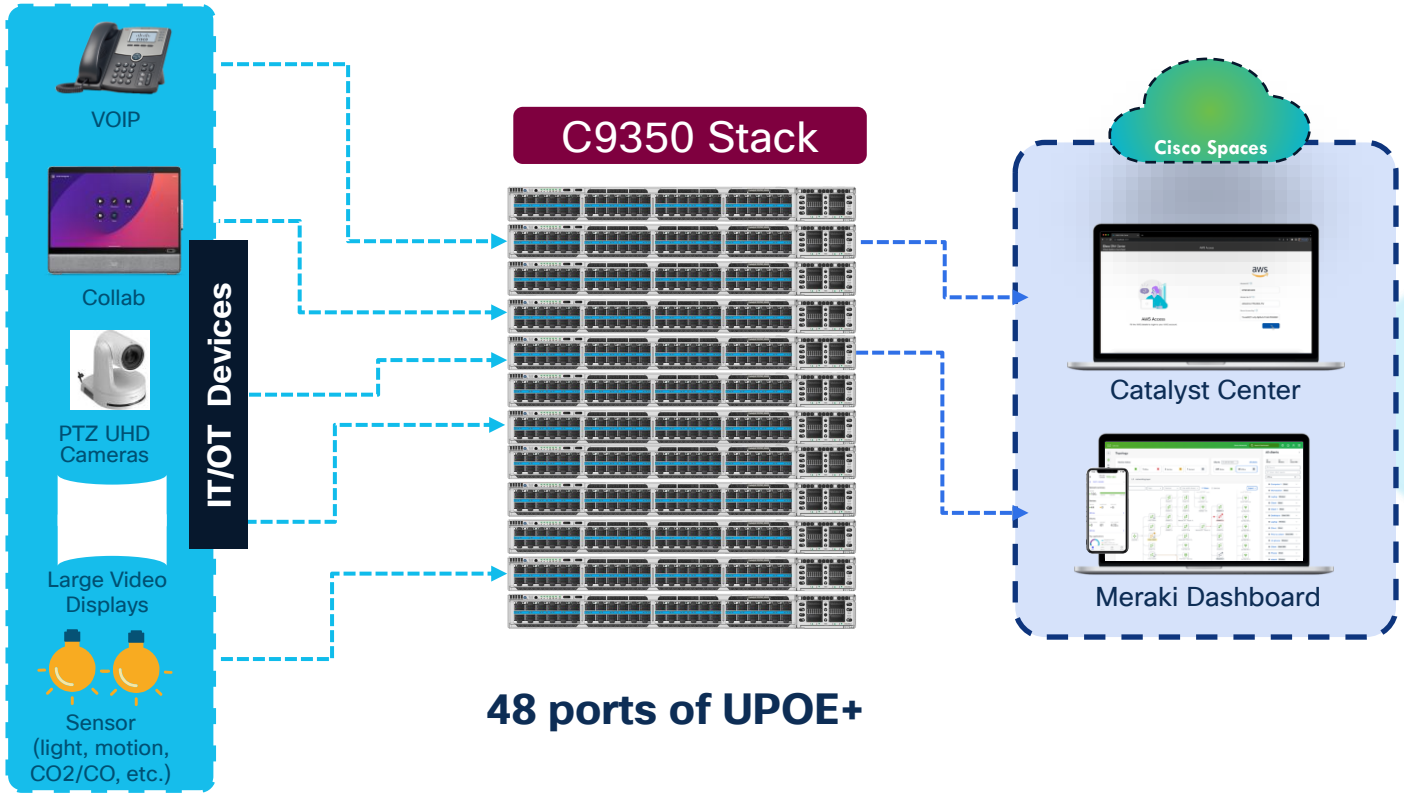



xFSU_test.tcc - Spirent TestCenter
File Edit View Tools Actions Diagnostics Help
Sign in to select workspace...
AION Sign in
Chassis
Apply
00:02:35
Test Configuration
Spirent TestCenter
TestCenter IQ Settings
All Devices (Hosts, Routers, ...)
All Multicast Groups
All Segment Lists
All Traffic Generators
All Stream Blocks
All Traffic Analyzers
All Ports
1/0/1 Port //1/1
Devices
Traffic Generator
Traffic Analyzer
Capture
1/0/48 Port //1/2
Settings
Add...
Delete
1 of 1
Edit...
Enable Global Analyzer Preload
10.00000 %
Status
Active
Name
Tags
Start Delay
Inter frame gap
xFSU StreamBlock 138
Click to ad...
Displaying Stream Blocks 1 - 1 | Total Stream Blocks: 1 | Selected 1 of 1
xFSU_test:Results 1
Launch TestCenter IQ
Port Traffic and Counters > Basic Traffic Results
Change Result View
Basic Counters
Errors
Triggers
Protocols
Undersize/Oversize/Jumbo
PFC Counters
Port Name
Total Tx Count (Fra...
Total Rx Count (Fra...
Total Tx Count (bits)
Total Rx Count (bits)
1/0/1 Port //1/1
1,903,620
410
15,228,945,024
250,232
1/0/48 Port //1/2
1
1,898,554
512
15,187,939,184
1,903,621
1,898,964
15,228,945,536
15,188,189,416
Streams > Dropped Stream Results
Result Count: 0/0
Dropped Count (Frames)
Dropped Frame Duration (ms)
xFSU_test:Results 1
xFSU_test:Results 2
Validation Errors
Log - 0 messages
Applied 0 object change(s) to the hardware
Exposed Properties
Command Sequencer

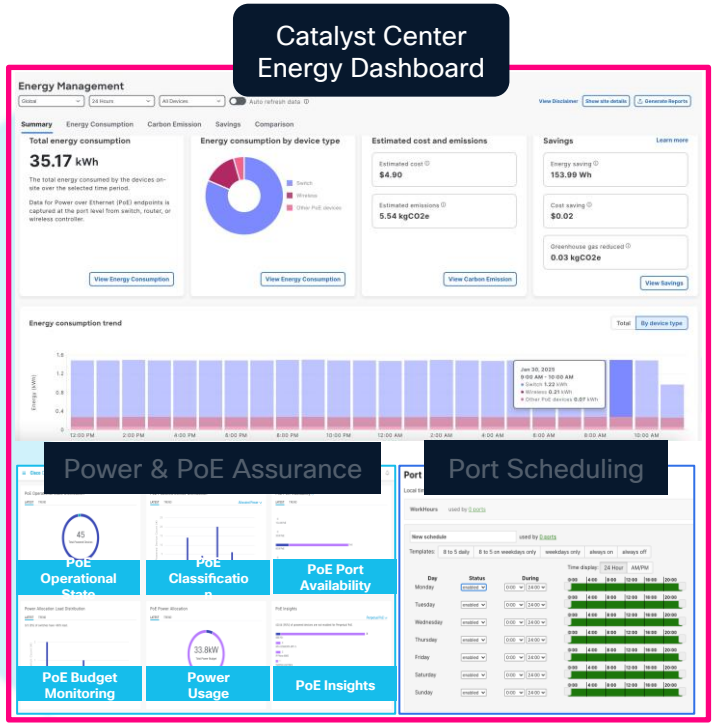

Host Directory
Quick Connection
Disconnect
Scroll Back as Window
Clear Scroll Buffer
Show Data Stream Viewer
Clear Data Stream Buffer
Copy
Paste
C9350-48HX-Stack
C9350-24T-Standalone
About these Buttons
Unix Commands
Run Sample Script
Call Host from Host Directory
Purchase License
C9350-24T#
Telnet
Xterm
Zmodem
ZOC2511_C9350-24T-Standalone0111.log
00:27:05
108x47

Scaled up for Smart Buildings

Density & Resiliency



48 ports of UPOE+



Connect → **Classify** → **Secure** → **Resiliency**

- Extended connectivity with SD-Access Extended node solutions
- CoAP to access lights and other sensors for lighting control

- Device classification and profiling with ISE
- Emerging standards support for access control (ex: Manufacturers Usage Description [MUD])

- Secure Virtual networks and segmentation of IoT from IT with SD-Access
- Scalable group-based policies

- PoE HA – Perpetual PoE, Fast PoE, 2-event classification
- Container-hosted Cloud-tethered apps on open Cisco IOS XE Software

End-to-end solution managed by central IT team that lowers TCO

Cisco 9350 – Energy Management

With SmartPower

Monitor **Optimize**

Power Optimization 0 to 100%

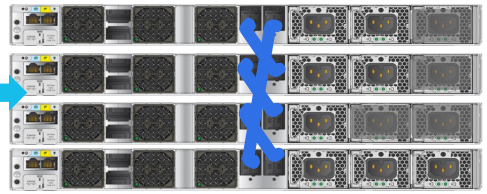
Level 1	Shut off
Level 2	Hibernation*
Level 3	Deep sleep*
Level 4	NA
Level 5	NA
Level 6	NA
Level 7	Auto off – LED, PSU and SFP
Level 8	Auto off – LED and SFP
Level 9	Auto off – LED
Level 10	Full Power

1 Global control for device optimization

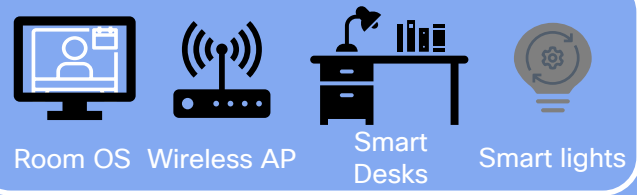
Example: Set SmartPower level to 7

Catalyst Center/ Meraki Cloud – Policy Management*

Auto-Off PSU - StackPower



Device integrations*



Negotiate over LLDP

2 Endpoint integrations with switch

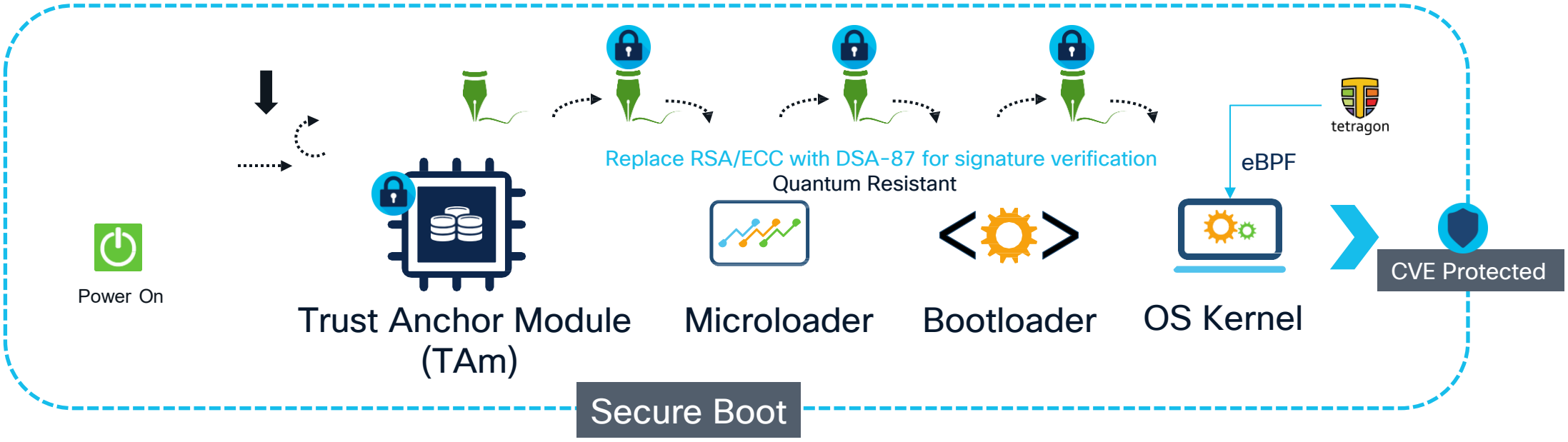
Example: Set SmartPower level for IP phone to 7

IP Phone integration available today

Achieving NetZero Goals with Intelligent SmartPower Framework

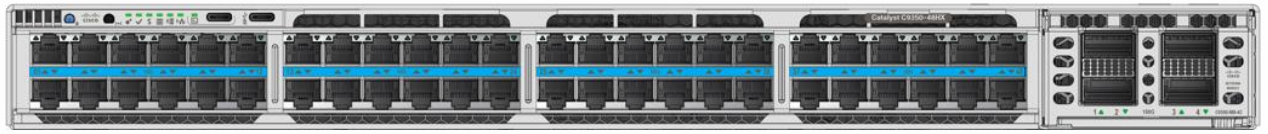
cisco

Securing the Switch – Hardware to Software



Quantum Resistant Hardware & Software

Vulnerability Protection w/Compensating Control*



C9350 Enhanced Application-Hosting

Unlocking emerging use cases

App-Hosting Deployment & Management

Catalyst Center

Infrastructure to host multiple Cisco Signed Applications

USB 3.0 120/240G

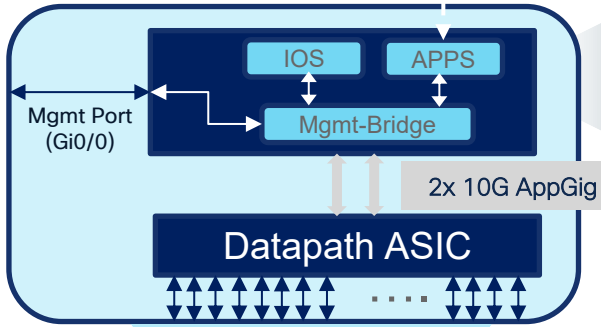
External SSD

16G DDR5 RAM

8GB for IOX

4C Gen12 2.4Ghz

4 vCPU for IOX



IT Operations & Security App's

WIRESHARK ThousandEyes Cisco DNA Spaces

kibana perfSONAR powered

3rd Party App Hosting (25+ certified apps)

2 x AppGig ports – 1/10G

App-hosting HA with Stacking (1+1)

2x App Memory | ≥13% faster[1] DDR5 | ≥35% faster[2] Gen12

Expanding capabilities for the next generation

cisco

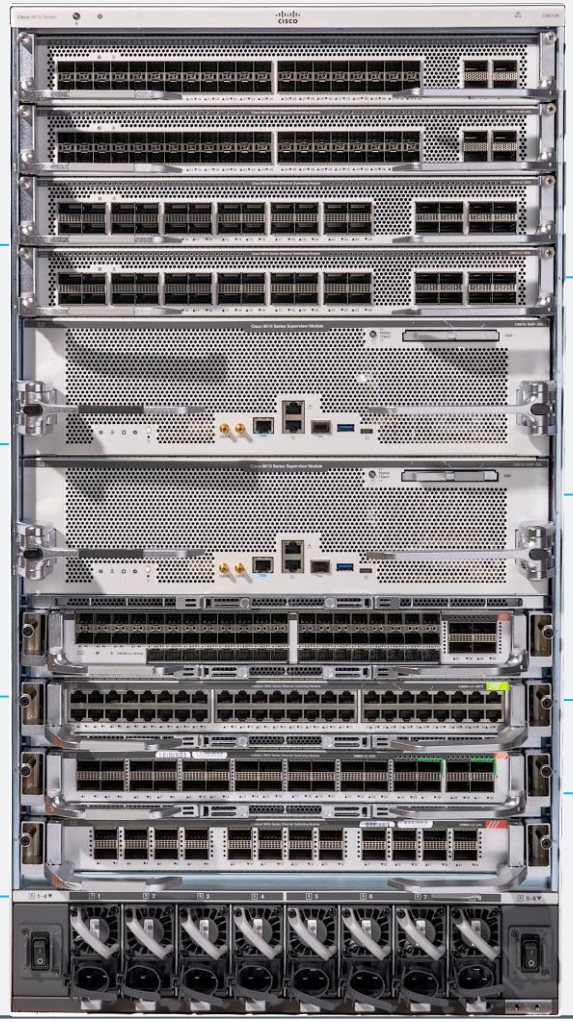
Cisco C9610R Chassis

Four serviceable fan trays in rear side

Built-in RFID (optional)

Blue Beacons (system, fan tray, sup, line cards)

Modular power supplies



8 line-card slots (1.25 RU)

2 supervisor slots (dedicated) (2.5 RU)

51.2 Tbps
System Bandwidth

Dimensions
(H x W x D inches)
31.47 x 17.4 x 26.1
(18RU)

Cisco C9610R Series Supervisors

Supervisor 3 and Supervisor 3 XL

Powered by Silicon One E100

C9610-SUP3 - E100

- 1M IPv4 Prefixes
- 768K Exact Match
- 256K Policies

25.6 Tbps (full duplex)	**4x K100/E100** + 1x Fabric ASIC
3.2 Tbps per slot	**8x Line Card** slots + **2x Supervisor** slots
8 core X86 CPU @ 2.5 GHz	**32GB** DDR4 DRAM
Built-in RFID	Copper and Fiber Mgmt ports
SATA SSD (Field Replacable)	1 x USB 3.0 storage 1x USB C console

Powered by Silicon One K100

C9610-SUP3XL - K100

- 2M IPv4 Prefixes
- 1.2M Exact Match
- 512K Policies

Cisco C9610R Support C9606R Line Cards

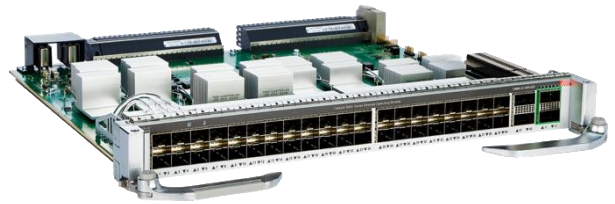
C9600-LC-24C – 100G/40G(fiber)

- 24 ports
- QSFP28/QSFP+
- 100G and 40G

17.18.2

C9600-LC-40YL4CD – 400G/200G*/100G/50G/40G/25G/10G (fiber)

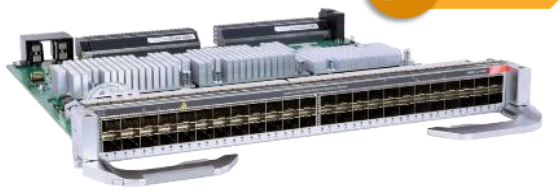
- 40+2+2 ports
- SFP56/QSFP56+/QSFPDD
- 400G,200G**,100G,50G,40G,25G, 10G and 1G*



C9600-LC-48YL – 50G/25G/10G/1G (fiber)

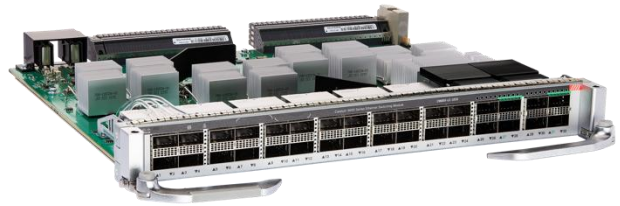
- 48 ports
- SFP56/SFP28/SFP+
- 50G,25G,10G,and 1G*

17.18.2



C9600X-LC-32CD – 400G/200G*/100G/40G(fiber)

- 30+2 ports
- QSFP28/QSFPDD
- Supports 400G,200G*,100G, and 40G



C9600-LC-48TX - mGig (copper)

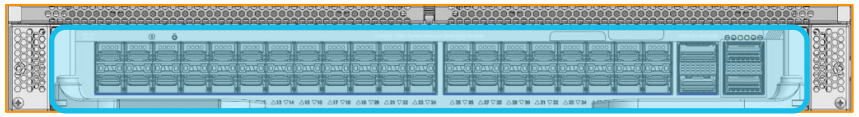
- 48 ports
- Copper 10G (NBASE-T/10BASE-T)
- 10G and 1G*

C9600X-LC-56YL4C - 100G/50G/40G/25G/10G (fiber)

- 56 50G+4 100G ports
- SFP56/QSFP28
- 100G, 50G, 40G, 25G, 10G and 1G*

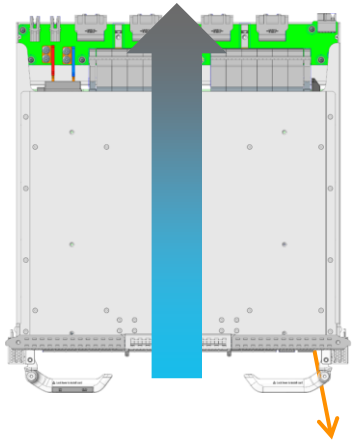
C9610-LC-ADPT

Adapter for C9606 linecards



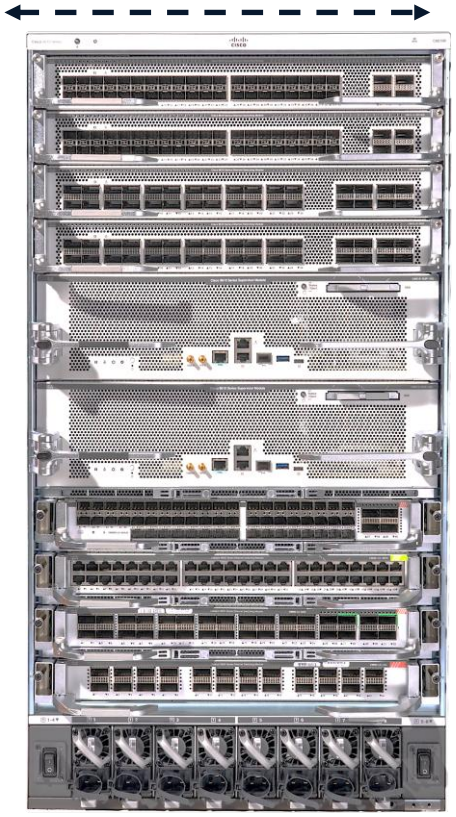
C9606 line-cards were 1RU form factor

1.25RU Adapter house the C9606 line-cards



C9606 line-cards were designed for left-to-right air flow

Adapter internally redirects airflow from front-to-back



- C9606 and C9610 have the same chassis width.
- No changes in **rack width** required

Backward Compatibility with C9606 LCs

Cisco C9610R Chassis

Reference

Port Density (Without breakout)

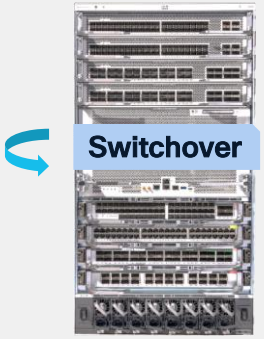
Port speed	Density with C9606 Sup 2	Density with C9610 Sup3/3XL
400G	8	**16**
200G	8**	**16****
100G	128	**256**
50G	224	**448**
40G	128	**256**
10/25G fiber	224	**448**
10G Copper	192	**384**
1G	8 (192 with Sup1)	**384***

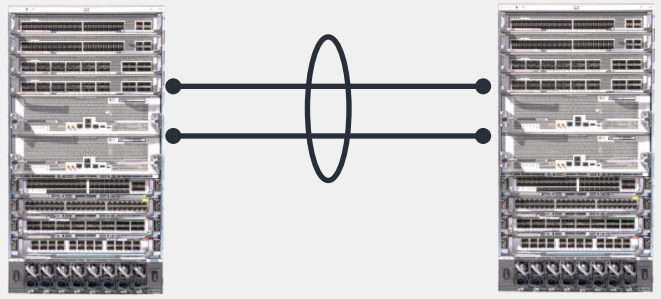
2X

cisco

Enterprise-Class High Availability

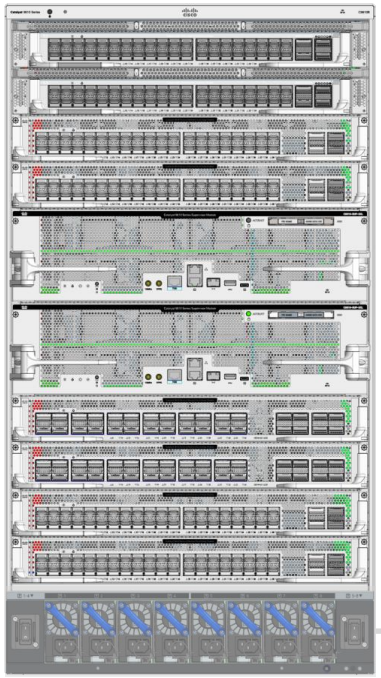
Protect business continuity

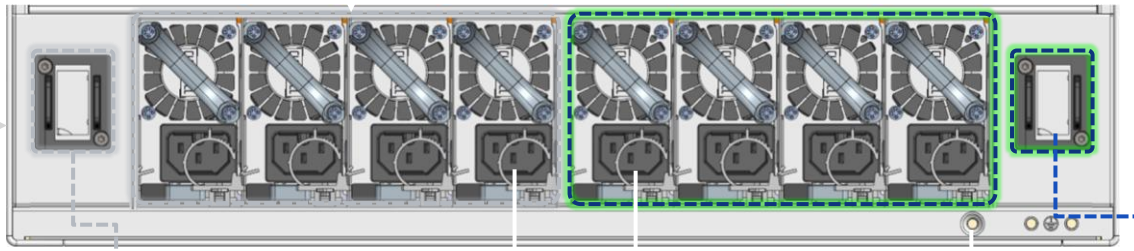




Physical redundancy	Stateful Switchover (SSO)	Non-Stop Forwarding (NSF)	In-Service Software Upgrade (ISSU)	Next Generation StackWise Virtual
Redundant hardware • Up to 8 Redundant power supplies • Up to 4 Redundant fan trays • Redundant supervisors	**Sub-second failover** • Between Supervisors in same chassis (≤ 5ms) • Between chassis with Next Generation StackWise Virtual (≤ 150ms)	**Resilient L3 topologies** • NSF support for OSPF, EIGRP, ISIS, BGP	**Minimize upgrade time** • SMU • ISSU • GIR	**Infrastructure resilience** • Multi-chassis EtherChannel (MEC) • Dynamic add/change Modules & Links 17.18.2

C9610R Power Supplies and FanTrays





Power Switch PSU 1 to 4

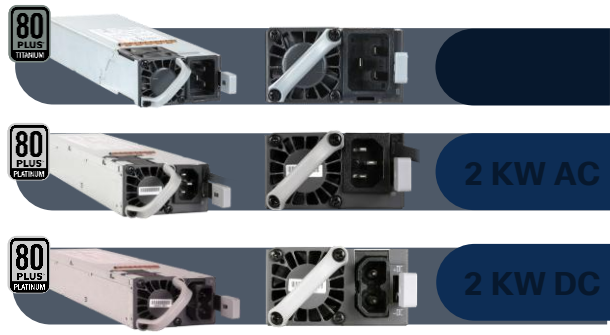
AC/DC Power Cord Input

Grounding Lug

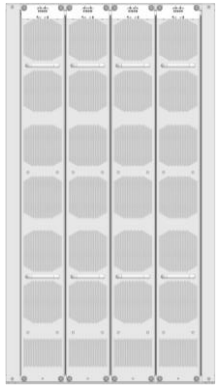
Power Switch PSU 5 to 8

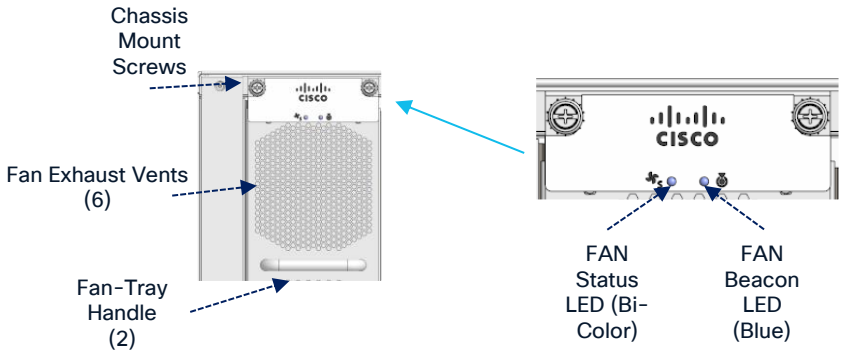
Same PSUs as C9606R (2KW AC/DC or 3KW AC)

Combined or Redundant mode (N+1 or **N+N**)



3KW – Titanium Rated
2KW – Platinum Rated





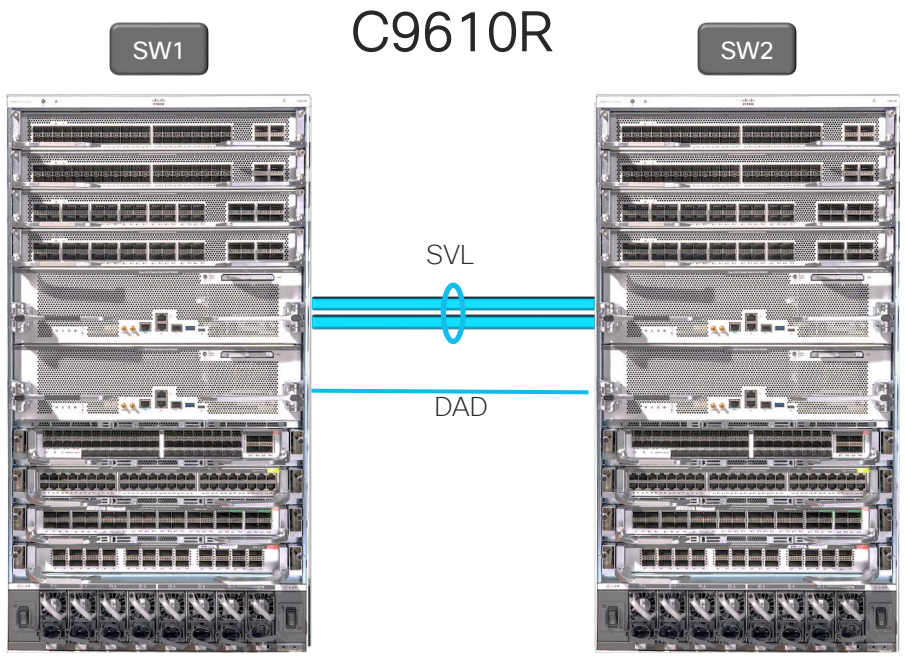
Front to back Airflow

N+ 1 Redundancy

Next Generation StackWise Virtual

17.18.2

Back panel (C9350) and front-panel (C9610) stacking use the same implementation.



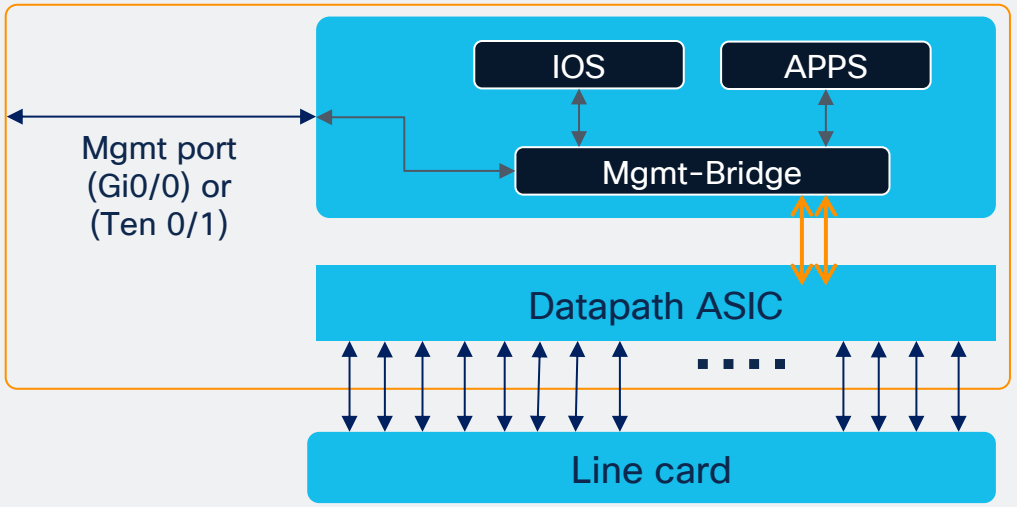
Standard Ethernet Based (VXLAN)

- Use shortest-path-first (SFP – ISIS)
- Dynamically adding and removing
  - SVL members
  - DAD links

- Simplify Operations by Eliminating STP, FHRP and Multiple Touch-Points
- Double Bandwidth & Reduce Latency with Active-Active Multi-chassis EtherChannel (MEC)
- Minimizes Convergence with Sub-second Stateful and Graceful Recovery (SSO/NSF)

17.18.2

Enhanced app-hosting infrastructure on Cisco 9610-Sup 3/XL



Internal connection
2x 10G AppGigEthernet Ports

NEW

External connection
Management port (gi0/0 or Ten 0/1)

8x Core Intel Gen10 Xeon Series CPU

32G DDR4 RAM

App hosting
4 vCPU + 8G

cisco

Cisco 9610 – Supervisor engine 3

Switch Database Management (SDM) template

User-customizable template
Allows customizable ACL TCAM resources

Cisco®
C9610 Series

Default template (Core)
Maximizes system resources for Layer 3 unicast and multicast routes

Custom template*
Provide flexibility for customizing TCAM space for specific requirements

C9610 Default SDM Template

Reference

This is the Core template.

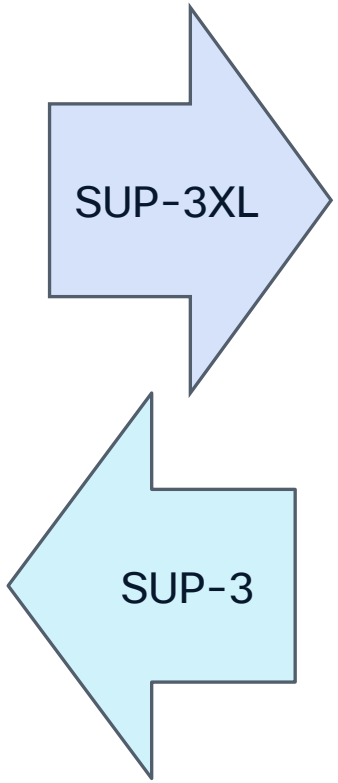
Feature-Name	Reserved-Scale
Unicast MAC addresses	**131072**
FIB Host Route	**131072**
OGACL	2048
SGACL Hosts	24576
SGACL Cells	24576
Max MPLS Label	65536
L3 Multicast entries	32768
L2 Multicast entries	16384
Number of VLANs	4094 (**)
Overflow Unicast MAC addresses	512 (**)
Overflow L2 Multicast entries	512 (**)
Overflow L3 Multicast entries	512 (**)
Ipv4/Ipv6 shared unicast routes	**131072 (**)**
Overflow shared unicast routes	**1000000 (**)**
STP Instances	4094 (**)
Tunnels	1024 (**)
VRF	3839 (**)
Max MPLS VPN Routes Per-Vrf label mode	1000000 (**)
Max MPLS VPN Routes Per-Prefix label mode	65536 (**)
Max L3 adjacency	131072 (**)
Max L3 Interface	12288 (**)
Max MPLS TE TUNNEL	4096 (**)
Security ACL IN	**21504**
Security ACL OUT	**21504**
QOS ACL IN	5120
QOS ACL OUT	5120
PBRNAT ACL IN	8192
PBRNAT ACL OUT	8192
MIRROR ACL IN	1024
MIRROR ACL OUT	1024
FNF ACL IN	2048
FNF ACL OUT	2048
FNF FLOW IN	**32768**
FNF FLOW OUT	**32768**

(**) - SDM library is referred to only obtain scale

Resource scale information

EM	1280000
HCAM	131072
OTHER	0

CLI: *show sdm prefer*



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Feature-Name	Reserved-Scale
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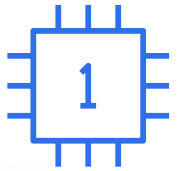
Max MPLS Label	131072
L3 Multicast entries	32768
L2 Multicast entries	16384
Number of VLANs	4094 (**)
Overflow Unicast MAC addresses	512 (**)
Overflow L2 Multicast entries	512 (**)
Overflow L3 Multicast entries	512 (**)
Ipv4/Ipv6 shared unicast routes	**131072 (**)**
Overflow shared unicast routes	**2000000 (**)**
STP Instances	4094 (**)
Tunnels	1024 (**)
VRF	3839 (**)
Max MPLS VPN Routes Per-Vrf label mode	1000000 (**)
Max MPLS VPN Routes Per-Prefix label mode	65536 (**)
Max L3 adjacency	131072 (**)
Max L3 Interface	12288 (**)
Max MPLS TE TUNNEL	4096 (**)
Security ACL IN	**38912**
Security ACL OUT	**38912**
QOS ACL IN	8192
QOS ACL OUT	8192
PBRNAT ACL IN	16384
PBRNAT ACL OUT	16384
MIRROR ACL IN	1024
MIRROR ACL OUT	1024
FNF ACL IN	2048
FNF ACL OUT	2048
FNF FLOW IN	**65536**
FNF FLOW OUT	**65536**

(**) - SDM library is referred to only obtain scale

Resource scale information

EM	1280000
HCAM	131072
OTHER	0

Architecture for the AI-Ready Secure Campus

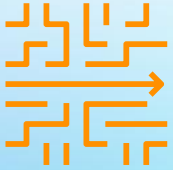


Scalable devices

ready for AI

Security

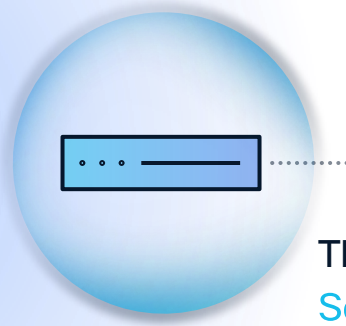
fused into the network



Operational simplicity

powered by AI

Comprehensive security fused into every layer



The Switch
Secured

The network
Secured

Users, endpoints and apps
Secured

The Switch is the first point of network access

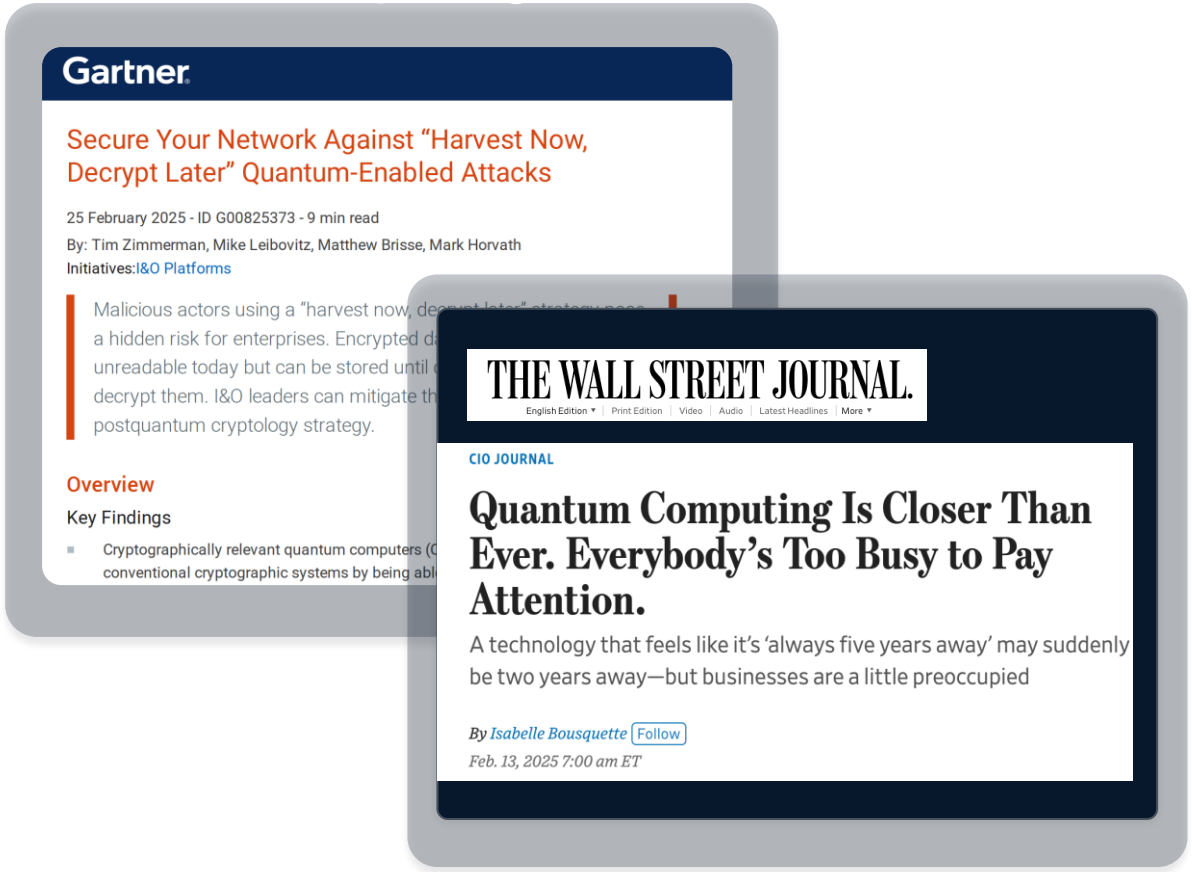
Make it your first point of security enforcement

Threats are accelerating

Exploits remain #1 infection vector: **33%** of infections start as exploits[1]

Stolen credentials grant longest access: **292** days - average breach lifecycle[2]

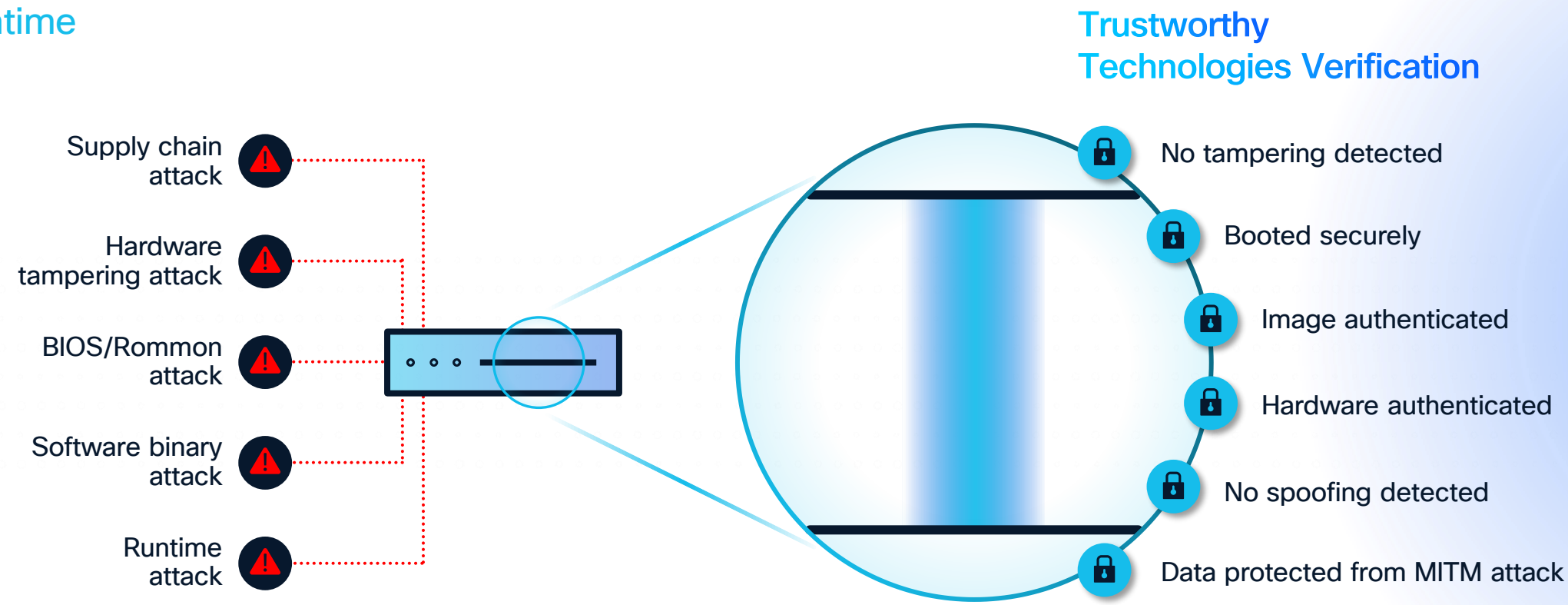
IoT devices are targets and threat **1/3** of breaches involved IoT devices

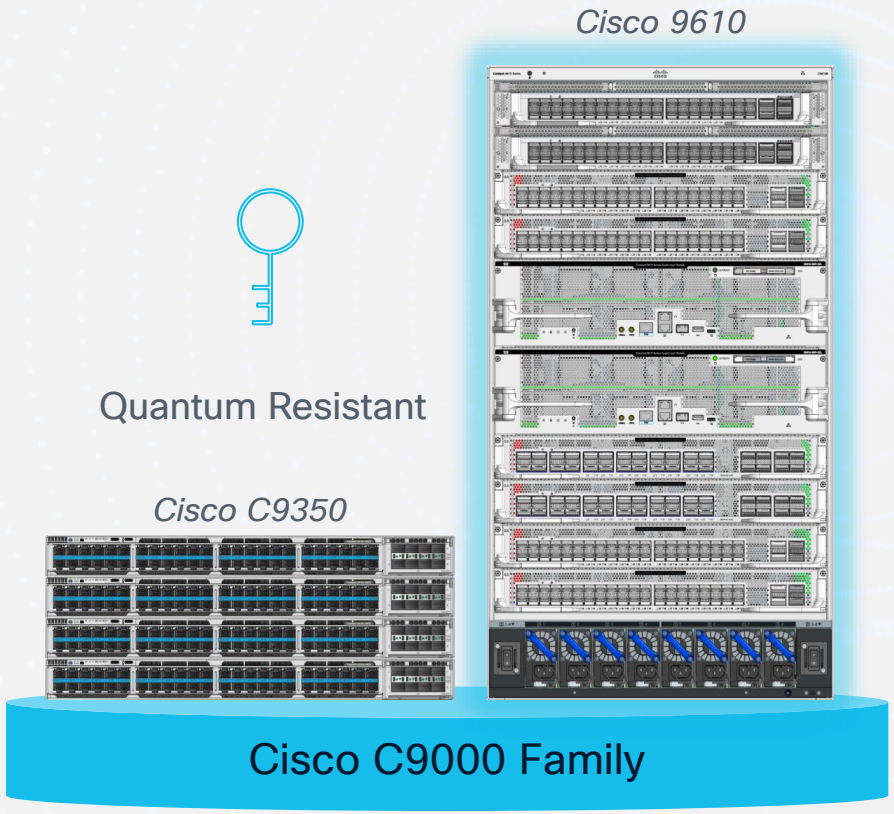


Sources:
1. M-Trends 2025: Executive Edition, Apr 2025, "By the Numbers – The Data of M-Trends"
2. IBM cost of a data breach 2024
3. Verizon DBIR, 2025

Securing the switch

Secure from hardware to software, from boot time to runtime

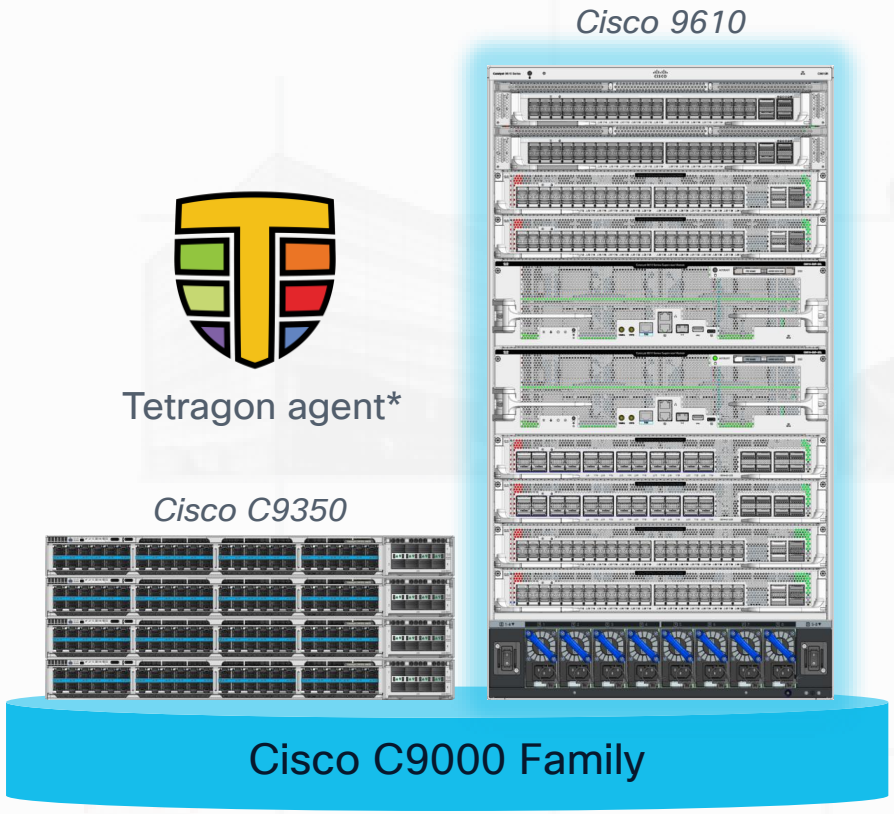




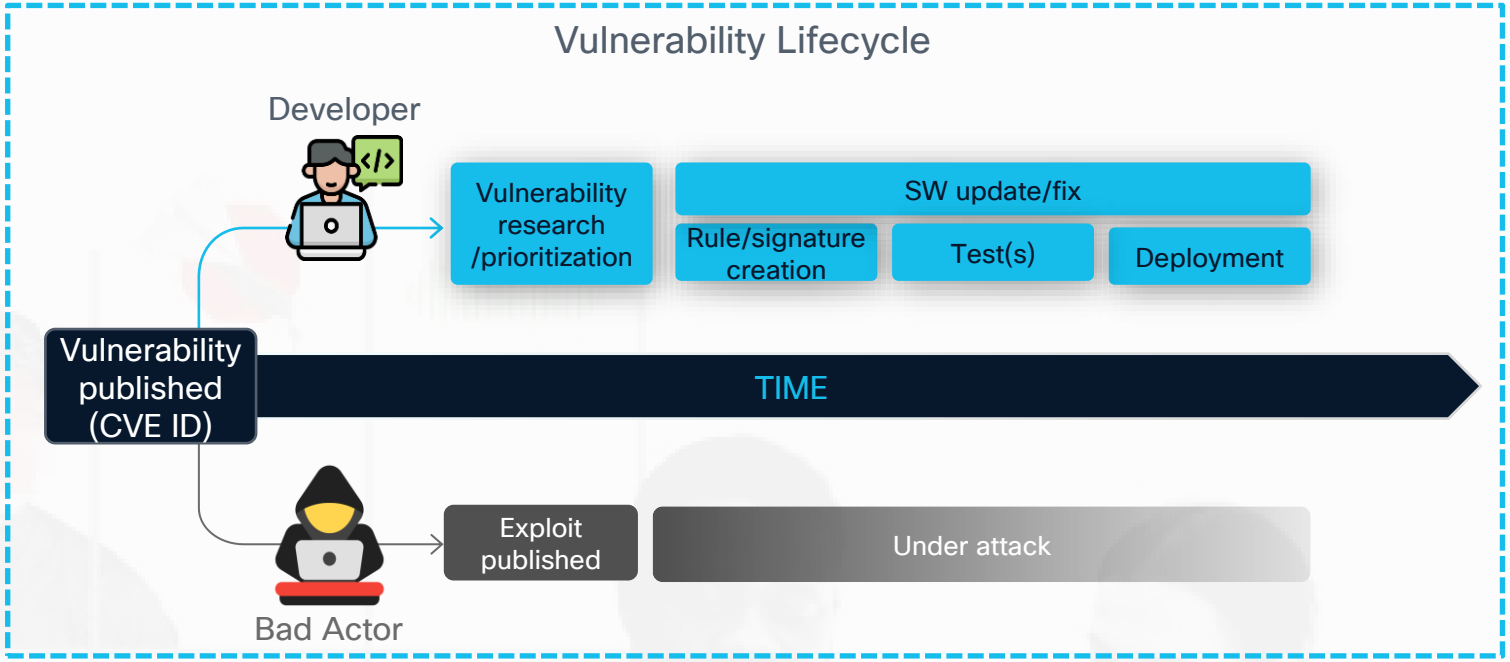
PQC compliant hardware

Data plane Security	Protects against ‘harvest now decrypt later’ attack on quantum vulnerable protocols like MACSEC & IPSec
PQC signed IOS-XE	Quantum secure operating system protects against forging & unauthenticated OS
PQC Compliant Secure Boot	PQC compliant bootloader and ROMMON verification protects against boot-level tampering

Quantum Resistant and PQC Compliant ready



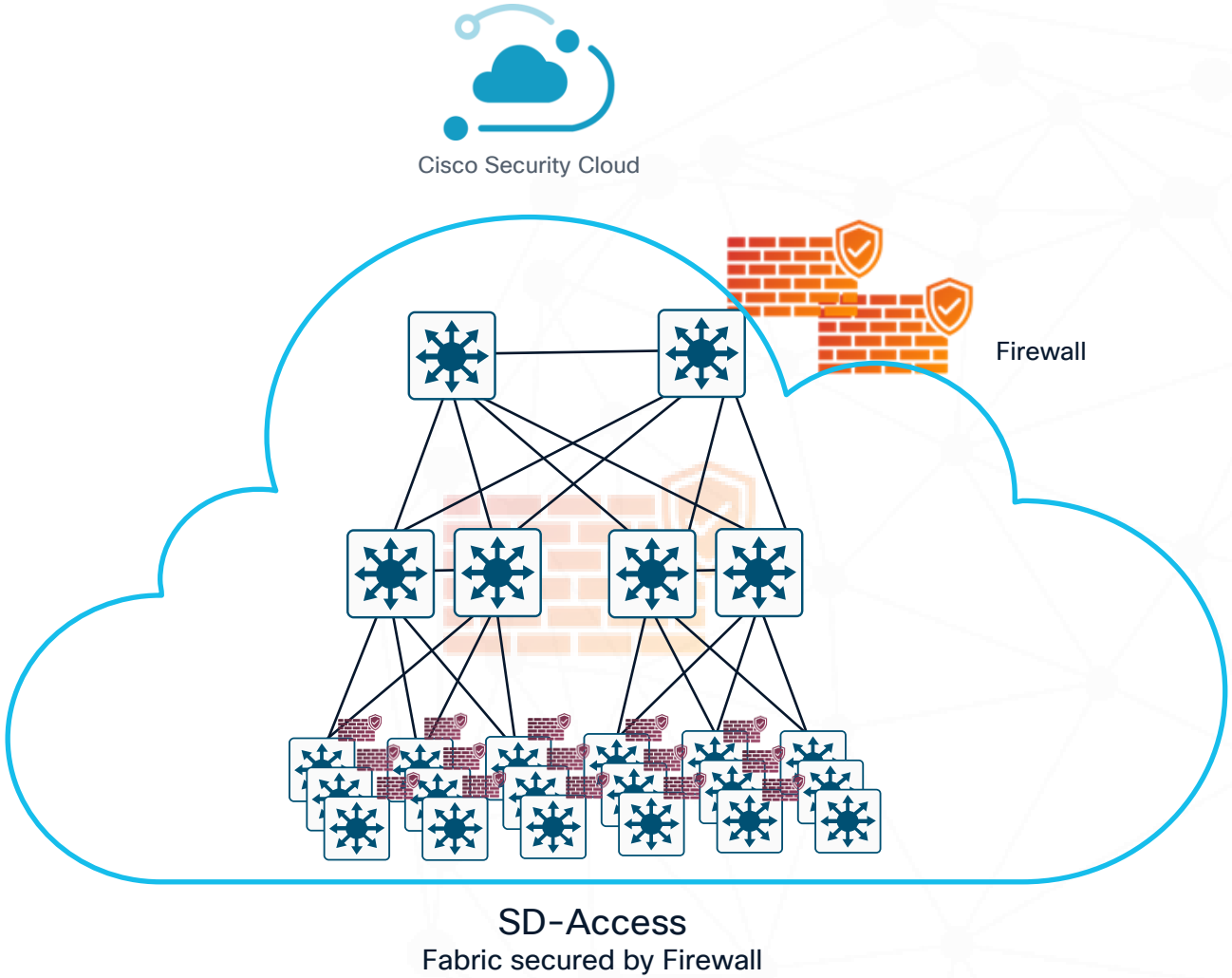
Tetragon can use eBPF to monitor and enforce security policies in real time by tracing kernel level events



Compensating Controls

- Automated inspection to identify vulnerabilities
- Multiple compensating controls and recommendation issued
- Protects against some attacks while software solutions is developed

Compensating Controls for Vulnerabilities



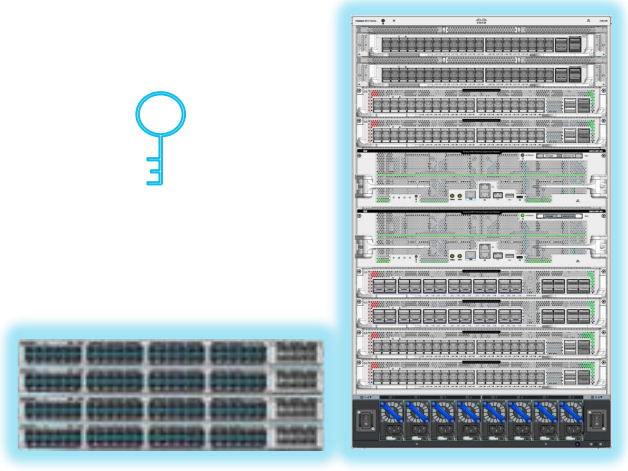
Firewall services on Campus Edge
- Selective traffic steering for stateful inspection*
- Centralized Firewall Policy

Highly Scalable
- Up to 3000 Edge devices per site – 3X Scale
- Scalable segmented clients with Cisco 9000s

Ultra Resiliency
- Integrated High Availability with ISSU and xFSU*
- Sub second convergence

SD-Access – Secure, Resilient and Scalable

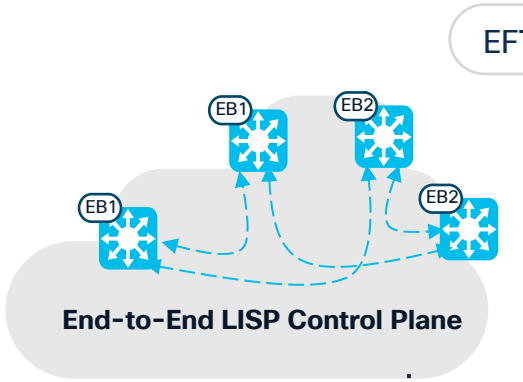
SDA LISP: Advancing Automation Capabilities



Silicon One Hardware Support

C9350 FE role with IOS-XE 17.18.2, Dec'25
Catalyst Center 2.3.7.11 & 3.1.6

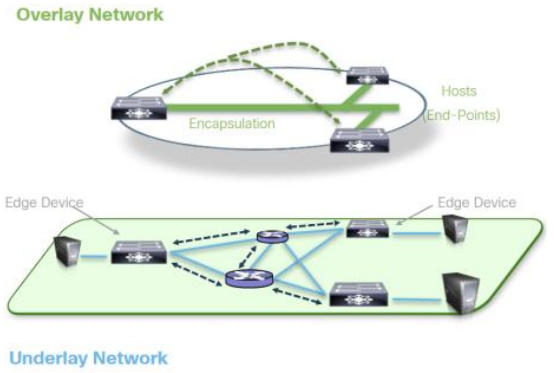
C9350 FIAB + eWLC, C9610 with IOS-XE 26.1.1
Catalyst Center 3.2.1 Mar'26



PubSub Architecture & Migration

Simplified border design with faster convergence with the new PubSub architecture.

Streamlined migration path from BGP/LISP to enhanced PubSub-based fabrics (IP/SDA Transits)



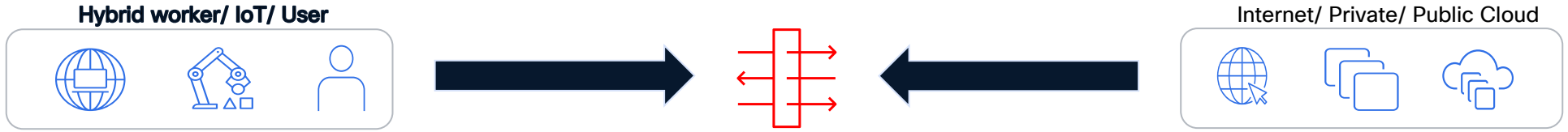
Automated IPv6 Underlay

IPv6 Only Underlay – 3.2.1
Dual Stack Underlay – 3.2.3

SSI Fabric: Stateful Security On-Demand

Intelligent Protection for Your SDA Fabric Network

Open Beta Nov' 2025



Key Concept

Allows ***select traffic*** redirection to security appliances.

This means:

- Policy-Driven Protection – Seamless Cisco or 3rd-Party Integration
- Efficient, Scalable Design – Optimize Firewall Investments
- Flexible – topology-agnostic rollout for faster time-to-value

cisco

Cisco Campus Fabric Management Evolution

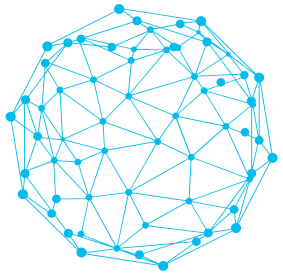
On-Prem

Cloud

templates

Ansible

Terraform



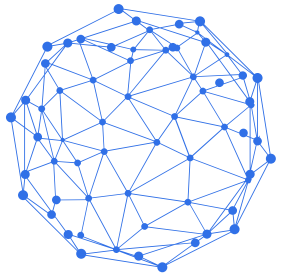
Since 2017

Intent Based Networking

Campus Optimized Fabric

Integrated Scalable Wireless

Multi-site, Multi-domain, IT/OT



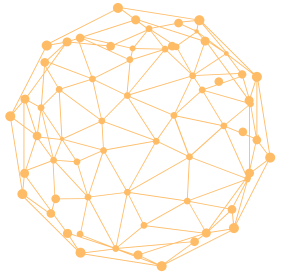
Since 2019

Common Fabric – Campus | DC

“Ship-In-Night” Wireless solution

Multi-vendor compatible

NEW



LA: Dec 2025

Intent Based Networking

Enterprise-grade Cloud Managed Fabric

Integrated Wired, Wireless | Automation & Assurance

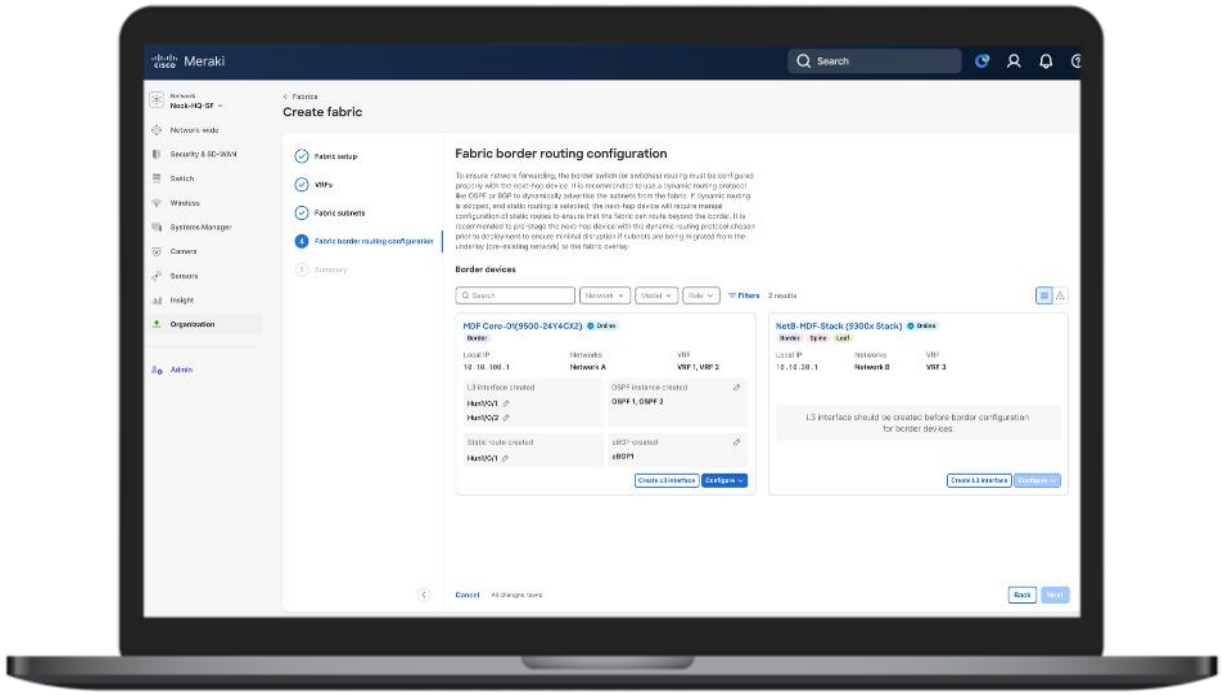
Scalable | Secure | Flexible architecture

* Beta : Nov’25 | FCS : Mar’26

cisco

Introducing cloud-managed fabric

EVPN Fabric Orchestration from Meraki Dashboard



Benefit from Cloud Simplicity

Build and manage large sites from an intuitive cloud networking platform

Leverage Existing Investments

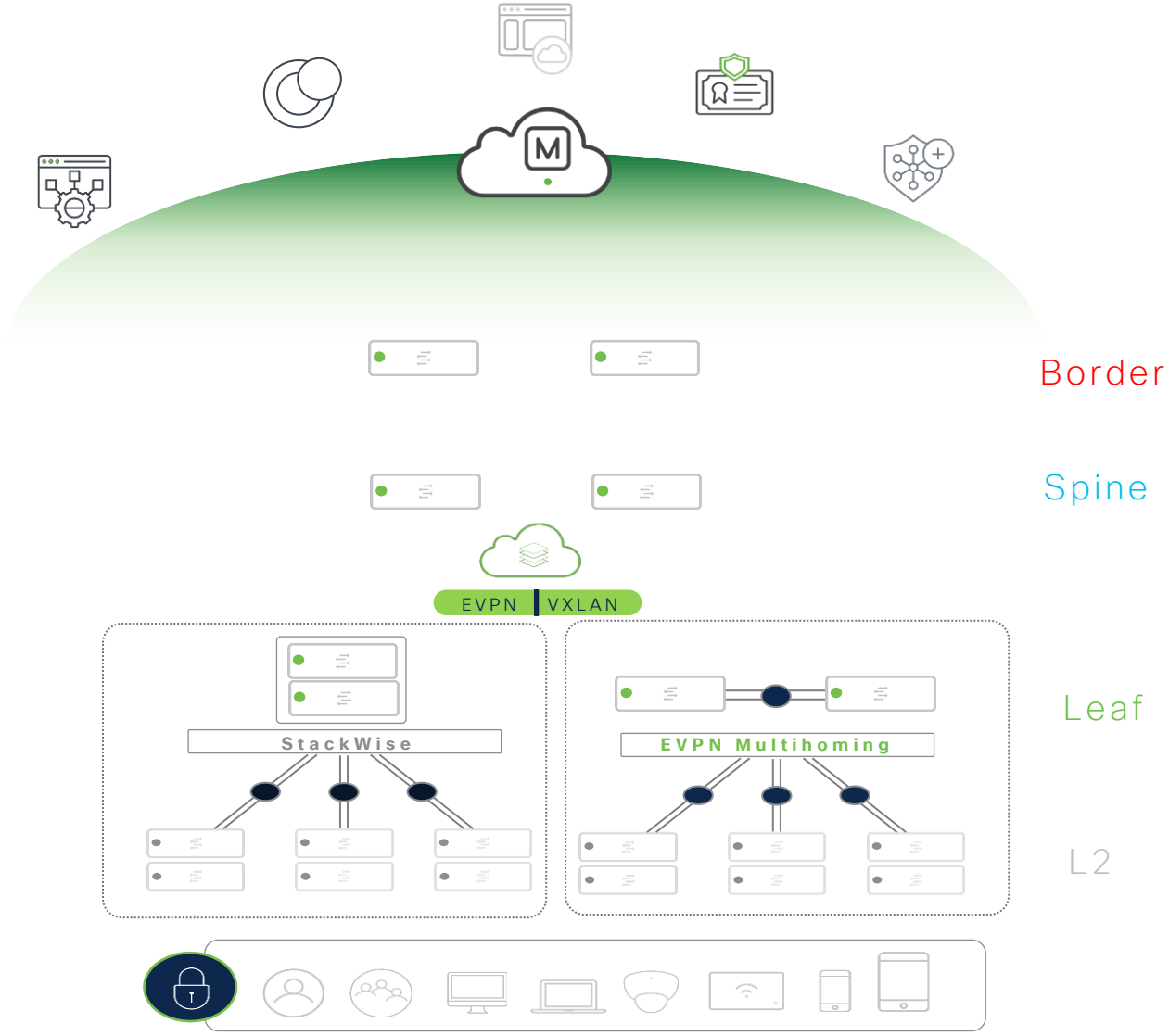
Modernize the network while utilizing existing C9K infrastructure

Migrate at Your Own Pace

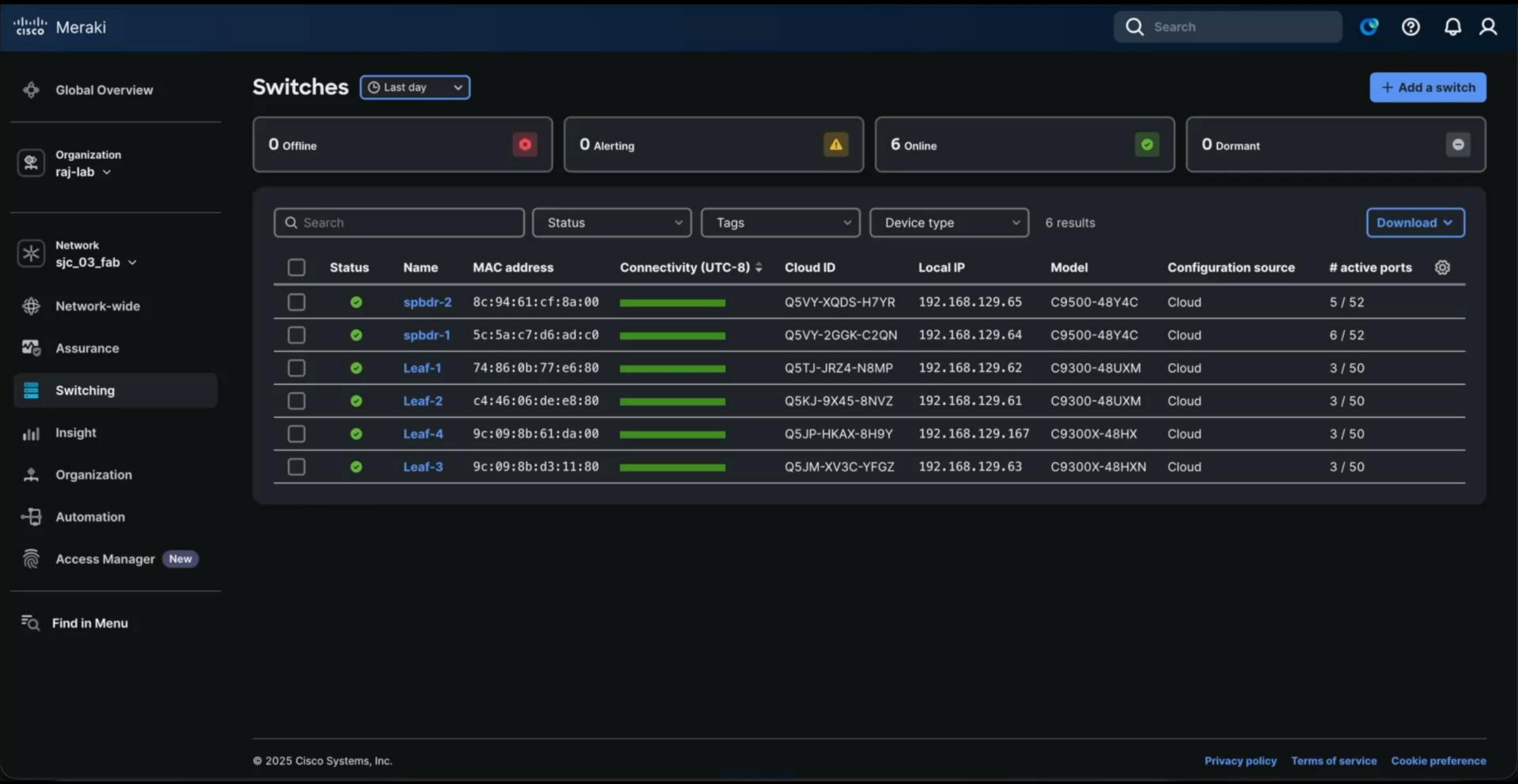
Incrementally migrate devices and subnets to the cloud over time

Beta: Nov 5, 2025 | Limited Availability: December 2025 (IOS XE 17.18.2)

- **Simplified** management as a **single logical entity**
- Focused on **brownfield migration**
- **Flexible** deployment and staging
- **Securing the network** with Adaptive Policy
- **Optimized** L2 extension
- Day-2 Operational Assurance



Cloud-Managed Fabric Solution


Meraki
Search
Global Overview
Organization
raj-lab
Network
sjc_03_fab
Network-wide
Assurance
Switching
Insight
Organization
Automation
Access Manager
New
Find in Menu
Switches
Last day
+ Add a switch
0 Offline
0 Alerting
6 Online
0 Dormant
Search
Status
Tags
Device type
6 results
Download
Status
Name
MAC address
Connectivity (UTC-8)
Cloud ID
Local IP
Model
Configuration source
active ports
spbdr-2 8c:94:61:cf:8a:00 Q5VY-XQDS-H7YR 192.168.129.65 C9500-48Y4C Cloud 5 / 52
spbdr-1 5c:5a:c7:d6:ad:c0 Q5VY-2GGK-C2QN 192.168.129.64 C9500-48Y4C Cloud 6 / 52
Leaf-1 74:86:0b:77:e6:80 Q5TJ-JRZ4-N8MP 192.168.129.62 C9300-48UXM Cloud 3 / 50
Leaf-2 c4:46:06:de:e8:80 Q5KJ-9X45-8NVZ 192.168.129.61 C9300-48UXM Cloud 3 / 50
Leaf-4 9c:09:8b:61:da:00 Q5JP-HKAX-8H9Y 192.168.129.167 C9300X-48HX Cloud 3 / 50
Leaf-3 9c:09:8b:d3:11:80 Q5JM-XV3C-YFGZ 192.168.129.63 C9300X-48HXN Cloud 3 / 50
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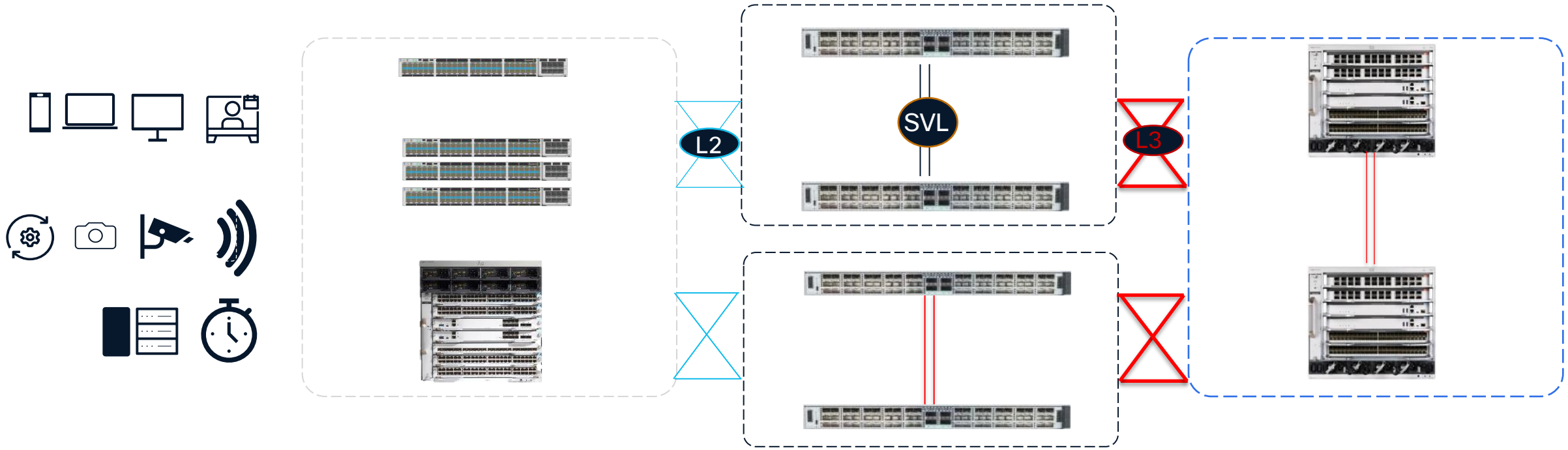
Cisco C9000 High Availability



Platform Resiliency

- StackWise-1.6T
- Power Stack
- PS/Fan Redundancy

Network Resiliency

- StackWise Virtual
- Graceful Insertion & Removal (GIR)

Operational Resiliency

- ISSU
- xFSU
- SMU/Patching

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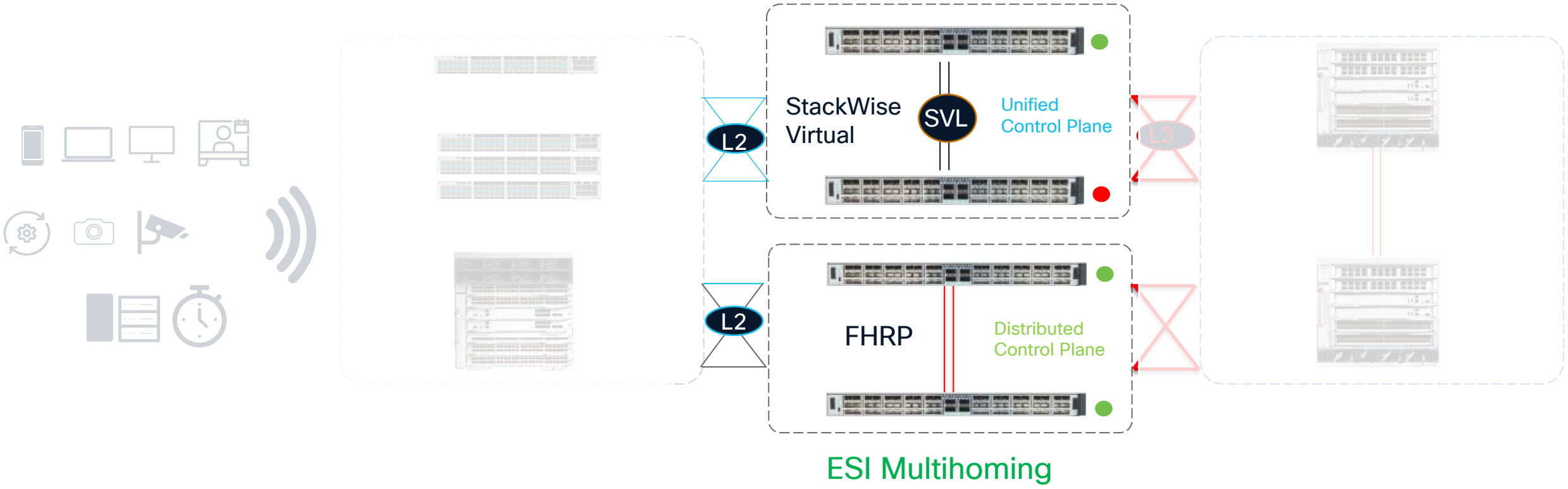
Cisco C9000 High Availability – Design Redundancy

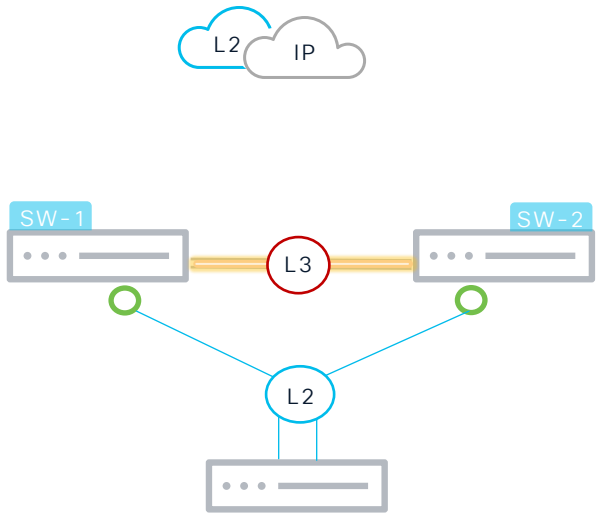


BGP EVPN Multihoming for Fabric & Non-Fabric

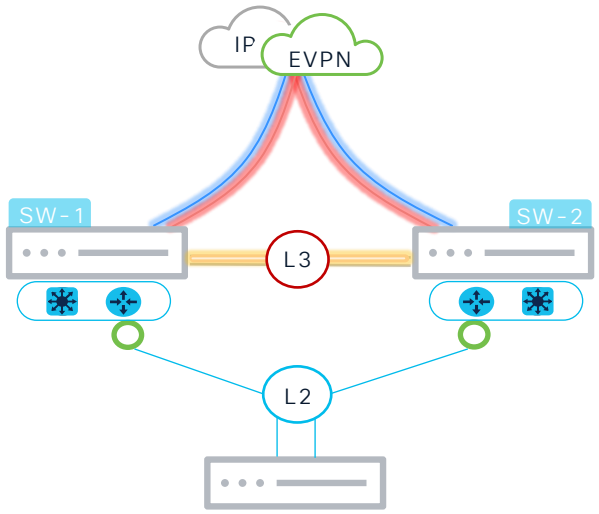
IOS-XE: 17.18.2

Enable Active-Active redundancy for Firewall, WLC or Access layer

Non-Fabric



Fabric



Active VLAN

- WLC HA
- Firewall HA

2Xperformance,high availability and scale

for transition path from FHRP to EVPN Multihoming

Flood free Access

L2 multipath solution for traditional IP / non-fabric networks

Extensive security

with Layer 3 segmentation and Layer 2 extension with EVPN fabric

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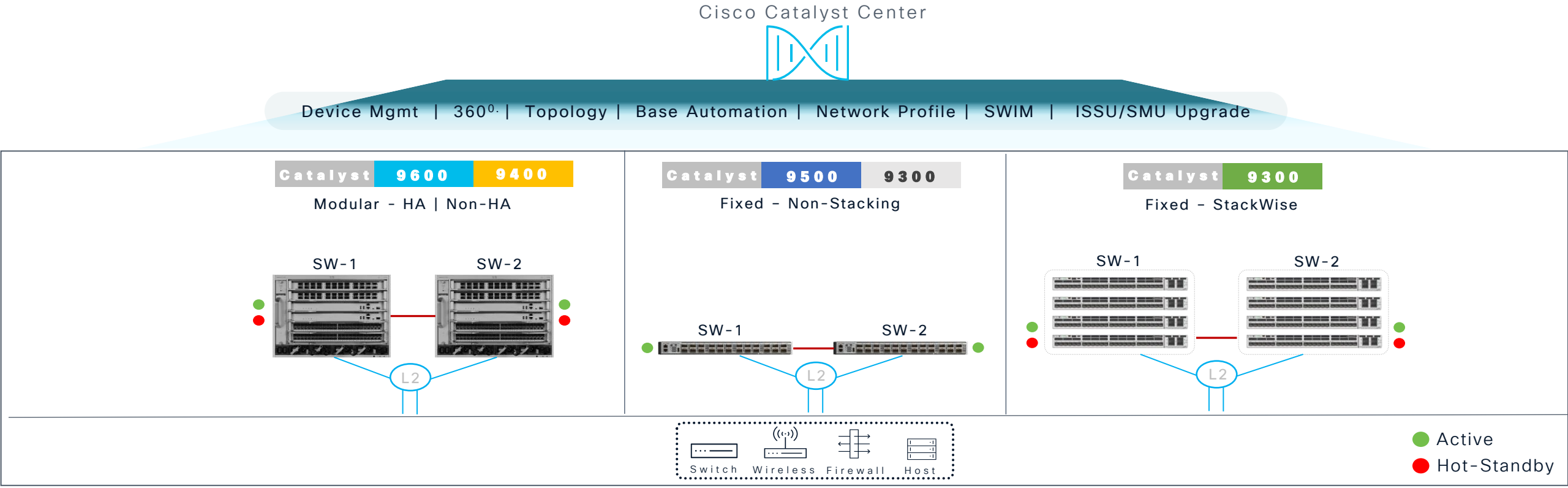
Introducing ESI Multihoming

17.8.2

Uncompromised Network Resiliency for Traditional | Fabric networks



- RFC 8365 based Layer 2 Multipathing solution – EVPN Multihoming
- Flexible network deployment options – Traditional (L2, IP, MPLS) | EVPN VXLAN Fabric
- Deterministic network availability during IOS-XE software upgrade for Fixed or Modular platforms
- Uncompromised network performance with Modular system software upgrade with ISSU

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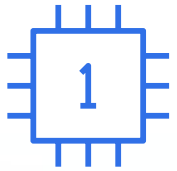
Architecture for the AI-Ready Secure Campus

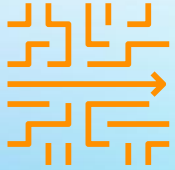


Scalable devices

ready for AI

Security

fused into the network



Operational simplicity

powered by AI

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Unified Platform and OS

The Foundation of Operational Simplicity

Fast, consistent out-of-box provisioning

Simple day 0 operations

Simple, streamlined onboarding

Automated port config

Secure, fast onboarding of devices

Expanding IOS XE Capabilities available in Cloud and CLI

CLOUD MANAGEMENT AVAILABLE NOW

1H'26

C9300L

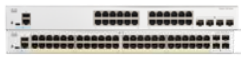
C9300

C9300X

C9200L

C9500

C9200/CX

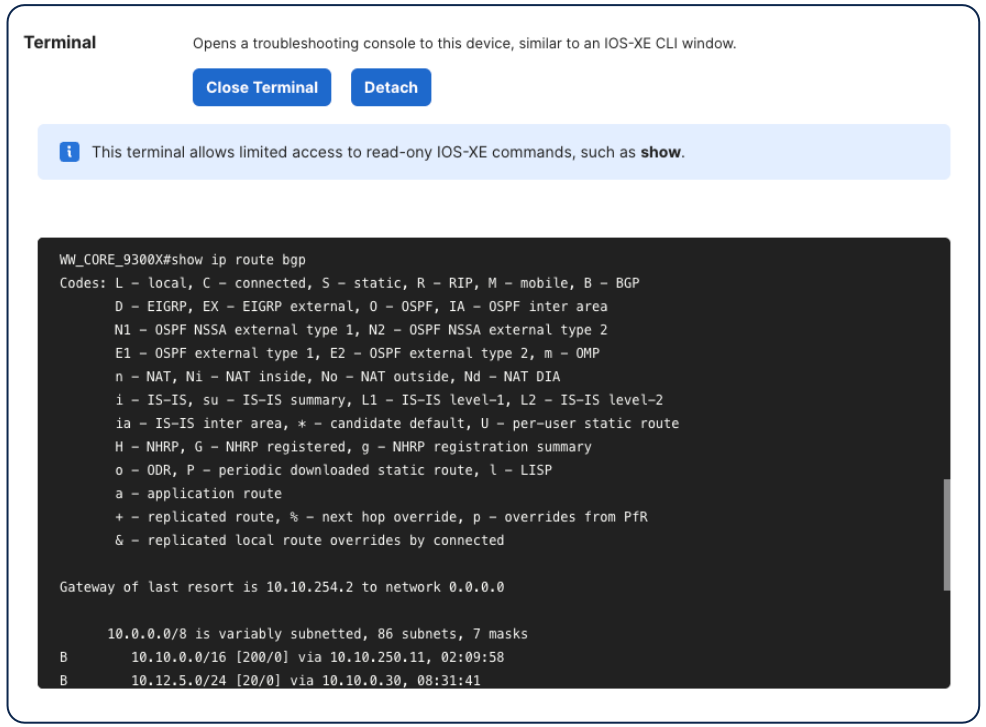


C9300LM

C9350

Modular

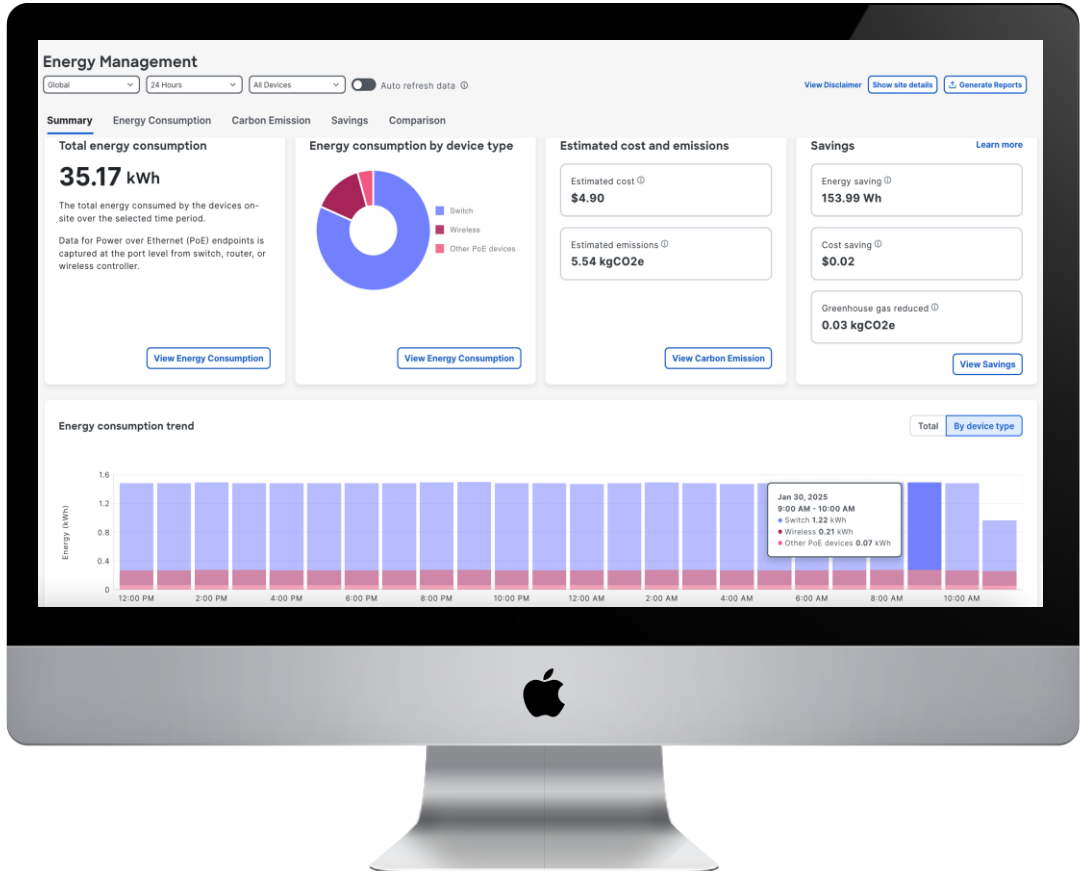
cisco



Cloud management (with device as the configuration source) unlocks the breadth of IOS XE Features

- VRF
- BGP
- In-Service Software Upgrade (ISSU)
- StackWise Virtual
- Energy Dashboard

Meraki Dashboard for Enterprise use cases



- Catalyst Center Global Manager
- Catalyst Center Virtual Appliance on Azure
- Site-based RBAC & Rule-based Compliance
- Campus Automation
- Energy Dashboard
- ThousandEyes Integration

Continued Investment in Catalyst Center

Simplify Troubleshooting

Wired Assurance: Delivering the best wired experience from client to cloud

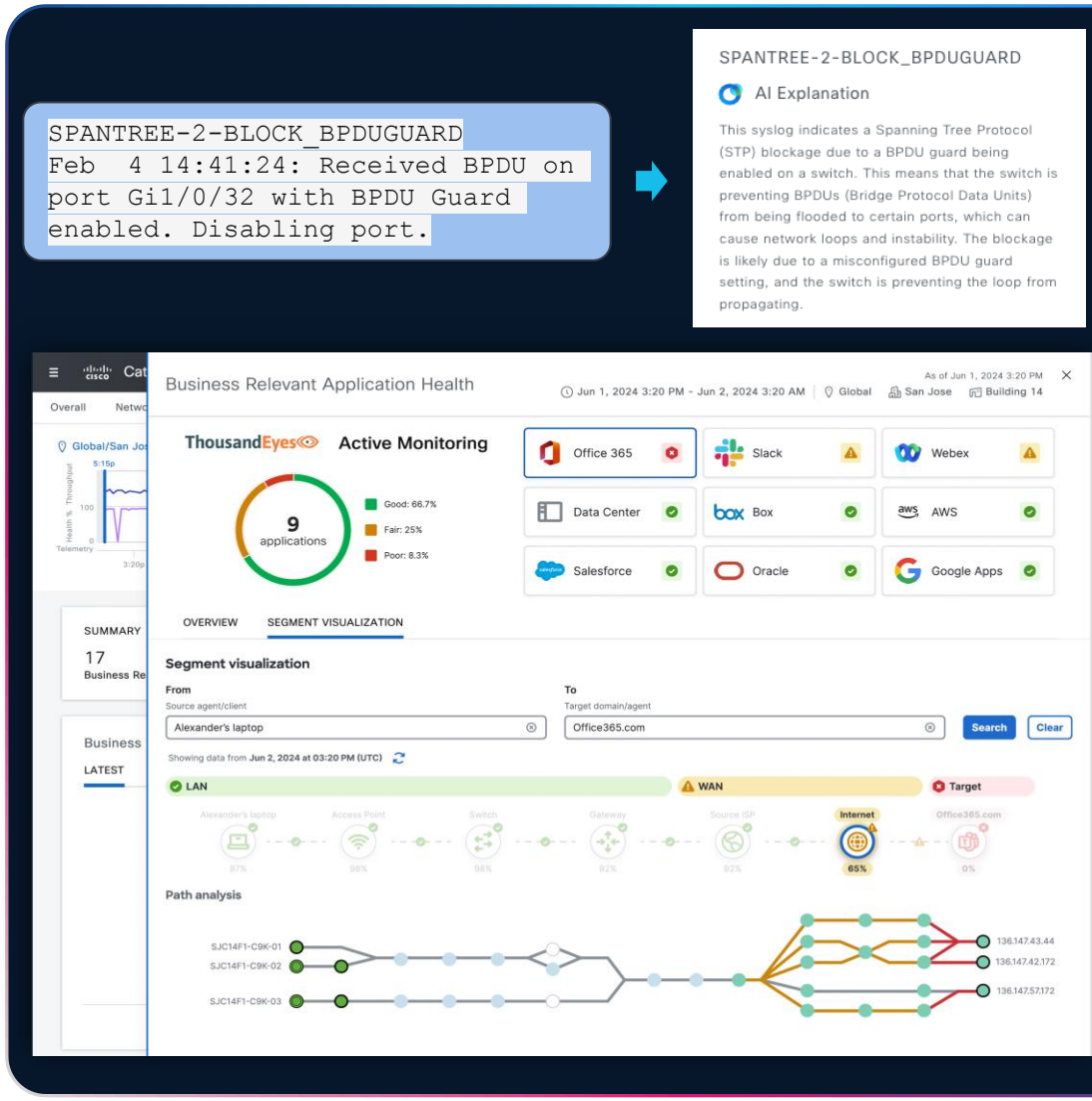
Assurance enhancements[1]: Org-wide assurance view, Device Health, Digital Optical Monitoring

Intelligent Packet Capture & Analyzer[1]: Automated packet capture & analysis

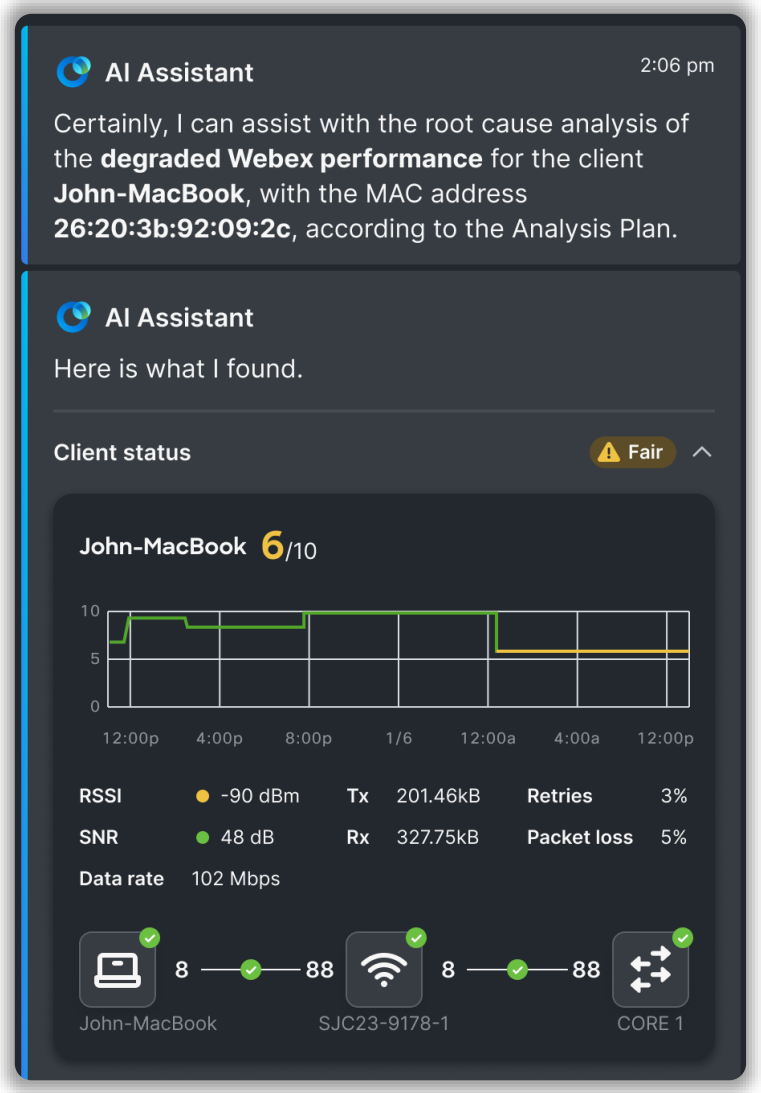
Thousand Eyes Integration[2]: Identify, isolate, and action issues across owned and unowned

AI Event Analytics[2]: Correlated events from Syslogs, Device Reachability, Radio Events, Client Onboarding

1. Available on Meraki Dashboard today, Packet Capture and Optical Monitoring on roadmap for Catalyst Center
2. Available on Catalyst Center today, ThousandEyes switch integration on roadmap for Meraki Dashboard



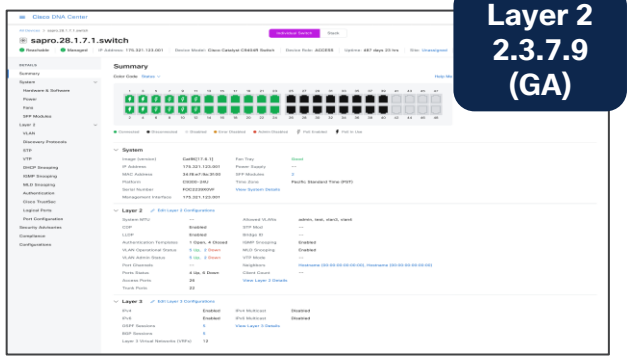
- Client troubleshooting using unique partnership with Apple, Intel, Samsung
- AI-driven RCA, end-to-end network correlation orchestrated through conversational interface
- Conduct network change management by conversation
- AI-generated summarization of Cisco document libraries and best practices



Operational Simplicity with AI Assistant

Catalyst Center Campus Automation

Per Device Configuration



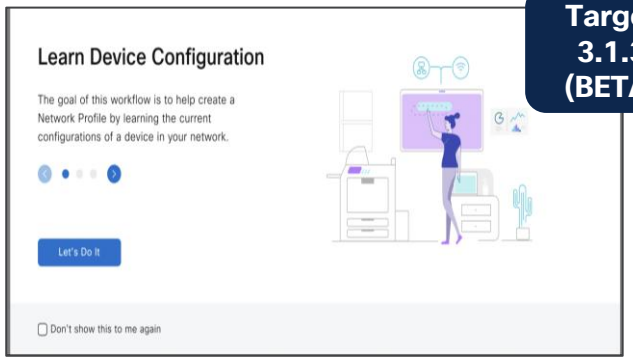
Layer 2
2.3.7.9
(GA)

Enabling **device by device** feature configuration

Layer 3 & Network Settings (In Planning)

Licensing
Catalyst Essentials

Profile Creation



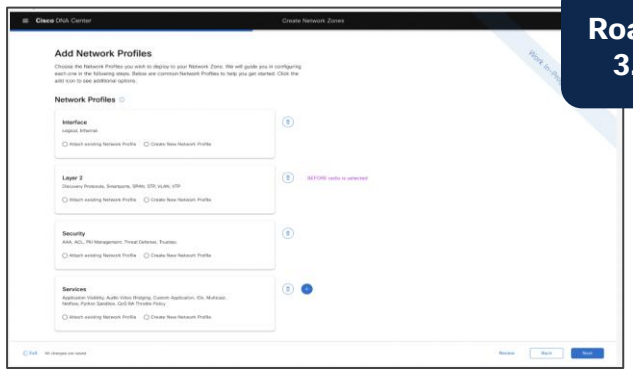
Target
3.1.3
(BETA)

Business continuity by retaining **existing configurations**

Create Profiles based on existing networks

Licensing
Catalyst Advantage

Service Management



Roadmap
3.2.1+

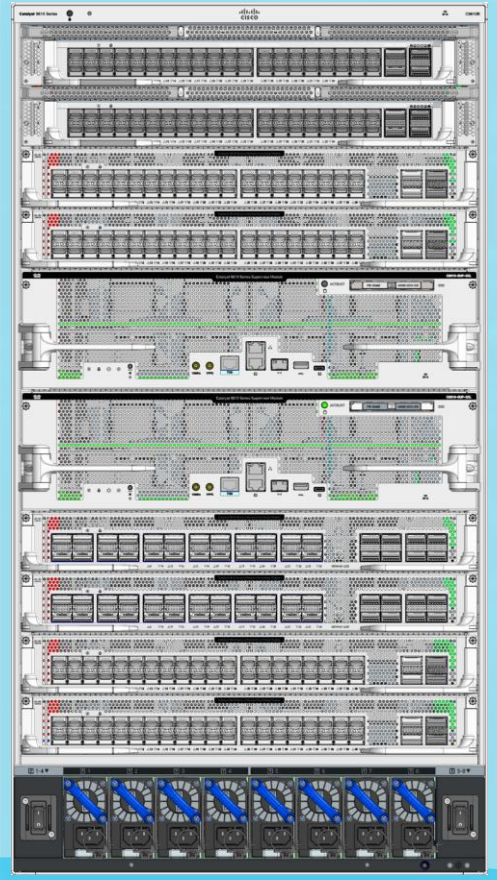
Service profile for network scalability and security

Manage service edits and provisioning at scale

Licensing
Catalyst Advantage

Summary

Cisco 9610



Cisco C9350

Cisco C9000 Smart Switches

AI- Ready Hardware

C9350, C9610, Silicon One, Cloud Native IOS-XE

Security fused into the network

PQC Compliant, Hypershield Ready, Compensating Controls

Operational Simplicity with Platform Flexibility

One hardware, your choice of management platform

Architecture for the AI-Ready Secure Networks

Complete your session evaluations

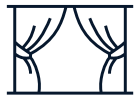
Complete a minimum of 4 session surveys and the Overall Event Survey to claim a Cisco Live T-Shirt.

Earn up to 800 points by completing all surveys and climb the Cisco Live Challenge leaderboard.

Level up and earn exclusive prizes!

Complete your surveys in the Cisco Live Events app.

Continue your education



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Thank you

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