CISCO Engage | Tech Day

Next-Gen Smart Switching

New products and high-availability features

Dave Cappelli
Enterprise Networking Account Executive

Russ Widener
Enterprise Networking Solutions Engineer

October 2025

Cisco powers how people and technology work together across the physical and digital worlds

Agenda

1. Smart Switching Announcements
2. Security Infused into the Network
3. Highly Resilient Architectures

Smart Switching

The explosion of new devices, OT endpoints and AI applications in campus

Smart Lighting

4K/8K Cameras

Gemini

Manufacturing Arm

Wearables

Apple Intelligence

Healthcare Devices

Enterprise AI Assistants

Wi-Fi7 pushes the limits

***Multigigabit** is the new **1G** for today's Wi-Fi*

***And PoE** requirements are increasing*

New threats with AI and Quantum

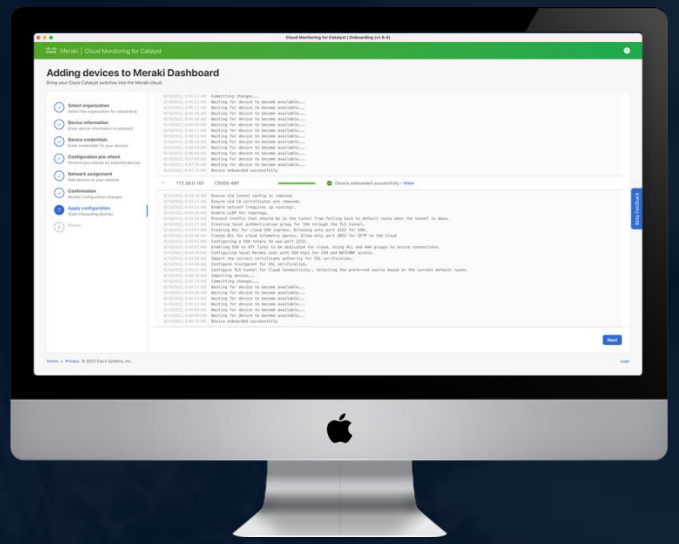
AI brings an explosion of new traffic patters across the network that can rapidly change.
Quantum means our standard encryption mechanisms will no longer be sufficient.

Security Needs for AI

- Visibility to all flows
- Policy Orchestration
- Optimized Traffic Flow

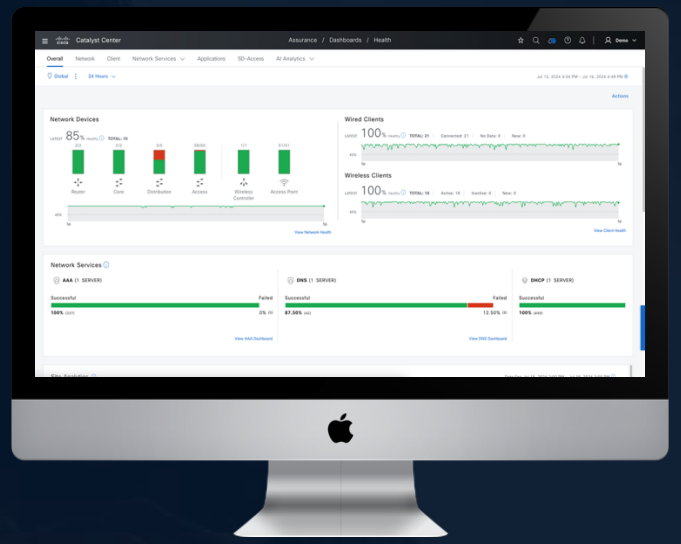
Security Needs for Quantum Computing

- PQC Signatures
- PQC Encryption
  (Harvest Now, Decrypt Later)
- Trustworthy Systems



Cloud

CLI/API Access



On-prem

C9000 Switch

Choice of Management Platform

Unified Hardware – Unified Licensing

INTRODUCING

Shipping Now!

The Cisco C9000 Series Smart Switches

Powerful, secure, easy to manage

Cisco Silicon One - industry's most powerful, programmable ASIC

High-performance, programmable x86 CPU

Cisco IOS XE w/ secure boot & Trustworthy Solution
PQC-Ready

Universal PoE+ & PoE Analytics

Switch power optimization & FMP-ready

On-device ThousandEyes App hosting

Cisco C9350 Smart Switch

1.6 Tbps	4 x 100G	<5 µs	4x
Stacking bandwidth	Uplink Modules	Latency	Higher MAC & ARP density

Cisco C9610 Smart Switch

25.6 Tbps	256 x 100G	<5 µs	10 slot
System bandwidth	Modular Line-Cards	Latency	To power the core

cisco

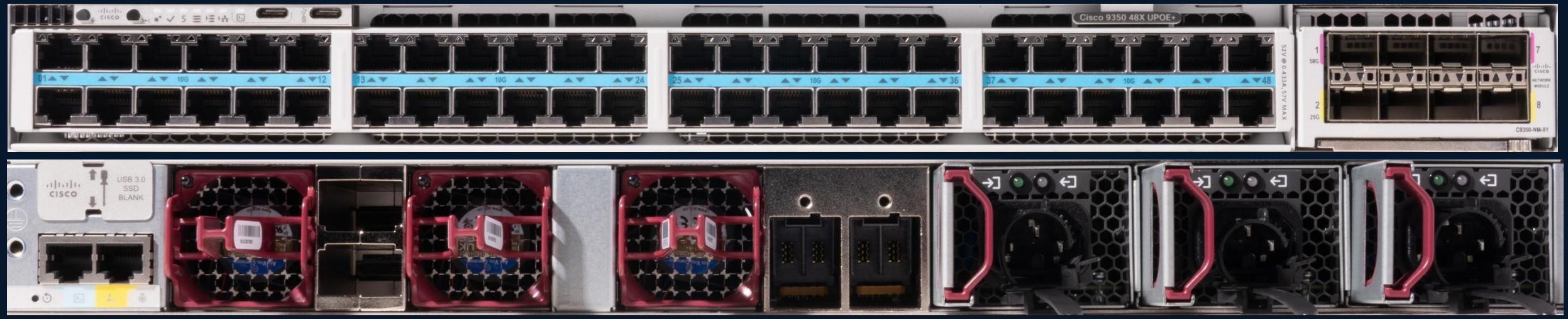
No plans to announce EoL on any Catalyst 9000 switches

Statement of Direction

Introducing the Cisco C9350

Access Smart Switches for the AI era

17.18.1



Unmatched Scale & Performance	48 x mGig* (10G)	12 Member, 1.6 Tbps Stacking	48 x 90W Full UPoE+
Industry Leading Resiliency	Enhanced xFSU	Enhanced Stackpower+	Enhanced Stacking
Integrated Security	Quantum Resistant	Cisco Live Protect	Hypershield Ready

**mGig supports 10M -> 10G*

Cisco C9350 Models

mGig Downlinks (18.6” D)

Cisco C9350-48HX
48x 10G-mGig & 90W UPoE+

Cisco C9350-48TX
48x 10G-mGig Data-Only

1G Downlinks (15.1” D)

Cisco C9350-48U
48x 1G & 60W UPoE

Cisco C9350-24U
24x 1G & 60W UPoE

Cisco C9350-48P
48x 1G & 30W PoE+

Cisco C9350-24P
24x 1G & 30W PoE+

Cisco C9350-48T
48x 1G Data-Only

Cisco C9350-24T
24x 1G Data-Only

Network Modules

C9350-NM-4C
4x 100G/40G QSFP28

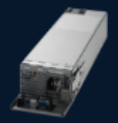
C9350-NM-2C
2x 100G/40G QSFP28

C9350-NM-8Y
8x 25G/10G/1G SFP28
(50G on top 4 ports)

Power Supplies

1600W AC
Titanium Rated, Port Intake

850W AC
Titanium Rated, Port Intake

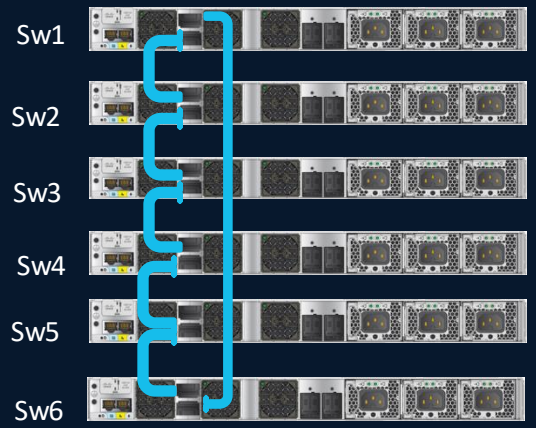


500W AC
Titanium Rated, Port Intake

New Stacking Architecture

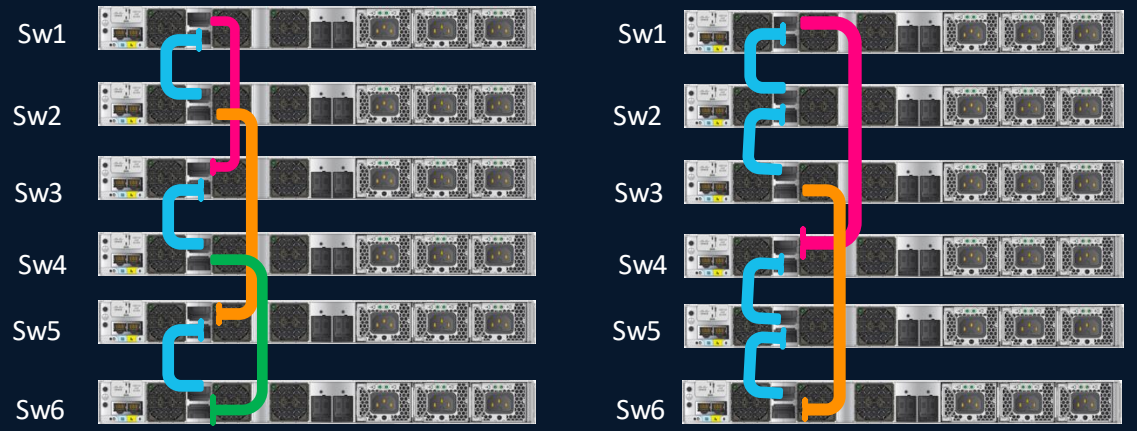
Built for the new generation of campus switching

One Logical Switch



Typical Stack Cables Configurations

One Logical Switch



New Stack Cables Configurations Options

8/12* Member Stacking
With **1.6T** stacking capacity

User friendly stacking design
Eliminate mandatory long stack cable requirement

Standard Ethernet Stacking
based on SPF (Shortest Path First) / VxLAN

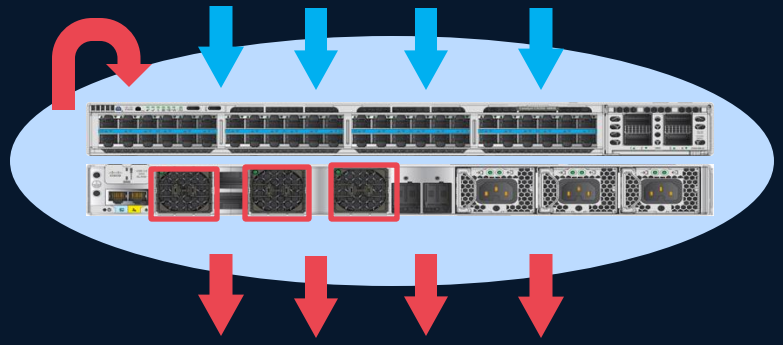
Point-to-point architecture
for low latency and optimized path selection

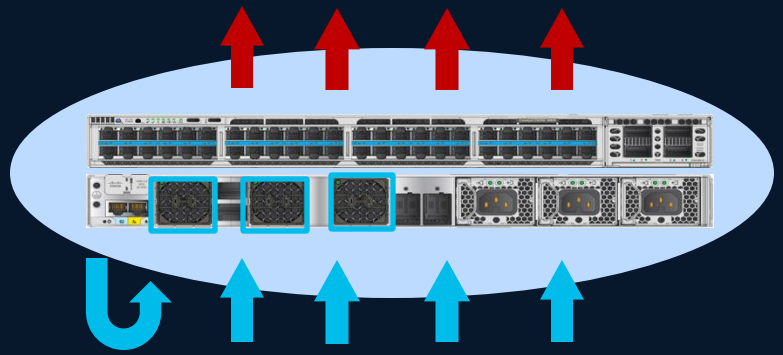
Sub-Second Stateful Switchover with SSO & NSF

Isolated bandwidth loss
in event of failure

*8 members at first customer shipment (FCS)
12 member coming soon

C9350 New Modular Fan Modules





Front-to-Back Airflow: Port Side Intake (PSI)

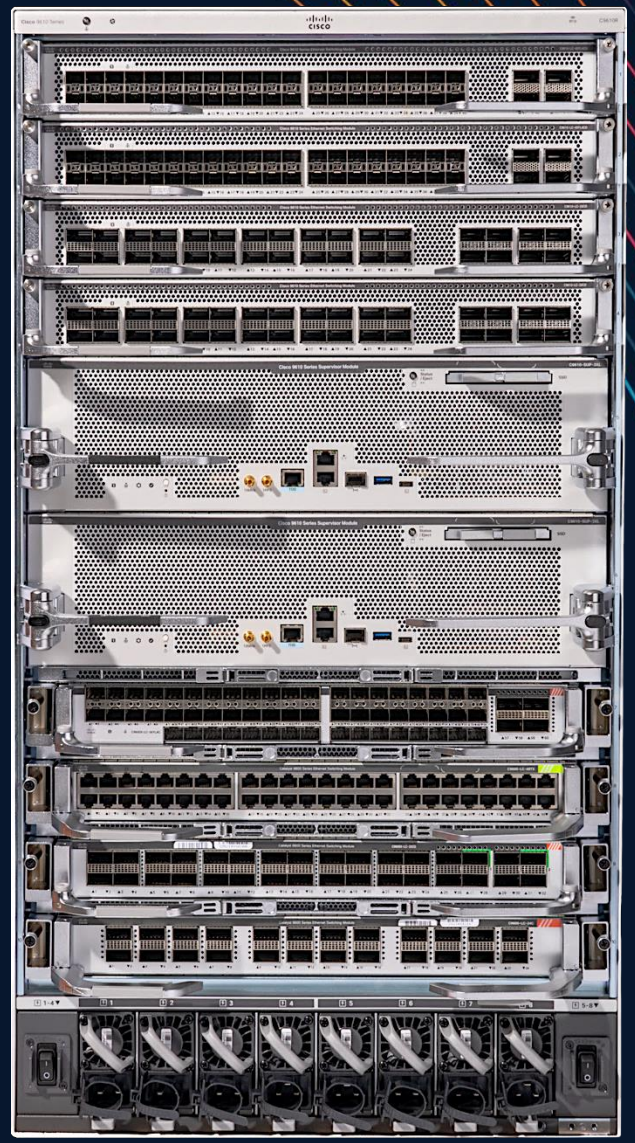
- Ideal for enclosed racks in wiring closets, ensuring front intake cooling.
- **Red Handle(C9350-FAN-I)**
- Supported on **All SKU's**

Back-to-Front Airflow: Port Side Exit (PSE)

- Suited for open-rack MDF/IDF rooms, directing airflow toward rear ventilation.
- **Blue Handle(C9350-FAN-E)**
- Supported on **Data/Fiber SKU's**

30% Boost in Airflow Capacity for Enhanced Thermal Efficiency

Cisco C9610 Series
Core Smart Switches



Introducing C9610

Generation 3 modular core – New Hardware launch

Gen 3 Supervisors

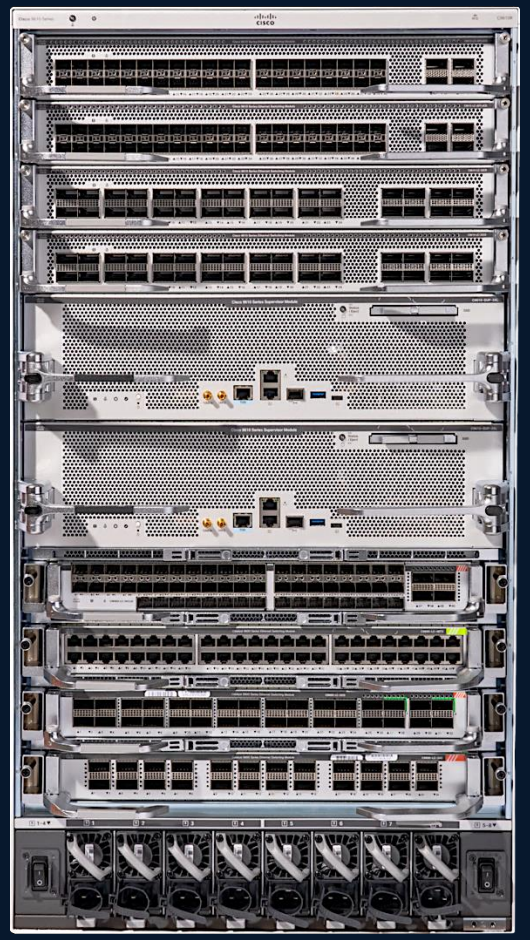
C9610-SUP3XL/3

Enterprise Focus
K100/E100

- **2M IPv4 / 1M IPv6**
- 3.2 Tbps per slot
- **512K hosts or clients***
- 32G DDR4 memory
- **256K ACL entries***
- **8 core** X86 CPU @2.0 Ghz

*Hardware Capable

Gen 3 Chassis



C9610R

- 51.2 Tbps System Bandwidth
- 8-line card slots (1.25 RU)
- 2 supervisor slots (2.5 RU)
- 4 serviceable fan trays in rear side
- Blue Beacons (system/fan tray, sup, line cards)
- 8 Modular power supplies

Gen 3 Line cards

C9610-LC-40YL4CD
(40 x 25/50GE, 2 x 400GE, 2 x 200GE)

C9610-LC-32CD
(30 x 40/100GE, 2 x 100/400GE)

4x FAN Trays with Front to Back Airflow

Cisco C9610R Chassis
Port Density (Without breakout)

Reference

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

17.18.2

* Native 1G

** 200G Hardware capable

Security fused into the Network

Security Fused into the Network

Securing application access over the WAN

Protecting user access and application interactions

SASE/UZTNA

- Continuous identity, posture and risk assessment across every session

Securing network connectivity

Safeguarding and optimizing network connections

Quantum-resistant:

- MACsec
- IPsec
- WAN MACsec

Securing network access

Securing connectivity to the network

Authorization and scalable segmentation

- Identity services engine (ISE)
- Software defined access (SDA) and Security Group Tags (SGT)
- NGFW

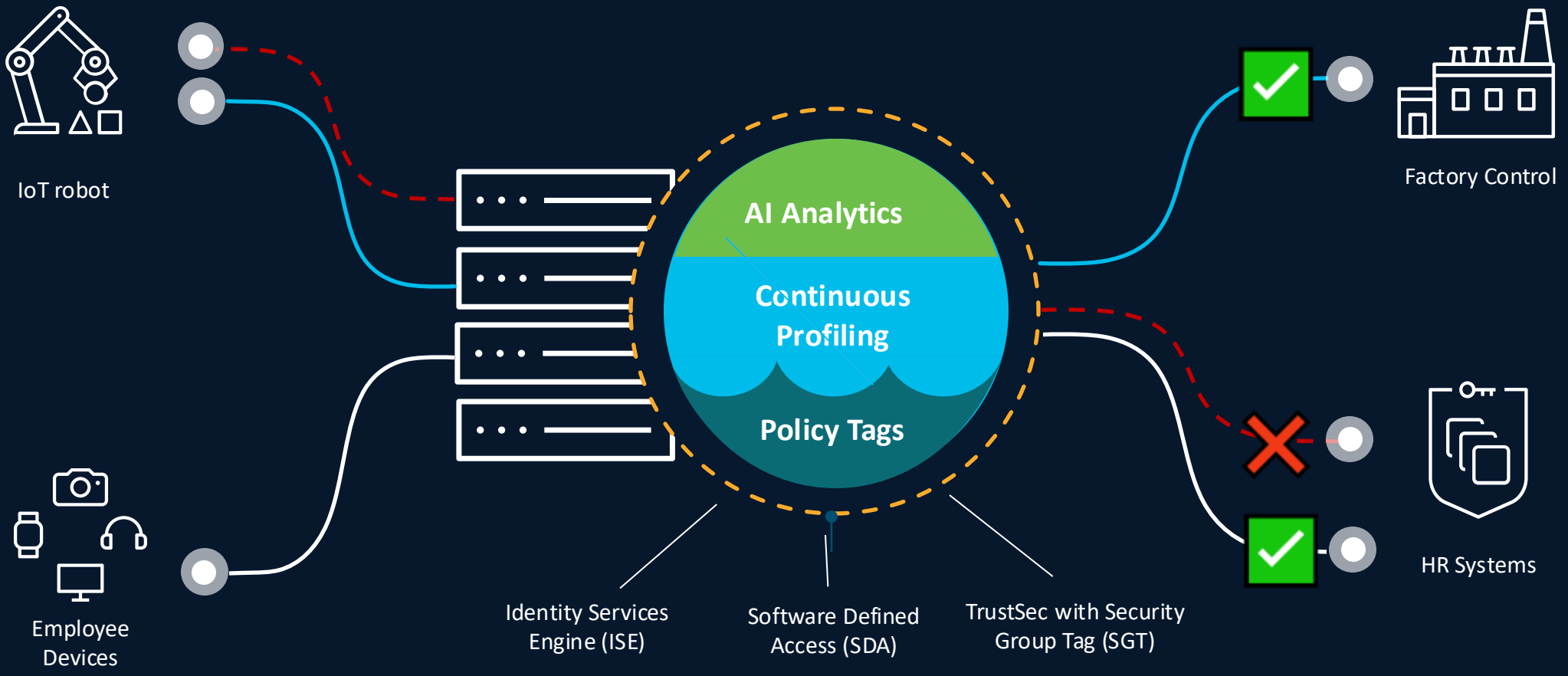
Securing the device

Protecting and ensuring compliance of devices

Quantum-resistant secure boot
Compensating controls

Cisco as a Leader for Fabric Architectures

Scalable microsegmentation to protect every connection



Hypershield in the Campus

FUTURE

Stateful Inspection and Control
- Security close to the source and at Network Edge

Firewall Embedded in Traffic Flows
- Reduced Infrastructure Complexity for Effective Security

Simplified Operations
- Centralized Policy and Firewall Management

Hypershield enables distributed stateful FW enforcement

What about code vulnerabilities?

Patching takes time

Software Maintenance Upgrade (SMU)

5-6 weeks turnaround

May require reload

Limited coverage

Needs an available fix for CVE

Release-specific

VS

Compensating Controls

Turnaround in days for high priority

Never requires reload

Can cover ~25% non-SMUable

Blocks CVE even when fix unavailable

Works across releases

FUTURE

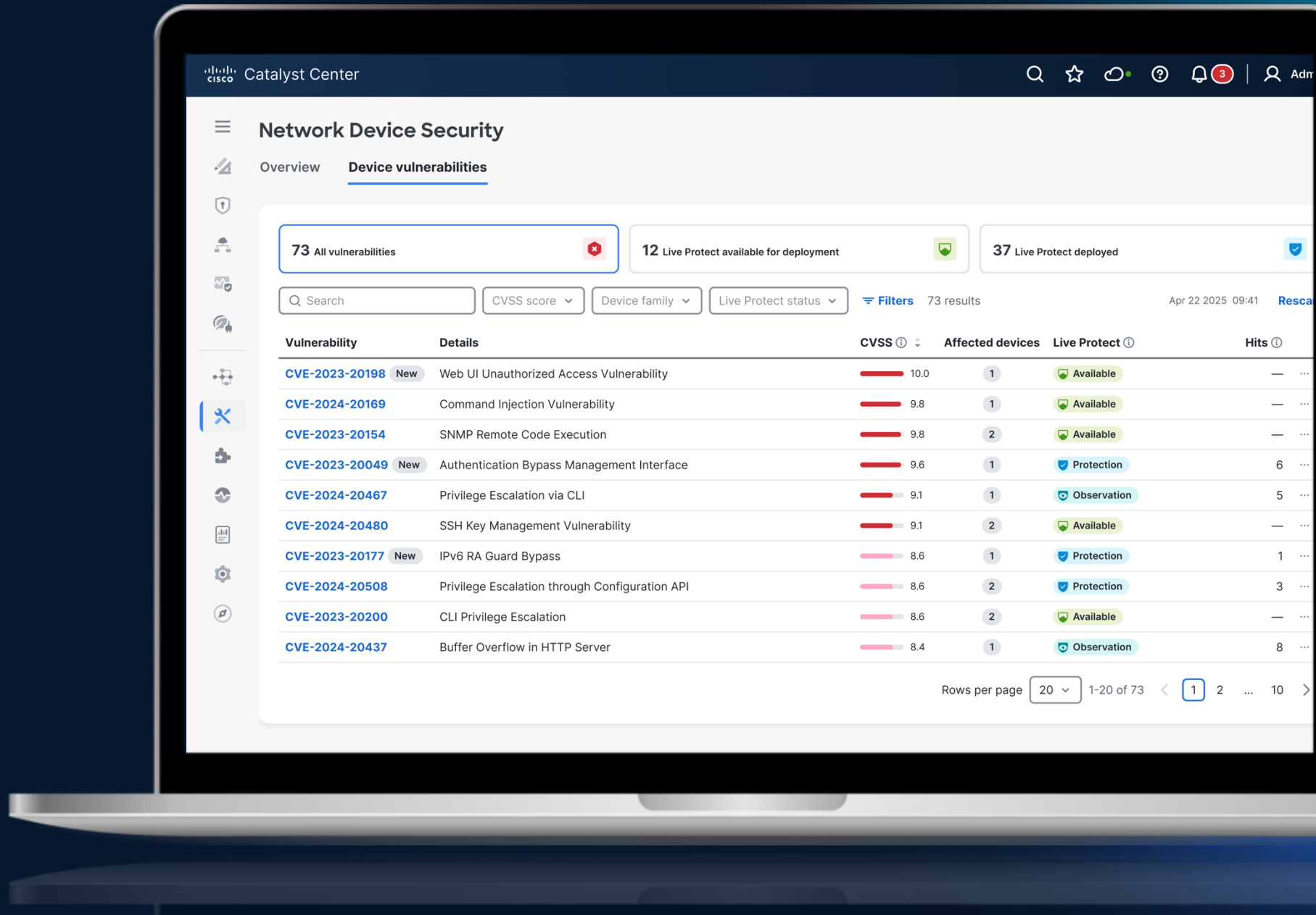
Live Protect

Mitigate new threats in near-real time

Leveraging kernel-level compensating controls

Without upgrading the image or rebooting the device

Shown in CatC 3.x



Network Device Security

Overview | Device vulnerabilities

73 All vulnerabilities

12 Live Protect available for deployment

37 Live Protect deployed

Search | CVSS score | Device family | Live Protect status | Filters | 73 results | Apr 22 2025 09:41 | Rescan

Vulnerability	Details	CVSS	Affected devices	Live Protect	Hits
CVE-2023-20198 New	Web UI Unauthorized Access Vulnerability	10.0	1	Available	—
CVE-2024-20169	Command Injection Vulnerability	9.8	1	Available	—
CVE-2023-20154	SNMP Remote Code Execution	9.8	2	Pending	—
CVE-2023-20049 New	Authentication Bypass Management Interface	9.6	1	Protection	6
CVE-2024-20467	Privilege Escalation via CLI	9.1	1	Observation	5
CVE-2024-20480	SSH Key Management Vulnerability	9.1	2	Available	—
CVE-2023-20177 New	IPv6 RA Guard Bypass	8.6	1	Protection	1
CVE-2024-20508	Privilege Escalation through Configuration API	8.6	2	Protection	3
CVE-2023-20200	CLI Privilege Escalation	8.6	2	Pending	—
CVE-2024-20437	Buffer Overflow in HTTP Server	8.4	1	Observation	8

Rows per page 20 | 1-20 of 73 | 1 | 2 | ... | 10

Highly Resilient Architectures

Catalyst 9000: Redundancy at Every Layer

Platform Redundancy Hardware + PS + Fan	Design Redundancy SVL + GIR + EVPN	Software Redundancy Upgrades + Patching
9300: StackWise, StackPower 9400/9600: Dual Supervisor, Power Supply, & Fan 9500: Power Supply & Fan	9300/9400/9500/9600 : Graceful Insertion and Removal (GIR) 9400/9500/9600: StackWise Virtual (SVL) 9300/9400/9500/9600: EVPN Multihoming	9300: Extended Fast Software Upgrade (xFSU) 9400/9600: ISSU (Standalone + StackWise Virtual) 9500: ISSU with StackWise Virtual 9300/9400/9500/9600: SMU Hot/Cold Patching

Minimize traffic impact across all layers of redundancy

Extended Fast Software Upgrade (xFSU)

Catalyst 9300/9350

IOS-XE 17.15.2

Extended Fast Software Upgrade (xFSU)

with Traffic Downtime under 5 Seconds

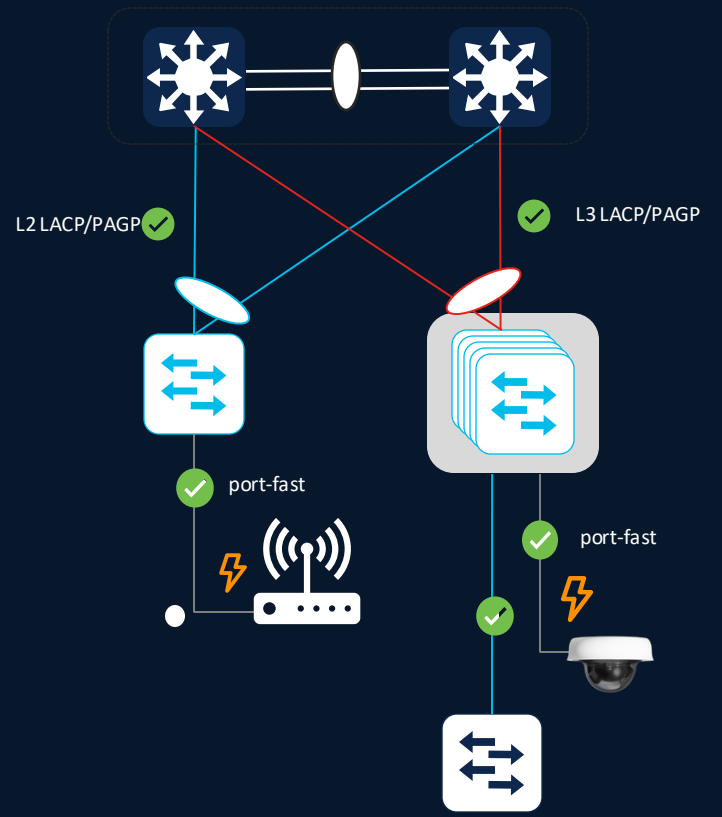
Wide Deployment Flexibility

- **Supported on Catalyst 9300 series switches**
  Works on **both standalone** and **stack** setups
- **Supported in Multiple Network Topologies**
- **No Topology Modifications Needed**

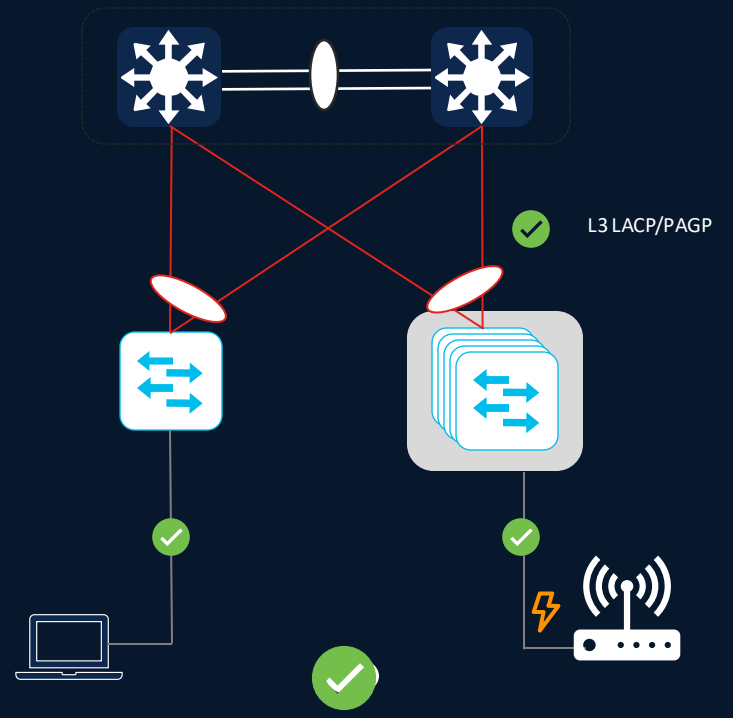
Supported Protocols

STP with RSTP and MSTP
Per VLAN Spanning Tree (PVST)
Static L2 Port Channels (Mode on)
UDLD
L2/L3 LACP
OSPFv2 or OSPFv3
IS-IS
Flexible NetFlow
QoS
IEEE 802.1X Authentication
MAC Authentication Bypass
Web Authentication
Non-Fabric VRF

L2 Access



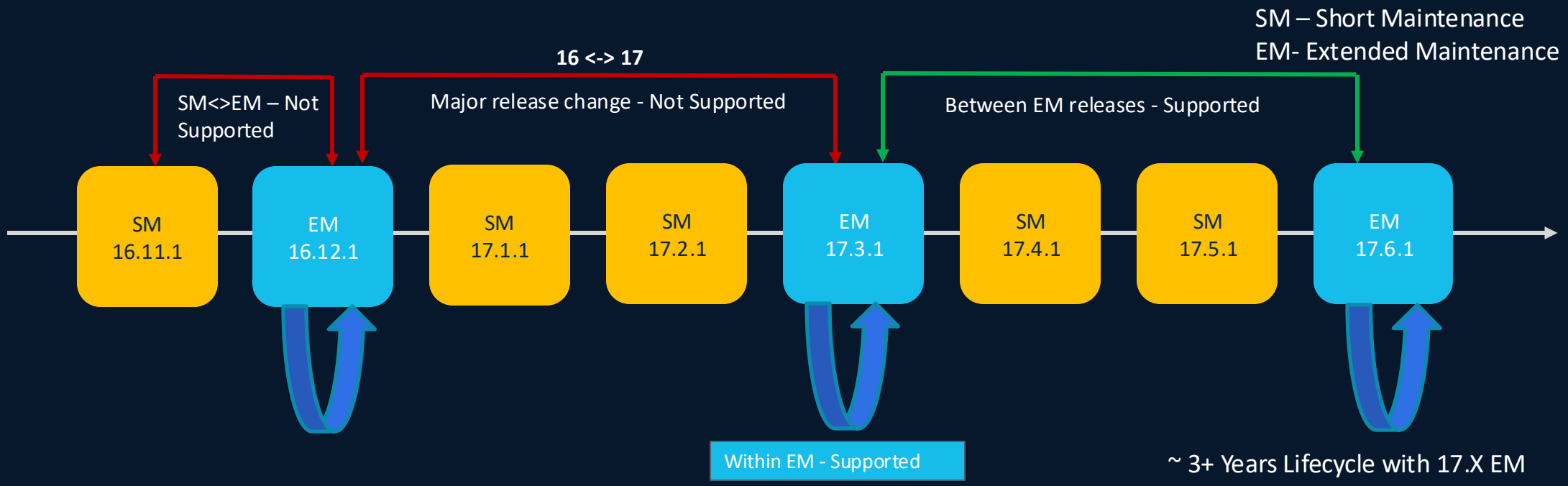
L3 Routed Access Node



Graceful Restart Routing Protocol:
BGP, IS-IS, OSPF

Supports Hitless Perpetual PoE

ISSU/xFSU Release Guidelines



Supported

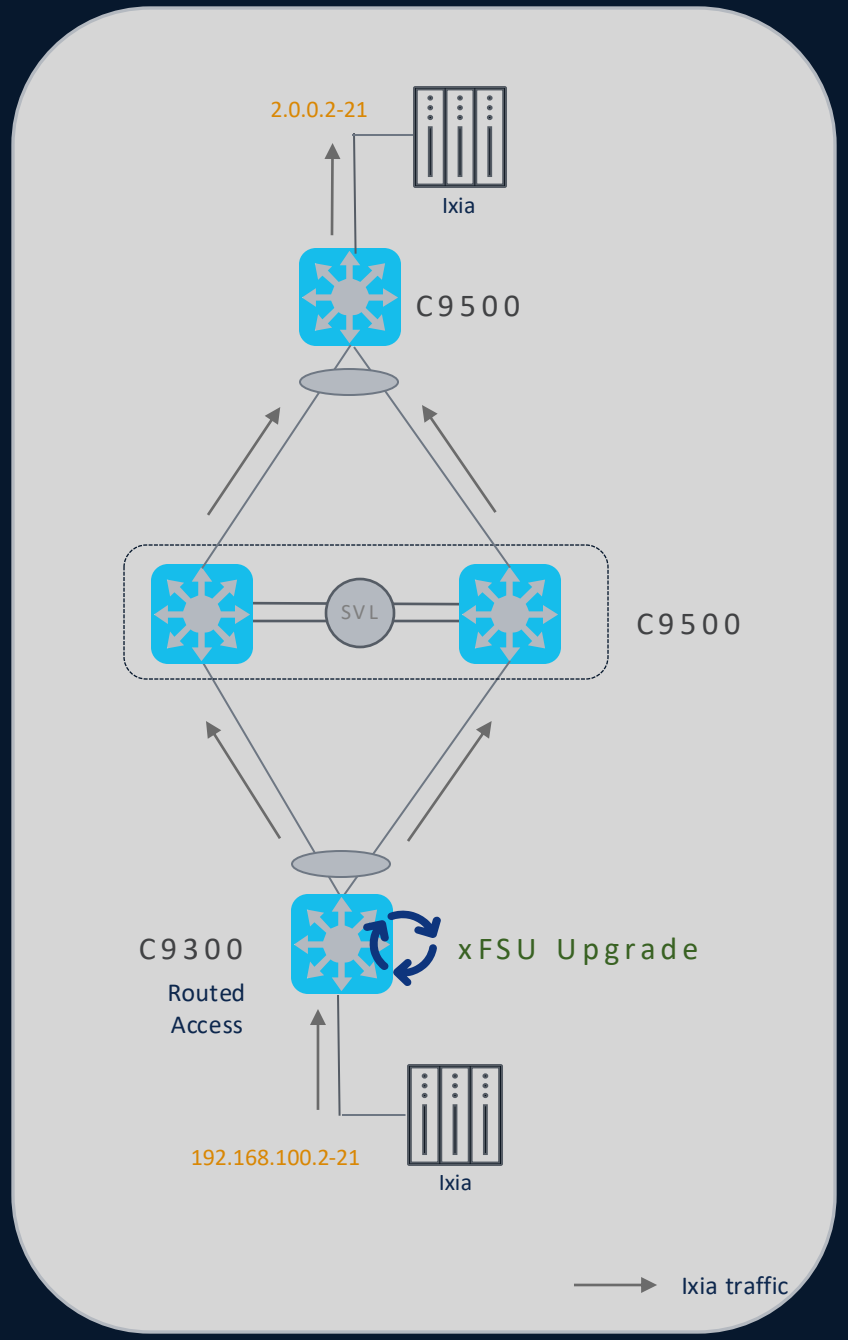
- Within EM Release - Any to Any within the EM Release (16.12.X <>16.12.X)
- Between EM Releases but within major releases [within + 2 EM releases]

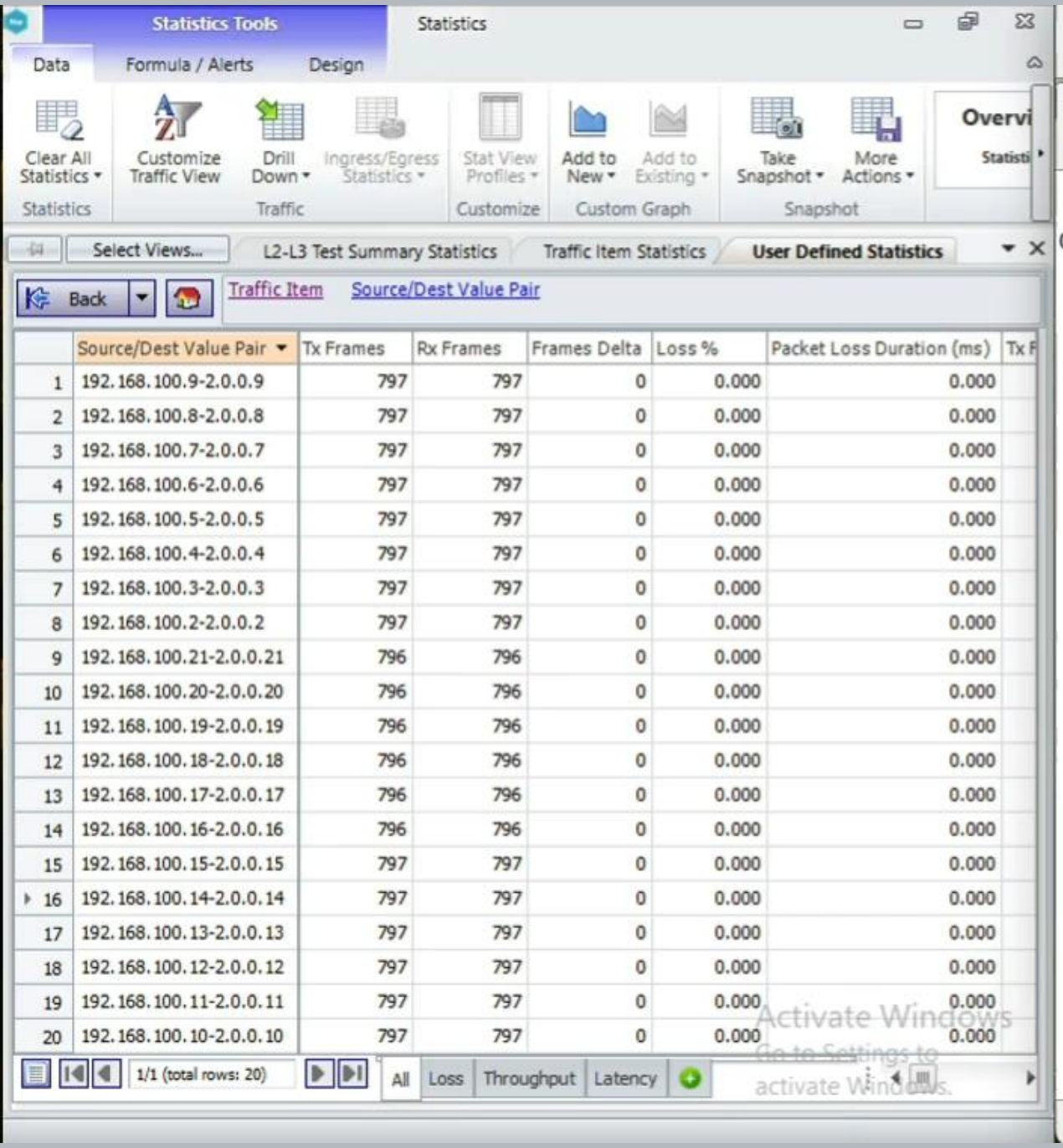
Not Supported

- SM to EM or EM to SM.(16.11.X <>16.12.x)
- Within SM Release - (16.11.1<>16.11.2)
- Beyond the + 2 EM Releases.
- When there is a major release change.
  - For example 16.x.x to 17.x.x

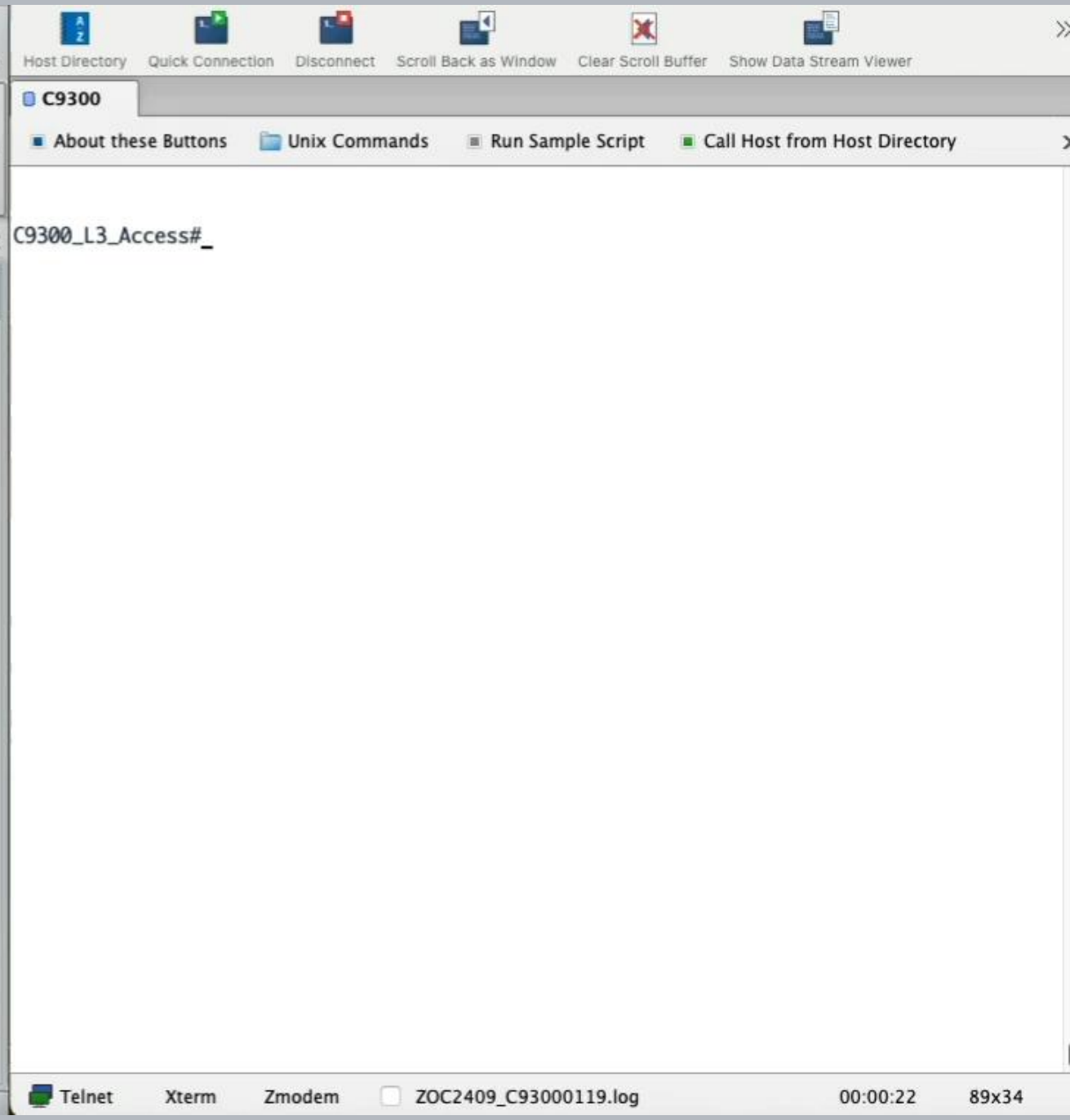
** Downgrade is not supported via ISSU method*

xFSU Demo





	Source/Dest Value Pair	Tx Frames	Rx Frames	Frames Delta	Loss %	Packet Loss Duration (ms)	Tx F
1	192.168.100.9-2.0.0.9	797	797	0	0.000	0.000	
2	192.168.100.8-2.0.0.8	797	797	0	0.000	0.000	
3	192.168.100.7-2.0.0.7	797	797	0	0.000	0.000	
4	192.168.100.6-2.0.0.6	797	797	0	0.000	0.000	
5	192.168.100.5-2.0.0.5	797	797	0	0.000	0.000	
6	192.168.100.4-2.0.0.4	797	797	0	0.000	0.000	
7	192.168.100.3-2.0.0.3	797	797	0	0.000	0.000	
8	192.168.100.2-2.0.0.2	797	797	0	0.000	0.000	
9	192.168.100.21-2.0.0.21	796	796	0	0.000	0.000	
10	192.168.100.20-2.0.0.20	796	796	0	0.000	0.000	
11	192.168.100.19-2.0.0.19	796	796	0	0.000	0.000	
12	192.168.100.18-2.0.0.18	796	796	0	0.000	0.000	
13	192.168.100.17-2.0.0.17	796	796	0	0.000	0.000	
14	192.168.100.16-2.0.0.16	796	796	0	0.000	0.000	
15	192.168.100.15-2.0.0.15	797	797	0	0.000	0.000	
16	192.168.100.14-2.0.0.14	797	797	0	0.000	0.000	
17	192.168.100.13-2.0.0.13	797	797	0	0.000	0.000	
18	192.168.100.12-2.0.0.12	797	797	0	0.000	0.000	
19	192.168.100.11-2.0.0.11	797	797	0	0.000	0.000	
20	192.168.100.10-2.0.0.10	797	797	0	0.000	0.000	



Graceful Insertion & Removal (GIR)

Graceful Insertion and Removal

Upgrades with no or minimal traffic loss

Comprehensive node isolation framework

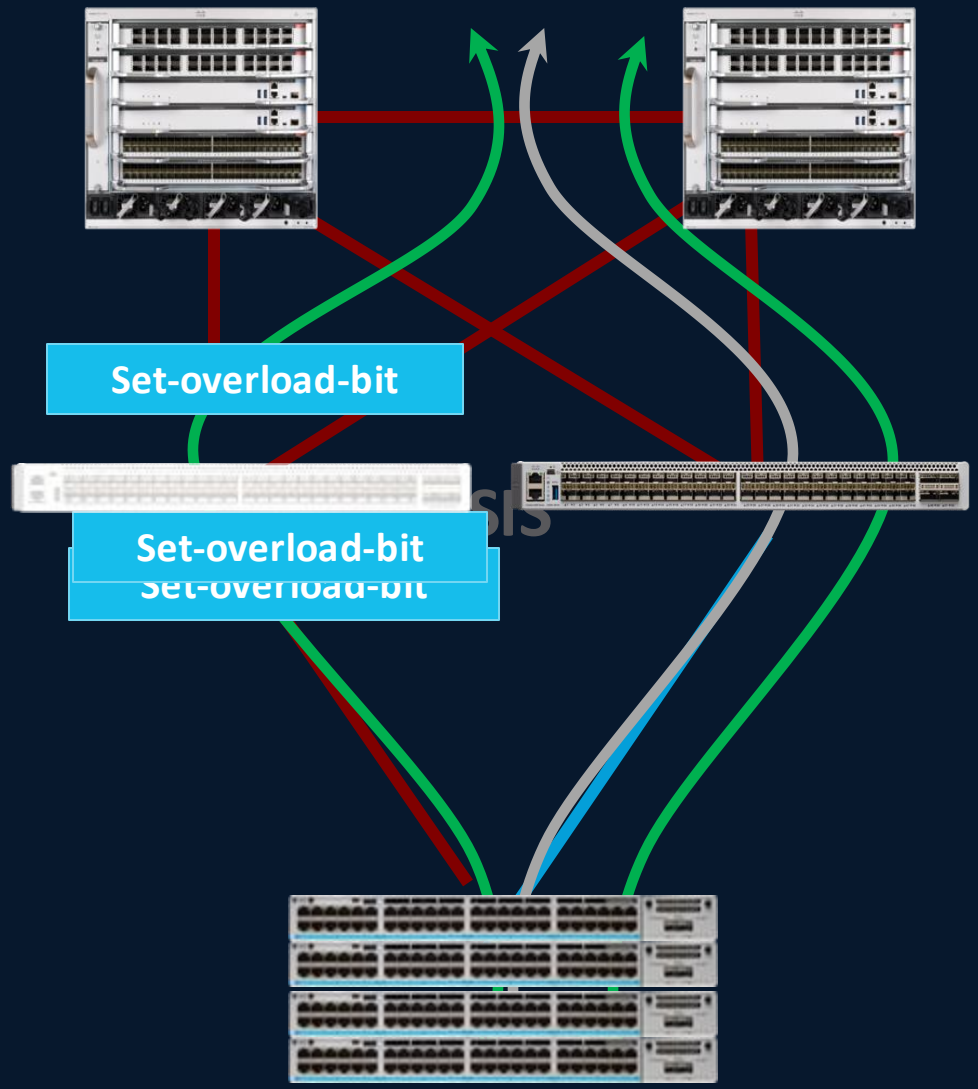
Easy execution with a single command

Highly customizable workflow

Simple
Customizable
Non-Traffic
Impacting

L2 and L3 Topology with GIR Isolation

```
9300#start maintenance
Template default will be applied.
Do you want to continue?[confirm]
*Mar 25 17:43:20.162: %MMODE-6-
MMODE_CLIENT_TRANSITION_START: Maintenance Isolate
start  for router isis 1
*Mar 25 17:43:50.213: %MMODE-6-
MMODE_CLIENT_TRANSITION_COMPLETE: Maintenance Isolate
complete  for router isis 1
*Mar 25 17:43:50.213: MMODE-6-
MMODE_CLIENT_TRANSITION%_START: Maintenance Isolate
start  for shutdown l2
*Mar 25 17:44:20.214: %MMODE-6-
MMODE_CLIENT_TRANSITION_COMPLETE: Maintenance Isolate
complete  for shutdown l2
*Mar 25 17:44:20.214: %MMODE-6-MMODE_ISOLATED: System
is in Maintenance
```

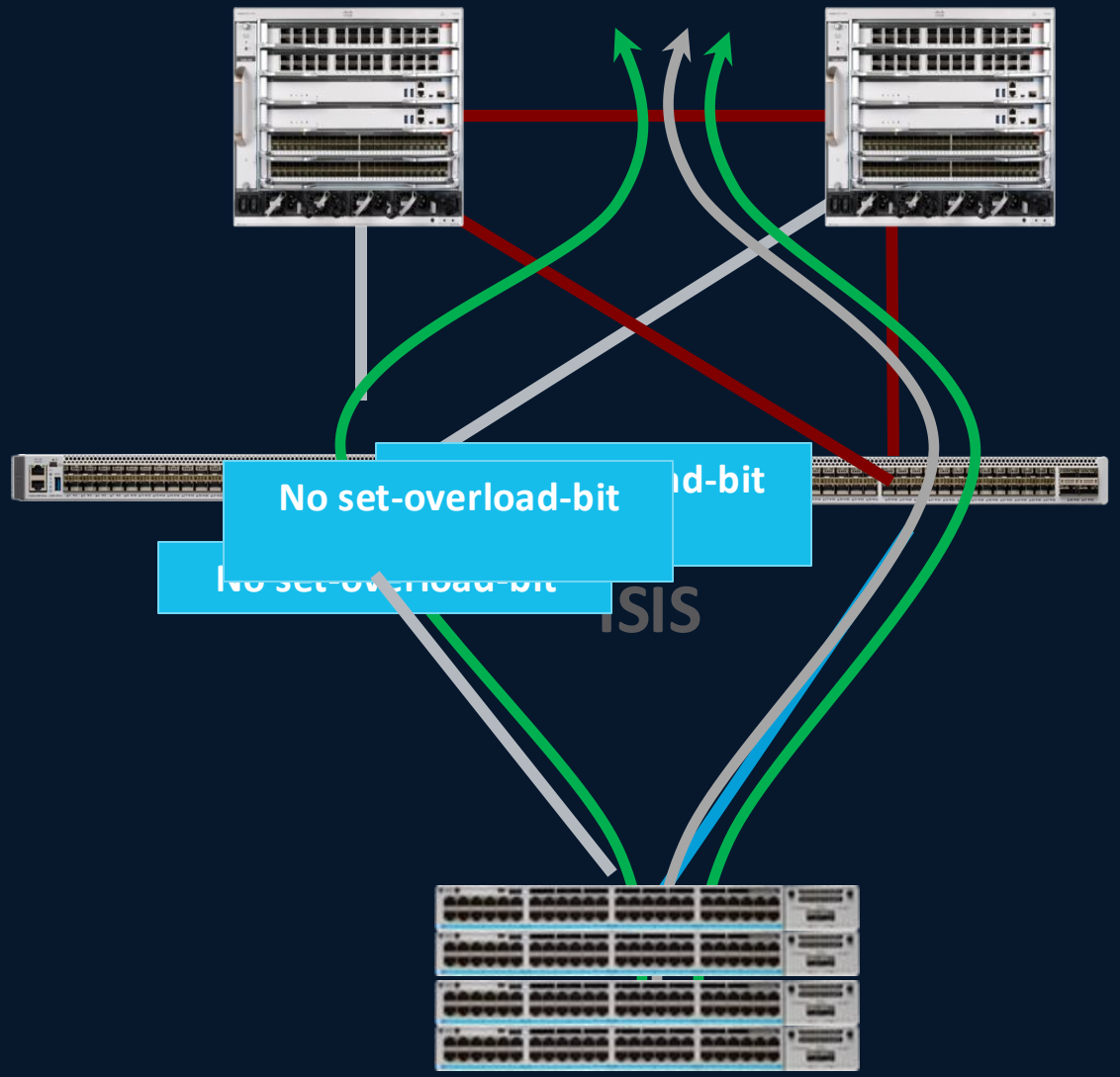


Order for Maintenance:

BGP -> IGPs in parallel (ISIS) -> L2

L2 and L3 Topology with GIR Isolation

```
9300#stop maintenance
*Mar 25 19:15:40.235: %MMODE-6-
MMODE_CLIENT_TRANSITION_START: Maintenance
Insert start  for shutdown l2
*Mar 25 19:16:10.237: %MMODE-6-
MMODE_CLIENT_TRANSITION_COMPLETE: Maintenance
Insert complete  for shutdown l2
*Mar 25 19:16:10.237: %MMODE-6-
MMODE_CLIENT_TRANSITION_START: Maintenance
Insert start  for router isis 1
*Mar 25 19:16:40.288: %MMODE-6-
MMODE_CLIENT_TRANSITION_COMPLETE: Maintenance
Insert complete  for router isis 1
*Mar 25 19:16:40.612: %MMODE-6-MMODE_INSERTED:
System is in Normal Mode
```



Order for Maintenance:

L2 → IGPs in parallel (ISIS) -> BGP

Reference

GIR Insertion and Removal Method

Protocol	Graceful Removal Mechanism	Graceful Insertion Mechanism
ISIS	Set Overload Bit	Unset Overload Bit
OSPF	Send LSAs with max metric	Refresh LSAs with original metric
BGP	Withdraw BGP Advertised routes	Re-insert the BGP Advertised Routes
HSRP	Advertise Resign Message	Advertise Hello Message
VRRP	Advertise Priority 0	Revert back with original priority

BETA

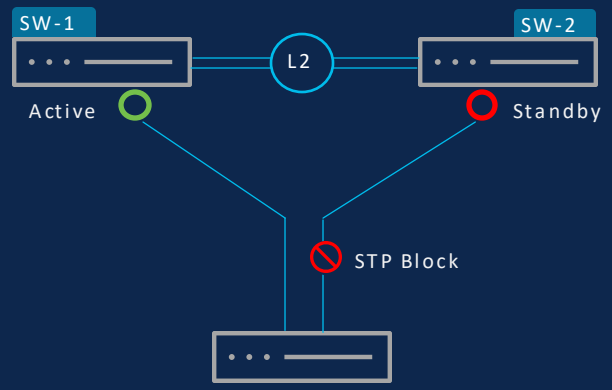
Catalyst 9K – EVPN Multihoming

17.18.1: Beta for Non-Fabric | Fabric available now

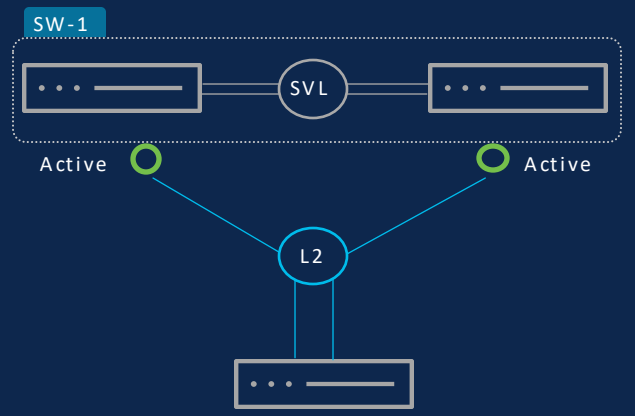
17.18.2 + 26.1.1: GA code expected in Q1 2026

FHRP

HSRP | VRRP | GLBP

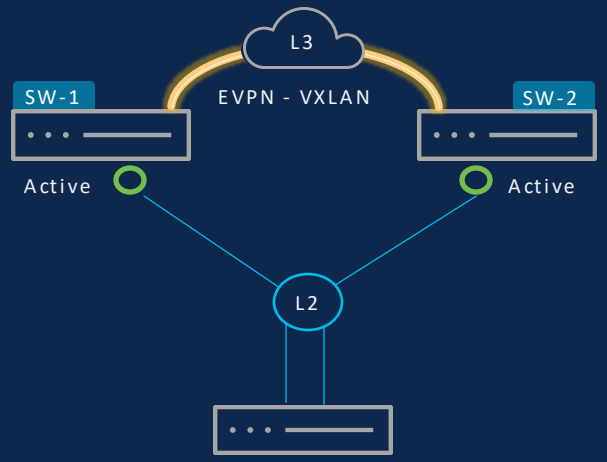


StackWise Virtual



EVPN Multihoming

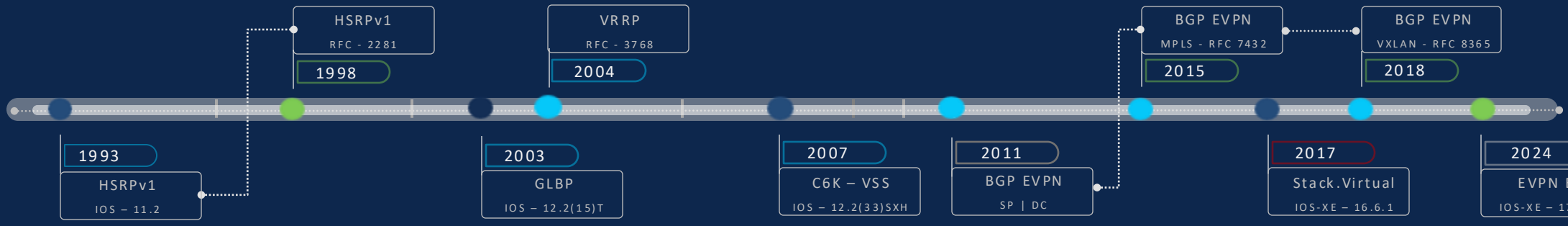
RFC 8365



Active VLAN

Standby VLAN

IETF



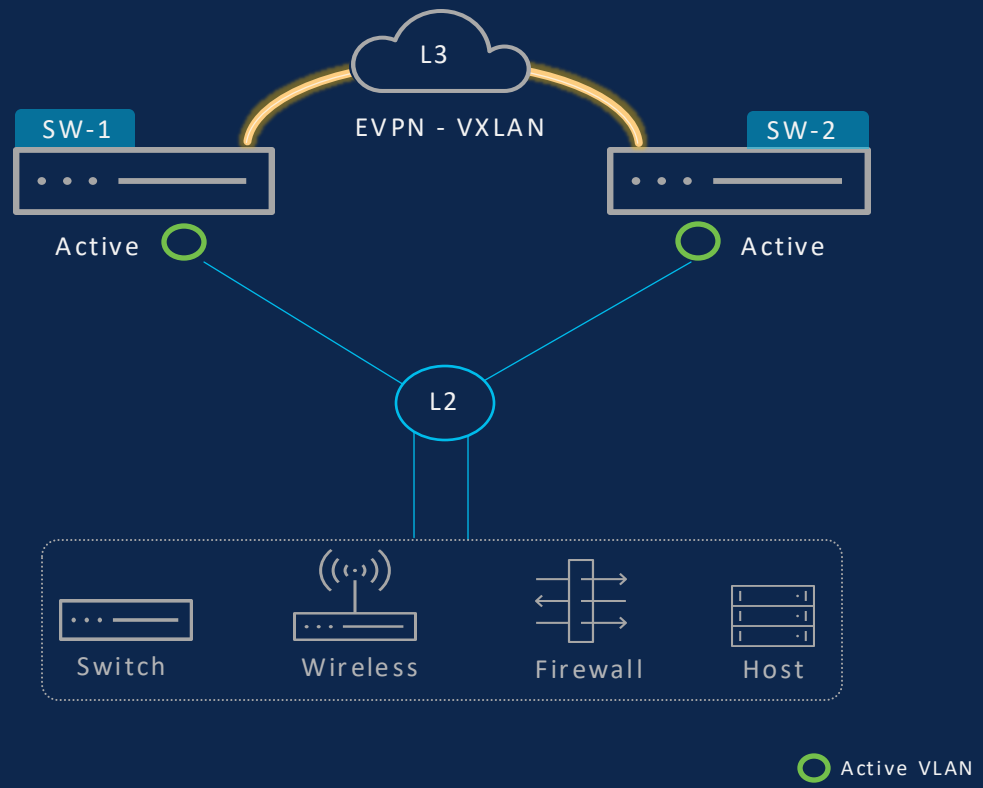
CISCO

CISCO

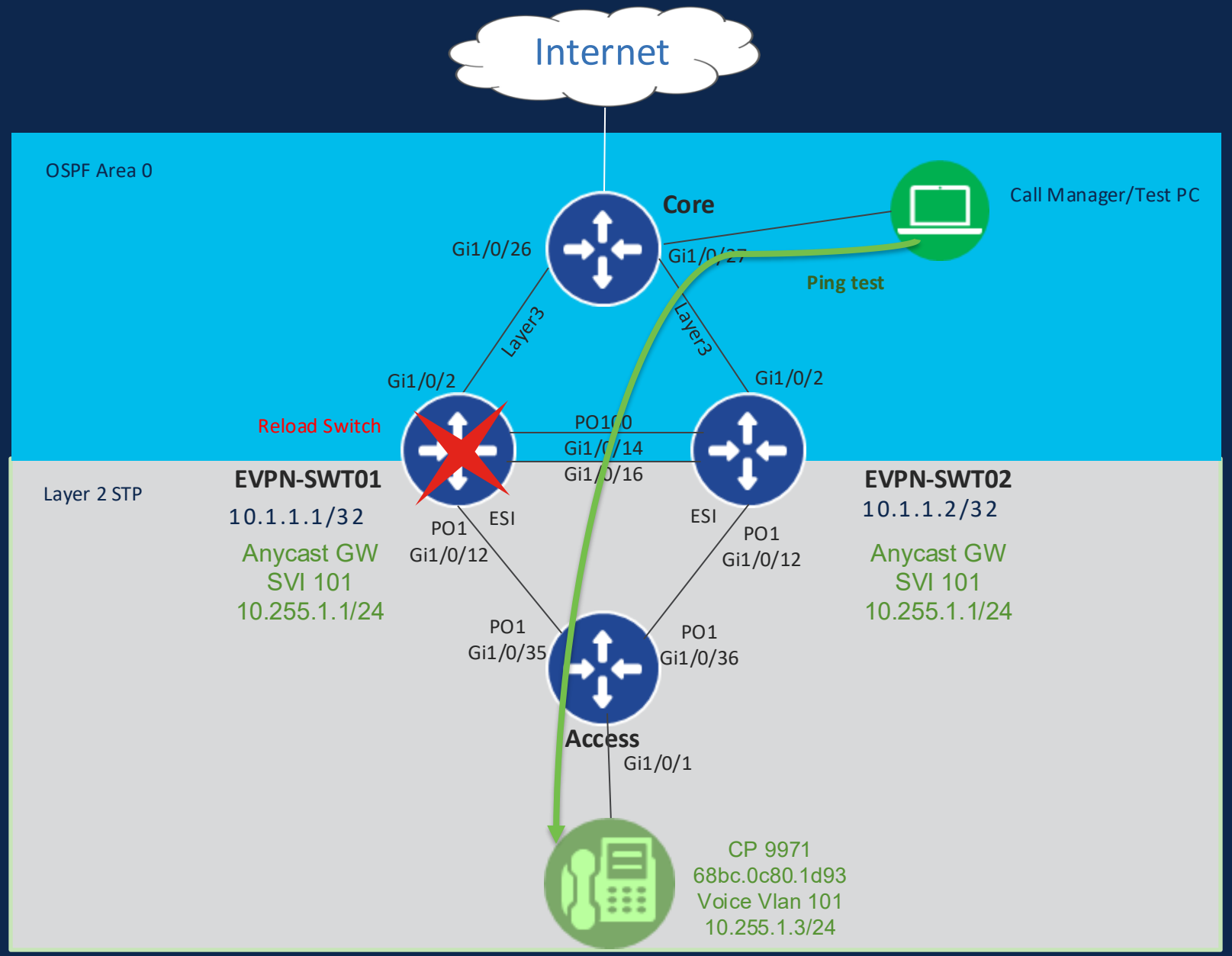
EVPN Multihoming– Product Support Matrix

Reference

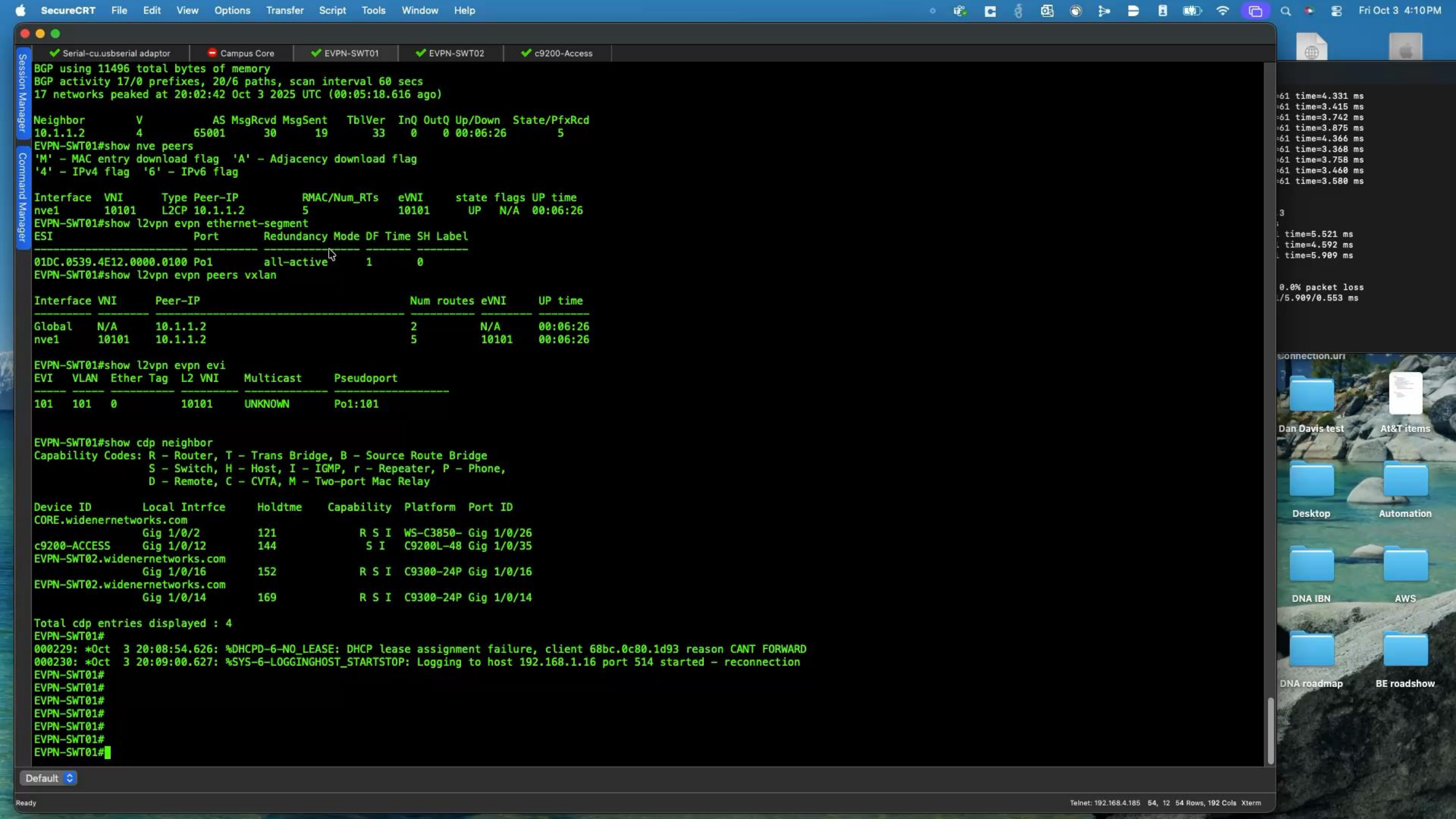
Catalyst 9K Modular Switch	Catalyst 9600 Series – Sup-1 Catalyst 9600 Modules – Any
	Catalyst 9400 Series – Sup-1 Catalyst 9400X Series – Sup-2 Catalyst 9400 Modules – Any
Catalyst 9K Fixed Switch	Catalyst 9500 Series
	Catalyst 9500-H Series
	Catalyst 9300X Series
	Catalyst 9300 Series
Software License	Network Advantage



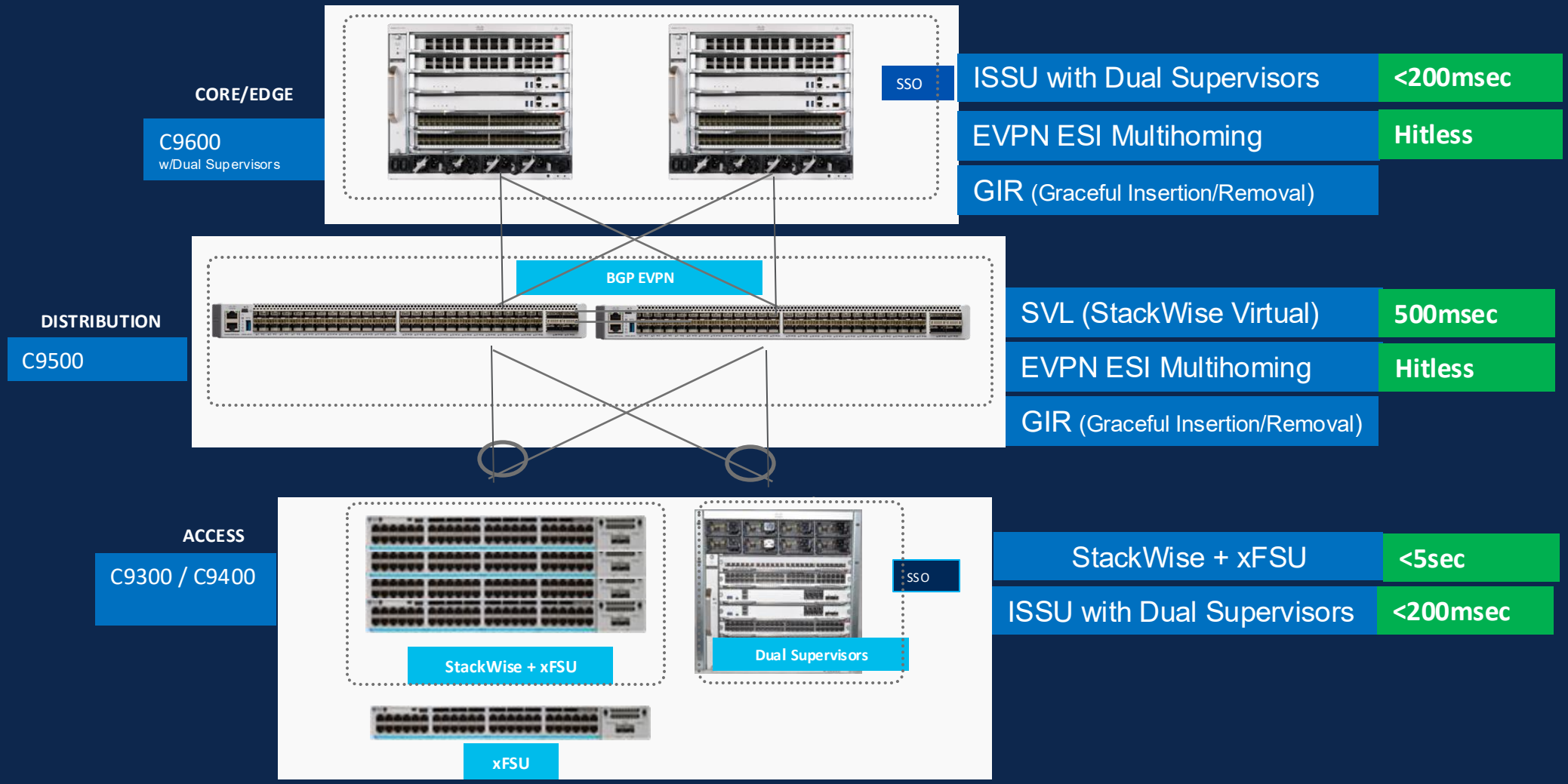
Topology


Internet
OSPF Area 0
Core
Call Manager/Test PC
Gi1/0/26
Gi1/0/27
Ping test
Layer3
Layer3
Gi1/0/2
Gi1/0/2
Reload Switch
PO100
Gi1/0/14
Gi1/0/16
Layer 2 STP
EVPN-SWT01
10.1.1.1/32
Anycast GW
SVI 101
10.255.1.1/24
ESI
ESI
PO1
Gi1/0/12
PO1
Gi1/0/12
EVPN-SWT02
10.1.1.2/32
Anycast GW
SVI 101
10.255.1.1/24
PO1
Gi1/0/35
PO1
Gi1/0/36
Access
Gi1/0/1
CP 9971
68bc.0c80.1d93
Voice Vlan 101
10.255.1.3/24

Demo


SecureCRT File Edit View Options Transfer Script Tools Window Help
Fri Oct 3 4:10PM
Serial-cu.usbserial adaptor
Campus Core
EVPN-SWT01
EVPN-SWT02
c9200-Access
Session Manager
Command Manager
BGP using 11496 total bytes of memory
BGP activity 17/0 prefixes, 20/6 paths, scan interval 60 secs
17 networks peaked at 20:02:42 Oct 3 2025 UTC (00:05:18.616 ago)
Neighbor V AS MsgRcvd MsgSent TblVer InQ OutQ Up/Down State/PfxRcd
10.1.1.2 4 65001 30 19 33 0 0 00:06:26 5
EVPN-SWT01#show nve peers
'M' - MAC entry download flag 'A' - Adjacency download flag
'4' - IPv4 flag '6' - IPv6 flag
Interface VNI Type Peer-IP RMAC/Num_RTs eVNI state flags UP time
nve1 10101 L2CP 10.1.1.2 5 10101 UP N/A 00:06:26
EVPN-SWT01#show l2vpn evpn ethernet-segment
ESI Port Redundancy Mode DF Time SH Label
01DC.0539.4E12.0000.0100 Po1 all-active 1 0
EVPN-SWT01#show l2vpn evpn peers vxlan
Interface VNI Peer-IP Num routes eVNI UP time
Global N/A 10.1.1.2 2 N/A 00:06:26
nve1 10101 10.1.1.2 5 10101 00:06:26
EVPN-SWT01#show l2vpn evpn evi
EVI VLAN Ether Tag L2 VNI Multicast Pseudoport
101 101 0 10101 UNKNOWN Po1:101
EVPN-SWT01#show cdp neighbor
Capability Codes: R - Router, T - Trans Bridge, B - Source Route Bridge
S - Switch, H - Host, I - IGMP, r - Repeater, P - Phone,
D - Remote, C - CVTA, M - Two-port Mac Relay
Device ID Local Intrfce Holdtme Capability Platform Port ID
CORE.widenernetworks.com
Gig 1/0/2 121 R S I WS-C3850- Gig 1/0/26
c9200-ACCESS Gig 1/0/12 144 S I C9200L-48 Gig 1/0/35
EVPN-SWT02.widenernetworks.com
Gig 1/0/16 152 R S I C9300-24P Gig 1/0/16
EVPN-SWT02.widenernetworks.com
Gig 1/0/14 169 R S I C9300-24P Gig 1/0/14
Total cdp entries displayed : 4
EVPN-SWT01#
000229: *Oct 3 20:08:54.626: %DHCPD-6-NO_LEASE: DHCP lease assignment failure, client 68bc.0c80.1d93 reason CANT FORWARD
000230: *Oct 3 20:09:00.627: %SYS-6-LOGGINGHOST_STARTSTOP: Logging to host 192.168.1.16 port 514 started - reconnection
EVPN-SWT01#
EVPN-SWT01#
EVPN-SWT01#
EVPN-SWT01#
EVPN-SWT01#
EVPN-SWT01#
EVPN-SWT01#
Default
Ready
Telnet: 192.168.4.185 54, 12 54 Rows, 192 Cols Xterm
time=4.331 ms
time=3.415 ms
time=3.742 ms
time=3.875 ms
time=4.366 ms
time=3.368 ms
time=3.758 ms
time=3.460 ms
time=3.580 ms
time=5.521 ms
time=4.592 ms
time=5.909 ms
0.0% packet loss
/5.909/0.553 ms
Dan Davis test
At&T items
Desktop
Automation
DNA IBN
AWS
DNA roadmap
BE roadshow

Campus Resiliency at Every Layer



Putting it all Together

New platforms for an AI future

- High density mGig and UPoE+ for WiFi7 and beyond
- Higher performance for AI workloads
- Intelligent onboarding and management
- Dual-persona: Networking + Security

Join us for Platform and AIOps updates next!

Security Infused in the Network

- Authentication, segmentation, encryption … even for a PQC world
- Hypershield-ready for IPS/IDS enforcement at switch port level
- Live Protect for immediate response against day-0 threats before patches are developed

Highly Resilient Campus

- Hitless core / distribution layers
- Sub 5 second upgrades for standalone or stackable access

Thank you