

The Cisco Live! logo features the word "CISCO" in a dark blue, sans-serif font, followed by "Live!" in a dark blue, cursive script font. The background of the entire image is a vibrant, multi-colored abstract pattern of overlapping, wavy lines and geometric shapes, transitioning from dark blue on the left to bright yellow and white on the right, with a sunburst effect on the right side.

CISCO *Live!*

Let's go

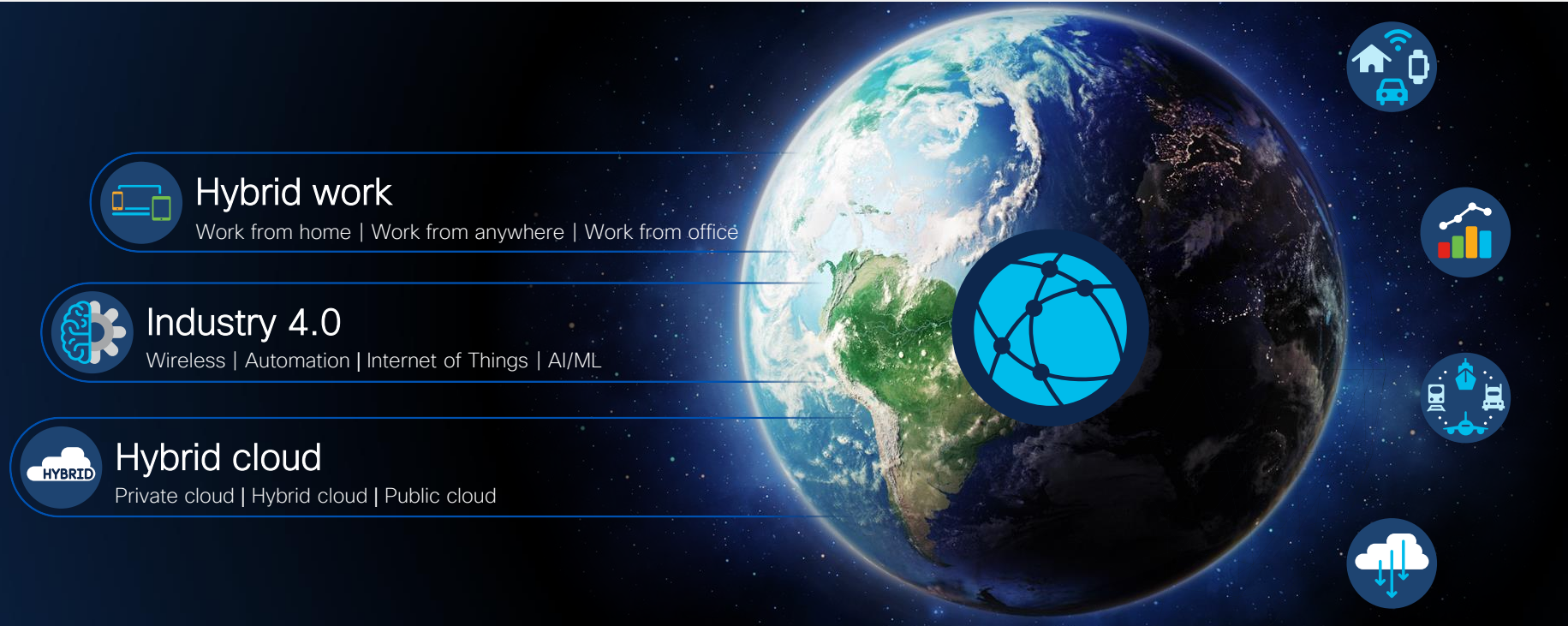
Catalyst 9000 Series Switching Family – Access

Minhaj Uddin, Leader Technical Marketing

Agenda

- Introduction
- Catalyst 9200CX / 9200
- Catalyst 9300X / 9300
- Catalyst 9400X / 9400
- Summary

Digital trends shaping the future of business



and the **network** is the core engine of hybrid work

Is Your Network Ready for the New Era?

IP Display/DMS



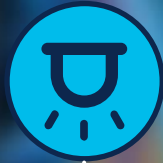
Printer



IP Camera



LED Lights



AP



PC/Laptop



IP Phone



Does the platform support new PoE devices efficiently?

Does the platform make it easy to provision and scale?

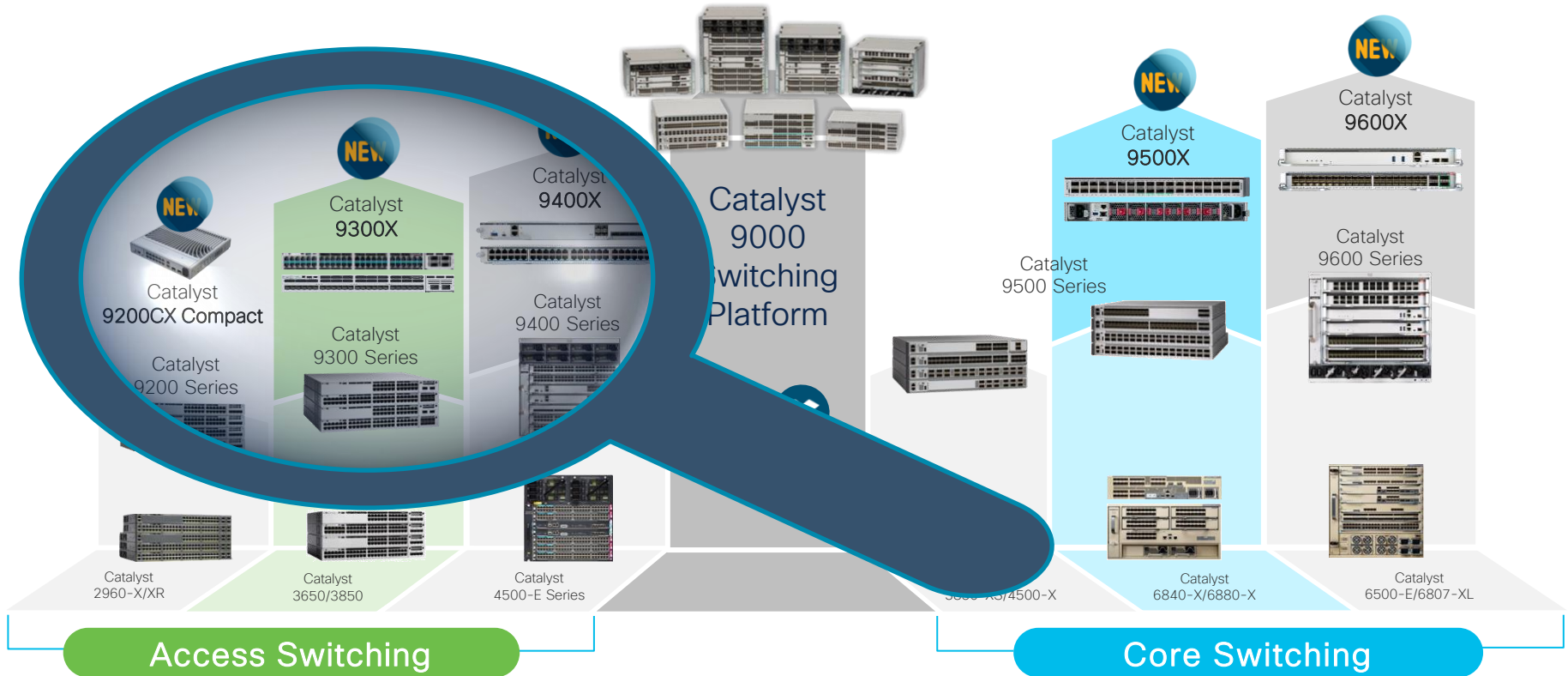
Does the platform support enough Programmability?

Does the platform ensure secure network access?

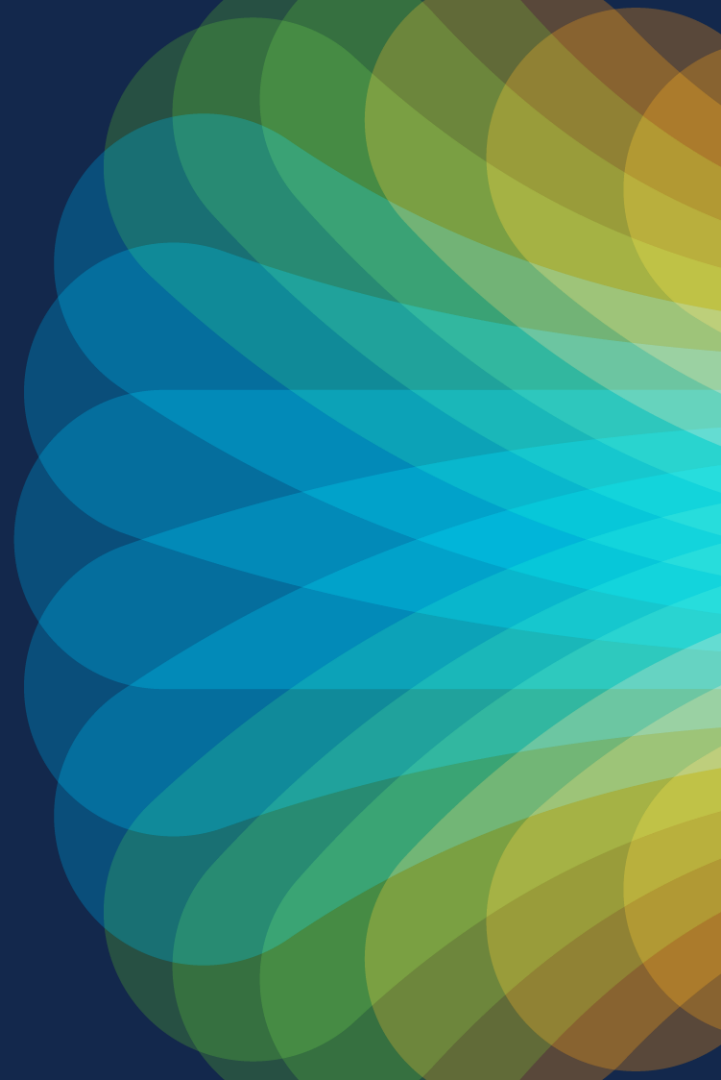
Does the platform let you adapt to new connectivity requirements?

Cisco Catalyst 9000 Switching Portfolio

Adding the “X factor” to the industry’s leading switching family



Catalyst 9300



Cisco Catalyst 9300 Series

Extended Catalyst 9300 Series with Catalyst 9300X models

Catalyst® 9300 models with modular uplinks

1G copper ports with PoE/Cisco UPOE®/UPOE+



48/24 ports Data



48/24 ports PoE+ 1G



48/24 ports UPOE+ and UPOE 1G

2x
Buffers

2-4x
Scale



48/24 ports UPOE 1G - 9300B

Multigigabit models with UPOE



48/24 ports Multigigabit

1G fiber



48/24 ports SFP 1G

StackWise® and StackPower cables



50CM-1M-3M



30CM-150CM

9300 Uplinks



4x
Multigigabit



4x 1G SFP



8x 1/10G SFP/
SFP+



2x 40G QSFP



2x 1/10/25G
SFP/SFP+

Catalyst 9300 models with Fixed uplinks

1G Copper Data & PoE



48/24 ports data 1G



48/24 ports PoE+ 1G

Multigigabit models with UPOE



48/24 ports mGig + UPOE

4x1G or 4x10G
fixed
Uplinks

4x1G or 4x10G
fixed
Uplinks

4x10G or
2x40G
Uplinks

Optional StackKit



Stack Adapters



50CM-1M-3M

Platinum-rated power supplies

Common components



315W AC



715W AC/DC



1100W AC



1900W AC

Modular fans



BRKARC-2098

External Storage



USB 3.0
120/240GB

Catalyst 9300X – New High Performance Access Switch

- 500GE Bandwidth
- 100G Encryption
- 1/2.5/5/10/25/40/100G Supports Different Speeds
- Enhanced App Hosting
2 x 10G App Gig ports
- 1T Stacking Capacity
- QAT Engine (HW Acceleration)



48 x mGig-10G + 90W UPOE+

Flexible Uplink Options

Investment protection with Catalyst 9300X

External storage
(240-GB SSD)

Redundant fans

Redundant power



Data stack cables
1T Stacking BW

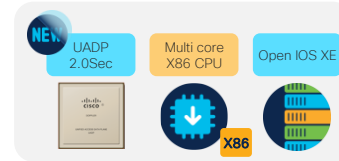
StackPower cables

Optional power
supplies (AC+DC)

Common components and stacking backward compatible with Catalyst®
9300 Series

Introducing the Catalyst 9300X models

Stacking up the industry firsts



Industry first **Terabit stacking**

Stacks with Catalyst® 9300 Series switches

Mixed 25/10G fiber stacking with copper

Transitions Catalyst 3850-XS fiber switches

100G uplinks on stackable

Densest uplinks: 2x 100/40G, 8x 25/10G, 8x 10G/Multigigabit

Extending Catalyst leadership ...

- Line-rate non-blocking
- Removable storage (240 GB)
- 256-bit MACsec
- Hot patching
- Extended FSU
- NBAR2
- IEEE 1588 and AVB

Fiber

Shipping Catalyst 9300X-24Y

Shipping Catalyst 9300X-12Y

Copper

Catalyst 9300X-48HX

Catalyst 9300X-48TX

Catalyst 9300X-48HXN

Catalyst 9300X-24HX

...while seamlessly integrating with Catalyst 9300

- Same optics
- Common stacking
- Common power stacking
- Common power supplies, fans, cables

Industry first **100G Layer 3 encryption**

IPsec,
* WAN MACsec,
* CloudSec*

Stackable 24x 10/25G

10/25G across all ports in 1RU

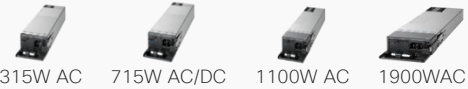
Industry first **StackPower+**

Enabled through StackPower+ and power supply enhancements

Industry first **App hosting with crypto acceleration**

QAT and ~2x capacity (memory, CPU, 2x 10G KR)

Modular uplinks | StackWise® and StackPower cables | Platinum-rated power supplies | Modular fan

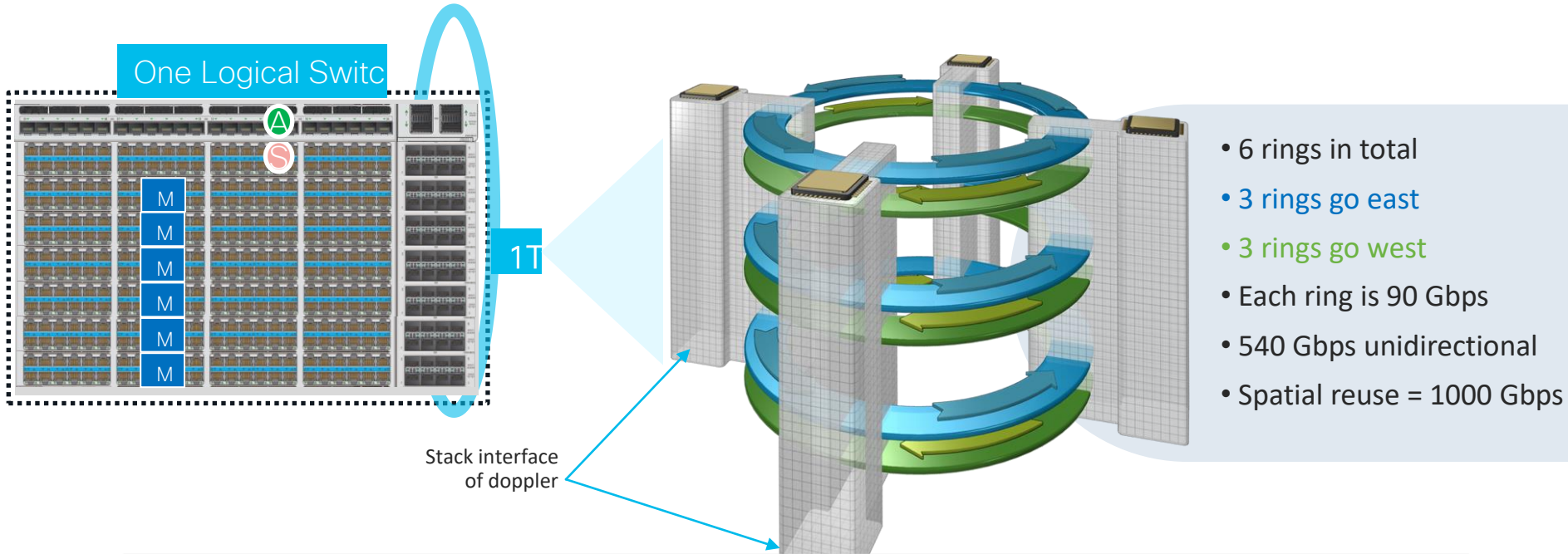


*Roadmap.



Cisco Catalyst 9300X Series Switches

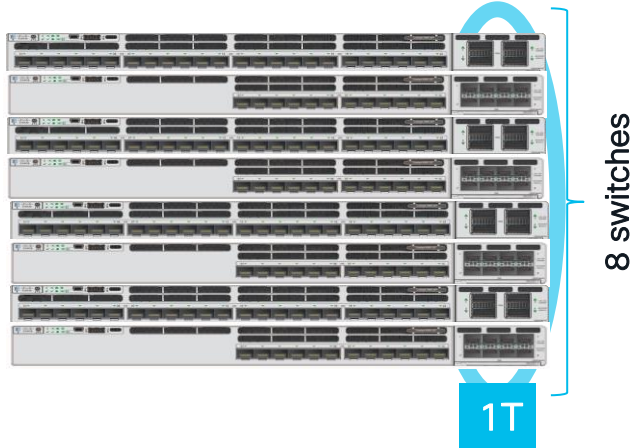
The stack ring – StackWise-1T on all C9300X SKUs



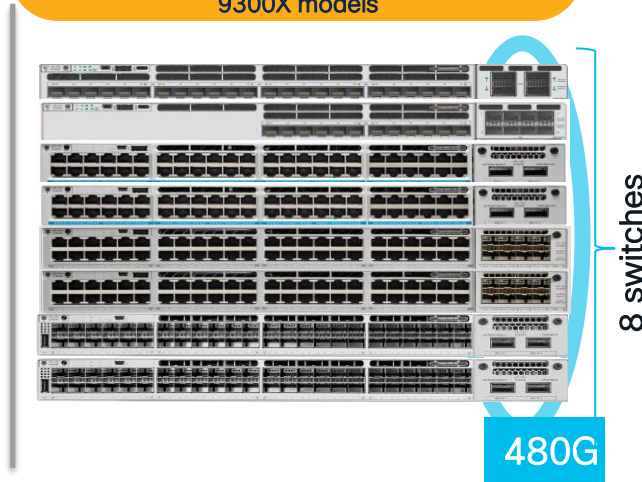
Assuming 4x 24-port Cisco® Catalyst® 9300X Series modular uplink models

Catalyst 9300 Stacking Support

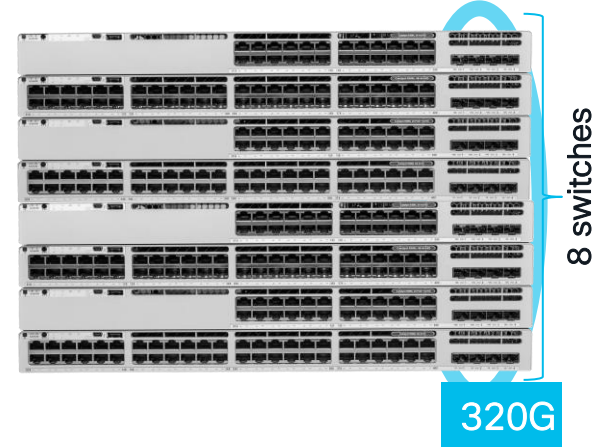
Modular Uplink
Catalyst 9300X models (10/25G Fiber)



Modular Uplink
Catalyst 9300 (non -B) and Catalyst
9300X models



Fixed Uplink
Catalyst 9300L models

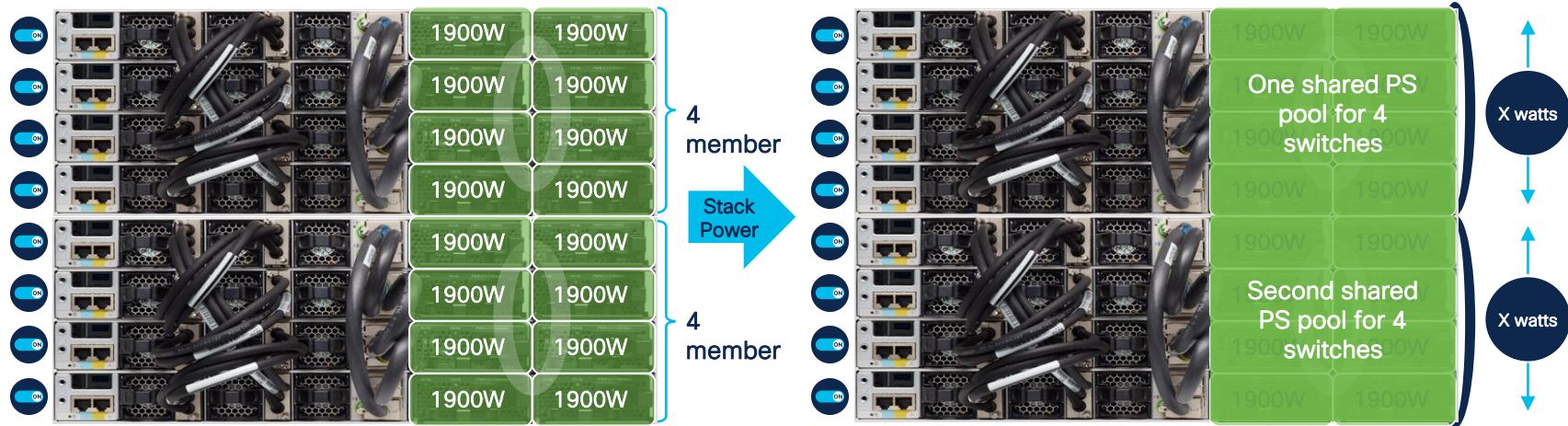


Stacking supported among Catalyst 9300X models and mixed stacking between Catalyst 9300 and Catalyst 9300X models

Stacking supported among Catalyst 9300L models only

Mixed stacking is not supported between Catalyst 9300, 9300X, and 9300L models

Highly available StackPower



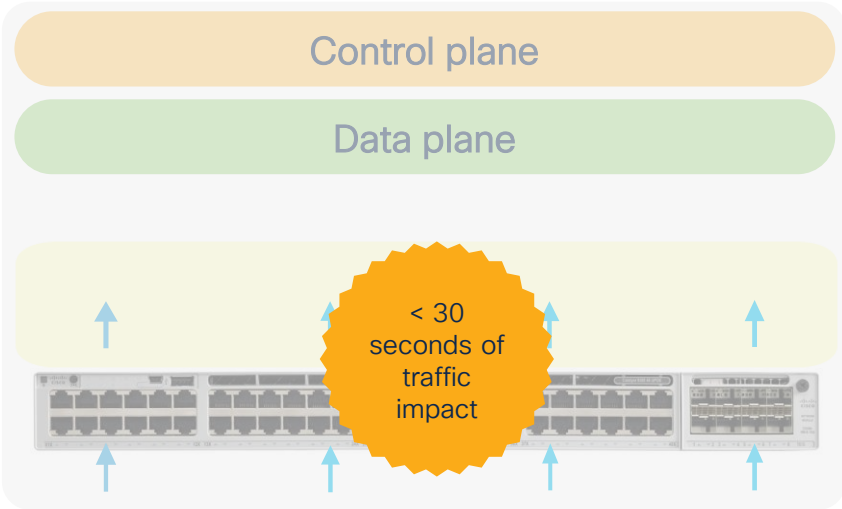
- Pools power from all Power Supplies (PS)
- All switches in StackPower share the available power in the pool
- Each switch is given its minimum power budget

Extended Fast Software Upgrade

Catalyst® 9300/9300X standalone



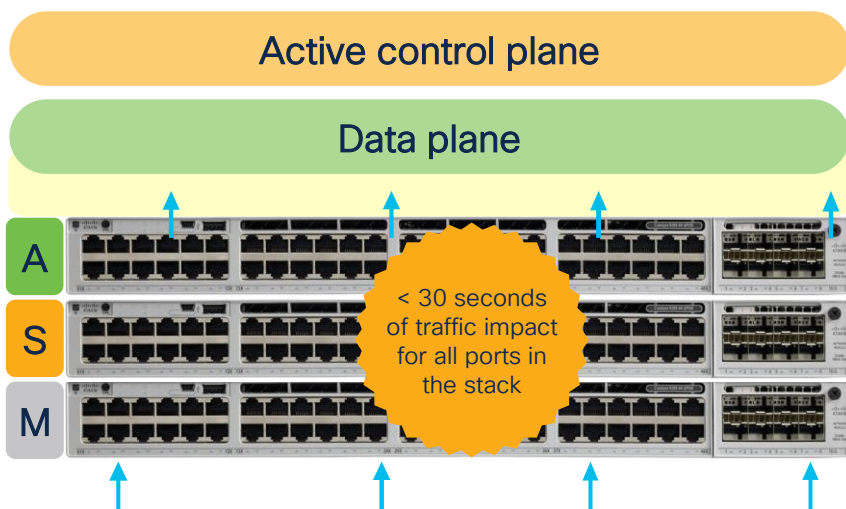
#Install add file image activate reloadfast commit



Catalyst 9300/9300X stack



#Install add file image activate reloadfast commit

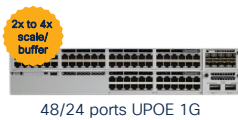
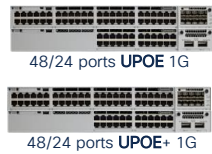
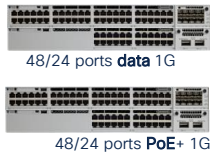


Cisco Catalyst 9300 Series

Extended Catalyst 9300 Series with Catalyst 9300X models

Catalyst® 9300 models with modular uplinks

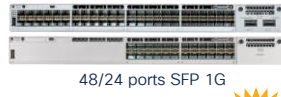
1G copper ports with PoE/Cisco UPOE®/UPOE+



Multigigabit models with UPOE



1G fiber



Catalyst® 9300X models with modular uplinks

NEW

Shipping 1/10/25G Fiber



mGig Copper models



StackWise® and StackPower cables



9300 Uplinks



9300X Uplinks



Catalyst 9300 models with Fixed uplinks

1G Copper Data & PoE

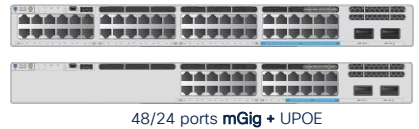


4x1G or 4x10G fixed Uplinks



4x1G or 4x10G fixed Uplinks

Multigigabit models with UPOE



4x10G or 2x40G Uplinks

Optional StackKit



Platinum-rated power supplies

Common components



Modular fans



External Storage



USB 3.0
120/240GB

*Supported on 48HX and 24Y

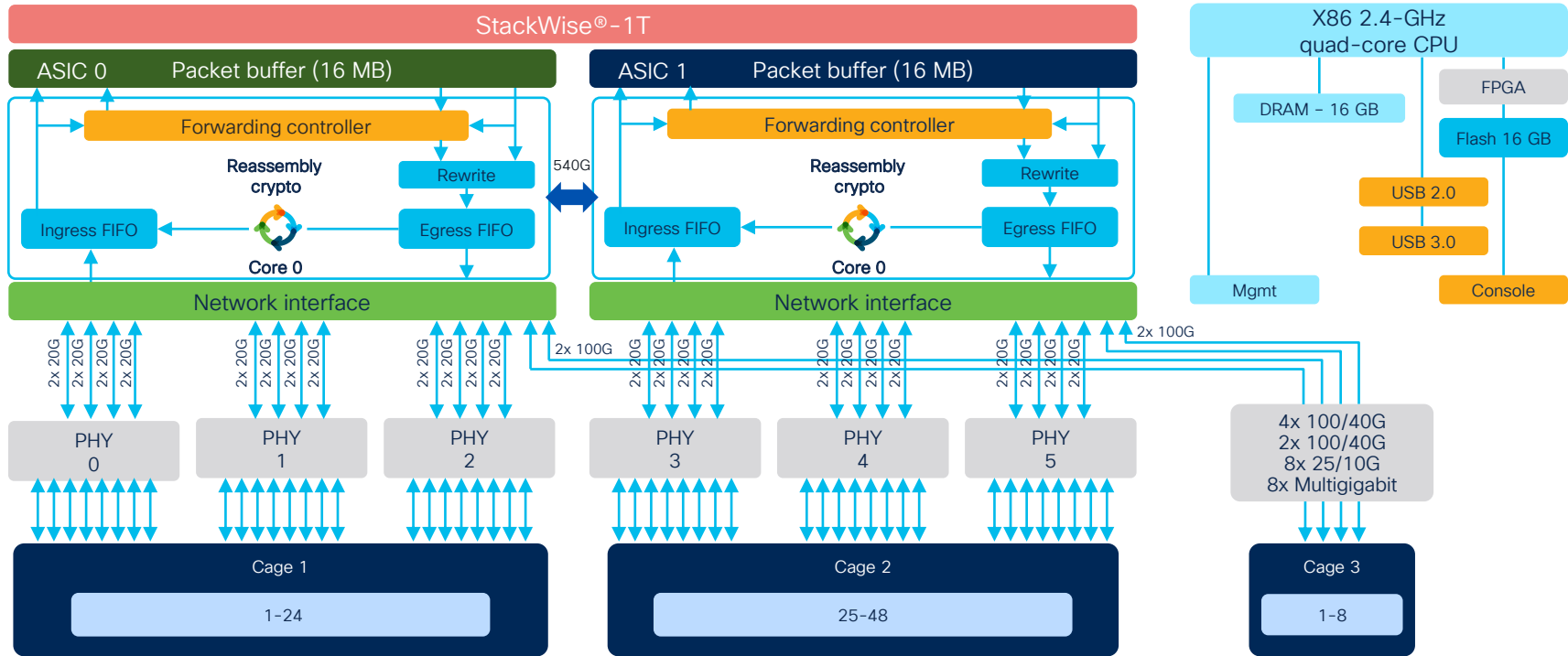
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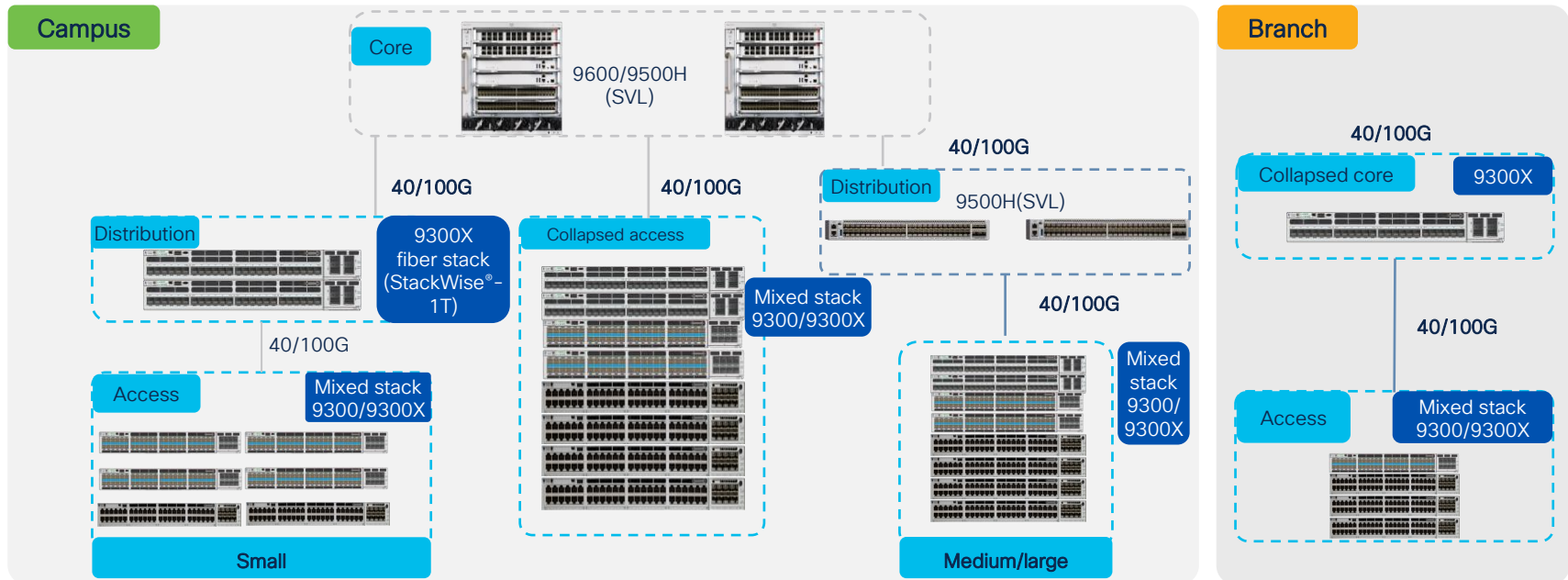
18

Cisco Catalyst 9300X models

C9300X-48HX - 48 port 1/2.5/5/10G copper

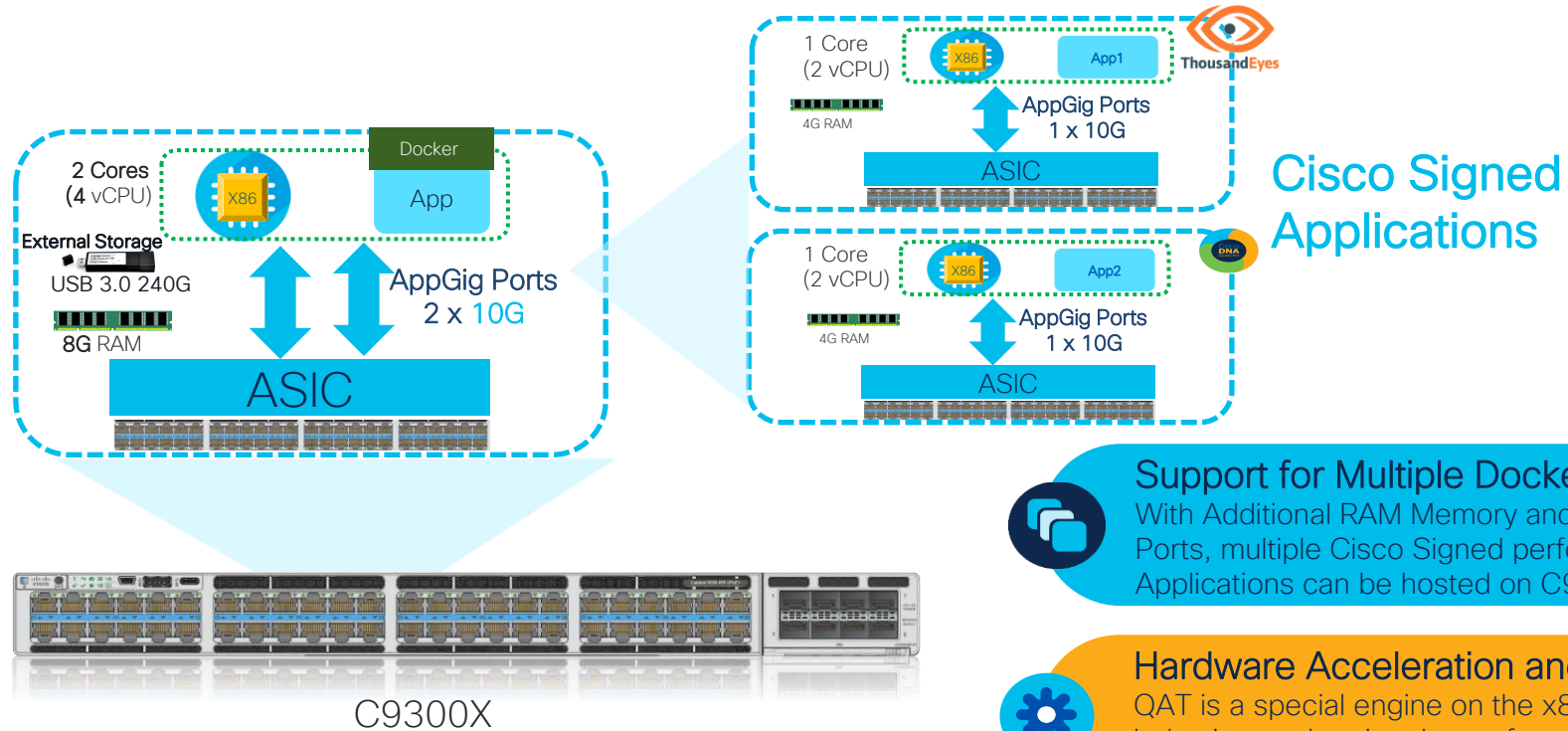


Flexible design options with the Catalyst 9300X in 2- or 3-tier architecture



Bringing 10/25/40/100G with StackWise-1 Terabit to access

Enhanced Application Hosting Infrastructure on C9300X



Support for Multiple Docker applications
With Additional RAM Memory and 2 x AppGigabit Ports, multiple Cisco Signed performance savvy Applications can be hosted on C9300X



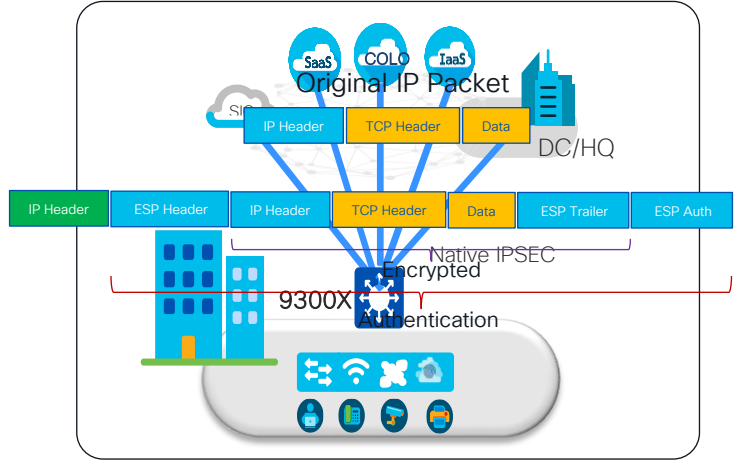
Hardware Acceleration and Security
QAT is a special engine on the x86 CPU which helps in accelerating the performance of Applications

Catalyst 9300X – Hardware based IPsec

Software
IOS-XE 17.6.2
 With DNA-A license
 (HSEC Key for Export Control)



Cisco Catalyst 9300X



Encryption	Authentication
AES-128-CBC	HMAC/SHA1
AES-128/256-GCM	GMAC
Tunnel Mode	
Encapsulation - ESP	
IKEv2	

- Static Virtual Tunnel Interface
- IPv4/IPv6
- OSPF/BGP
- PBR + Set Interface *
- NAT Traversal *
- Multicast Routing*
- L3 segmentation over IPSEC*
- L2 Extension over IPSEC*

* Roadmap



Catalyst 9300 Mini Switch



Introducing 9300LM(mini) Series Switches in C9300L Family

Fixed Uplink replacement for Catalyst 3650-mini



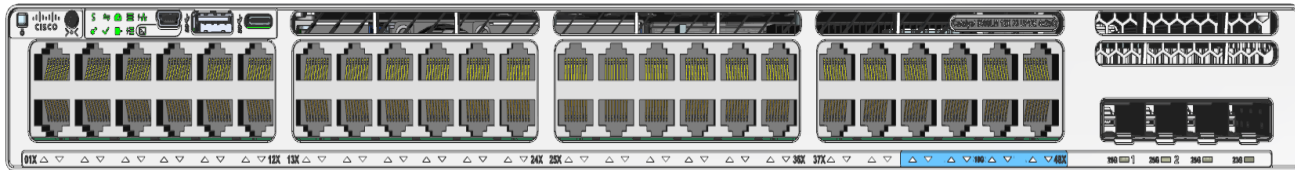
UADP 2.0



X86 CPU



Cisco Open IOS-XE



40 X 1G + 8 x mGig-10G

Fixed 25G Uplinks



UPOE

Next-gen IT/OT Workspaces



Cisco StackWise 320
Stackable with
C9300L



mGig

Wifi 6E deployments



USB type-A front Panel
SSD*

Application hosting

*Roadmap

IBN Innovations



HA, Hot Patching,
UPOE



MACsec 256,
ETA



On-box
App hosting



SD-Access, BGP EVPN
AVC, FNF



Catalyst C9300L

19.2 inches



Catalyst C9300LM

12-13.2 inches

Platform Depth <14 inches

	AC PSU	DC PSU
UPOE	13.2 in	12.8 in
Data	12.4 in	12.0 in

Catalyst 9000 Innovations in Shallow depth Form Factor

Cisco Catalyst 9300LM Series

Fixed Uplinks (C9300LM Models)

Multigigabit model



C9300LM-48UX-4Y **40 x 1 G + 8 x 100/1/2.5/5/10G UPOE Ports**

4 x 10/25G Uplinks

UPOE models



C9300LM-24U-4Y **24 x 1G UPOE Ports**

4 x 10/25G Uplinks

1G Data model



C9300LM-48T-4Y **48 x 1G Ports**

4 x 10/25G Uplinks



C9300LM-48U-4Y **48 x 1G UPOE Ports**

4 x 10/25G Uplinks

Modular Stacking



Stack Adapters



Stack Cables

Newer Higher-Efficiency C9300LM only Power supplies



600W AC



715W DC



1000W AC

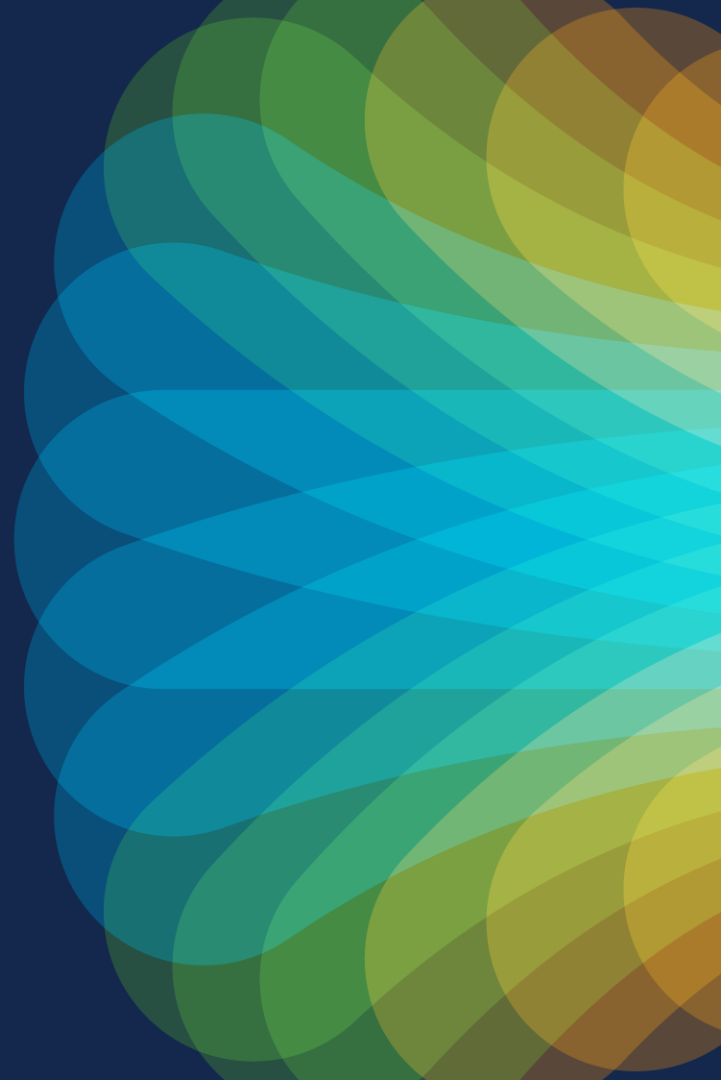
Modular Fans*



FAN Module

* Data SKU utilize Fixed Fan

Catalyst 9200



Catalyst 9200 Series



UADP 2.0 Mini



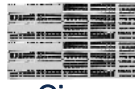
Cisco IOS-XE Lite



6MB
Packet Buffer



Up to 100GE
Bandwidth



Cisco
StackWise
160/80



Enhanced Security
MACsec 128



Smart building ready
Green builds, 802.3bt
PoE

Cisco Catalyst 9200 Series highlights

UADP 2.0 mini

Cisco IOS XE Software

Limited-scale SD-Access

MACsec-128 link encryption

Trustworthy solutions

Perpetual/Fast PoE

Programmability

Cold patching

Full Flexible NetFlow
streaming telemetry

Right Sized Switching for simple Branch Deployments

Cisco Catalyst 9200 Series

Lead with Catalyst 9200/L for simple branch deployments

Multi-billion \$ Refresh Opportunity for 2960-X

Cisco IOS® XE Lite



Multicore X86 CPU



UADP 2.0 Mini



Fixed Uplinks



C9200L-48T/ C9200L-48P/ C9200L-48PL



C9200L-24P/ C9200L-24T

POE+ & mGig models



C9200L-48PXG-4X/2Y



C9200L-24PXG-4X/2Y

Modular Uplinks

Recommended for small scale SDA deployments



C9200-48T/ C9200-48P/ C9200-48PL
C9200-48PB²



C9200-24T/ C9200-24P
C920024PB²

POE+ & mGig models



C9200-48PXG



C9200-24PXG

Compact Switches



C9200CX-8UXG-2X



C9200CX-12P-2X2G



C9200CX-8P-2X2G



C9200CX-12T-2X2G

Modular fans

FRU Fan



Higher Efficiency AC FRU Power Supplies

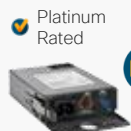
FRU PSU



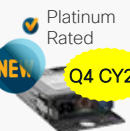
125WAC



600WAC



1000WAC



715WDC⁴

NEW
Q4 CY23

Modular Uplinks

FRU Uplinks¹



4x 1G



4x 10G



2x 25G



2x 40G

Catalyst 9200 Family Highlights

SD-Access

Programmability

MACsec-128³

Cold Patching

Trustworthy Solutions

Full Flexible NetFlow

Perpetual/Fast PoE

Cloud Monitoring **NEW**

¹ C9200 1G SKUs support 1/10G uplinks while C9200 mGig will support 10/25/40G uplinks

³ 9200CX Supports MACsec-256

² C9200 32 VN SKUs only support 1/10G uplinks and these SKUs cannot be stacked with other C9200 SKUs

Catalyst 9000 Compact Switch



The New Catalyst 9200CX Series Switches

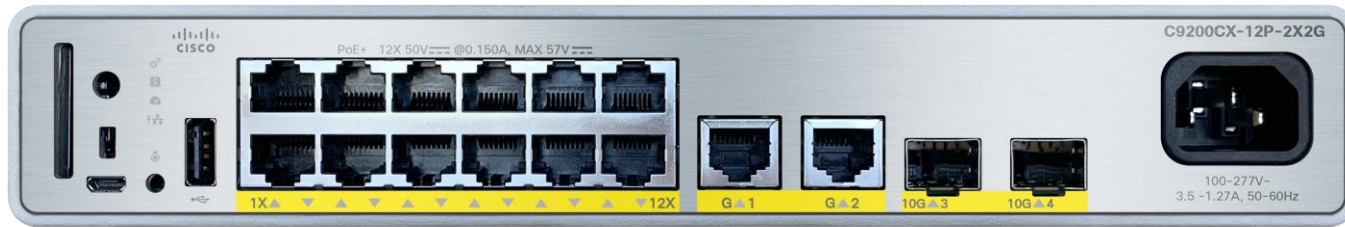
Next Generation of Compact Catalyst Switches



UADP 2.0 Mini



Cisco IOS-XE Lite



12x 1G PoE+

2x 1G Copper + 2x 1/10G SFP+



6MB
Packet Buffer



Up to 60GE
Bandwidth



Enhanced Security
MACsec 256



Smart building ready
Green builds, 802.3bt
PoE

Flexible Deployment Option



Architecture options
Fabric or Traditional 2-Tier



Flexible powering
Traditional Outlet, UPOE+



Deployment flexibility
Any space, mount or enclosure



Fiber to the edge
Shorter copper runs



Small branches
Zero touch provisioning

Catalyst 9000 Feature Richness Packed in a Compact Form Factor

Catalyst 9200CX Compact Family

AC Power Supply Units

Shipping

12 and 8 Port PoE+ Models

C9200CX-12P-2X2G



- 12 x 1G PoE+
- 2 x 1G copper and 2 x SFP+ uplinks
- Internal AC power supply
- 240W PoE power budget

C9200CX-8P-2X2G



- 8 x 1G PoE+
- 2 x 1G copper and 2 x SFP+ uplinks
- Internal AC power supply
- 240W PoE power budget

12 Port Data-Only Model

Shipping

C9200CX-12T-2X2G



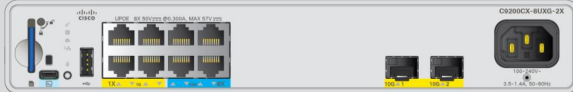
- 12 x 1G data
- 3 x 1G copper and 2 x SFP+ uplinks
- Fully Powered by 802.3bt Class 6 60W Uplink
- OR External 80W Power Supply

NEW

mGig/UPOE Model

Q3
CY23

C9200CX-8UXG-2X



- 4x mGig/10G + 4x 1G
- 8x 802.3bt Type 3 Class 6 60W (all ports)
- 2x 1/10G SFP+
- Internal AC power supply
- 240W PoE power budget

Wi-Fi 6/6E with Catalyst 9100 Series APs

AP	PoE power consumption	Link speed	Link Layer Discovery Protocol (LLDP)
C9136I	802.3bt (UPOE)	5G	47.3W
C9162I	802.3bt (UPOE)	2.5G	25.5W
C9164I	802.3bt (UPOE)	2.5G	30W
C9166	802.3bt (UPOE)	5G	30.5W

Powered by
Cisco IOS-XE Lite

SD-Access

MACsec-256

Programmability

Full Flexible NetFlow

Trustworthy solutions

Cold patching

Perpetual/Fast PoE

Bonjour Service Peering

UADP 2.0
Mini

Multicore
X86 CPU

Cisco IOS®
XE Lite



Catalyst 9200CX Compact Family

HVDC Power Supply Units

NEW

HVDC 1G/PoE+

Orderable

NEW

HVDC mGig/UPOE

Q3
CY23

C9200CX-8P-2X2GH



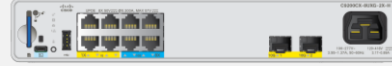
- 8 x 1G PoE+
- 2 x 1G copper and 2 x SFP+ uplinks
- Internal HVDC power supply
- 240W PoE power budget

C9200CX-12P-2X2GH

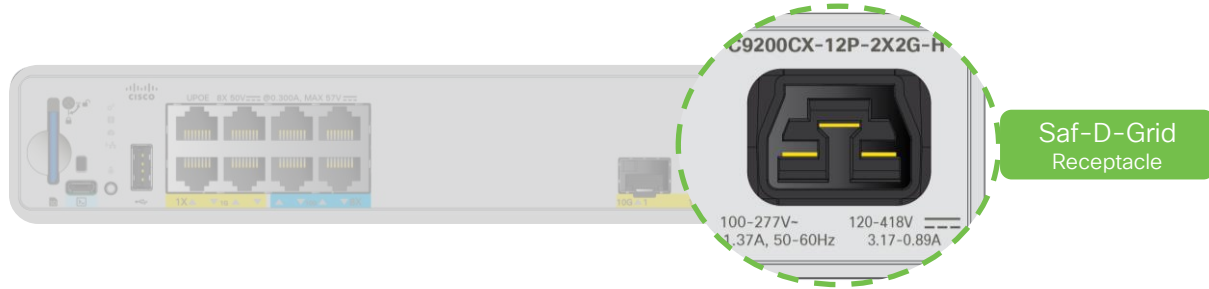


- 12 x 1G PoE+
- 2 x 1G copper and 2 x SFP+ uplinks
- Internal HVDC power supply
- 240W PoE power budget

C9200CX-8UXG-2XH



- 4x mGig/10G + 4 x 1G (802.3bt Type 3 Class 6 60W all ports)
- 2x 1/10G SFP+
- Internal HVDC power supply
- 240W PoE power budget



Saf-D-Grid
Receptacle



Powering Options

AC (110-240VAC)

Plenum Voltage (277VAC)¹

HVDC (120V-418VDC), 380VDC²

Cabling Options³

Ring terminal to SAF-D-GRID

C14 to SAF-D-GRID

C20 to SAF-D-GRID



Investment protection
with **MAX** flexibility!

¹ Need a plenum rated enclosure

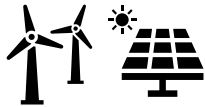
² 380VDC, commonly used in DC micro grids and Class 4 deployments

³ Cables not provided with switch

Why High Voltage DC?



Benefits



Avoids double conversion. From DC → AC, then AC → DC:

- Production of Wind/Solar power is in DC
- Electrical devices with transistors use DC power



Higher voltage helps reduce conductor material required (less copper) or improve transition efficiency:

- Controllability
- Better voltage regulation



Considerably lower power losses compared to 120VAC when transporting over long distances:

- Offshore power needs/Undersea power lines
- Power transmission for longer distances

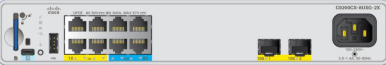
Catalyst 9200CX Family

Now also with mGig and HVDC Models

NEW

mGig/UPOE Model Q3 CY23


C9200CX-8UXG-2X



- 4x mGig/10G + 4 x 1G (802.3bt Type 3 Class 6 60W all ports)
- 2x 1/10G SFP+
- Internal AC power supply
- 240W PoE power budget

HVDC mGig/UPOE Q3 CY23

C9200CX-12P-2X2GH



- 12 x 1G PoE+
- 2 x 1G copper and 2 x SFP+ uplinks
- Internal HVDC power supply
- 240W PoE power budget

HVDC 1G/PoE+ Models Orderable

C9200CX-8P-2X2GH



- 8 x 1G PoE+
- 2 x 1G copper and 2 x SFP+ uplinks
- Internal HVDC power supply
- 240W PoE power budget


C9200CX-8UXG-2XH



- 4x mGig/10G + 4 x 1G (802.3bt Type 3 Class 6 60W all ports)
- 2x 1/10G SFP+
- Internal HVDC power supply
- 240W PoE power budget


PoE+ Models Shipping

C9200CX-12P-2X2G



- 12 x 1G PoE+
- 2 x 1G copper and 2 x SFP+ uplinks
- Internal AC power supply
- 240W PoE power budget


C9200CX-8P-2X2G



- 8 x 1G PoE+
- 2 x 1G copper and 2 x SFP+ uplinks
- Internal AC power supply
- 240W PoE power budget

Data-Only Model Shipping

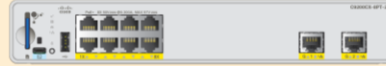
C9200CX-12T-2X2G



- 12 x 1G data
- 3 x 1G copper and 2 x SFP+ uplinks
- Powered by 802.3bt Class 6 60W UL
- OR External 80W PS (LVDC support)

Pass-through Model Roadmap

C9200CX-8PT-2G



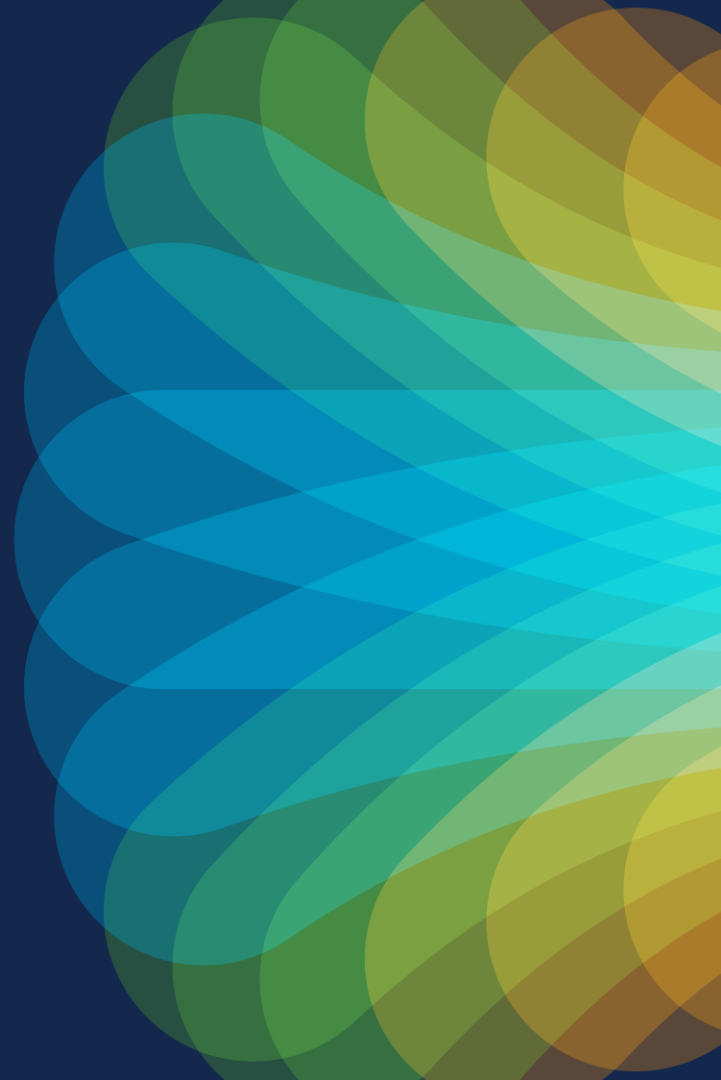
- 8 x 1G PoE+
- 2 x 1G copper & UPOE+ uplinks
- External power adapter (80W/150W [LVDC support] & 802.3bt UPOE+ ULs)
- 240W Max PoE power budget

Powered by Cisco IOS-XE Lite

SD-Access (16 VNs)	Cold patching	Trustworthy solutions	Perpetual/Fast PoE
Full Flexible NetFlow	MACsec-256	Programmability	Bonjour Service Peering

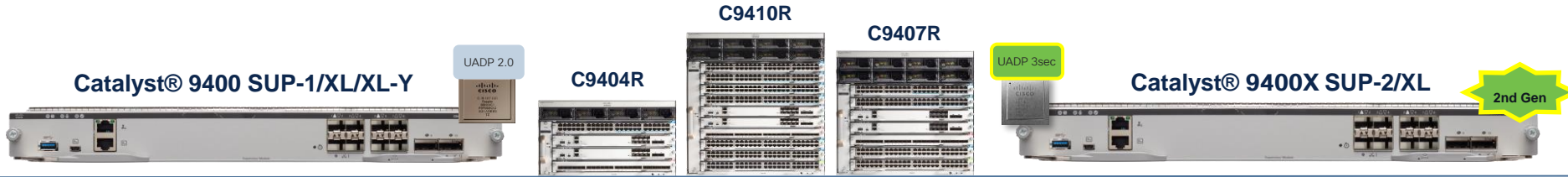
CISCO *Live!*

Catalyst 9400X/9400



Cisco Catalyst 9400 Series

High Performance, Flexibility and Investment protection with C9400X

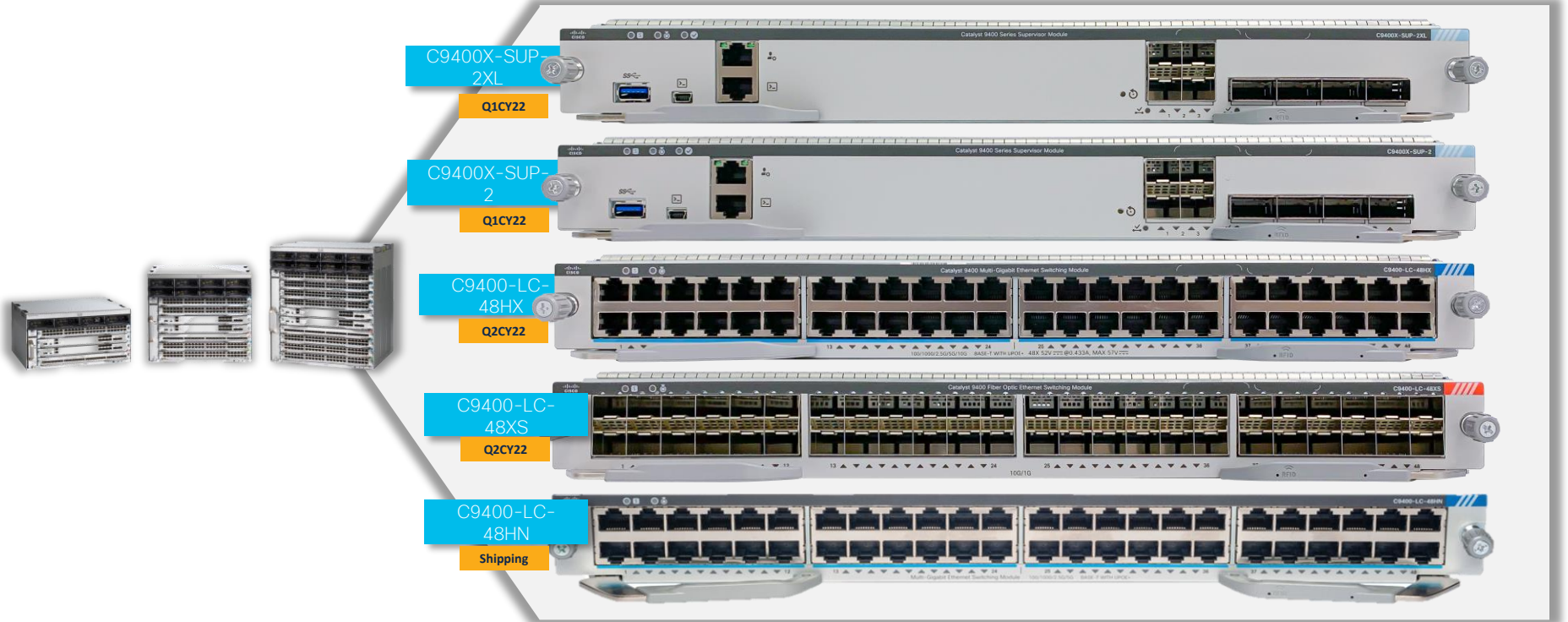


<p>Up to 240G/slot</p>	<p>1/2.5/5/10/25/40G</p>	<p>Up to 480G/slot No Oversubscription*</p>	<p>1/2.5/5/10/25/40G + 100G</p>	<p>Flexible ASIC Templates</p>
<p>Up to 96,000 MACs Up to 64,000 routes</p>	<p>Up to 32 MB packet buffer/ASIC</p>	<p>Up to 128,000 MACs Up to 256,000 routes</p>	<p>Up to 36 MB packet buffer/ASIC</p>	<p>100G IPsec Encryption</p>

<p>DATA</p> <p>C9400-LC-48T</p>	<p>1G SFP</p> <p>C9400-LC-24S</p> <p>C9400-LC-48S</p>	<p>POE+/UPOE</p> <p>C9400-LC-48P</p> <p>C9400-LC-48U</p>	<p>UPOE +</p> <p>C9400-LC-48HX</p> <p>C9400-LC-48H</p>	<p>MultiGigabit</p> <p>C9400-LC-48UX</p> <p>C9400-LC-48HN</p>	<p>10G SFP+</p> <p>C9400-LC-48XS</p> <p>C9400-LC-24XS</p>
--	--	---	---	--	--

Unmatched flexibility Maximum investment protection 100G leadership in access With Sup-2XL

Same Chassis with New Supervisors and Line cards



NOTE: Same Supervisor model required in Dual SUP/SSO configuration

C9400X-SUP-2/2XL

Gen 2 supervisor modules with UADP 3.0sec

4.8 Tbps Sup2XL/
2.4 Tbps Sup2
(full duplex)

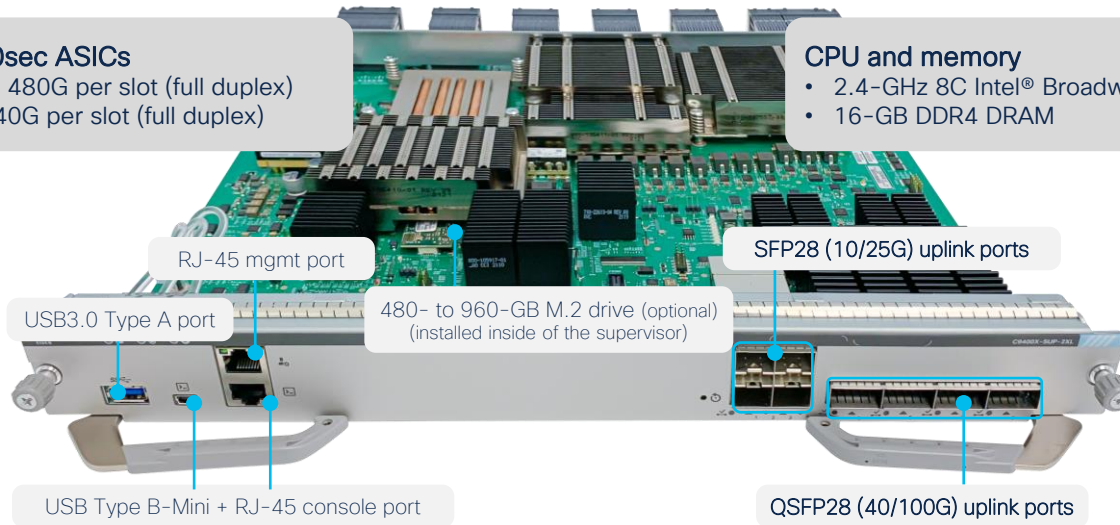
Cisco IOS® XE
17.11.1

3x UADP 3.0sec ASICs

- SUP-2XL – 480G per slot (full duplex)
- SUP-2 – 240G per slot (full duplex)

CPU and memory

- 2.4-GHz 8C Intel® Broadwell DE-NS CPU
- 16-GB DDR4 DRAM

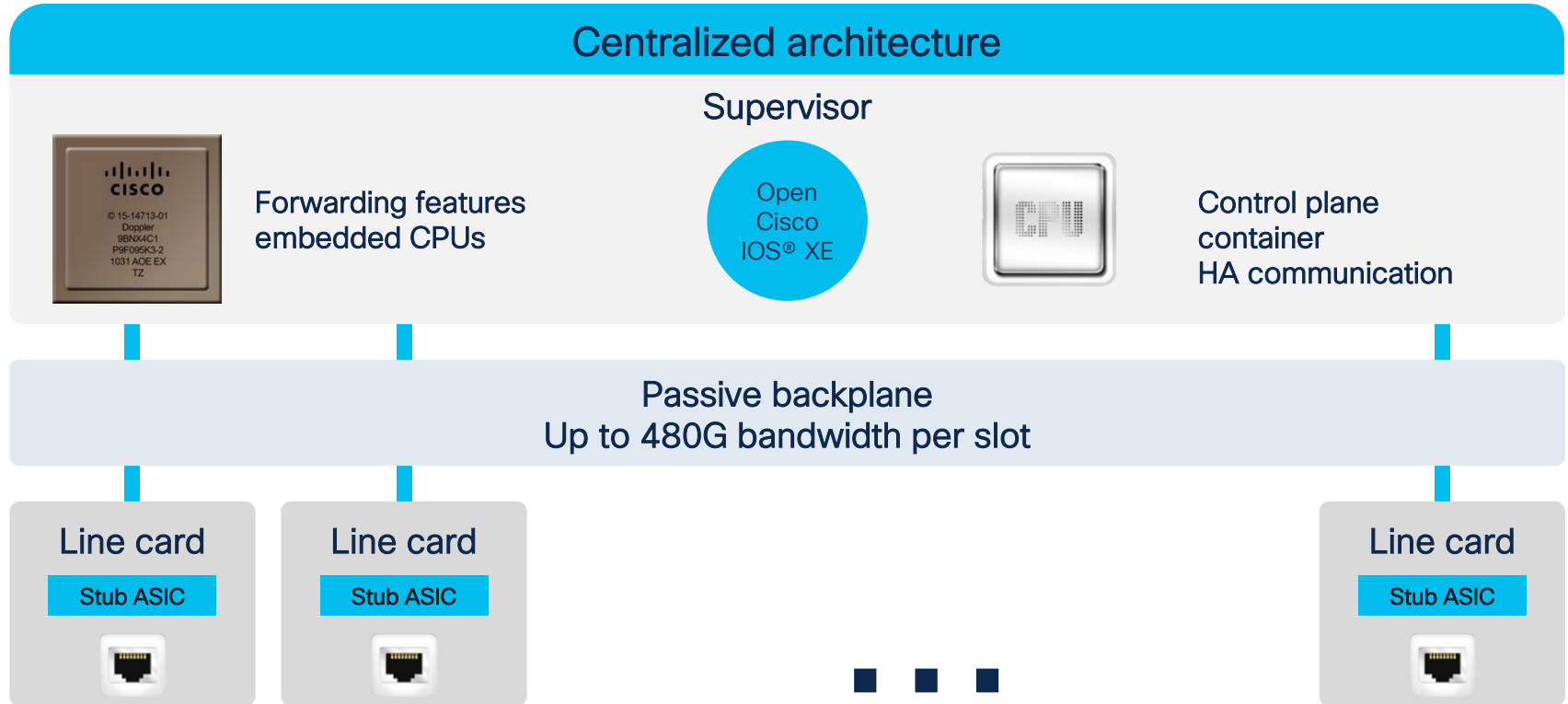


SUP-1XL feature parity at FCS

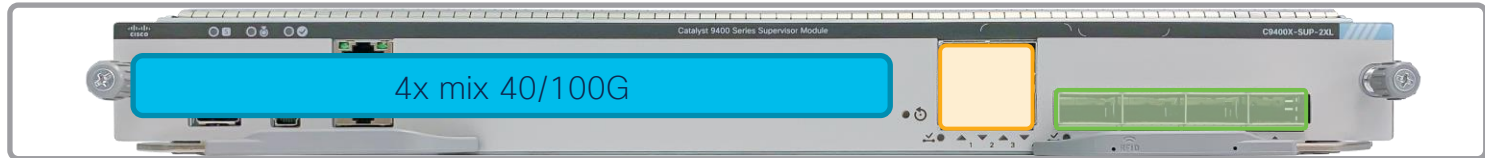
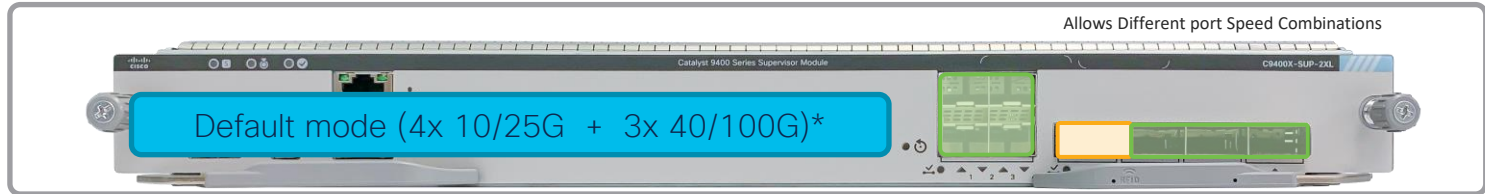
New in
17.11.1

- Custom SDM template.
- IPSEC NAT-T
- MCAST Support on AppGig

Architecture



Sup 2 / 2XL Uplinks – Single Supervisor



*QSA and Breakout support on Roadmap

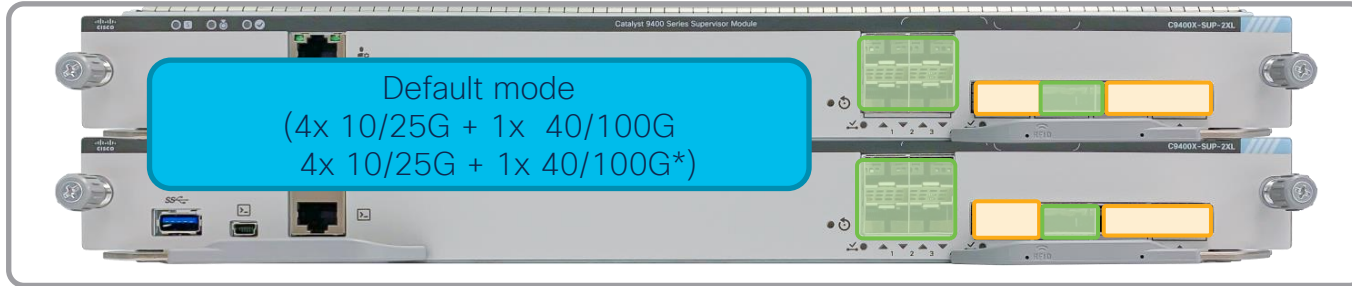


Active



Disabled

Sup 2 / 2XL Uplinks – Dual Supervisors




*QSA and Breakout support on Roadmap

 Active

 Disabled

Introducing Catalyst 9400 Gen 2 Line Cards

Higher Bandwidth & Higher Density Line Cards




C9400-LC-48HX
(48 x 10G mGig UPOE+)

Shipping Supported with Sup1 & Sup2

C9400-LC-48HN
(48 x 5G mGig UPOE+)

Up to 384 mGig Ports at Line rate w/ Sup2XL
All ports support 90W UPOE+/802.3BT



C9400-LC-48XS
(48 x 10G SFP+)

Up to 384 10G Fiber Ports at Line rate w/ Sup2XL



C9400-LC-48UX
(24 x mGig UPOE+24 x UPOE)

Up to 192 mGig Ports with Oversubscription w/ Sup1

Access



C9400-LC-24XS
(24 x 10G SFP+)

Up to 192 10G Ports with Oversubscription w/ Sup1

Aggregation

New Line Cards are supported only on Supervisor-2/2XL

Bandwidth Boost with Gen2 Supervisors



Cisco C9400 SUP 1/1XL

Cisco C9400X
SUP2

Cisco C9400X
SUP2XL

	Type	C9404R	C9407R	C9410R	C9404R/C9407R/C9410R	C9404R/C9407R/C9410R
C9400-LC-48HX	UPOE+	-	-	-	240	480
C9400-LC-48XS	Fiber	-	-	-	240	480
C9400-LC-48UX	UPOE	80 / 240	80 / 120	80	240	240
C9400-LC-24XS	Fiber	80 / 240	80 / 120	80	240	240
C9400-LC-48HN	UPOE+	80 / 120	80 / 120	80	240	240

Not Supported

Bandwidth in Gbps

Bold indicates Line Rate

3x Bandwidth Uplift for Gen1 LCs (80G -> 240G) on 10 Slot Chassis w/ SUP2XL

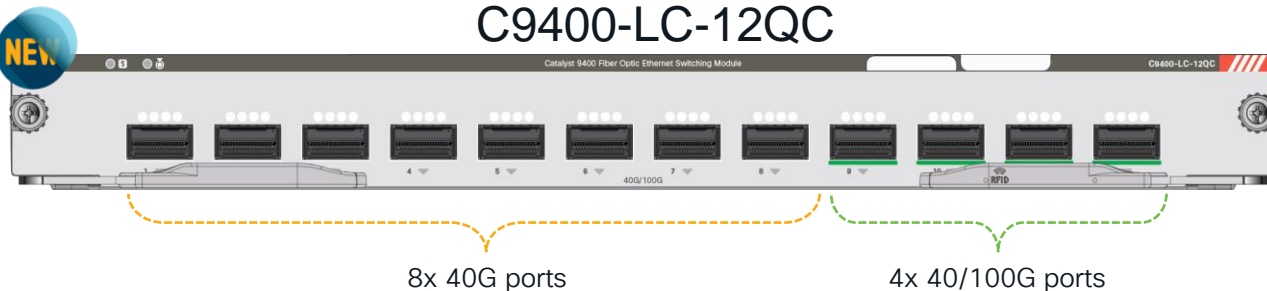
2x Bandwidth Uplift for Gen1 LCs (120G -> 240G) on 7 Slot Chassis w/ SUP2XL

Introducing 25G & 40G/100G Line Cards on C9400X



IOS XE 17.12.1

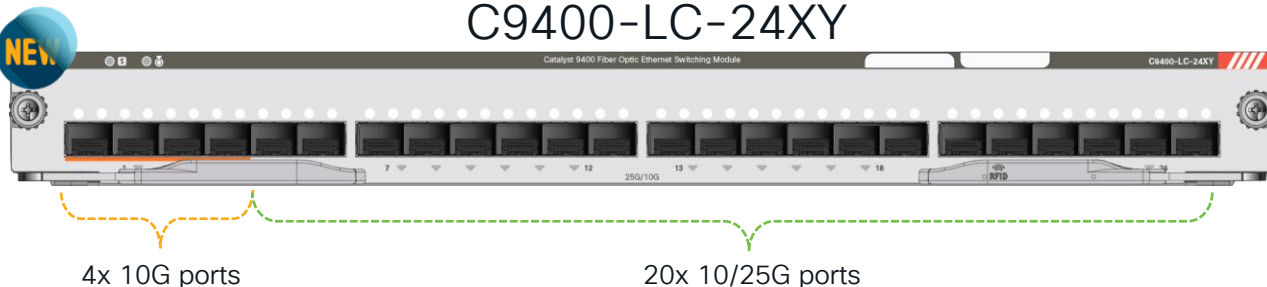
C9400-LC-12QC



8x 40G ports

4x 40/100G ports

C9400-LC-24XY



4x 10G ports

20x 10/25G ports

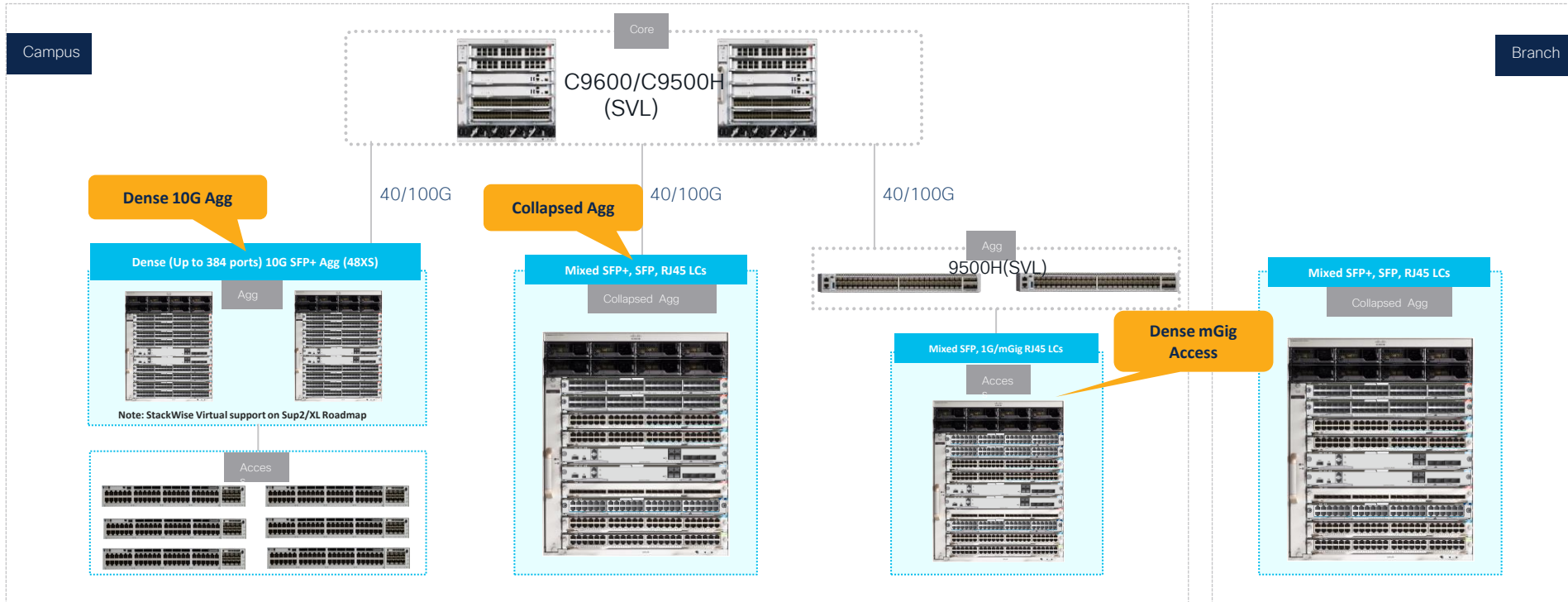
Enabling Collapsed
Access & Distribution
Transition with SUP2

Higher speed downlinks
for High-end Access
expanded designs

Supported with SUP-2
& SUP-2XL Only

Catalyst 9400 Deployment Flexibility

C9400X enables dense 10G SFP+ aggregation and multigigabit access use cases



Power Redundancy

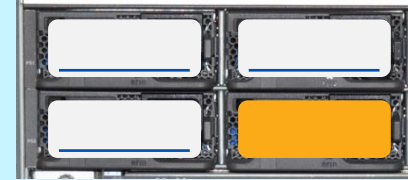
Normal

PS failure

Combined
(default)



Load sharing on all PSs



Load sharing on functional PSs

Redundant



Load sharing on active PSs
Standby PS in output disabled



Standby PS becomes active
System enters alarm state

Failed PS

Active

Standby

Power redundancy: N+1 and N+N

- Default active is PS1 through 4, and standby is PS5 through 8
- Standby power slots are configurable



- Default active is PS1 through 7, and standby is PS8
- Standby power slot is configurable



```
SW(config)#power redundancy-mode redundant ?  
  N+N Redundant N+N (N is active, N is standby)  
  N+1 Redundant N+N (N is active, 1 is standby)  
SW(config)#power redundancy-mode redundant N+1 ?  
  <1-8> standby slot in N+N mode  
SWR(config)#
```

```
SW(config)#power redundancy-mode redundant ?  
  N+N Redundant N+N (N is active, N is standby)  
  N+1 Redundant N+N (N is active, 1 is standby)  
SW(config)#power redundancy-mode redundant N+1 ?  
  <1-8> standby slot in N+1 mode  
SWR(config)#
```

Active

Standby

Cisco Catalyst Access Switching Positioning

Secure, resilient campus



SD-Access



SD-Access
extended nodes

Choose Catalyst 9400 Series or Catalyst 9300 Series modular uplink models (C9300X and C9300) models

- Designed for security, mobility, IoT, and cloud
- High availability, ETA, application hosting

Business-critical branch



Branch-in-a-Box
No router

Fabric-in-a-Box
External router



SD-Access

Choose: A) Catalyst 9300 Series fixed uplink models (C9300L models) with external router

- Full security with visibility
- High availability, ETA, application hosting

B) Catalyst 9300X models for complete branch solution

+ IPsec, firewall, additional app hosting

Simple branch



Catalyst 9200 Series



SD-Access

Consider Catalyst 9200 Series (C9200 and C9200L models)

- Extend automation and policy
- Limited VRFs

Choose Catalyst 9400 or 9300/9300L for innovations in Intent-Based Networking (IBN)



Full SD-Access, fabric-in-a-box,
Embedded Wireless Controller



Wired Assurance,
SD-Access, AVC



ETA,
MACsec-256



On-box
app hosting



HA, hot patching,
StackPower, Cisco UPOE+

Entry point for IBN

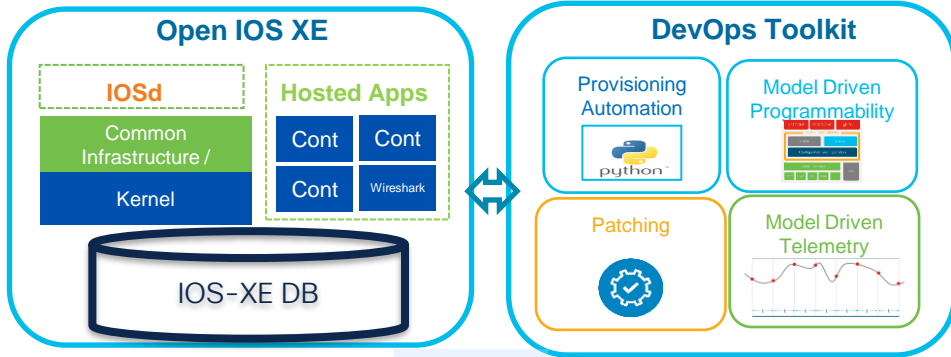


SD-Access, fabric edge, Full NetFlow

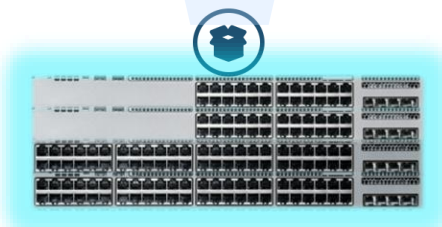
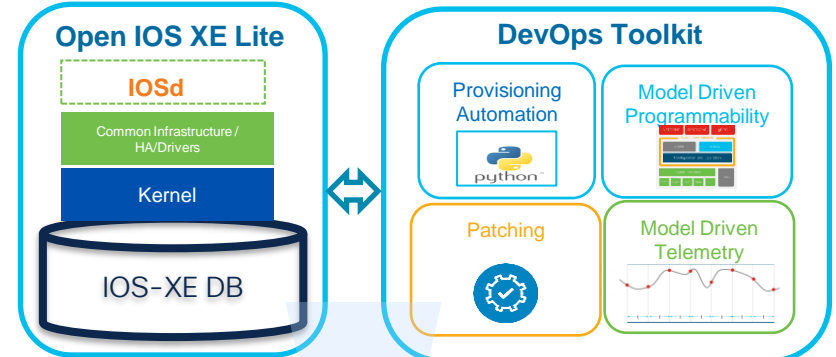
IOS-XE Software & Innovations



Open IOS-XE



Catalyst 9k Family – 9300/9400/9500



Catalyst 9200/9200CX



Software Maintenance Upgrade

SMU is a package that can be installed on a system to provide a fix or a security resolution to a released image.

- **Hot Patching** - does not require explicit reload after installation to get activated. (*not traffic-affecting*)
- **Cold Patching** - requires a system reload after installation to get activated. (*traffic-affecting*). The 9200 family supports only this.

- **Bundle SMU** - One single SMU file containing and applying multiple SMU fixes on the backend.
- **Independent SMU** - One single SMU file tailored to address a specific bug or vulnerability.



Patching can also be performed using Cisco DNAC

C9300-Access.cisco.com (172.26.192.131) Image Update

Date: Mar 16, 2023 12:15 PM Duration: 4 minutes 20 seconds Status: Successfully Activated cat9k_iosxe.17.03.04.SPA.bin cat9k_iosxe.17.03.04.CSCwa53947.SPA.smu.bin

DNAC Version: Guardian 2.3.3
License Level: DNA Advantage

Operations Checks

- > SMU Distribution 1 minute 51 seconds
- > SMU Activation 2 minutes 27 seconds
 - SMU Activation of image: cat9k_iosxe.17.03.04.CSCwa53947.SPA.smu.bin on device: 172.26.192.131 completed successfully
 - > Pre Activation Script Execution 1 second
 - > Activation 2 minutes 26 seconds



Reduces time and scope of testing



Self-sufficient and reliant bug fix solution for PSIRT, CFD & IFD



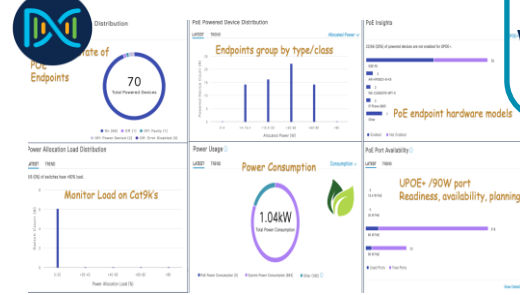
Hot Patching



EMR Releases with 371 SMU files available

Sustainable Smart Spaces with Catalyst 9000

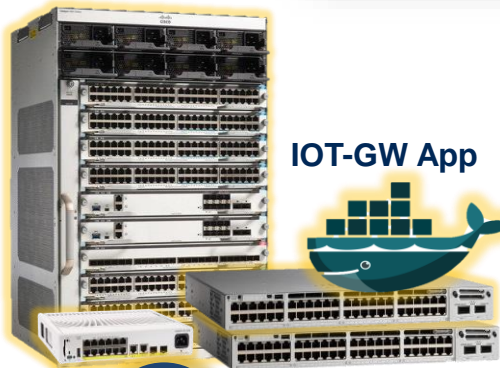
Cisco DNAC



Power Telemetry



Future of WorkSpaces



POE 90W

Sustainable Energy Efficient

Building Standards Ready

LEED, Platinum & WELL Standards

* Capex Savings Upto 20%

CISCO SPACES

New Energy Utilization

Get Energy Analytics, Trends & Insights for Network Devices in your Buildings.

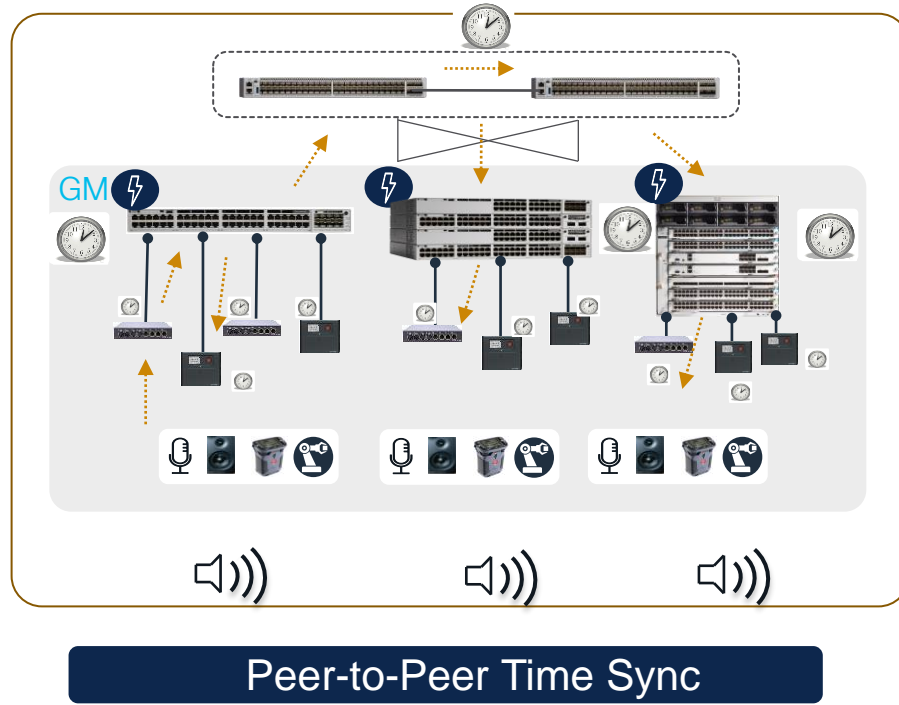
IOT EcoSystem

molex STANLEY IBM TRIRIGA PlaceOS
 MazeMap Mecho servicenow BASKING
 Igor WINEW EnOcean Haltian
 kontak.io (P) Pointn mapspeople Laird
 IPerc) LANE BROUWER mhtlighting



CISCO Live!

Time Sensitive Networks with Catalyst 9k



Timing Protocol

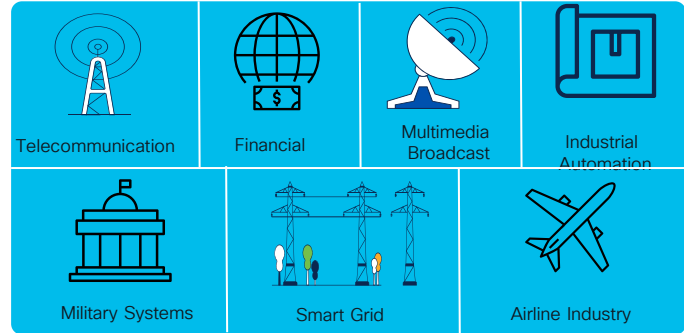
Precision Time Protocol

Hardware Timestamping

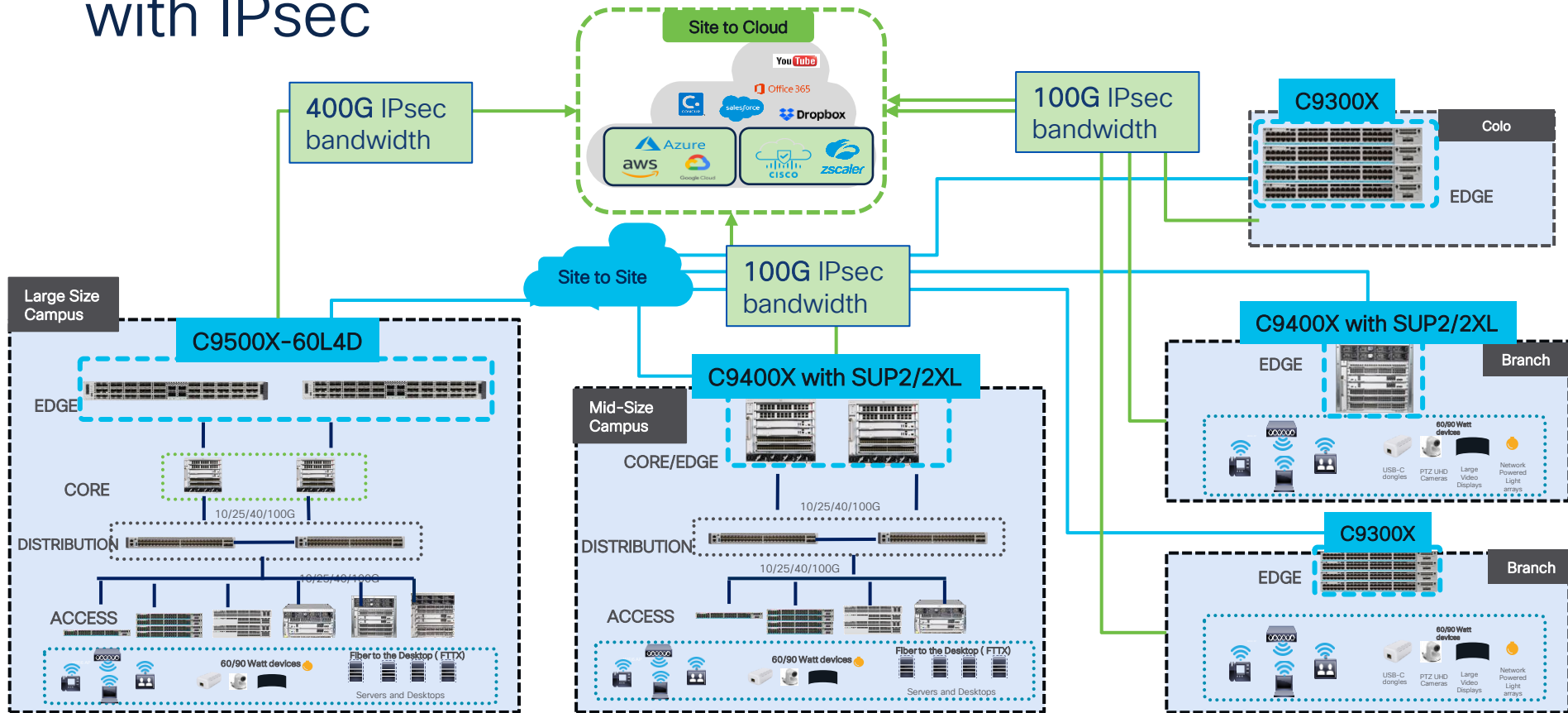
Transparent / Boundary Clock

Industry Standard - IEEE 1588v2

< 100ns Accuracy



End-to-End Encryption in Enterprise Campus with IPsec



Graceful Insertion and Removal (GIR)

Hardware replacement

Software upgrades

Configuration changes

Gracefully remove or insert a node without impacting traffic

Layer 3

Layer 2

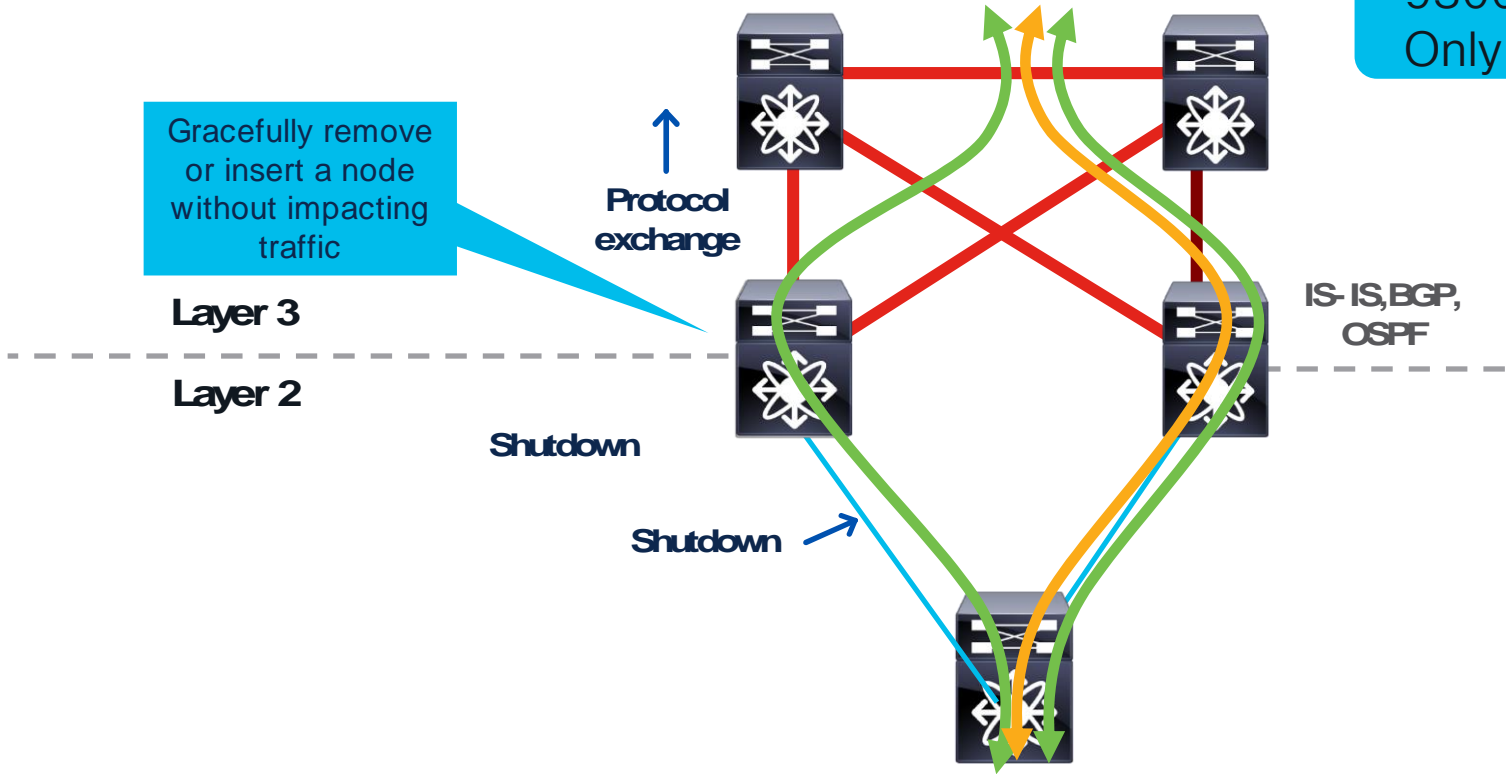
Shutdown

Shutdown

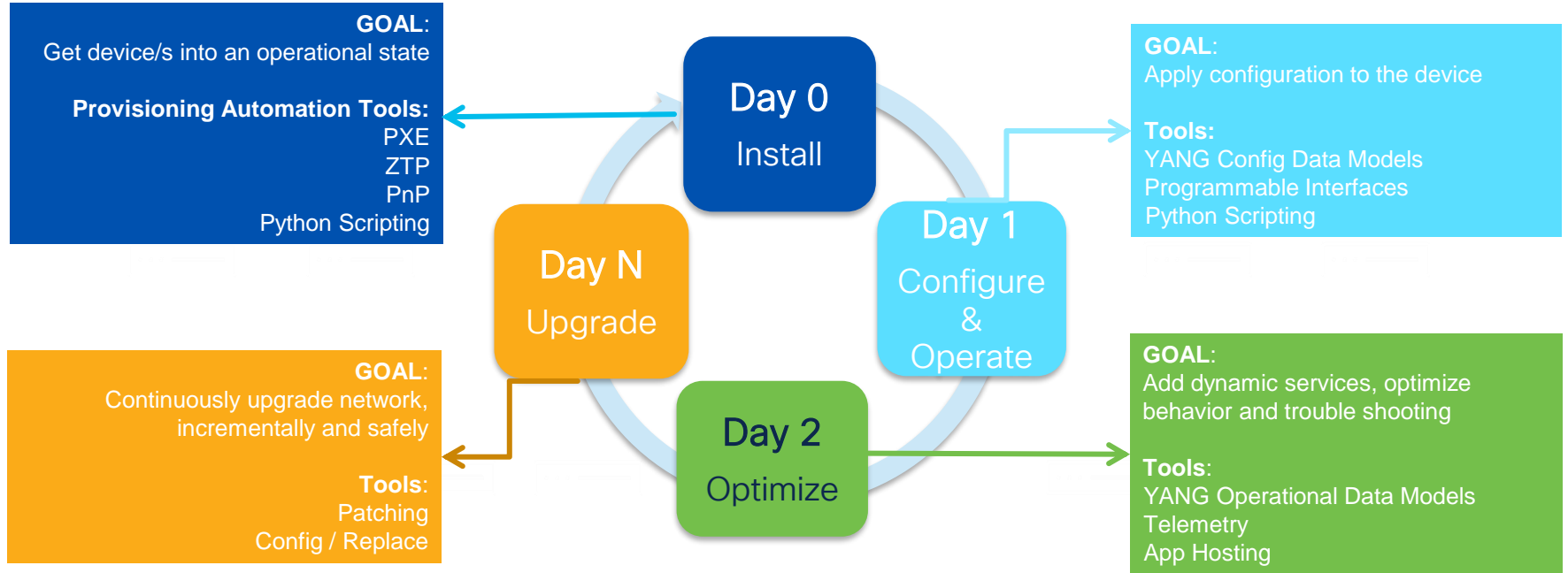
Protocol exchange

IS-IS, BGP, OSPF

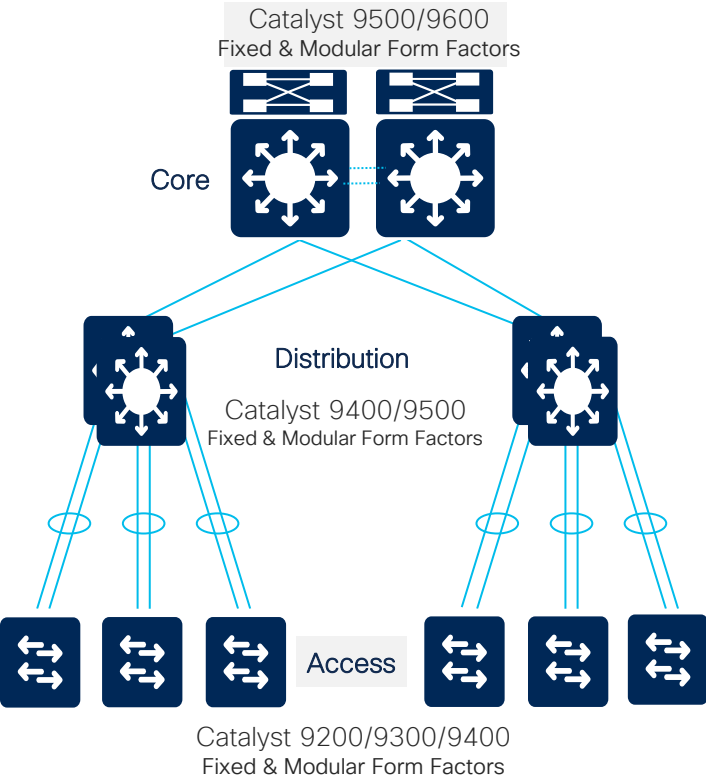
9300 Only



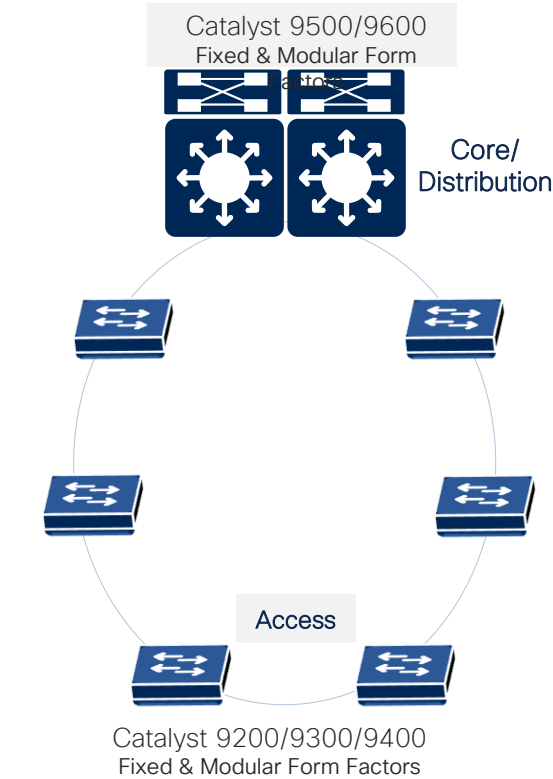
Comprehensive Automation Lifecycle with Catalyst 9000



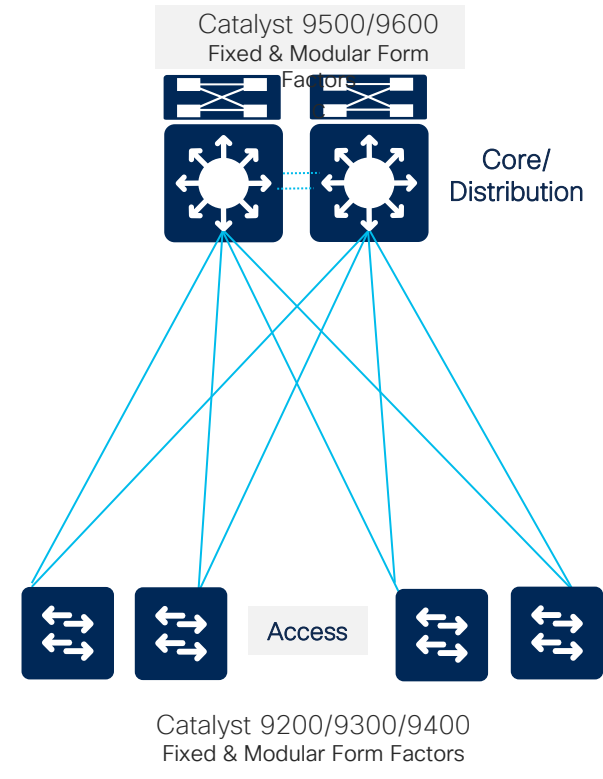
End to End Catalyst 9000 for Traditional Campus Networks



3 Tier

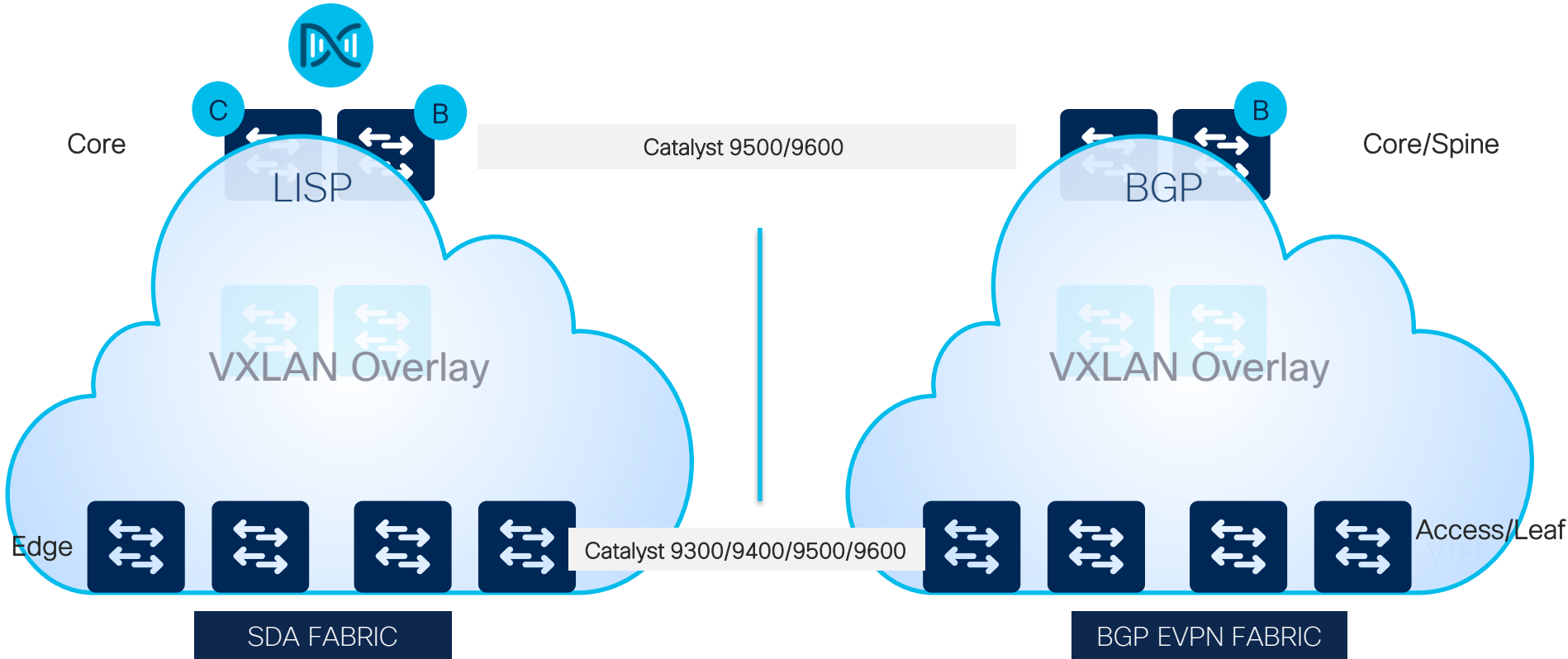


Ring



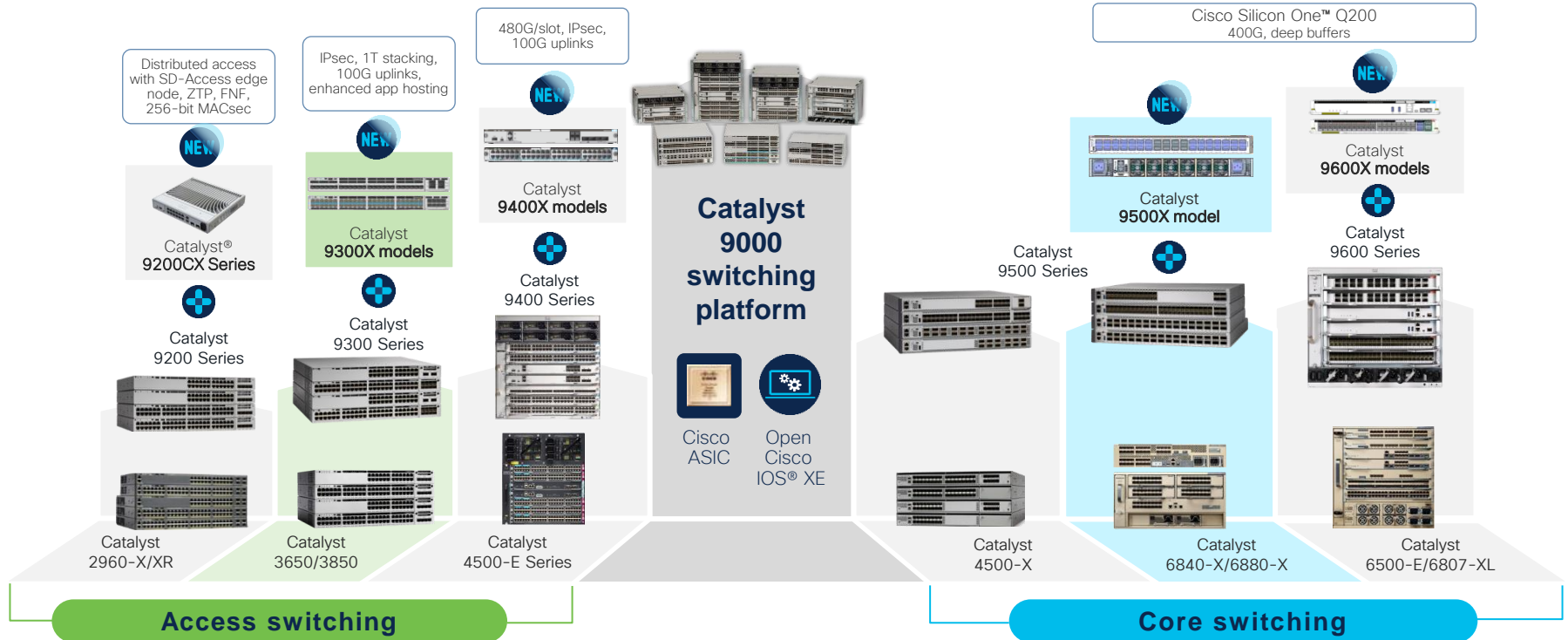
2-Tier / Collapsed Core

End to End Catalyst 9000 for Fabric Based Networks



Catalyst 9000X – Expanding industry leadership

Adding the “X factor” to the industry’s leading switching family





The bridge to possible

Thank you

CISCO *Live!*

The Cisco Live! logo features the word "CISCO" in a bold, black, sans-serif font, followed by "Live!" in a black, cursive script font. The background of the entire image is a vibrant, multi-colored abstract pattern of overlapping, wavy bands in shades of red, orange, yellow, green, and blue, creating a sense of motion and energy.

CISCO *Live!*

Let's go