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Catalyst 9000 Series Switching Family - Access Portfolio

Subtitle goes here

Minhaj Uddin, Leader Technical Marketing @Twitter_handle BRKARC-2098



Cisco Webex App

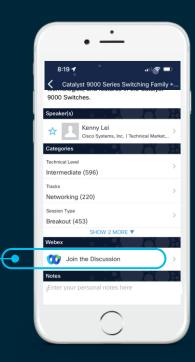
Questions?

Use Cisco Webex App to chat with the speaker after the session

How

- 1 Find this session in the Cisco Live Mobile App
- 2 Click "Join the Discussion"
- 3 Install the Webex App or go directly to the Webex space
- 4 Enter messages/questions in the Webex space

Webex spaces will be moderated by the speaker until June 17, 2022.



https://ciscolive.ciscoevents.com/ciscolivebot/#BRKARC-2098



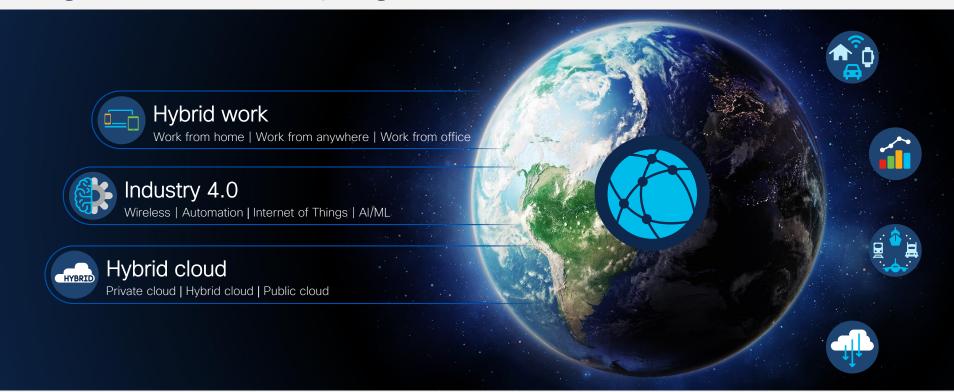


Agenda

- Digital trends
- Catalyst 9200CX / 9200
- Catalyst 9300X / 9300
- Catalyst 9400X / 9400
- Summary



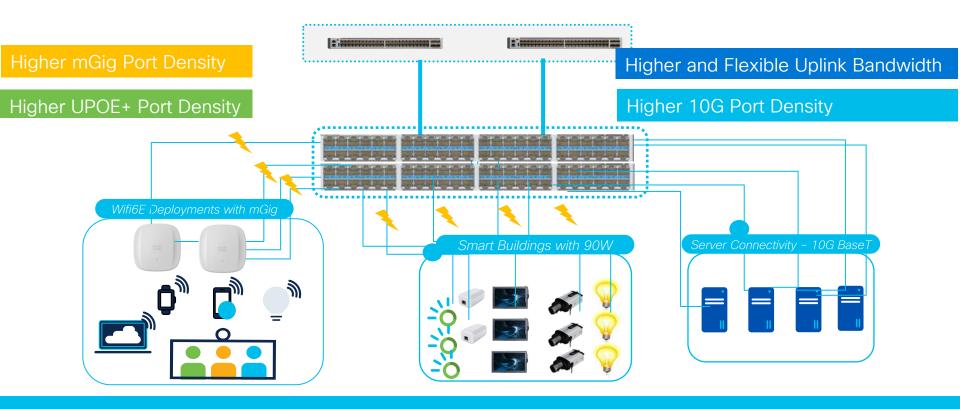
Digital trends shaping the future of business



and the network is the core engine of hybrid work

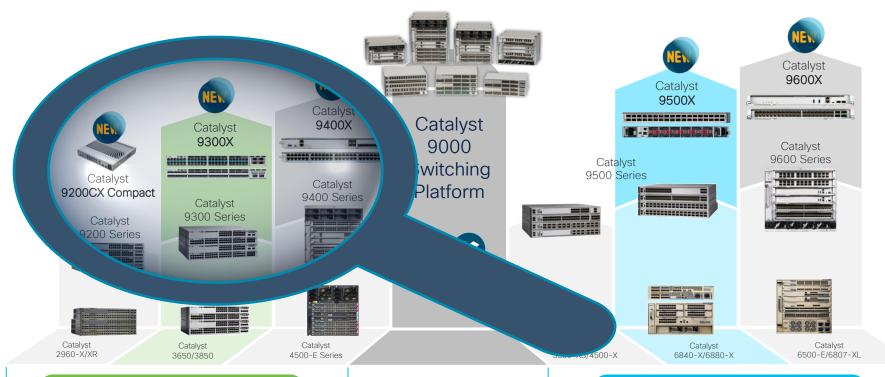
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Enterprise Access Trends



Cisco Catalyst 9000 Switching Portfolio

Adding the "X factor" to the industry's leading switching family



Access Switching

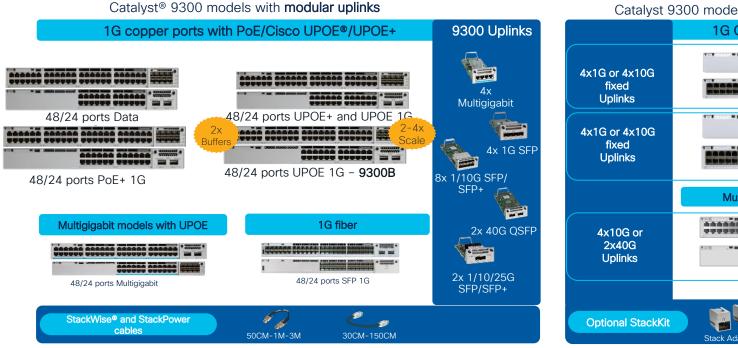
Core Switching

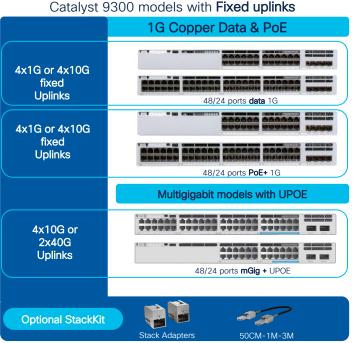


Catalyst 9300



Cisco Catalyst 9300 Series Extended Catalyst 9300 Series with Catalyst 9300X models

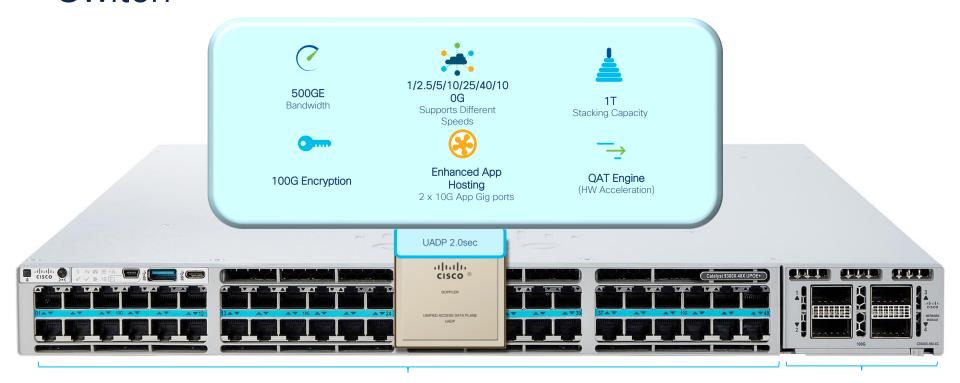




Platinum-rated power supplies Modular fans **External Storage** USB 3.0 Common 120/240GB components 715W AC/DC 315W AC 1900W AC 1100W AC

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Catalyst 9300X - New High Performance Access Switch

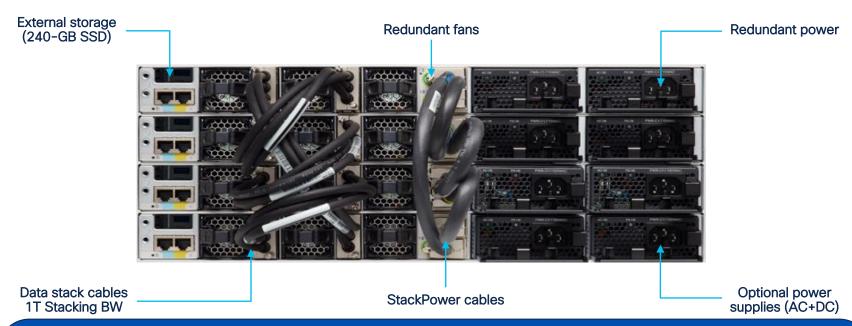


48 x mGig-10G + 90W UPOE+

Flexible Uplink Options

BRKARC-2098 10

Investment protection with Catalyst 9300X



Common components and stacking backward compatible with Catalyst® 9300 Series



Introducing the Catalyst 9300X models Stacking up the industry firsts

Mixed 25/10G fiber stacking with copper

Transitions Catalyst 3850-XS fiber switches

Industry

first

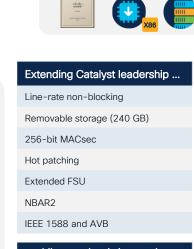








Open IOS XE





Same optics

Common stacking

Common power stacking

Common power supplies, fans, cables

Platinum-rated power supplies

App hosting with

crypto acceleration

Modular fan



first

Shipping

Shipping

Industry

first















Industry



OAT and ~2x capacity

(memory, CPU, 2x 10G KR)

100G uplinks on stackable

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

8x 10G/Multigigabit

Catalyst 9300X-48HX

Catalyst 9300X-48TX

Catalyst 9300X-48HXN

Catalyst 9300X-24HX













Modular uplinks

Terabit stacking

Fiber

Catalyst 9300X-24Y

Catalyst 9300X-12Y

100G Laver 3

encryption

IPsec,

* WAN MACsec.

* CloudSec*

Stacks with

Catalyst® 9300 Series switches





Stackable

24x 10/25G

10/25G across

all ports in 1RU





Enabled through StackPower+ and

power supply enhancements

StackWise® and StackPower cables











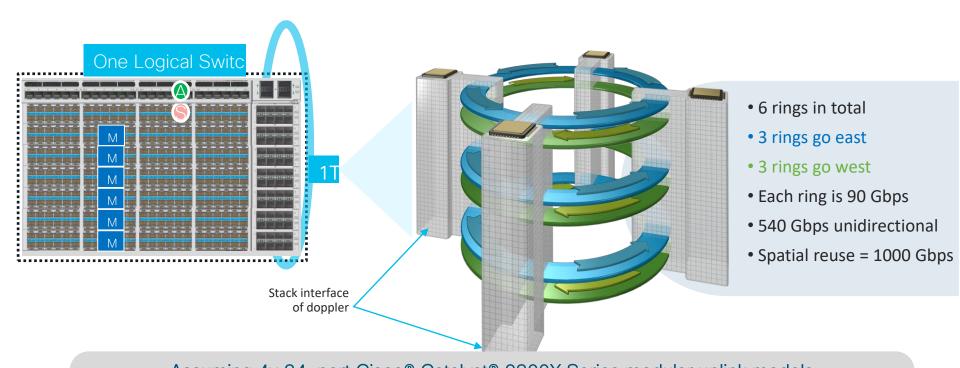


StackPower+

Copper

Cisco Catalyst 9300X Series Switches

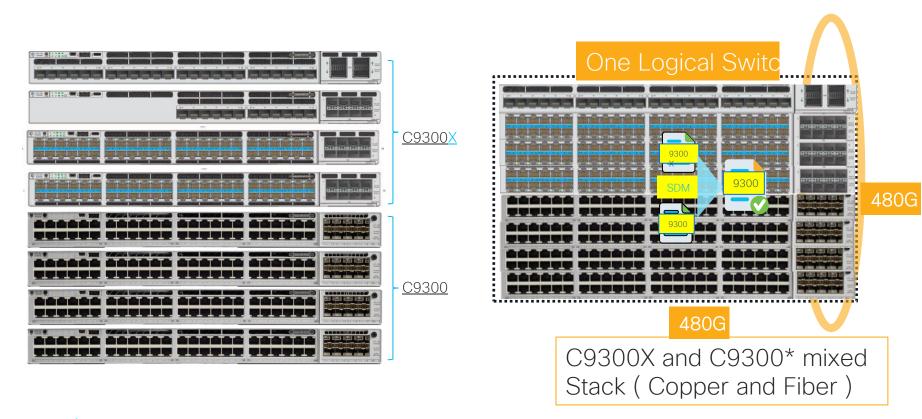
The stack ring - StackWise-1T on all C9300X SKUs



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



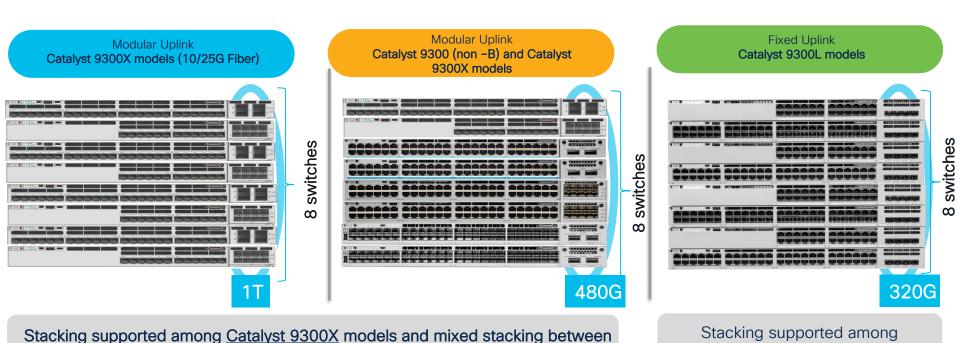
C9300X and C9300 Stack: Investment Protection





Catalyst 9300 Stacking Support

Catalyst 9300 and Catalyst 9300X models

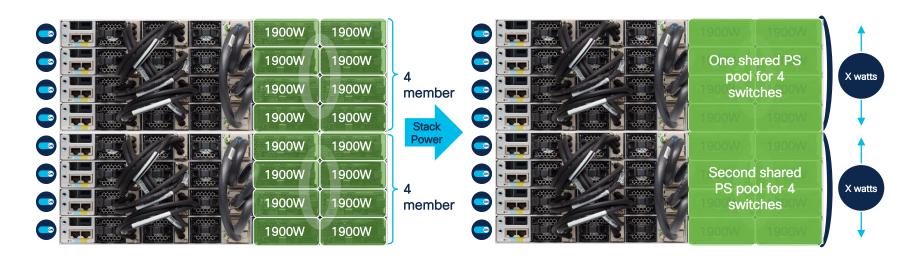


Mixed stacking is not supported between Catalyst 9300, 9300X, and 9300L models



Catalyst 9300L models only

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



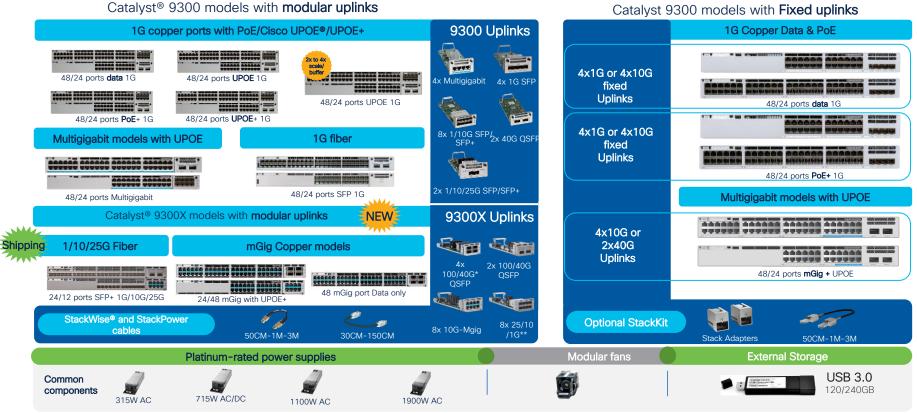
Extended Fast Software Upgrade

Catalyst® 9300/9300X standalone Catalyst 9300/9300X stack #Install add file image activate reloadfast commit #Install add file image activate reloadfast commit Control plane Active control plane Data plane Data plane < 30 seconds < 30 of traffic impact seconds of for all ports in traffic the stack impact



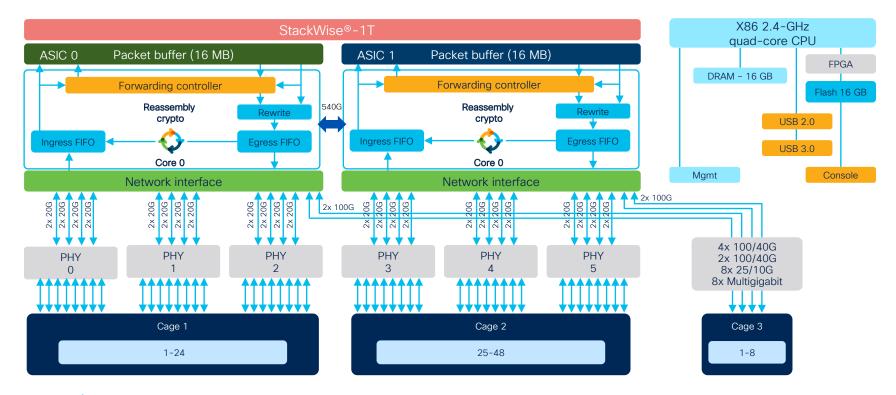
Cisco Catalyst 9300 Series

Extended Catalyst 9300 Series with Catalyst 9300X models



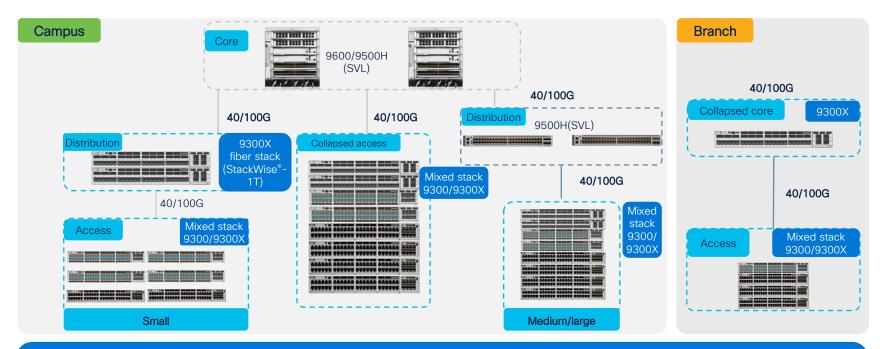
Cisco Catalyst 9300X models

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





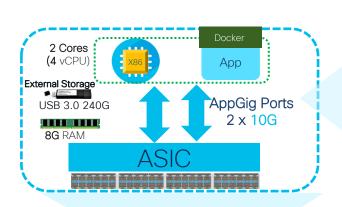
Flexible design options with the Catalyst 9300X in 2- or 3-tier architecture

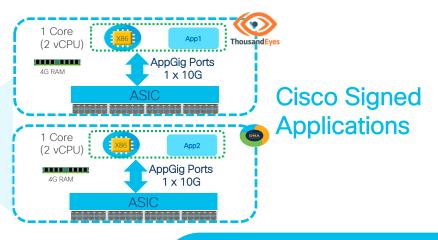


Bringing 10/25/40/100G with StackWise-1 Terabit to access



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 - Purpose built for the New

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

Edge



Cisco Catalyst 9300X

	4	SaeS Ori	COLO Iaa ginal IP Par TCP Header	cket	DC/HQ	
IP Header		IP Header	TCP Header	Data	ESP Trailer	ESP Auth
		9300	Annentica		SEC	

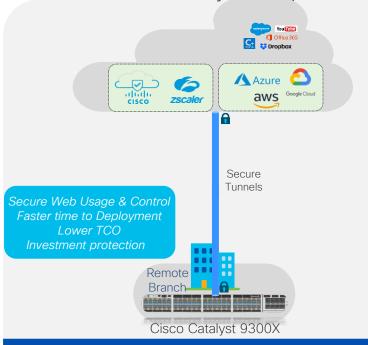
Encryption	Authentication	
AES-128-CBC	HMAC/SHA1	
AES-128/256-GCM	GMAC	
Tunnel Mode		
Encapsulation - ESP		
IKEv2		

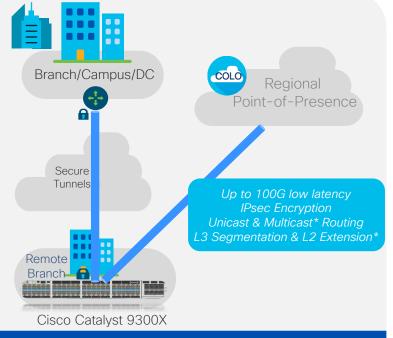


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Catalyst 9300X - Purpose built for the New Edge

Secure connectivity to anywhere





Site-to-Cloud

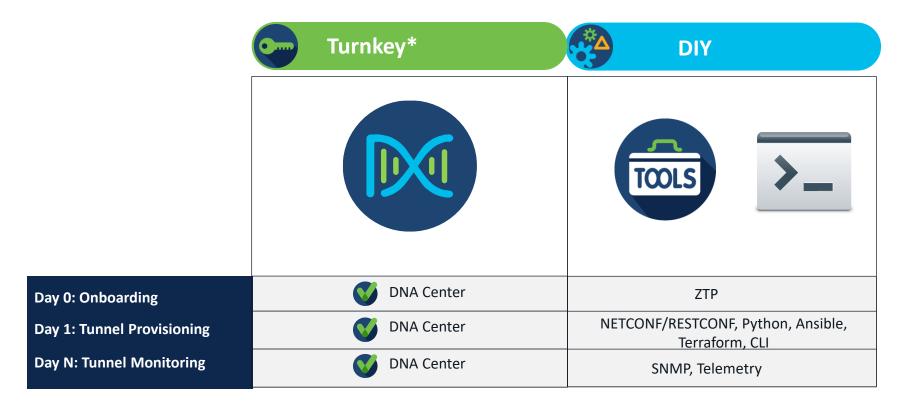
Standards based IPSEC for secure Direct Internet Access & Cloud Native Workloads

Site-to-Site

100G Line-rate IPsec encryption with low latency forwarding

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Catalyst 9k Edge - Automation & Monitoring





Catalyst 9300 Mini Switch



Introducing 9300LM(mini) Series Switches in C9300L Family

Fixed Uplink replacement for Catalyst 3650-mini

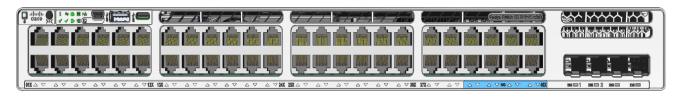




X86 CPU



Cisco Open IOS-XE



40 X 1G + 8 x mGig-10G



UPOE
Next-gen IT/OT
Workspaces





mGig Wifi 6E deployments



Fixed 25G Uplinks

USB type-A front Panel SSD* Application hosting

*Roadmap

IBN Innovations



HA, Hot Patching, UPOE



MACsec 256, ETA



On-box App hosting





Platform Depth <14 inches

AC PSU DC PSU

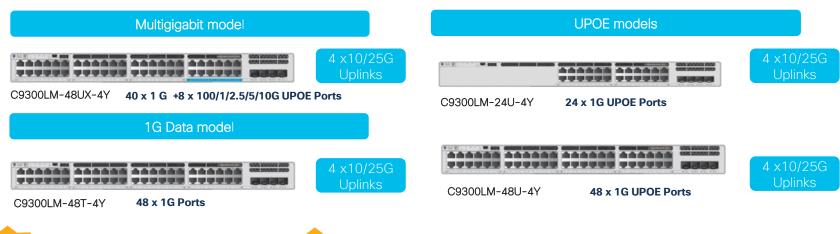
UPOE 13.2 in 12.8 in

Data 12.4 in 12.0 in

Cisco Catalyst 9300LM Series

IOS-XE 17.9.1 Target FCS: July CY22

Fixed Uplinks (C9300LM Models)







Catalyst 9200



Catalyst 9200 Series

















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

Cisco Catalyst 9200 Series

Next generation of entry-level access switches for intent-based networking















Recommended for small scale SDA deployments



48 ports Full POE+/Partial POE+/Data.1G/10G Uplink



48 ports Full POE+, 12xmGig, 10G Uplink 48 ports Full POE+, 8xmGig, 25G Uplink



24 ports Full POE+/Data, 1G/10G Uplink



24 ports Full POE+, 8xmGig, 10G Uplink 24 ports Full POE+, 8xmGig, 25G Uplink

48 ports Full POE+/Partial PoE+/Data 48 port Full POE+ with 32 VN**



48 ports Full POE+, 8xmGig



24 ports Full POE+/Data 24 ports Full PoE+ with 32 VN**



24 ports Full POE+, 8xmGia

Higher Efficiency AC FRU Power Supplies

Modular uplinks

FRU Fan



Silver Rated 125W

Platinum Rated

600W

FRU PSU











Full Flexible NetFlow streaming telemetry

Cisco Catalyst 9200 Series highlights

UADP 2.0 mini

Cisco IOS XF Software

Limited-scale SD-Access

MACsec-128 link encryption

Trustworthy solutions

Perpetual/Fast PoE

Programmability

Cold patching

FRU Uplinks*

2x 40G 2x 25G

4x 10G

*C9200 1G skus support 1/10G uplinks while C9200 mGig will support 10/25/40G uplinks **C9200 32 VN skus only support 1/10G uplinks and these skus cannot be stacked with other C9200 skus

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Lookup tables

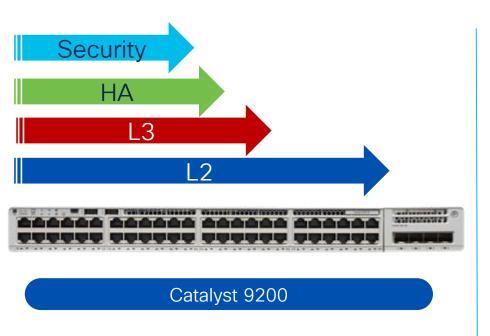
Forw	arding Resou	rces
	9200	9200L
MAC	32k	16k
Host Route	10k	8k
IGMP Groups	1k	1k
Indirect Route	4k	3k
Multicast Route	1k	1k
SGT	2k	2k

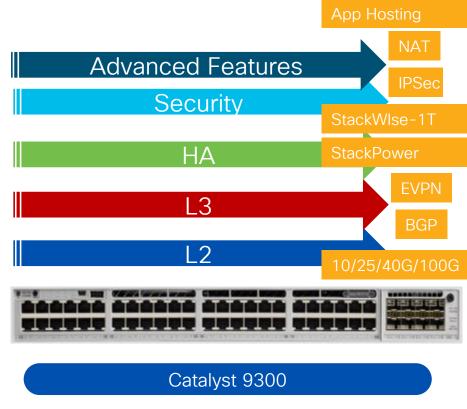
Fe	ature Resourc	es
	9200	9200L
Security ACL PACL VACL RACL	1k	1k
QoS ACL	1k	1k
Netflow ACEs	128	128

Netflow Entries: 16k per ASIC



Fixed Access Positioning





Catalyst 9000 Compact Switch



The New Catalyst 9200CX Series Switches

Next Generation of Compact Catalyst Switches







12x 1G PoE+

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









Flexible Deployment Option











Cisco Catalyst 9200CX Series

Data and PoE+ Models

1G Downlink and 1G/10G Uplink Models

Data SKU



C9200CX-12T-2X2G 12x1G Downlinks + (3x1G + 2x10G SPP+ Uplinks)

- External power adapter (80W)
- UPOE+ powered (70W)



80W AC External Power Adapter

Powering Option	Available Power (W)
Auxiliary Input	80W
1 UPOE+ Uplink	71W
1 Class 6 802.3bt (60W)	51W

PoE+ SKUs



C9200CX 12 Port PoE+
12x1G Downlinks + (2x1G + 2x10G SPP+ Uplinks)



C9200CX 8 Port PoE+

8x1G Downlinks + (2x1G + 2x10G SPP+ Uplinks)

- 310W Internal AC power supply
- 240W PoE power budget



Catalyst 9200CX - Next Generation Compact Switches





	Catalyst® 3560CX models	
Market-Leading Encryption	AES 128-Bit MACsec	+
Network Visibility	Limited Flexible NetFlow	+
SD Bonjour Services	Not Available	+
Programmability	Basic Scripting with Python	+
Application Visibility	Smart Logging, Limited Flexible Net Flow, and AVC	+
SDA Fabric	SDA Extended Node Capability	+

Catalyst® 9200CX models
AES 256-Bit MACsec
Full Flexible NetFlow
Bonjour Service Peering
YANG Models (RESTCONF, NETCONF, gNMI), ZTP
Streaming Telemetry (NETCONF Dial-In and gRPC Dial-Out) SD-AVC w/ NBAR2
SDA Edge Node Capability (16VNs)













Catalyst 9200CX Mounting Options

Wall Mount



- · With mounting tray and screws
- With mounting tray and magnet (in case of metal wall)

Rack Mount



Table-Top/Bottom/Shelf Mount



- · With mounting tray and screws
- With mounting tray with magnet (in case of metal desk or shelf)

Din Rail Mount



· With a mounting tray and rail mount

Catalyst 9200CX Hardware Comparison

	Catalyst 9200CX Series POE+ switches	Catalyst 9200CX Series Data-Only switch	Catalyst 3560CX Series switches
CPU	4 Core @375Mhz Embedded ARM	4 Core @375Mhz Embedded ARM	Dual Core CPU@600MHz
DRAM (DDR3)	4GB	4GB	512MB
Flash On board	4GB	4GB	128MB
Buffer	6MB/ASIC	6MB/ASIC	4MB/ASIC
Power Supply	310W (Internal)	80W (External) or UPOE+ UL Powered	300W (Internal) or UPOE+ UL Powered
Switching Bandwidth	60GB	60GB	32GB
MACSEC	256-Bit MACSEC	256-Bit MACSEC	802.1X-2010(MKA) PSK Support for Switch-2-Switch
Max PoE Budget	240W	-	240W
Max Depth	9.6" (24.3cm)	6.5" (16.5cm)	10.6" (26.9cm)



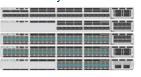
Catalyst 9200CX Scale Enhancements

Forwarding Resources				
	C9200/CX	C3560CX		
MAC	32k	16k		
Host Route	10k	4k		
IGMP Groups	1k	1k		
Indirect Route	4k	1k		
Multicast Route	1k	1k		
SGT	2k	2k		

Feature Resources					
	C9200/CX	C3560CX			
Security ACL	1k	375			
• PACL					
• VACL					
• RACL					
QoS ACL	1k	375			
Netflow Entries	16k	8k			

Catalyst 9300 Series - Market leading Fixed switches









Mixed (Catalyst 9300+C9300X)



Deployment Type	High-speed Access and Distribution	Access	Access + Distribution
Stacking	1 Terabit	480G	480G
Stackpower	√+ higher power budget)	✓	>
HW-based IPSEC	✓	×	×
Dense Uplinks	Up to 100G	Up to 40G	Up to 100G
Fiber models	Up to 25G/10G SFP+	Up to 1G SFP	Up to 25G/10G SFP+
Max 10G copper ports (1RU)	48	24	48
App Hosting	✓-2x App Hosting capacity)	✓	✓















Catalyst 9400X/9400



Modular Access delivering ever-increasing value

- ✓ No oversubscription per slot on any chassis (w/ Sup 2XL)
- √ Higher non-oversubscribed port density
- √ Higher Access Point (AP) Density
- √ Perpetual and Fast PoE hardware capable



- √ 100 Gbps ports on Supervisors
- ✓ More Active Ports on Supervisors
- √ Higher TCAM scale
- ✓ Proven 25 Gbps value



Catalyst 9400 SUP 2XL



Catalyst 9400 SUP 2



Catalyst 9400 SUP 1/1XL



Cisco Catalyst 9400X New Supervisor 2/2XL powered by Cisco UADP 3.0sec ASIC







Up to 1.6T Bandwidth

1/2.5/5/10/25/40/100G Supports Different Speeds





Increased Forwarding + ACL Scale Up to 128K MACs* Up to 256K Routes*





Up to 100G Encryption IPSec*, WAN-MACsec*

Customizable Templates for higher Scale*

* Hardware Capable, Software Support not committed

100G Leadership in Access



Up to 240G

bandwidth



1/2.5/5/10/25/40G Supports Different Speeds





Forwarding + ACL Scale Up to 96K MACs Up to 64K Routes





UADP 2.0XL

alialia CISCO

Sup-1/1XL

240/120/80Gbps/Slot with Sup-1XL (4/7/10 Slot Chassis) 80Gbps/Slot with Sup-1 (All Chassis)





Sup-2/2XL

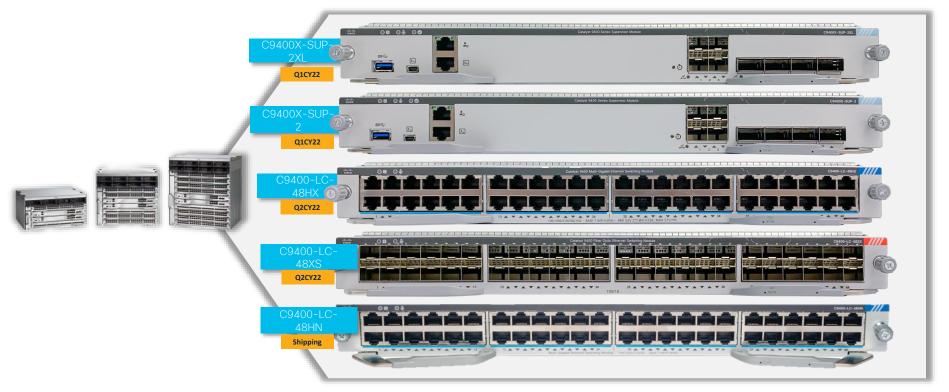
480Gbps/Slot with Sup-2XL 240Gbps/Slot with Sup-2

Unmatched Flexibility

Maximum Investment Protection

Same Series, Chassis options - New SUPs and Line cards

Same Chassis with New Supervisors and Line cards



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

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C9400X-SUP-2 / 2XL

Gen2 Supervisor Modules with UADP 3.0sec





3x UADP 3.0sec ASIC

- Sup 2XL 480Gbps per Slot (Full duplex)
- Sup 2 240Gbps per Slot (Full duplex)

CPU & Memory

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



Sup1-XL Feature Parity at FCS

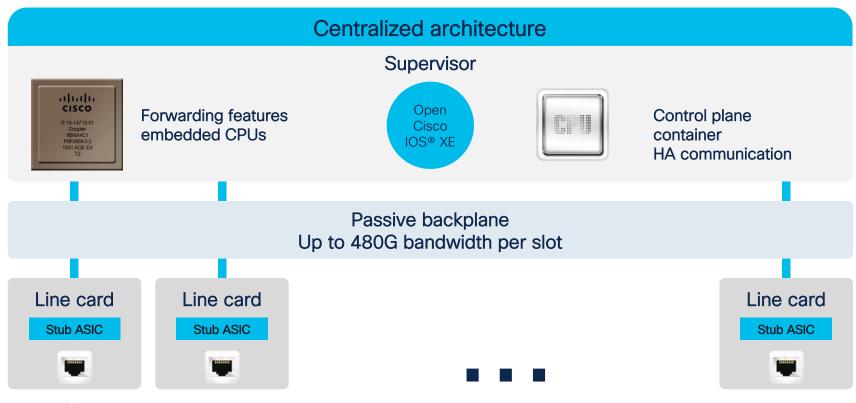
Exceptions

(Roadmapped)

- StackWise Virtual
- Perpetual and Fast PoE
- MACSEC HA on LC
- MACSEC XPN Support on SUP
- Auto Neg on Passive cable



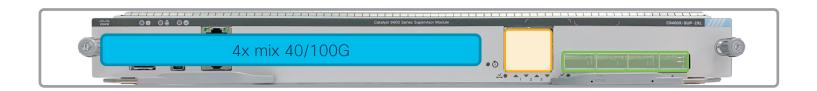
Architecture





Sup 2 / 2XL Uplinks - Single Supervisor



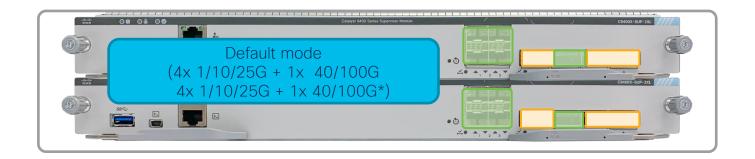


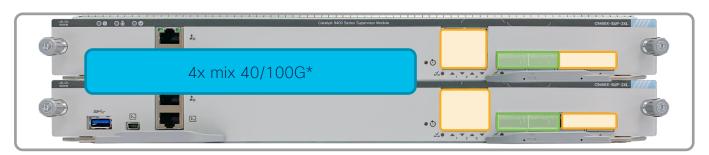






Sup 2 / 2XL Uplinks - Dual Supervisors







Active

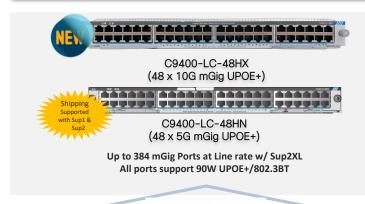


Disabled

cisco Livel

Introducing Catalyst 9400 Gen 2 Line Cards

Higher Bandwidth & Higher Density Line Cards





C9400-LC-48UX
(24 x mGig UPOE+24 x UPOE)
Up to 192 mGig Ports with Oversubscription w/ Sup1

Access



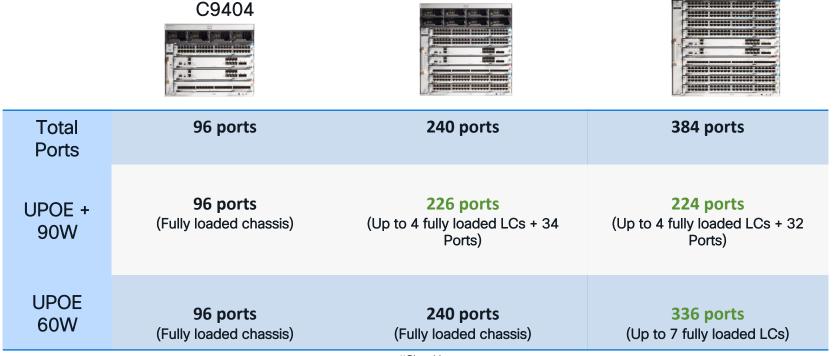
New Line Cards are supported only on Supervisor-2/2XL



Concurrent 60W/90W POE Port Density with C9400-LC-48HX

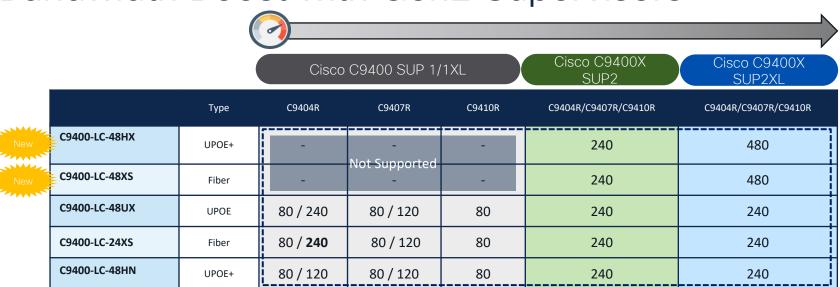
C9407

With <u>3200W</u> Power Supply in Combined Mode(Fully loaded PSUs):



C9410

Bandwidth Boost with Gen2 Supervisors



Bandwidth in Gbps

Bold indicates Line Rate

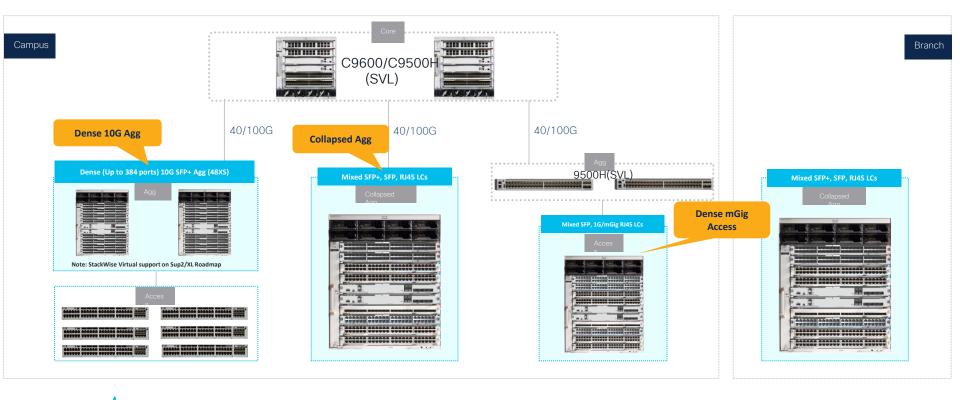
3x Bandwidth Uplift for Gen1 LCs (80G -> 240G) on 10 Slot Chassis w/ SUP2XL

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



Catalyst 9400 Deployment Flexibility

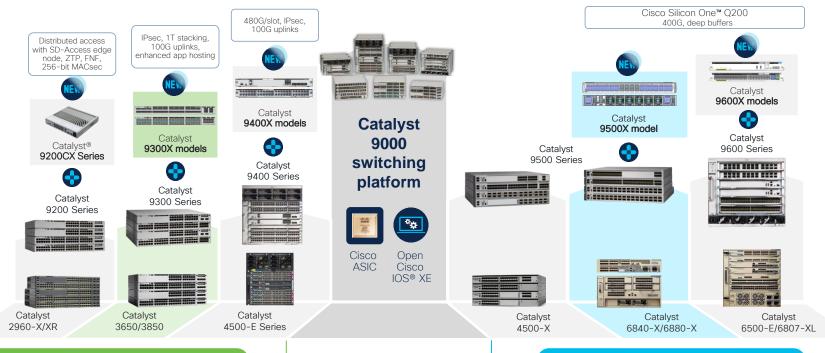
C9400X enables dense 10G SFP+ aggregation and multigigabit access use cases





Catalyst 9000X - Expanding industry leadership

Adding the "X factor" to the industry's leading switching family



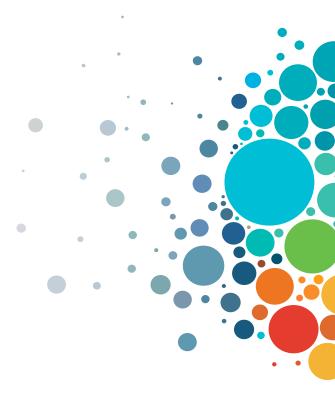
cisco Live!

Access switching

Core switching

Technical Session Surveys

- Attendees who fill out a minimum of four session surveys and the overall event survey will get Cisco Live branded socks!
- Attendees will also earn 100 points in the Cisco Live Game for every survey completed.
- These points help you get on the leaderboard and increase your chances of winning daily and grand prizes.



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Cisco Learning Network

Resource community portal for certifications and learning



Cisco Training Bootcamps

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Cisco Continuina **Education Program**

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



Thank you





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