



The bridge to possible

Cisco Catalyst 8300 & 8200 Series Platforms

Technical Deep Dive

Stefan Mansson CCIE#3516 25 years
Product Manager, ISR4k & Cat8k

Cisco Webex App

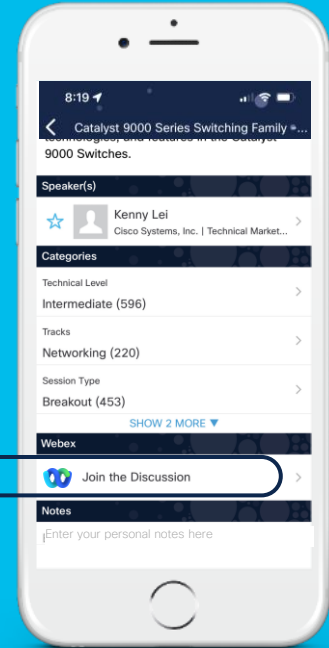
Questions?

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 until February 24, 2023.



Stefan Mansson

Product Manager ISR4000 & Cat8300/8200



38 years in Network Business

32 years exclusively with Cisco Branch Routers and Routing Solutions



CCIE #3516 25 years, since -98



CCSI #20145 Cisco Instructor 24 years

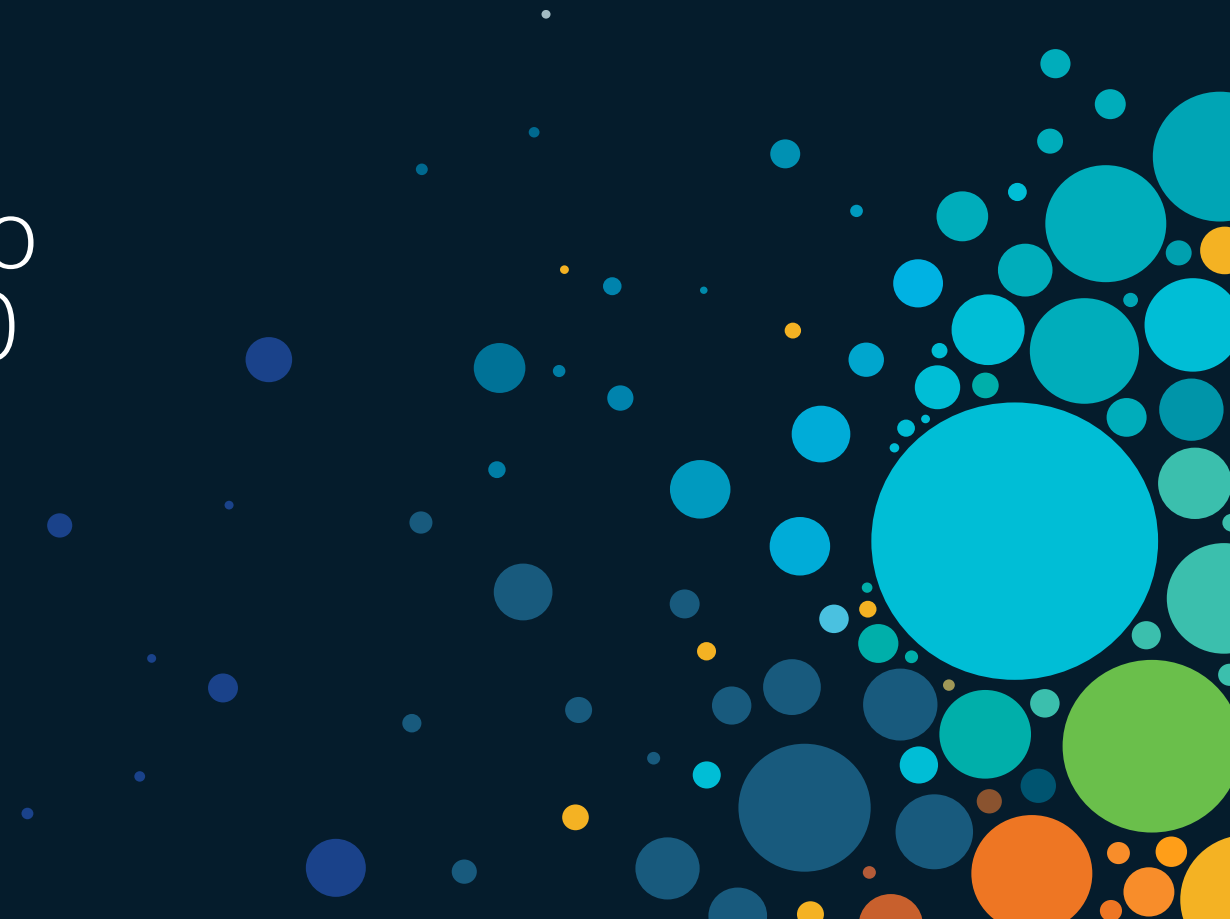




Agenda

- Why we built the Catalyst 8000 Platform Family
- Solution and Use-cases
- Platform Deep Dive
- Connectivity Richness
- User Centric Design
- Platform Performance and Comparison
- Platform Architecture
- Cat8000 DNA Licensing
- Roadmap, EoS & Migration Paths
- Conclusion

Introduction to Catalyst 8000 Platform Family



Catalyst 8000 Edge Platforms

Purpose Built for today's networks



Catalyst 8000v Edge Software/
Catalyst 8200 Edge uCPE

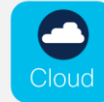


Catalyst 8300/8200/8200L Series Edge Platforms



Catalyst 8500/8500L Series Edge Platforms

C8000 Market Drivers



Secure, connected experience

- SD-WAN & 5G ready
- Cloud-scale multi-layer security
- 256-bit WAN MACSec



Cloud-native agility

- Multigigs throughput improvement
- Up to 200G CEF / 33G SDWAN
- 10G in Access - 40G/100G in Edge
- Dynamic Core Allocation

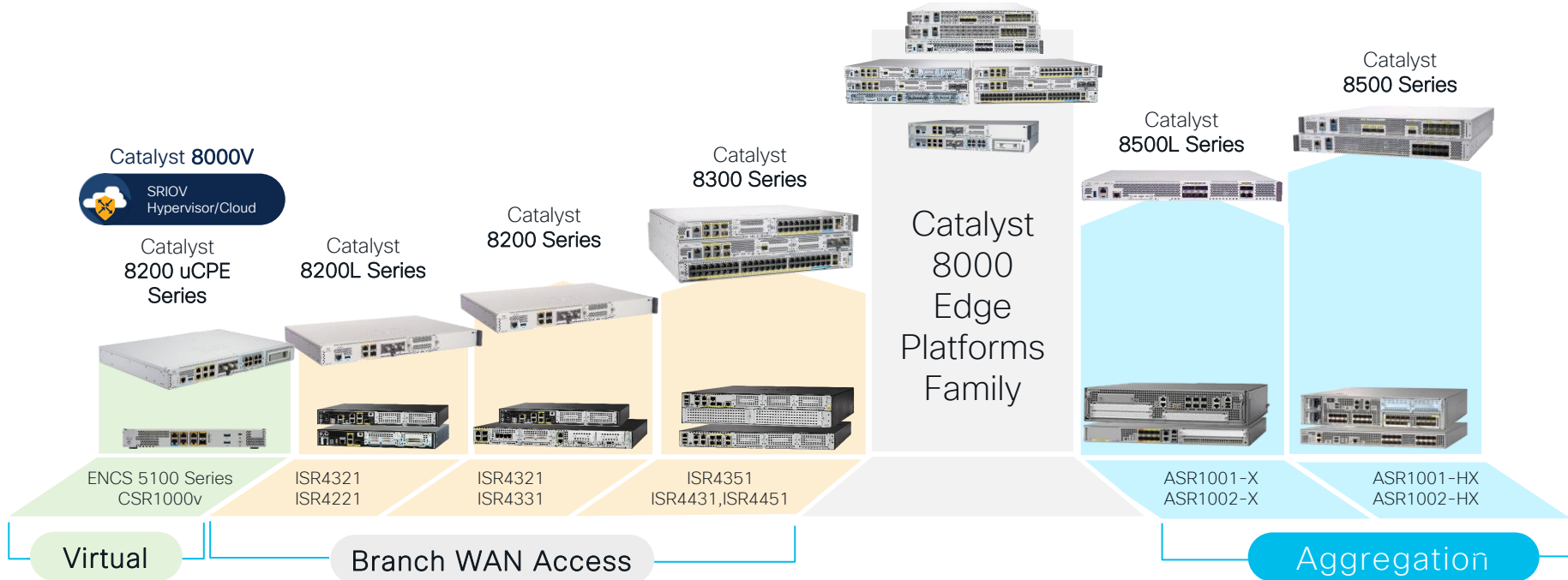


Accelerated Edge Computing

- Powerful Edge Compute Resources
- Up to 4x performance for containerized SDWAN security services

Cisco Catalyst Routing Portfolio

Refreshed from Branch, Aggregation and Cloud



Cisco Catalyst 8000 Edge Platforms Family

Modular Access for branch

Catalyst 8300

Up to 12 Gbps routing
5 Gbps IPsec/SD-WAN



Catalyst 8200

Up to 3.8 Gbps routing
1 Gbps IPsec/SD-WAN



Catalyst 8200L

Up to 3.8 Gbps routing
500 Mbps IPsec/SD-WAN



ISR 4451/4431/4351



ISR 4331/4321



ISR 4321/4221

Modular Access

Optimized performance & scale for today's network operations

Cisco Catalyst 8300, 8200 Series Edge Platforms

The leading SD-WAN high performance branch router with rich services

Performance and Rich Services

12Gbps CEF/5Gbps IPSEC

C8300-1N1S-4T2X

C8300-2N2S-4T2X



C8300-1N1S-6T

C8300-2N2S-6T



10Gbps CEF/ 2Gbps IPSEC

C8200-1N-4T

3.8Gbps CEF/ 1Gbps IPSEC



C8200L-1N-4T

3.8Gbps CEF
500Mbps IPSEC



Traffic profile: Cisco IMIX (352 Bytes)

CEF: Autonomous mode Routing

IPsec: Autonomous & Controller/SDWAN mode

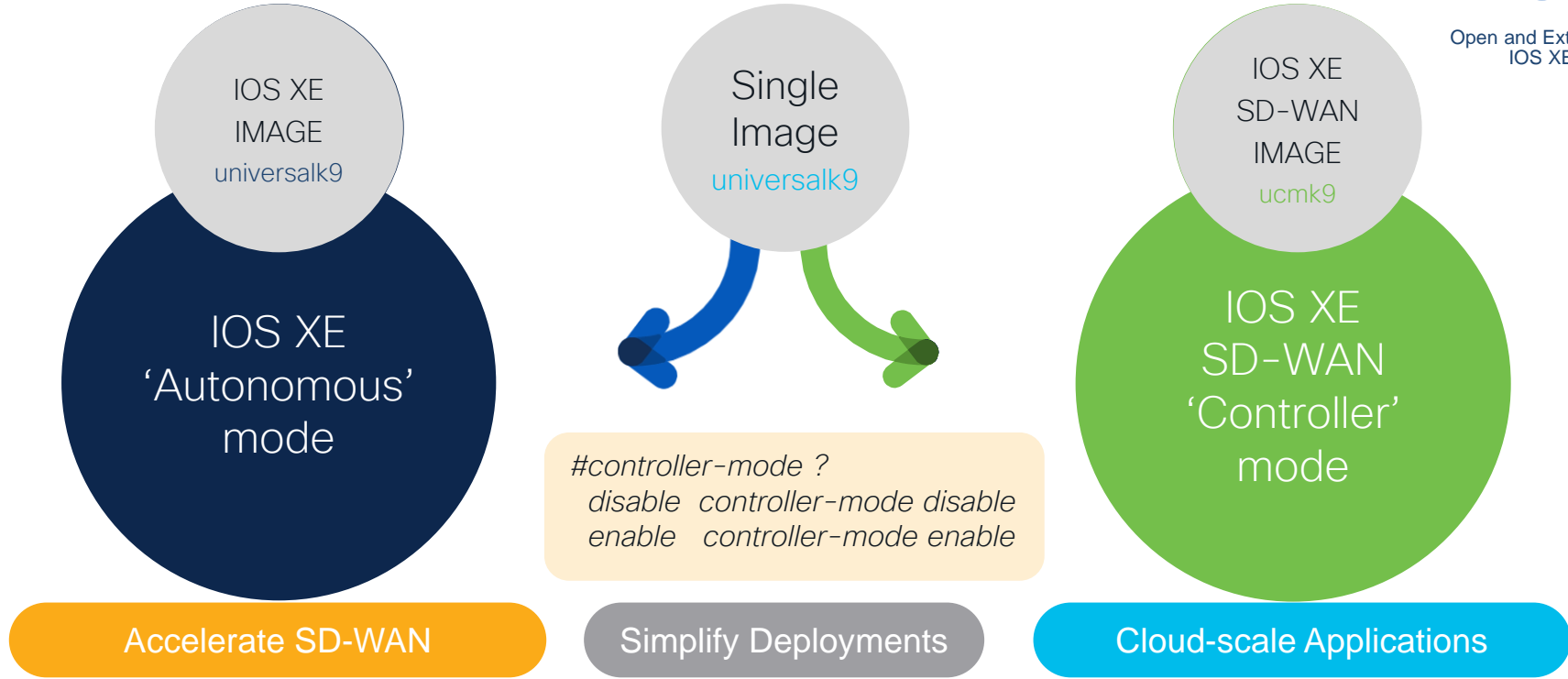
Throughput: Aggregate traffic

Flexible SoC Architecture with Multiple Cores

Easy Operations with Single Image

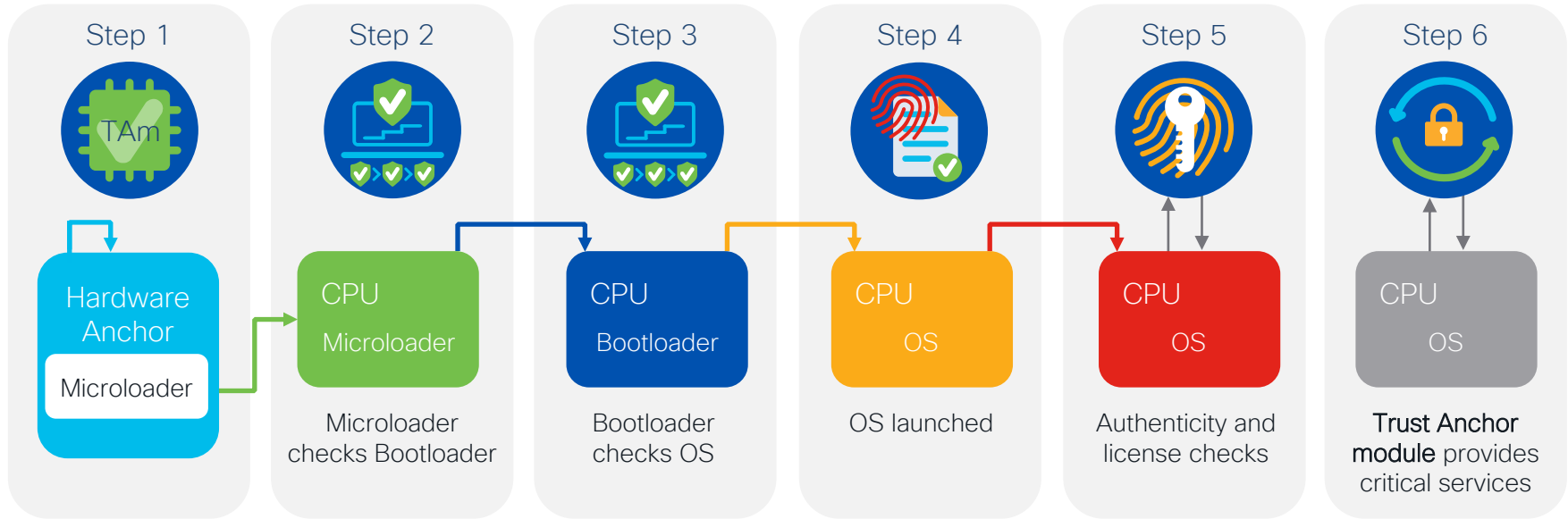


Open and Extensible
IOS XE



Open, API, Model Driven & Secure Operating Systems

Secure Platform with Trustworthy Solutions



First instructions run on CPU stored in tamper-resistant hardware

Confidentiality

Integrity

Authenticity

Solution and Use Cases



Catalyst 8300,8200 Series Edge Platforms

One platform, many solutions

SD-WAN & SASE

Cloud OnRamp for SaaS
Cloud OnRamp for IaaS
Umbrella SIG
Multi-layer Security
UC SD-WAN

Internet Gateway

High Throughput Performance
High Scale NAT44, NAT64
10/1G Port Offering
Firewall DDoS protection

Secure WAN

Site-to-site
Remote Access VPN
GETVPN, DMVPN, FlexVPN
Zone Based Firewall
256-bit WAN MACsec
Encryption Traffic Analysis

Managed SP CPE

MPLS, Segment Routing
L2VPN, L3VPN
AVC, NBAR2, QoS/HQoS
MP-BGP

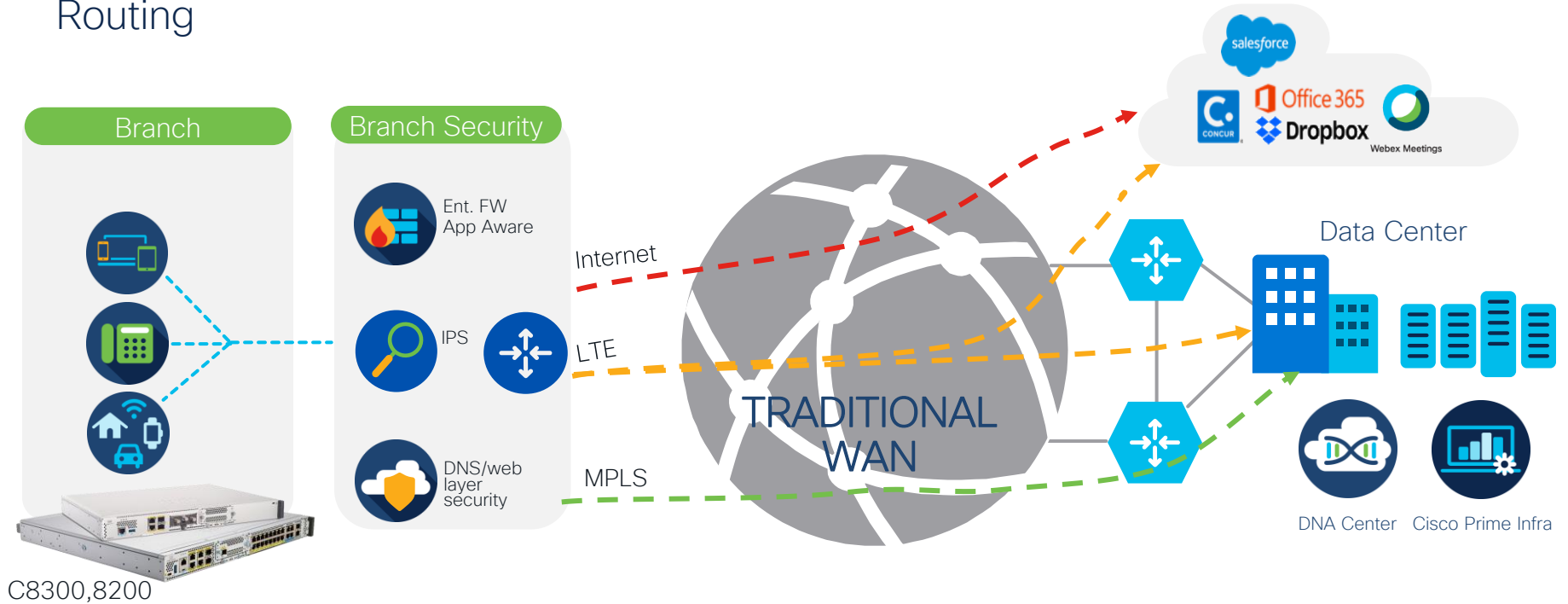
SD-Access

Control Plane node
Border node
Fabric edge node (roadmap)

Inherits all IOS XE innovation from Day1, Full feature parity with ISR4K

Enterprise Branch Office

Routing



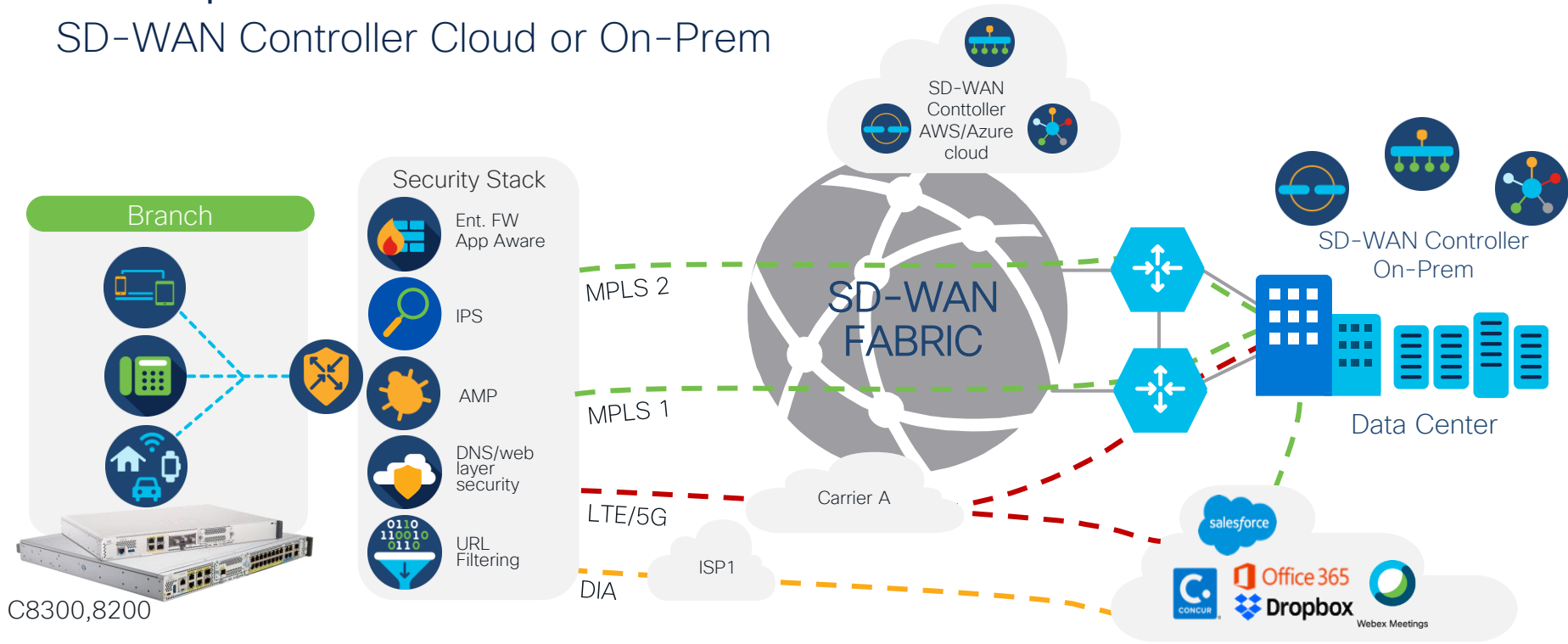
Secure Network Edge

Traditional Transport

Zero-touch Provision

Enterprise Branch Office

SD-WAN Controller Cloud or On-Prem



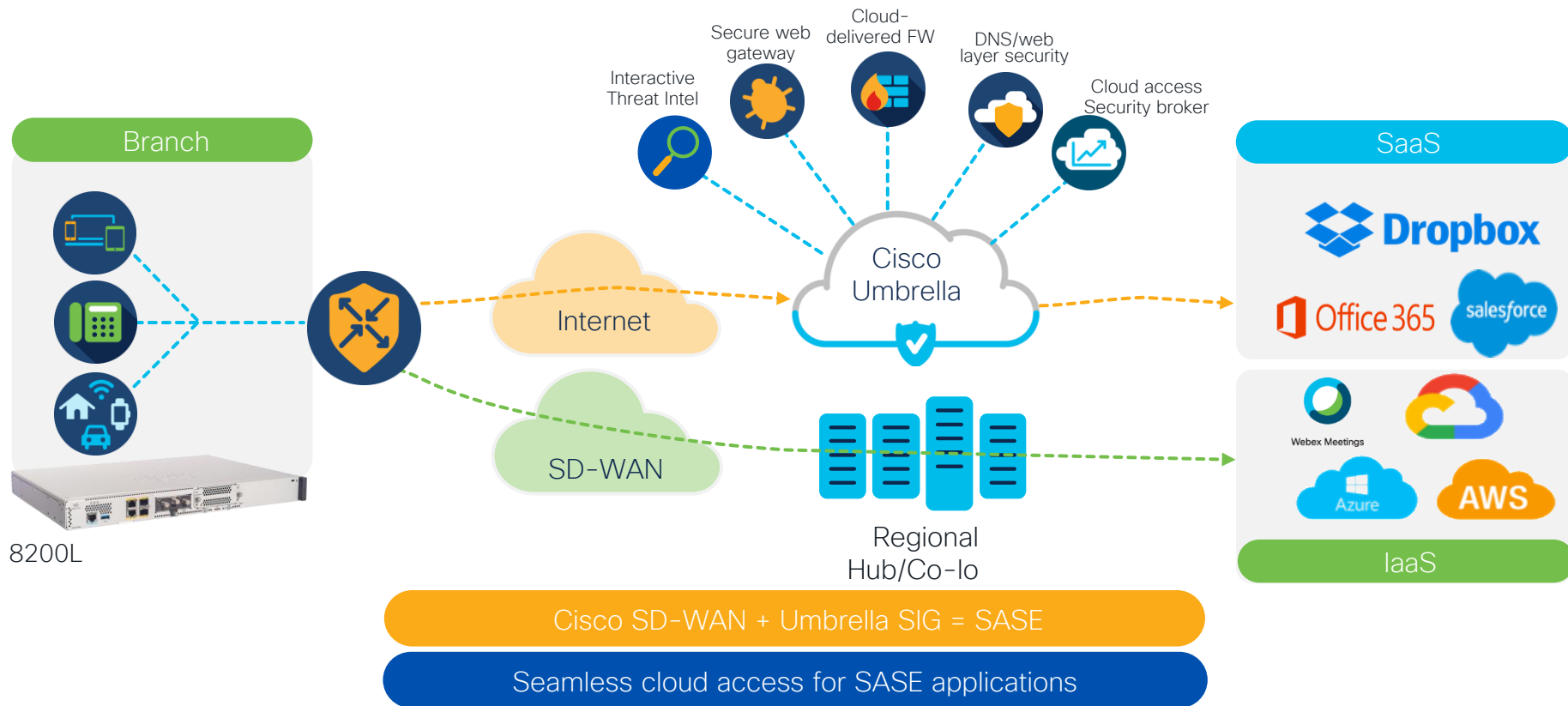
Secure Network Edge

Cloud Onramp for SaaS (DIA)

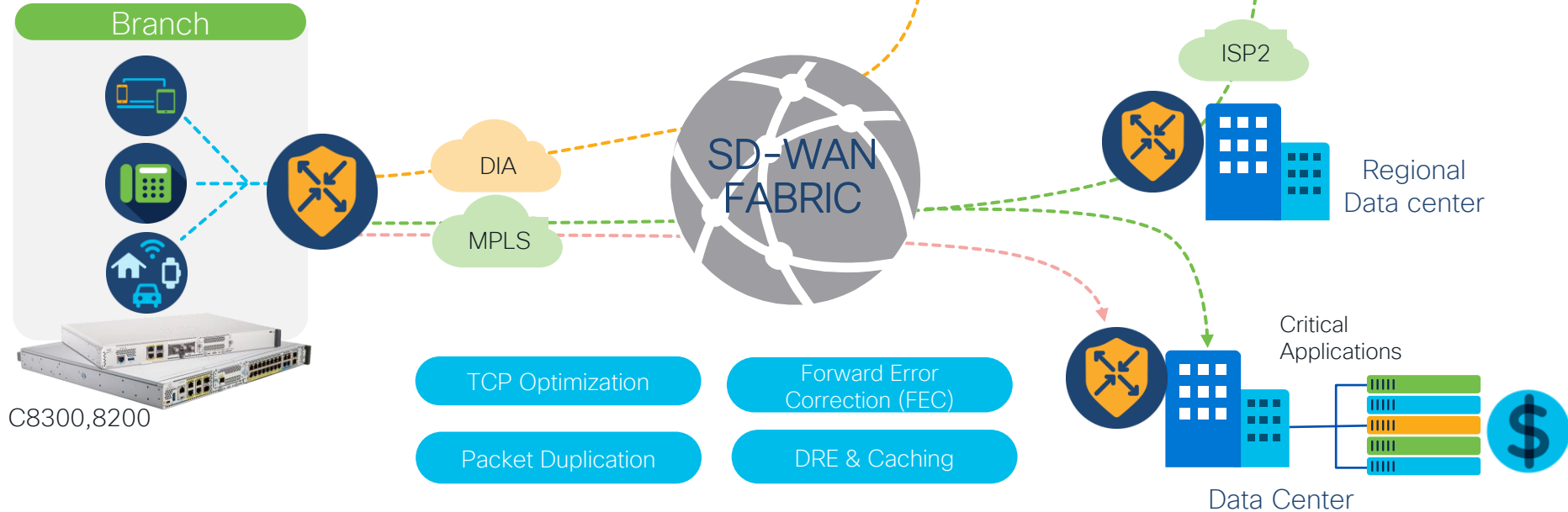
Zero-touch Provision

CISCO *Live!*

SASE Cloud Adoption with SD-WAN

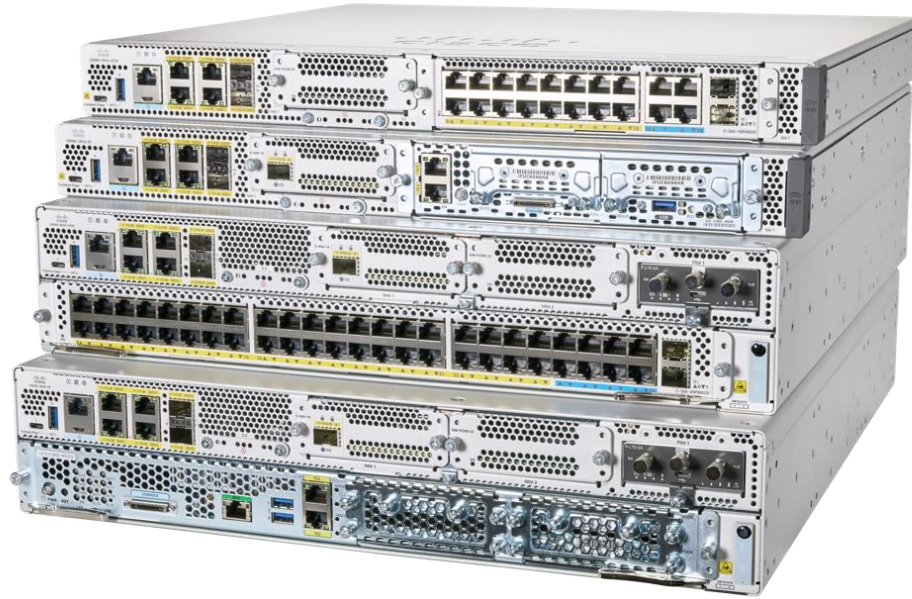


AppQoE with SD-WAN



Enhanced Application Quality of Experience

Platform Deep Dive



Catalyst 8300

Cisco Catalyst 8300 Series Edge Platforms

Foundation for the Secure Cloud Scale SD-WAN branch



Now supports
1G/10G WAN MACsec

Integrated Rich Services

Voice Survivability
AppQoE
SSL/TLS Proxy

Edge Intelligence

Compute
Container based Apps



Performance & Scale

Up to 5x IPsec and IP CEF Performance
Core Availability for 3-4x Services Performance
Higher IPsec Tunnel Scale

Multi-layer Security

Application Firewall
IPS/IDS, URL Filtering
AMP, Threatgrid
Umbrella SIG

Enhancements

6 WAN
ports

4x RJ45
2x SFP(+)

Default
8G Up to
32G
DRAM

10G
256-bit
MACsec

Pluggable
Storage
up to
600GB

5G
Cellular
PIM

Management

vManage

DNA Center

Cisco
Prime Infra

Open APIs



Cisco Catalyst 8300 Series Edge Platforms

Introducing 10G in Access with higher WAN port density

10G WAN Ports 'X'
4x1G Cu + 2x SFP+

C8300-2N2S-4T2X



C8300-1N1S-4T2X



12Gbps CEF
5Gbps SD-WAN

1G WAN Ports 'T'
4x1G Cu + 2x SFP

C8300-2N2S-6T



C8300-1N1S-6T



10Gbps CEF
2Gbps SD-WAN

M2 USB &
SSD Storage

UADP-based switch
modules/10G WAN modules

User Centric Design
(RFID, QR label, FRUs)

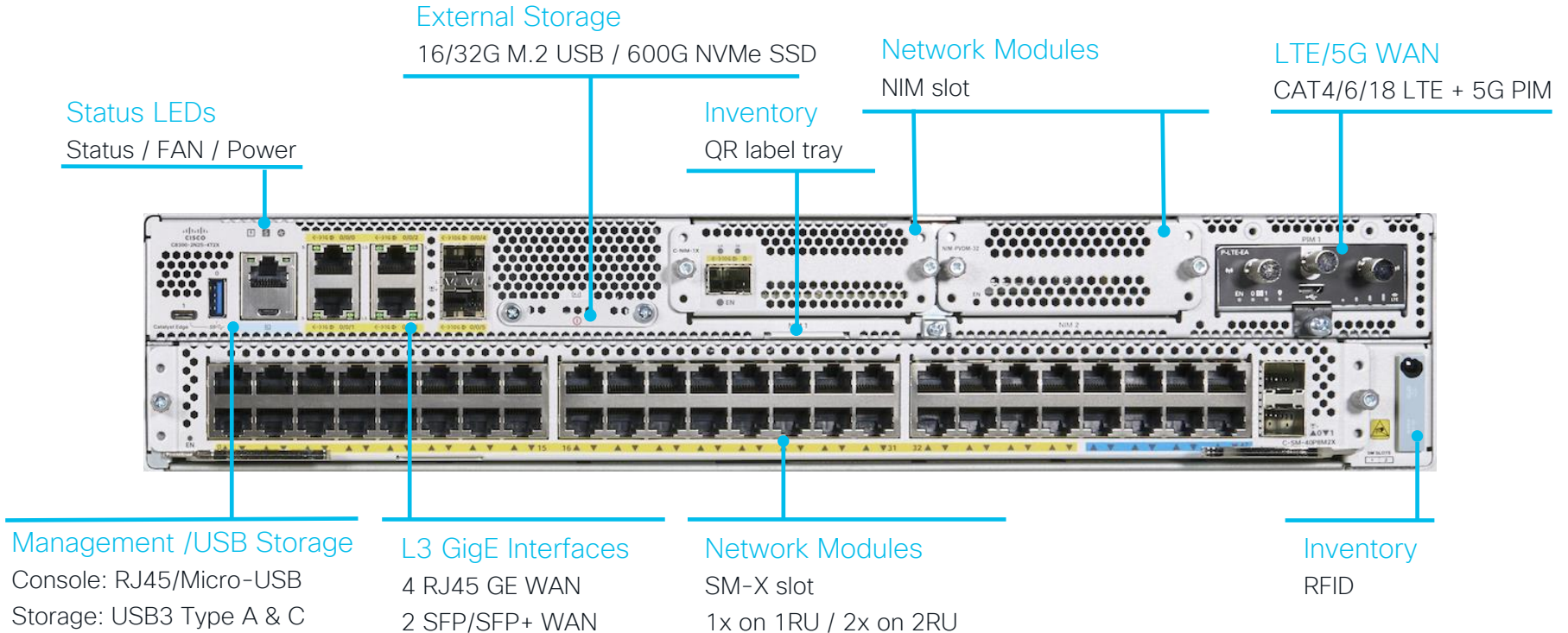
AC or DC Redundant
PSU, Replaceable fan tray



C8300-2N2S Front View

2 NIM and 2 SM

C8300-2N2S-6T: 4x RJ45, 2x SFP
C8300-2N2S-4T2X: 4x RJ45, 2x SFP+



C8300-2N2S Rear View

Power supply Slot 1

PSU with Internal FAN
AC/DC PSU

Power supply Slot 0

PSU with Internal FAN
AC/DC PSU

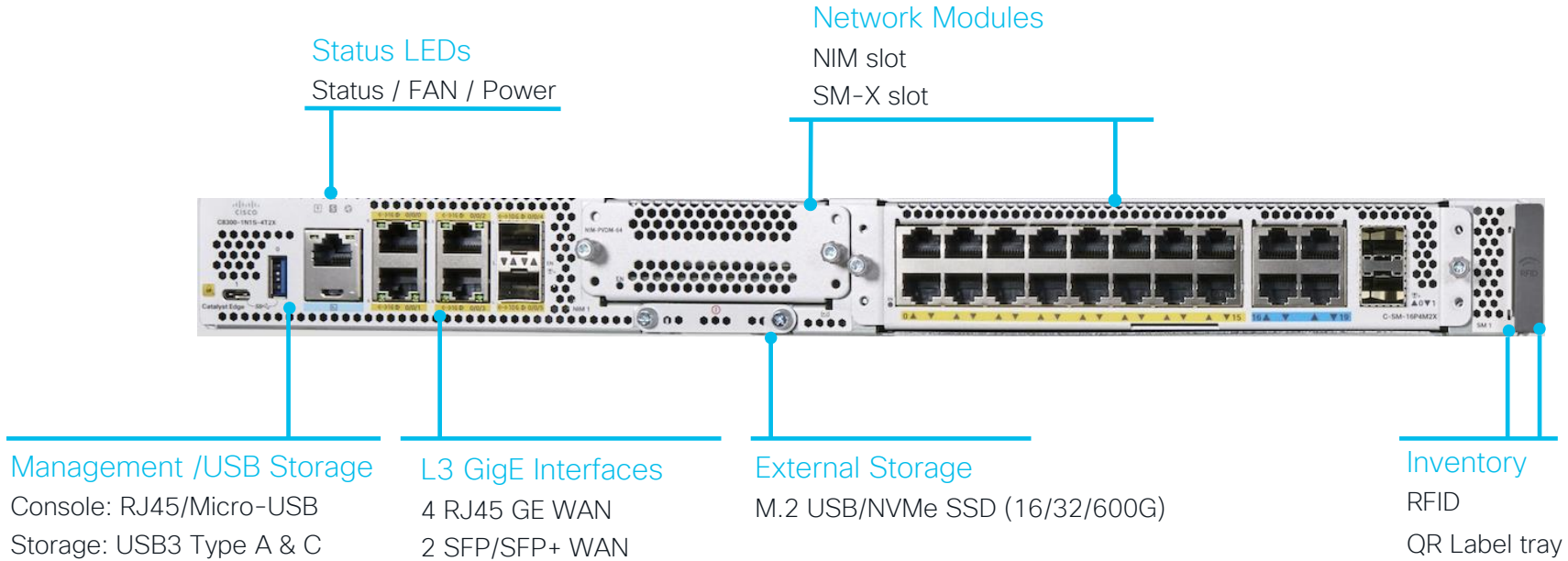


Hot-swappable FAN Tray

C8300-1N1S Front View

1 NIM and 1 SM

C8300-1N1S-6T: 4x RJ45, 2x SFP
C8300-1N1S-4T2X: 4x RJ45, 2x SFP+



C8300-1N1S Rear View

1 NIM and 1 SM

Power supply Slot 1

PSU Internal FAN
AC/DC PSU

Power supply Slot 0

PSU Internal FAN
AC/DC PSU



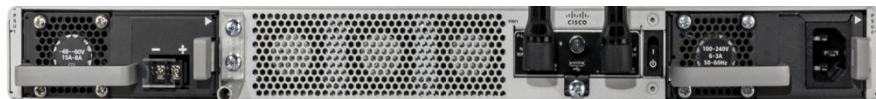
Field replaceable Fan Tray

Not hot-swappable on 1RU platforms

LTE/5G WAN

CAT4/6/18 LTE + 5G PIM

C8300 Power Supply



- Dual AC, DC, POE PSUs
- HVDC PSU support
- PoE, PoE+ & UPOE Capable
- PoE Boost with 500W and 1000W

Device Model	Power Supply	AC 250W	DC 400W	DC 400W HV	Dual AC PSU	Dual DC PSU	AC + POE 500W	AC + DC Mix mode
C8300-1N1S-6T	Internal	✓	✓	✓	✓	✓	✓	✓
C8300-1N1S-4T2X	Internal	✓	✓	✓	✓	✓	✓	✓

- ### PoE Supported Modules
- C-NIM-1M (L3 GigE & mGig)
 - C-SM-40G8M2X (Switch)
 - C-SM-16G4M2X (Switch)
 - NIM-ES2-8-P (Switch)

Device Model	Power Supply	AC 650W	DC 650W	DC 650W NEBS	Dual AC PSU	Dual DC PSU	PoE Adaptor	AC + DC Mix mode
C8300-2N2S-6T	Internal	✓	✓	✓	✓	✓	✓	✓
C8300-2N2S-4T2X	Internal	✓	✓	✓	✓	✓	✓	✓



N + 1 Redundancy with Inline Power

C8300 Field Replaceable FAN Module

Replaceable fan tray, 4 Internal Fans assembly module for Chassis cooling + PSU fan



Hot-swappable Fan Tray

Front-to-Back Airflow (default)

Reverse Airflow (NEBS)

Fixed Fan tray, 3 Internal Fans assembly module for Chassis cooling + PSU Fan



Internal, field replaceable Fan Tray

Front-to-Back Airflow

FAN Module Build N+1 Redundancy for Cooling



Catalyst 8200(L)

New Branch Additions

Cisco Catalyst C8200-1N-4T

Foundation for the Secure Cloud Scale SD-WAN branch



Supports
1G WAN MACsec
starting 17.6 XE

Integrated Rich Services

Voice Survivability
AppQoS
SSL/TLS Proxy

Edge Intelligence

Container based Apps



Performance & Scale

Up to 1G IPsec and 3.8G CEF Performance
Up to 400M On-prem Services Performance
Up to 2500 SDWAN & 4000 IPsec tunnels

Multi-layer Security

Application Firewall
IPS/IDS, URL Filtering
AMP, Threat Grid
Umbrella SIG

Enhancements



4 WAN ports

2x RJ45
2x SFP(+)

Default
8G Up to
32G
DRAM

Less than
12" depth

Pluggable
Storage
up to
600GB

5G
Cellular
PIM

Management

vManage

DNA Center

Cisco Prime
Infra

Open APIs

Cisco Catalyst 8200L-1N-4T

High Throughput SASE Compliant Secure Cloud



Supports
1G WAN MACsec
starting 17.6 XE

Integrated Rich Services

Voice feature parity with C8300
Data plane feature parity with C8300

SASE Compliance

Cloud based Security for the small branch



Scale

Up to 3.8G CEF Performance
Up to 500M IPSEC performance
Up to 1500 SDWAN & 4000 IPsec tunnels

SASE Compliant Security

High Throughput IPsec
Trustworthy Solutions
Umbrella SIG

Enhancements



4 WAN ports

2x RJ45
2x SFP(+)

Default
4G Up to
32G
DRAM

Less than
12" depth

Pluggable
Storage
up to
600GB

5G
Cellular
PIM

Manageability

vManage

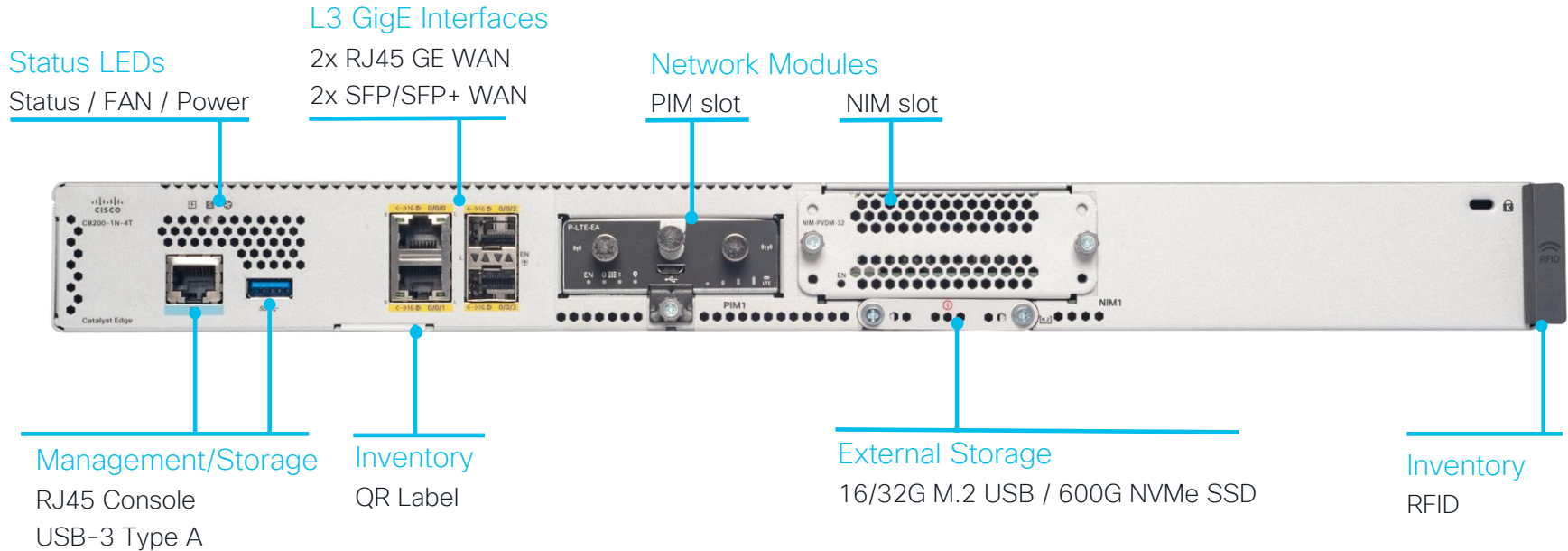
DNA Center

Cisco Prime
Infra

Open APIs

C8200/C8200L Front View

1 NIM and 1 PIM



Note: C8200 and C8200L built on the same chassis

C8200/C8200L Rear View

1 NIM and 1 PIM

Power supply

AC Power Supply

Power ON/OFF switch



PoE connector

External PoE Adaptor

FANs

2 Internal FANs

Not field replaceable

Front to back airflow

Cisco Catalyst 8200 Series Edge Platforms

Introducing 3.8G Access Edge with higher embedded port density

4 x WAN
2 x RJ45
2 x SFP

C8200-1N-4T



SSL Acceleration
Application Firewall
IPS/IDS
URL Filtering
AMP, Threat Grid
Umbrella SIG

Full SD-WAN Security
8x Cores
8GB DRAM default
3.8Gbps CEF
1Gbps SD-WAN

4 x WAN
2 x RJ45
2 x SFP

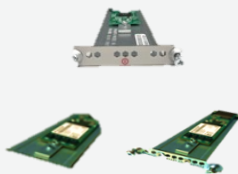
C8200L-1N-4T



SASE compliant Security
SSL Acceleration
Cloud based Firewall
Umbrella SIG

SSE Security
4x Cores
4GB DRAM default
3.8Gbps CEF
500Mbps SD-WAN

NVMe
Storage



ISR4k NIMs
5G/LTE PIMs



User Centric Design
(RFID, QR label, FRUs)



Connectivity Richness



C8300 Connectivity Richness

Next-gen modules and backward compatibility



Slot type

Pluggable Interface
Module (PIM)

Network Interface
Module (NIM)

Services Module (SM)

Module type

LTE/5G

LAN, WAN, LTE, VOICE,
DSL, UCS-E, ASYNC

LAN, WAN, VOICE,
UCS-E, ADAPTOR

70+ varieties
of
Modules and
Interfaces

Catalyst 8300 Supported Modules

70% of ISR4k modules reused



LAN

NIM-ES2-4
 NIM-ES2-8
 NIM-ES2-8-P
 C-SM-40P8M2X
 C-SM-16P4M2X
 C-NIM-4X
 C-NIM-8M
 C-NIM-8T

Async

NIM-16A
 NIM-24A
 SM-X-64A

WAN

C-NIM-1X
 C-NIM-1M
 C-NIM-2T
 NIM-1T
 NIM-2T
 NIM-4T
 SM-X-1T3/E3
 NIM-2BRI-S/T
 NIM-4BRI-S/T

WAN + Voice:
 NIM-1MFT-T1/E1
 NIM-2MFT-T1/E1
 NIM-4MFT-T1/E1
 NIM-8MFT-T1/E1
 NIM-1CE1T1-PRI
 NIM-2CE1T1-PRI
 NIM-8CE1T1-PRI

LTE

NIM-LTEA-EA
 NIM-LTEA-LA
 P-LTE-VZ
 P-LTE-NA
 P-LTE-US
 P-LTE-JN
 P-LTE-GB
 P-LTE-IN
 P-LTE-AU
 P-LTEA-EA
 P-LTEA-LA
 P-LTEAA-EA
 P-LTEAP18-GL
 CG418-E

5G

5G sub-6GHz PIM
 CG522-E

Voice

SM-X-PVDM-3000
 SM-X-PVDM-2000
 SM-X-PVDM-1000
 SM-X-PVDM-500
 SM-X-24FXS/4FXO
 SM-X-16FXS/2FXO
 SM-X-8FXS/12FXO
 SM-X-72FXS

NIM-2FXSP
 NIM-4FXSP
 NIM-2FXS/4FXOP
 NIM-2FXO
 NIM-4FXO
 NIM-4E/M
 NIM-2BRI-NT/TE
 NIM-4BRI-NT/TE
 NIM-PVDM-32
 NIM-PVDM-64
 NIM-PVDM-128
 NIM-PVDM-256

DSL

NIM-VAB-A
 NIM-VA-B
 NIM-VAB-M
 NIM-4SHDSL-EA

ADAPTOR

C-SM-NIM-ADPT

Storage

SSD-M2NVME-600G
 M2USB-16G
 M2USB-32G

UCS-E

UCS-E160S-M3/K9
 UCS-E1120D-M3/K9
 UCS-E180D-M3/K9
 UCS-E1100D-M6

C8200/C8200L Connectivity Richness

Next-gen modules and backward compatibility



Slot type

Pluggable Interface
Module (PIM)

Network Interface
Module (NIM)

Module type

LTE/5G

LAN, WAN, LTE, VOICE,
DSL, ASYNC

50+
varieties of
Modules
and
Interfaces

Catalyst 8200/L Supported Modules



LAN

NIM-ES2-4
NIM-ES2-8
NIM-ES2-8-P

Async

NIM-16A
NIM-24A

WAN

C-NIM-2T
C-NIM-1M
NIM-1T
NIM-2T
NIM-4T
NIM-2BRI-S/T
NIM-4BRI-S/T

WAN + Voice:

NIM-1MFT-T1/E1
NIM-2MFT-T1/E1
NIM-4MFT-T1/E1
NIM-8MFT-T1/E1
NIM-1CE1T1-PRI
NIM-2CE1T1-PRI
NIM-8CE1T1-PRI

LTE

NIM-LTEA-EA
NIM-LTEA-LA
P-LTEA-EA
P-LTEA-LA
P-LTEAA-EA
P-LTEAP18-GL

CG418-E (Standalone)

5G

P-5GS6-GL
(PIM)

CG522-EE
(Standalone)

Voice

NIM-2FXSP
NIM-4FXSP
NIM-2FXS/4FXOP
NIM-2FXO
NIM-4FXO
NIM-4E/M
NIM-2BRI-NT/TE
NIM-4BRI-NT/TE
NIM-PVDM-32
NIM-PVDM-64
NIM-PVDM-128
NIM-PVDM-256

DSL

NIM-VAB-A
NIM-VA-B
NIM-VAB-M
NIM-4SHDSL-EA

Storage

SSD-M2NVME-600G
M2USB-16G
M2USB-32G

C8300 SM Based Layer 2 Switch Module

16 x 1Gig (w/
128/256-bit LAN
MACsec)

4 x mGig (2.5G Ethernet)

2 x 10G ports
(SFP+)

Next-Gen L2 Switch Module

- Layer 2 Features compatible with Catalyst switches
- LAN MACsec for switch to host communication
- 2.5 mGig to connect to future Access Point/ 5G
- Support for SDWAN features
- UPoE Capable

40 x 1Gig
(w/ 128-bit LAN MACsec)

8 x mGig
(2.5G Ethernet)



Port Speed and Diversity
(1G, 2.5G mGig, 10G Fiber)



LAN MACsec
(128-bit/ 256-bit)



Power Over Ethernet
(PoE/ PoE+/ UPOE)



Cisco UADP ASIC
(UADP 2.0)

SM-NIM Carrier Adapter for Catalyst 8300 Series

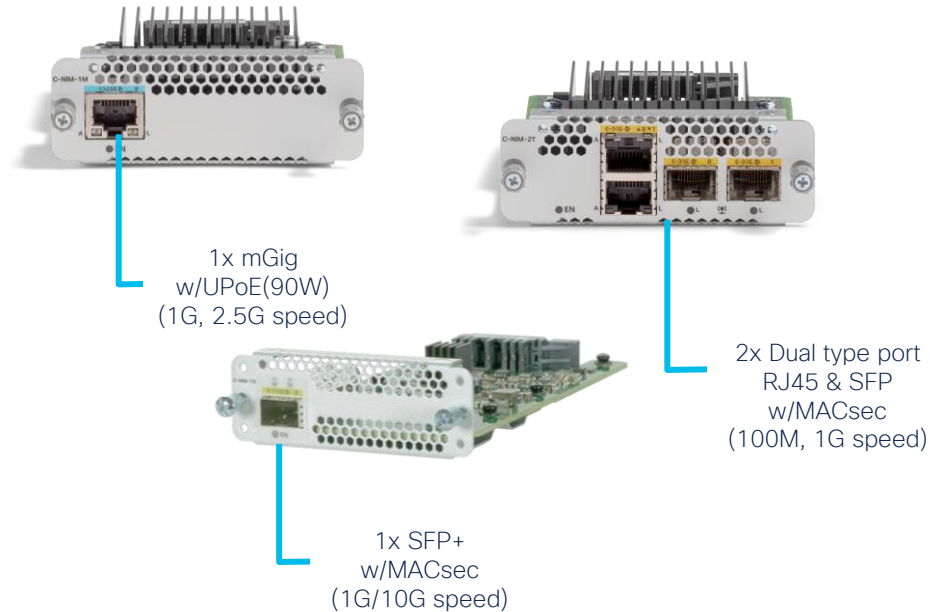


2 x NIM
Slots

Next-Gen SM NIM Carrier module

- Single-Wide Module
- 2x NIM modules support
- 2x 10Gbps backplane connectivity
- SD-WAN support from Day-1 (17.3.2 XE)
- Unique to C8300, not supported on ISR4K

Next-Gen Layer 3 WAN Modules



Together with **C-SM-NIM-ADPT** and embedded ports, supporting up to...

- **18 x 1Gbps WAN ports** on C8300-2N2S-4T2X & C8300-2N2S-6T
- **12 x 1Gbps WAN ports** on C8300-1N1S-4T2X & C8300-1N1S-6T
- **8 x 10Gbps WAN ports** on C8300-2N2S-4T2X

Next-Gen L3 WAN Modules

- Supports 10Gbps, 2.5Gbps & 1Gbps
- Port flexibility with Copper & SFP
- 256-bit WAN MACsec support
- SD-WAN support from Day-1 (17.6 XE)
- Supported on C8300/C8200/L Platforms
- UPoE (90 Watt) support on 2.5Gbps port
- Full feature parity with onboard WAN ports

Roadmap: NEXT-Gen L2/L3 modules in Branch

C-NIM-8M

- 8x 2.5Gbps mGig, RJ45
- 4x UPoE support

C-NIM-4X

- 4x 1/10Gbps, SFP+

C-NIM-8T

- 8x 1Gbps, RJ45

Sneak Peek



Targeted for FCS in 17.11
Introducing 3 NIMs to address new market needs + vEdge 2000 EoS

Price effective NIM switch series with added attractive features

- Flexible L2 & L3 capacity
- 90W UPoE BT capacity
- Comprehensive LAN&WAN MACSec
- 10Gbps & 2.5mGig options
- Capacity to L2-switch SFP & SFP+
- SD-WAN support

Target FCS: Summer 2023 - IOS 17.11

5G Sub-6 GHz module

CAT 20 LTE

Dual Micro SIM

3300↓/400↑ Mbps

Supported on all ISR1K, C8200, C8300 platforms

SD-WAN support

PID	Modem	Region
P-5GS6-GL	Telit FN980	Global Single PID



* Support for LTE band dedicated for use by emergency services

SIM usage indicator

5G / LTE antennas

- Antennas 1 and 3



GPS antenna

- Active GPS antenna

5G / LTE antennas

- Antennas 2 and 0

LTE Advanced Pro

Ushering Gigabit class

Cisco Cellular Gateway

CG418-E



- ✓ Flexible Fail-Over Cellular Gateway
- ✓ 1.2Gbps DL / 150Mbps UL
- ✓ PoE+ Powered (or externally powered)
- ✓ IP Passthrough
- ✓ External Antenna Support
- ✓ Integrated security with ACT2 for SUDI
- ✓ Console Port for Out of band management
- ✓ Modem Telit LM960A18

Supported Bands :

LTE: 1, 2, 3, 4, 5, 7, 8, 12, 13, 14, 17, 18, 19, 20, 25, 26, 28, 29, 30, 32, 38, 39, 40, 41, 42, 43, 46, 48, 66, 71

HSPA+: 1, 2, 4, 5, 8, 9, 19

Improved WAN Connection
Speed

Support for Dual
SIM

Zero-Touch
Provisioning

SD-WAN

A pathway to 5G

Cisco Cellular Gateway



- ✓ Flexible Fail-Over Cellular Gateway
- ✓ 3.3Gbps DL / 420Mbps UL
- ✓ PoE+ Powered (or externally powered)
- ✓ IP Passthrough
- ✓ External Antenna Support
- ✓ Integrated security with ACT2 for SUDI
- ✓ Console Port for Out of band management
- ✓ Modem Sierra Wireless EM9190

Supported Bands :

5G: n1, n2, n3, n5, n28, n41, n66, n71, n77, n78, n79

LTE: 1, 2, 3, 4, 5, 7, 8, 12, 13, 14, 17, 18, 19, 20, 25, 26, 28, 29, 30, 32, 34, 38, 39, 40, 41, 42, 43, 46, 48, 66, 71

HSPA+: 1, 9, 19

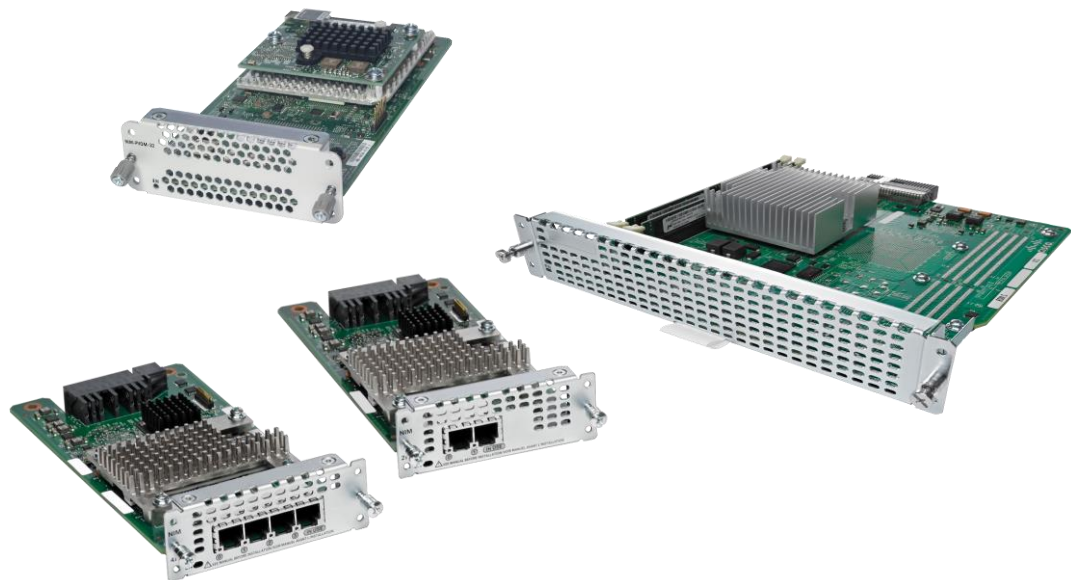
Improved WAN Connection
Speed

Support for Dual
SIM

Zero-Touch
Provisioning

SD-WAN

C8300/C8200 NIM Based DSP Voice Modules



Low-medium complexity deployments

4x NIMs supporting 32,64,128 or 256 voice channels

IP based voice services like transcoding and conferencing

Can be paired with service modules for DSP farm capability

Supports wide range of codecs for different complexities

Plain Old Telephony Connections

Optimized for rich-media voice applications

C8300 Next-Gen Compute for the Cisco Branch Edge

New!



UCS-E1100D-M6

Key Specs

Intel D-1749-NT
3.0 Ghz, 10 cores

4 NVMe/SATA SSD
disk (Upto 4*4TB)
4x DRAM
(Up to 4*32GB)

4*10G interface
1 USB-C



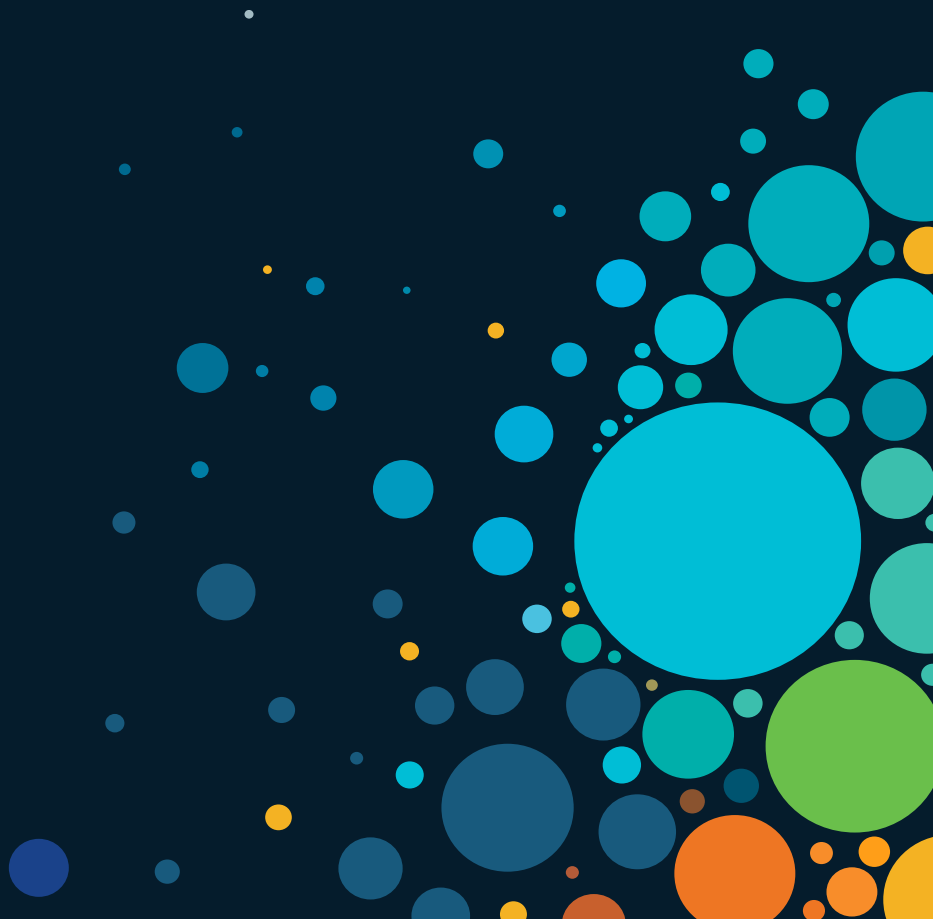
Introducing UCS-E M6 Double-wide SM
for Catalyst 8300

- 3rd Gen Intel Xeon Scalable Processors
- 2x 10Gbps Front ports
- 2x 10Gbps Backplane ports
- NVMe SSD/ DDR4 memory (3200 Mhz)
- Intel VROC RAID (RAID-0, RAID-1 & RAID-5)
- Certified with Esxi 7.x and RHEL 8.0
- Intersight capable H/W
- AppQoE ready



Supported on C8300, 2RU chassis
C8300-2N2S-4T2X & C8300-2N2S-6T

User Centric Design



Label Tray



Label Tray is a **Plastic strip** that can be pulled out

Label Tray contains:

Product ID

PID version ID

CLEI

TAN

Serial Number



Label tray contains a **QR code** with above information encoded in it:

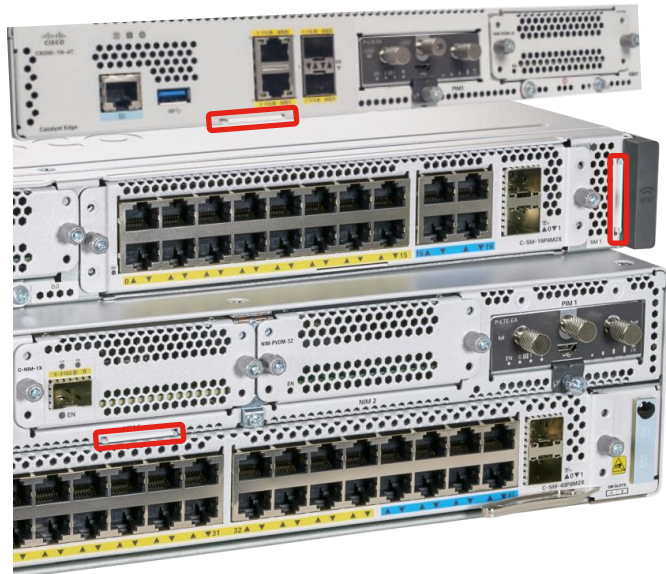
Device Family, Base PID

Device MAC

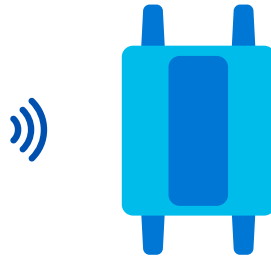
Vendor

Serial Number

HW Version



Radio Frequency Identification (RFID)



Front Facing **Passive UHF RFID**



Ultra High Frequency (**UHF**) Specs
860 to 960 MHz
1-to-4-meter Distance
Supply Chain Applications



UHF Benefits:
Good read range
Low cost
Industry adopted standard

Can easily be removed or deselected at ordering

Storage Options

External M.2 storage

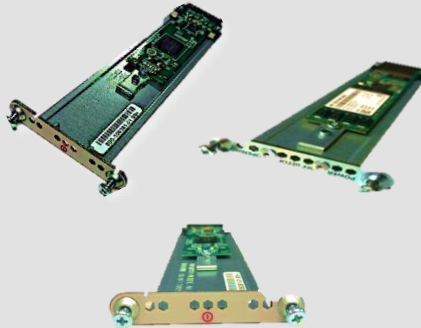


Storage Options

8 GB default bootflash

16G default M2. USB*
32 GB M.2 USB options
600 GB M.2 NVMe SSD options

*C8200L ships without default 16G M.2 USB



Use Case

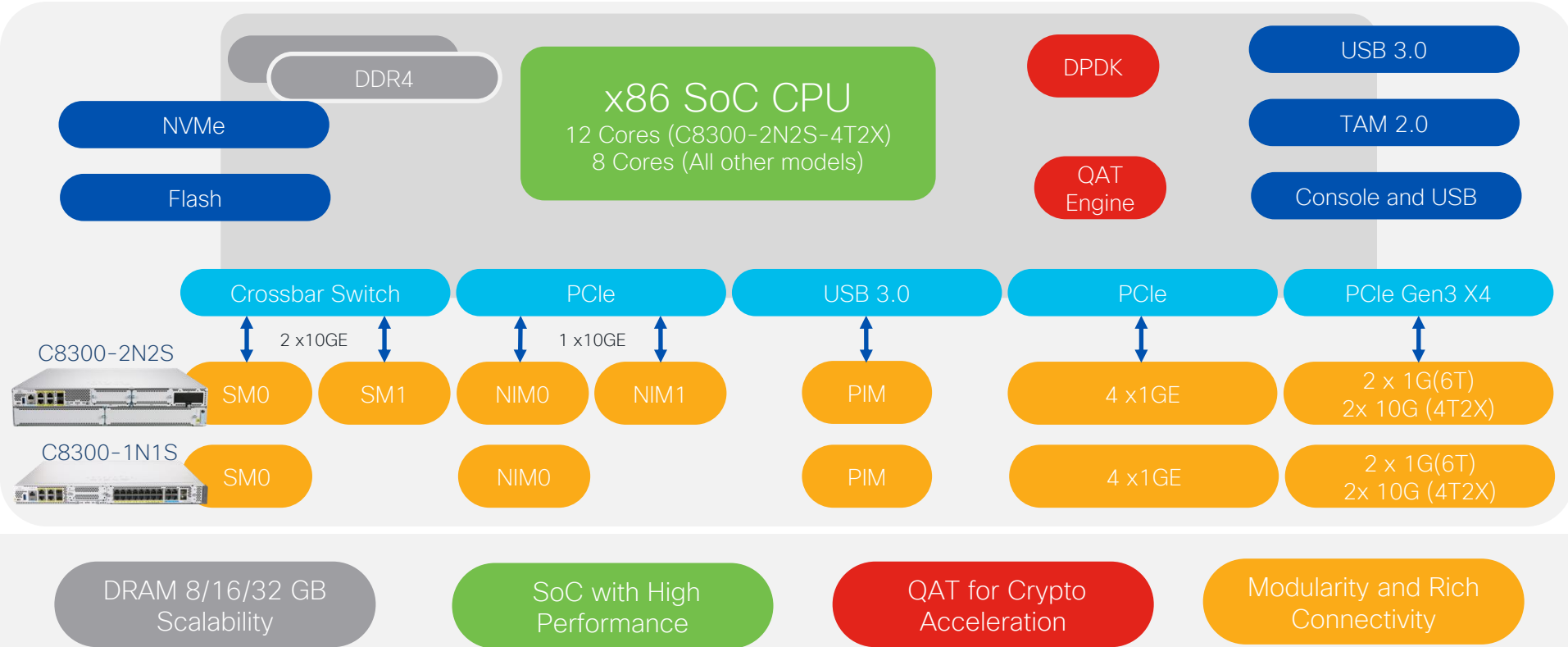
Storage for App Hosting (UTD)

Extension to bootflash

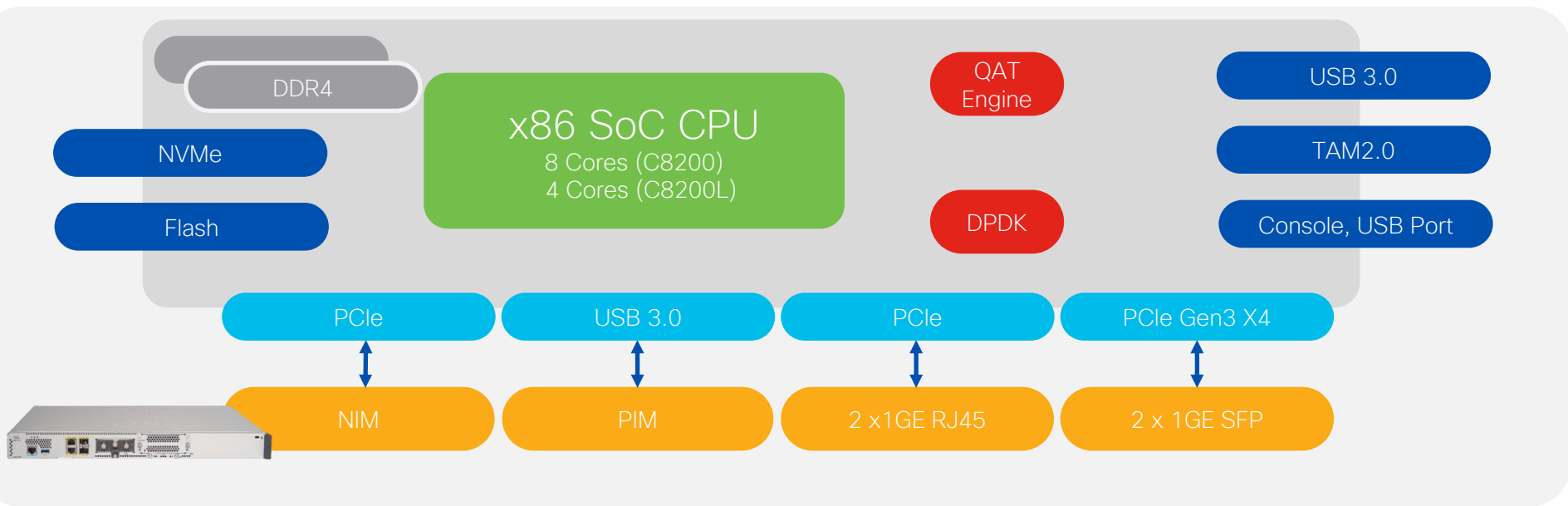
Use cases
AppQoE, SSL Proxy

Platform Architecture

C8300 Block Diagram



C8200[L] Block Diagram



DRAM 8/16/32 GB
Scalability

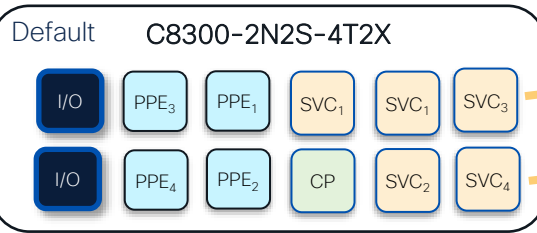
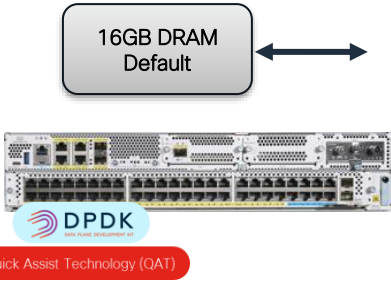
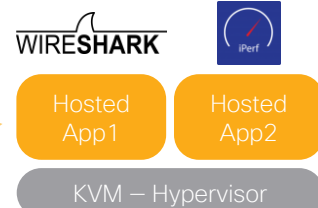
SoC with High
Performance

QAT for Crypto
Acceleration

Modularity and Rich
Connectivity

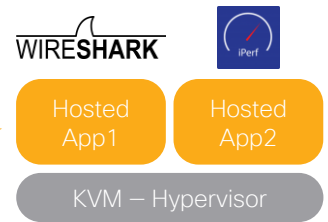
Catalyst C8300, C8200 & C8200L

Single silicon x86 architecture with **Dynamic Core Allocation**



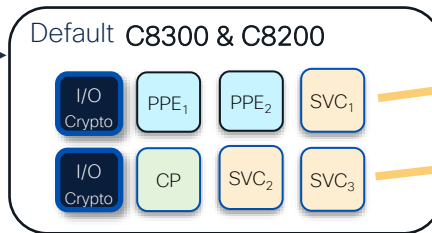
C8300-2N2S-4T2X: 12-core x86 - Dual Scheduler & crypto cores

- Up to 12 Gbps CEF, 5Gbps SDWAN/IPSsec - 5x cores for Embedded Services



8GB* DRAM Default

* Not applicable to C8200L



C8300, C8200: 8-core x86 - Dual Scheduler & crypto cores

- Up to 12 Gbps CEF, 5Gbps SDWAN/IPSsec - 3x cores for Embedded Services

C8200L: 4-core x86 - Single Scheduler & Crypto core

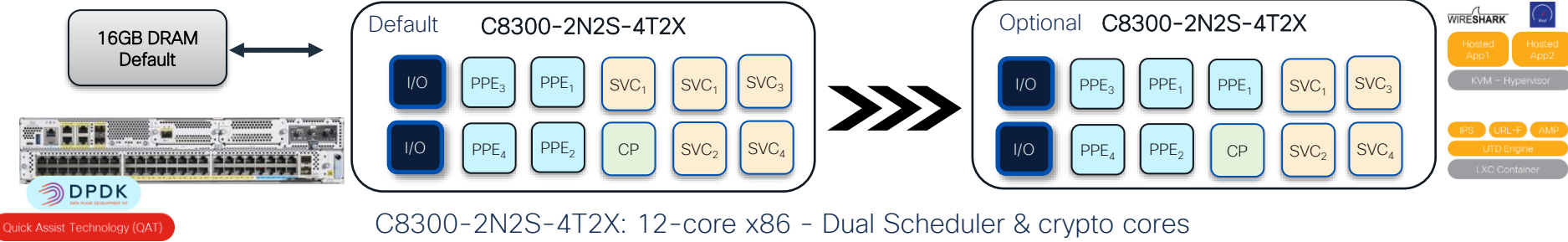
- Up to 3.8 Gbps CEF, 500Mbps SDWAN/IPSsec - 1x core for Thousand Eyes



Catalyst C8300, C8200 & C8200L

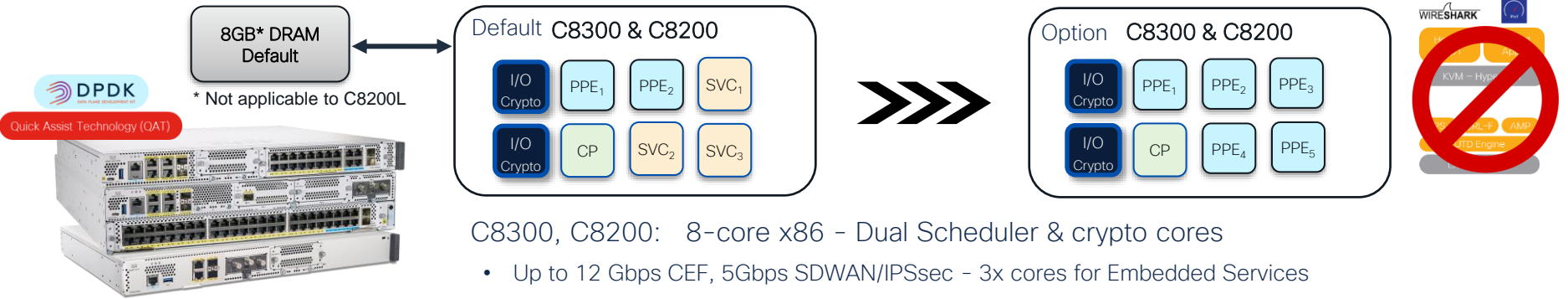
Single silicon x86 architecture with **Dynamic Core Allocation**

```
(config)#platform resource ?
data-plane-heavy      Use Data Plane Heavy template
service-plane-heavy   Use Service Plane Heavy template
```



C8300-2N2S-4T2X: 12-core x86 - Dual Scheduler & crypto cores

- Up to 12 Gbps CEF, 5Gbps SDWAN/IPSsec - 5x cores for Embedded Services



C8300, C8200: 8-core x86 - Dual Scheduler & crypto cores

- Up to 12 Gbps CEF, 5Gbps SDWAN/IPSsec - 3x cores for Embedded Services

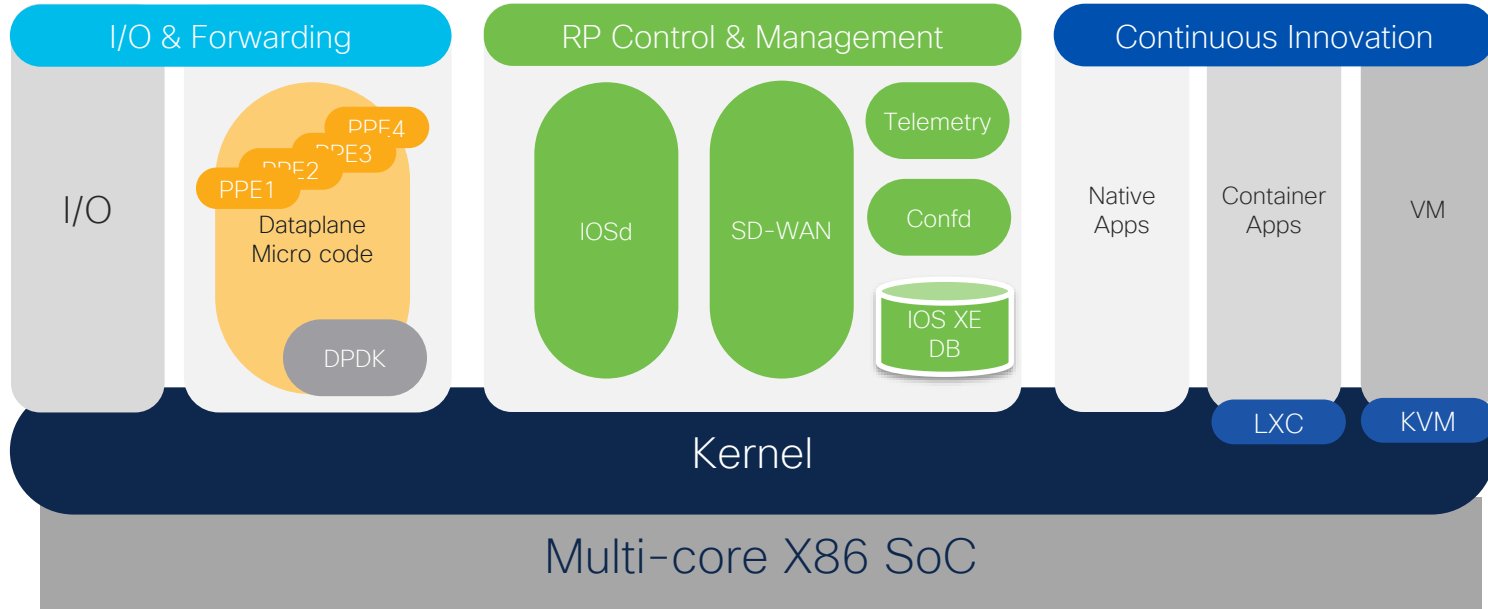
C8200L: 4-core x86 - Single Scheduler & Crypto core

- Up to 3.8 Gbps CEF, 500Mbps SDWAN/IPSsec - 1x core for Thousand Eyes

C8k IOS XE on SoC based Architecture



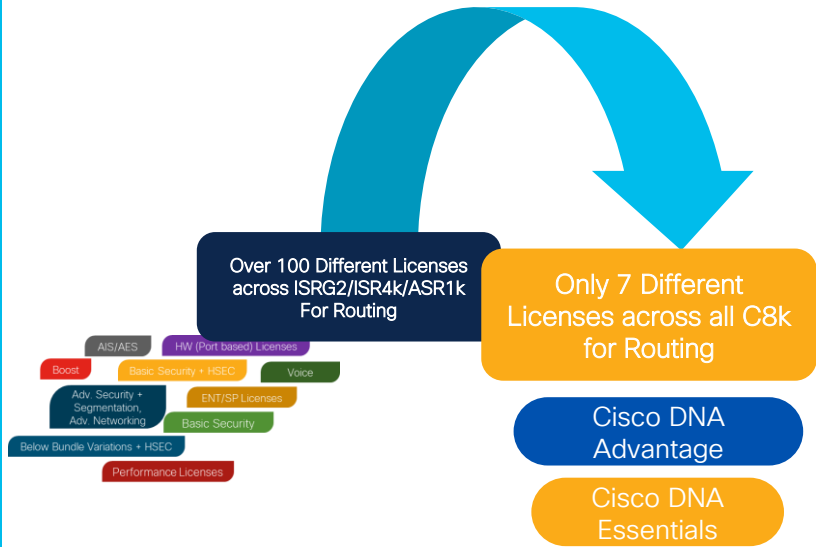
Open and Extensible
IOS XE



Open, API, Model Driven & Secure Operating Systems

DNA Licensing

What is it?
How do I use it?



Single Offer with common DNA Licensing on C8000

Hardware



Catalyst 8300,8200/L Edge

DNA Subscription / Feature pack



Cisco DNA Advantage



Cisco DNA Essentials*



DNA Essentials



Network Stack
(Perpetual)

DNA Stack
Term (3/5Y)

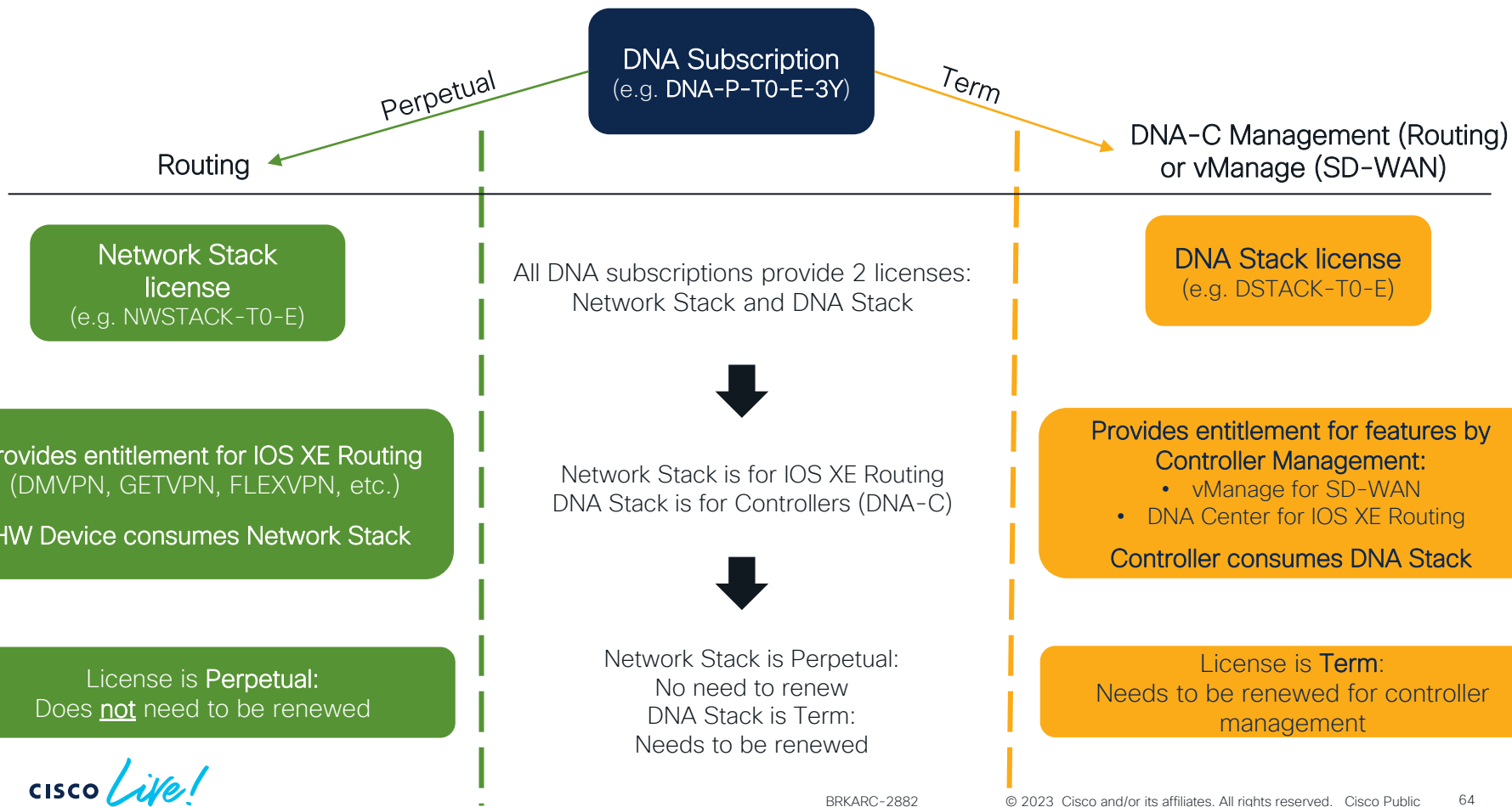
DNA Advantage



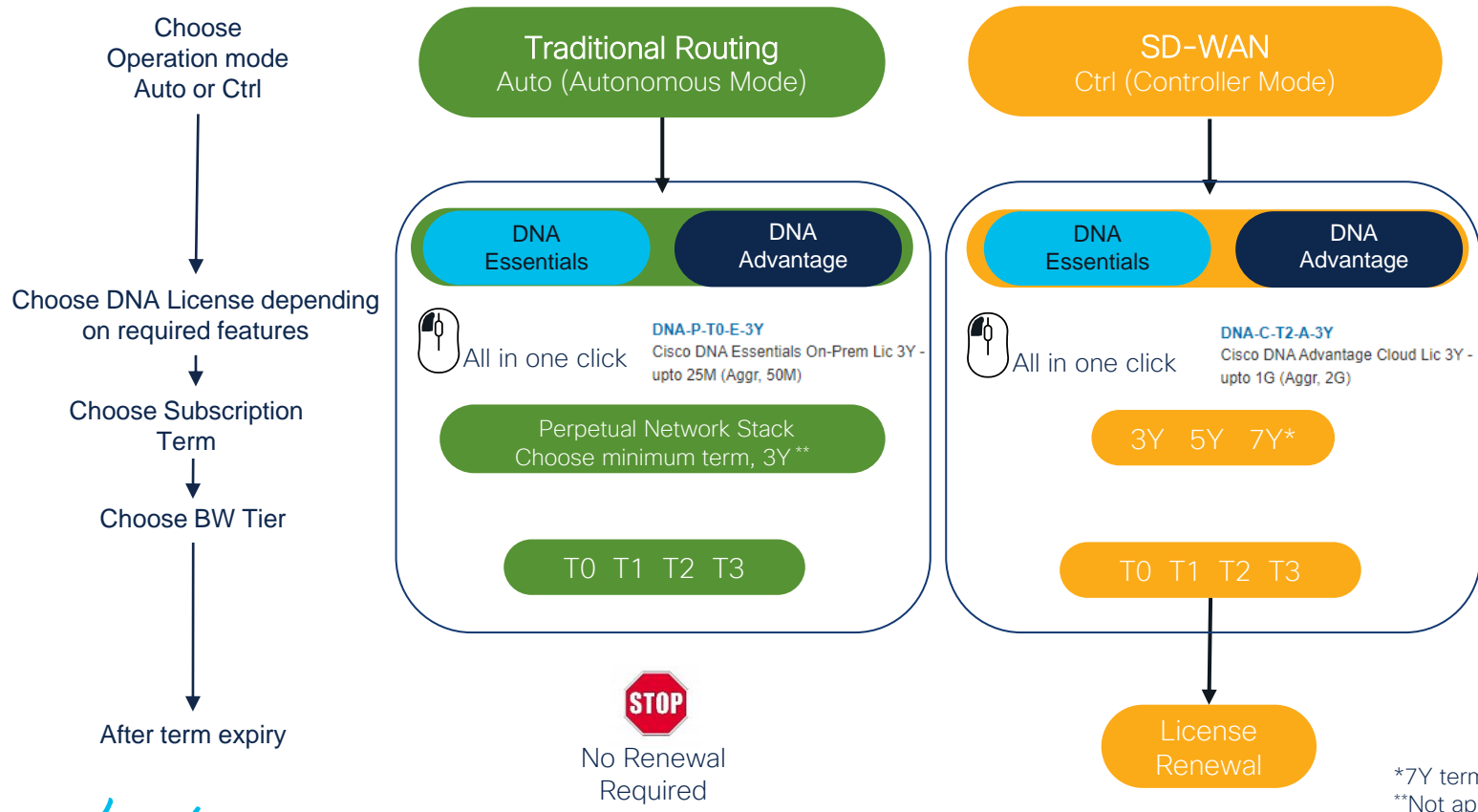
Network Stack
(Perpetual)

DNA Stack
Term
(3/5/7Y)

What is a DNA Licensing Stack?



DNA License – Decision Model



*7Y term in Advantage only
**Not applicable for C8000V

What goes into the DNA BW tiers

DNA-P-T0-E-3Y
DNA-P-T1-E-3Y
DNA-P-T2-E-3Y
DNA-P-T3-E-3Y

SDWAN

Choose BW tier based on all WAN Traffic (any combination of below):

- IPsec between SDWAN sites
- IPsec to zScaler, SIG, or any other non-SDWAN IPsec
- GRE Traffic (no Crypto)
- Direct Internet Traffic (no Crypto)
- Any traffic in the Transport VRF going to, or coming from the WAN

Non-SDWAN
(with crypto enabled)

Choose the BW tier based on only the IPsec traffic

- Only IPsec traffic
- Non-crypto traffic is not charged by license
- HSEC license (\$1) required for >250Mbps in one or both directions
- Don't forget to select HSEC option with T2 & T3

Non-SDWAN
(without crypto enabled)

Choose the lowest applicable BW tier (C8300/C8200-T0, C8500L-T2, C8500-T3)

- Non-crypto traffic is not charged by license
- Run to max technical capacity

Choosing BW tier

1. Estimate your aggregate IPsec or SD-WAN VPN0 traffic
2. Divide by 2 and choose the DNA BW Tier which will accommodate your result

Aggr. Throughput / BW tier	Catalyst 8000 BW Tiers
Unlimited ↑ From 2001 Mbps Aggr.	T3 10Gbps Select HSEC option
Up to 2000 Mbps Aggr. ↑ From 401 Mbps Aggr.	T2 1Gbps Select HSEC option
Up to 400Mbps Aggr. ↑ From 51 Mbps Aggr.	T1 200Mbps
Up to 50 Mbps Aggr. ↑	T0 25Mbps

BW tier compliant examples

T3 – Adv. & Prem. only

C8500-12X4QC – Autonomous Mode
T3 = Only BW tier for C8500-12X & 12X4QC
Regardless of throughput, encryption or SD-WAN

C8500L – Autonomous Mode
T2 = Starting BW tier for C8500L

C8300-2N2S-4T2X – SD-WAN
Running an estimated aggr. of 2 Gbps, Transport side

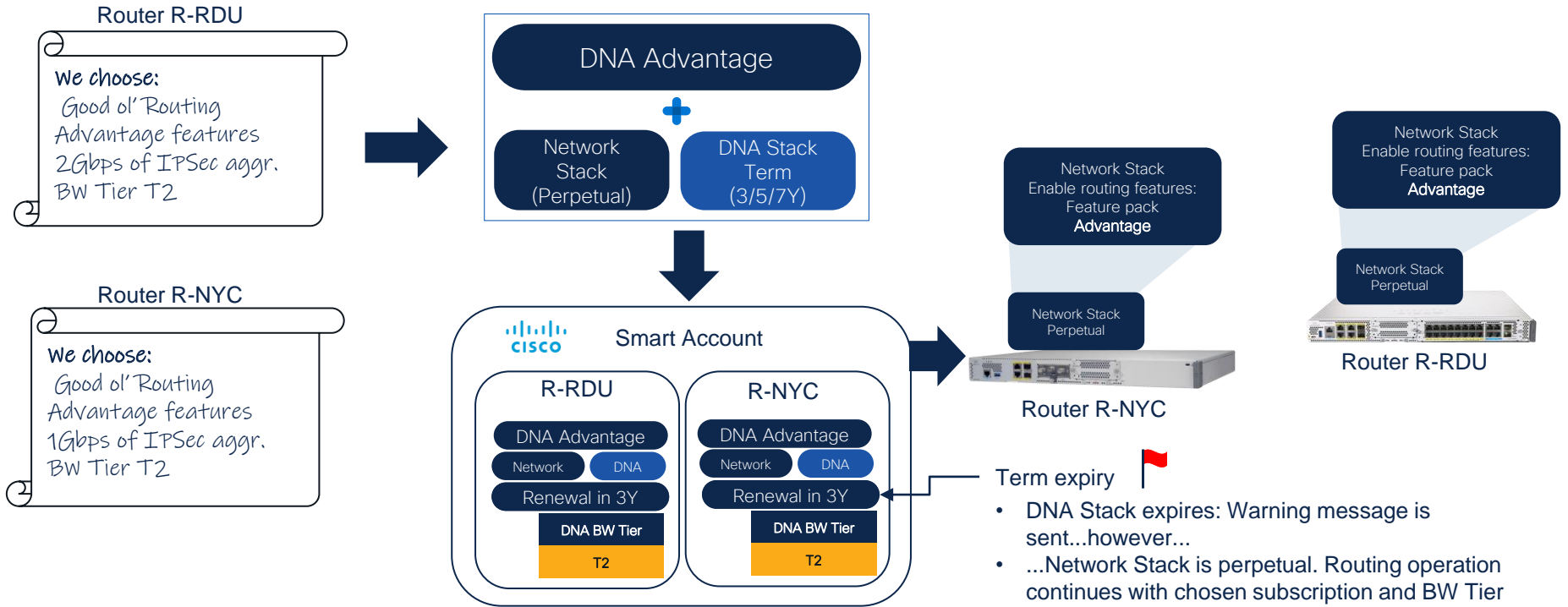
C8300-2N2S-6T – Autonomous Mode
I'm running aggr. 350 Mbps IPsec + 9 Gbps unencrypted traffic

C8300-2N2S-4T2X – Autonomous Mode
I'm running 11 Gbps of unencrypted traffic



Using a higher BW tier on platform than what's in Smart Account = Unit out of compliance report by Smart Licensing Server

How does it work – Routing (Autonomous Mode)



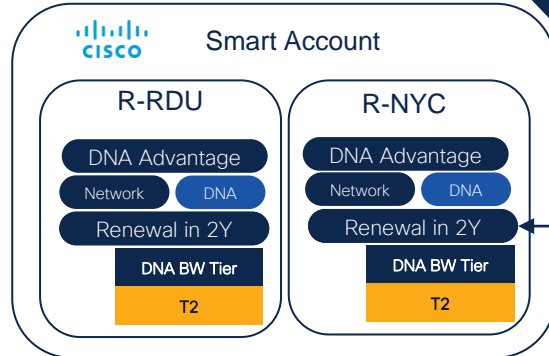
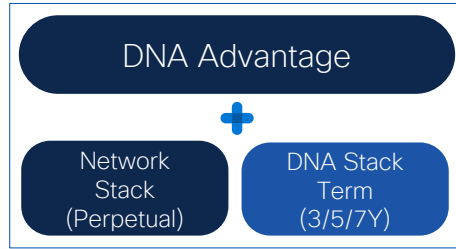
How does it work – Moving to SDWAN after 1 year

Router R-RDU

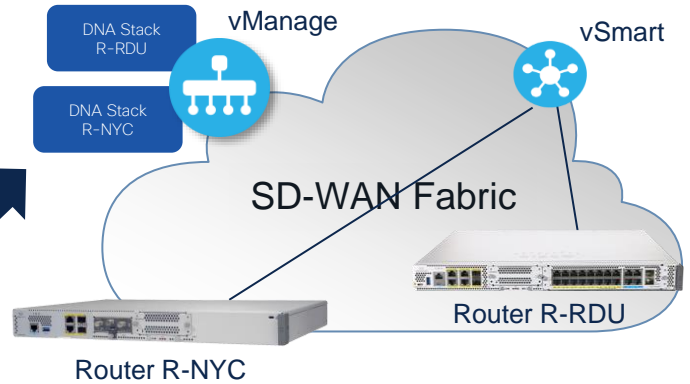
We're transitioning to SD-WAN
Advantage features
Max 2G Aggr VPN 0 traffic

Router R-NYC

We're transitioning to SD-WAN
Advantage features
Max 2G Aggr VPN 0 traffic



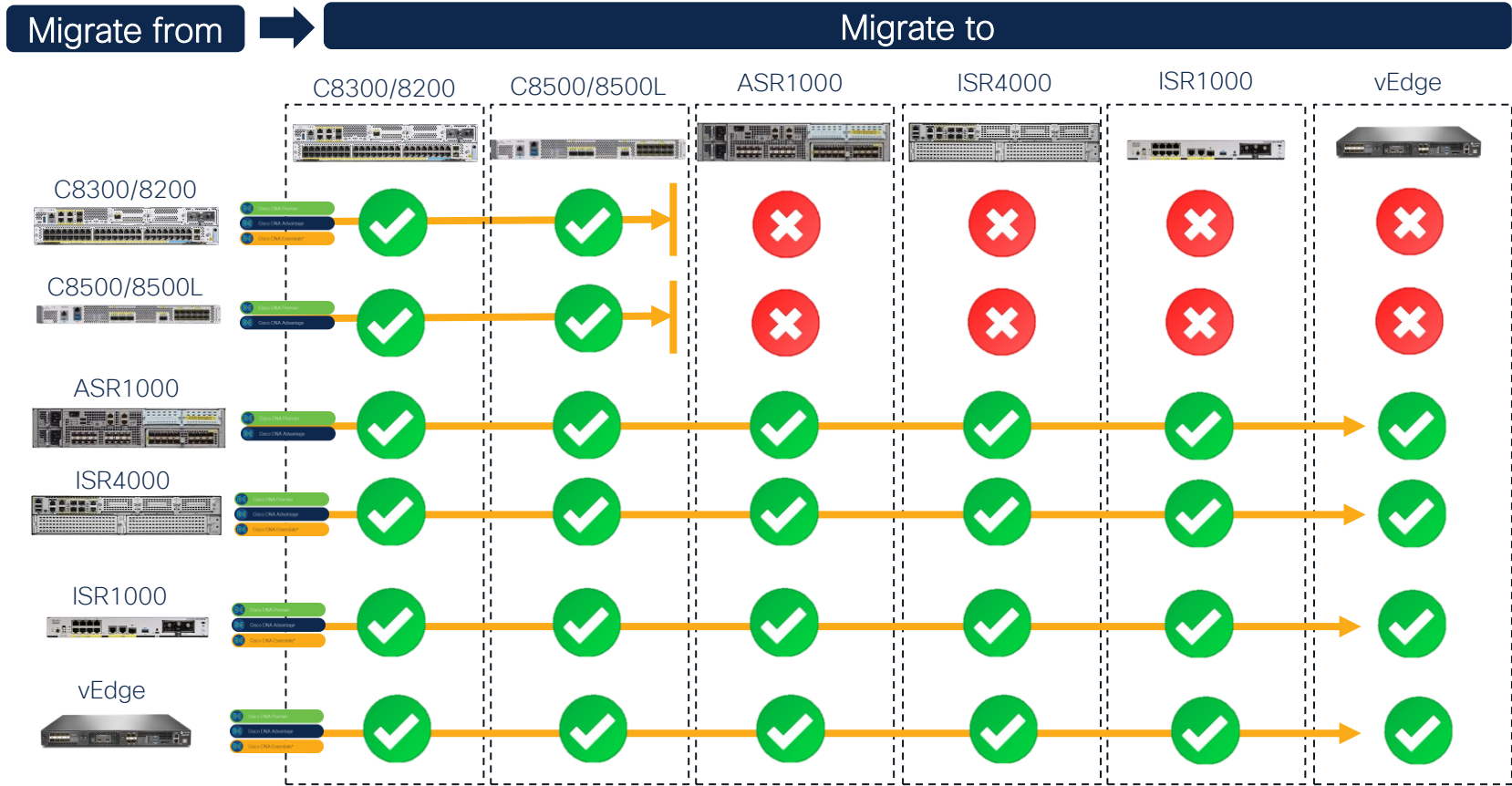
Network Stacks removed & changed to DNA Stacks on vManage



Term expiry

- DNA Stack expires: License loses entitlement to use vManage Controller
- Customer expected to renew or remove router from SD-WAN fabric

DNA License Portability Map



EoS & Migration paths

ISR4k

Time to say goodbye and start migrating

- End of Sale announcement: Nov 7th , 2022
- EoS date: Nov 7th , 2023
 - HW support until Nov 30th , 2028

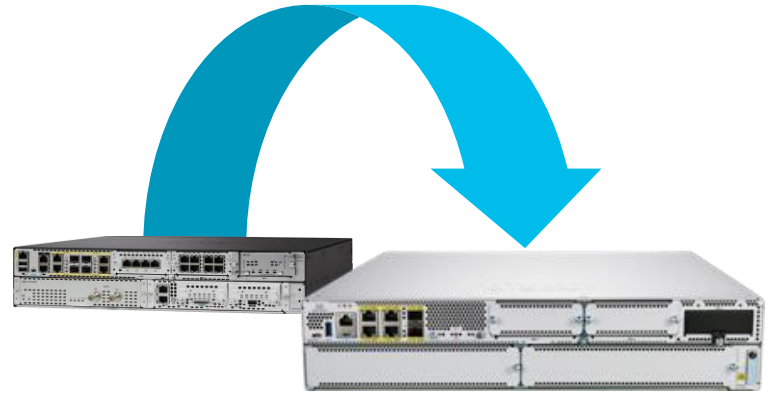


- Platforms affected: ISR4221, 4321, 4331, 4351, 4431 & 4451, with peripherals
- Not included in this EoS: ISR4461, ISR4k-only modules & ISR4k spares
- Last supported IOS release for affected ISR4k platforms: IOS 17.9 (Aug 2022)
 - 17.9 EoS Maintenance Support until Aug 31st , 2025
 - 17.9 EoS Vulnerability Support until Aug 31st , 2028

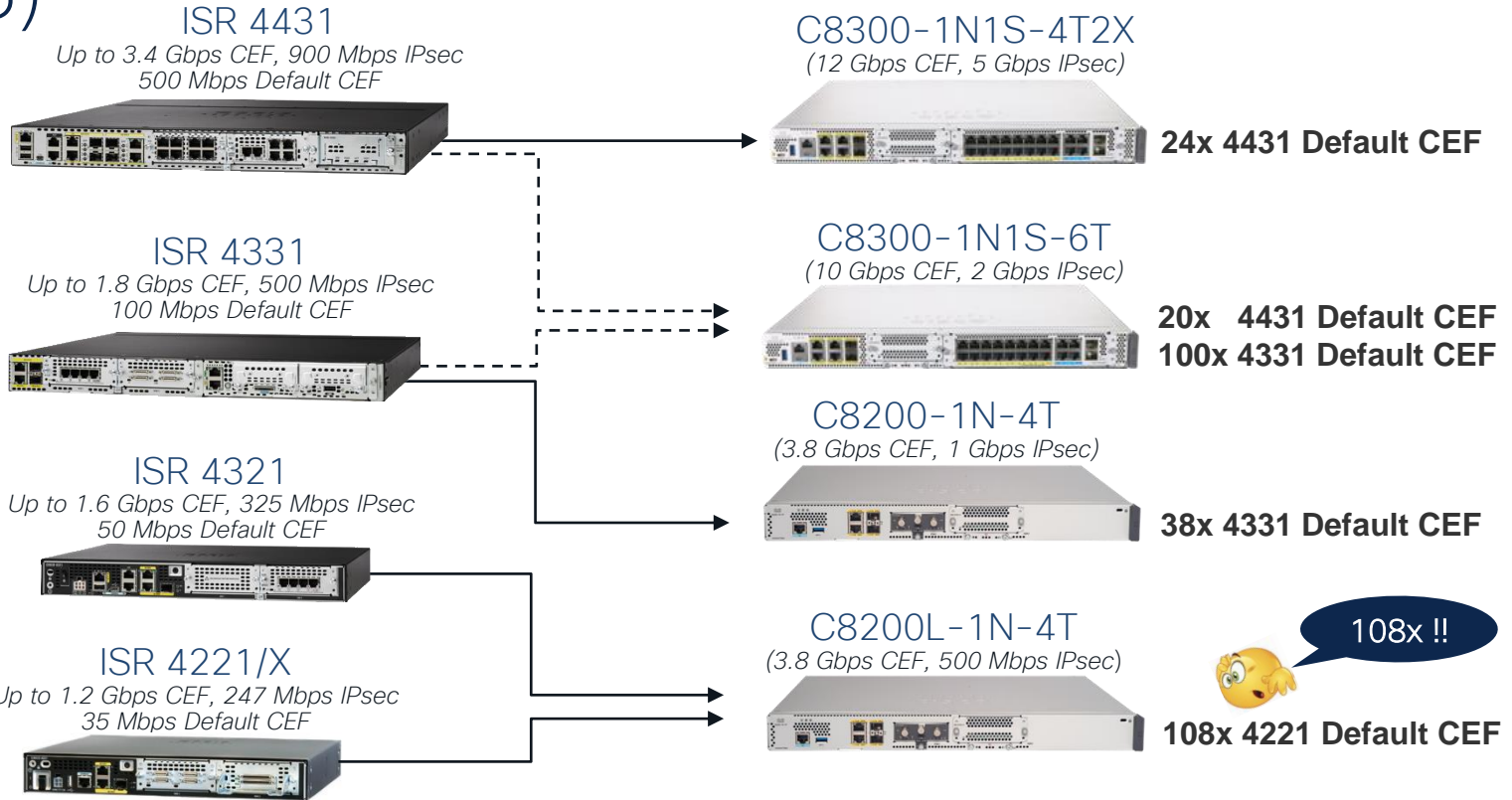
Recommended replacements: C8300 & C8200

<https://www.cisco.com/c/en/us/products/collateral/routers/4000-series-integrated-services-routers-isr/select-isr4k-series-platform-eol.html>

Migrating from ISR4000 to Cat8000



Migration Summary – ISR 4000 to Catalyst 8000 (1RU)



—————> Recommended replacement
- - - - -> Recommended for comparable modularity

Migration Summary – ISR 4000 to Catalyst 8000 (2RU)

ISR 4451

*Up to 3.8 Gbps CEF, 1.6 Gbps IPsec
1 Gbps Default CEF*



C8300-2N2S-4T2X (12 Gbps CEF, 5 Gbps IPsec)



Recommended replacement

12x 4451 Default CEF

ISR 4351

*Up to 3.4 Gbps CEF, 900 Mbps IPsec
200 Mbps Default CEF*



C8300-2N2S-6T (10 Gbps CEF, 2 Gbps IPsec)



Recommended replacement

50x 4351 Default CEF

ISR4400 vs C8300

Product Comparison

	C8300-2N2S-4T2X	ISR4451
IPsec Tunnels	6000	4000
SD-WAN IPsec	5 Gbps	1*/1.4** Gbps
CEF (Routing)	12+ Gbps	1*/3.8** Gbps
Non-SD-WAN IPSEC	5 Gbps	1*/1.8** Gbps
DRAM	Default 8 GB Up to 32 GB	Default 4 GB Up to 16 GB
Embedded ports/ Modularity	4xRJ45 + 2xSFP+ / 2xNIM + 2xSM +1xPIM	4xRJ45/SFP / 3xNIM +2xSM

	C8300-1N1S-6T	ISR4431
IPsec Tunnels	6000	3500
SD-WAN IPsec	1.8 Gbps	490*/750** Mbps
CEF (Routing)	10+ Gbps	0.5*/3.4** Gbps
Non-SD-WAN IPSEC	1.9 Gbps	0.5*/1** Gbps
DRAM	Default 8 GB Up to 32 GB	Default 4 GB Up to 16 GB
Embedded ports/ Modularity	4xRJ45 + 2xSFP+ / 1xNIM + 1xSM +1xPIM	4xRJ45/SFP / 3xNIM

C8300-2N2S-4T2X & C8300-1N1S-4T2X – Identical throughput

C8300-2N2S-6T & C8300-1N1S-6T – Identical throughput

All perf numbers are IMIX (352Bytes): Aggregate throughput

* Factory Default
** Boost license

ISR4300 vs C8200

Product Comparison

	C8200-1N-4T	ISR4331	C8200L-1N-4T	ISR4321
IPsec Tunnels	2500(SD-WAN)	1000(SD-WAN)	1500(SD-WAN)	250(SD-WAN)
SD-WAN	1Gbps	100Mbps*/485Mbps**	500Mbps	50Mbps*/300Mbps**
CEF (Routing)	3.8Gbps	100Mbps*/1.8Gbps**	3.8Gbps	50Mbps*/1.6Gbps**
IPSEC (Non-SD-WAN)	1Gbps	100Mbps*/445Mbps**	500Mbps	50Mbps*/300Mbps**
DRAM	Default 8GB Up to 32GB	Default 4GB Up to 16GB	Default 4GB Up to 32GB	Default 4GB Up to 8GB
Embedded ports / Modularity	2x RJ45 + 2xSFP / 1xNIM +1xPIM	2x RJ45 + 1xRJ45/SFP / 2xNIM +1xSM	2x RJ45 + 2xSFP / 1xNIM +1xPIM	1xRJ45 + 1xRJ45/SFP / 2xNIM

All perf numbers are IMIX (352Bytes): Aggregate throughput

* Factory Default
** Boost license

Make use of the Level up to C8k promo

ISR G2/4K Install Base

Transition to C8k with Confidence



ISR 4000
ISR4400/4300/4200
EoS: Nov 2023



ISR G2(2900/3900)
End of PSIRT Support: Dec 2020
Last day of support: Dec 2022

Leverage LDOS for Install Base Migration



Cisco Catalyst 8000 Series Edge Platforms

Modularity | Resource Upgradeability | Resiliency | Performance

8300: Up to 28% off HW
8200: Up to 38% off HW

FREE Switch Module



Power Next Generation
Branch with UADP and
programmable IOS-XE

OR

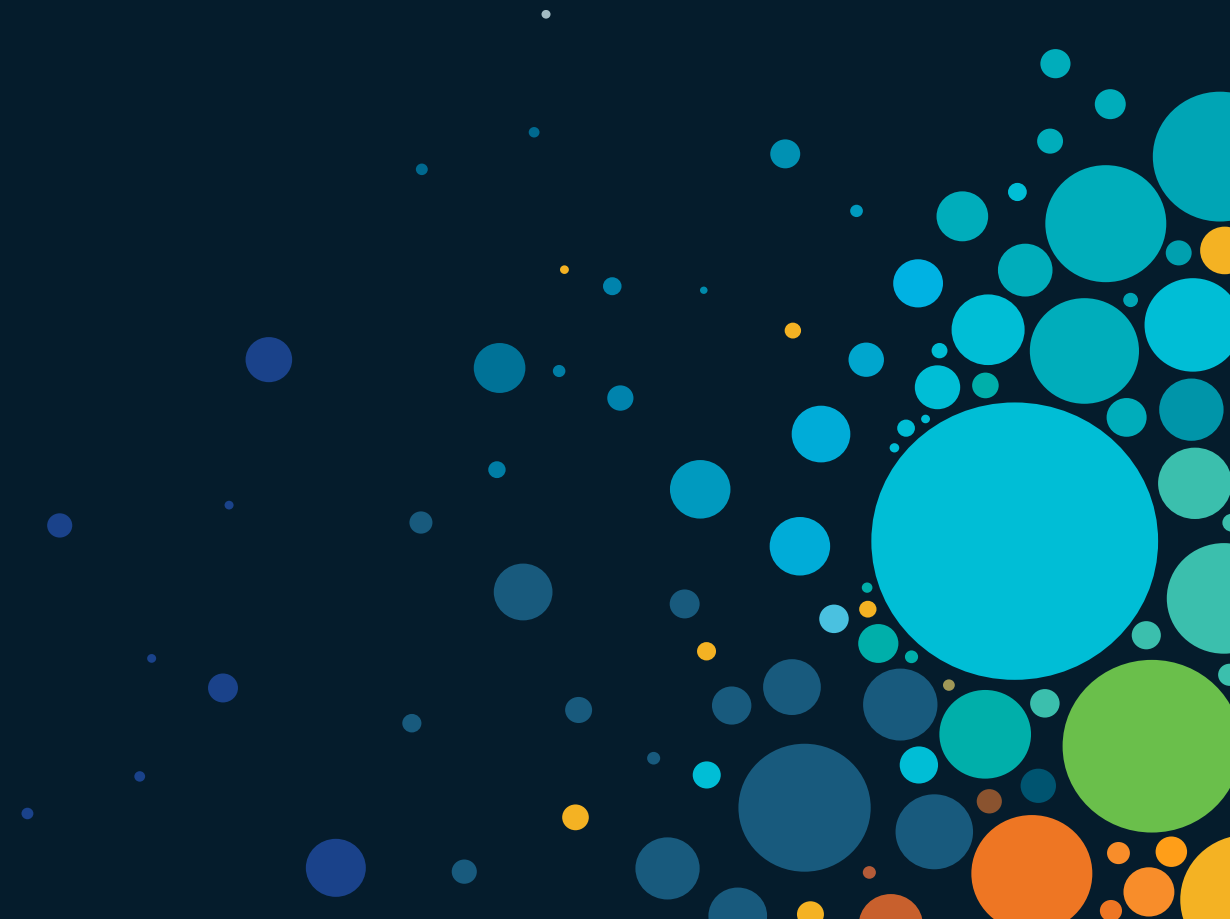


FREE Cellular Module

Highly available WAN
with LTE failover using
4G/Cat18 LTE PIM

Extended until July 31st 2023

Conclusion



Cisco Catalyst 8300, C8200 Series Edge Platform

Foundation for today's & tomorrow's branch



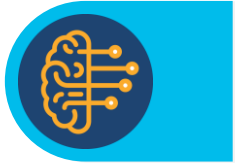
Ready for the Agile Cloud Journey

High Speed Cloud Access
Multi-Cloud Application Optimization
Compact, Powerful 1&2 RU Platforms



Accelerated Multi-Layer Security

QAT chip for Crypto offload
SASE driven Feature Innovations
Full-stack On-premise security



5G Ready Edge Intelligence

Future proof for 5G high speed WAN
Multi-Domain Intent Based Networking



User Centric Design

Operational Ease for better Tracing
Passive UHF Radio Frequency ID
Easy Access Label Tray
Field Replaceable FAN Tray

1G, 10G Powerful
Routing Platform



Crypto Hardware
Acceleration



3.8-20Gbps
CEF Aggregate
Throughput



High WAN
port-density



High Performance
IPsec, MACsec



Highly
Programmable

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<https://www.ciscolive.com/emea/learn/sessions/session-catalog.html>

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The bridge to possible

Thank you

CISCO *Live!*

CISCO *Live!*

ALL IN