
TECHNICAL DECISION MAKER PRESENTATION

Cisco Catalyst 8500 Series Edge Platforms

Prepared as a convenient PDF reference for network planning, platform evaluation, and procurement discussions.

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Cisco Catalyst 8500 Series Edge Platforms

Technical Decision Maker Slides

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Created Date: April 2021

Last Update: March 2023

Cisco Catalyst 8500 Series Edge Platforms

Agenda



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Catalyst 8000 Edge Platforms Family

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Solutions and Use Cases

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Key Takeaways

Cisco Catalyst 8000 Edge Platforms Family

It's a Multicloud World



Journey to Cloud

Fueled by Technology Transformation

Multicloud



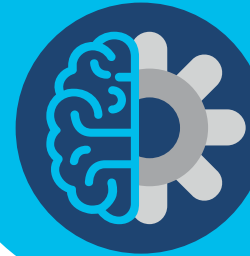
“Cloud migration will continue to accelerate the adoption of SD-WAN”
- Markets & Markets

5G, Edge Compute



“5G Enterprise Market is expected... CAGR of over 42% during the forecast period (2020-2025)... pushing toward the industrial revolution 4.0”
- Mordor Intelligence Report

AI/ML Insights



“By 2022, 72% of network strategists project using AI-enabled predictive insights or prescriptive remediation”
- Cisco VNI Report

Facilitating more service acceleration at the edge in a multicloud world

Powered by secure cloud scale SD-WAN

Cisco's flexible architecture for Intent-based Networking

Any Deployment



On-premise | Cloud | Multi-tenant
Automation | Network Insights | Machine Learning | AI
Open | Programmable | Scalable

Any Service



Multicloud
Optimization



Multi-Layer
Security



Analytics



Voice



Multi-Domain
IBN Policy

Any Transport



Satellite



Internet



MPLS



5G/LTE



SDCI*

Any Location



Branch



Colocation



Cloud

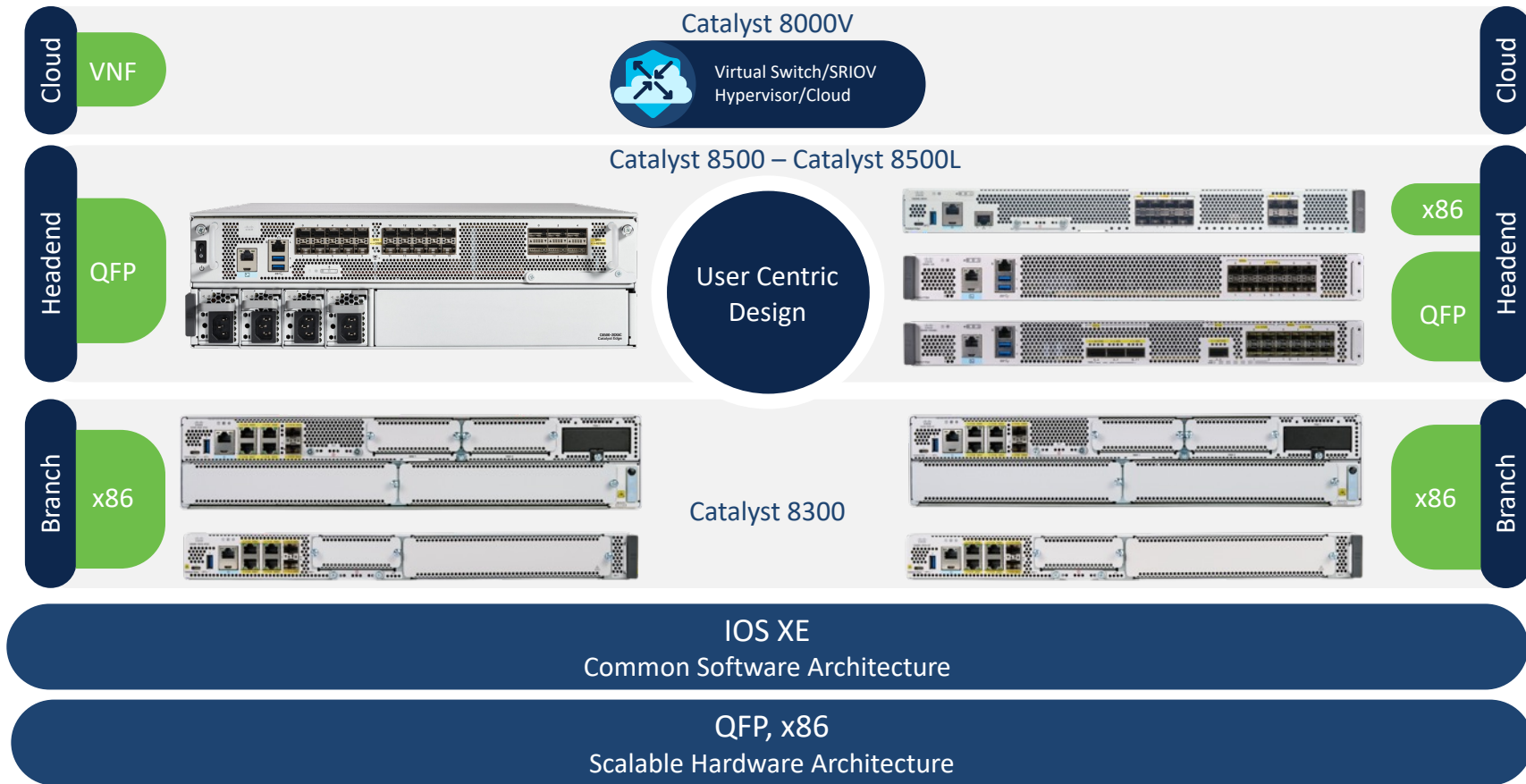


Remote Work

* Software Defined Cloud Interconnect



Cisco Catalyst 8000 Edge Platforms Family



Catalyst 8500 Series Edge Platforms

Cisco Catalyst 8500 Series Edge Platforms

- Highly Capable 1 and 3 RU Enterprise Routing Platforms

Integrated Rich Services

NBAR2, NAT, Firewall, QoS, etc.
High Scale Service Edge Platforms

Edge Intelligence

Compute
Container based Apps

Scale

Up to 8000 SD-WAN Tunnels
Dense High Speed 100 / 40 GE Ports
High Density 10 / 1 GE Ports

Multi-layer Security

High Throughput IPsec
Line Rate MACsec
Trustworthy Solutions
Umbrella SIG

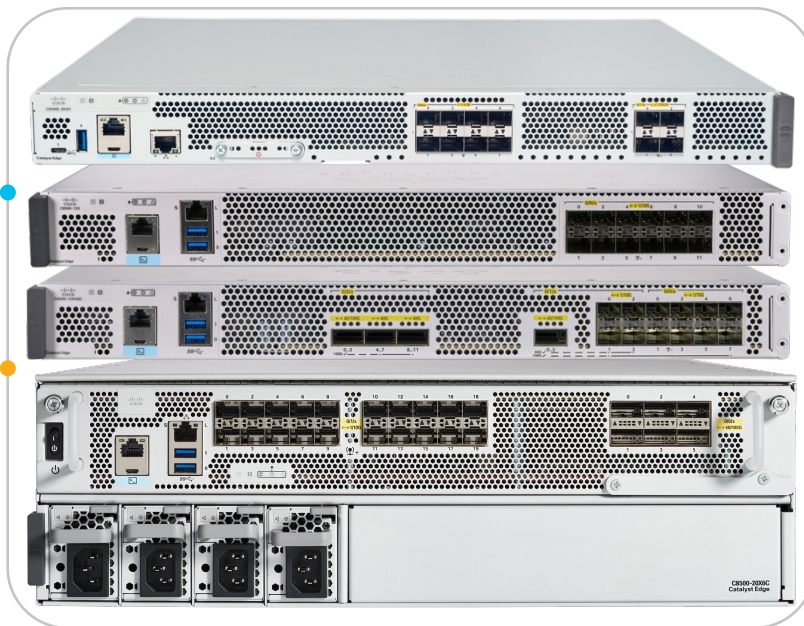
Manageability

vManage

DNA Center

Open APIs

Analytics



Flow
based
Datapath

WAN
MACsec

Third
Generation
QFP

Up to
200Gbps
CEF

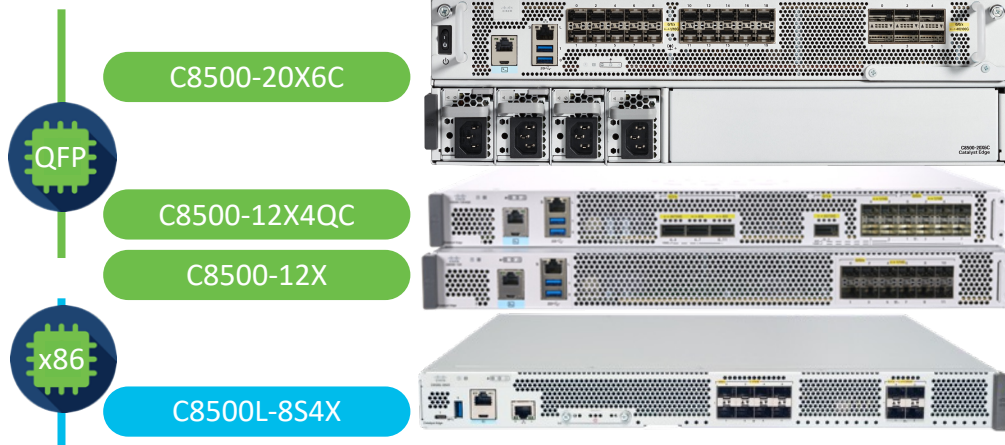
5G Ready



Built-in Port
Flexibility

Cisco Catalyst 8500/8500L Series Edge Platforms

Highly Capable 1 and 3 RU SD-WAN Headend



QFP based hardware forwarding

Third generation QFP ASIC designed by Cisco

Port flexibility for 100/40/10 Gig interfaces

Up to 200 Gb/sec forwarding on C8500-12X4QC

TCAM hardware assist for pattern matching

Advanced Flow based forwarding

x86 based SOC design

Dedicated cores for control, data, and services

Optimized technology for efficient packet processing

Core reallocation to balance forwarding, services needs

Up to 20 Gb/sec forwarding on C8500L-8S4X

IOS XE

5G Ready

WAN MACsec

Port flexibility

Catalyst 8500/8500L Series Edge Platforms

10/1G X
100G C

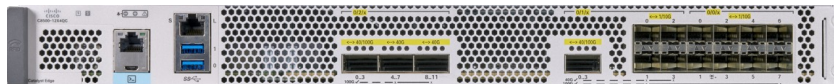
C8500-20X6C



6 QSFP
20 SFP+

100G C
40G Q
10G /1G X

C8500-12X4QC



4 QSFP
2 SFP+

10G /1G X

C8500-12X



12 SFP+

10/1G X
1G S

C8500L-8S4X



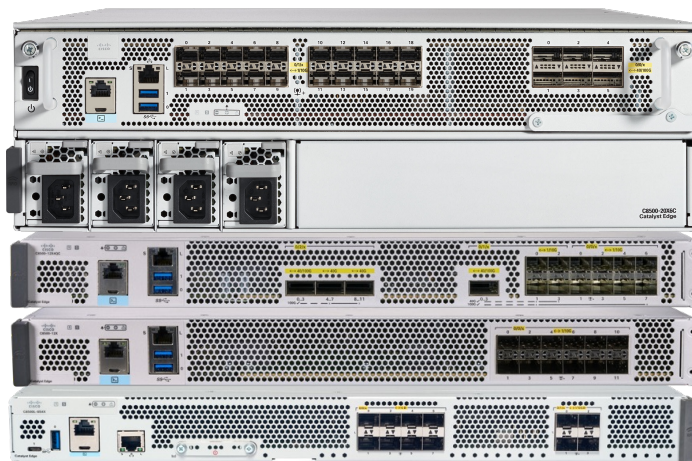
8 SFP
4 SFP+

Cisco Catalyst 8500 Series Edge Platforms

Purpose-built 1 and 3 RU SD-WAN Headends

C8500 Hardware

3rd Generation QFP Forwarding



C8500L Hardware

Advanced Flow-based Forwarding

Exceptional Hardware

- Compact 1RU form factor options
- Powerful 3 RU form factor
- Built-in TAm Chip
- Hardware Accelerated IPsec
- Line rate MACsec on all built-in ports

IOS XE Richness

- Secure Access Service Edge
- Multi-Cloud Application Optimization
- Multi-Domain Intent Based Networking
- High Scale Services
- ASR 1000 Enterprise Feature Parity

User Centric Design

- Radio Frequency ID (RFID)
- Label Tray
- 1 + 1 Power Supply Redundancy
- N + 1 Fan Redundancy
- FRUable: Fans, PSUs, DRAMs, SSD

Catalyst 8500 Series Edge Platforms Overview

3RU Catalyst 8500 Overview



Data Plane

Four QFP 3.0 ASICs

896 PPEs, 3584 threads

Dual 160Gb TCAM

64GB DP Memory

CEF: up to **500 Gbps**

IPsec: up to **150 Gbps**

SD-WAN IPsec: up to **100 Gbps**

Control Plane

x86 Eight Core Processor

64GB of RAM, default

QAT assist

32GB Bootflash, 480GB SSD, default

Trustworthy

Trust Anchor module

Secure Boot, Image Signing

Modern Crypto, Runtime Defenses

Interface Options

Six 100/40GE QSFP28

Twenty 10/1GE SFP+ Ports

Cisco WAN MACsec, SYNCE Support

* All Throughput numbers are Aggregate IMIX values

1RU Catalyst 8500 Series Overview



Data Plane

Third Generation QFP: 224 PPEs

80Mb/10Mb* TCAM

32GB DP Memory

CEF: up to 200 Gbps/120 Gbps*

IPsec: up to 46 Gbps/30 Gbps*

SD-WAN IPsec: up to 33 Gbps/22 Gbps*

Control Plane

x86 Quad Core Processor

DRAM 16GB default – 64GB upgradable

QAT assist

32GB Bootflash, Optional 480GB SSD

Trustworthy

Trust Anchor module

Secure Boot, Image Signing

Modern Crypto, Runtime Defenses

Interface Options

Two 100/40GE QSFP28, Two 40GE QSFP+ Ports

Twelve 10/1GE SFP+ Ports

Cisco WAN MACsec, SYNCE Support

*C8500-12X Parameter

All Throughput numbers are Aggregate IMIX values

C8500L-8S4X Overview



Data Plane

Advanced flow-based forwarding

CEF: up to 20 Gbps

IPsec: up to 12 Gbps

SD-WAN IPsec: up to 6.6 Gbps

Control Plane

x86 Processor – 2 dedicated cores

DRAM 16GB default – 64GB upgradable

QAT assist

32GB Bootflash, Optional 480GB M.2 SSD

Trustworthy

Trust Anchor module

Secure Boot, Image Signing

Modern Crypto, Runtime Defenses

Interface Options

Eight 1GE SFP Ports

Four 1 / 10GE SFP+ Ports

Cisco WAN MACsec, SYNCE Support

All Throughput numbers are Aggregate IMIX values

Cisco Catalyst 8500 Series Edge Platforms

Highly Capable SD-WAN Headend

Performance ↑



C8500L-8S4X

CEF: up to 20 Gbps
IPsec: up to 12 Gbps
SD-WAN IPsec: up to 6.6 Gbps



C8500-12X

CEF: up to 120 Gbps
IPsec: up to 30 Gbps
SD-WAN IPsec: up to 22 Gbps



C8500-12X4QC

CEF: up to 200 Gbps
IPsec: up to 36 Gbps
SD-WAN IPsec: up to 33 Gbps



C8500-20X6C

CEF: up to 500 Gbps
IPsec: up to 150 Gbps
SD-WAN IPsec: up to 100 Gbps

IMIX traffic
CEF: Autonomous mode
IPsec: Autonomous/Controller mode

All Throughput numbers are Aggregate IMIX values
IMIX Profile: 64B:7, 594B:4, 1418B:1

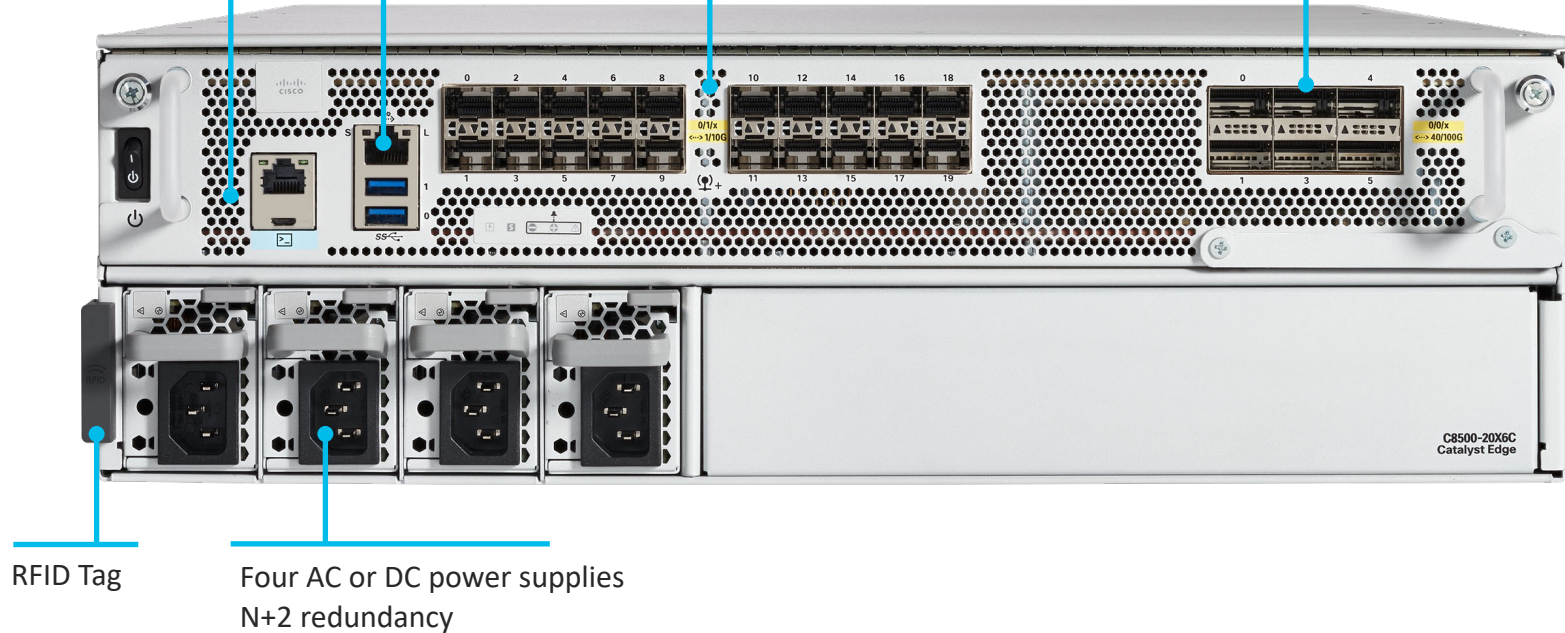
Catalyst 8500-20X6C Front Face

RJ45 and Micro USB
Console

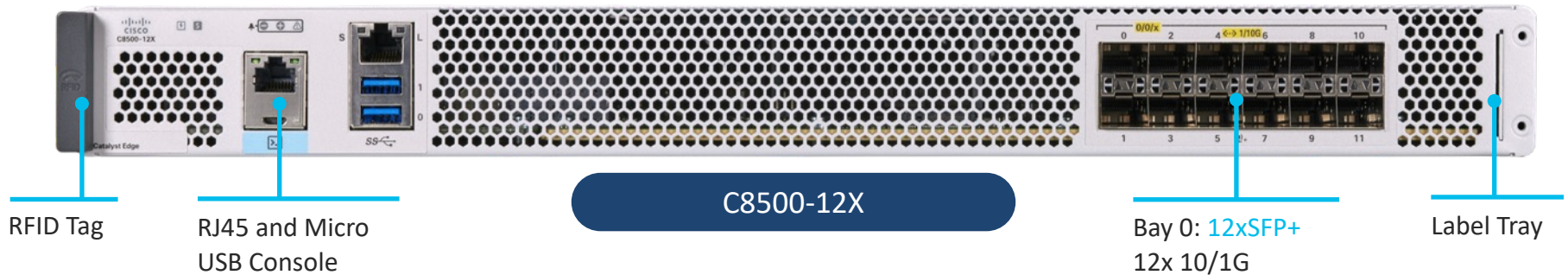
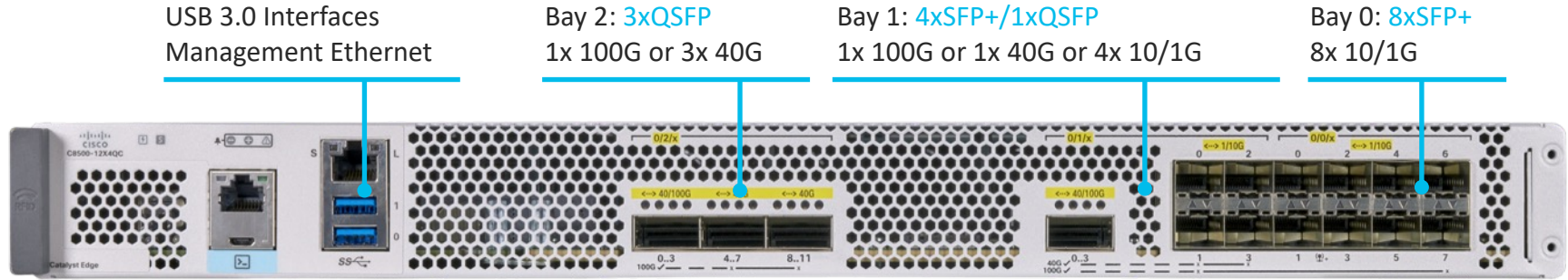
USB 3.0 Interfaces
Management Ethernet

Bay 1: 20xSFP+
20x 10/1G

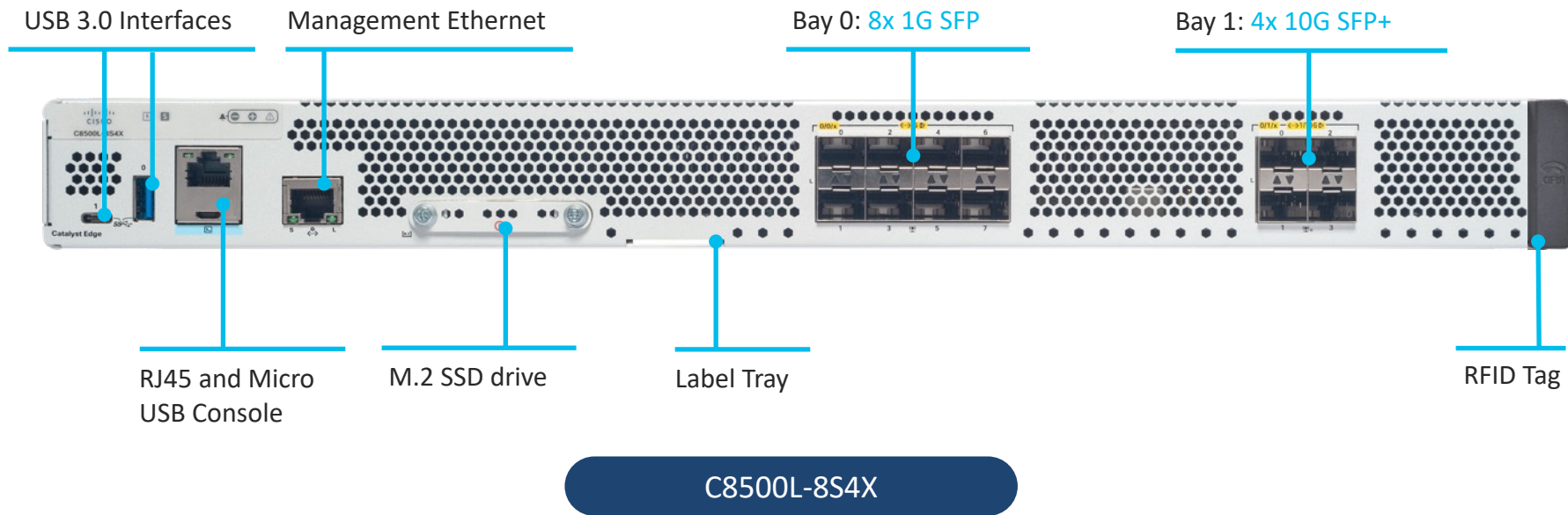
Bay 0: 6xQSFP
6x 100G/40G



Catalyst 8500 Series Front Face



Catalyst 8500L-8S4X Front Face

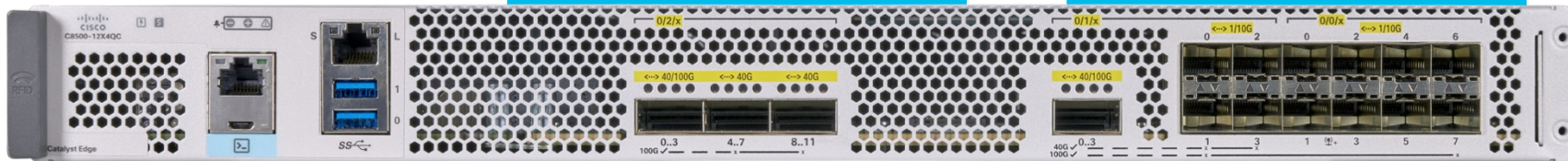


C8500-12X4QC Port Connectivity

Purpose-built 100GE, 40GE Port SD-WAN 1RU Platform

Max 120G of
ports from Bay 2

Max 120G of ports across
Bay 0 + Bay 1

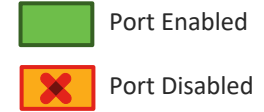


Option	Port Speed	Maximum Port Configuration
1	100GE	2x100G
2	100/40GE	1x100GE + 3x40GE
3	100/40GE	1x100GE + 12x10GE
4	40/10GE	4x40GE + 8x10GE
5	40/10GE	3x40GE + 12x10GE
6	100/40/10GE	1x100GE + 1x40GE + 8x10GE
7	10GE	12x10GE + 12x10GE (using breakout* cable)
8	1GE	12x1GE

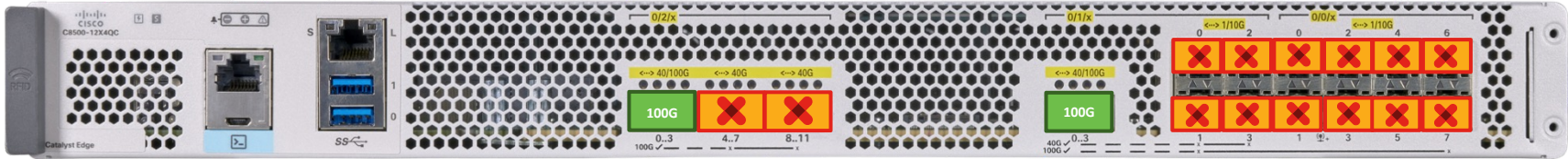
Note: 1/10GE port's speed is detected based on SFP/SFP+ used in the port, *breakout cable support in autonomous mode only

100GE, 40GE Connectivity Options (i)

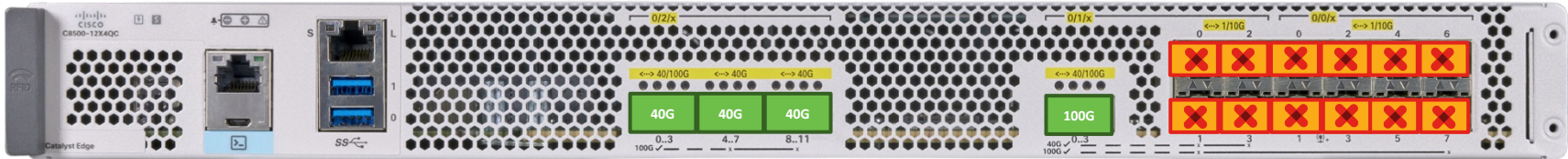
C8500-12X4QC



Option 1 2 x 100GE



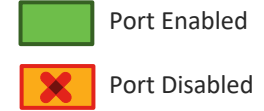
Option 2 1 x 100GE + 3 x 40GE Ports



Note: For port speed change on any bay; there is an expected 1 sec traffic disruption due to backplane reset

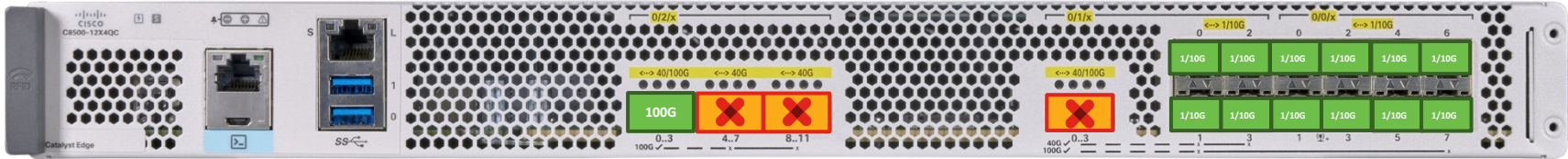
100GE, 40GE Connectivity Options (ii)

C8500-12x4QC



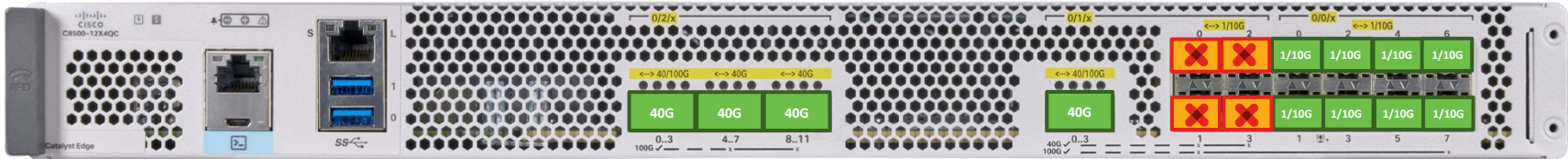
Option 3

1 x 100GE + 12 x 10GE



Option 4

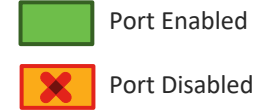
4 x 40GE + 8 x 10GE



Note: For port speed change on any bay; there is an expected 1 sec traffic disruption due to backplane reset

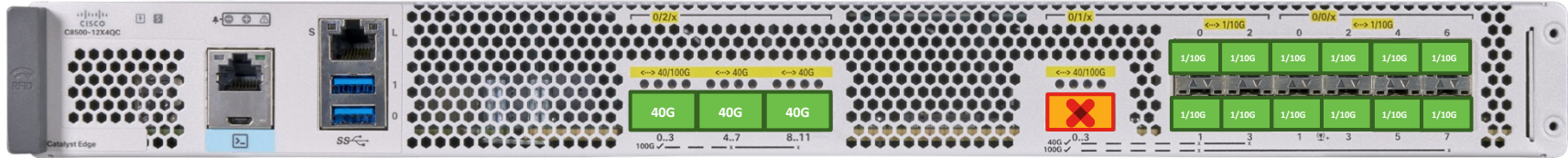
100GE, 40GE Connectivity Options (iii)

C8500-12x4QC



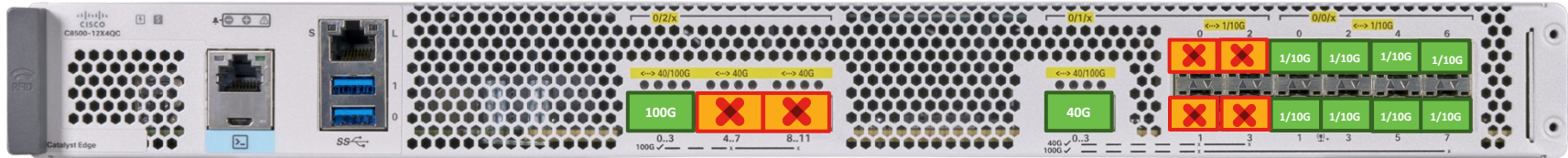
Option 5

3 x 40GE + 12 x 10GE



Option 6

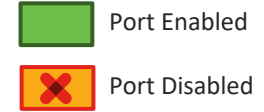
1 x 100GE + 1 x 40GE + 8 x 10GE



Note: For port speed change on any bay; there is an expected 1 sec traffic disruption due to backplane reset

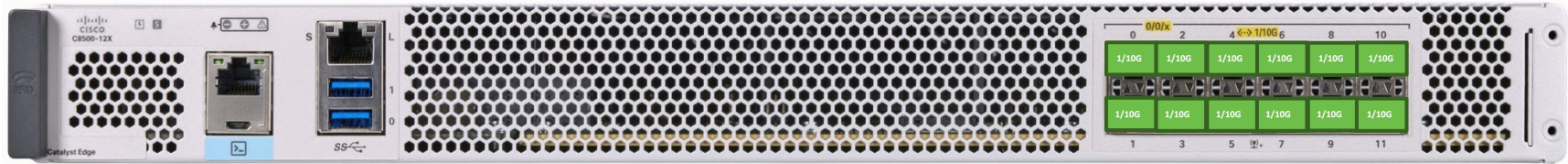
High Density 10GE, 1GE Connectivity Options

C8500-12x and C8500-12X4QC



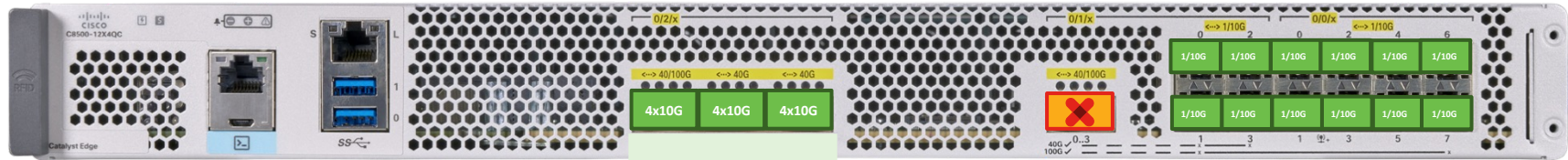
Option 6,7

C8500-12X: 12 x 1/10GE



Option 6,7

C8500-12X4QC: 12 x 1/10GE + 12 x 10GE*

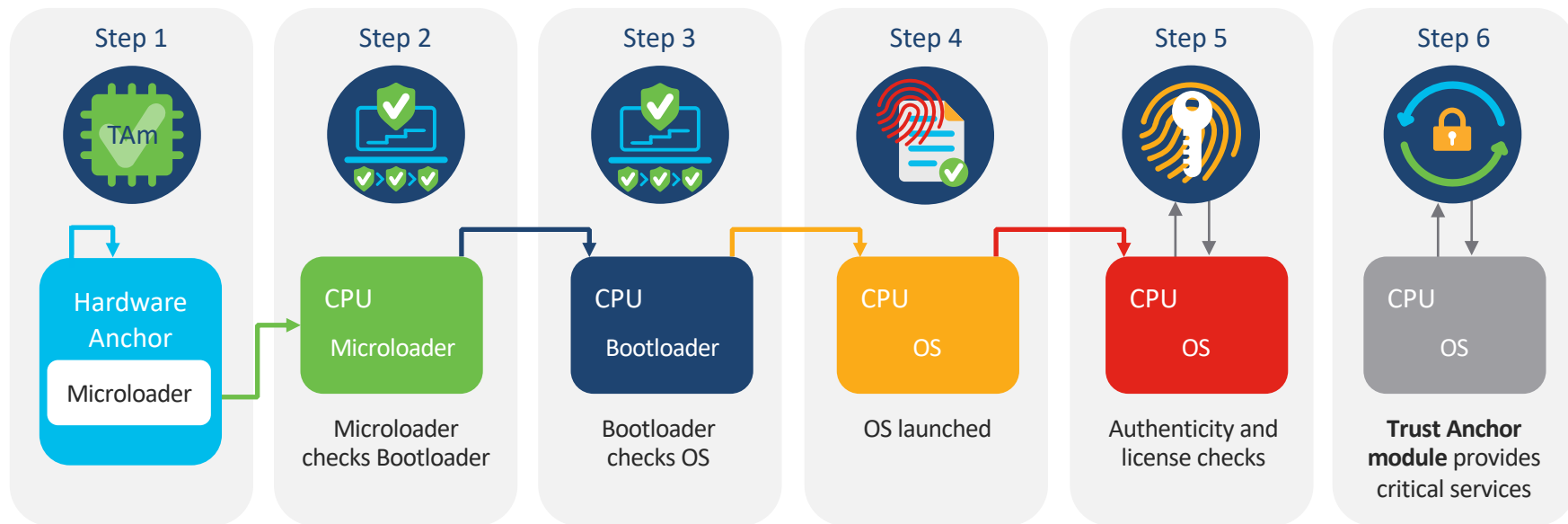


12 x 10GE using Breakout Cable

*C8500-12X4QC breakout cable is supported from 17.4.1 and on Autonomous mode only.



Secure Platform with Trustworthy Solutions



First instructions run on CPU stored in tamper-resistant hardware

Confidentiality

Integrity

Authenticity



Radio Frequency Identification (RFID)

Front Facing **Passive UHF RFID**

Ultra High Frequency (**UHF**)

860 to 960 MHz

1 to 4 meter Distance

Benefits

Good read range

Industry adopted standard

Supply Chain Applications





Label Tray



Label Tray

Label Tray has a **plastic strip** that can be pulled out

Label Tray contains

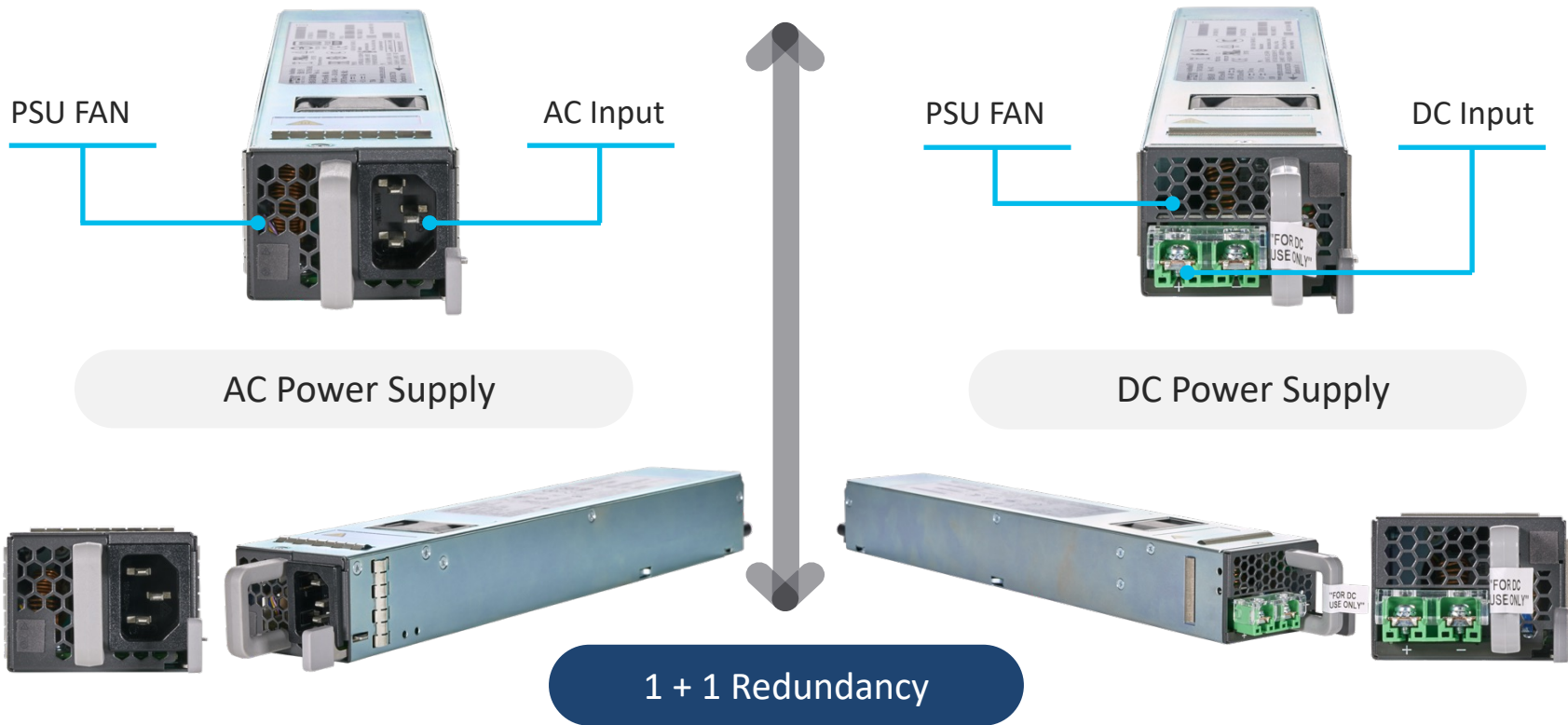
- Product ID
- PID version ID
- CLEI
- TAN
- MAC and Hardware version number



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



AC, DC Power Supply for 1RU platforms





AC, DC Power Supplies

- C8500-20X6C
 - PWR-CH1-1100WAC
 - PWR-CH1-950WDC
- C8500-12X and C8500-12X4QC
 - PWR-CH1-750WACR
 - PWR-CH1-950WDCR
- C8500L-8S4X
 - PWR-CH1-400WAC
 - PWR-CH1-400WDC
 - PWR-CC1-400WHV
- Minimum of two power supplies
 - Extra are for 2+N redundancy
- Supplied with 2 power supplies
- Supplied with 2 power supplies



NEBS specs for C8500-20X6C

- Dimensions: 26.85" L x 17.25" W x 5.22" H
- Weight: 80 pounds
- Recommended 4 post rack mount

- NEBS level 3 (ENG-3396) compliance with front side filter installed





Field Replaceable FAN Modules

1RU Catalyst 8500 platforms



3RU Catalyst 8500-20X6C platform



Replaceable FAN Tray

N + 1 FAN Redundancy

Front-to-Back Airflow



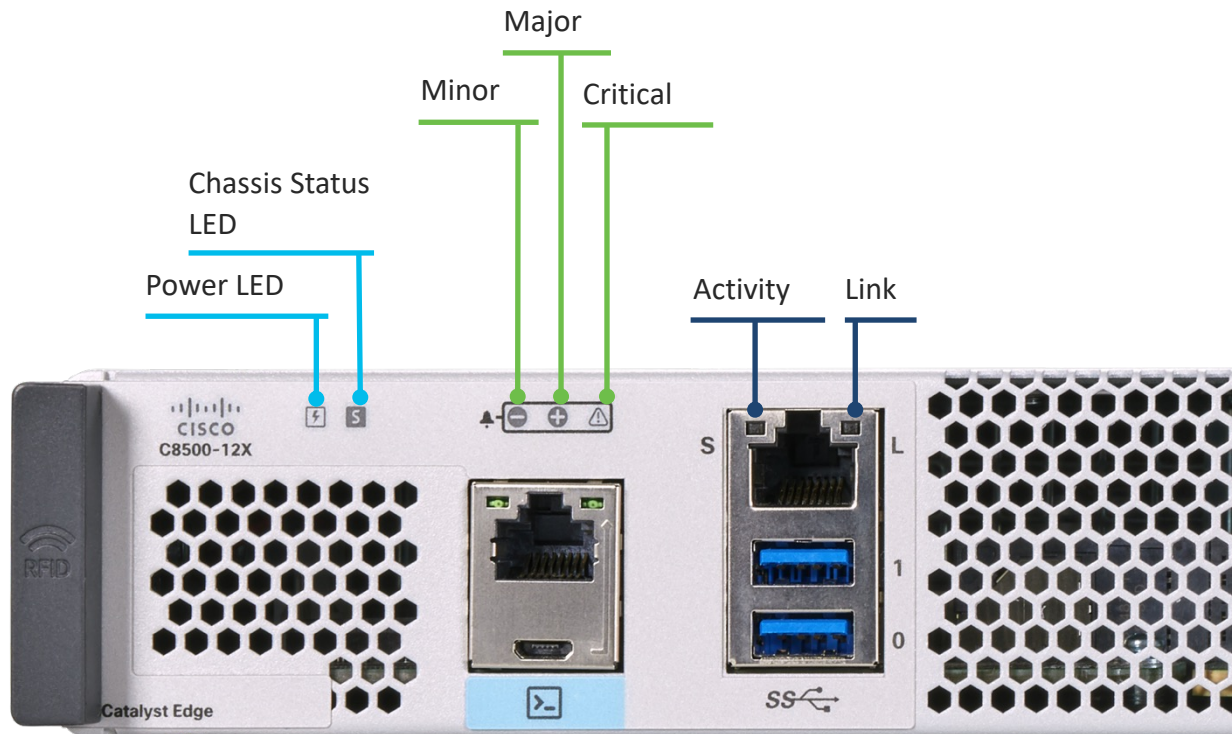
Front Panel LED Indicators

Built-in Port LEDs

LED OFF ➡ Port is not enabled by software

LED Amber ➡ Port is enabled by software, but problem with link

LED Green ➡ Port is enabled by software and link is valid



Similar LEDs applicable for C8500-12X4QC and C8500-12X platforms

Management Flexibility



Console Flexibility

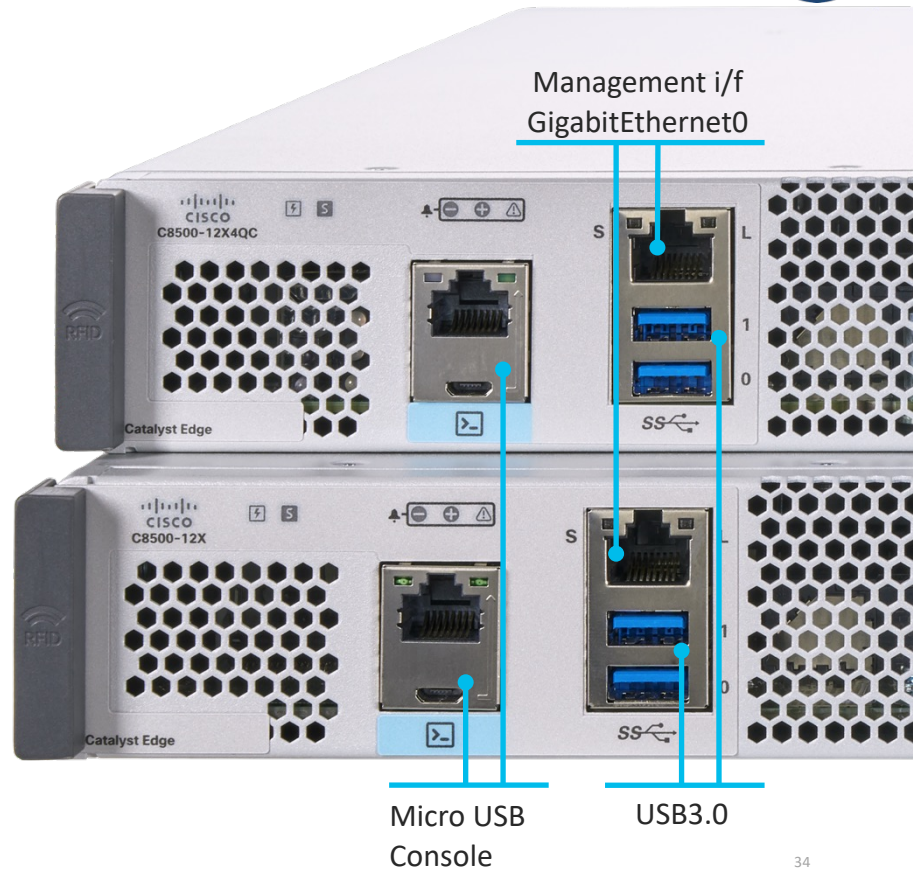
Traditional RJ45 Console Port
Micro USB Console Port

Out-of-band Management

Dedicated Management Interface

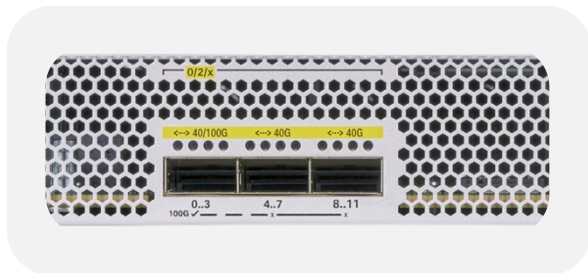
External Storage

2 x USB 3.0 Ports

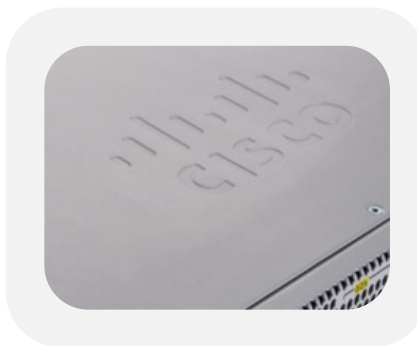




Industrial Design and Ergonomics



Circle Pattern
Hex Packing



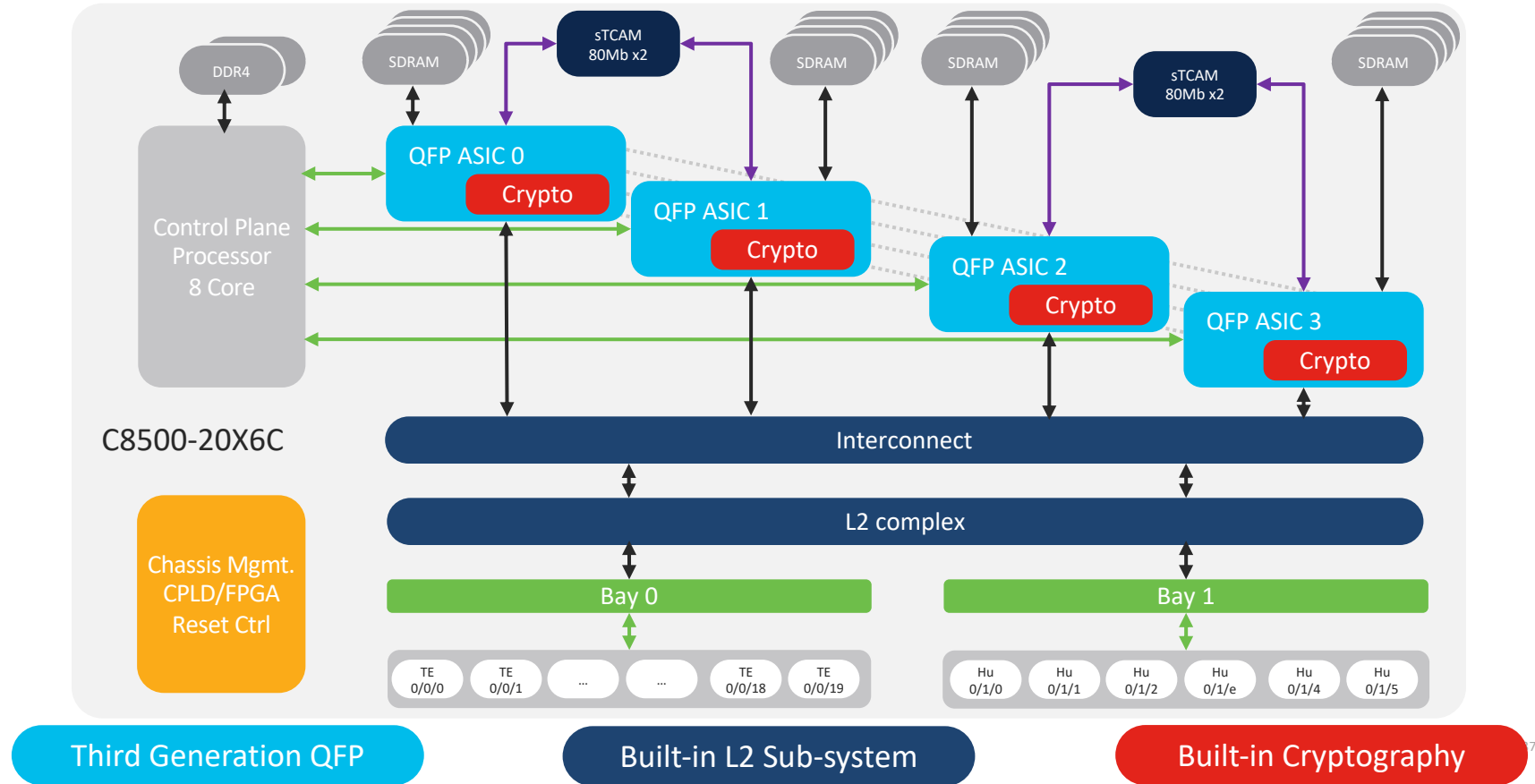
Satin Aluminum Based
Textured Finish



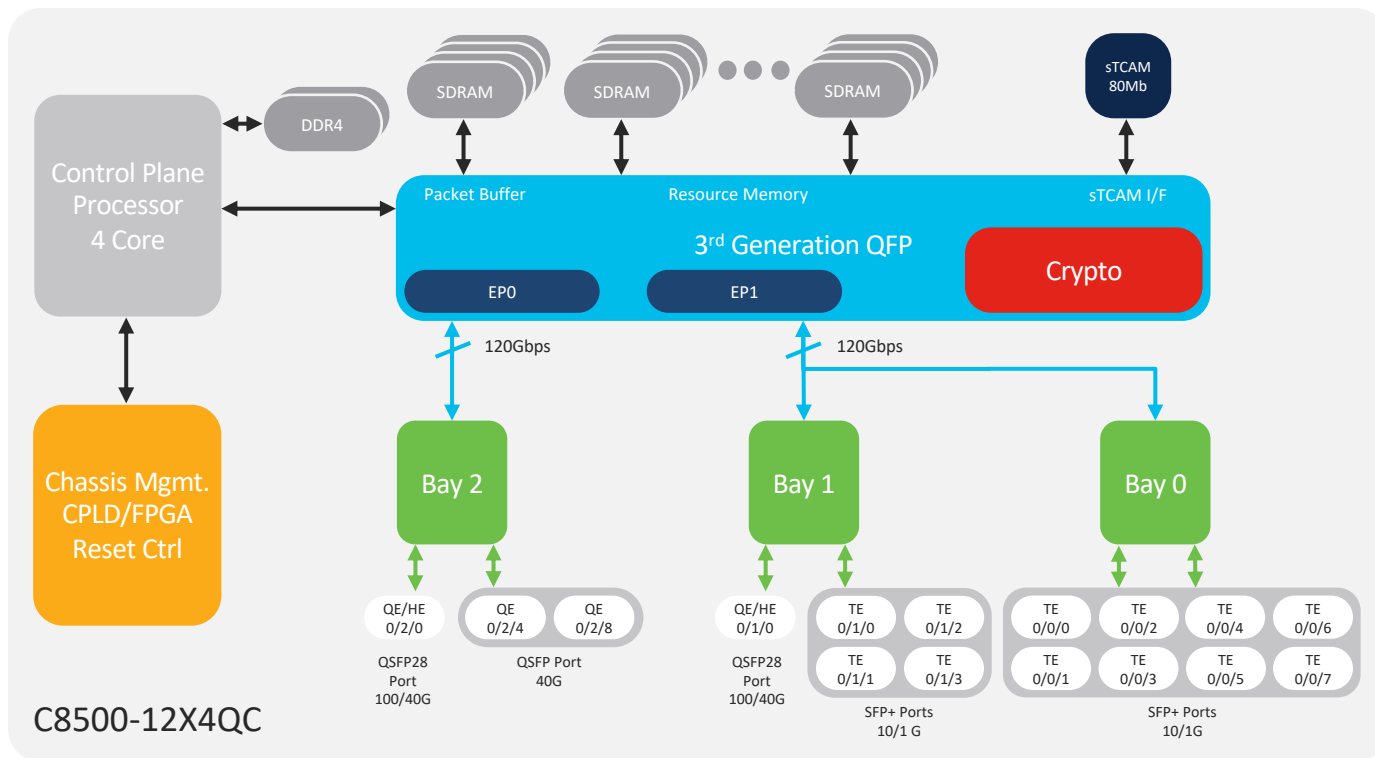
Rounded Frame
4 mm

Catalyst 8500 Platform Architecture

Catalyst 8500-20X6C Block Diagram



C8500-12X4QC Block Diagram

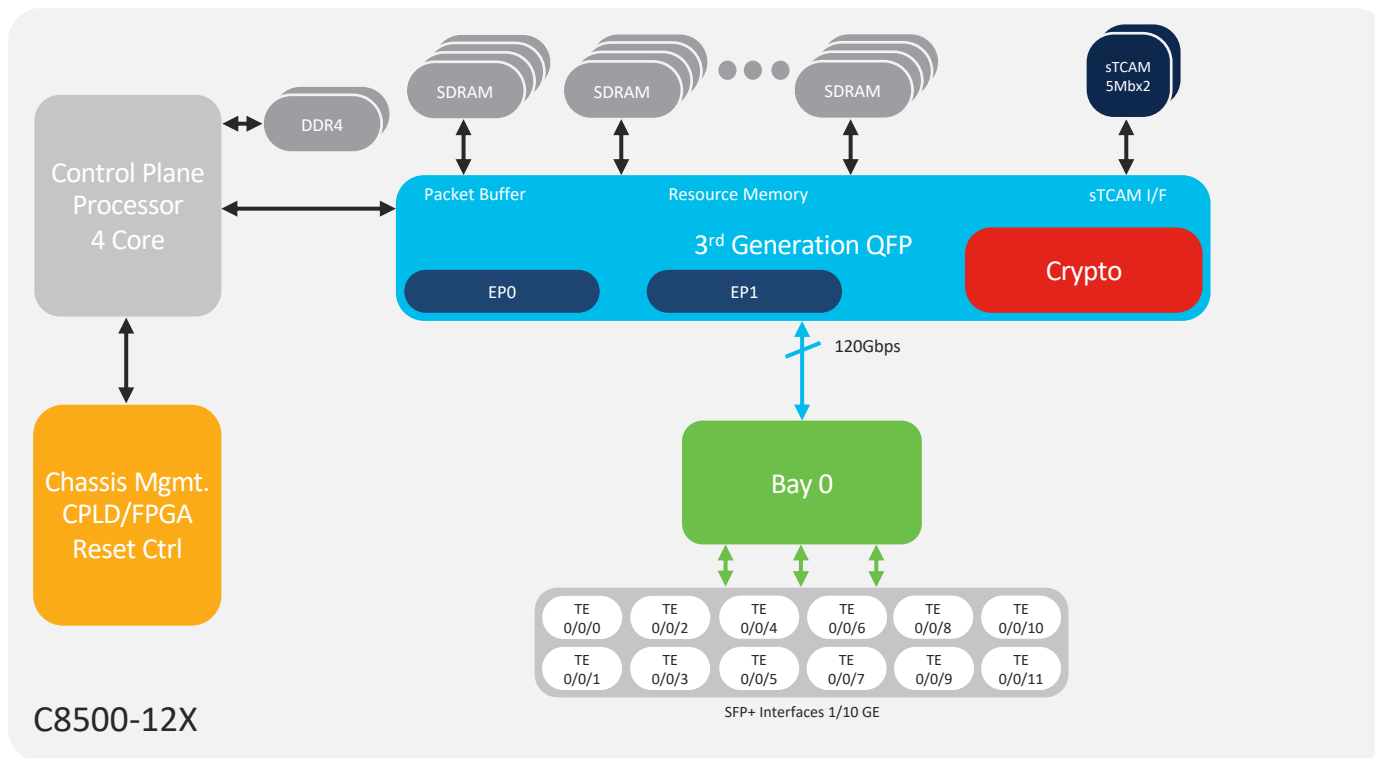


Third Generation QFP

Built-in L2 Sub-system

Built-in Cryptography

C8500-12X Block Diagram

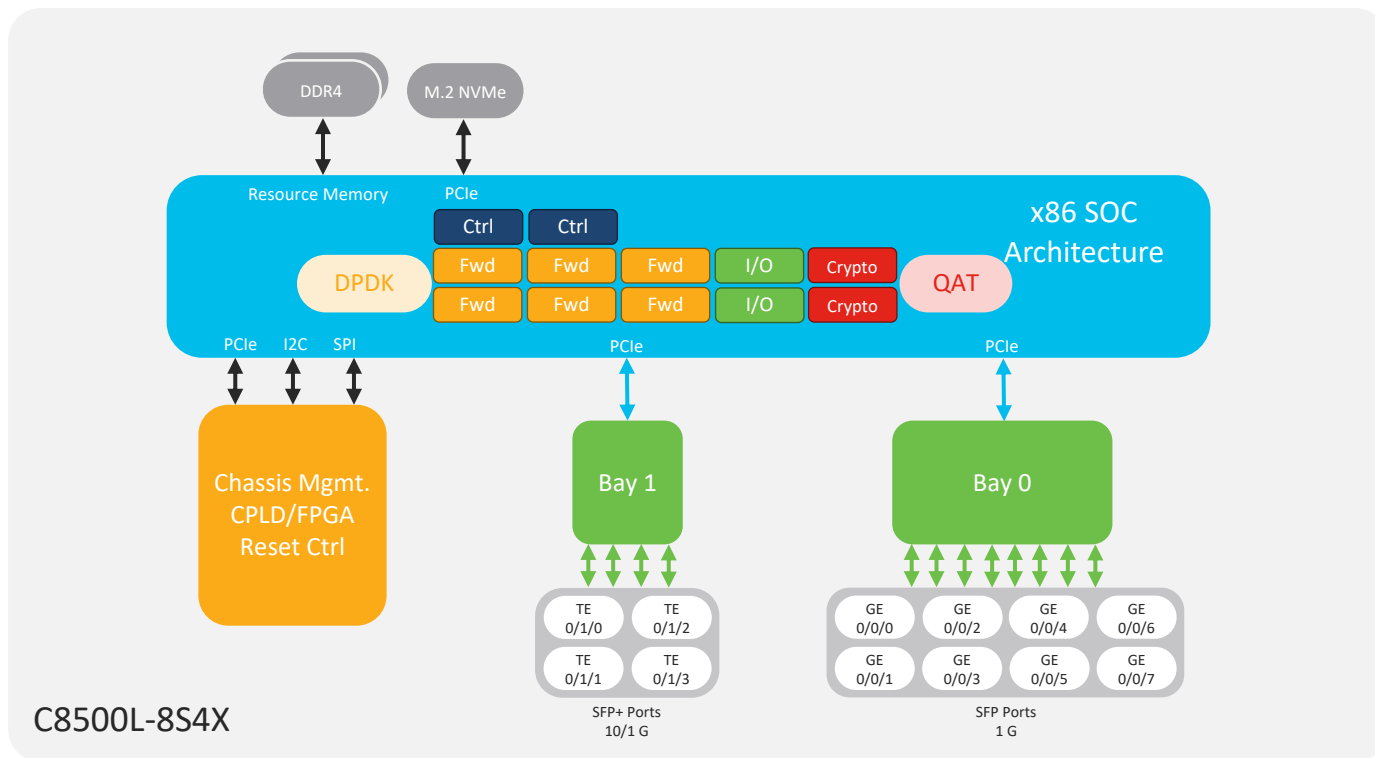


Third Generation QFP

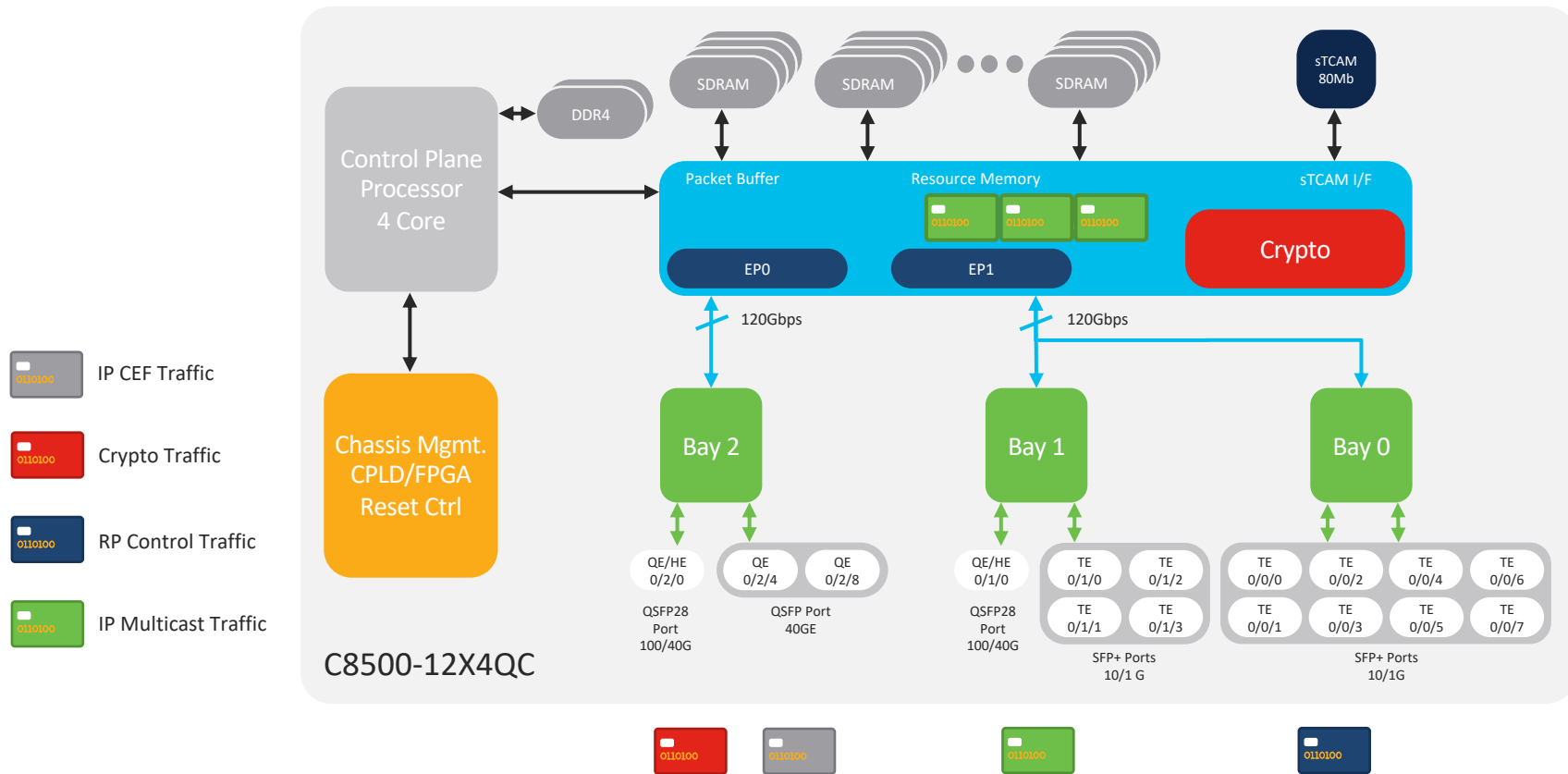
Built-in L2 Sub-system

Built-in Cryptography

C8500L-8S4X Block Diagram



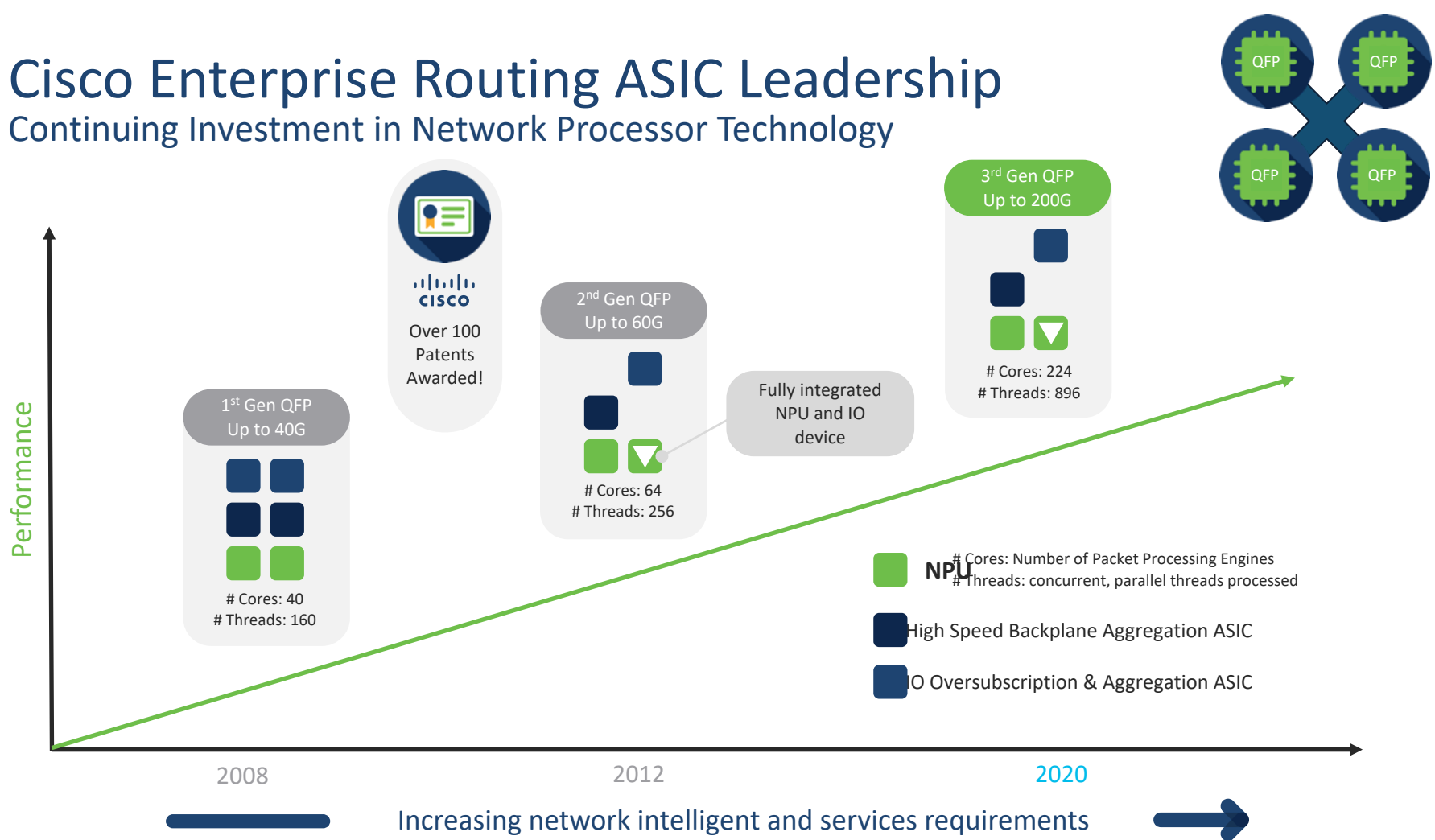
Life of a Packet



C8500 - Third Generation Quantum Flow Processor

Cisco Enterprise Routing ASIC Leadership

Continuing Investment in Network Processor Technology



Cisco Third Generation QFP

Exceptional Data Path ASIC



Multi-Core Parallel Processing
Scalable for Future



High Scale Feature Velocity
Improved Performance, Programmable



Hardware Accelerated IPsec
In-Line Encryption, Decryption



Built-in Layer 2 Sub-system
Better Traffic Management

QFP 3.0 Architecture

Multi-threaded Parallel Processing

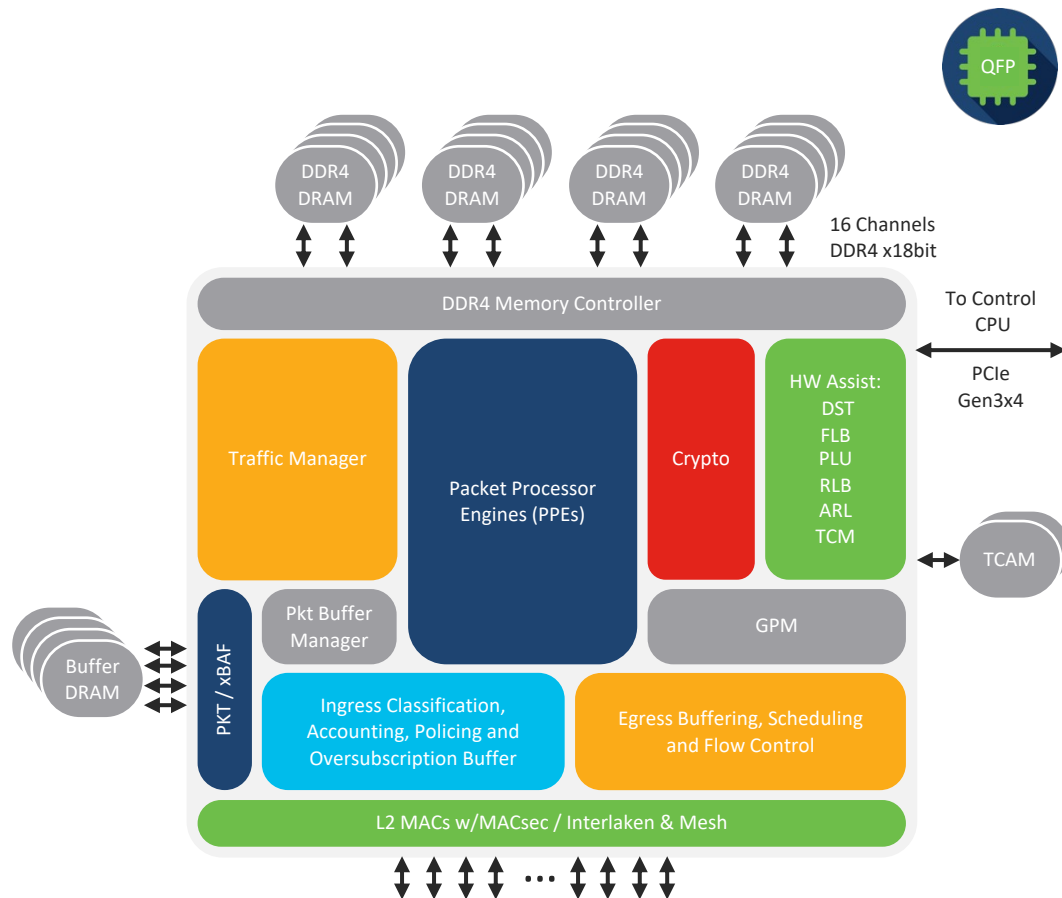
- 28 clusters of 8 PPEs each
- 224 PPEs, 4 threads each → 896 threads

Hardware Accelerated Crypto

- 16 Crypto Engines with dedicated resources
- Flow queues for complex stateful features

Layer-2 Aggregation

- 240Gbps of aggregation
- Per Port Classification and Accounting





QFP 3.0 Innovation

Traffic Manager

256K useable queues
134K scheduling nodes
Event driven flow control

Layer 2 Sub-system

240Gbps Aggregation
Per Port L2/L3 classification

Inline Crypto

Higher IPsec throughput
16 Crypto Engines
Next Generation Strong
Encryption: Suite-B

C8500L - Intel x86 Forwarding with Advanced Flow-based Algorithm

C8500L - Performance enhancements using advanced flow-based forwarding



Multi-Core Parallel Processing



High Scale Feature Velocity
Improved Performance, Programmable



High speed IPsec, with QAT
In-Line Encryption, Decryption



Advanced flow-based forwarding
algorithm



Advanced flow based forwarding on C8500L

Multicore Architecture

12 cores

Dynamic distribution depending on use case

Specialized Hardware Assist

Crypto supported by dedicated cores

Stateful flows are locked to cores to optimize forwarding. Intel® Quick Assist Technology (QAT) is used to accelerate cryptography for maximum secure throughput.

Traditional x86 based data planes give any packet to any available core.



Stateful features require additional processing and spend time moving state information.



Advanced flow based forwarding locks a flow to a given core.

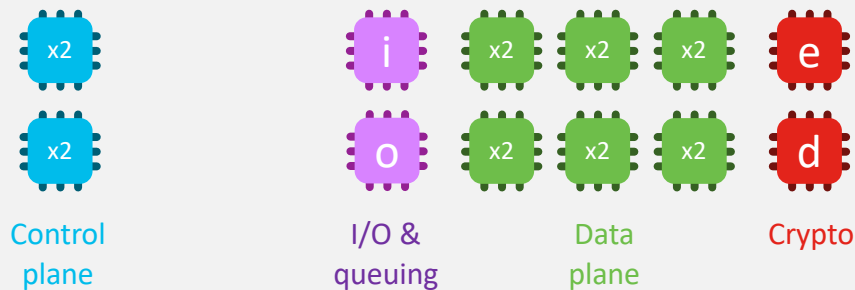
- reduces overhead for stateful features



Two modes – data or service plane focused

Data plane focus

- 4 threads for control plane
- No cores for services
- 10 cores for data plane
 - 2 cores shared for I/O and queuing
 - 2 crypto cores (1 encrypt, 1 decrypt)
 - 12 threads for feature processing



Services focus

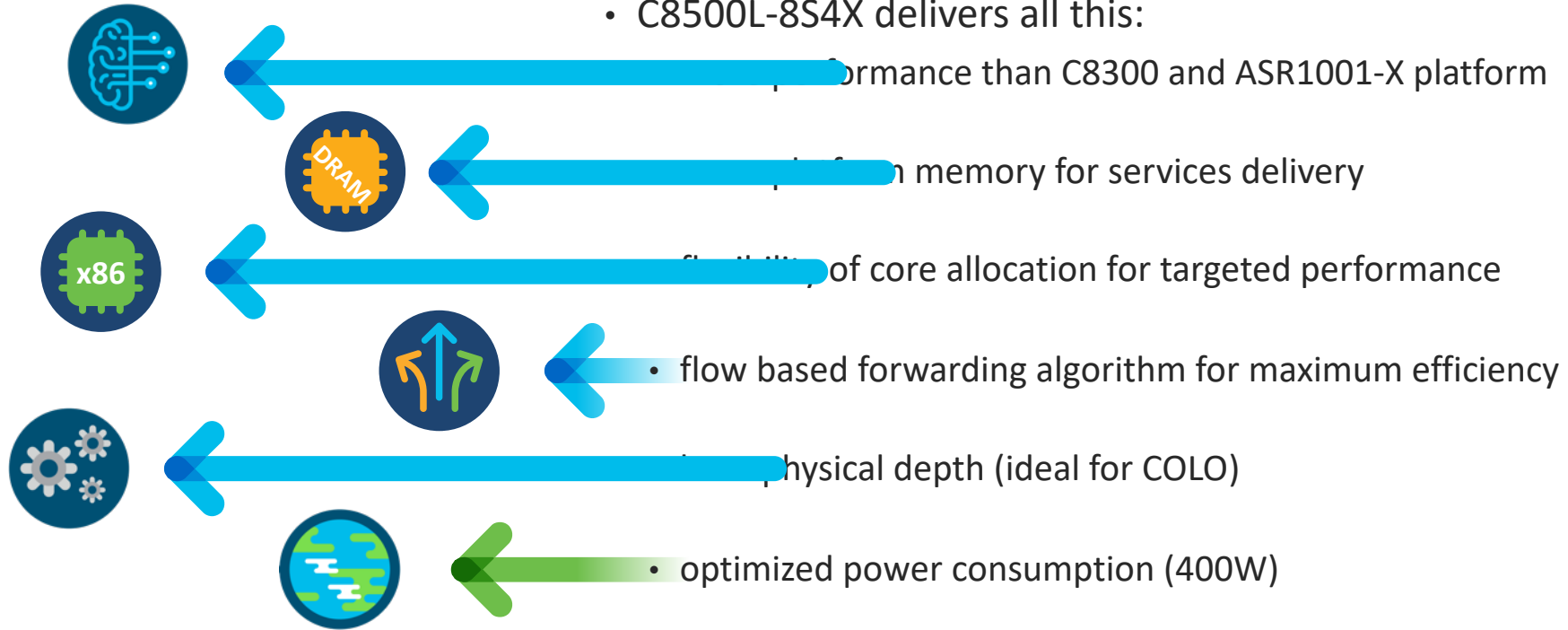
- 4 threads for control plane
- 8 threads for services
- 6 cores for data plane
 - 1 core shared for I/O and queuing
 - 1 crypto core (encrypt and decrypt)
 - 8 threads for feature processing



CLI configuration and reboot required to change modes. Roadmap for future software to not require reboot.

C8500L-8S4X delivers power in compact package

- C8500L-8S4X delivers all this:



C8300 / C8500L / C8500 performance comparison

Data-plane
Heavy Mode

Gb/sec	C8300-2N2S-4T2X	ASR1001-X	C8500L	C8500-12X
CEF	19.9	18.9	20.8	113.6
IPsec	7.9	5.7	13.2	27.9
NAT	9.4	15.2	17.0	56.8
ZBFW	8.5	18.9	18.8	71.0
FNF (fast mode)	n/a	n/a	8.1	n/a
GRE	15.6	17.8	18.1	72.2

x86 load based dataplane

QFP load based dataplane

x86 flow based dataplane

QFP load based dataplane

* IMIX - 352 bytes average, clear text injected traffic rate.

All numbers are for aggregate IMIX traffic in Gbps

*IQDF: IPsec + QoS + DPI + FNF

C8300 / C8500L / C8500 performance comparison

Data-plane
Heavy Mode

* Gb/sec	C8300-2N2S-4T2X	ASR1001-X	C8500L	C8500-12X
SDWAN-IQDFNFw	1.8	2.2	3.1	9.2
SDWAN-IQDFN	2.2	2.2	3.9	10.4
SDWAN-IQDF	2.3	2.4	4.0	11.6
SDWAN-IQ	6.1	4.0	8.4	20.6
SDWAN-I	6.8	4.6	8.6	22.6

x86 load based dataplane

QFP load based dataplane

x86 flow based dataplane

QFP load based dataplane

* IMIX - 352 bytes average, clear text injected traffic rate.

All numbers are for aggregate IMIX traffic in Gbps

*IQDFNFw: IPsec + QoS + DPI + FNF + NAT + Firewall

C8300 / C8500L / C8500 platform comparison

	C8300-2N2S-4T2X	ASR1001-X	C8500L	C8500
MACSEC availability on built-in ports	2x 1/10G	6x 1G + 2x 10G	8x 1G + 4x 1/10G	C8500-12X: 12x 1/10G C8500-12X4QC: 12x 1/10G + 4x 40G/2x 100G
Complete high priority QoS path	No	Yes	Yes	Yes
Hardware TCAM	No	Yes	No	Yes
Maximum memory	32 GB	32 GB	64 GB	64 GB
Default memory	8GB	8 GB	16 GB	16 GB
Size / Depth	2 RU / 18.52"	1 RU / 19.25"	1 RU / 16.3"	1 RU / 18.46"
Max power rating	* 650 W	250 W	400 W	750 W

* 1000 W for PoE capable power supplies.

C8300 / C8500L / C8500 platform comparison

	C8200-1N-4T	C8300-2N2S-4T2X	C8500L	1RU C8500
MACSEC availability on built-in ports	No	2x 1/10G	8x 1G + 4x 1/10G	C8500-12X: 12x 1/10G C8500-12X4QC: 12x 1/10G + 4x 40G/2x 100G
Complete high priority QoS path	No	No	Yes	Yes
Hardware TCAM	No	No	No	Yes
Maximum memory	32 GB	32 GB	64 GB	64 GB
Default memory	8GB	8GB	16 GB	16 GB
Size / Depth	1 RU / <12"	2 RU / 18.52"	1 RU / 16.3"	1 RU / 18.46"
Max power rating	*100W	** 650 W	400 W	750 W

* 150 W for PoE only DC power supply.

** 1000 W for PoE capable power supplies.

Catalyst 8500

IOS XE Software Architecture

IOS XE Richness

Ready on Day 0



L2VPN SD-WAN Aggregation

Business VPNs

NAT

Firewall

Internet Gateway

IPsec Gateway

Traditional Routing

IPsec Aggregation

High End Branch

Route Reflector

Catalyst 8500 Series

Secure WAN Aggregation

MPLS, L2/L3VPN

NAT, CGN

VXLAN, OTV

Data Center Interconnect

IOx App-Hosting

Key Server

Services Performance

Cloud Gateway

MACsec

L4-L7 Services

Synchronous Ethernet

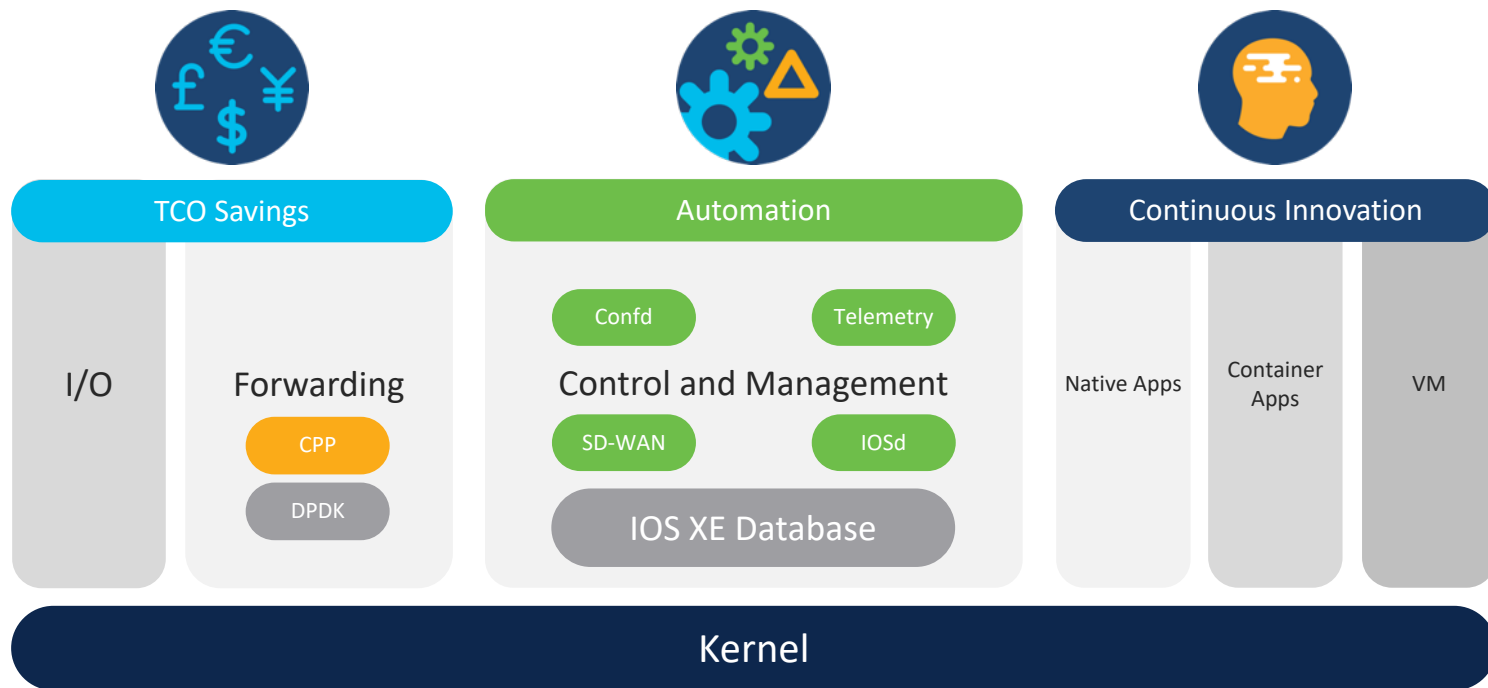
WAN Aggregation

Cisco Catalyst 8500 Series inherits IOS XE Routing, SD-WAN features!



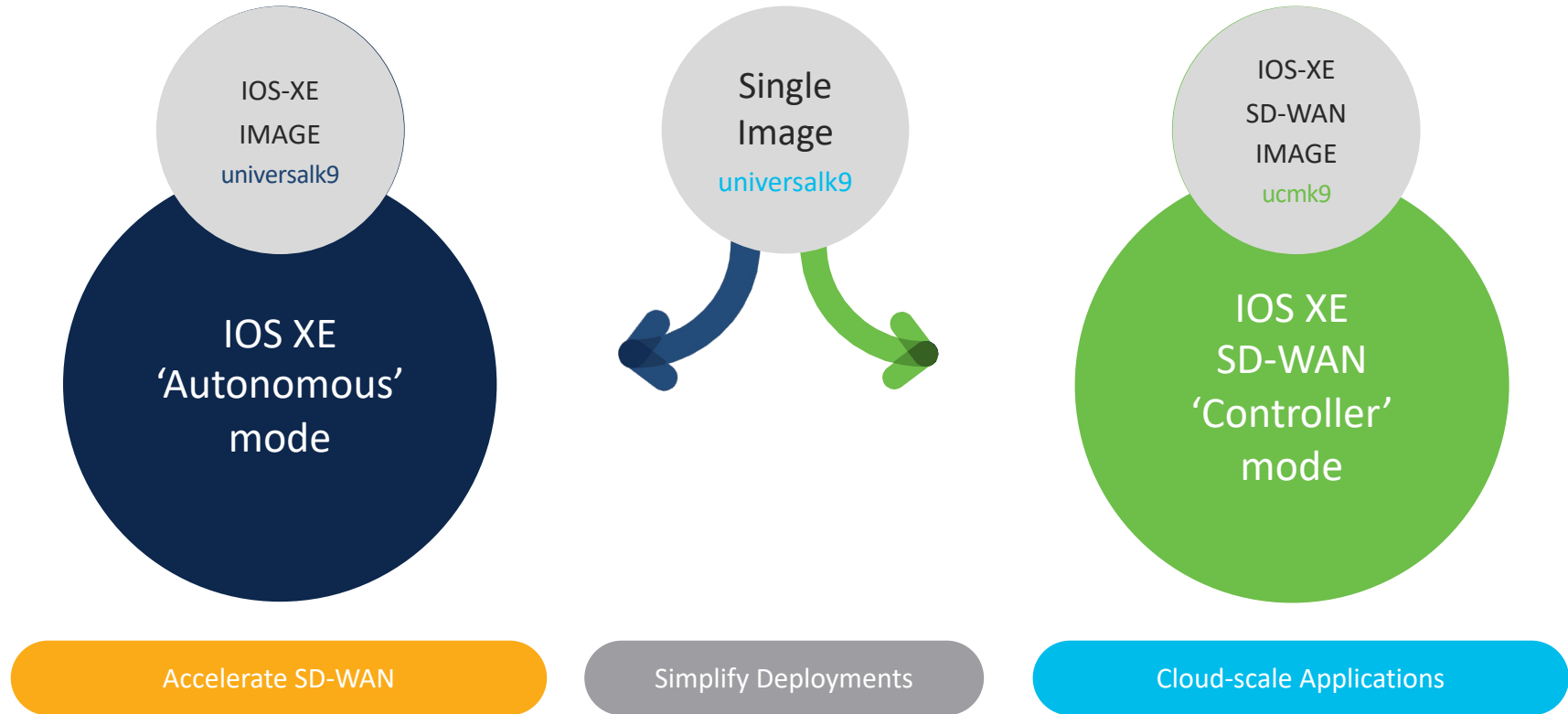
Open and Extensible IOS
XE

Open IOS XE — A Modern Operating System

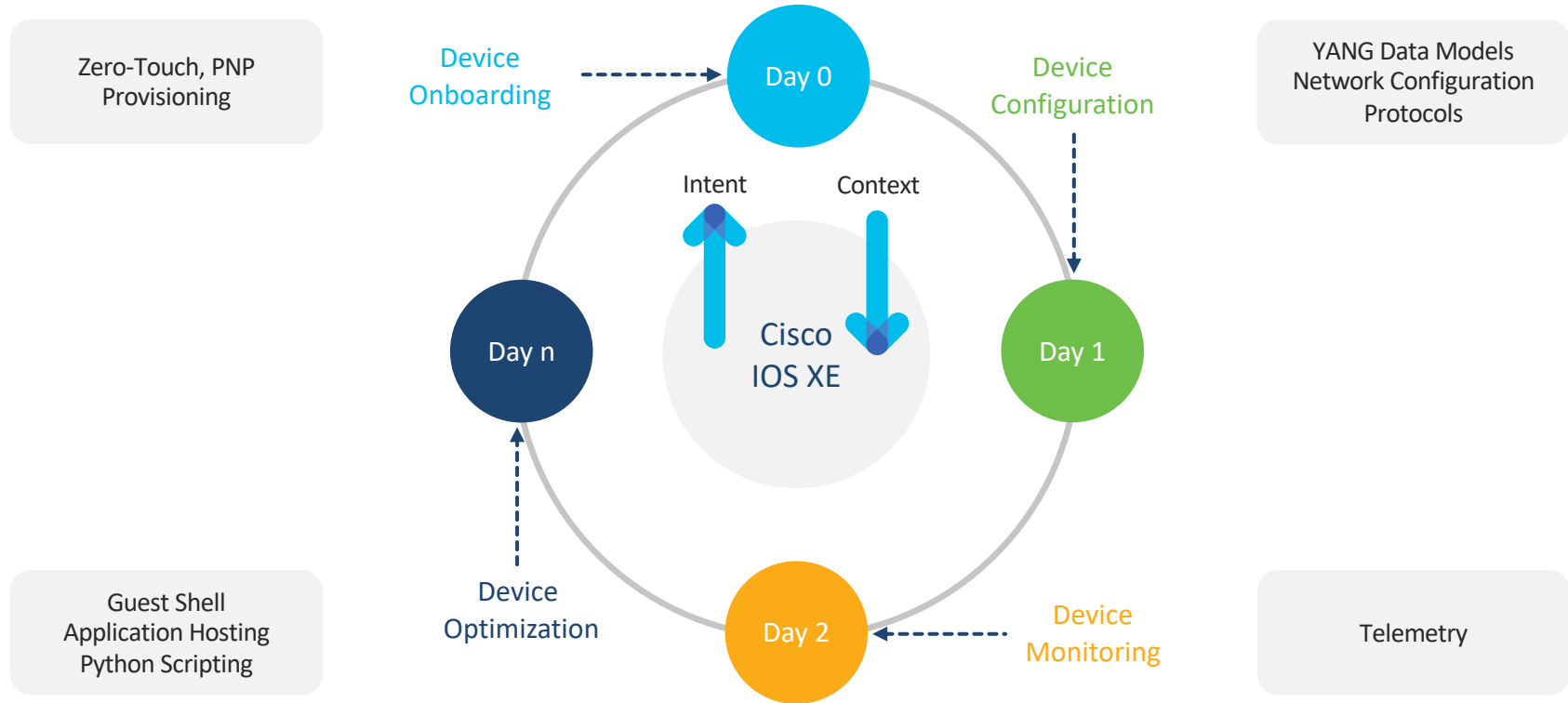


Open, API, Model Driven & Secure Operating Systems

Easy Operations with Single Image



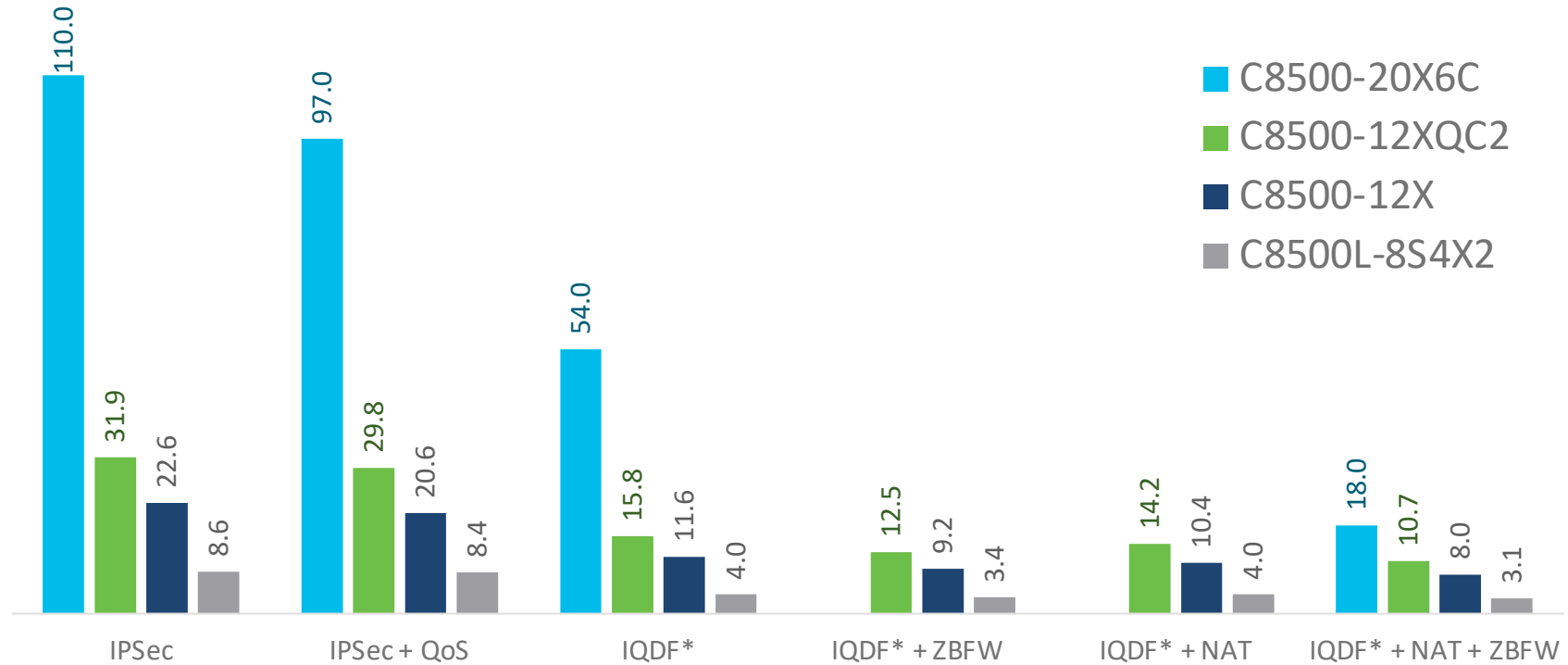
Programmability Device Lifecycle Phases



Catalyst 8500

Performance and Scale

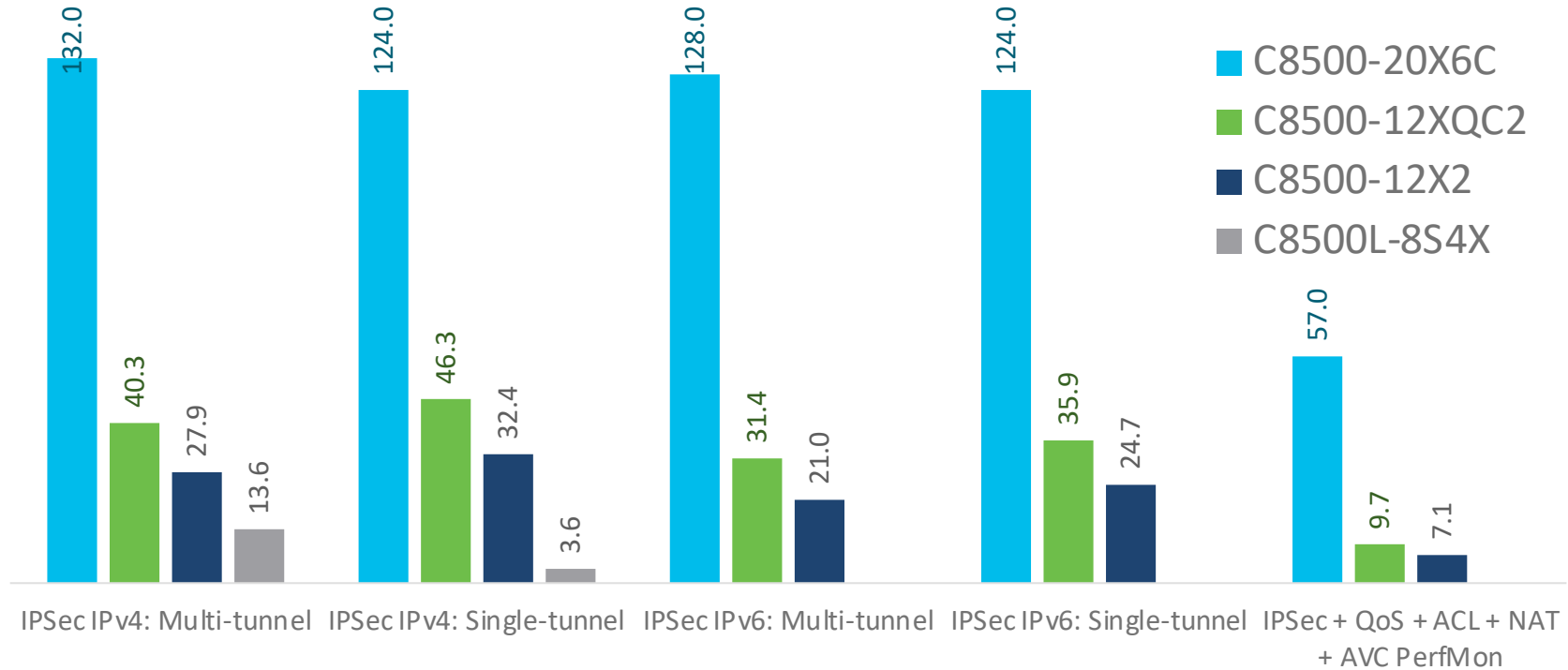
SD-WAN Throughput Performance



All numbers are for aggregate IMIX traffic in Gbps

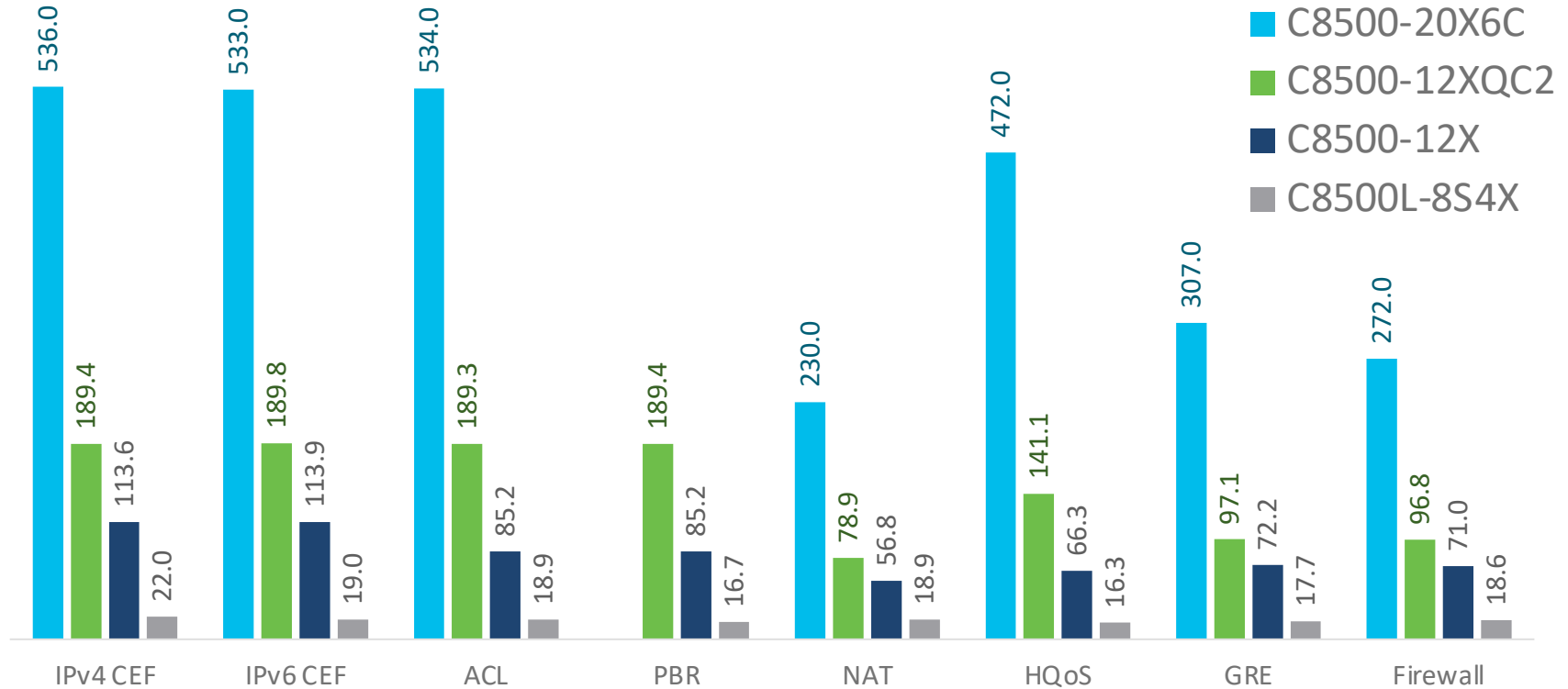
*IQDF: IPsec + QoS + DPI + FNF

IOS XE IPsec Throughput Performance



All numbers are for aggregate IMIX traffic in Gbps
IMIX Profile: 64B:7, 594B:4, 1418B:1

IOS XE Performance



All numbers are for aggregate IMIX traffic in Gbps
IMIX Profile: 64B:7, 594B:4, 1418B:1

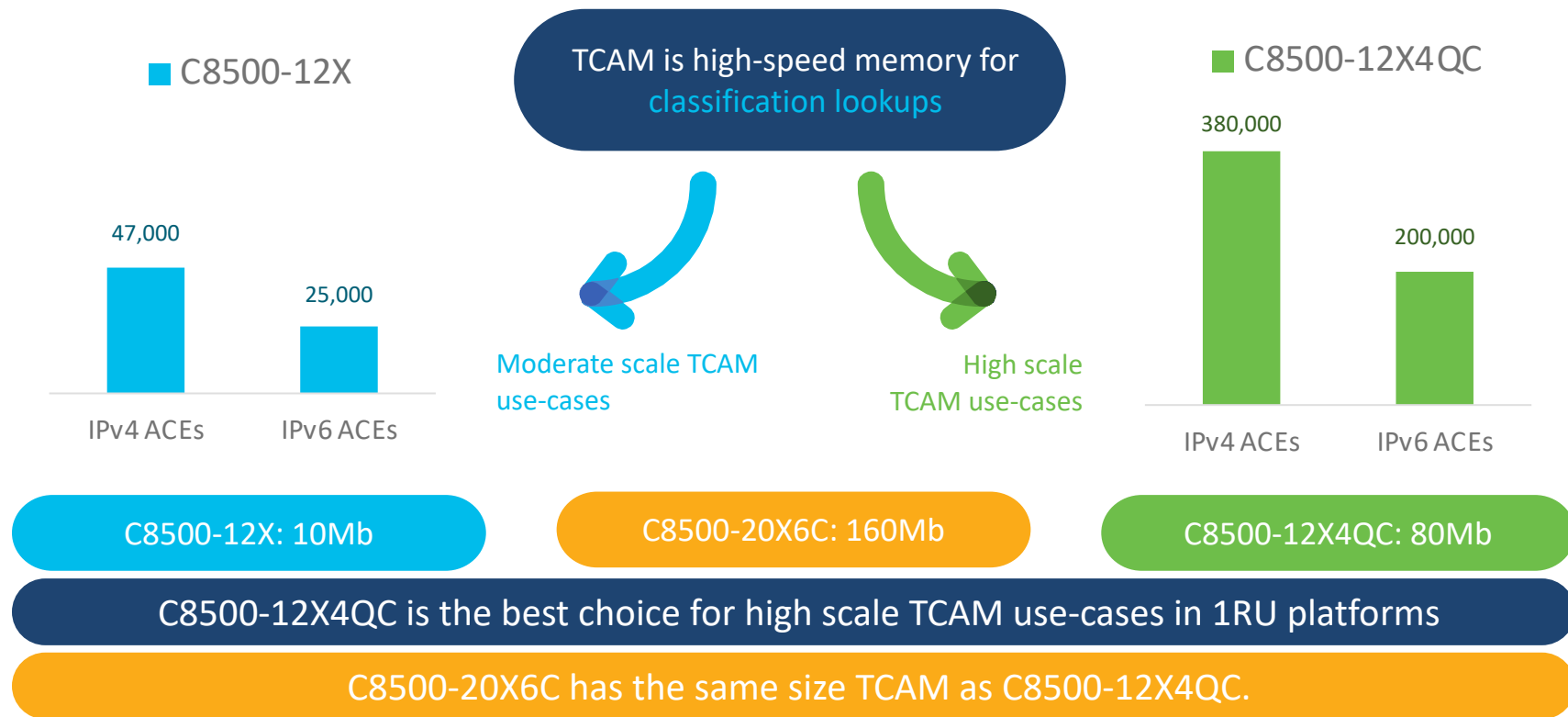
SD-WAN 1D-Scale

Feature	C8500-20X6C	C8500-12X4QC	C8500-12X	C8500L-8S4X
IPsec Overlay Tunnels (Viptela)	8,000	8,000	8,000	6,000
GRE Overlay Tunnels (Viptela)	8,000	8,000	8,000	6,000
DPI Flows	2,000,000	2,000,000	2,000,000	1,000,000
cFlow Flows		2,000,000	2,000,000	1,000,000
OMP Routes (Overlay)	2,000,000	2,000,000	2,000,000	1,500,000
IPv4 Routes	2,000,000	2,000,000	2,000,000	1,500,000
NAT Sessions	32,000,000	6,000,000	6,000,000	2,000,000
Firewall Sessions	32,000,000	6,000,000	6,000,000	2,000,000
ARP Entries	1,000,000	500,000	500,000	300,000

IOS XE 1D-Scale

Feature	C8500-20X6C	C8500-12X4QC	C8500-12X	C8500L-8S4X
ARP Adjacencies	2,000,000	1,000,000	1,000,000	
IPv4 Routes	4,000,000	4,000,000	4,000,000	3,500,000
IPv6 Routes	4,000,000	4,000,000	4,000,000	3,000,000
IPsec Tunnels		8,000	8,000	4,000
FlexVPN Tunnels		10,000	10,000	4,000
NAT/PAT Sessions	32,000,000	16,000,000	12,000,000	2,000,000
CGN Sessions	48,000,000	32,000,000	24,000,000	3,200,000
Firewall Sessions	32,000,000	6,000,000	6,000,000	2,000,000
IPv4 ACEs	380,000	380,000	47,000	50,000
IPv6 ACEs	200,000	200,000	25,000	25,000

Catalyst 8500 TCAM Capacity



C8500L-8S4X does not use a hardware TCAM.

Catalyst 8500

Solution and Use-cases



Cisco Catalyst 8500 Series Edge Platforms

Best Platforms for Cloud-scale Enterprise Networks

01 Powerful Data Plane

02 Accelerated
SD-WAN Services

03 High Speed
Multi-Cloud Access

04 Highly Scalable
Control Plane

“C8500 Platforms offer best in class hardware with rich software features for high performance use-cases!”



Powerful Data Plane
QFP 3.0, x86 FBD*

Hardware
Accelerated Services



High Speed DIA, DCA
100/40/10/1GE Ports

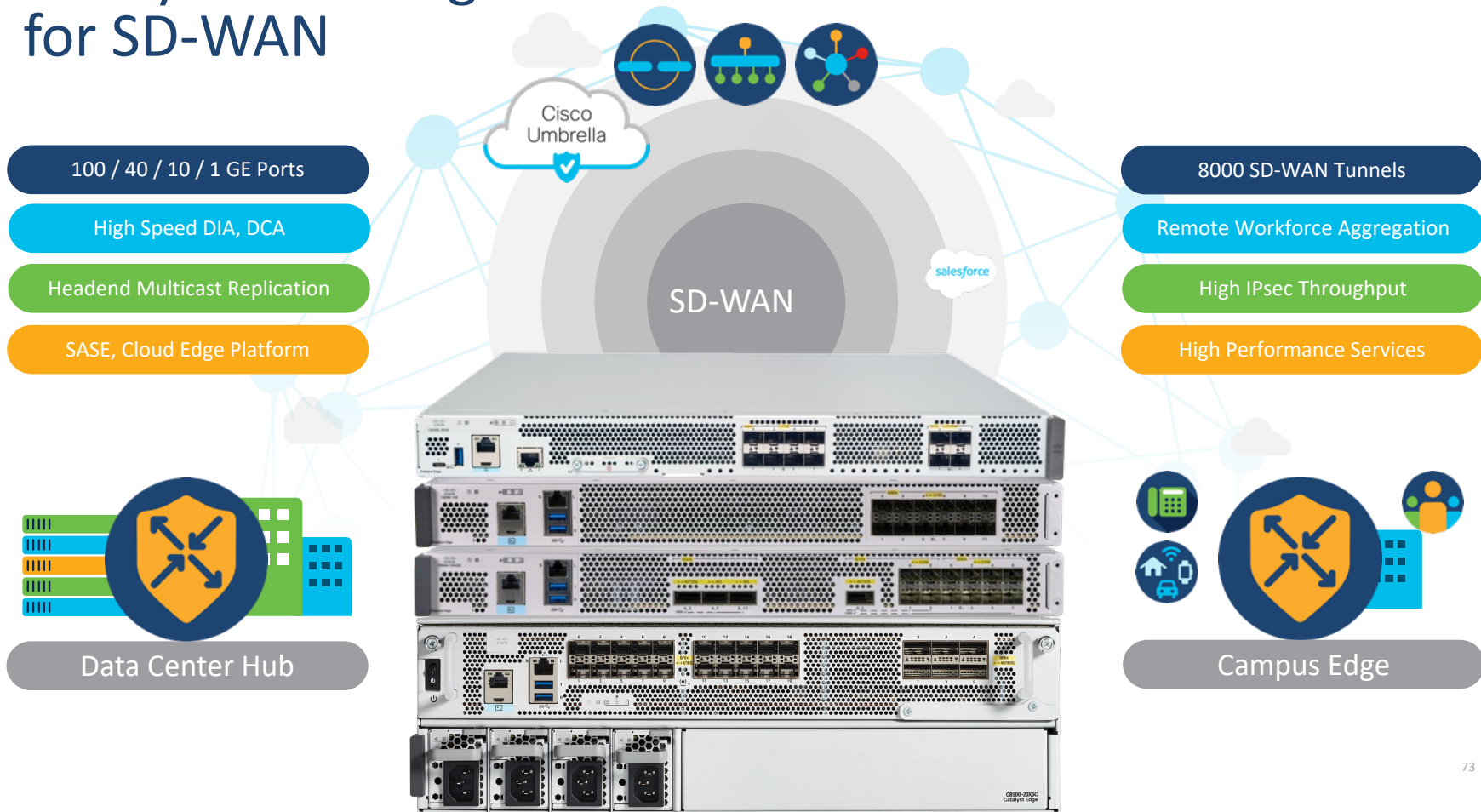


High Scale SD-WAN
IPsec Tunnels



*FBD: Flow Based Distribution

Catalyst 8500 Edge Series Platforms for SD-WAN



Catalyst 8500 Edge Series Platforms for Cloud-Scale, Co-location

Large capacity in small form factor

Cloud MSP: Edge, CPE

Rich Features

Multi-tenant, VRF Aware

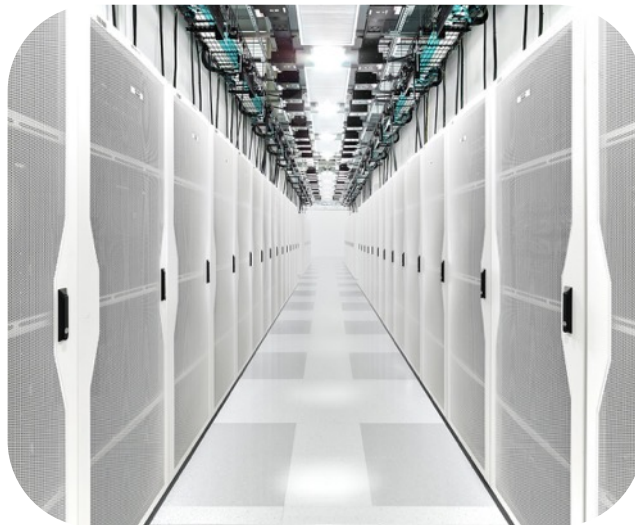
VxLAN

Route Scale

Convergence Services

IPsec, NAT, Firewall

B2B Redundancy



Co-lo, Cloud Gateway

Highly Scalable

8000 VRFs

Up to 4M IPv4, IPv6 Routes

Up to 16M NAT, 32M CGN

Up to 6M Firewall Sessions

8000 IPsec Tunnels

WAN MACsec on all ports

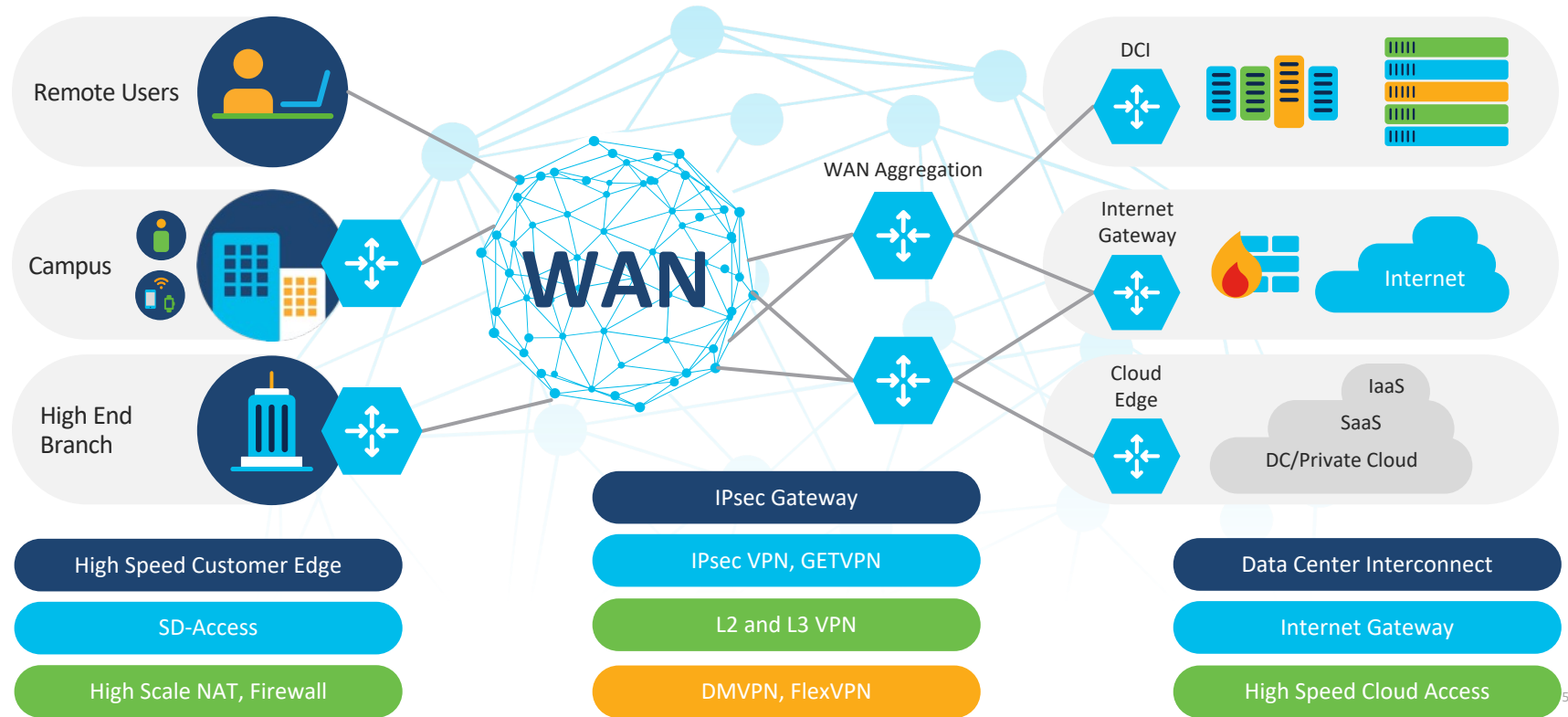
Port Flexibility: 100/40/10/1G

Small 1 RU form factor

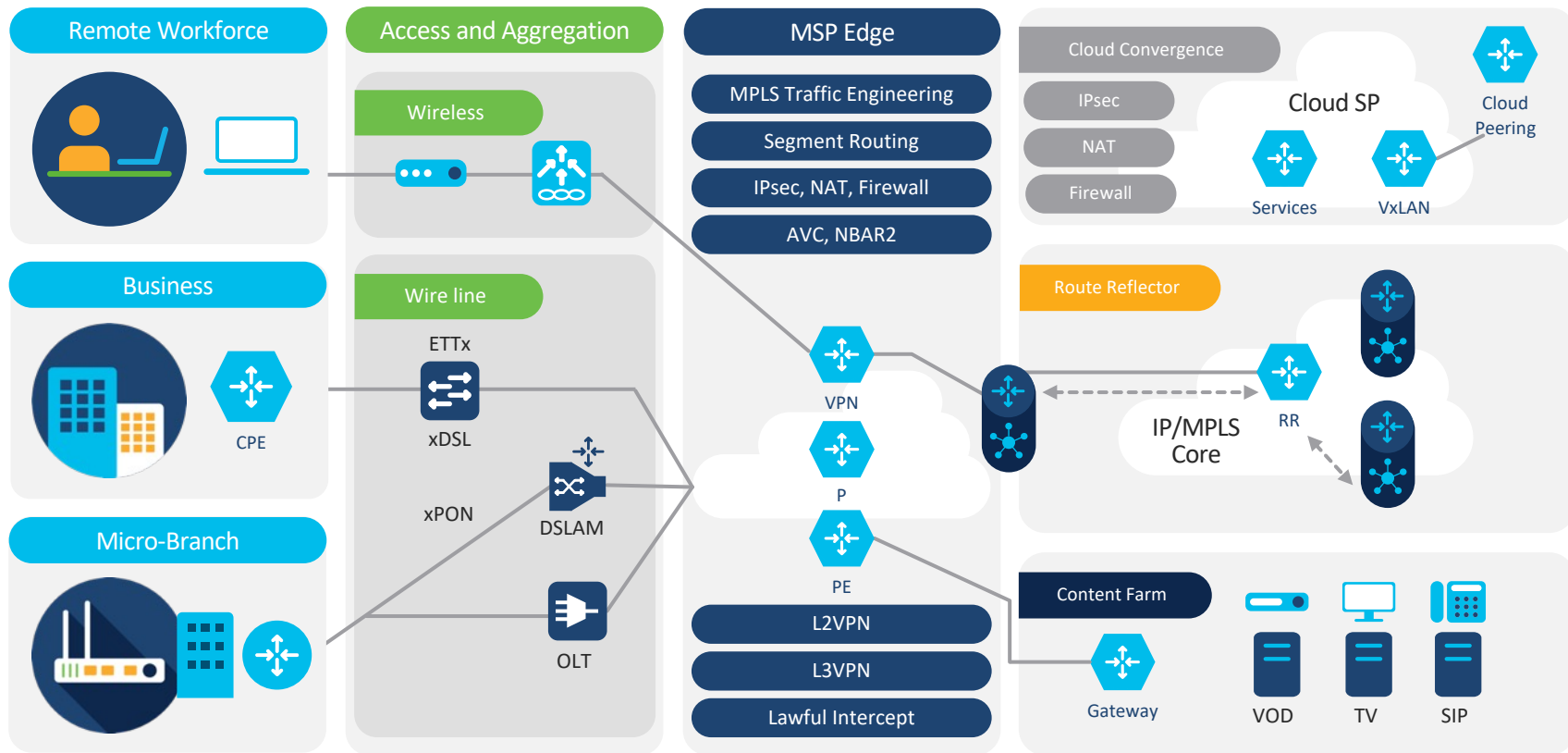
Platinum Power Efficiency

Catalyst 8500 Edge Series Platforms for Enterprise Networks

Traditional Routing Headend Applications



Catalyst 8500 Edge Series Platforms for MSP Applications



Catalyst 8500 Edge Series Platforms

One Platform, Many Solutions

SD-WAN

High Speed DIA, DCA
Headend Multicast Replication
Feature Inheritance
1G, 10G, 40GE, 100GE
Port Connectivity

Internet Gateway

High Throughput Performance
High Scale NAT, AVC, Firewall
Direct Internet Access
1G, 10G, 40GE, 100GE
Port Connectivity

Cloud GW, CoLo

Multi-Tenant, VRF Aware
High Scale NAT, AVC, Firewall
Inter VRF
Communication-VASI
Stateless/Stateful
Box-to-Box Redundancy

Secure WAN

Site-to-site, Remote
Access VPN
GETVPN, DMVPN, FlexVPN, IPsec
over GRE, sVTI
High Scale NAT, AVC, Firewall
Cisco WAN MACsec

SD-Access

Control-Plane Node
Border Node
SD-A/SD-WAN Multi-Domain

DCI

EoMPLS, L2TPv3,
VPLS, MPLS
Overlay Transport Virtualization
VxLAN
Cisco WAN MACsec

Network Infra

MPLS, Segment Routing
L2VPN, L3VPN
mVPN
MPLS-TE
AVC, H-QoS
Route Reflector

Cloud MSP

Multi-Tenant, VRF Aware
VxLAN
Route Scale
Convergence Services
IPsec, NAT, Firewall
B2B Redundancy

Catalyst 8500

Inherits Cisco ASR 1000 features for IOS XE and IOS XE SD-WAN use-cases

Key Takeaways

Cisco Catalyst 8500 Series Edge Platforms

Highly Capable SD-WAN Headend Solutions



Ready for the Agile Cloud Journey

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



Ready for 5G, Edge Compute

3rd Generation QFP In-Line Crypto
SASE driven Feature Innovations
Improved Services Performance



5G Ready Edge Intelligence

High End Aggregation 100/40/10/1GE Port flexibility
Multi-Domain Intent Based Networking



Equipped with User Centric Design

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

1st 100/40GE Port
1RU SD-WAN
Platform



Accelerated Services using
3rd Gen QFP or x86
architectures



Up to 500Gbps
CEF Aggregate
Throughput



Built-in Interface
Flexibility
100/40/10/1GE



High Performance
IPsec, MACsec



Highly Programmable





Turn this technical overview into a purchase-ready BOM

Send the exact model or BOM and your deployment requirements. Layer23-Switch can review compatibility, availability, and quote options.

- ✓ Exact model or Cisco PID and quantity
- ✓ Port count, media type, PoE budget, and uplink speed
- ✓ Redundancy, licensing, support, and accessory needs
- ✓ Ship-to country, target date, and lead-time constraints

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