



Cisco 8000

Technical Update

Powered by Silicon One & IOS XR

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BRKSPG-2944

CISCO *Live!*



Webex App

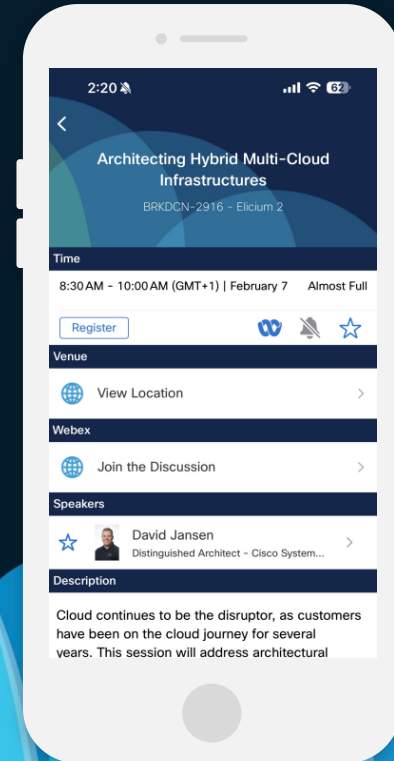
Questions?

Use the Webex app to chat with the speaker after the session

How

- 1 Find this session in the Cisco Events 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

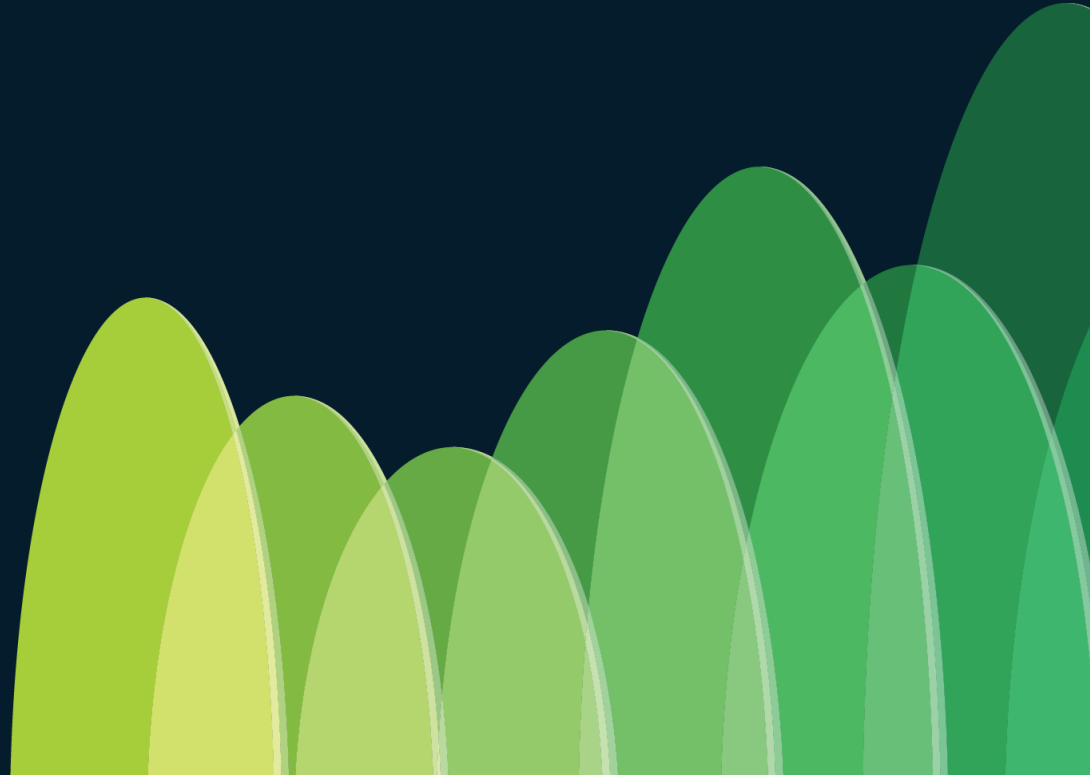
Webex spaces will be moderated by the speaker until February 28, 2025.



Agenda

- Introduction & Positioning
 - Silicon One
 - Portfolio
 - Scale
 - Life of a Packet
- Cisco 8000 Optics
 - Power Optimization
 - 800G
 - Software Options
 - Conclusion

Introduction & Positioning

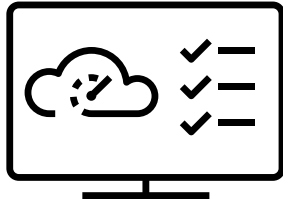


8000 Value Proposition

- 400G & 800G Optimized *
- Powered by Silicon One
- Runs IOS XR and 3rd party NOS
- Fixed, Centralized, Distributed
- Power Efficient

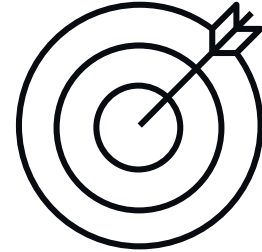


Cisco 8000 Routers Positioning



Key Features

- 3.2 Tbps up to ~518 Tbps
- 400G & 800G Optimized, with support for 100G
- IP + Optical(ROn) capabilities with 400G/800G ZR/ZR+/Bright ZR+
- New Silicon One architecture: longevity, trade off bandwidth, scale, cost & power.

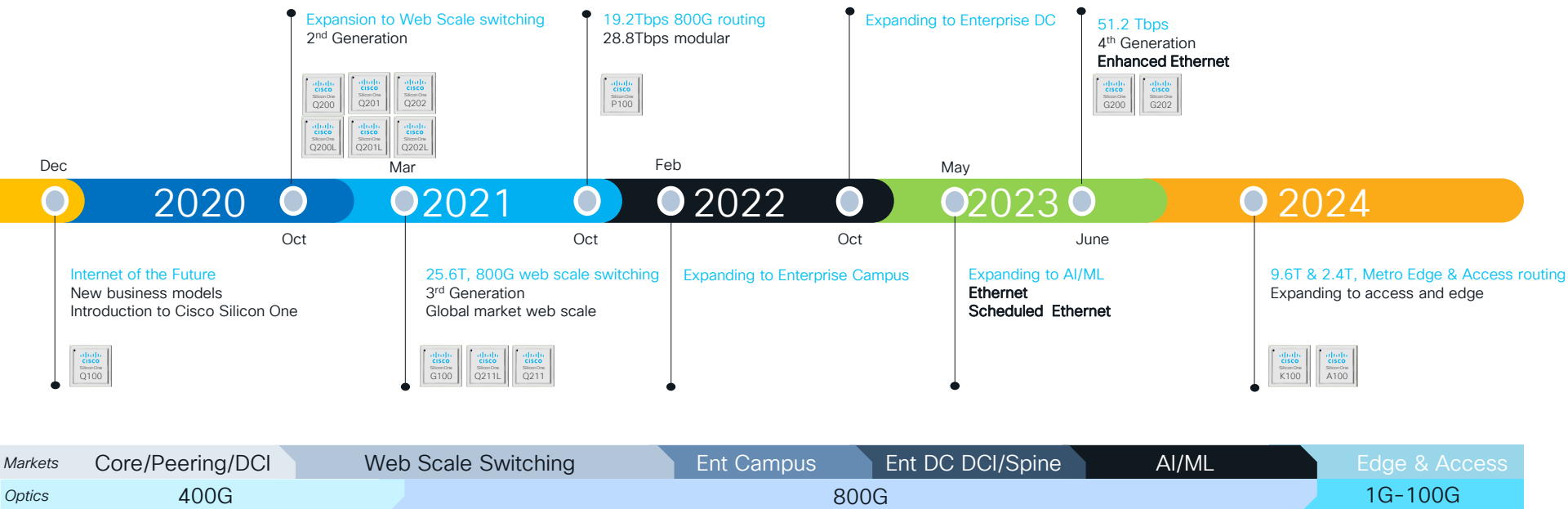


Target Use Cases

- Core LSR
- Cloud Aggregation
- Routed DC ToR/Leaf
- SP Aggregation
- Peering
- Finally getting 'edgy' Metro Edge and Access

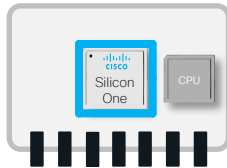
Cisco Silicon One

Expanding over time



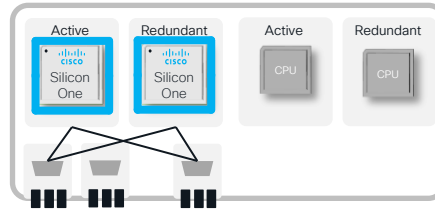
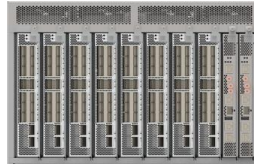
Enabled System Architectures

Fixed



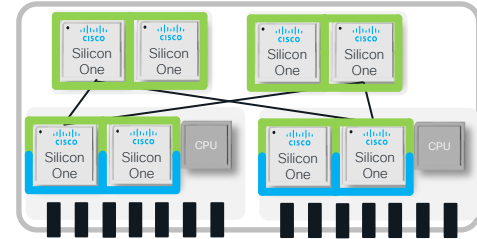
Standalone

Centralized



Standalone

Distributed



Fabric Element +
Linecard

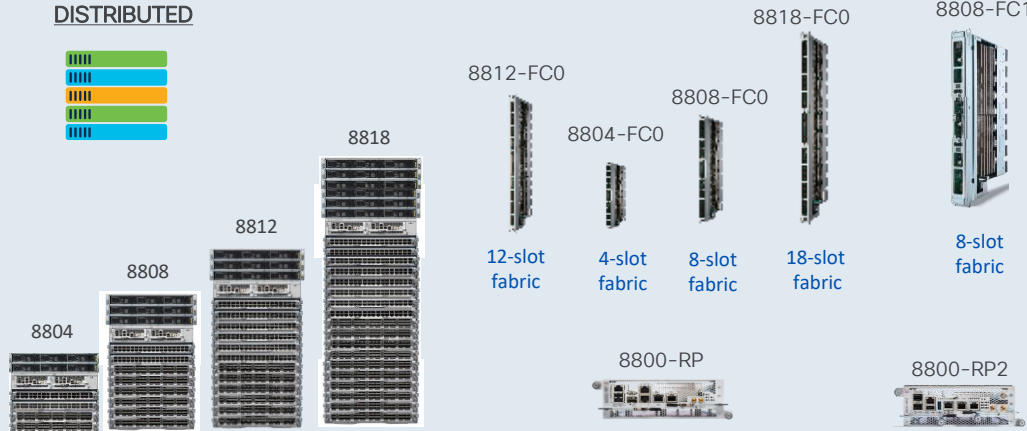
Cisco 8000 Hardware

ASIC Q100

ASIC Q200

ASIC P100

DISTRIBUTED



88-LC1-36EH

28.8T; 36x QDD-800

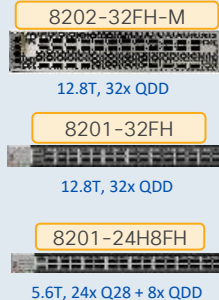
88-LC1-12TH24FH-E

12T; 24x QDD, 12x QSFP28-DD

88-LC1-52Y8H-EM

3.7T; 52x SFP28, 12x Q28, 4x QDD

FIXED



8212-48FH-M

2RU, 19.2T

8711-32FH-M

1RU, 12.8T

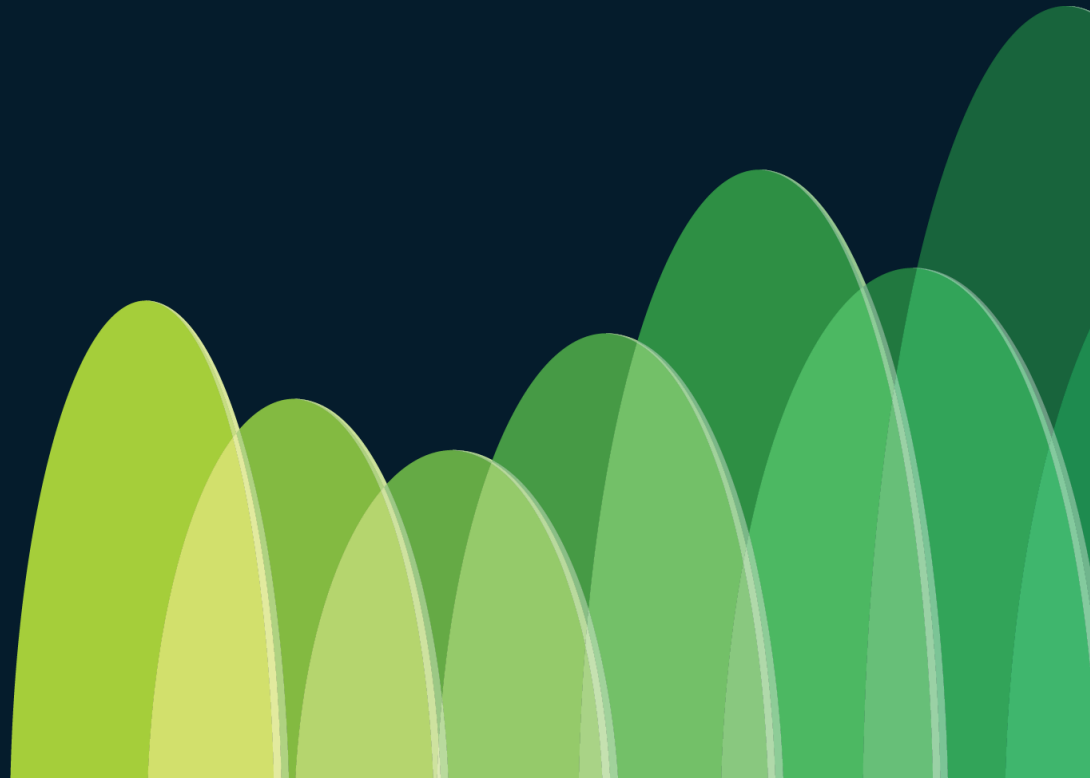
CENTRALIZED



8608-SYS

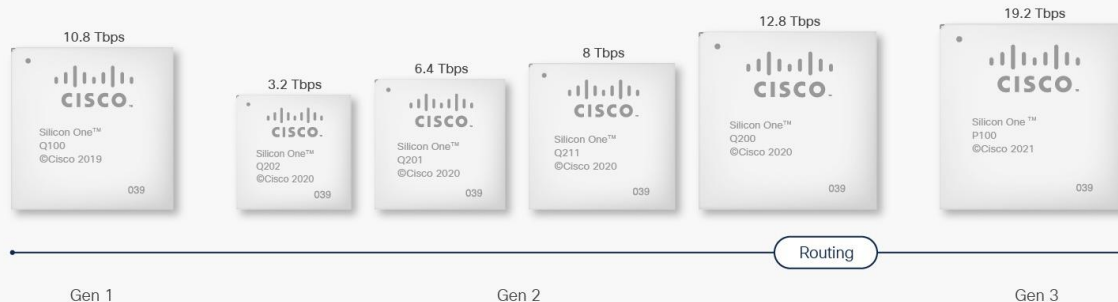
12.8T, 8x MPA each 1.6T

Silicon One



Cisco Silicon One Family

Cisco 8100 Series (w/o HBM)



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Cisco 8800/8600/8200/8700 Series (w/HBM)

BRKSPG-2944

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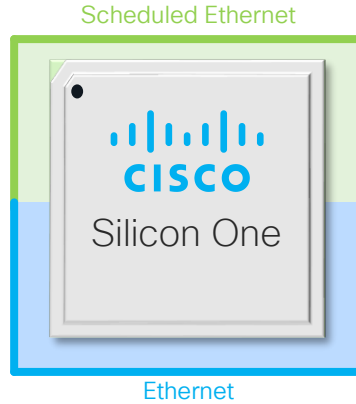
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Cisco Silicon One - Modes of Operation

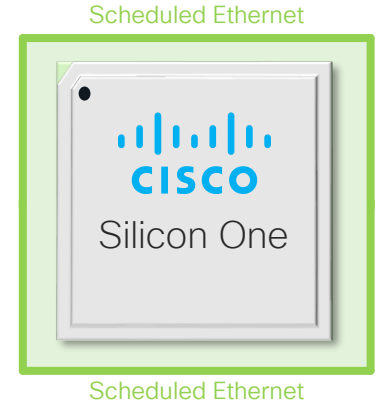
Standalone (SA)



Linecard (LC)



Fabric Element (FE)

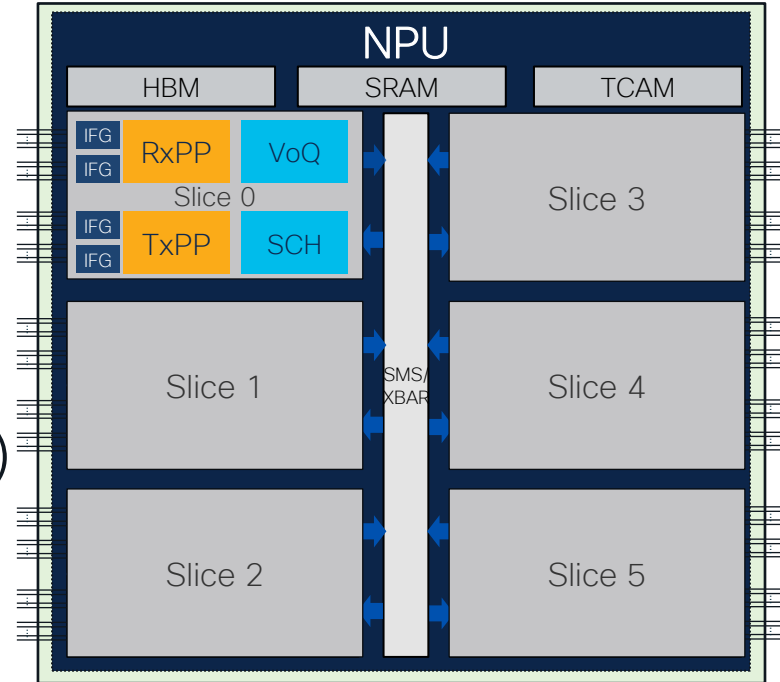


Device	Generation	Mode(s)
P100	3 rd	LC, SA
Q200	2 nd	LC, SA, FE
Q100	1 st	LC, SA, FE
Q211	2 nd	SA
Q201	2 nd	SA
Q202	2 nd	SA

Device	Generation	Mode(s)
G200	4 th	SA
G202	4 th	SA
G100	3 rd	SA, FE
Q200L	2 nd	LC, SA, FE
Q100L	1 st	LC, SA, FE
Q211L	2 nd	SA
Q201L	2 nd	SA
Q202L	2 nd	SA

Cisco Silicon One Q200

- 12.8 Tbps capacity, 8.1 Bpps
- 256 x 56G SerDes
 - 6 slices per Q200
 - 2 Interface Groups (IFG) per slice
- 108MB shared on-die packet buffer
- Expandable packet buffer to HBM (8GB)

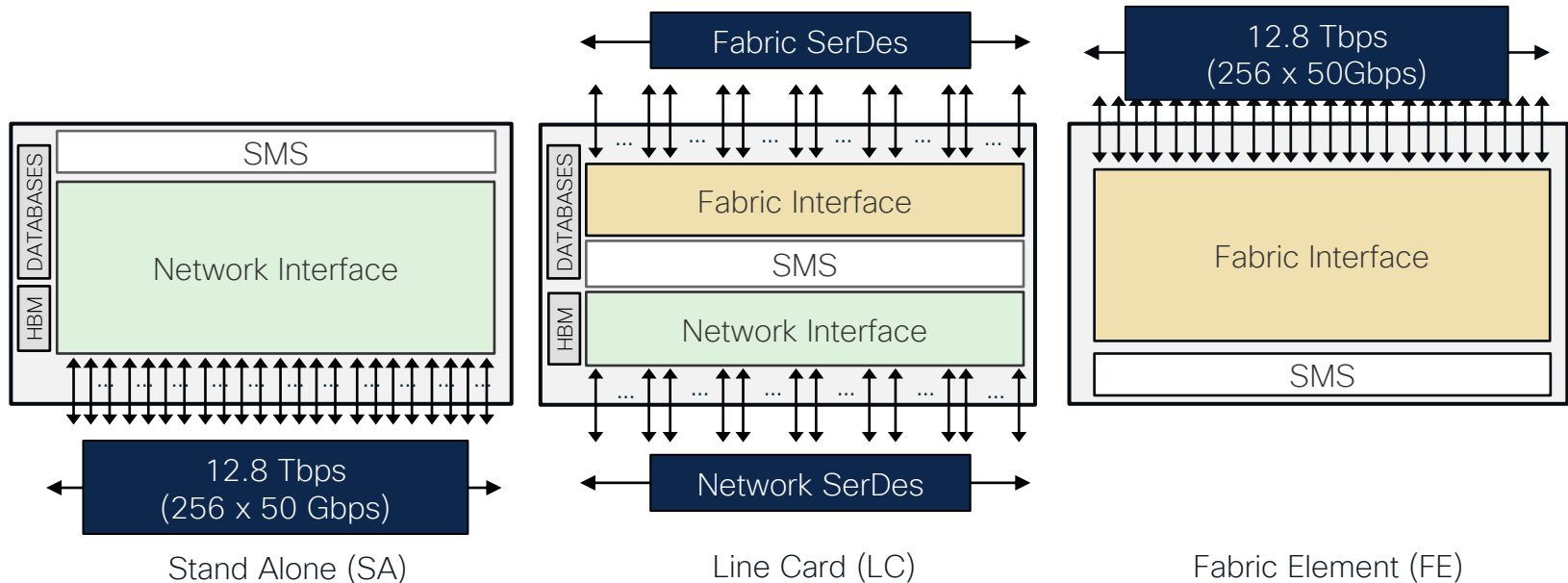


Cisco Silicon One Q200

Cisco Silicon One Q200

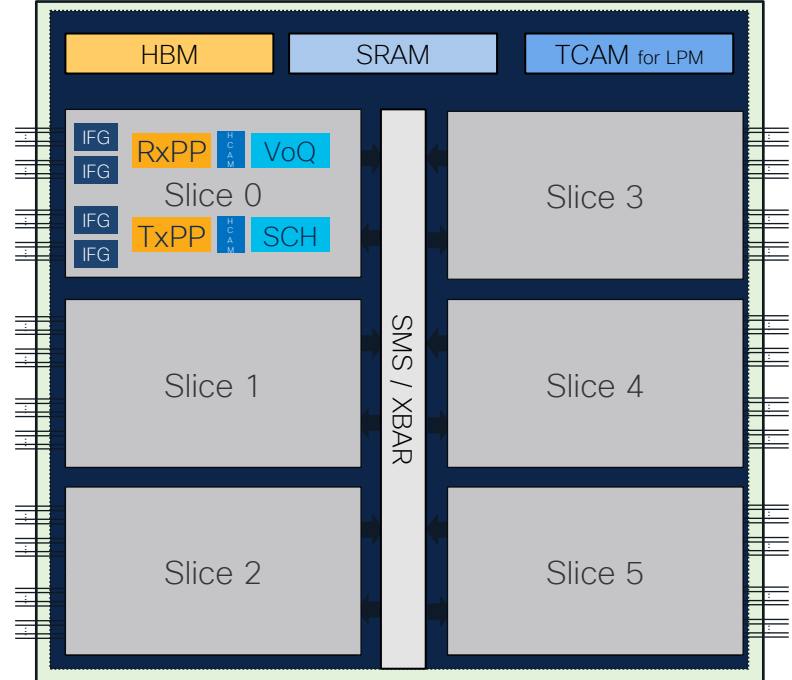
Mode of Operation

Cisco Silicon One with 3 modes



Cisco Silicon One P100

- 19.2 Tbps Cisco Silicon One P100
 - 6 slices per P100
 - 2 Interface Groups (IFG) per slice
- 100G SerDes
- Large on-die packet buffer
- Expandable packet buffer to HBM (8GB)

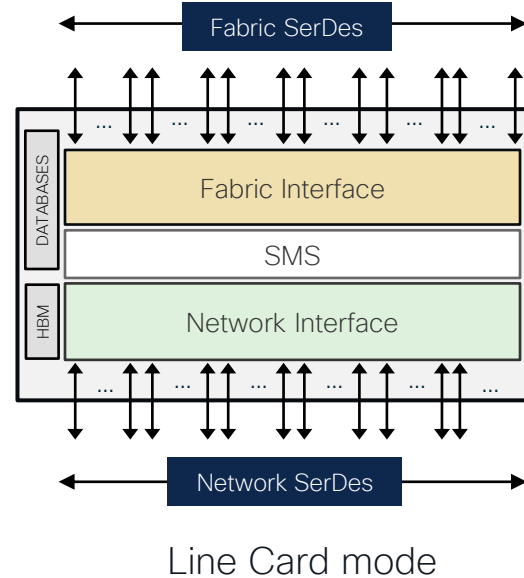
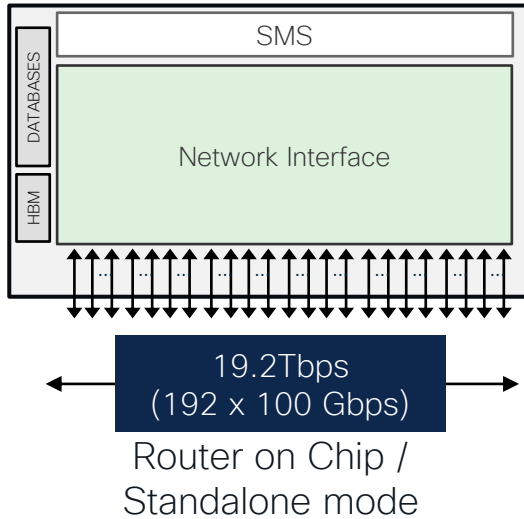


Cisco Silicon One P100

Cisco Silicon One P100

Mode of Operation

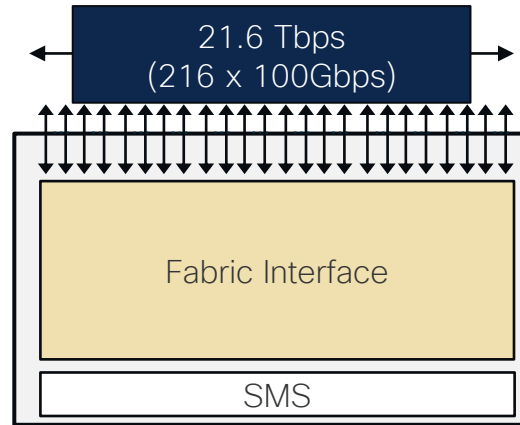
Cisco Silicon One with 2 modes



Cisco Silicon One F100

Mode of Operation

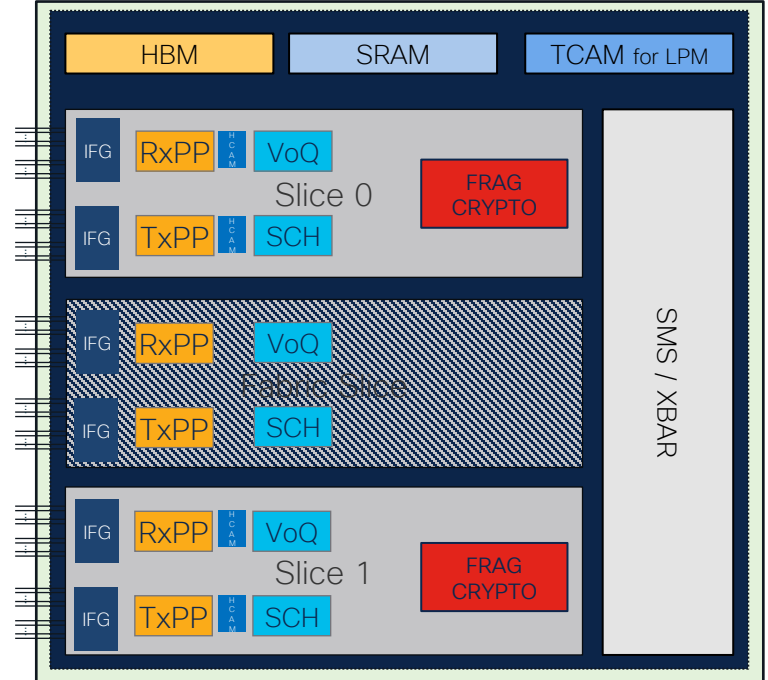
Cisco Silicon One with 1 mode



Fabric Element (FE)

Cisco Silicon One K100 – “getting edgy”

- 192 x 56G SerDes
 - 9.6Tbps (LC) or 6.4Tbps (SA)
- 3 x 3.2Tbps slices per K100
 - 2 x Network + 1 x Fabric
 - 2 Interface Groups (IFG) per slice
 - 1 crypto engine per slice (MACsec)
- 64 MB on-die packet buffer
- 8 GB HBM memory
 - Buffer expansion
 - FIB expansion

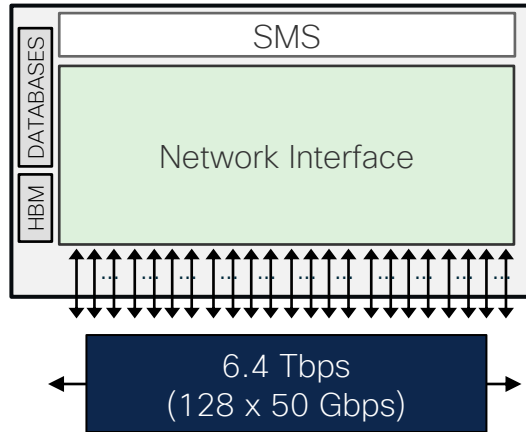


Cisco Silicon One K100

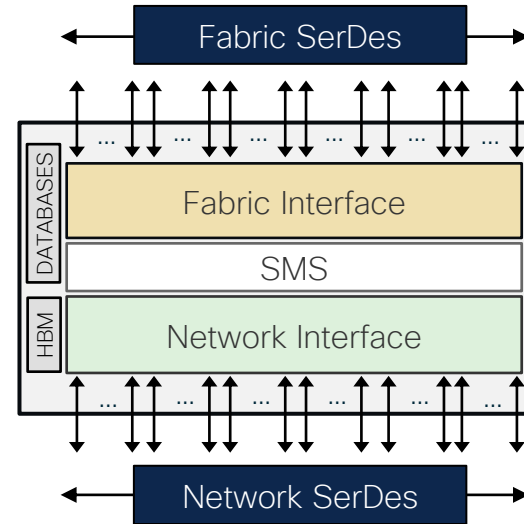
Cisco Silicon One K100

Mode of Operation

Cisco Silicon One with 2 modes



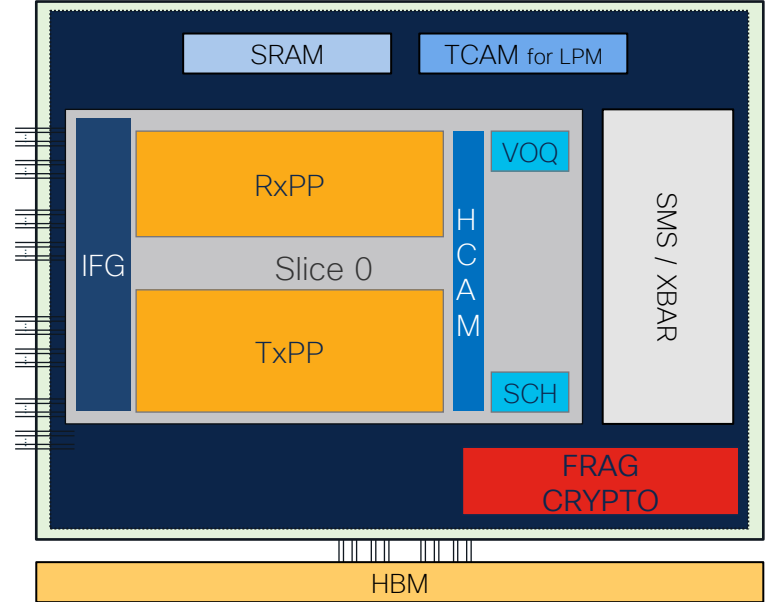
Stand Alone (SA)



Line Card (LC)

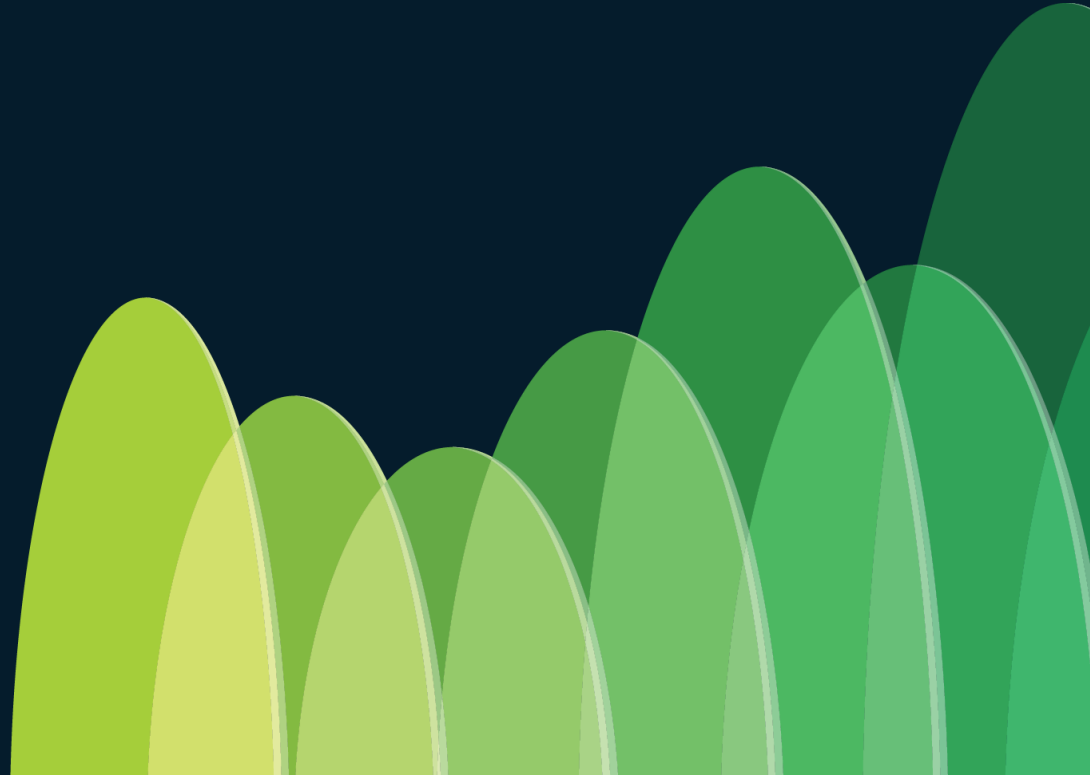
Cisco Silicon One A100

- 16nm, 48 x 56G SerDes
 - Single slice, single IFG
- 1.2Tbps / 480Mpps
- 1 crypto engine (IPSec capable)
- 18 MB on-die packet buffer
- External 4 GB HBM memory
 - Buffer expansion, FIB expansion
- Optimized for Access



Cisco Silicon One A100

Portfolio Fixed Systems



8100 Hardware Reference

	8111-32EH	8101-32FH	8102-64H	8101-32H
Bandwidth	25.6T	12.8T	6.4T	3.2T
ASIC	G100	Q200L	Q201L	Q202L
QSFP28	-	-	64	32
QSFP56-DD (400G)	-	32	-	-
QSFP-DD800	32	-	-	-
Depth	23.6" / 600mm	23.6" / 600mm	20.1" / 511 mm	19.3"/ 490 mm
Weight	24 lbs / 10.9 kg	31 lbs / 14.1 kg	35.5 lbs / 16.1 kg	22.7 lb / 10.3 kg
CPU / Memory	Intel Broadwell 4-core w/ 32 GB DRAM & 128 GB SSD		Intel Broadwell 4-core w/ 16 GB DRAM & 128 GB SSD	
Fans	6	6	3	5
Airflow	PSI	PSI / <i>PSE future</i>	Either	Either
Typical/Max power	400/TBDW	288/675W	256/400W	172/300W

8200 Hardware Reference

	8212-48FH-M	8201-32FH	8202-32FH-M	8201-24H8FH	8201	8202
Bandwidth	19.2 Tbps	12.8 Tbps	12.8 Tbps	5.6Tbps	10.8 Tbps	10.8 Tbps
ASIC	P100	Q200	Q200	Q200	Q100	Q100
QSFP28	0	0	0	24	12	60
QSFP56-DD (400G)	48 (MACsec)	32	32 (MACsec)	8	24	12
Depth	23.6" / 600mm	23.6" / 600mm	23.6" / 600mm	23.6" / 600mm	20.1" / 511 mm	20.1" / 511 mm
Weight	42 lb / 19 kg	31 lb / 14.1 kg	42 lb / 19kg	31 lb / 14.1 kg	24 lb / 10.9 kg	42 lbs / 19 kg
CPU / Memory	Intel Broadwell 6-core with 64 GB DRAM & 128 GB SSD	Intel Broadwell 4-core with 32 GB DRAM & 128 GB SSD				
Fans	4	6	4	6	5	3
Airflow	PSI	Either	PSI / PSE future	Either	Either	Either
Typical/Max power	TBD	288/675W	700/1550W	200/525W	415/660W	700/1150W

8212-48FH-M

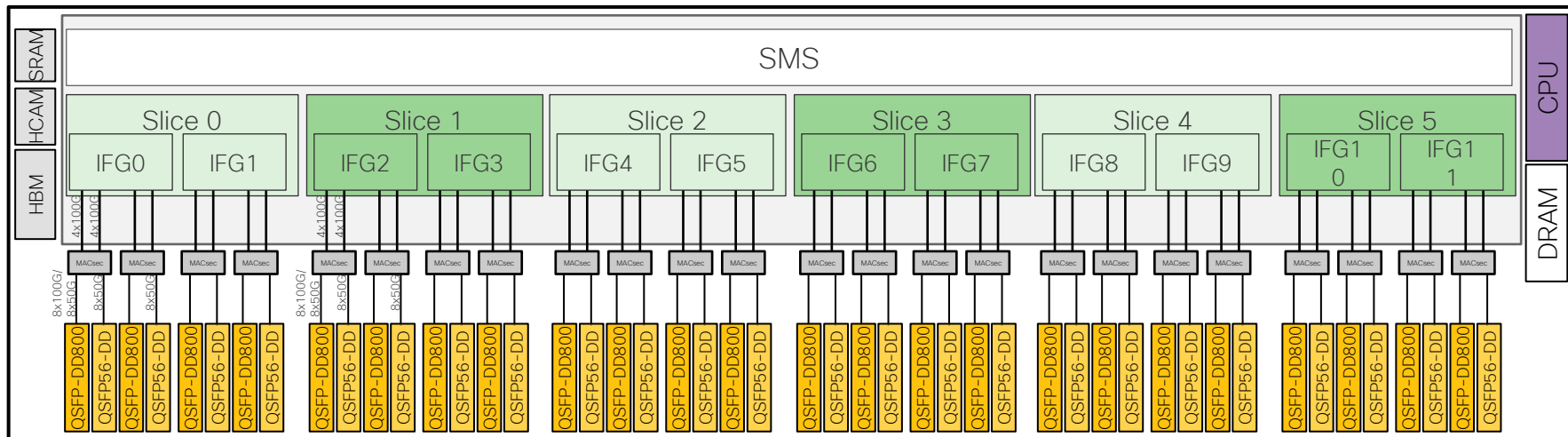


- 2 RU Fixed System, 24x QSFP-DD800
 - Total 48x QSFP-DD optics
- Cisco Silicon One P100
- ZR/ZR+/Bright ZR+ support on all ports
- MACsec on all ports





8212-48FH-M Architecture



- All 800G ports breakout capable to 2x 400 GbE, 8x100 GbE, 4x100 GbE, 2x 100 GbE or 4x 10/25 GbE
- All 400G ports breakout capable to 4x100 GbE, 2x 100 GbE or 4x 10/25 GbE

8711-32FH-M

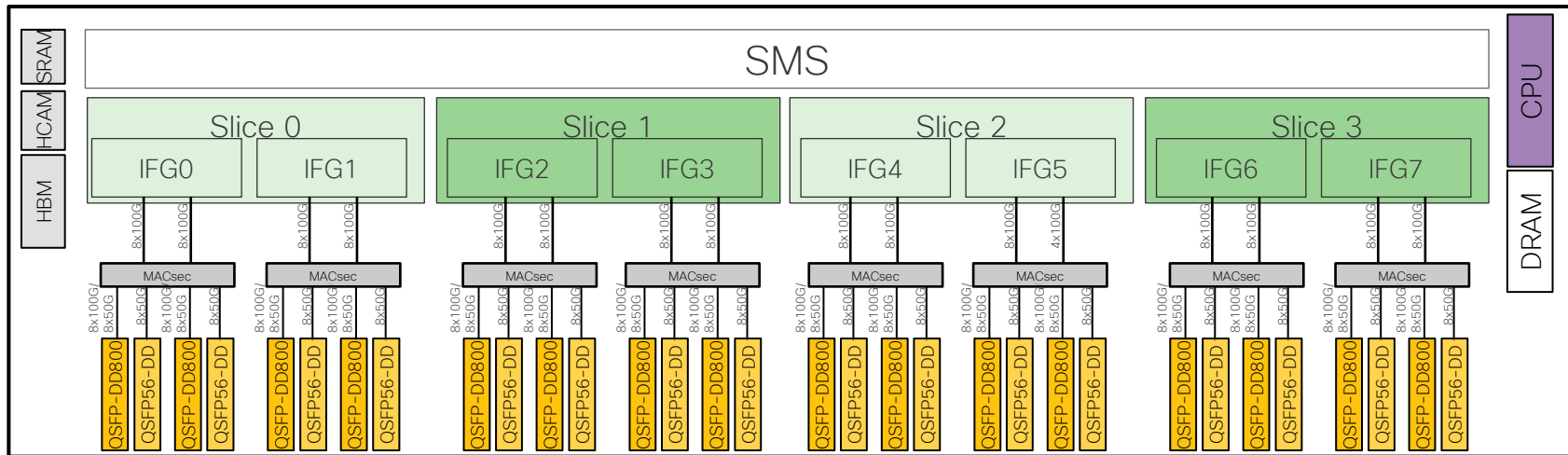


- 1 RU Fixed System, 16x QSFP-DD800
 - Total 32x QSFP-DD optics
- Cisco Silicon One P100
- ZR/ZR+/Bright ZR+ support on all even (top row) ports
- MACsec on all ports





8711-32FH-M Architecture



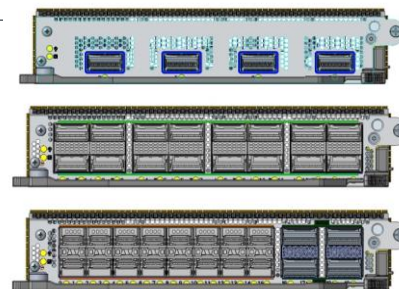
- All 800G ports breakout capable to 2x 400 GbE, 8x100 GbE, 4x100 GbE, 2x 100 GbE or 4x 10/25 GbE
- All 400G ports breakout capable to 4x100 GbE, 2x 100 GbE or 4x 10/25 GbE

Cisco 8712-MOD-M



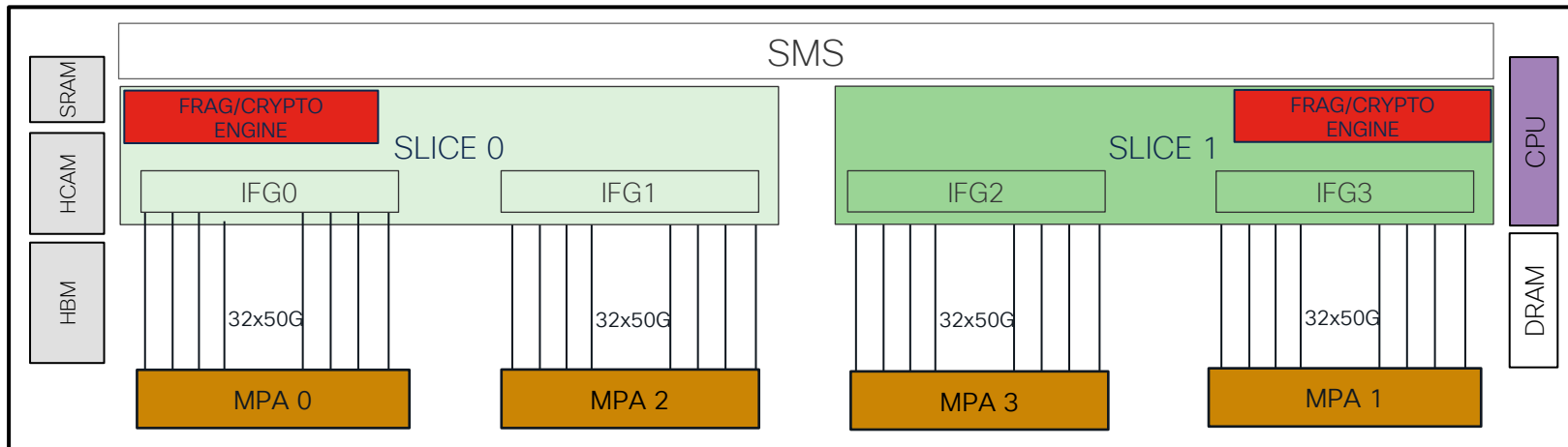
8712-MOD-M

ASIC	K100
Rack Units	2RU
MACsec	Yes (integrated)
ZR/ZR+/Bright ZR+	All 400G ports
8K-MPA-4D	4x400G
8K-MPA-16H	16x100G
8K-MPA-16Z2D	16x1/10/25/50G + 2x400G
Total Throughput	6.4Tbps





8712-MOD-M Architecture



- 4 types of MPAs with support of different port speed from 1G to 400G (1G, 10G, 25G, 40G, 50G, 100G, 400G)
- On-Chip MACsec function at line rate on all ports

8011-4G24Y4H-I

Next Generation Access

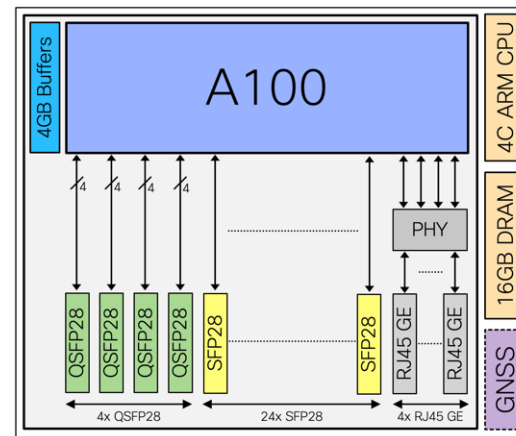
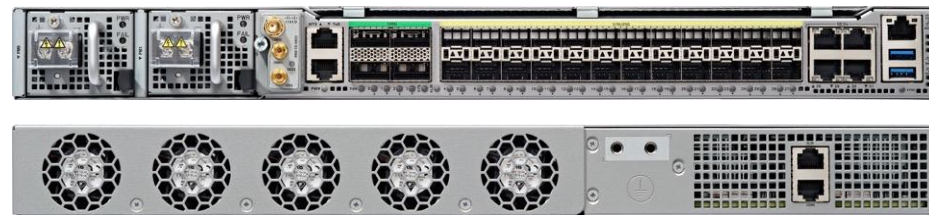
Mar 2025

25.1.1

Hardware Overview

Data Plane	1x A100 NPU 1.2T 480Mpps (16nm) 4GB DDR5 external packet buffer
Control Plane	4 core ARM CPU 2.2GHz 16GB DRAM / 32GB eMMC
Port Configuration	4x QSFP28 40/100GE 24x SFP28 1/10/25GE 4x 1GE RJ45 10/100/1000ME
Management Ports	Front: 1G Ethernet OoB management, USB console, USB memory Back: serial console/aux, alarm
Timing Capabilities	SyncE + PTP G.8273.2 class C all ports/speeds Ports: 10MHz, 1PPS, ToD, BITS Optional: u-blox F9 PRTC-B GNSS module with antenna port
Product Capabilities	MACsec* line rate on all ports/speeds 200G crypto engine (IPsec*) 1G auto negotiation on all ports
Power and Cooling	I-Temp: -40°C to +65°C at 300m 2x modular DC or AC PSUs (1+1 redundancy) 5 redundant fixed fans Front to back airflow
Power Consumption	Typical 85W without optics
Dimensions	1RU Depth: 260mm

1G	10G	25G	40G	100G	400G
24+4	24	24	4	4	N/A



*post FCS

BRKSPG-2944

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Portfolio Distributed systems

Cisco 8800 Modular Routers

Portfolio



8804



8808



8812



8818

Rack Units

10 RU

16 RU

21 RU

33 RU

Slots

4

8

12

18

Ports & Line Cards



36x400G MACsec



36x400G



34x100G & 14x400G
Q200



36x800G



24x400G + 12x200G



4x400G + 8x100G + 52x50G MACsec
P100

Total Throughput

57.6 Tbps

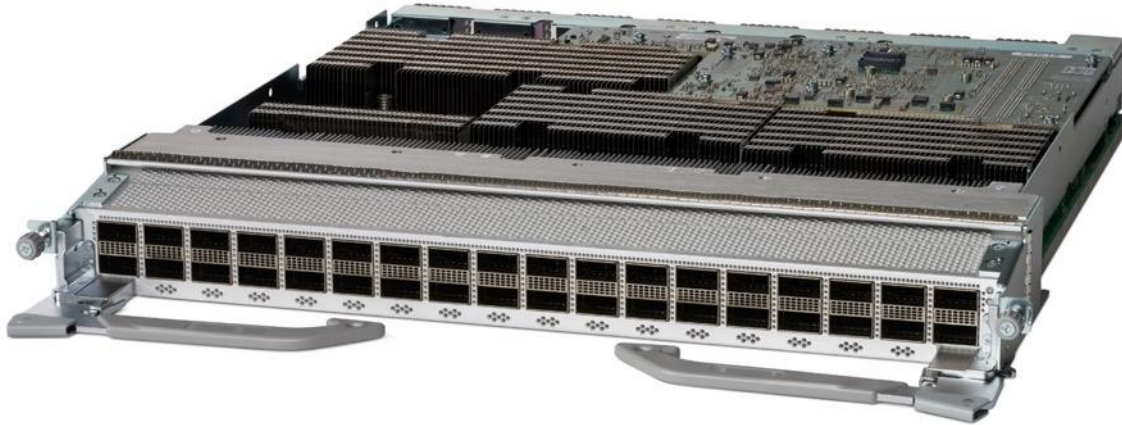
115 Tbps

172 Tbps

259.2 Tbps

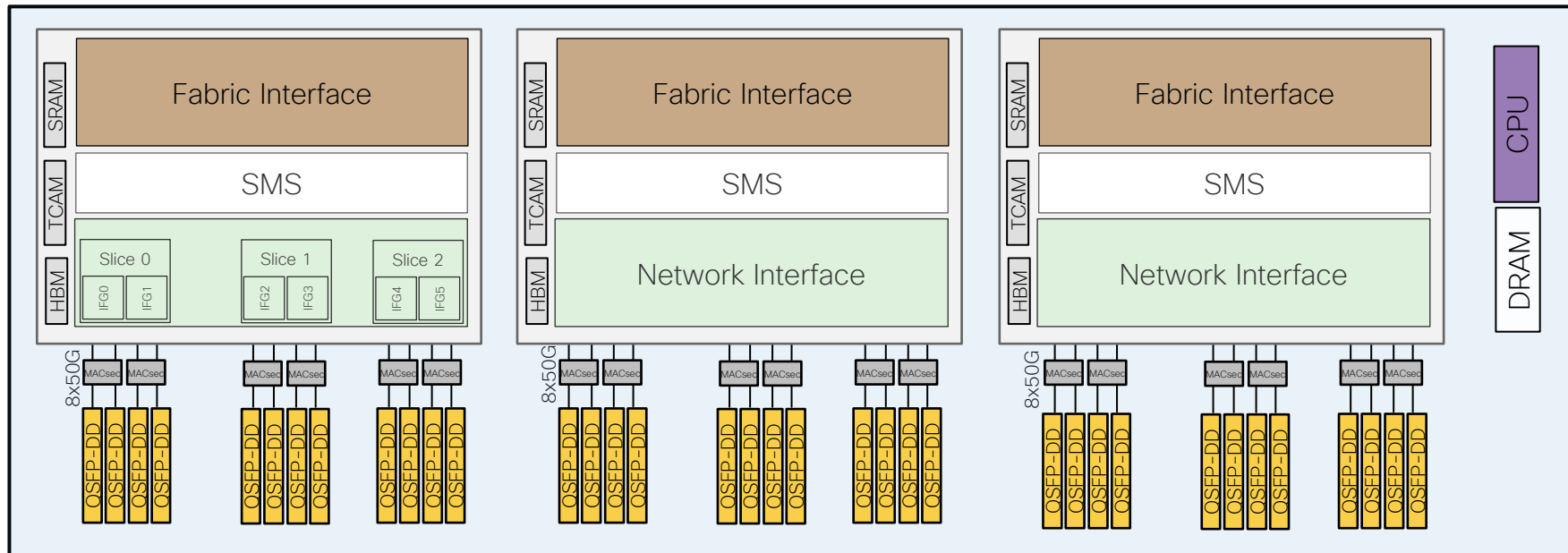
88-LC0-36FH & 88-LC0-36FH-M

- 14.4 Tbps capacity, 36 x 400G QSFP-DD
- Cisco Silicon One Q200
- MACsec support on -M variant (all ports)





88-LC0-36FH-M Architecture



- Breakout capacity:
 - 4x100 GbE or 2x 100 GbE or 4x10/25 GbE on all 400GbE ports

88-LC0-34H14FH

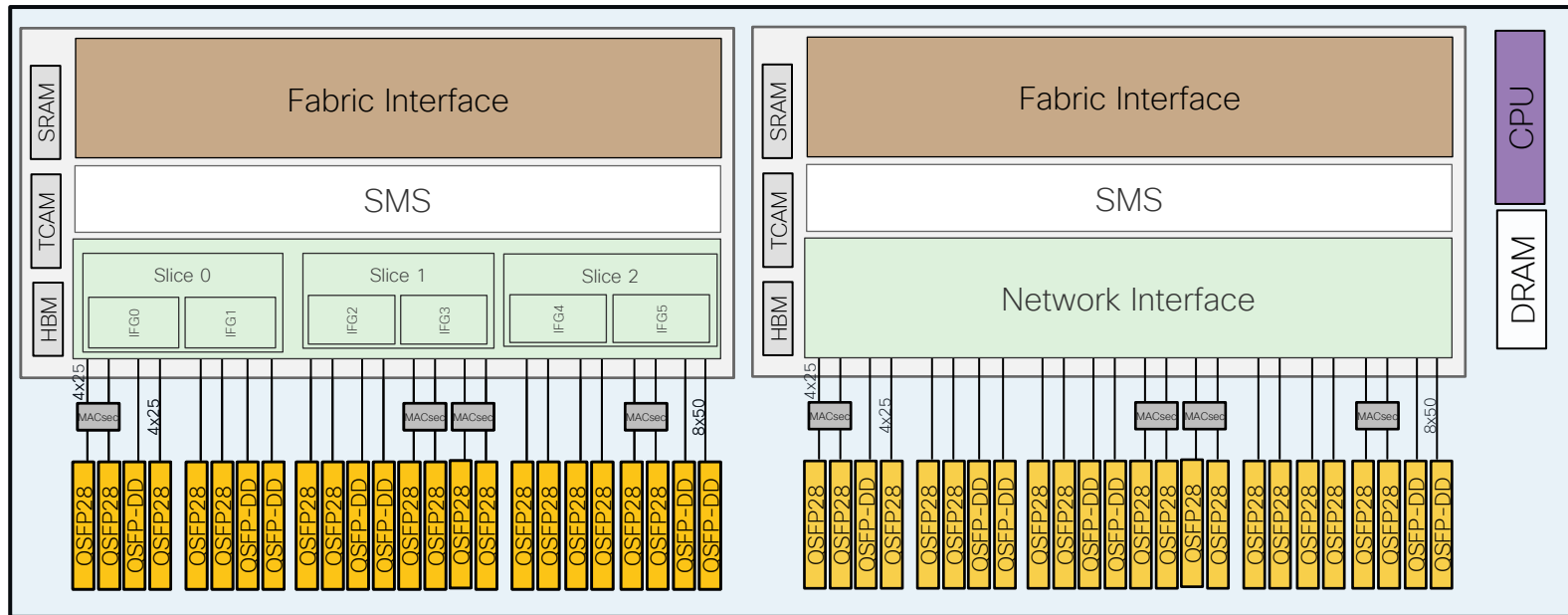
- 9 Tbps capacity, 34 x 100G QSFP + 14 x 400G QSFP-DD
 - Possible to use as low-power 48 x 100G QSFP
- Cisco Silicon One Q200
- 100G MACsec support on upper row (16 ports)



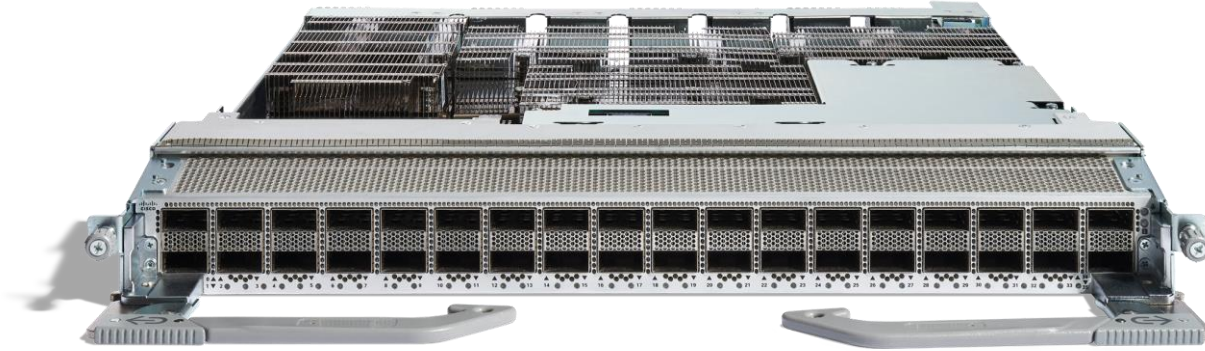


88-LC0-34H14FH Architecture

- Low power mode supports only 100G
- Medium mode required to support 400G



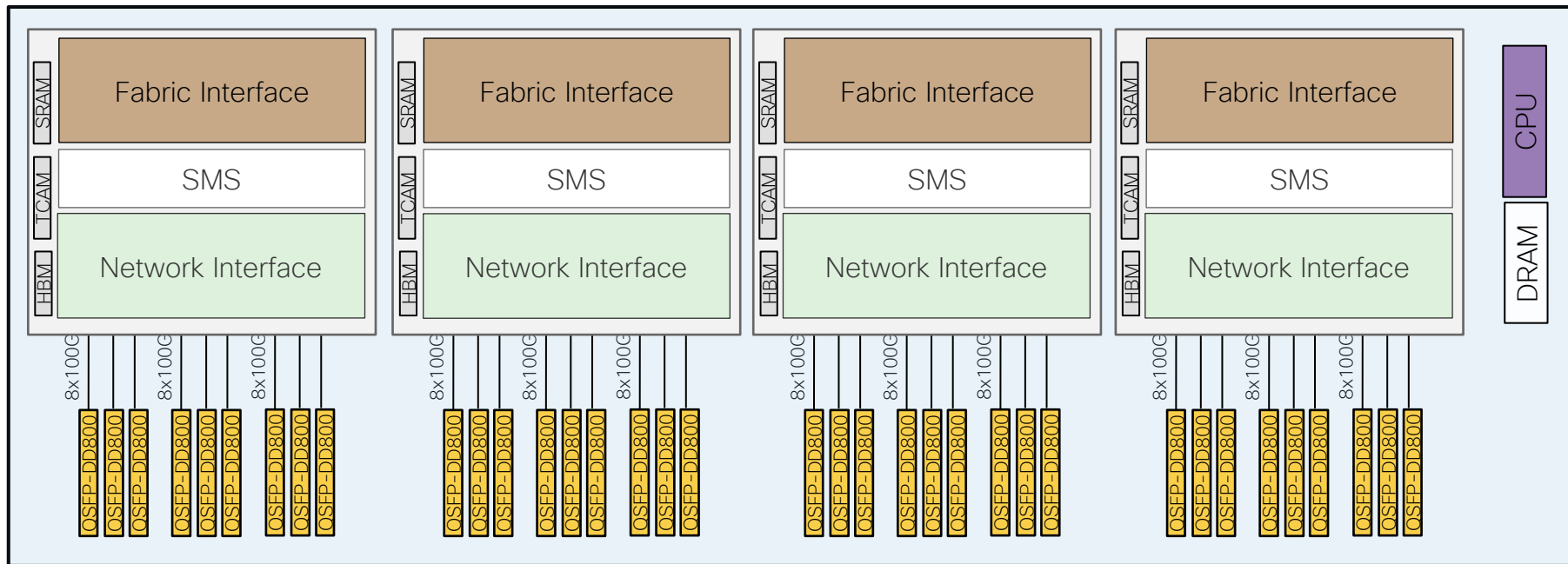
88-LC1-36EH



- 28.8 Tbps capacity, 36 x QSFP-DD800
- Cisco Silicon One P100 - Position: Core, Peering
- Requires new fabric cards and RP2
- Breakout capable to 2x400 GbE or 8x100 GbE or 4x100 GbE
- General Availability Q2 2024

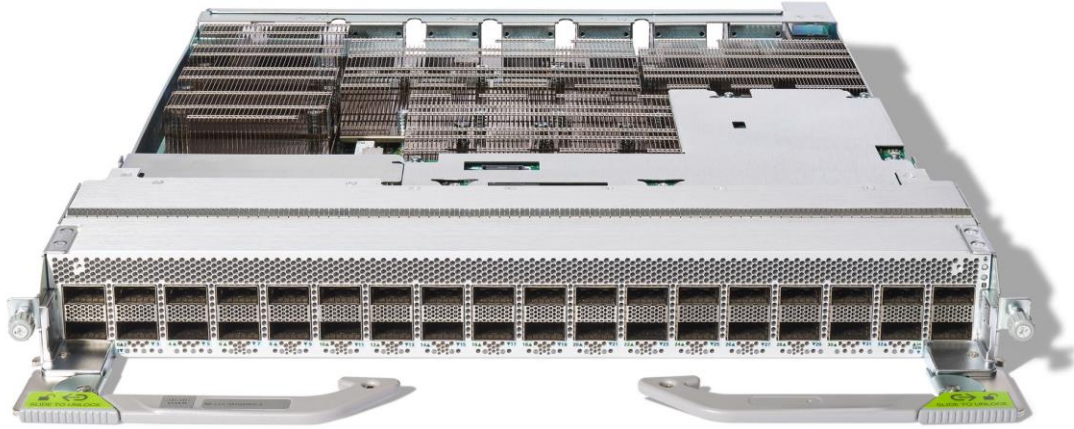


88-LC1-36EH Architecture



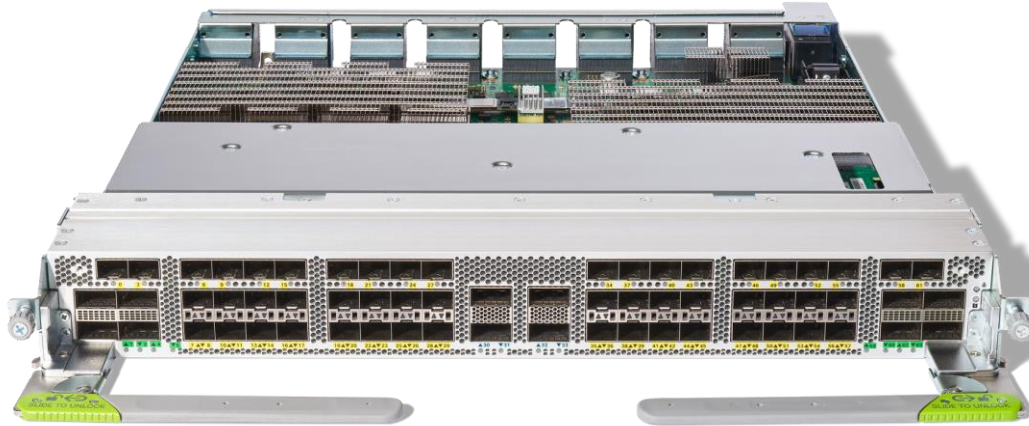
- Breakout capable to 2x400 GbE or 8x100 GbE or 4x100 GbE
- Other options in roadmap

88-LC1-12TH24FH-E



- 12 Tbps capacity, 12 x 200G + 24 x 400G QSFP-DD
- Cisco Silicon One P100
- Requires new fabric cards and RP2
 - Supported on 8804 and 8808 only
- Breakout capable to 4x100 GbE or 2x100 GbE

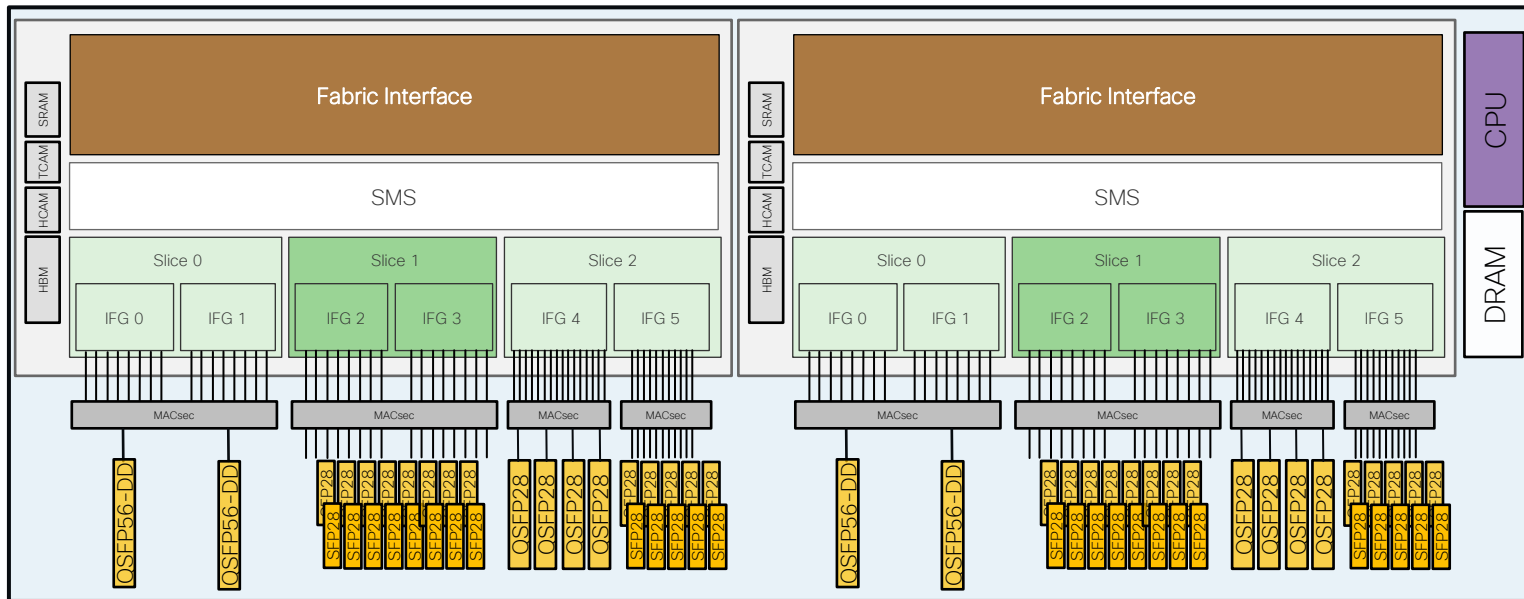
88-LC1-52Y8H-EM



- 3.7 Tbps capacity, 4 x QSFP-DD + 8 x QSFP28 + 52 x SFP28
- Cisco Silicon One P100
- MACsec on all ports
- Requires new fabric cards and RP2
 - Supported on 8804 and 8808 only
- Breakout capable to 2x400 GbE or 8x100 GbE or 4x100 GbE

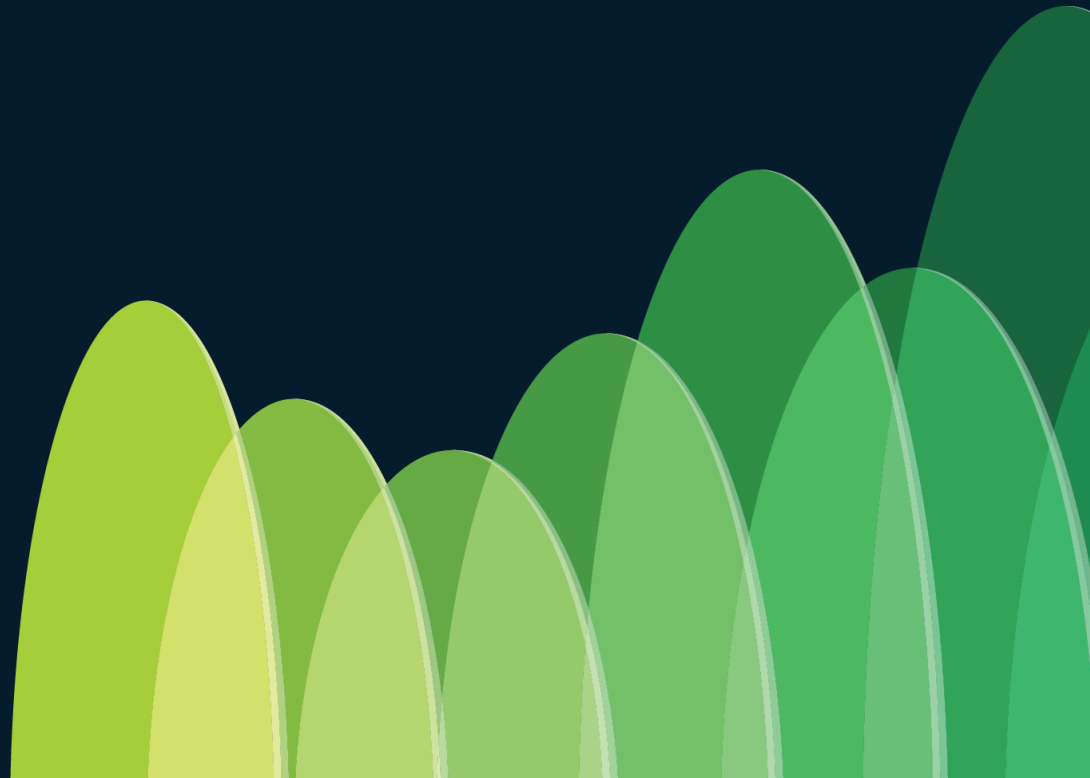


88-LC1-52Y12H-EM



*50G – pure fabric packet data

8800 Fabric



8800 Switch Fabric

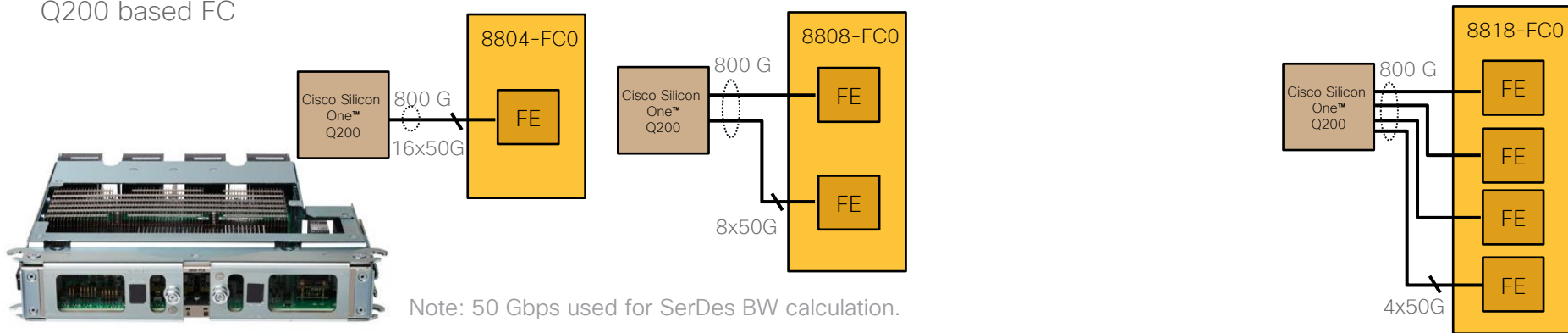
- Orthogonal direct-connect, specific to each chassis
- Up to 8 Fabric Cards between line cards and fan trays
- Cisco Silicon One ASIC in Fabric Element



Fabric Element in FC

Example for 88-LC0-36FH linecard with 8800-FC0

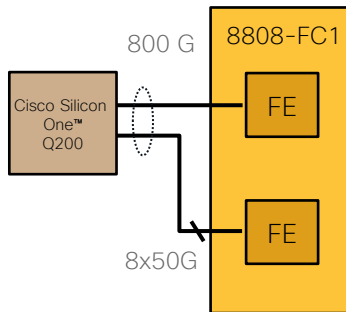
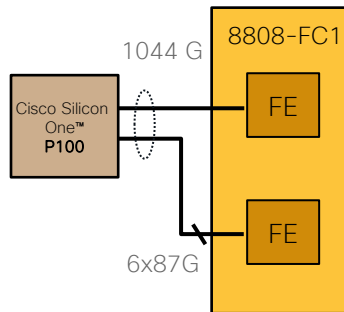
Q200 based FC



Fabric Element in FC

Example for 88-LC1-36EH & 88-LC0-36FH linecard in 8808

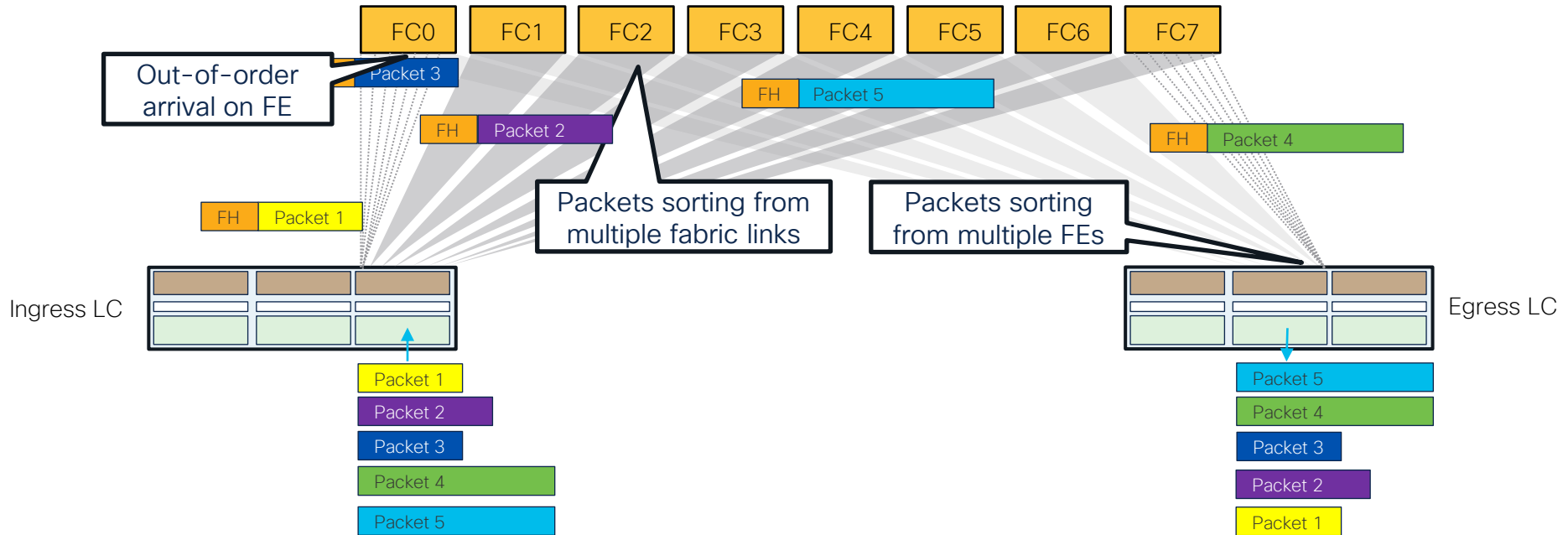
F100 based FC



Note: 50 or 87 Gbps used for SerDes BW calculation.

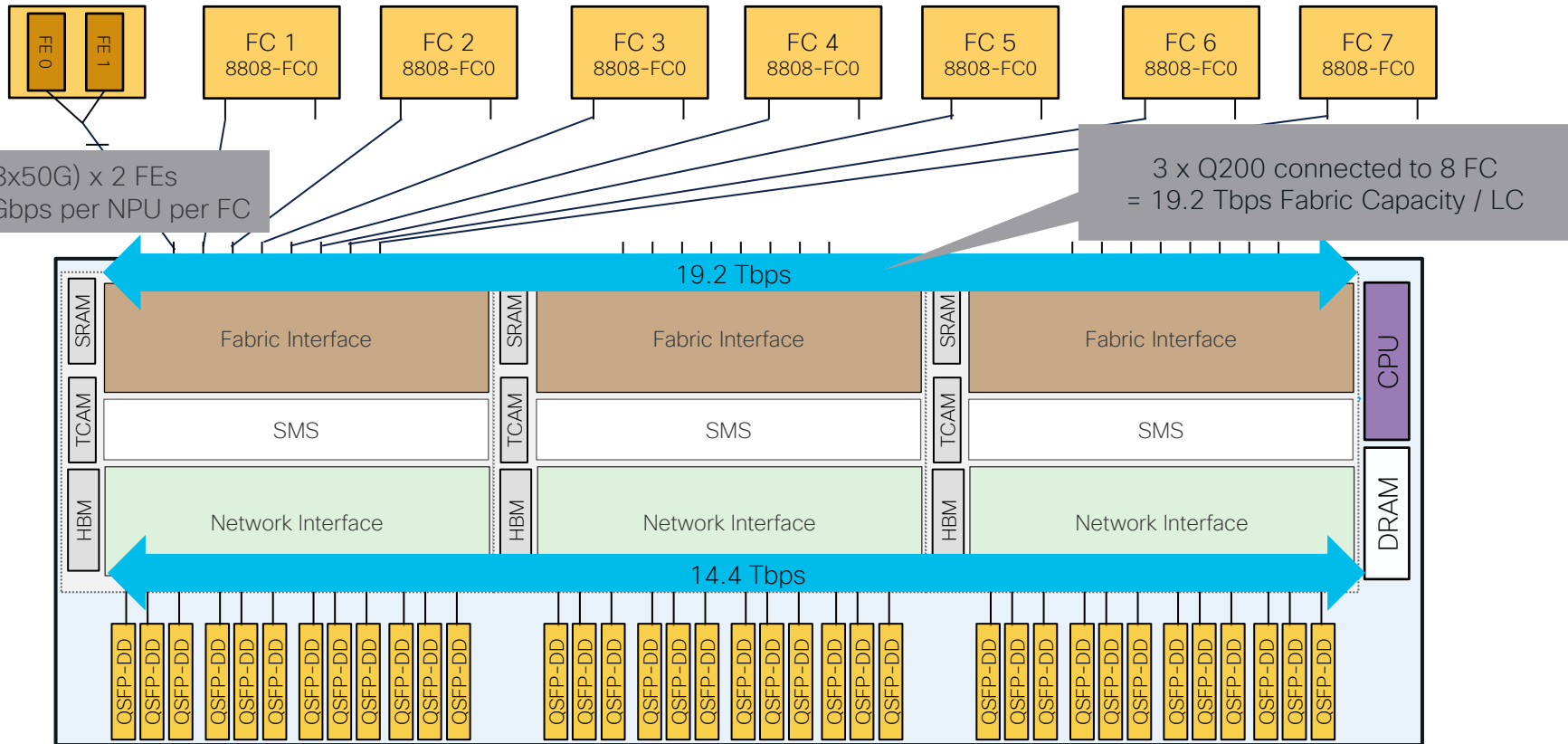
8800 Switch Fabric

- Ethernet based, spray & re-order



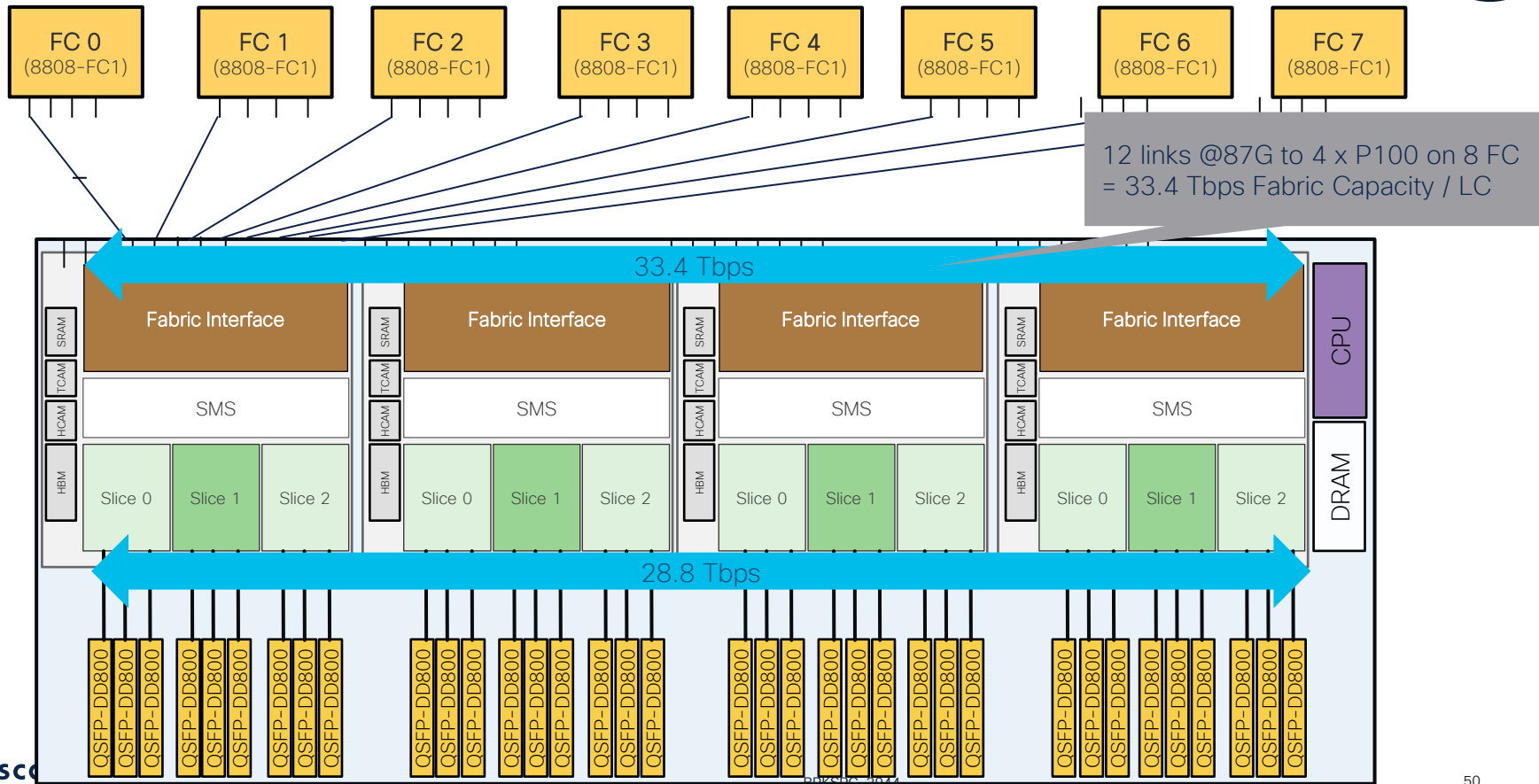
88-LC0-36FH Linecard - FC connection

8FC Mode in 8808 Chassis



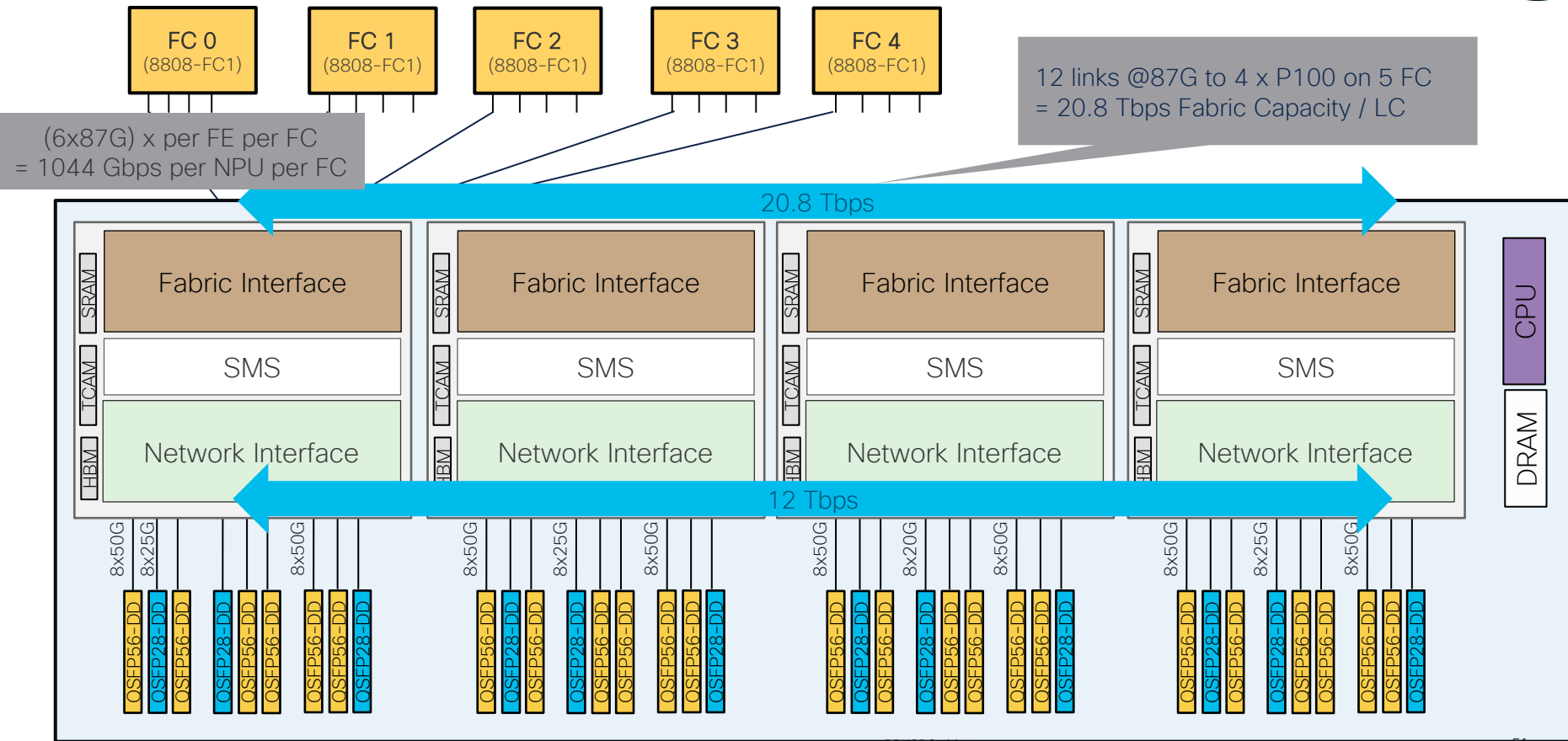
88-LC1-36EH Linecard - FC connection

8FC Mode in 8808 Chassis

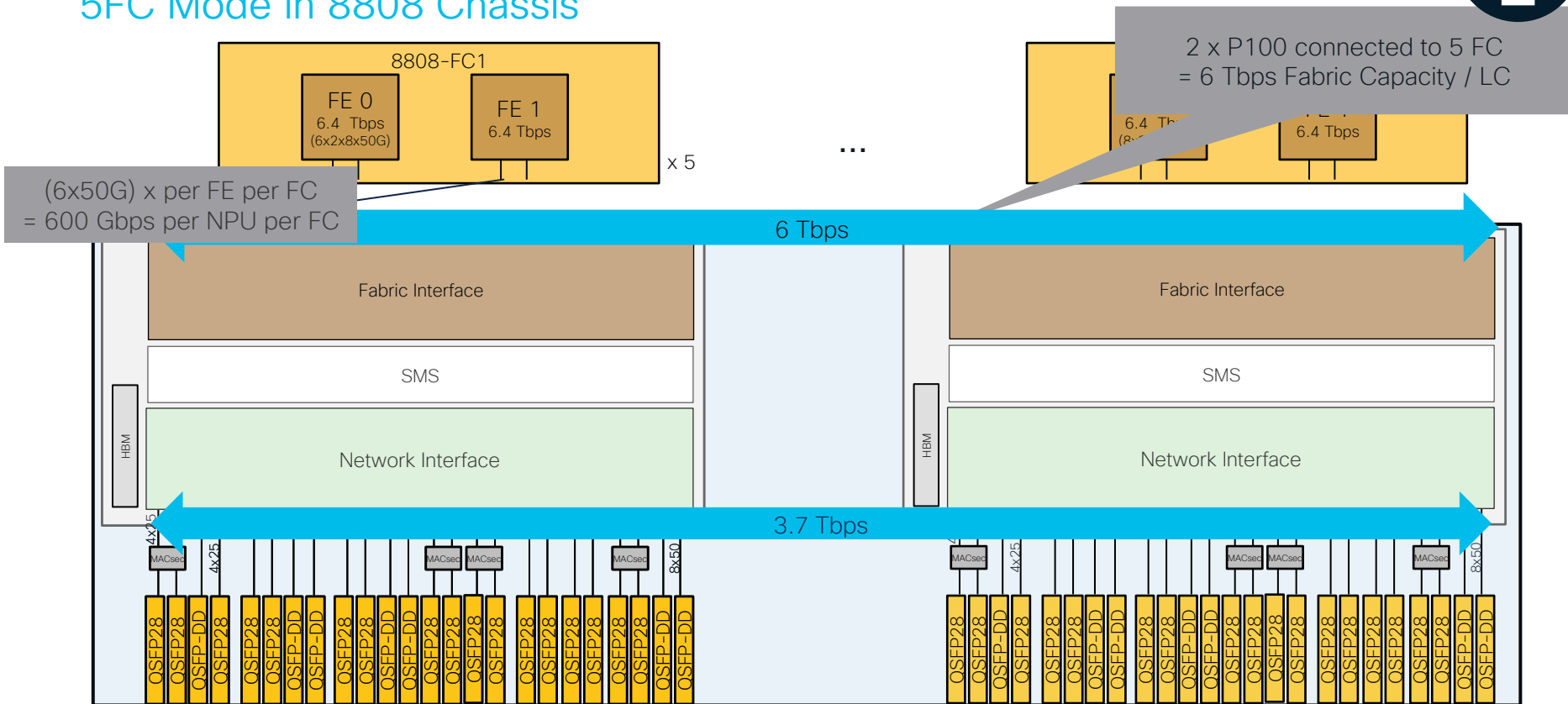


88-LC1-12TH24FH-E FC connection

5FC Mode in 8808 Chassis

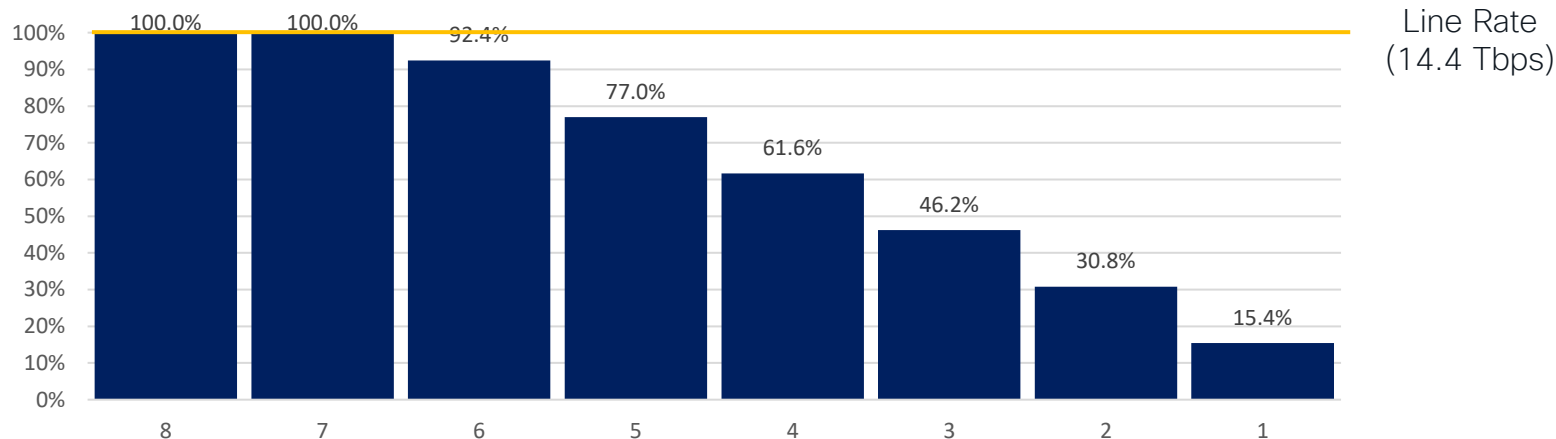


5FC Mode in 8808 Chassis



Fabric Resiliency

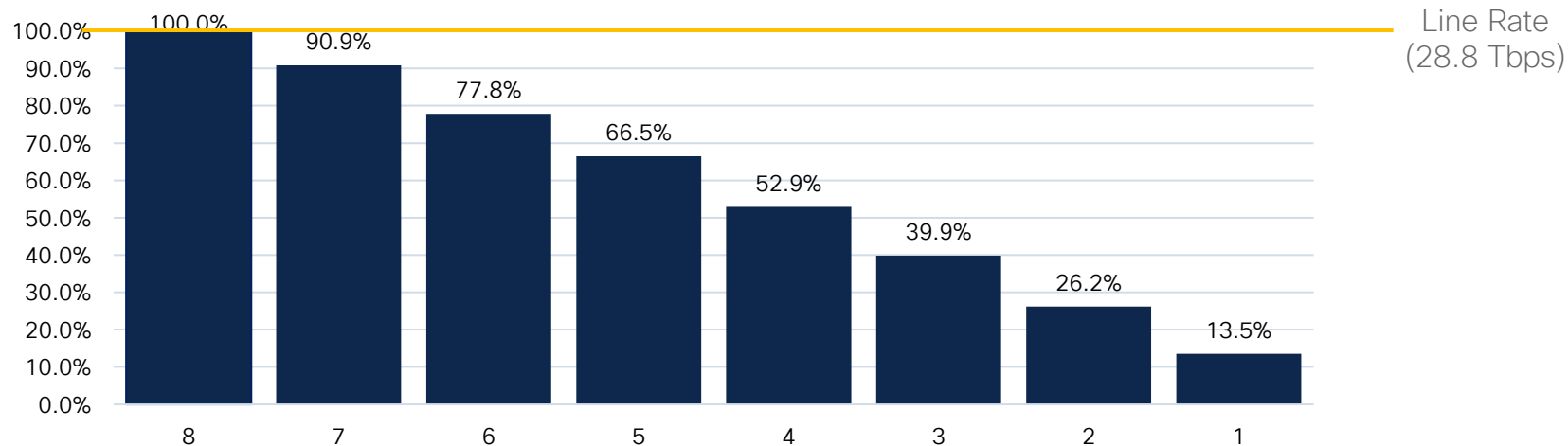
8FC Mode with Q200 LC



- 14.4 Tbps per LC
- 7+1 fabric redundancy, graceful degradation on failures
- System continues to function with only 1 plane operational

Fabric Resiliency

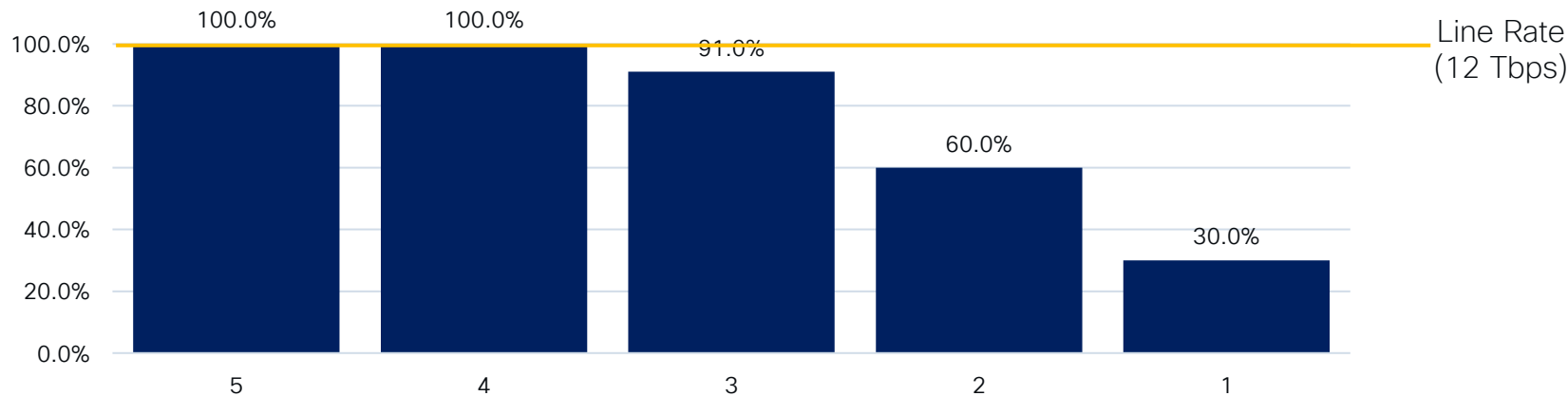
8808-FC1 with 88-LC1-36EH (P100 LC) in 8808



- 28.8 Tbps per LC
- No Fabric Redundancy, graceful degradation on failures
- System continues to function with only 1 plane operational

Fabric Resiliency

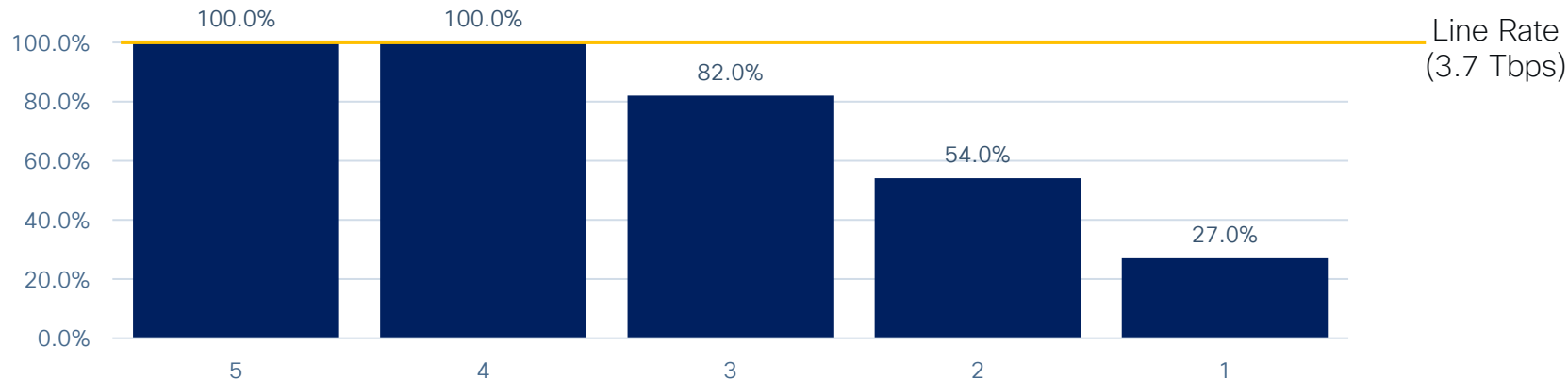
8808-FC1 with 88-LC1-12TH24FH-E (P100 LC) in 8808



- 12 Tbps per LC
- 4+1 Fabric Redundancy, graceful degradation on failures
- System continues to function with only 1 plane operational

Fabric Resiliency

8808-FC1 with 88-LC1-52Y8H-EM (P100 LC) in 8808



- 3.7Tbps per LC
- 4+1 Fabric Redundancy, graceful degradation on failures
- System continues to function with only 1 plane operational

8800 Series

8800-RP2

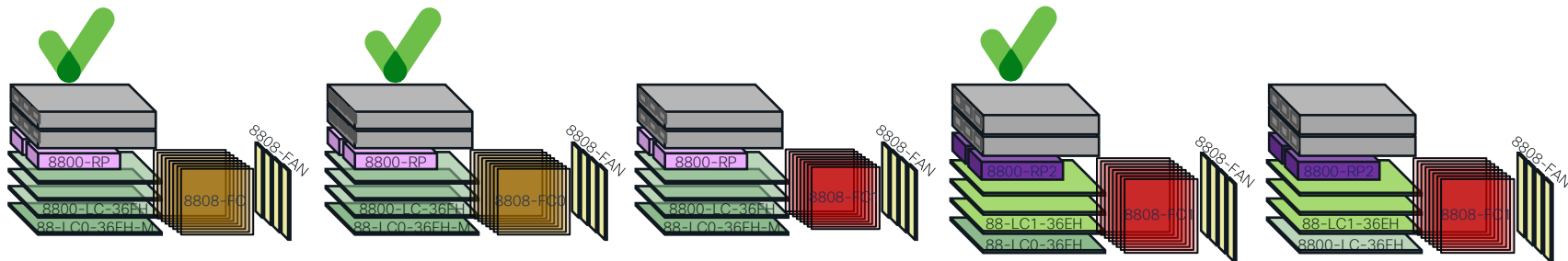
- 8-core x86 CPU @ 2.7GHz
- 64GB RAM
- 256GB NVMe
- Class C support



RP-FC-Line card compatibility Matrix

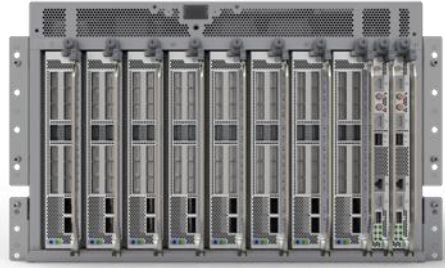
RP Type						Default NPU mode	Supported NPU mode
	Q200 FC	F100 FC	Q200 LC	P100 LC			
	8804-FC0 8808-FC0 8818-FC0	8808-FC1	88-LC0-36FH, 88-LC0-36FH-M, 88-LC0-34H14FH	88-LC1-36EH	88-LC1-12TH24FH-E 88-LC1-52Y8H-EM		
8800-RP	Yes	No	Yes	No	N/A	Q100	Q100/Q200
8800-RP2	Yes	Yes	Yes	Yes	Yes	Q200 P100 (Chosen based on FC)	Q200/P100

- 8800-RP is not supported with P100 LC with F100 FC
- Q100 LCs are not supported with 8800-RP2 with any Fabric
- Q100 FCs are not supported with 8800-RP2



Portfolio Centralized System

Cisco 8600 Centralized Router



8608



ASIC

Q200

Rack Units

7RU

MACsec

Yes

MPA

86-MPA-24Z-M

24 x 10/25/50G

86-MPA-4FH-M

4x 400GbE

86-MPA-14H2FH-M

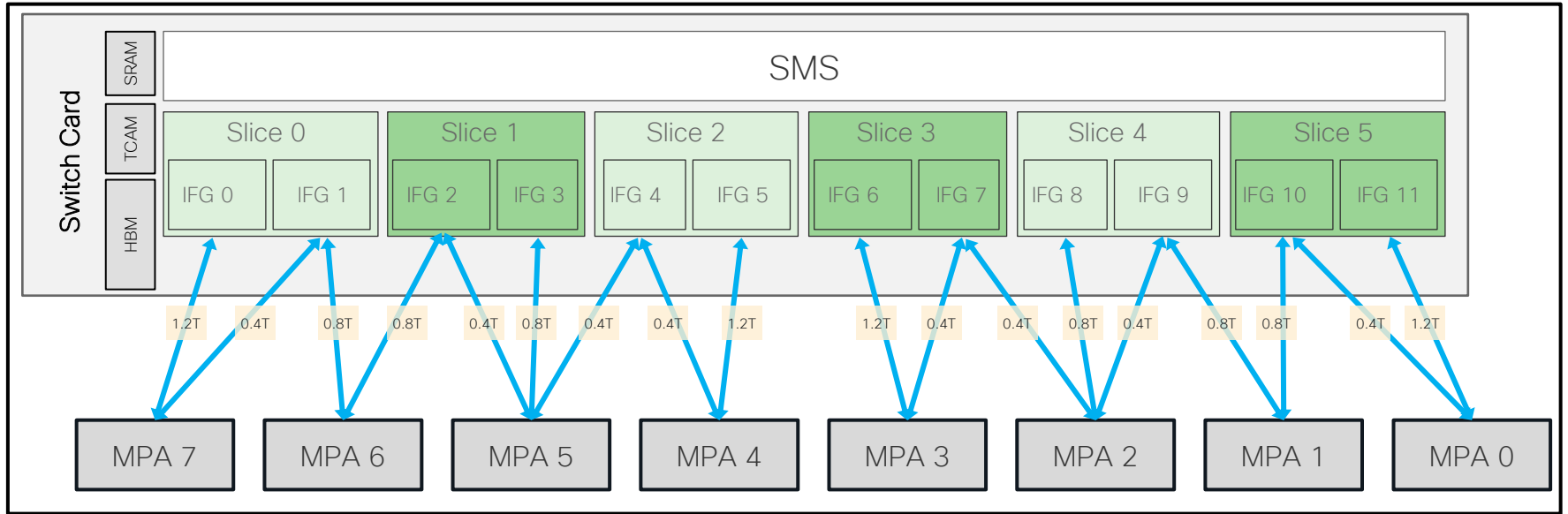
8x 100GbE+2x 400GbE / 16x 100GbE

Total Throughput

12.8Tbps

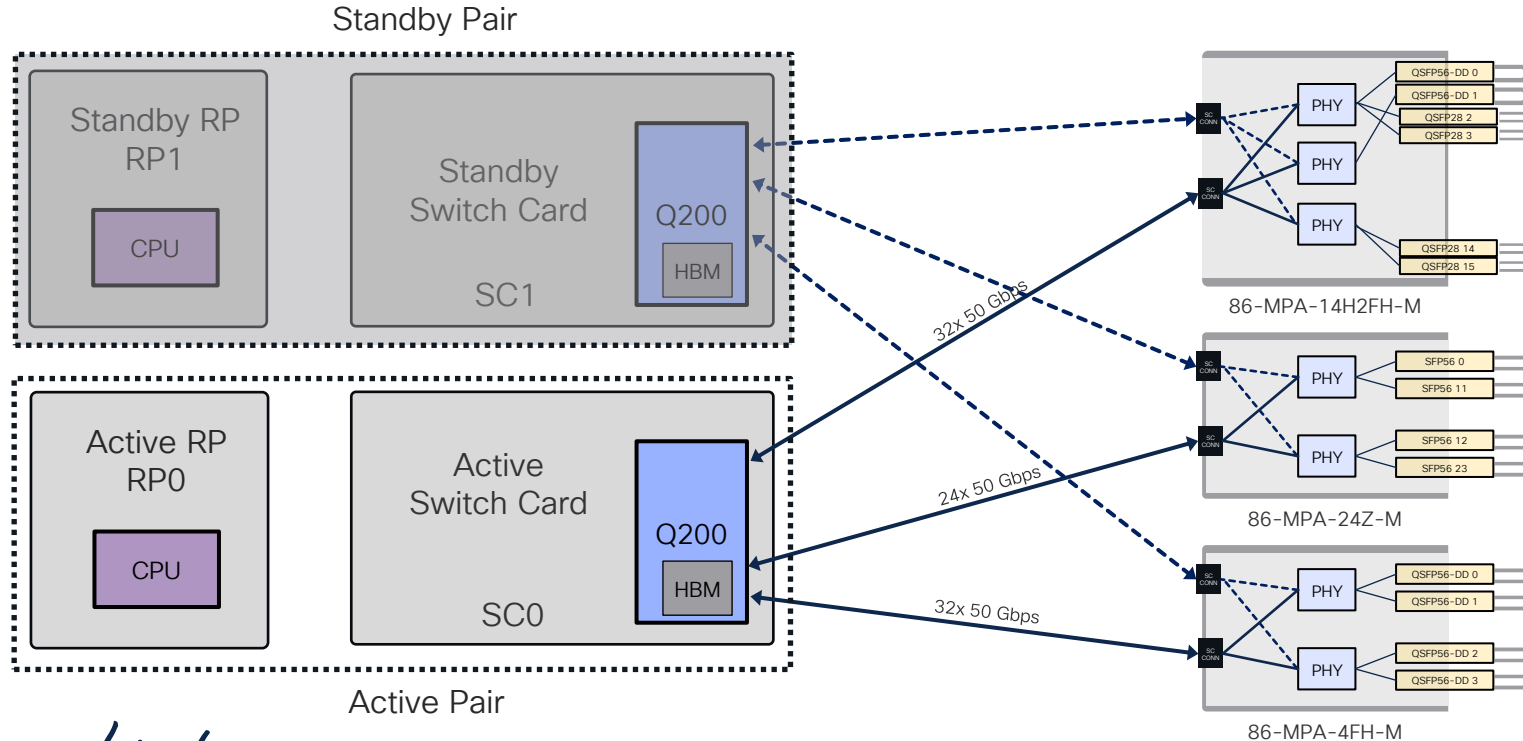


Cisco 8608 Architecture



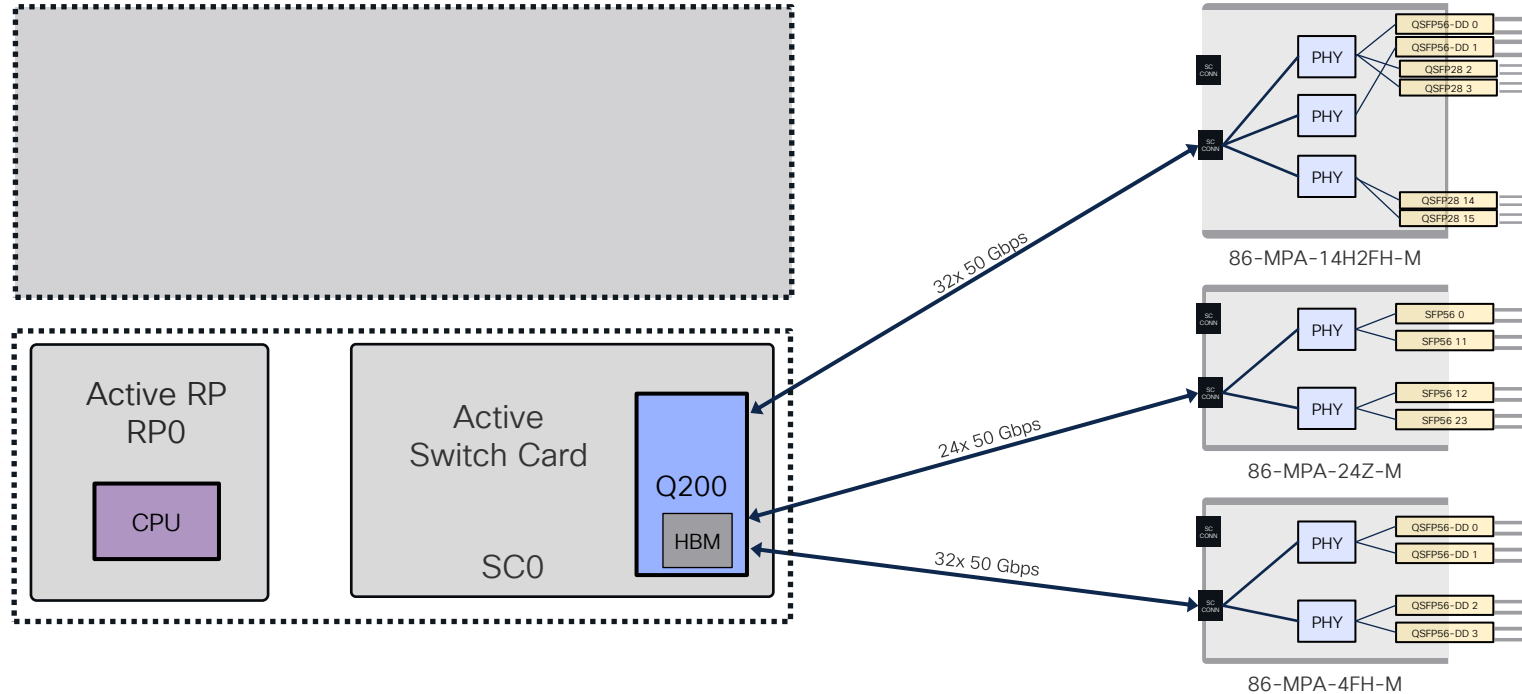
8608 Architecture

Redundant Mode

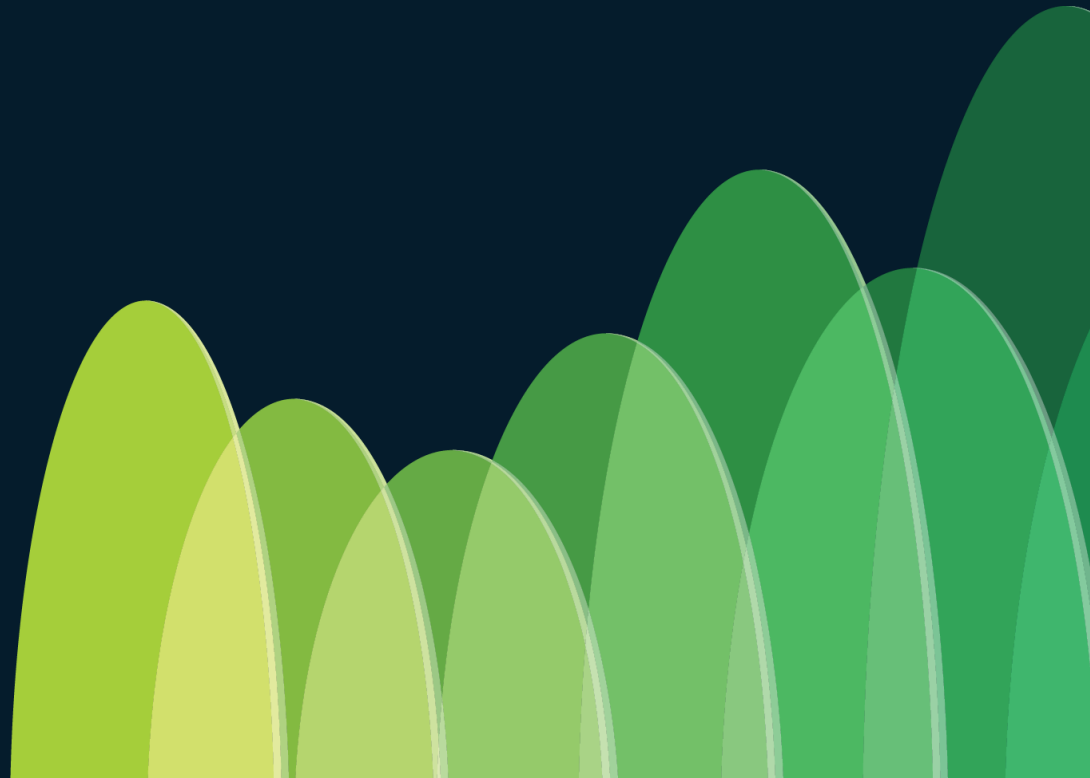


8608 Architecture

Non redundant Mode



Scale



P100 1D Scale

- Routing:

- RIB: 20M paths
- FIB: 3M IPv4; 1.5M IPv6
- 2k VRF
- IGP: 40k routes
- BGP: 2k sessions
- BGP FS: 6k IPv4/3k IPv6 rules
- BFD: 4k sessions per NPU, up to 3.3ms

- MPLS:

- 608k local
- 64k egress
- RSVP HE: 8k
- RSVP mid: 128k
- LDPoTE: 1k (default)
- Label stack:
 - 8 for SR-TE imposition
 - 3 for repair (5 in XR 7.9.1)
 - 14 for hashing/ECMP

P100 1D Scale

• L2

- 512 BD, 512 BVI, 512 AC per BD
- 128k MAC
- 8k xconnect, 4k t-LDP
- 4k L2 interfaces

• ACL IPv6

- Ingress: 5k(8200)/9.5k(8800 LC) v6 per Slice (Shared with QoS, BGP-FS,LPTS)
- Egress: 4.5k(8200)/5k(8800 LC) v6 per Slice

• QoS

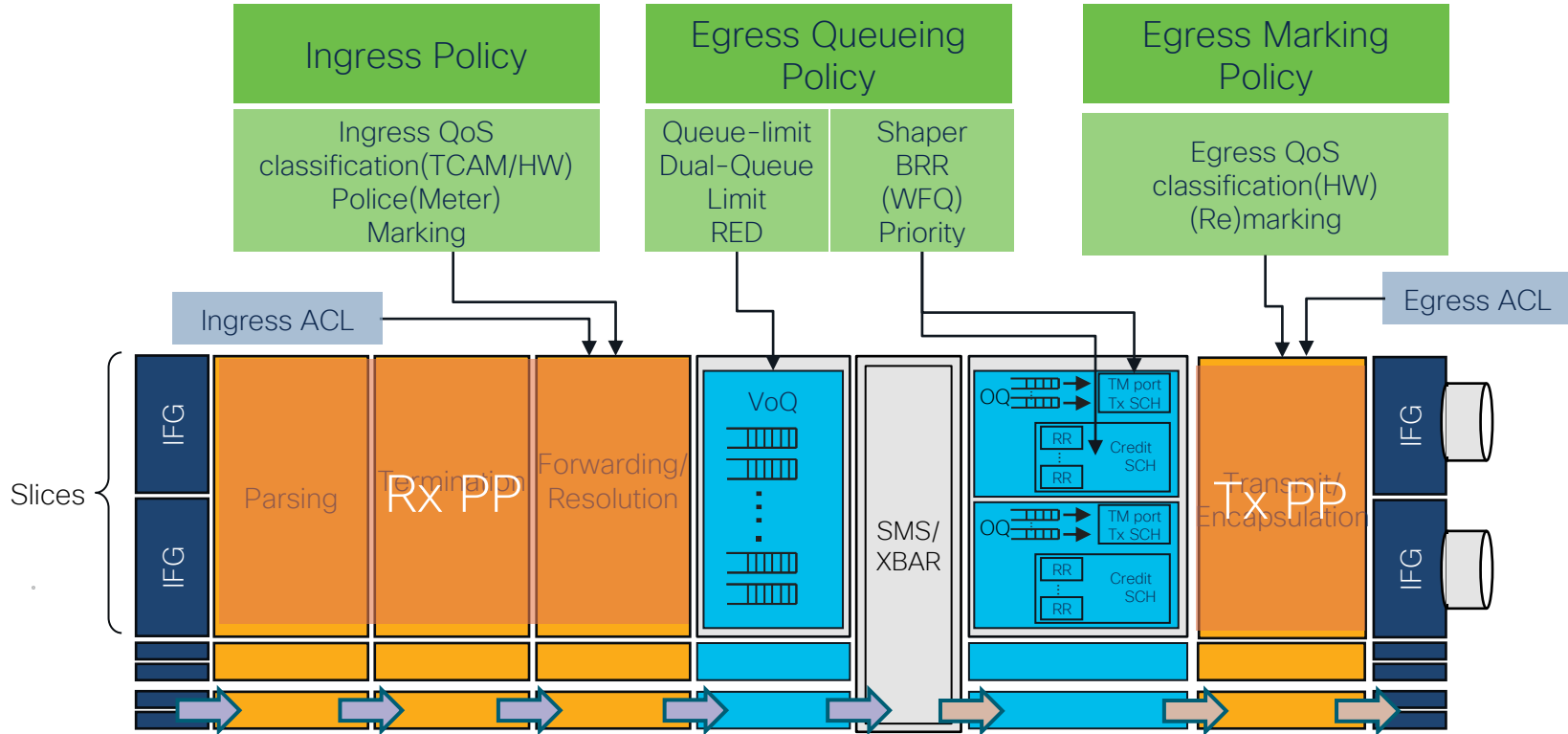
- 56k VoQ
- Up to 8 VoQ per port
- H-QoS: 2 level

• ACL IPv4

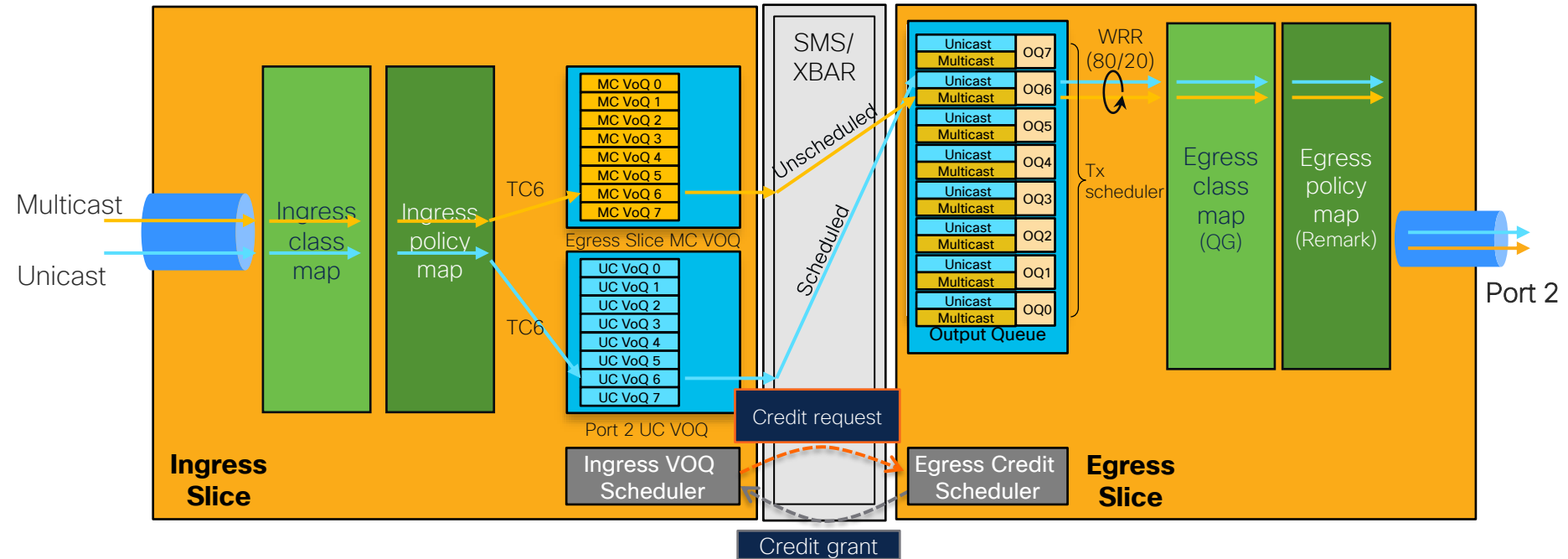
- Ingress: 9.5k(8200)/19.5k(8800 LC) v4 per Slice (Shared with QoS, BGP-FS,LPTS)
- Egress: 9k(8200)/10k(8800 LC) v4 per Slice

QoS & Life of a Packet

8000 QoS: 3 policy configuration model



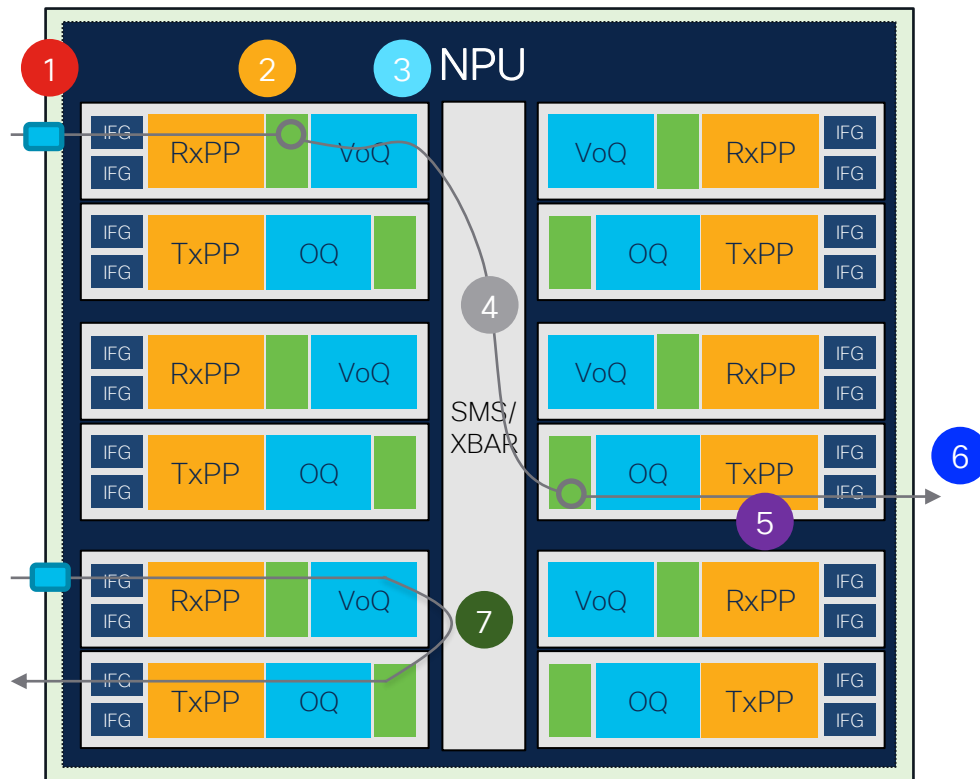
8000 QoS: VOQ Based Architecture



Life of a Unicast Packet

Cisco 8200

- 1 Packets arrive on the input slice of the receive device.
- 2 The NPU performs the packet lookup, feature checks, and identifies the destination for the packet.
- 3 The ingress NPU enqueues the packet on the corresponding VoQ for the {destination, traffic class}
- 4 When credits are available for the destination VoQ, the packet is switched across the SMS to the destination (egress) slice.
- 5 On the egress slice, the transmit direction lookups and feature checks are performed.
- 6 The final encapsulations are added to the packet and it's transmitted from the TX NPU out the physical interface
- 7 All packets are switched through the same SMS regardless of whether they are bound for the same NPU slice or a different NPU slice.

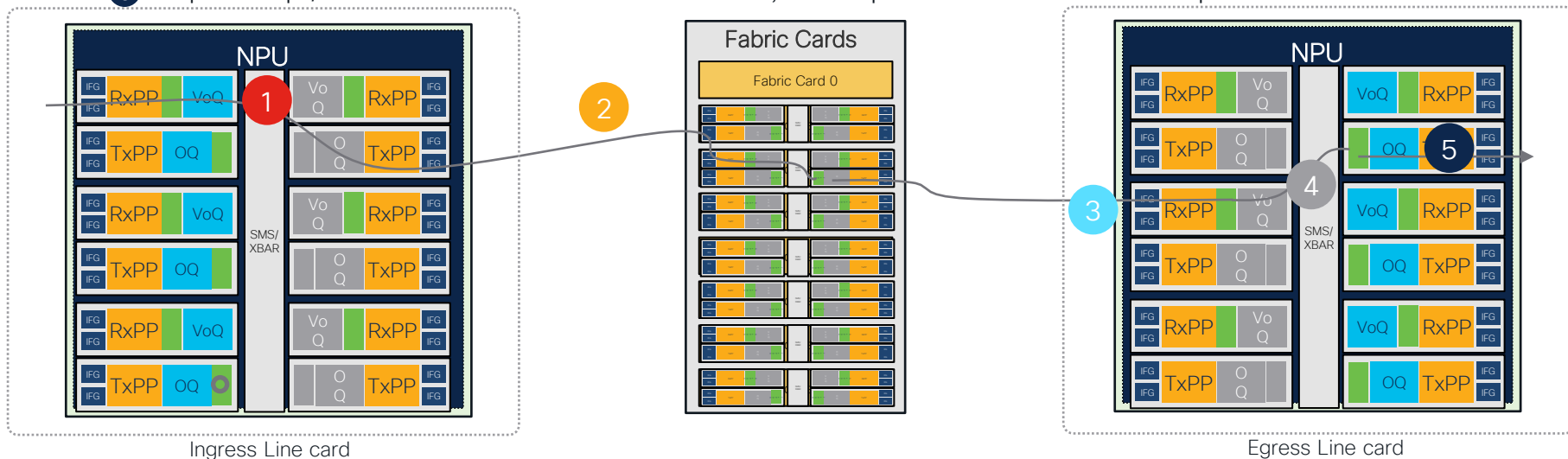


Life of a Unicast Packet

Cisco 8800

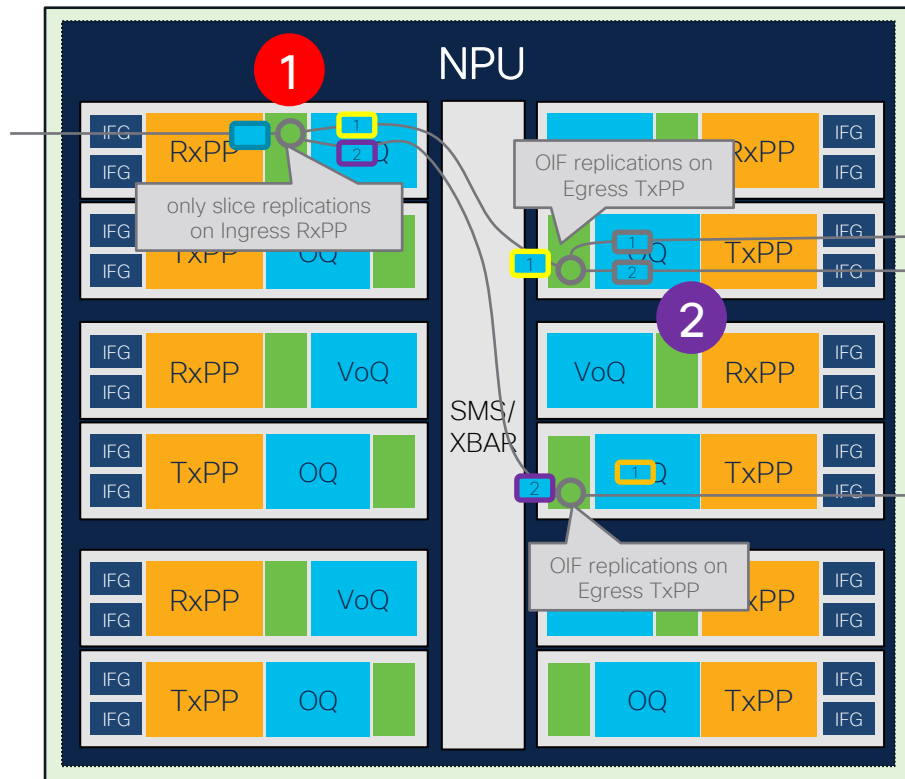
Packets are assigned on the ingress NPU to a VoQ that represents the destination {interface, traffic class}, and credits are still allocated by the TM scheduler in the same manner.

- 1 Packets are dequeued from the TM on the ingress NPU, switched across the local SMS onto a slice that operates in fabric mode.
- 2 Packets are switched to fabric devices (exist physically on the dedicated fabric cards).
- 3 Packets are switched to the correct destination NPU and the address is encoded in the internal fabric header.
- 4 Packets are received by the fabric facing slice of the transmit side NPU and switched to the output NPU slice.
- 5 Output lookups/features are done in the transmit NPU slice, and the packet is transmitted to the output interface.



Life of a Multicast Packet

Cisco 8200



- 2 stages Multicast replication

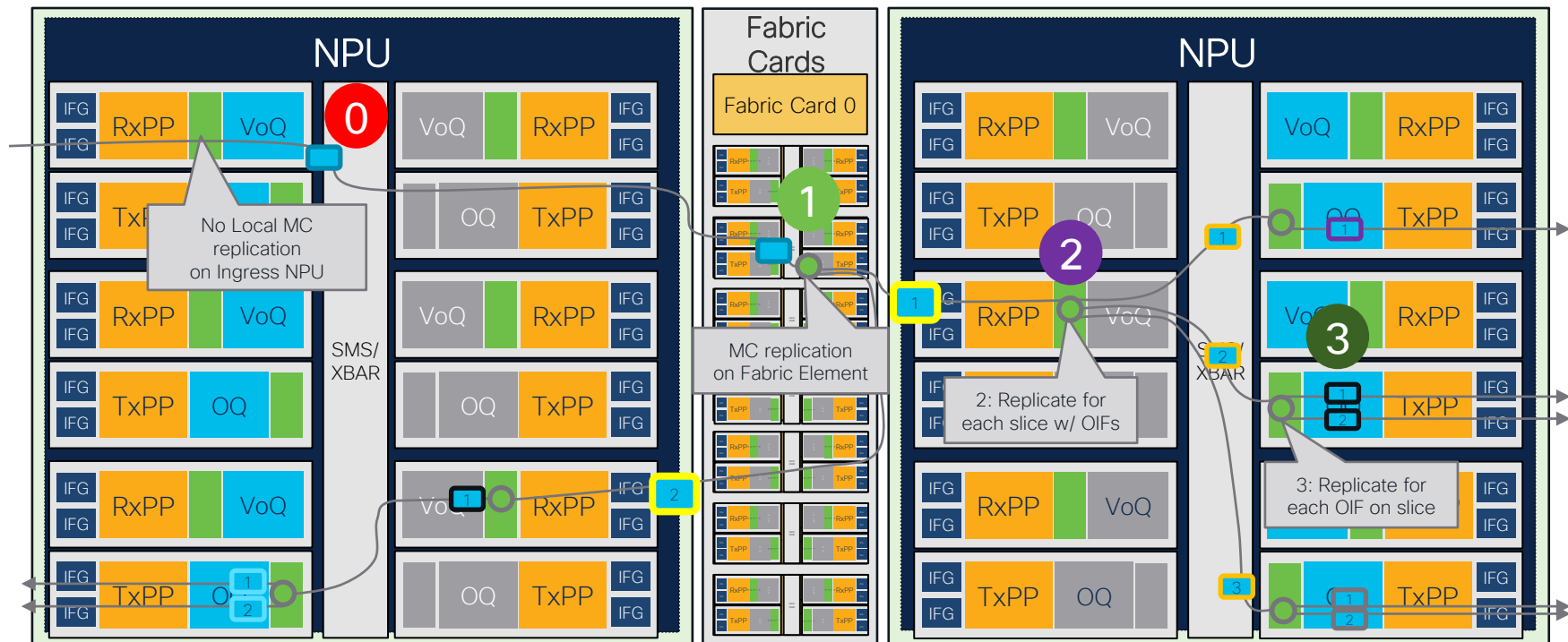
- 1** MFIB lookup - replication to TxPP Slices that have members on them
- 2** Egress TxPP replication → OIF

Life of a Multicast Packet

Cisco 8800

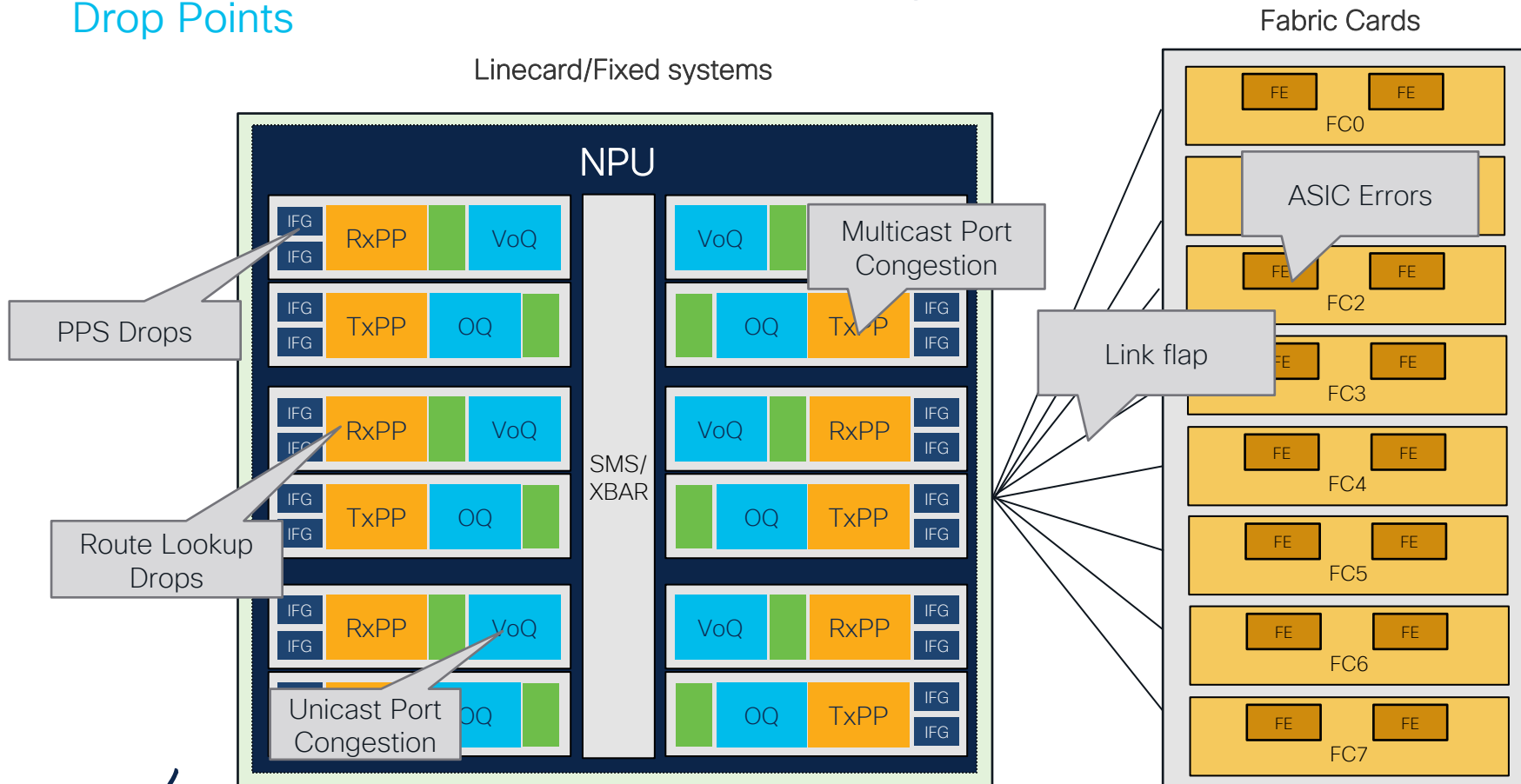
3 stages Multicast replication

- Source → Fabric Element → Egress NPU → Output Interfaces (OIF)



Packet Drop Troubleshooting

Drop Points



Cisco 8000 Optics

Cisco 8000 Optics

All-in-QSFP: QSFP56-DD

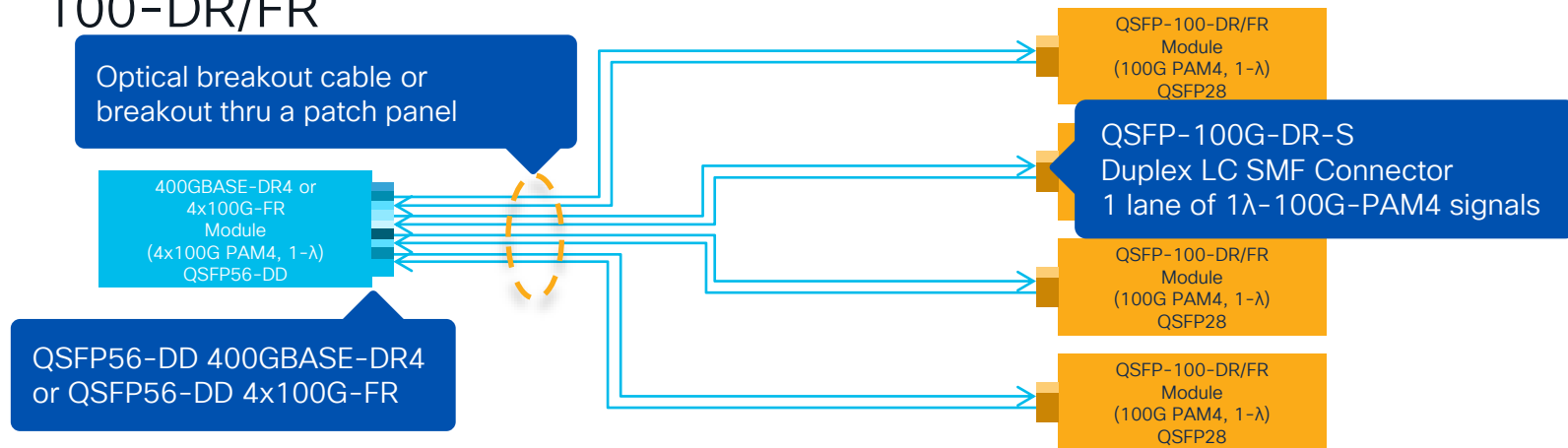
- QSFP-DD for 400G
 - 8 electrical lanes @ 50G (56Gbps raw)
- QSFP-DD for 200G or 2x100G
 - 8 electrical lanes @ 25G (28Gbps raw)

PMD	Reach	Media	Lasers	Modulation	Power Consumption
LR4	10Km (6dBm)	Duplex SM	4	PAM4	12W
LR8	10Km (6dBm)	Duplex SM	8	PAM4	13W
FR4	2Km (5dBm)	Duplex SM	4	PAM4	12W
DR4	500m (4dBm)	PSM	4	PAM4	12W
ZR	40~80Km	Duplex SM	1	DP 16QAM	19W
ZR+, Bright ZR+	Varies	Duplex SM	1	Varies	23W, 21W
DAC	3m	Copper	N/A	PAM4	1.5W
AOC	100m	Fiber Cable	Black Box	PAM4	12W

400G Breakout Options

400GBASE-DR4 example

- Provides 4 lanes for 1 λ -100G-PAM4 (100GBASE-DR) optical signal (up to 500m)
- Can be used for high density 100G interface with breakout QSFP-100-DR/FR

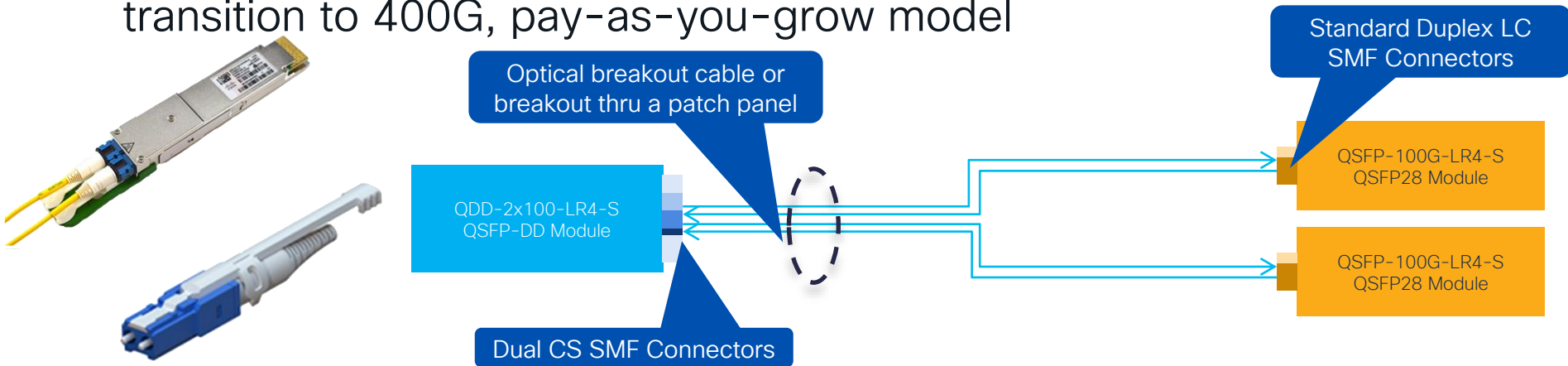


- 4x100G-FR: 4 x 1 λ -100G-PAM4 (100G-FR) optical signal (Up to 2km)

200G Breakout Options

QDD-2x100G-LR4-S example

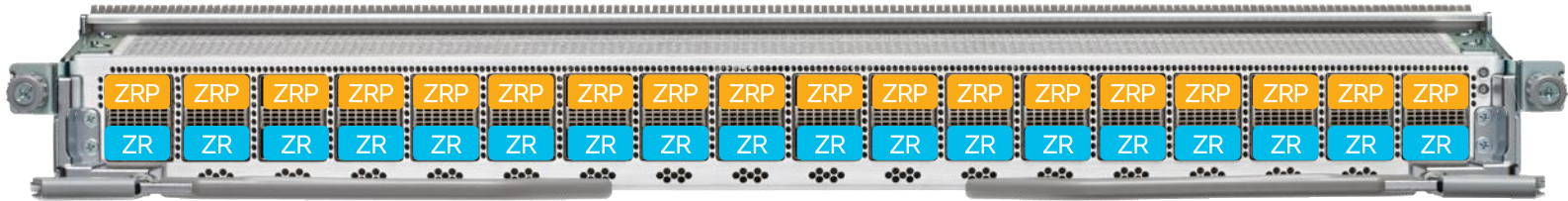
- Pros: connect “legacy” 100G modules to QSFP-DD ports, smooth transition to 400G, pay-as-you-grow model



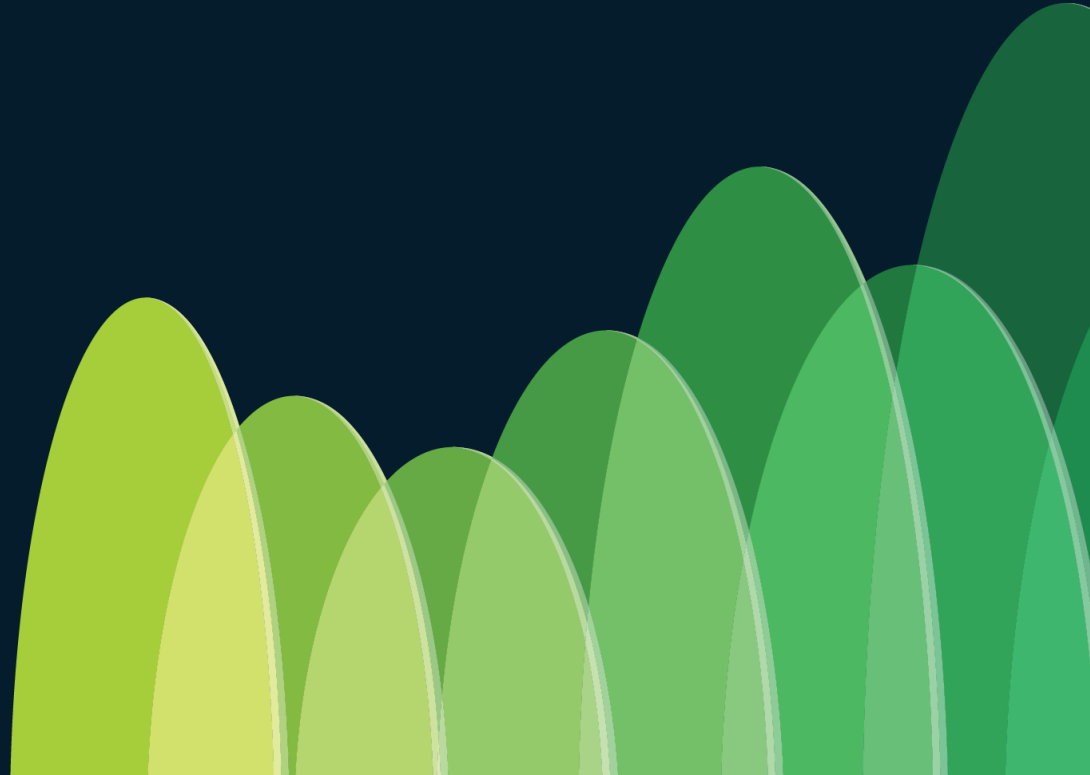
PID	Reach	Power	Connector	Media
QDD-2x100G-CWDM4	2km	7W	Dual Duplex CS	Duplex SMF
QDD-2x100G-LR4-S	10km	8W	Dual Duplex CS	Duplex SMF
QDD-2x100G-SR4	100m	5W	MPO-24	MMF

400G ZR/ZR+/Bright ZR+ Support

- ZR, ZR+, Bright ZR+: all rows, all ports, all combinations.
 - No placement restrictions
 - Valid for 8200 Q200 based systems and Q200 based line cards
- Only exception is 88-LC0-36FH-M: ZR+/Bright ZR+ support on upper row only



Power Optimization



Hardware Innovations

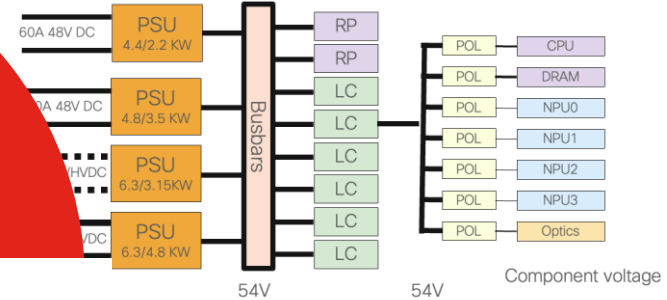


Orthogonal Chassis Design

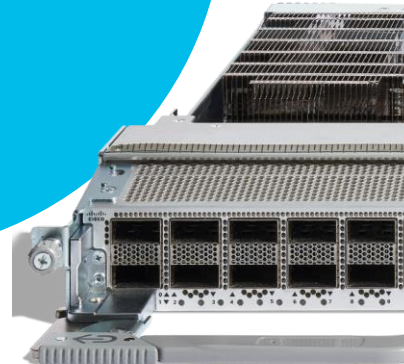
Cooling



Power Delivery



Line Card pitch, air inlets

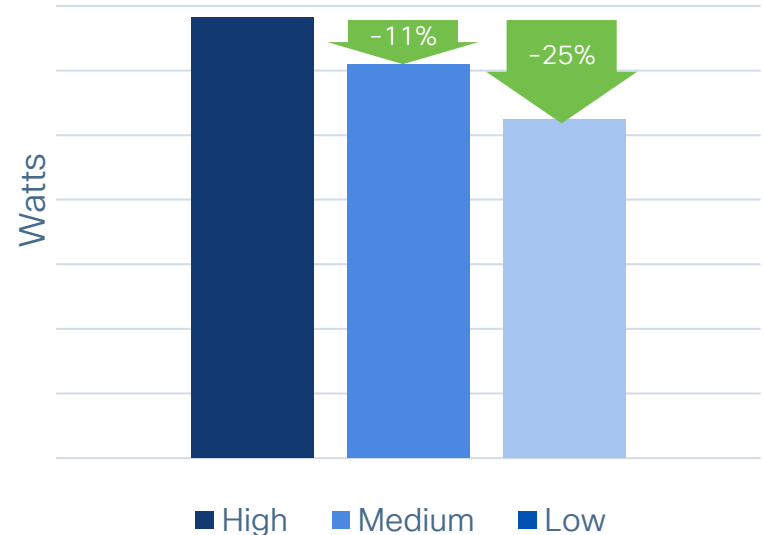


Software Innovations

NPU Power Profiles

- Reduce power consumption by running NPU in a predefined mode
- Choice done based on network traffic and power consumption requirements
- Supported on Q200 PIDs only
- Reload required (system or LC)

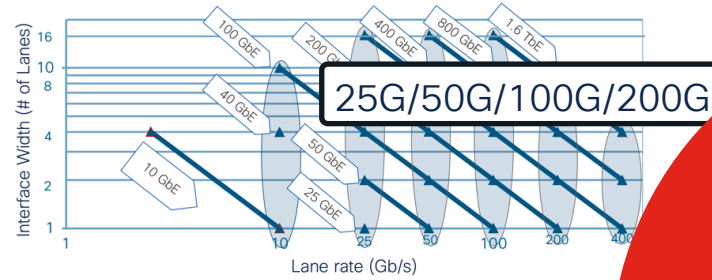
8201-32FH Typical Power Consumption
Impact of profiles



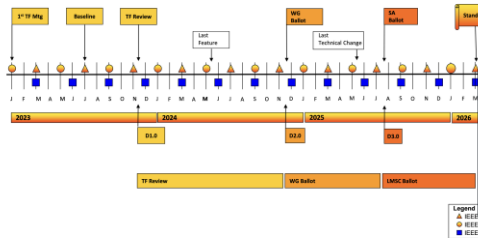
Introducing 800G



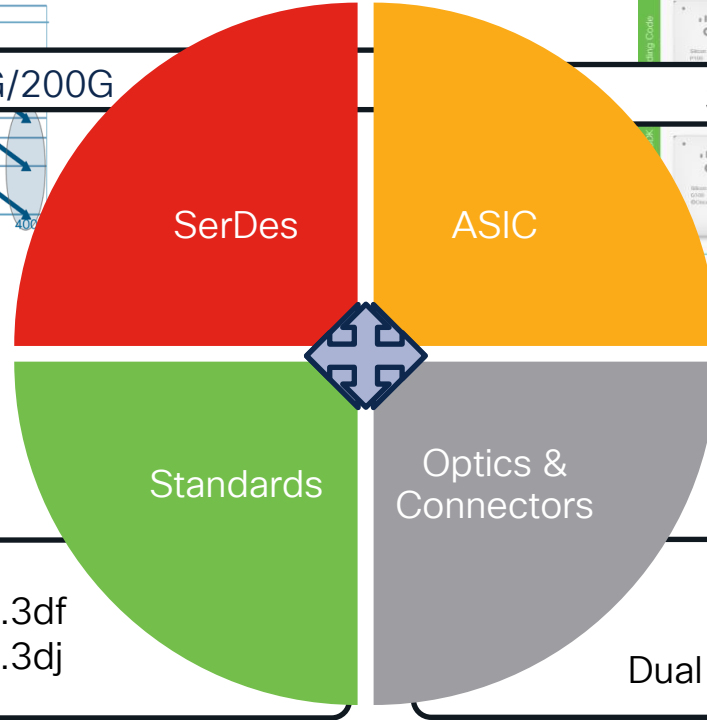
Path to 800G & 800GbE



Adopted IEEE P802.3dj Timeline (16 Jan 2023)



16 Jan 2023 IEEE P802.3dj Task Force Page 1

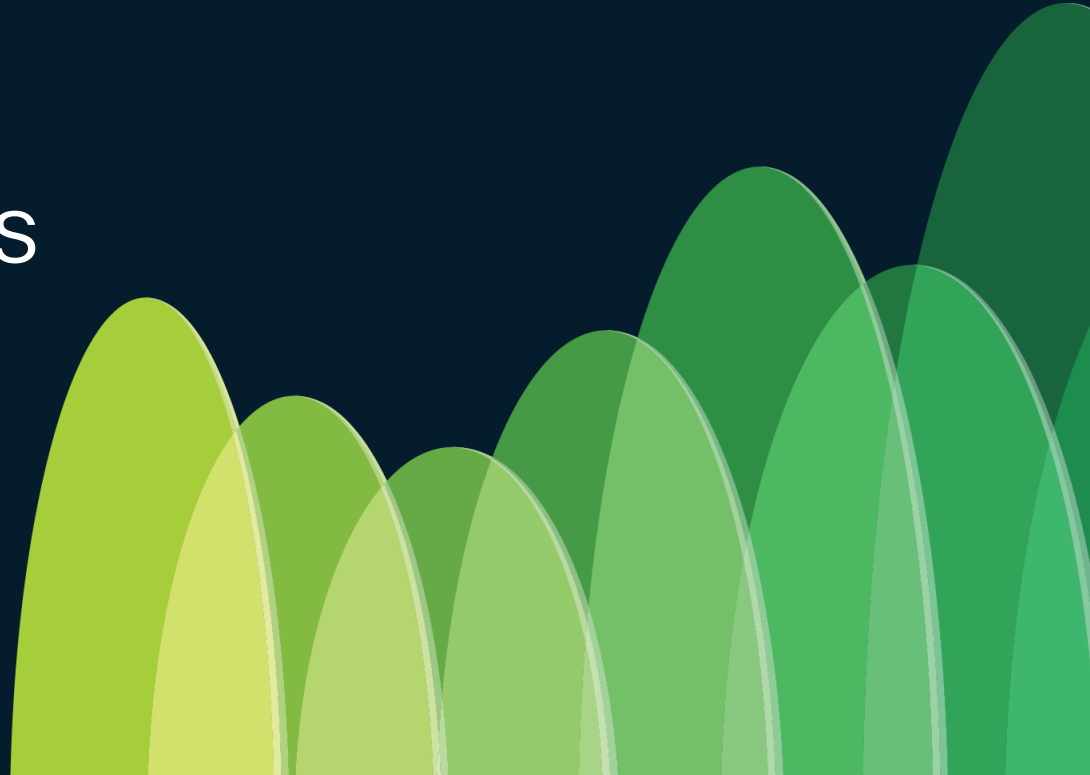


QSFP-DD800
Dual MPO/Duplex LC



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Software Options



By default: IOS XR

Architecture Evolution Journey

IOS XR

- 32-bit QNX-based
- SMU based patches
- Highly reliable, large scale routing
- Core and edge use cases

IOS XR 64-Bit

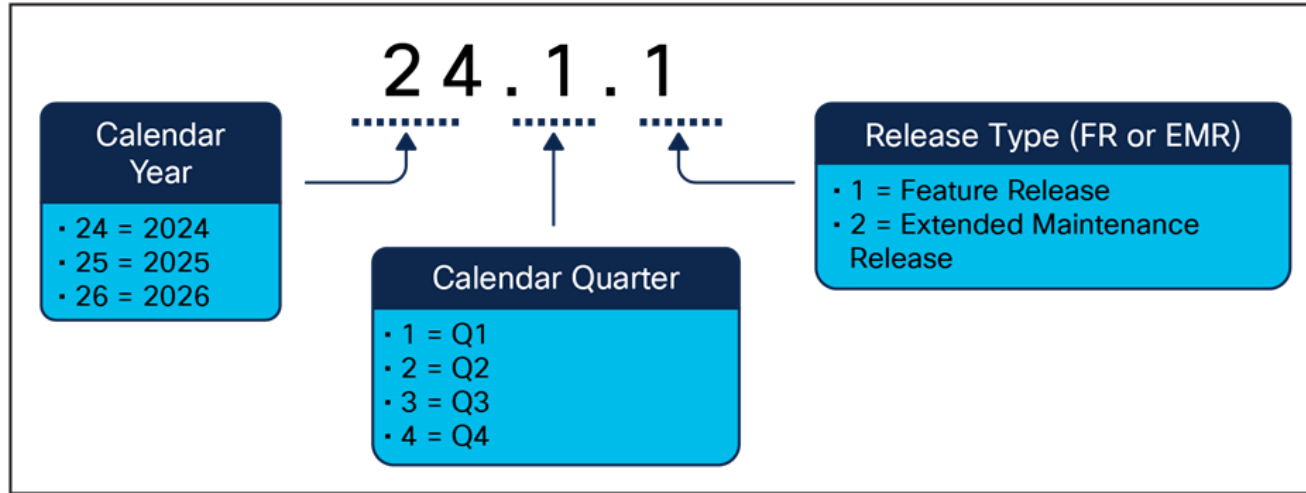
- 64-Bit Linux-based
- Merchant and Cisco silicon
- Cloud-Scale Ready!
 - ✓ Model-driven management + Telemetry
 - ✓ Automated device onboarding – ZTP, iPX
 - ✓ Hosted third-party software

IOS XR 7

- Advanced flexibility for custom use cases
 - ✓ Model-driven APIs at all layers
- Security enhancements – Establish trust in the HW, SW & Network
- Simplification & Flexible Consumption
 - ✓ Disaggregated SW Offer
 - ✓ Optional SW packages

OS Evolution

IOS XR Release Taxonomy Update



- 4 Feature Releases (FR) + 4 Extended Maintenance Releases (EMR) per calendar year.
- Extended Maintenance Releases will be released 90 days after the Feature Release

Third Party NOS Option



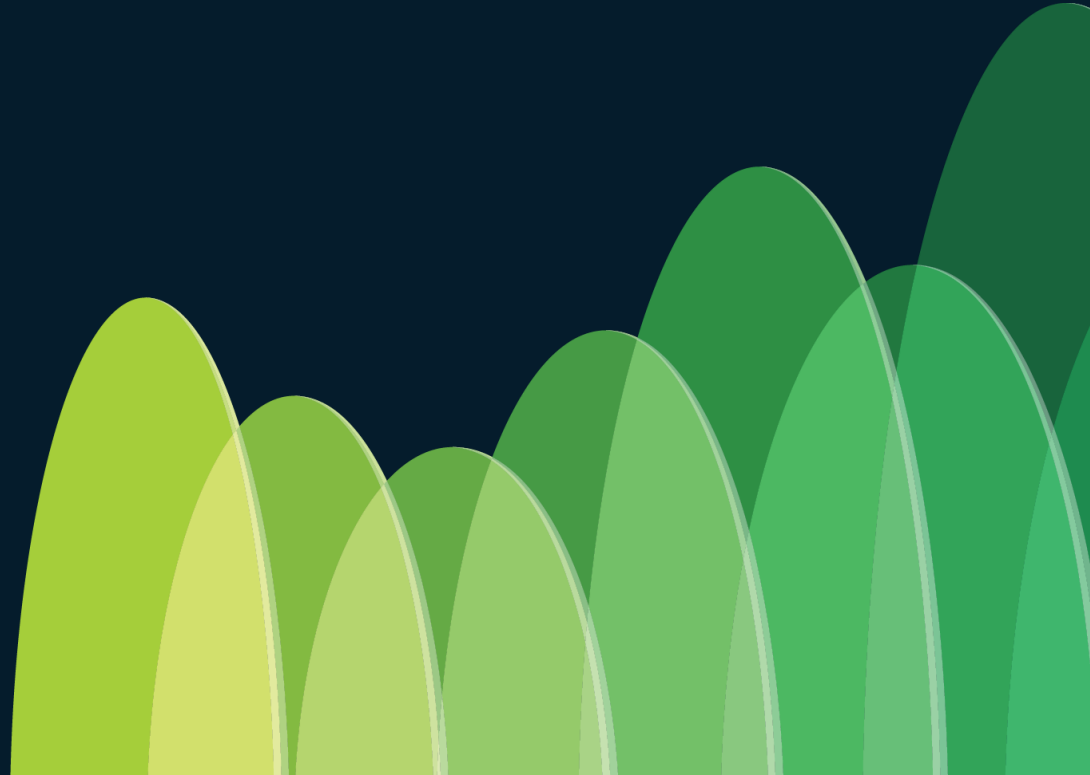
- open-source Network Operating System (NOS)
 - Based on Debian Linux distribution
- Uses Switch Abstraction Interface (SAI) API
 - Controls forwarding elements (ASIC, NPU)
- Cisco provides Base Support Package (BSP)
 - Controls board, fans, drivers, FPD, LED, etc.

SONiC Support on 8000

Fixed Systems

Supported PID	Size	Ports	HBM	MACsec
8101-32H-O	1RU	32xQSFP28	No	No
8102-64H-O	2RU	64xQSFP28	No	No
8101-32FH-O	2RU	32xQSFP-DD	No	No
8111-32EH-O	1RU	32xQSFP-DD800	No	No
8201-32FH-O	1RU	32xQSFP-DD	Yes	No

Conclusion



Acknowledgements

- Fred Cuiller, CS Lee, Ahmad Bilal Siddiqui, Lane Wigley, LJ Wobker, Ram Mohan, Mark Nowell

References

- Public References & Press Releases available on The Newsroom
- xrdocs.io 8000 section is [live!](#)



Introduction

Cisco 8000 Series routers are cloud-enhanced systems powered by groundbreaking Cisco Silicon One™ ASICs and Cisco IOS XR7 software. Released late 2019, new hardware, software and innovations have been introduced since and will be covered in this section.



Cisco 8000 Series Portfolio Update

This session provides a high-level overview of the Cisco 8000 series routers and you'll see the entire Cisco 8000 series portfolio and its differentiated value proposition. Presented by **Mauricio Cruz Covarrubias**, Director of Product Management, Core & Edge, Ammar Khan, Engineering Product Manager, and Iqbal Syed, Senior Product Manager. Recorded on December 9, 2021 as part of Networking Field Day: Service Provider.

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[SONiC Docs](#)

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Thank you





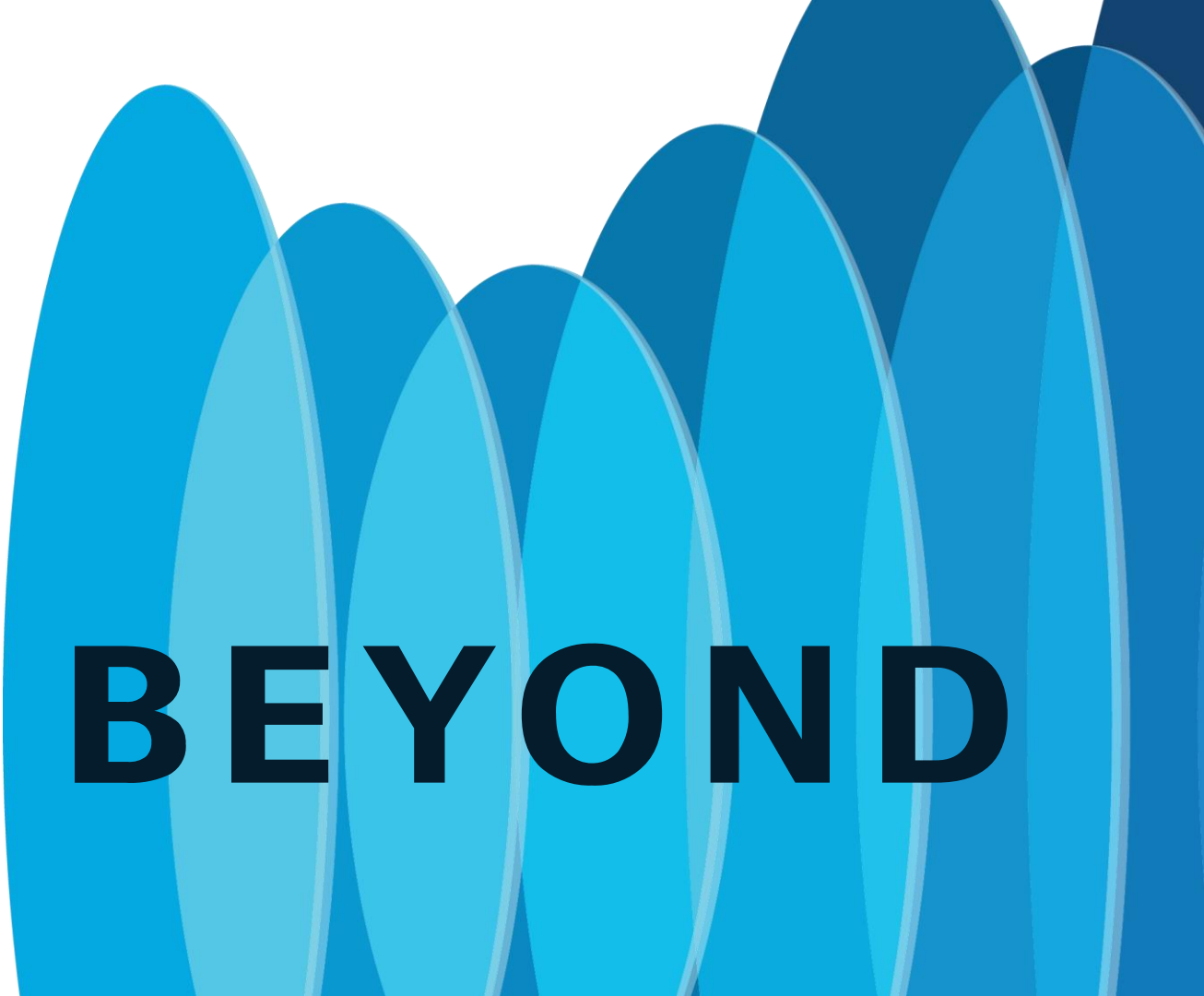
Thank you

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GO BEYOND

The background of the slide features a series of overlapping, teardrop-shaped elements in various shades of blue, ranging from light sky blue to deep navy blue. These shapes are arranged in a way that creates a sense of depth and movement, resembling a stylized horizon or a series of waves. The overall composition is clean and modern, with the text elements clearly legible against the white background.