



The bridge to possible

Nové usecasey a zařízení v SP portfóliu

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Systems Architect – #55452

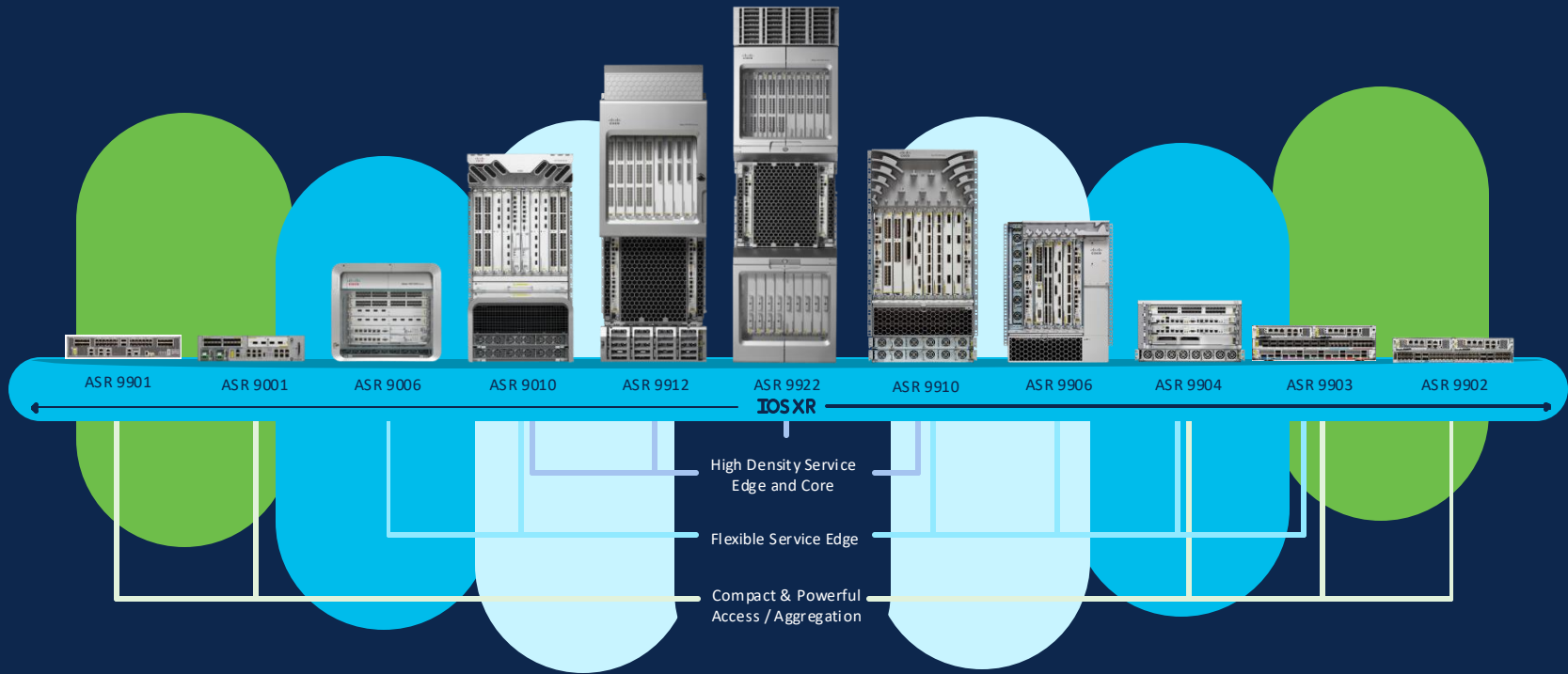
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A9K






Cisco ASR 9000 Series

Hardware portfolio



ASR 9000 5th Generation Portfolio

400GE to 4T

	Ports	Bandwidth	Combo Ports	MACSec/ FlexE	Timing	RSP / RP
 A99-32X100GE-X	32 Ports of QSFP28	3.2 Tbps	No	No	Class B SyncE	RSP5, RP3
 A9K-20HG-FLEX	15 Ports QSFP28 5 Ports QSFP-DD	2 Tbps	Yes	MACSec + Flex-E	Class C SyncE	RSP5, RP3
 A9K-8HG-FLEX	6 Ports QSFP28 2 Ports QSFP-DD	800 Gbps	Yes	MACSec + Flex-E	Class C SyncE	RSP5, RSP880-LT, RSP880, RP3, RP2
 A99-10X400GE-X	10 Ports of QSFP-DD	4 Tbps	Yes	MACSec	Class B SyncE	RSP5, RP3
 A9K-4HG-FLEX	4 Ports QSFP28 16 Ports SFP28 24 Ports SFP+	400 Gbps	Yes	MACSec	Class C SyncE	RSP5, RSP880-LT, RSP880, RP3, RP2

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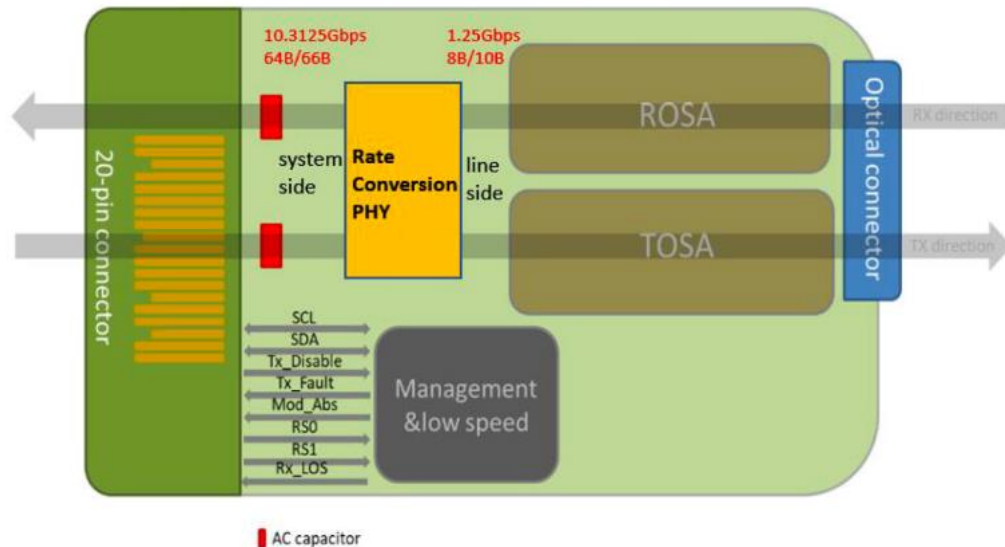
10G to 1GE Rate Change SFP Optics (aka Smart 1G)

2 modules:

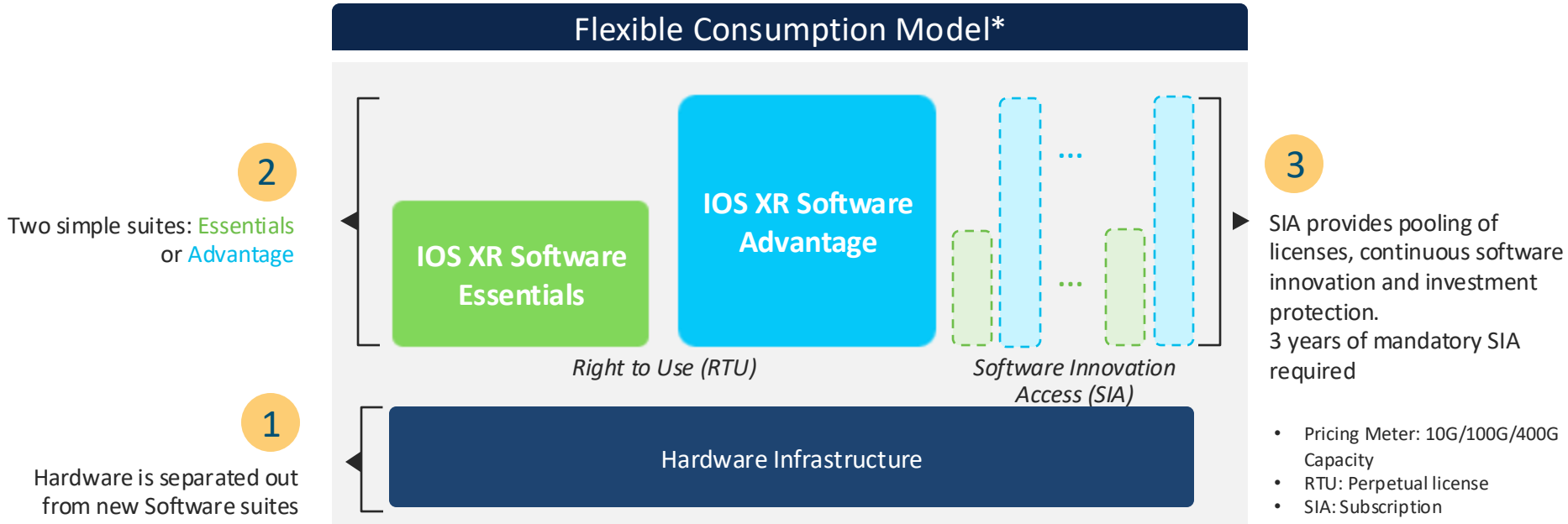
- **SFP-1G-SX**: 1km reach over OM3/OM4
- **SFP-1G-LH**: 10km reach over single-mode fiber

1G modules can work in 10G/25G ports

- designed to allow platforms without 1G Media Access Control to link up to 1G transceivers; works on 10G/25G ports
- provides a standard 10G electrical interface on the system side
- Contains PHY to convert 10G electrical interface to 1G optical interface
- In the ingress the module converts physical coding from 8B/10B to 64B/66B encoding
- In the egress the module converts physical coding from 64B/66B to 8B/10B encoding
- Due to higher thermal of these 10G-to-1GE SFPs **odd numbered** 10G/25G ports can run this optic (the upper row of SFP+/SFP28 ports) - It means that **max 20x 1GE ports can be supported.**
- The following port combinations are available:



Flexible Consumption Model (FCM)



* Smart Licensing registration & reporting required for FCM

Supporty v SP

Identify the right service level

Traditional Model to FCM Model Support Service Levels Translator

Equivalent Traditional Support Service GSPs			
SW Support		SP SW Support	
Service	Service Description	Service	Service Description
SAS	24/7 SW Support	SPSAS	24/7 SW Support
ECMU	24X7 SW TAC with SW downloads	SPCMU	24X7 SW TAC with SW downloads

Smart Net Total Care		SP Base, HW Support	
Service	Service Description	Service	Service Description
-	-	SP RTF Svc(*)	SPRTF
SNT	SNTC-8X5XNBD	8X5XNBD AR Svc	SPAR1
SNTE	SNTC-8X5X4	8X5X4 AR Svc	SPAR2
SNTP	SNTC-24X7X4	24X7X4 AR Svc	SPAR3
S2P	SNTC-24X7X2	24X7X2 AR Svc	SPAR4
CS	SNTC-8X5XNBDOS	8X5XNBD Onsite Svc	SPCS
C4S	SNTC-8X5X4OS	8X5X4 Onsite Svc	SPC4S
C4P	SNTC-24X7X4OS	24X7X4 Onsite Svc	SPC4P
C2P	SNTC-24X7X2OS	24X7X2 Onsite Svc	SPC2P



FCM Support GSPs	
What to Quote	
"SD"-Service	SKU format
SDSWK	SD-xxxx
SDSWK	SD-xxxx

What to Quote	
"SD"-Service	SKU format
SDRTFK(*)	SD-xxxx
SDAR1K	SD-xxxx
SDAR2K	SD-xxxx
SDAR3K	SD-xxxx
SDAR4K	SD-xxxx
SDCSK	SD-xxxx
SDC4SK	SD-xxxx
SDC4PK	SD-xxxx
SDC2PK	SD-xxxx

SDRTF service level is restricted for SP customers only

Cisco 8000

8000 Value Proposition

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





Routing

Web Scale Switching

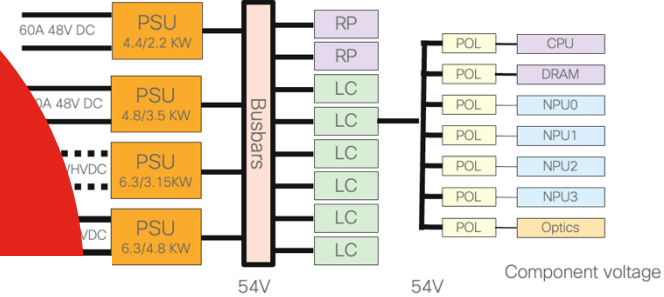


Hardware Innovations



Orthogonal Chassis Design

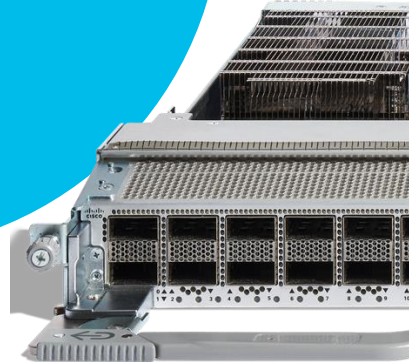
Power Delivery



Cooling



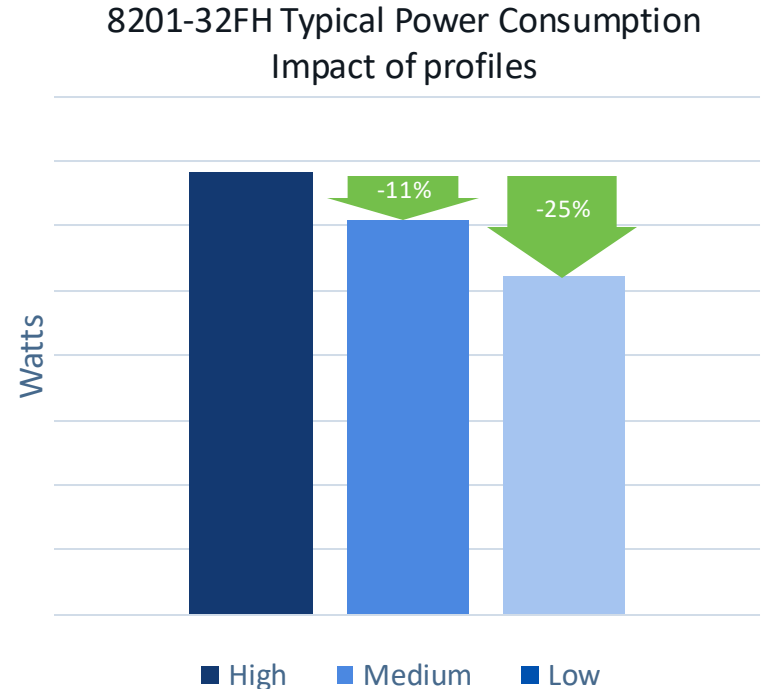
Line Card pitch, air inlets



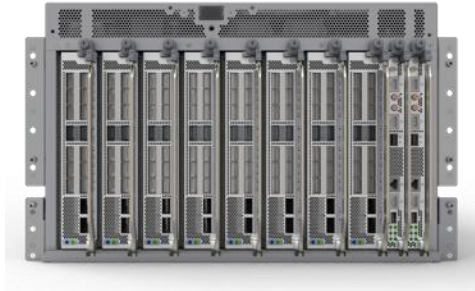
Software Innovations

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)



Cisco 8600 Centralized Router

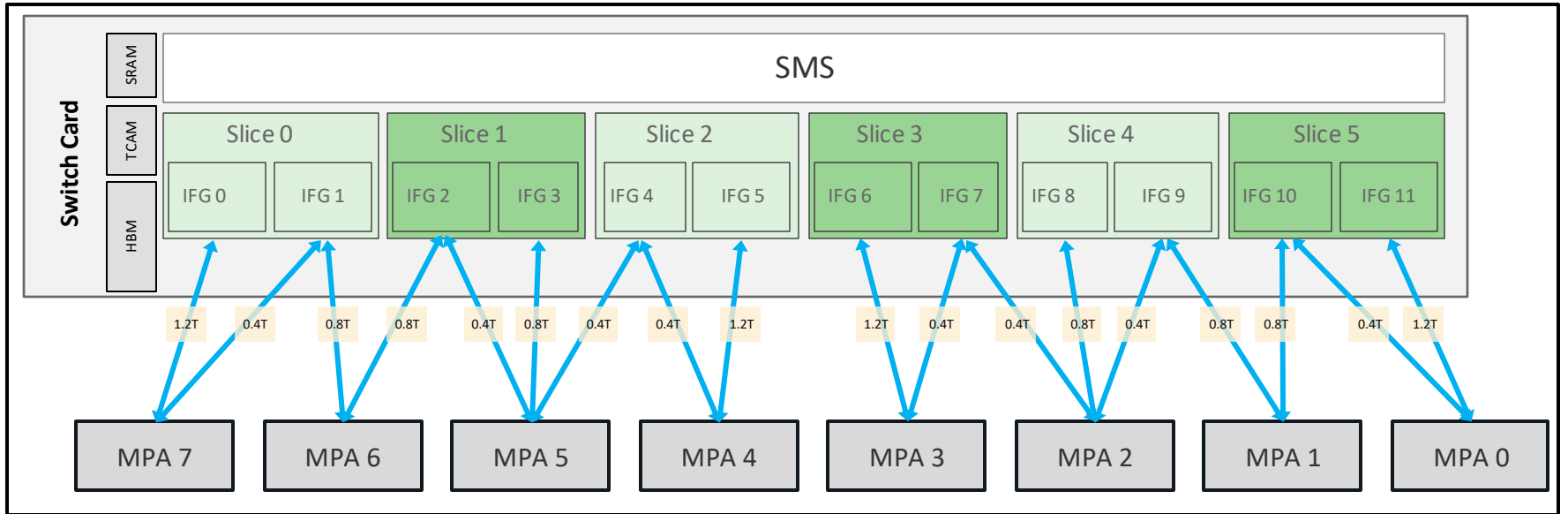


8608

ASIC	Q200
CP/DP Redundancy	Possible (Optional)
Rack Units	7RU
MACsec	Yes
MPA	
86-MPA-24Z-M	24 x 10/25/50G (1.2T)
86-MPA-4FH-M	4x 400GbE (1.6T)
86-MPA-14H2FH-M	8x 100GbE + 2x 400GbE or 16x100GbE (1.6T)
Total Throughput	12.8Tbps

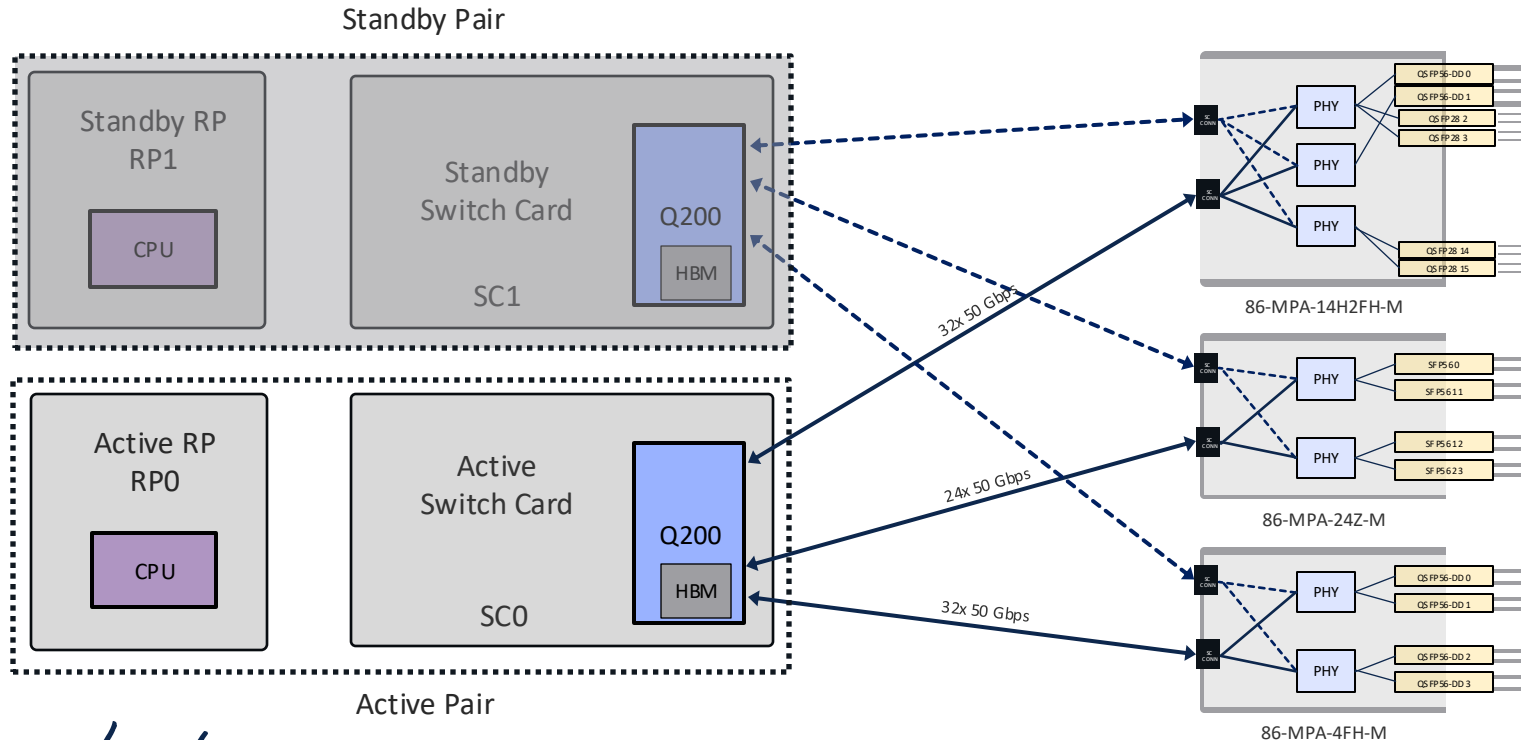


Cisco 8608 Architecture



8608 Architecture

Redundant Mode



Cisco 8711-32FH-M

1RU, 12.8T, 32x400G MACsec System



Hardware Overview

Data Plane	1x P100 ASIC -12.8T
Control Plane	6 Core x86 CPU 64GB DDR4 SODIMM, 480GB SSD
Port Configuration	32x QSFPDD /16x QSFPDD-800
Product Capabilities	Timing Class C performance, MACsec all ports* RON Architecture ready
Fans and PSU	6x Fans N + 1 redundancy 2x PSUs 1 + 1 redundancy
Typical Power	740 W excluding optics
Dimension	1RU, 600mm depth
Use Case	Core, Aggregation, Peering, DC Core



FANS (x6)

Front to Back Airflow (Port-side Air Intake)
Back to Front Airflow (Port-side Air Exhaust)

PSUs (x2)

Pluggable 2KW AC
Pluggable 2KW DC
Pluggable 2KW HV

10G	25G	40G	100G [#]	400G	800G ^{**}
128	128	32	128	32	16



Cisco 8102-28FH-DPU-O



The Cisco 8102-28FH-DPU-O and are fixed form factor (2RU) switch with 28xQSFP-DD56 interfaces capable of 12.8T of throughput. The switch has four, port facing, field replaceable DPU sleds.

Physical Summary
NPU: Single 12.8T Q200L
CPU: 16 Core x86 CPU 128GB DRAM
DPU: AMD Elba 16 ARM CPU Cores 32G Memory
4 x DPU Sleds Field Replaceable Units
Software Operating System SONiC
3+1 Fan, 1+1 PSU Redundancy Port-side Intake Airflow
Interface Support: 400/200 /100/50/40/25 GE

Highlights:

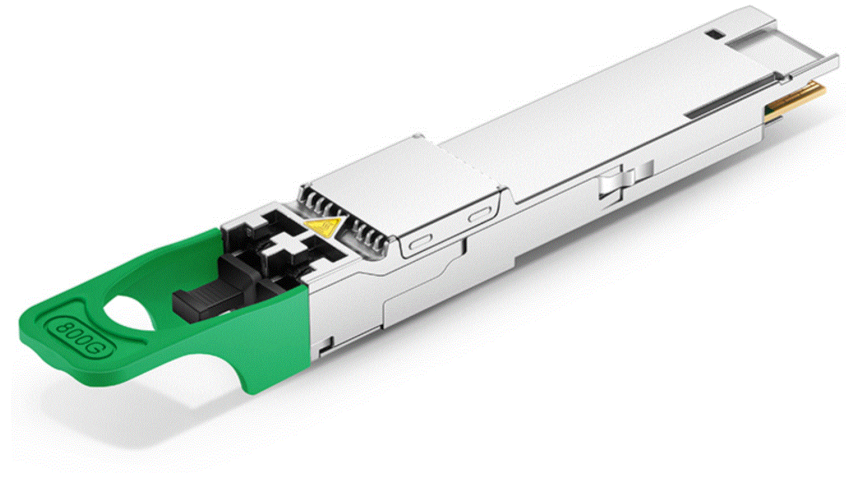
- Increased CPU cores and memory for future workloads
- SAI/SONiC support (202405)
- 28x400G QSFP-DD56 switch optimized for power efficiency
- Support up to 1.6T of DPU services
- RDMA support for AI and storage workloads

Port Side:



8000 Series 800G Ports

- First shipped in mid 2022 – 32x 800G
- Second board will be 36x 800G line card
- First-gen 800G ports are 8x 100 GbE or 2x 400 GbE
 - 2x LC connector to two 400 GbE FR4
 - MPO12 to two 400 GbE DR4
 - MPO16 to eight 100 GbE



For more info: <https://blogs.cisco.com/tag/qsf-p-dd800>

FCM

Flexible Consumption Model

- licenses used per active port
- license pooled from smart account

FCM 2.0 HW Categorization

FCM 1.0

Cisco 8000



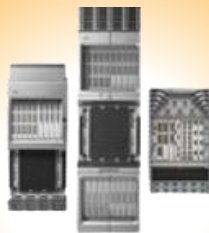
- Cisco 8000 on Q100 & Q200*
- Cisco 8k FCM 1.0 License Pool

NCS 5500/5700



- Applicable on all NCS 55/5700 HW
- All NCS 55/5700 FCM 1.0 License Pool

ASR 9000



- All ASR 9000 HW
- All A9K FCM 1.0 License Pool

FCM 2.0

Cisco 8000 and 8000E



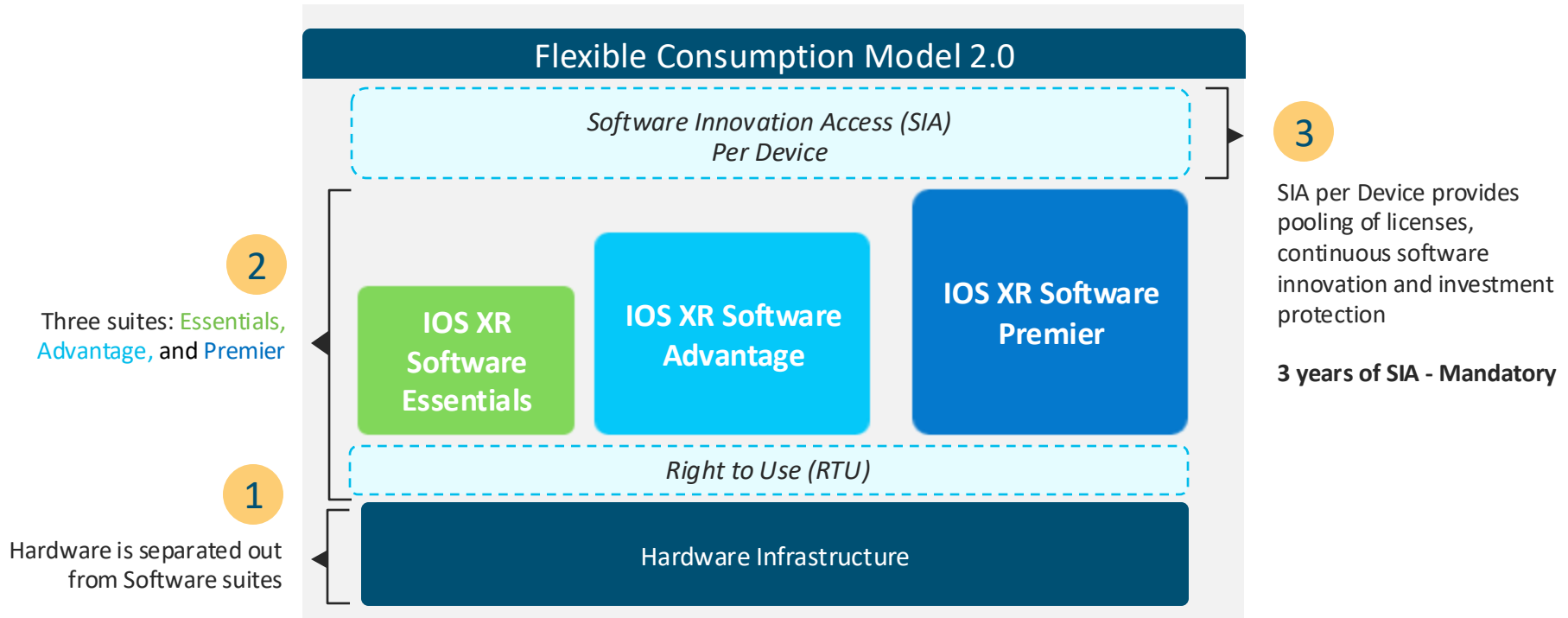
- Cisco 8000 & Cisco 8000E
- ASIC P100, K100 and beyond
- Cisco 8608
- FCM 2.0 License Pool
- New RTU & SIA Licenses

We will continue with FCM 1.0 on existing NCS 540 series, NCS 55/5700 Series, ASR 9K & Cisco 8000 on Q100 & Q200

All Upcoming Platforms will be launched with FCM 2.0

Flexible Consumption Model (FCM 2.0)

Offer Structure



FCM 2.0

3 Tier Model

IOS XR RTU Premier (PRM)

IOS XR RTU Advantage (ADN)

IOS XR RTU Essentials (ESS)

*Subject to Platform Capability

** Please check Release Notes & HW Config for Supported Platforms
cnBNG Control Plane has separate License

- **L2 Services:**
 - > *1K (Attachment Circuit + PW)

- **L3 Services:**
 - VRFs : >128 VRFs*

- **L2 Services:**
 - E-LAN (Bridging): L2VPN VPLS , EVPN-VPLS
 - EVPN IRB w/ Anycast GW, EVPN VxLAN
 - E-LINE (P2P) : L2VPN VPWS, EVPN-VPWS, Multi Segment-PW
 - Up to 1K (Attachment Circuit + PW)

- **L3 Services:**
 - MPLS IPv4/v6 , VPN (L3VPN/6VPE)
 - IPv4, IPv6 Provider Edge (6PE), GRE
 - Multicast VPN (MVPN)
 - > 16 & <= 128 VRFs
 - FIB Scale:> 512k & <=2M

- **L2 Transport:**
 - Dot1Q, QinQ
 - VLAN, EFP (L2transport), IRB/BVI
 - Static Tunnels: GRE/VxLAN/IPnIP

- **L3 Transport:**
 - IGP Flex Algo, IP, ISIS, OSPF, BGP, MPLS
 - SR transport, SRv6 transport
 - Basic Multicast (PIM & ICMP,MLD), MLDP
 - FIB Scale: < 512k (v4 + v6 routes)

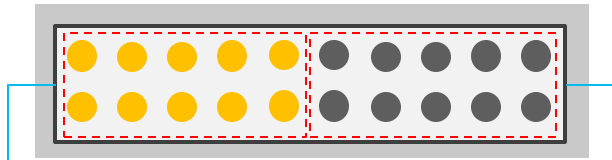
- **Premium Services*** :PWHE, EVPN HE, Egress NetFlow / sFlow
- **Subscriber Management** : AGF-UP, Subscriber Session Steering, Integrated NAT
- **Security***: IPSec , TunnelSec
- **SaaS Integration:** Cisco SW Integration , **Advanced API**
- TDM (along with smart SFP)*
- **Max Scale supported for all features by the HW**

- **Peering:** BGP FlowSpec, BGP attribute-download, BGP Policy Accounting, BGP Monitoring Protocol (BMP)
- **Traffic Engineering:** RSVP-TE , SR-TE , SRv6-TE , P2MP RSVP TE, **TreeSID**
- **Security***: MacSec
- **Subscriber Management** : Cloud Native BNG-User Plane, User Plane Geo Redundancy, IPoE , PPPoE, LAC, LNS
- **RON** – PLE
- **Advanced Timing***: Virtual Port, A-PTS , GNSS, Timing support on breakout Cables**

- **Management***: Enhanced Telemetry, Yang models, CLI/SSH, SNMP, NetFlow , SL API
- **Infra:** QoS, HQoS, PBR, ABF, E-OAM (Link-level Fault-Management) , CFM and Y.1731, SR-PM, BFD
- **HA***: BGP PIC, TI-LFA FRR, IP-FRR, G.8032
- **Security:** ACL's, LPTS, SSH, Radius/TACACS
- **Timing***: G.8275.1, G.8275.2, 1PPS, ToD, 10Mhz

FCM 2.0 - One SIA Per Device

FCM 1.0: SIA per Port

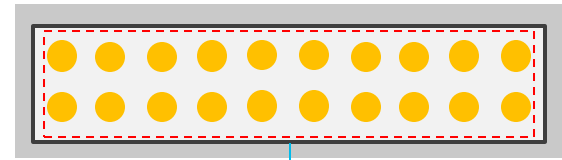


- SIA Per Port
- Procurement at FCS

- Additional SIA Per Port
- Required to be Procured During Capacity Expansion



FCM 2.0: SIA per Device



- Single SIA Per Device
- Device = Fixed Pizza Box or Modular LC
- Procurement at FCS Only
- No Additional SIA needed during Capacity expansion
- SIA Per Device is Term based and needs to be Renewed

NCS 540

NCS 540 Family in 2024

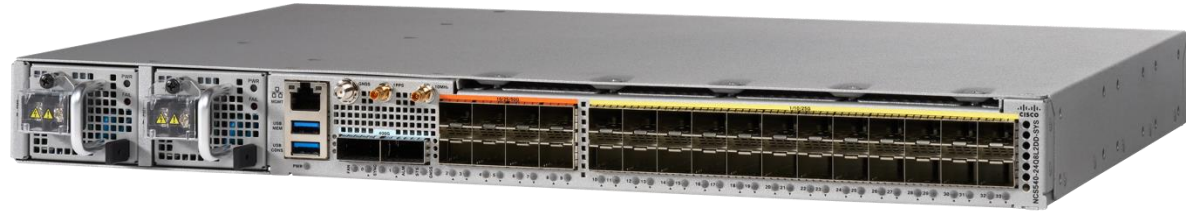
Small	Medium	Large	Fronthaul
<p>Darwin Fitzroy, Galapagos, Beagle Meerkat^{7.5.2}, Finches^{7.8.1}</p>	<p>Tortin & Big Bend Tortin 16/32, Everglades, Crater Lake, Acadia, Denali, Olympic^{7.5.2}</p>	<p>Arches</p>	<p>Felidae Lion, Jaguar</p>
			
<p>64G or 104G QUX-64/120 1/10/25GE (2x SFP28) PSU: Fixed AC/DC 1+1 or non-redundant I-Temp S2S or F2L Airflow, Fixed Fans Depth: 23cm C-Temp PID: Single AC/DC PSU, F2L Airflow, no timing Passive Cooling (Fanless) PID: Fixed DC PSU 1+1, 2.5RU, depth 38cm</p> <p style="text-align: center;">Shipping 7.3.1/7.4.1/7.5.2/7.8.1</p>	<p>136G to 300G QAX-160/300 1/10/25/40/100GE (2/4x QSFP28) PSU: FRU 1+1 AC/DC or Fixed 1+1 DC/1AC I-Temp or C-Temp F2B or S2S Airflow, Modular or Fixed Fans GNSS Receiver MACsec Depth: 25-28cm</p> <p style="text-align: center;">Shipping 6.3.2/6.5.2/7.0.1/7.5.2</p>	<p>800G Q2A 1/10/25/40/50/100/200/400GE (2x QSFP56-DD, 8x SFP56) PSU: FRU 1+1 AC/DC I-Temp F2B Airflow, Modular or Fixed Fans GNSS Receiver MACsec Depth: 30cm</p> <p style="text-align: center;">Shipping 7.4.1</p>	<p>300G or 900G QAX-300/J+ 1/10/25/40/100GE (2/4x QSFP28) 2/24x 10/25GE TSN 802.1Qbu 12/24x CPRI 3-8 PSU: FRU 1+1 AC/DC I-Temp or C-Temp F2B Airflow, Modular or Fixed Fans GNSS Receiver MACsec* Depth: 35/55cm</p> <p style="text-align: center;">Shipping 7.3.2</p>

NCS 540

NCS 540				FCS	NPU	NPU Gbps	Max IO Gbps	PSUs	Fans	Airflow	Temp	Conf. Coat	Depth [cm]	GNSS	PTP Class	MACsec	CPRI	TSN	QDD56	QSFP28	SFP56	SFP28	SFP10	SFP	RJ45	
Large	Arches		N540-24Q8L2DD-SYS	7.4.1	Q2A	800	1000	M	F	F2B	I		30	Y	C	Y			2	8	24					
Medium	Tortin	Tortin 16	N540-ACC-SYS	6.5.2	QAX	300	640	M	M	F2B	I		26	Y	B	Y			2	8	24					
		Tortin CC 16	N540X-ACC-SYS	6.5.2	QAX	300	640	M	M	F2B	I	Y		26	Y	B	Y			2	8	24				
		Tortin 32	N540-24Z8Q2C-SYS	6.3.2	QAX	300	640	M	M	F2B	I			26	Y	B	Y			2	8	24				
Medium	Big Bend	Everglades	N540X-16Z4G8Q2C-D/A	7.0.1	QAX	300	564	F ¹	F	S2S	I	Y	28	Y	C	Y			2	8	16				4	
		Olympic	N540X-16Z8Q2C-D	7.5.2	QAX	300	560	F ^D	F	S2S	I	Y		28	Y	C	Y			2	8	16				
		Crater Lake	N540-28Z4C-SYS-D/A	7.0.1	QAX	300	680	F ¹	F	F2B	C			25		B				4			28			
		Acadia	N540X-12Z16G-SYS-D/A	7.0.1	QAX	160	136	F ¹	F	S2S	I	Y		25	Y	C								12	12	4
		Denali	N540-12Z20G-SYS-D/A	7.0.1	QAX	160	140	F ¹	F	F2B	C			25		B								12	20	
Small	Darwin	Fitzroy	N540X-4Z14G2Q-D/A	7.4.1	QUX	120	104	F ²	F	S2S	I	Y	23		C							2	4	14	4 ^x	
		Galapagos	N540X-8Z16G-SYS-D/A	7.3.1	QUX	120	104	F ²	F	S2S	I	Y		23		C							8	12+8 ^c	4	
		Beagle	N540X-6Z18G-SYS-D/A	7.3.1	QUX	64	78	F ²	F	S2S	I	Y		23		C							6	18		
		Finches	N540-6Z18G-SYS-D/A	7.8.1	QUX	64	78	F ¹	F	F2L	C			23		-							6	18		
		Meerkat	N540-6Z14S-SYS-D	7.5.2	QUX	64	80	F ^D	-	-	I			38		C							6	10+6 ^c	4	
Fronthaul	Felidae	Lion	N540-FH-AGG-SYS	7.3.2	J+	900	1000	M	M	F2B	C		55	Y	C	Y ^R	Y	Y		4	24					
		Jaguar	N540-FH-CSR-SYS	7.3.2	QAX	300	550	M	F	F2B	I			35	Y	C	Y ^R	Y	Y		2	6	20			

M: modular F: fixed F¹: dual DC or single AC F²: dual DC or dual AC F^D: dual DC R: roadmap x: combo ports c: using cSFP

NCS 540 Large Arches N540-24Q8L2DD-SYS



- Broadcom Qumran 2A (J2 family)
- 800Gbps/600Mpps, Max IO 1T, 2GB Packet Buffer
- CPU 4C Intel Xeon, 16GB DRAM, 64GB SATA
- 1RU, Depth 299mm
- Redundant Modular AC/DC 1+1 power supplies
- Front to Back airflow
- Fixed redundant fans
- I-Temp -40C to +65C
- G.8273.2 Class C & GNSS Receiver

2x 400GE QSFP56-DD

8x 50GE SFP56

24x 25GE SFP28



QDD-400G-ZR-S



QDD-400G-ZRP-S

NCS 5500, 5700

(BRKSPG-2397)

NCS 5500/5700 – Fixed Portfolio


High Scale Aggregation evolution

NCS5500 Products (Q-MX, J, J+)

NCS5700 Products (J2/J2C/Q2C/J2C+)

1G | 10G | 25G

NCS 5501/SE



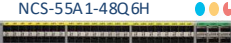
40G | 100G

NCS 5502/SE




25G | 40G | 100G

NCS-55A1-48Q6H




NCS-55A1-24Q6H-S/SS




40G | 100G

NCS 55A1-36H-S/SE




NCS 55A1-24H




10G | 25G | 100G

NCS 55A2-MOD-S/SE




NCS-57B1-6D24




- 400G ZR/ZR+
- 1RU; 4.8 Tbps throughput
- 24x100G + 6x400G
- MACSEC, Timing

NCS-57B1-5DSE




- 400G ZR/ZR+
- 1RU; 4.4 Tbps throughput
- 24x100G + 5x400G
- MACSEC, Timing
- External TCAM

NCS-57D2-18DD-S




- 400G ZR/ZR+
- 2RU; 7.2 Tbps throughput
- Flexible 66 ports 2x400G + 16x400G/64x100G
- MACSEC*, IPSEC*, Timing

NCS-57C3-MOD-S




- 400G ZR/ZR+
- 3RU; 2.4T throughput
- Fixed: 48x1/10/25G + 8x100G QSFP28
- 3 x MPA: 2x800G + 1x 400G
- MACSEC, Timing

NCS-57C3-MOD-SE



- 400G ZR/ZR+
- 3RU; 2.4T throughput
- Fixed: 48x1/10/25G + 4x100G QSFP28
- 3 x MPA: 2x800G + 1x 400G
- MACSEC, Timing
- External TCAM

NCS-57C1-48Q6D-S



- 400G ZR/ZR+
- 1RU; 2.4T throughput
- 32x1/10/25G + 16x1/10/25/50G + 6x400G
- MACSEC, Timing

 Segment Routing  EVPN  MACSec  Timing  400G ZR/ZRP

NCS 5500/5700 – Modular Portfolio

High Scale Aggregation evolution

NCS5500 Products (J, J+)

40G | 100G

NC55-24H12F-SE



NC55-18H18F



100G

NC55-36X 100G-S



NC55-24X 100G-SE



NC55-6x200-DWDM-S



40G | 100G

NC55-36X 100G-A-SE



Modular

NC55-MOD-A-S/SE








NC55-MOD-A-SE

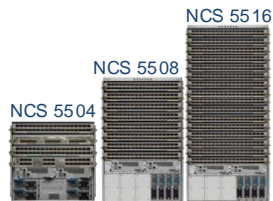


10G | 25G | 100G

NC55-32T16Q4H-A



-  Segment Routing
-  EVPN
-  MACSec
-  Timing
-  400G ZR/ZRP



NCS5700 Products (J2)

NC57-24DD



- 400G ZR/ZR+
- 24x400G,
- Through put 9.6 Tbps
- No eTCAM

NC57-18DD-SE



- 400G ZR/ZR+
- 18x400G, 30x200G/100G
- Through put 7.2 Tbps
- External TCAM

NC57-36H6D-S



- 400G ZR/ZR+
- 100G, 400G
- Throughput 4.8 Tbps
- Timing, MACSEC,

NC57-36H-SE



- 400G ZR/ZR+ (1x100G mode)
- 100G
- Throughput 3.6 Tbps
- External TCAM

NC57-MOD-S



- 400G ZR/ZR+
- 10G, 25G, 50G, 100G, 400G
- Throughput 4.8 Tbps
- Timing, MACSEC, 800G-MPA

Nové usecasey



Crosswork cloud

What Crosswork Cloud Provides for Customers



Moat

Network Insights (BGPmon)

Gate

Trust Insights (Trust Audit)

Bridge

Traffic Analysis (Netflow stats)

Crosswork Cloud Top Use Cases

Network Insights

BGP Security

- Human Error & BGP Hijacks
- Real time BGP updates
- Looking Glass & Alarms
- Peer, RPKI and DNS monitoring

Traffic Analysis

Edge Netflow

- Top Talkers
- Traffic Stats & History
- Peer Management & Prospecting
- Load Balancing & Threshold Alerts

Trust Insights

Router Zero Trust

- Continuous Tamper Evidence Audit
- Hardware Postering TPM/TAM
- Secure Boot, OS and Software KGVs
- Config hash & File System Check



ZeroTrust



Critical Flow Monitoring



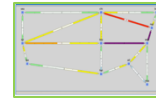
Peering Engineering



NOC



SLA Monitoring



Capacity Planning



SPIS BGP Optimization



SASE



BGP-DoS DDoS



NetSec



RON Security



TopX Reports



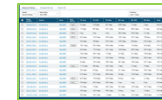
Malware Traffic detection



Network Sec Slicing

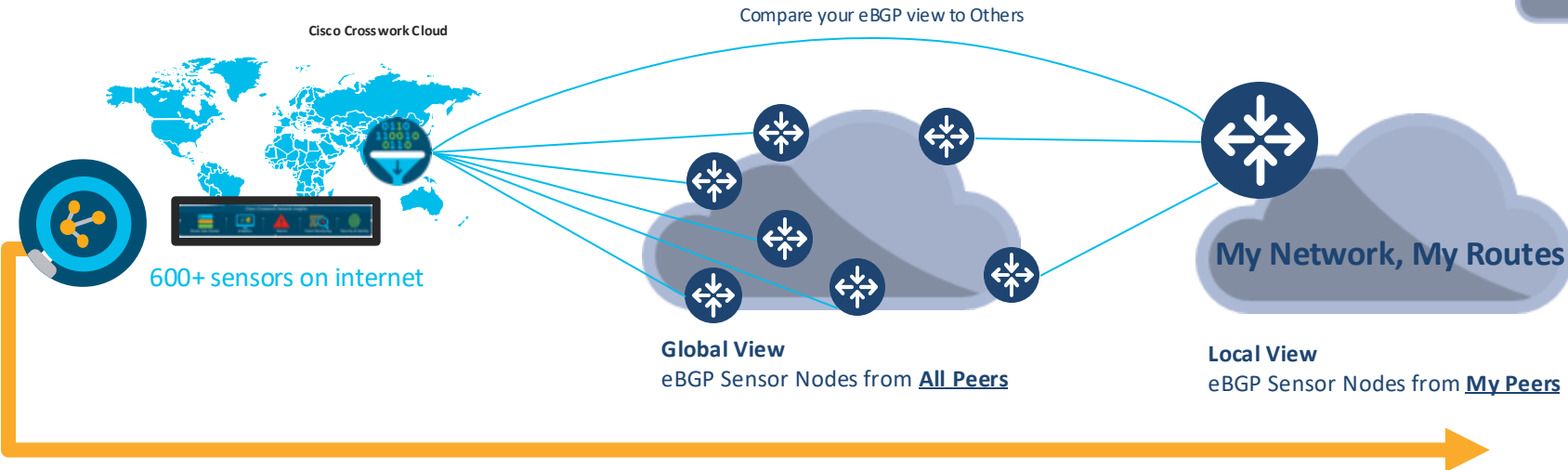


SOC



Traffic Security

External Route Analysis at Cloud Scale



BGP Polices allow You to identify when things are not behaving as expected



eBGP Sensor Nodes From partners and from our own locations



External view of your network as seen by others



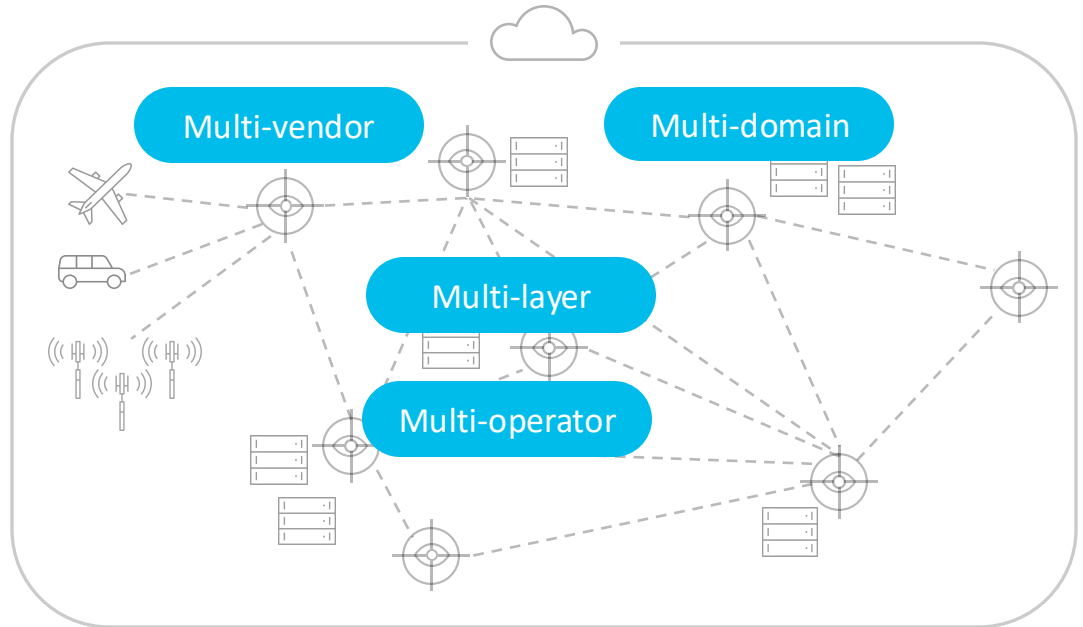
How do I know if the source of the BGP event is coming from my network?



Multidomain management

Users expect a great experience as network complexity and costs increase

- Higher demands on networks and services
- Complex and distributed network; fragmented tools
- Performance visibility silos
- Expensive site visits
- Lengthy resolution times

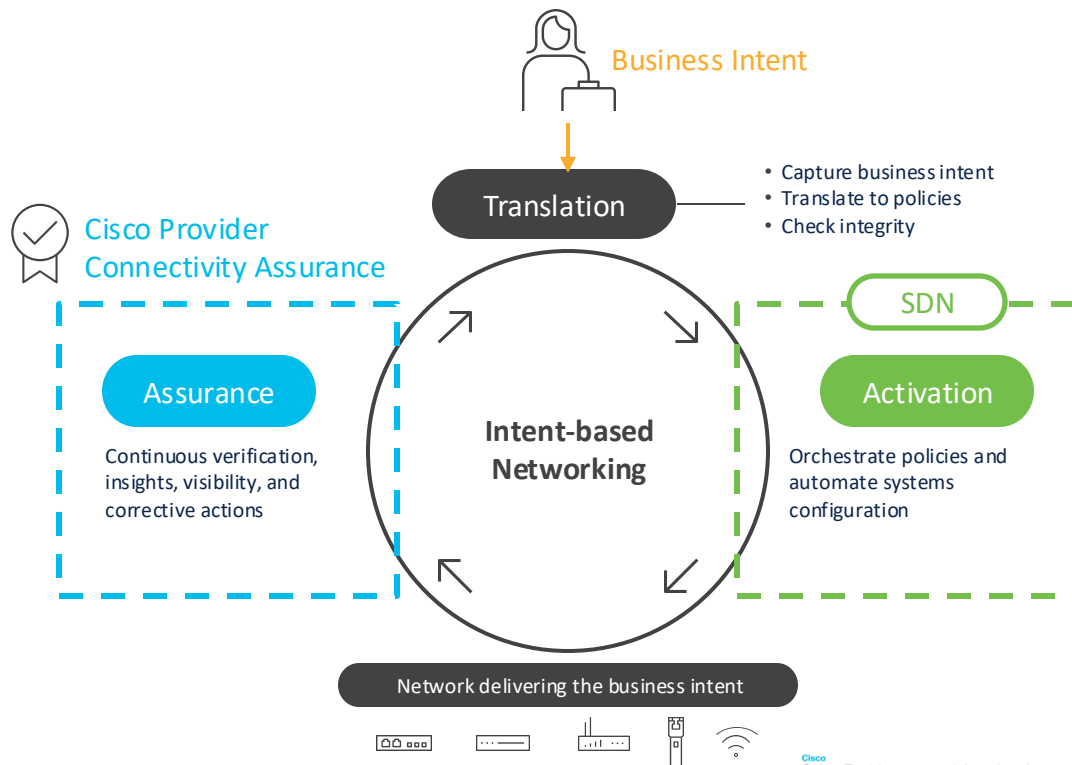


Multiple layers, vendors and domains
Silos of network & service data

Evolution towards intent-based networking & assurance

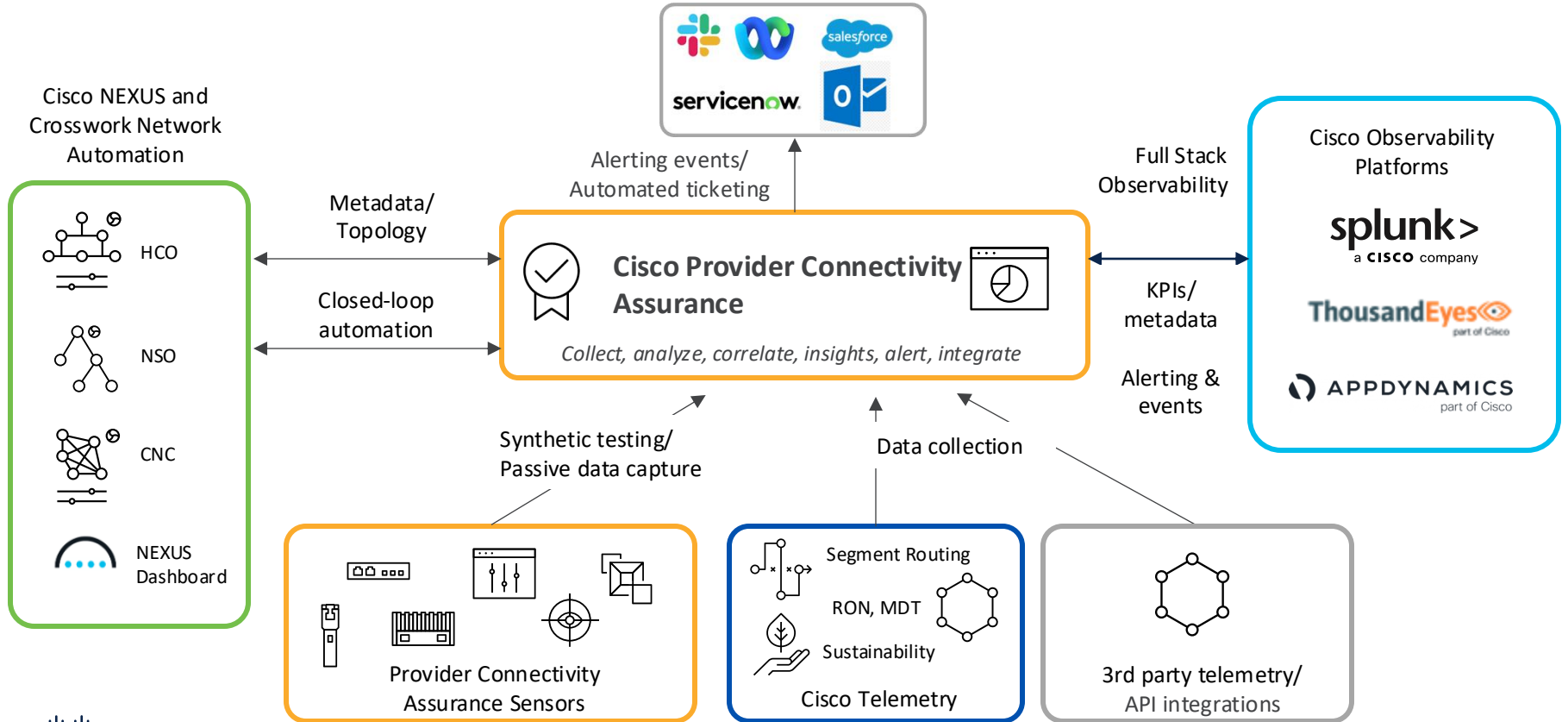
An intelligent assurance layer to drive intent-based networking use cases

- Service-based model understands how to assure the service
- Deployment of assurance is aligned to the business intent
- Understands how the service should behave
- If real time issues are detected or if future issues are predicted, the orchestration layer is informed
- Drives action to preserve SLOs and maintain integrity of business intent



Provider Connectivity Assurance

Part of the end-to-end Cisco assurance story





Cisco DDoS Edge protection solution

DDoS is in principle easy... and Cheap!

Our Pricing

1 Month Basic	Bronze Lifetime	Gold Lifetime	Green Lifetime	Business Lifetime
5.00€ /month	22.00€ Lifetime	50.00€ Lifetime	60.00€ Lifetime	90.00€ Lifetime
1 Concurrent -	1 Concurrent +	1 Concurrent +	1 Concurrent +	1 Concurrent -
300 seconds boot time	600 seconds boot time	1200 seconds boot time	1800 seconds boot time	3600 seconds boot time
125Gbps total network capacity	125Gbps total network capacity	125Gbps total network capacity	125Gbps total network capacity	125Gbps total network capacity
Resolvers & Tools	Resolvers & Tools	Resolvers & Tools	Resolvers & Tools	Resolvers & Tools
24/7 Dedicated Support	24/7 Dedicated Support	24/7 Dedicated Support	24/7 Dedicated Support	24/7 Dedicated Support
Order Now	Order Now	Order Now	Order Now	Order Now

Coffee & Espresso

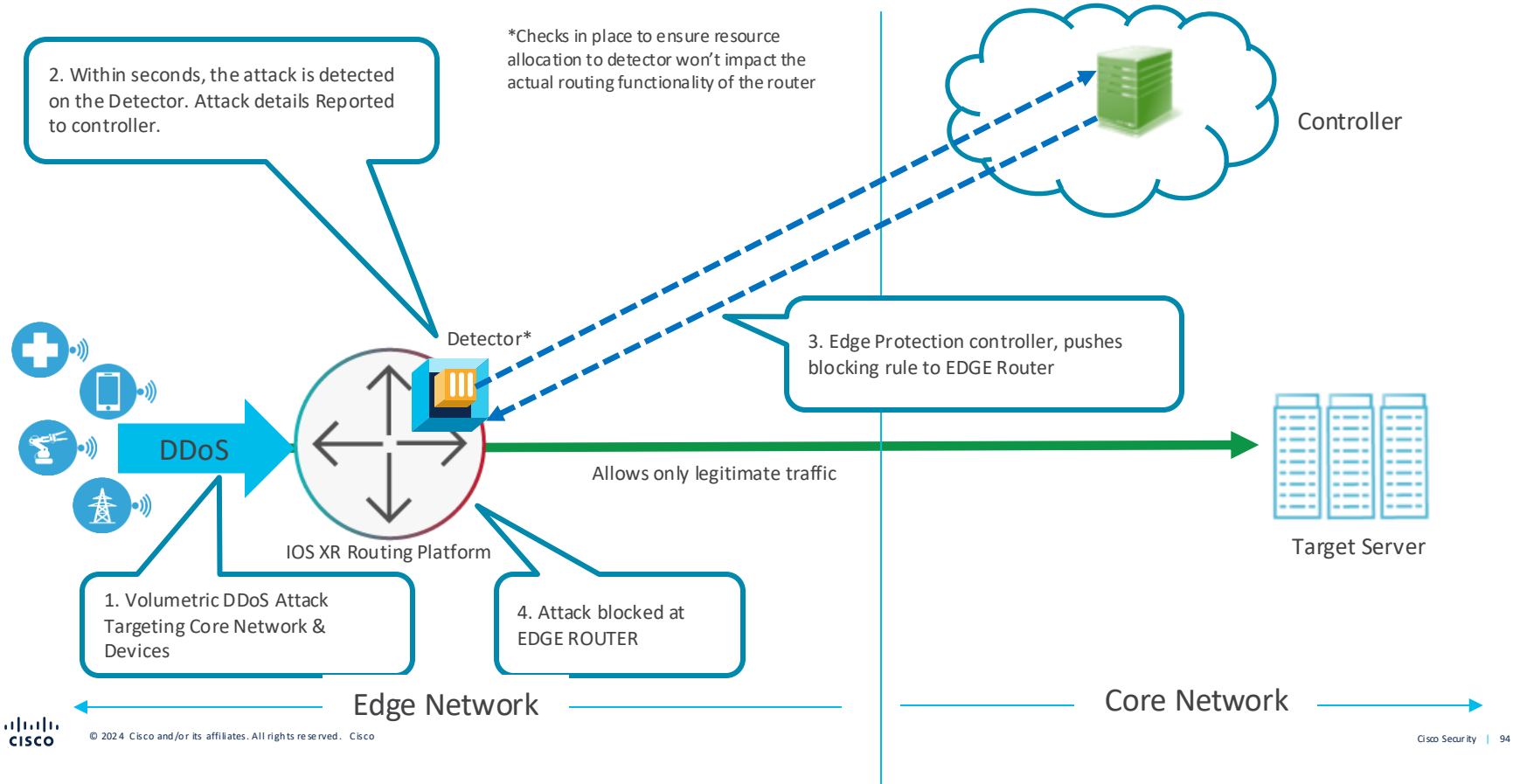
We're proud to use only 100% Fairtrade Espresso.

Enjoy hot or iced	short 237 ml	tall 354 ml	grande 473 ml	venti 591 ml
Piccolo Latte <small>4oz</small>	3.80			
Latte, Cappuccino, Flat White	3.80	4.40	4.90	5.40
Cafe Mocha	4.40	5.00	5.60	6.20
White Chocolate Mocha				
Caramel Macchiato	4.90	5.50	6.10	6.70
Long Black / Americano	3.20	3.80	4.40	5.00
Short Black / Espresso	3.20 <small>short</small>		3.80 <small>grande</small>	
Brewed Coffee	2.80	3.10	3.40	3.70

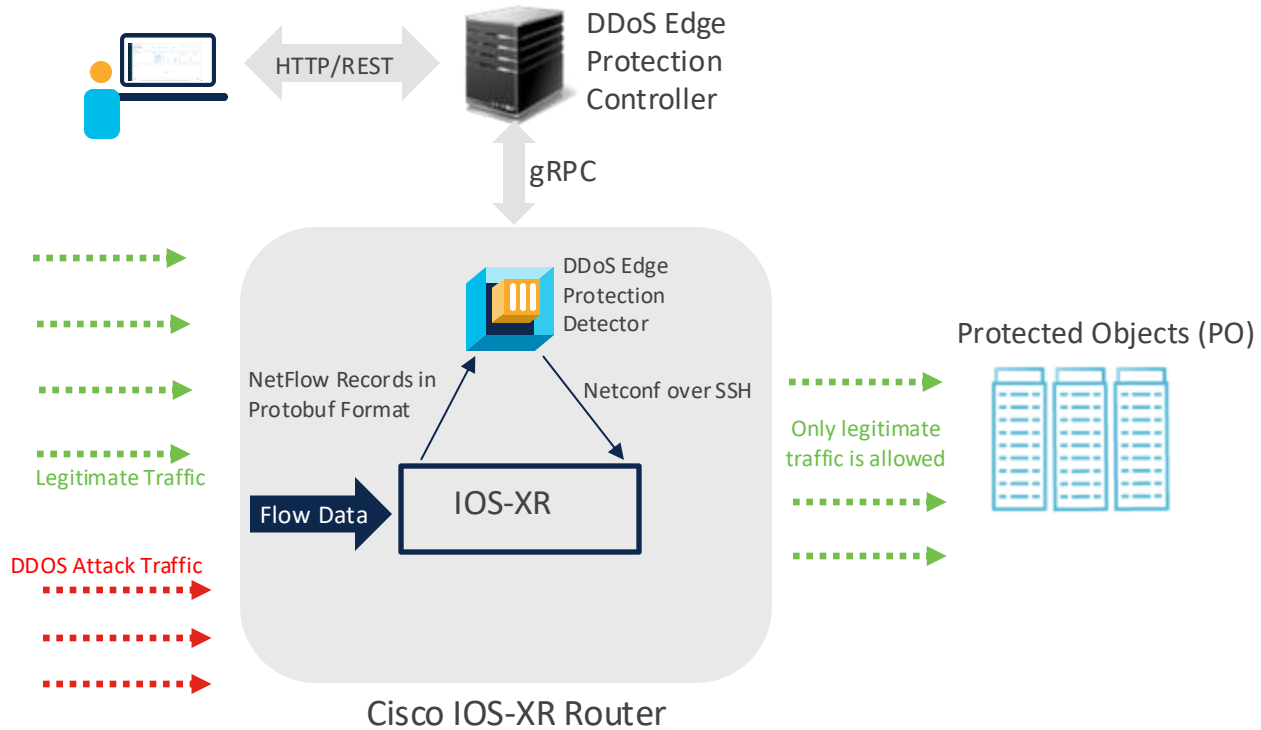
Make it your way. Soy is free in any beverage.

DDoS-as-a-Service Pricing Example

Edge Protection Solution On IOS XR Routers

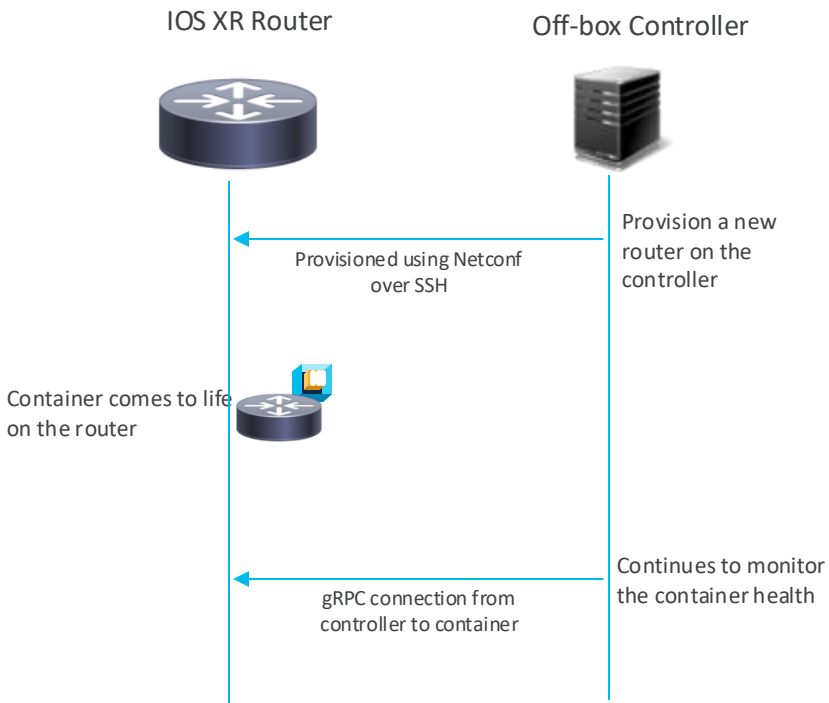


End-to-End Workflow – Router View

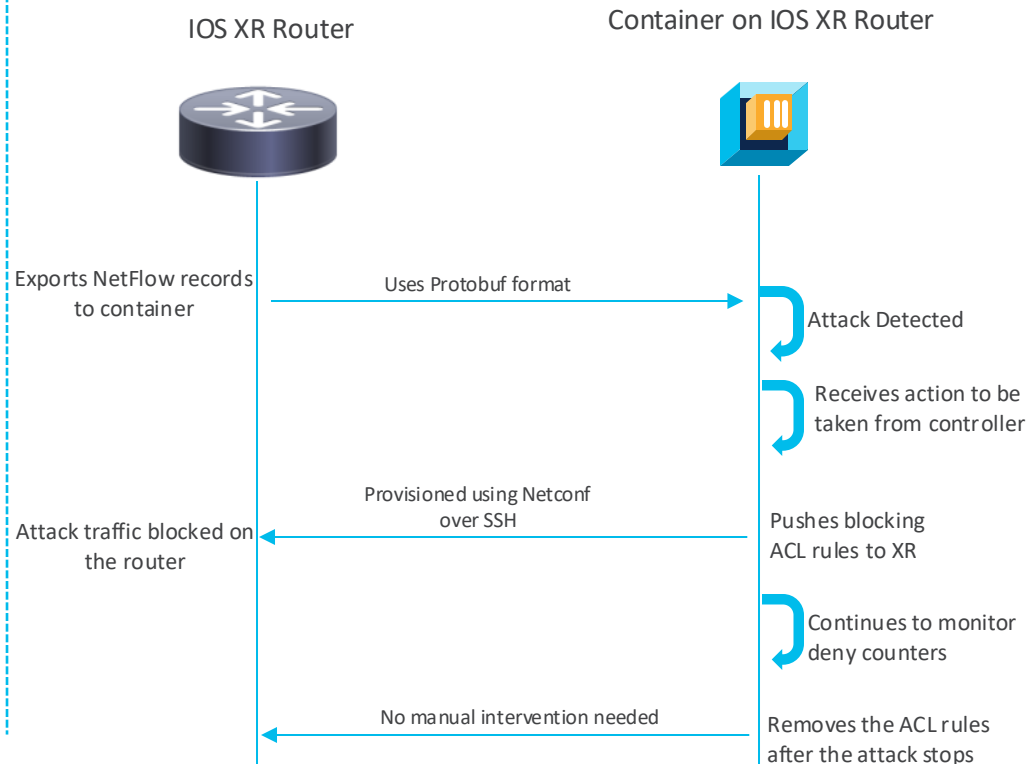


Detailed Flows

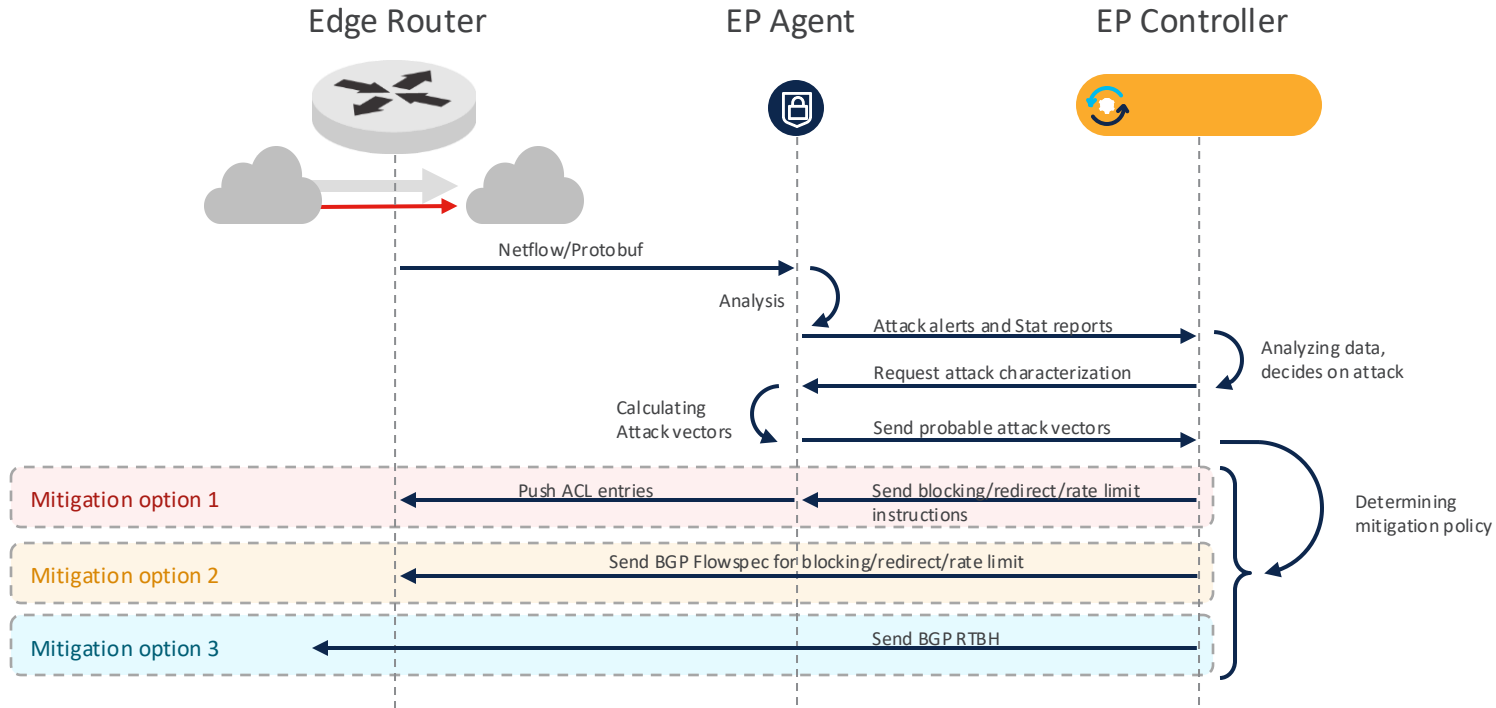
Provisioning Phase



Detection & Mitigation Flows



Workflow With Edge Protection

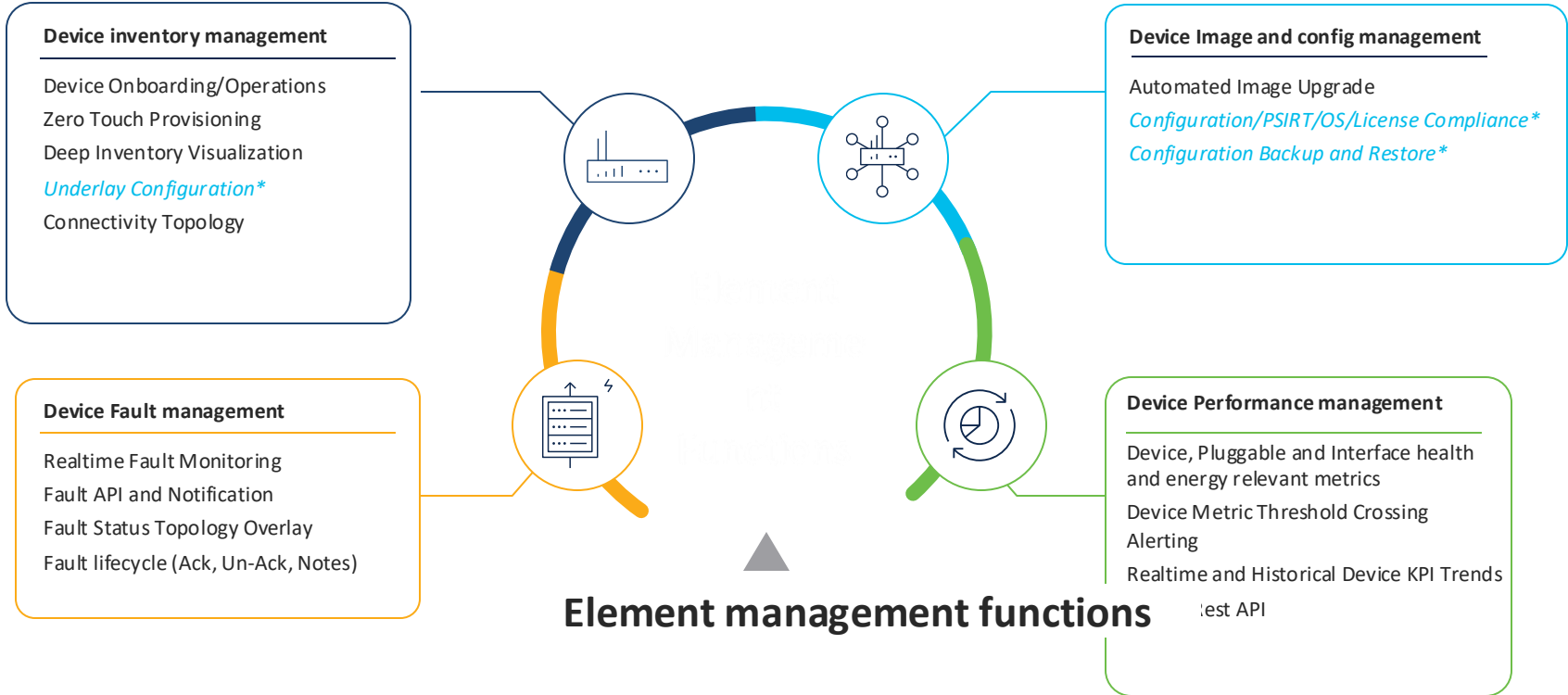




CNC Essential

Element Management Function

Element Management use-cases in CNC



**Future/Roadmap deliverable*

Device Lifecycle Management Functions

Inventory Management

The image displays three overlapping screenshots of the Cisco Crosswork Network Automation interface. The top screenshot shows a network topology for ASR907-120.22, highlighting a chassis and a module R1. The middle screenshot shows the 'Network Devices' section with a 'Reachability Status Summary' and a 'Deep Inventory Collection Status Summary'. The bottom screenshot shows the 'Network Inventory' section with a table of device details.

Product ID	Product Name	Product Type	Operational...	Vendor	Device Name	Serial Number	Manufactur...	Version
<input type="checkbox"/>	AS900-MA1X	IM subslot 0/4	Module	Enabled	Cisco System...	ASR903-55.5...	F0C18A0NT0X	06-Oct-2014 ... V02
<input type="checkbox"/>	AS900-MA2ES-CX	IM subslot 0/2	Module	Failed	Cisco System...	EPN4SR907...	F0C1927NE29	05-Jul-2015 ... V00
<input type="checkbox"/>	AS900-MA2ES-CM5L	IM subslot 0/6	Module	Enabled	Cisco System...	ASR907-120...	F0C232BN4BY	30-Jun-2019 ... V00
<input type="checkbox"/>	AS900-MA2ES-CM5L	IM subslot 0/3	Module	Failed	Cisco System...	ASR907-120...	F0C232BN4BU	30-Jun-2019 ... V00
<input type="checkbox"/>	AS900-MA2Z	IM subslot 0/1	Module	N/A	Cisco System...	NC54206-10...	F0C2103NHH	15-Jan-2017 ... V01
<input type="checkbox"/>	AS900-MA2Z	IM subslot 0/2	Module	Enabled	Cisco System...	ASR903-55.5...	F0C1933PHZ	17-Aug-2014 ... V01
<input type="checkbox"/>	AS900-MA3G-IMG3	IM subslot 0/3	Module	Enabled	Cisco System...	ASR903-55.5...	F0C2204PANZ	28-Jan-2018 ... V01
<input type="checkbox"/>	AS900-MA3G-IMG3	IM subslot 0/2	Module	Enabled	Cisco System...	ASR900-120...	F0C2301FRS	06-Jan-2019 ... V01

Challenges:

- Poor visibility into the network infrastructure
- Inaccurate data and Inventory
- Establishing required inventory v/s Current

Solution:

- Network wide Inventory view
- Detailed Device Inventory visualization
- Active Inventory Change notifications
- Localized status monitoring

Outcome:

- Near real-time Inventory visibility
- Improved Inventor manageability and operator productivity

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i Start presenting to display the poll results on this slide.



The bridge to possible

