



Juniper Networks újdonságok 2025



Agenda

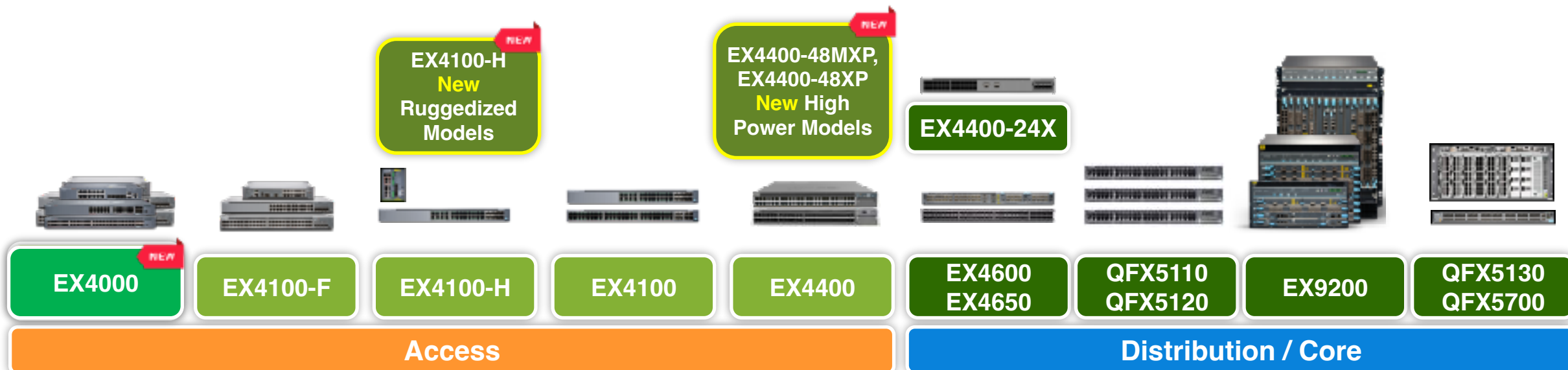
- Ruggedized switches
- New campus switch series
- WiFi-7 AP
- Mist integrated NAC
- Routing assurance
- New compact MX



EX4100-H Switches Overview

EX CAMPUS & BRANCH SWITCH PORTFOLIO

Cloud-Native, AI-Native, Secure and Resilient Switching



Cloud-Native, Mist AI-Native switches (Wired Assurance)

1. Cloud-Native



Microservices cloud enables best agility & scale, and fastest time to deploy.

2. AI-Native



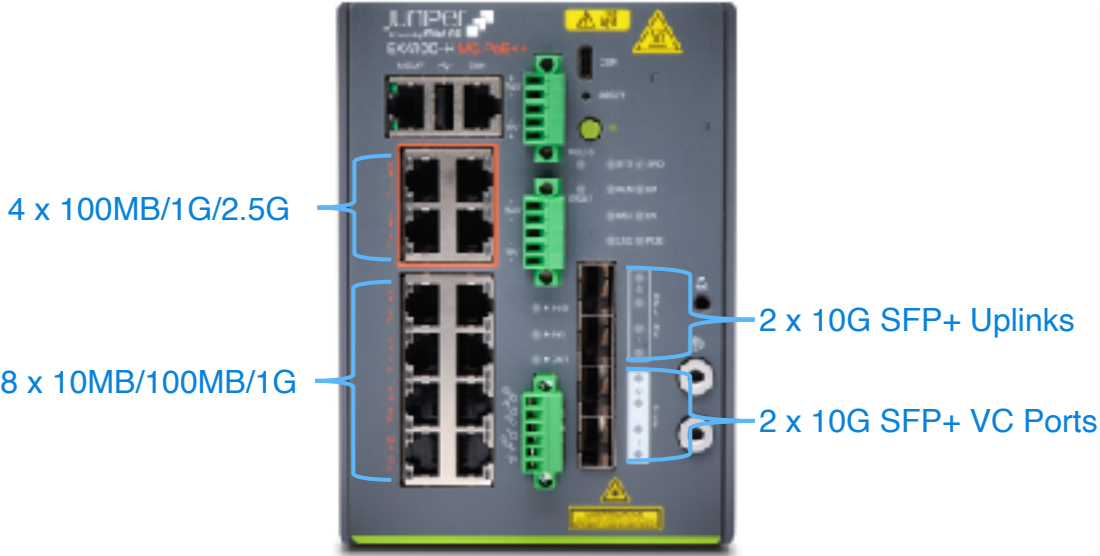
Industry-leading AIOps via Mist AI identifies and resolves issues quicker & more reliably, lowering OPEX and assuring best operator experience.

3. Assured Experiences



Enables visibility, efficiency, and resiliency needed to deliver consistent and reliable user experiences across full stack.

EX4100-H-12MP Ruggedized Switch



- 4 x 100MB/1G/2.5 GbE-T on MGE copper ports
- 8 x 10MB/100MB/1G on 1 GE copper ports
- 2 x 1/10 SFP+ fixed Virtual Chassis / Uplink ports*
- 2 x 1G/10G fixed Uplink ports
- 802.3af/at/bt on all access ports
- MACsec AES 256 support on Multi-gig and Uplinks ports
- Energy Efficient Ethernet
- Up to 360W PoE++ budget using AC and or DC PSU's

SKUs	10MB/100MB/1G BASE-T ports	100M/1G/2.5G BASE-T ports	1G/10GbE SFP+ uplink ports	10G fixed VCP ports	PoE++ (90W capable) Ports	PoE Power Budget (1PSU/ 2PSU)	Cooling	PSU	PS Rating
EX4100-H-12MP	8	4	2	2	12	240W / 360W	N/A **	External PSU	340
EX4100-H-12MP-DC	8	4	2	2	12	240W / 360W	N/A **	External PSU	340

* 1GbE speed supported only when VC ports converted to network ports

** - Natural Convection cooling

EX4100-H RUGGEDIZED FAMILY OF SWITCHES

CLOUD NATIVE RUGGEDIZED SWITCH



Key Benefits

- 12 Port, 24 Port Copper and 24 Port Fiber Ruggedized switches
- Fanless with extended temperature range **-40C to +75C**
- Mist Wired Assurance support from Day One
- MGig (up to 2.5G) and PoE++(90W) & Fiber port capability
- Dry Contact Alarms: 2 in & 1 Out
- Dual redundant PSUs with both AC and DC PoE capability
- AES256 MACsec capability
- Junos feature parity with existing EX4100 switches
- **Use Cases:** Smart Cities lighting/traffic signals, Factory Automation, Airport terminals, Remote asset management etc.

SKU	Interfaces	Stacking/Uplink	MACsec(AES256)	POE Budget [2PSUs]
EX4100-H-12MP EX4100-H-12MP-DC	4x100MB/1G/2.5G RJ45 + 8x10MB/100MB/1G RJ45	2x 10G (Default VC) + 2x 10G (Uplinks)	Uplinks (2) + MGig (4)	360W (PoE++)
EX4100-H-24MP EX4100-H-24MP-DC	8x100MB/1G/2.5G RJ45 + 16x10MB/100MB/1G RJ45	4x 10G (Default VC) + 4x 10G (Uplinks)	Uplinks (4) + MGig (4)	370W (PoE++)
EX4100-H-24F EX4100-H-24F-DC	24x1G SFP	4x 10G (Default VC) + 4x 10G (Uplinks)	Uplinks (4) + All Access Ports(24)	NA

EX4100-H-24 – System 3D views



EX4100-H-12MP



EX4100-H-24MP

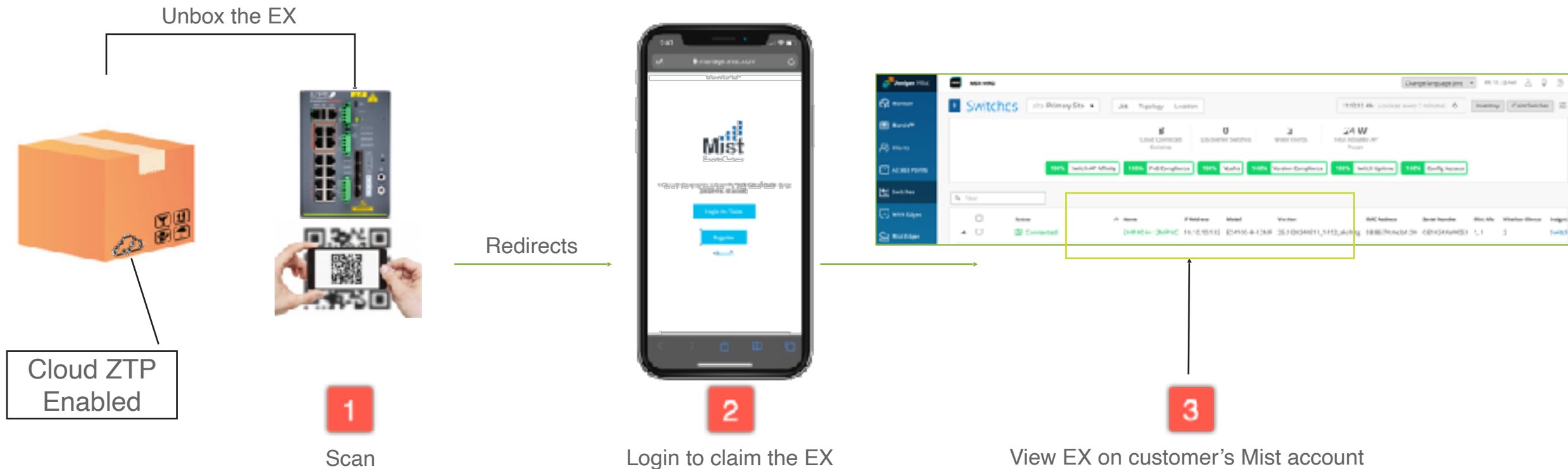


EX4100-H-24F

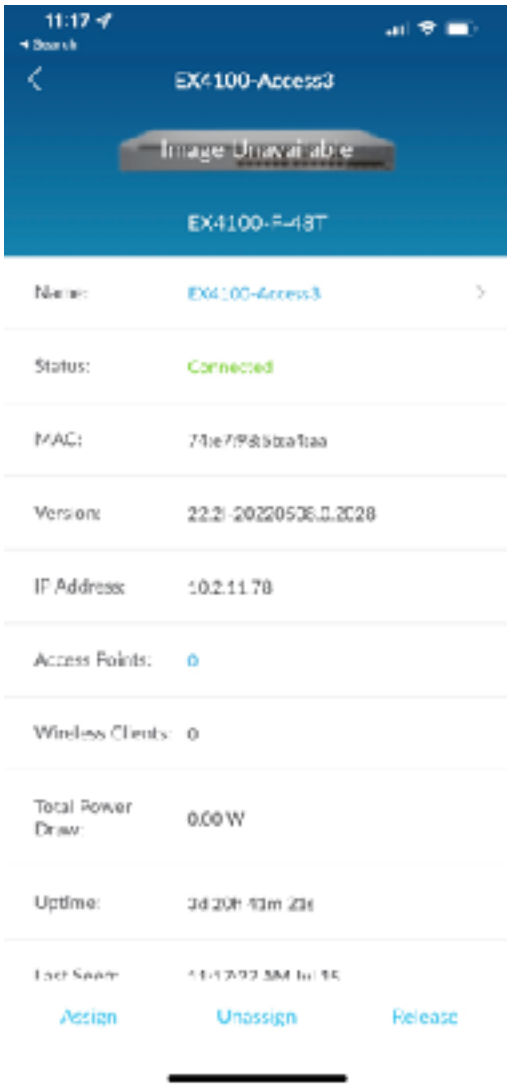
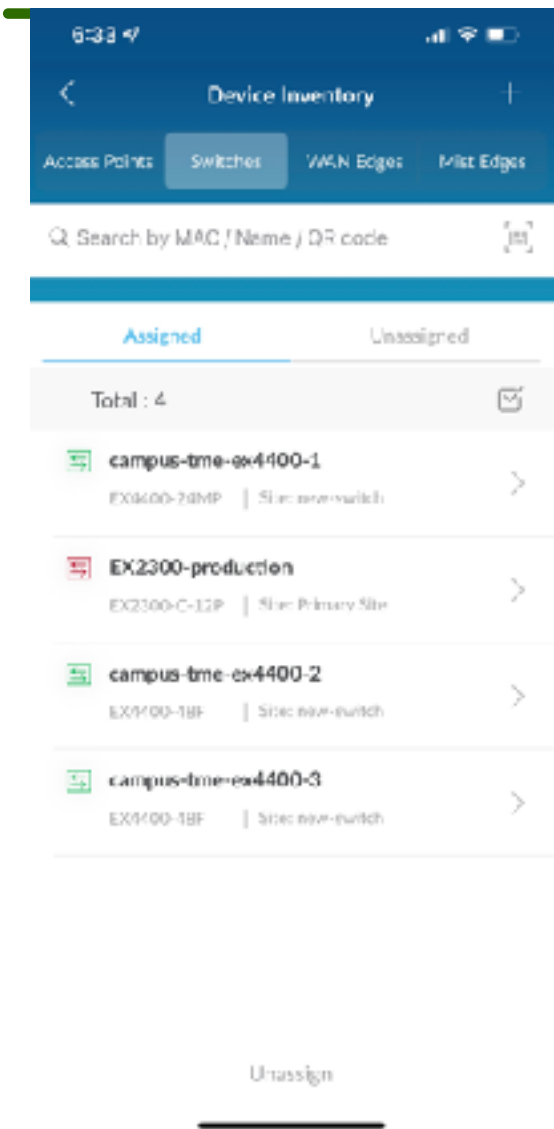
Day 0 : EX4100-H ACTIVATION with QR CODE

Look for Cloud-Ready Sticker on the EX shipping carton

- It implies EX switch is Cloud ZTP enabled



CLAIM SWITCH VIA MIST AI APP



EX4100-H-12MP – Management options

- Cloud Management
 - Mist Wired Assurance
- Automation
 - Scripting solution based on Ansible

The screenshot displays the management interface for a Juniper EX4100-H-12MP switch. The top navigation bar shows the switch name "EX4100-H-12MP-VC" and includes "Utilities" and "Save/Cancel" buttons. Below the navigation bar, there are tabs for "Port Panel" and "Port List". The "Port Panel" tab is active, showing a grid of port configuration options. The grid is organized into two main sections: "0" and "1". Each section contains a grid of port numbers (0-11) and status indicators (green and red). A "Modify Virtual Chassis" button is located on the right side of the port configuration area.

Below the port configuration area, there are two main sections: "METRICS" and "PROPERTIES".

METRICS

100%	Switch-AP Affinity	100%	Hot Compliance
100%	VLANS	100%	Version Compliance
100%	Switch Uptime	100%	Config Success

PROPERTIES

[Show Switch Insights](#)

VC Member	Mac Address	Serial Number	IP Address	Model	Version	Uptime	Status
0 (Primary)	58:85:7D:0E:14:00	GF1106A2W0055	10.10.10.135	EX4100-H-12MP	25.1120240911_1412_0ksh01g	98m	OK
1 (Backup)	58:85:7D:0E:14:00	GF1106A2W0057	10.10.10.136	EX4100-H-12MP	25.1120240911_1412_0ksh01g	98m	OK



EX4000

EX4000

Front view – Compact, 24 and 48 port SKUs



Rear view – Compact non-PoE, PoE, 24 and 48 port SKUs



EX4000

- Mist Cloud-native entry level (lower cost) Enterprise class Layer 2 and basic Layer 3 access switches
- 8/ 12/ 24/ 48 Ports with 1G and MGig, PoE+/PoE++ enabled downlink ports with 1G and 10G uplink capabilities
- First Juniper product to have Hardware Root of Trust (HROT) implemented.
 - SW is authenticated by HW before boot
- FRS Target : Feb'25 (3 SKUs) April'25 (7 SKUs)
- Competing
 - Meraki: MS120 (1G Uplinks) and MS125 (10G Uplinks)
 - Cisco: C1000(1G Uplinks) and C1000 (10G Uplinks)

SKU #	Description	Commentary
EX4000-8P	8 Port (8x 1GT, 1x 1GT, 2x 1/10G SFP+ uplink/stacking)	PoE+ with 120W PoE budget
EX4000-12MP, -12P, -12T	12 Port (upto 12x 1GT, 4x 2.5GT, 4x 1/10G SFP+ uplink/stacking)	PoE+ & ++ with 240W PoE budget
EX4000-24MP, -24P, -24T	24 Port (upto 24x 1G, 4x 2.5GT, 4x 1/10G SFP+ uplink/stacking)	PoE+ with 370W and PoE++ with 480W PoE budget
EX4000-48MP, -48P, -48T	48 Port (upto 48x 1G, 8x 2.5GT, 4x 1/10G SFP+ uplink/stacking)	PoE+ with 740W and PoE++ with 960W PoE budget

PFE high level comparison

Features	EX2300	EX4000	EX4100
Multichip on fpc0	Yes	Yes	No
BGP	No	Yes	Yes
Multicast Queue	No	Yes	Yes
Per port queue	8	12	12
MDCoS	No	Yes	Yes
LACP-Fast timer	No	Yes	Yes
VRF	No	Yes	Yes
BFD	No	Yes (S/w based 1sec timer)	Yes
UTT	No	No	Yes
JTI	Yes	Yes	Yes
Mirror/Sflow	Yes	Yes	Yes
LAG/AE	Yes	Yes	Yes
Firewall Filters	VFP/IFP/EFP	VFP/IFP/EFP	VFP/IFP/EFP
Flow Based Telemetry	No	No	Yes

PFE Unidimensional Scale Results

Scale Parameter	EX4000-48MP Result
L3 vlan tag	1000
Jumbo Frame	9216
IRB	1000
L2 vlan scale	1020
LACP Lag Max member	8
MAC scale	32000
MAC learning rate	7600
DHCP snooping	8000
DHCP Server	4000
DHCP Relay	4000
ARP	4000
Dot1x Supplicants	150 supplicants per ifd (two ifd's of same PFE unit tested for 48MP)

Scale Parameter	EX4000-48MP Result
PACL ingress ACL terms	510
PACL Egress ACL terms	510
VACL ingress ACL terms	510
VACL egress ACL terms	255
RACL ingress ACL terms	510
RACL egress ACL terms	510
IPv4 LPM	1000
IPv4 Host	7500
BFD session	2.5 seconds 100 sessions
L2 IGMP snooping	1024
IPv4 Multicast	3000
instance-type virtual-router scale	11
VRRP v4 Groups	126
VRRP v4 Sessions	126
ARP Learning rate	66 fps

MIST Support

< Switches: bng-ex4000-48mp-p2a-multid01

Locate

Utilities ▾

Save

Cancel

Front Panel

Port List

EX4000-48MP

CPU

Memory

Temp

PoL

PSUs

Fans

RMS 25GE

0

2

4

6

1

3

5

7

RMS 1GE

8

10

12

14

16

18

20

22

24

26

28

30

32

34

36

38

40

42

44

46

9

11

13

15

17

19

21

23

25

27

29

31

33

35

37

39

41

43

45

47

SFP+ VC Ports

0

1

SFP+ Uplink

2

3

METRICS

100% Switch-AP Affinity

100% PoE Compliance

100% VLANs

100% Version Compliance

Switch Uptime

100% Config Success

PROPERTIES

INSIGHTS	Switch insights
LOCATION	not on floorplan
MAC ADDRESS	20:90:29:07:bc:80
DEVICE ID	20983907bc80
MODEL	LX4000-48MP
VERSION	24.4R1.11
TEMPLATE	None (Configure)

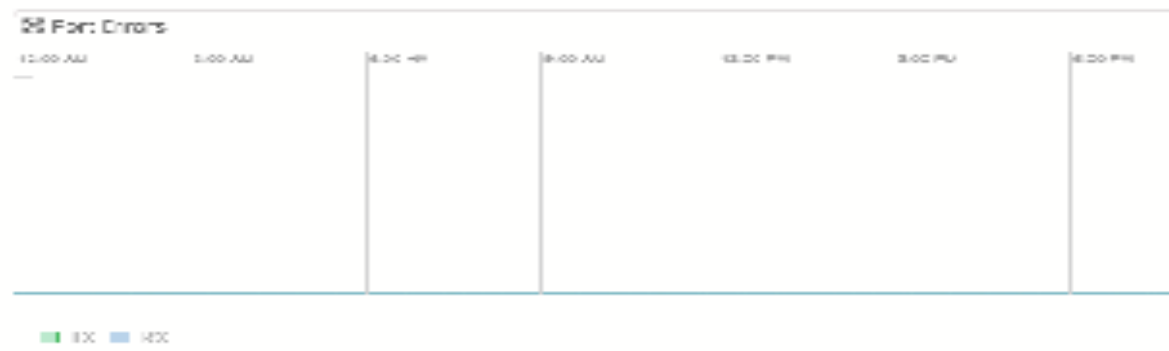
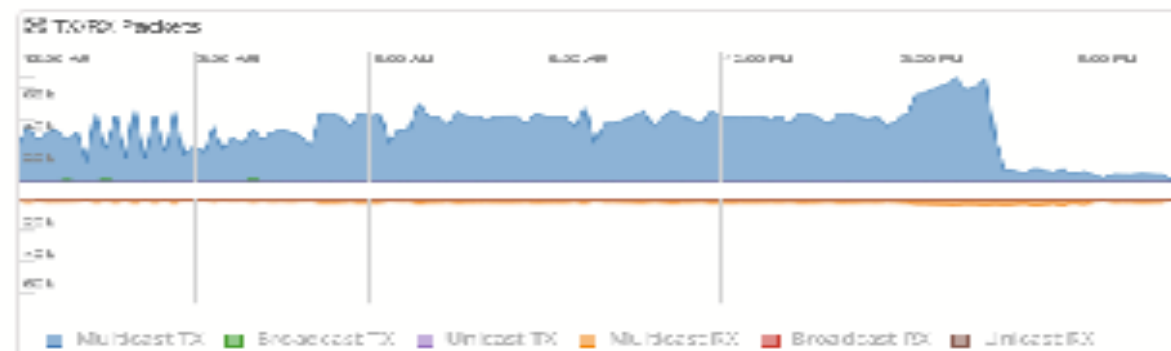
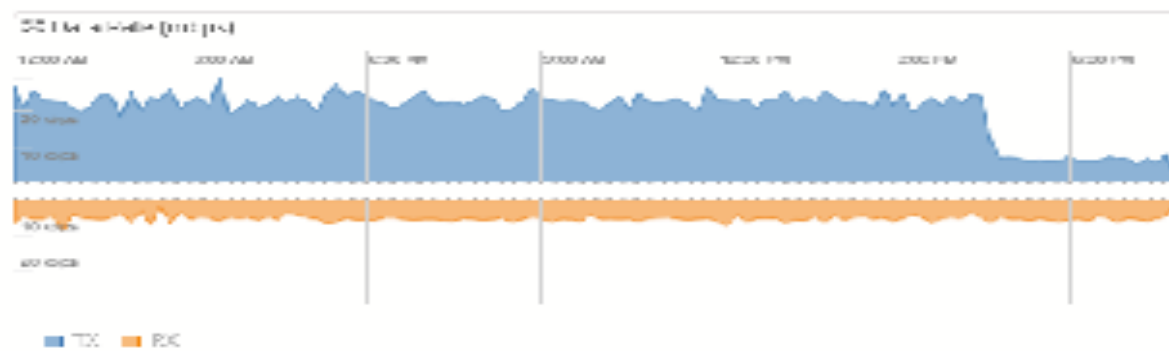
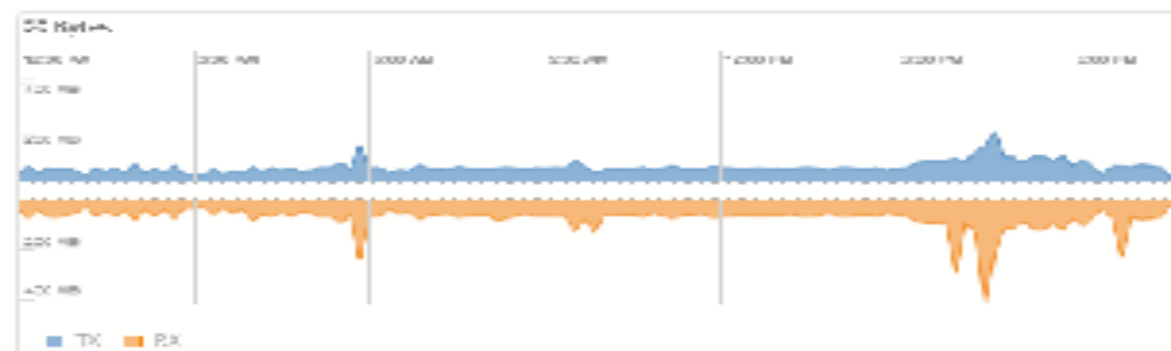
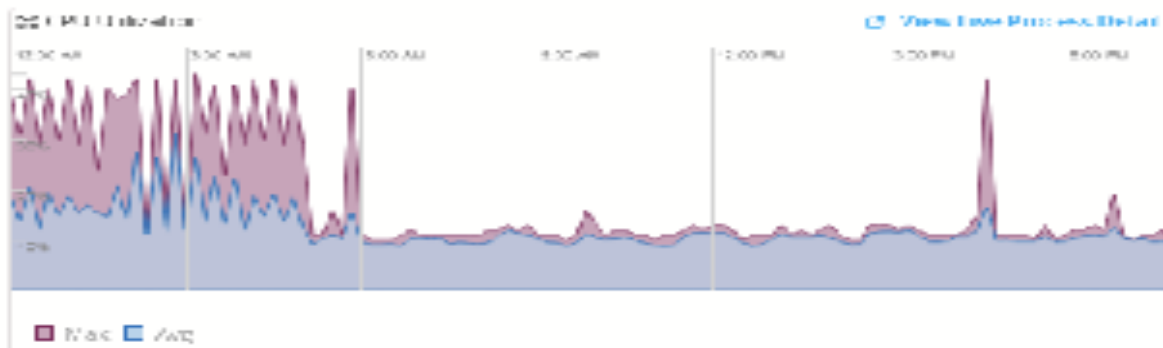
STATISTICS

STATUS	Connected
IP ADDRESS	<div>10.206.38.136 (vme0)</div> <div>192.168.2.189 (vlan 1)</div>
MIST APS	4
WIRELESS CLIENTS	0
TOTAL POWER DRAW	62.60 W
UPTIME	1d 17h 36m
LAST SEEN	Jan 23, 2025 2:05:12 PM

MIST Support

Switch Charts

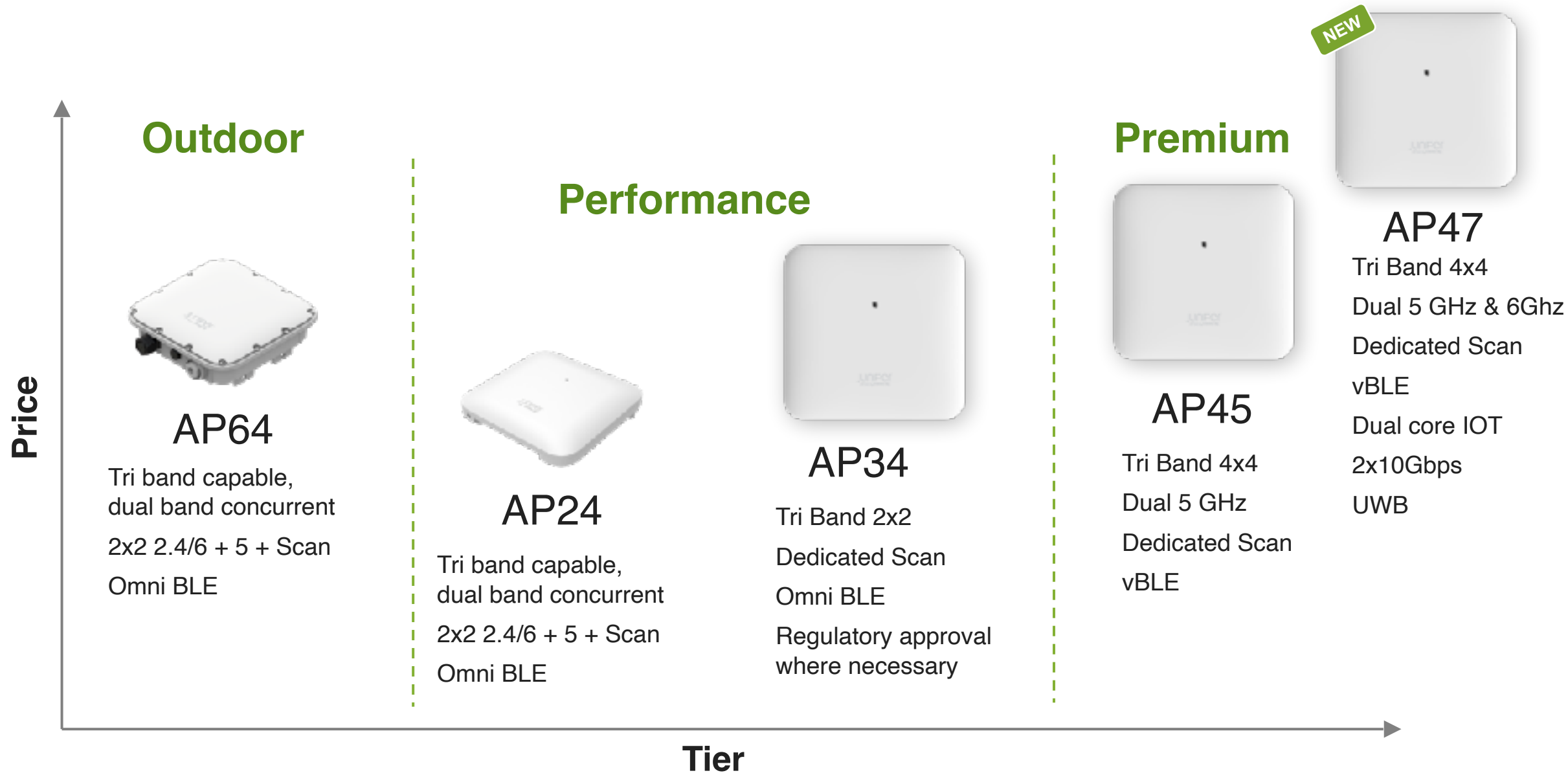
All ports





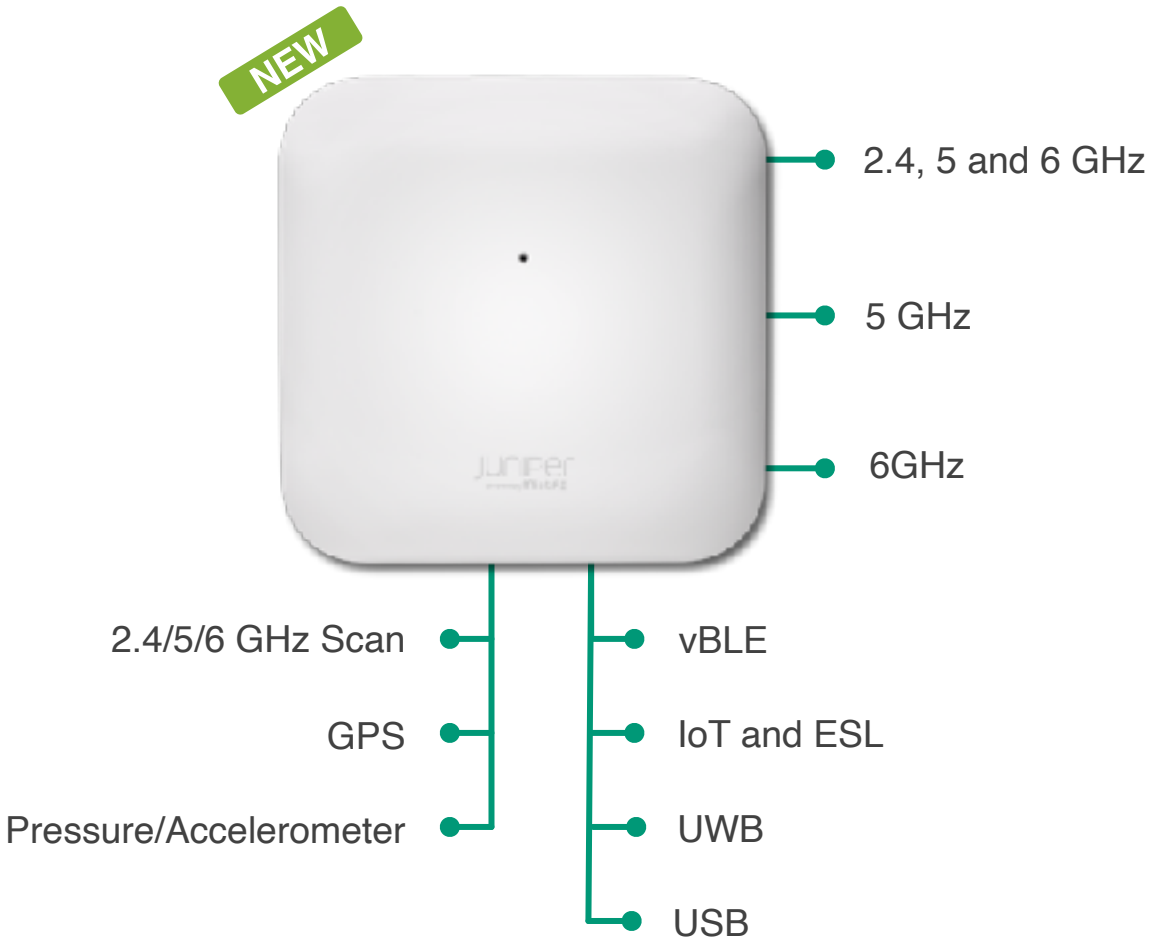
WiFi update

Wi-Fi 6Ghz Portfolio



Expanding Portfolio with AI for Wi-Fi 7

Juniper AP47, driven by Mist AI™



* = future software release

1

Quad-Radio – 3 data radios and a dedicated Scan radio

- 4x4:4SS Data and 2x2:2SS Scanning

2

Wi-Fi modes of operation

- Mode 1: 2.4 GHz + 5 GHz + 6 GHz
- Mode 2: 5 GHz + 5 GHz + 6 GHz
- Mode 3: 6 GHz + 6 GHz + 5 GHz

3

Location and IoT

- Patented Virtual Bluetooth LE 5.4 (1st 802.15.4 radio)
- Second 802.15.4 radio – Thread*, ZigBee*, or Matter*
- Ultrawide Band (UWB) – For additional location use cases
- GPS/GNSS L1/L5

4

Dual 10G mGig Support (802.3bz)

- 2 x 10 GbE- 10G, 5G, 2.5G, 1G, 100M
- Full functionality on 802.3bt power
- Hitless PoE – Dual 802.3bt and link failover

5

3 x AP47 Models

- Integrated Omni, Integrated Directional, and External Antenna

6

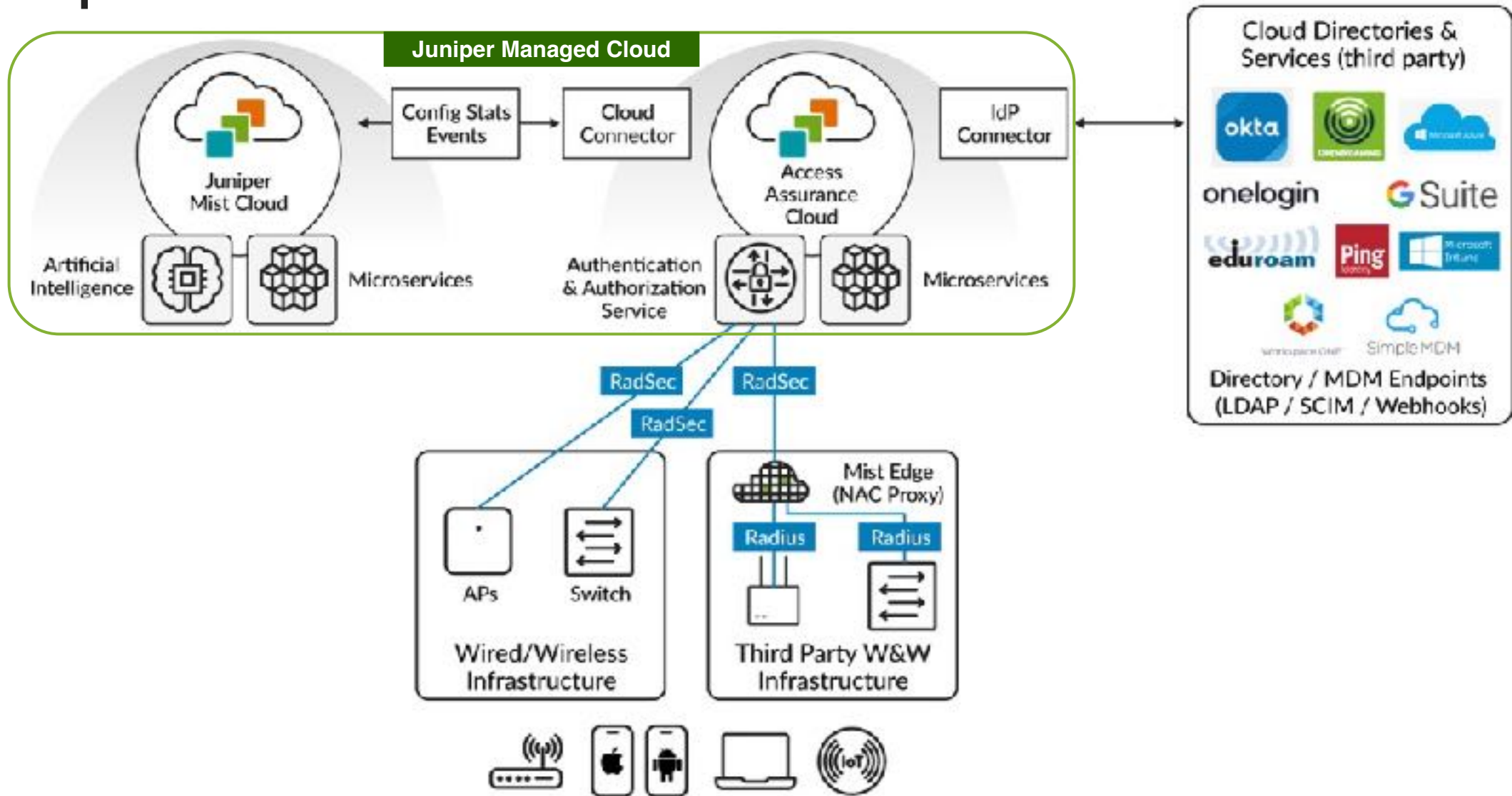
AI for Wi-Fi 7

- Deliver better user experiences
- Simplify IT operations and optimize performance



Network Access Control

Juniper Mist Access Assurance Framework



Authentication policies

Monitor

Maps™

Clients

Access Points

Switches

WLAN Edges

Mobile Edges

Location

Analytics

Site

Organization

Auth Policies

Each user authentication attempt is evaluated according to the list of Policy rules based on Match criteria. Only the first matching policy rule is applied.

Add RuleCreate Label

Show/Hide Events

Hit Count

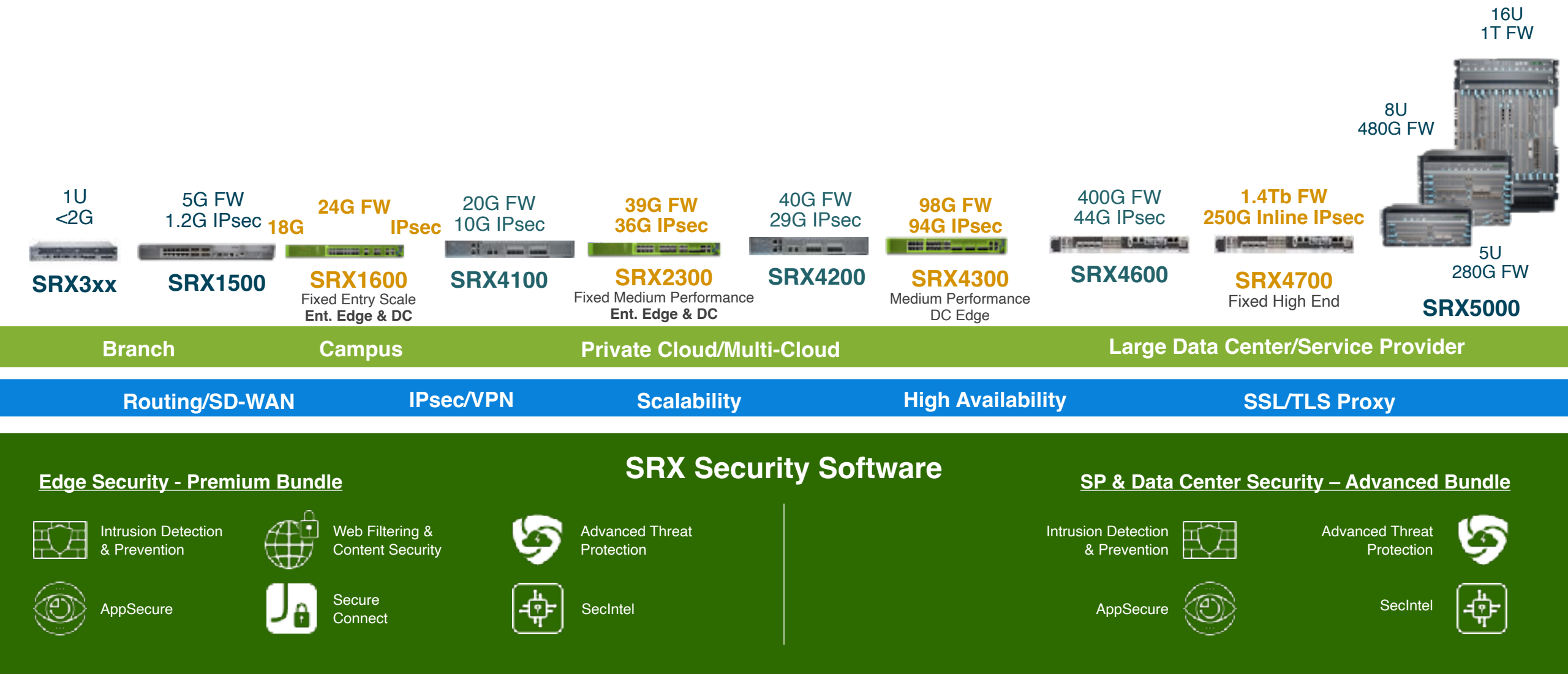
Today

<input type="checkbox"/>	No.	Name	Match Criteria (match on location, SSID, User Group, and)	Policy	Assigned Policies (NAP, Roles, Session Timeout, and)	Hit Count
<input type="checkbox"/>	1	Educam HomeUser	+ all Educam WLAN < HomeUsers >	✓	Network Access Allowed student network < +	0
<input type="checkbox"/>	2	Educam Ext Users	+ Educam WLAN <	✓	Network Access Allowed Guest network < +	0
<input type="checkbox"/>	3	University Secure SSID	+ all Staff devices < EAP-TLS < Wireless >	✓	Network Access Allowed Employee Network < +	0
<input type="checkbox"/>	4	misc ap	+ all EAP-TLS < Wired >	✓	Network Access Allowed AP Trunk Port < Single Supplicant Mode < +	3
<input type="checkbox"/>	5	Deny Barred Devices	Barred Device	✗	Network Access Denied	0
<input type="checkbox"/>	6	Restrict Quarantined Devices	+ Quarantined <	✓	Network Access Allowed Quarantine Me. < +	0
<input type="checkbox"/>	7	Approved Wired Printers	+ all CanonPrinter < WPA < Wired >	✓	Network Access Allowed IoT Network < +	0
<input type="checkbox"/>	8	Google TLS Auth	+ all google homepage users < EAP-TLS < Wireless >	✓	Network Access Allowed Employee Network < +	0
<input type="checkbox"/>	9	MSE Access Points	+ all MSE Access Points < WPA < Wired >	✓	Network Access Allowed AP Trunk Port < Single Supplicant Mode < +	1
<input type="checkbox"/>	10	Wired Cert Auth	+ all EAP-TLS < Wired >	✓	Network Access Allowed Employee Network < +	0
<input type="checkbox"/>	11	misc ap5	+ all ap5 < WPA < Wired >	✓	Network Access Allowed AP Trunk Port < Single Supplicant Mode < +	0
<input type="checkbox"/>	12	Employee BYOD	+ all Employee Group < EAP-TLS < Wireless >	✓	Network Access Allowed Employee Role < BYOD Network < +	0
<input type="checkbox"/>	13	Employee CORP Devices	+ any Issued by Juniper < Cert by Location < & all Employee Group < EAP-TLS < Wireless >	✓	Network Access Allowed Employee Network < Employee Role < +	20
<input type="checkbox"/>	Last	Last Rule	All Users	✗	Network Access Denied	4



SECURITY update

Next-Gen Security Appliance Portfolio in 2024





New branch security gateways

Roadmap

LEOPARD – SYSTEM 3D VIEWS

Model 1 & 2



Model 3 & 4












Routing Assurance

INITIAL PLATFORMS : Small Size Enterprise Edge, Provider Edge, DC Edge, Peering MX.

MX204 & MX304

Shipping		Roadmap	
 Trio 4	 MX204 – 400G	 Trio 6	 MX304 – 1.6T to 4.8T
Compact Platform with full feature set		Fastest Ramping Juniper Product	Orderable 2H2024

 Ease of automation	 Telemetry	 Marvis	 Paragon	 Intelligent Power Mgmt.
 Sustainable by design	<ul style="list-style-type: none">• Build to Last - Longest Life Span in history of Routing.• Focus on TCO - Cost, Scale, Power Optimized for the target use cases. Full Interop.			
 Proven performance	<ul style="list-style-type: none">• Superior Scalability -> 29M Flows, 2M Filter prefixes etc.• Secure Connectivity – Line Rate MACsec/ IPSec / DDoS / Flexible Filters.			

Routing UI

- New UI – based on Mist UI and bespoke to applications.
- Juniper Mist Routing Assurance includes re-use of common components (Org settings, Users etc) while introducing new Menu items and Tabs for Routers.

The screenshot displays the Juniper Mist Routing Assurance interface. On the left is a blue sidebar with navigation links: Monitor, Routers, and Organization. The main header shows the user 'DAVID ORG - SIMONANTOINE' and the time '10:51:12 PM'. The 'Routers' tab is active, showing a site filter set to 'Primary Site'. A summary bar indicates 8 Cloud Connected Routers, 8 Connected Routers, and 0 Disconnected Routers. Below this is a search bar and a table of routers. The table has columns for Status, Name, IP Address, Model, Version, and Insights. All routers are in a 'Connected' status. At the bottom, a message states: 'Assign Routers to the site from the [Inventory page](#)'.

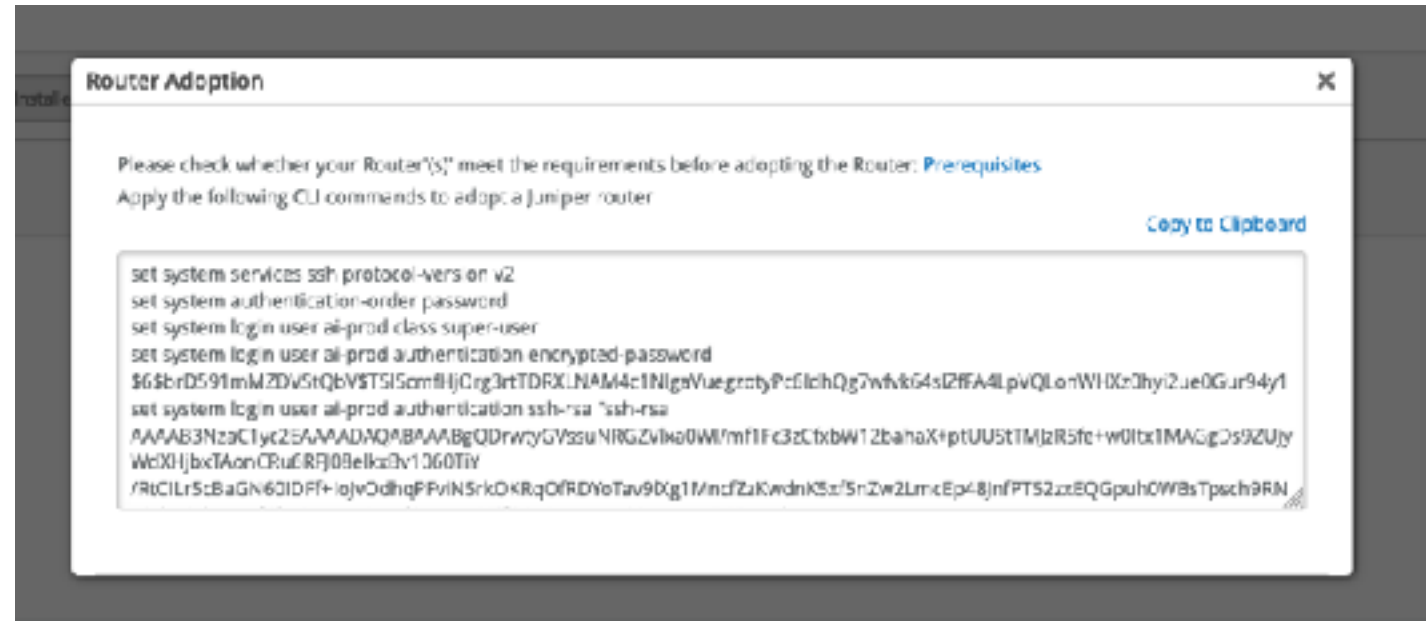
Status	Name	IP Address	Model	Version	Insights
Connected	R1	10.6.3.113	VMX	18.2R1.9	Router Insights
Connected	R2	10.6.3.114	VMX	18.2R1.9	Router Insights
Connected	R3	10.6.3.115	VMX	18.2R1.9	Router Insights
Connected	R4	10.6.3.116	VMX	18.2R1.9	Router Insights
Connected	R5	10.6.3.117	VMX	18.2R1.9	Router Insights
Connected	R100	10.6.3.111	VMX	18.2R1.9	Router Insights
Connected	R101	10.6.3.112	VMX	18.2R1.9	Router Insights
Connected	R200	10.6.3.118	VMX	18.2R1.9	Router Insights

Router Onboarding

- Inventory → Adopt Router
- Copy onboarding commands and apply to the router.
- Not onboarded?
 - Check connectivity from device → cloud. Telnet oc-term.ai.juniper.net port 2200
 - Already in an Org? Devices can only be onboarded into one Org per deployment.
 - Correct instance? Check the commands are copied from the correct instance, e.g. Stage vs Prod
- Assign to Site
 - Connectivity and Stats are not available until the device is assigned to a Site.



STATUS	NAME	MAN ADDRESS	MODEL	SITE	SERIAL NUMBER
Connected	access-024	2c4b7528.20.00	VNX	Primary Site	YM6C4059C901



Router Adoption

Please check whether your Router(s) meet the requirements before adopting the Router: [Prerequisites](#)

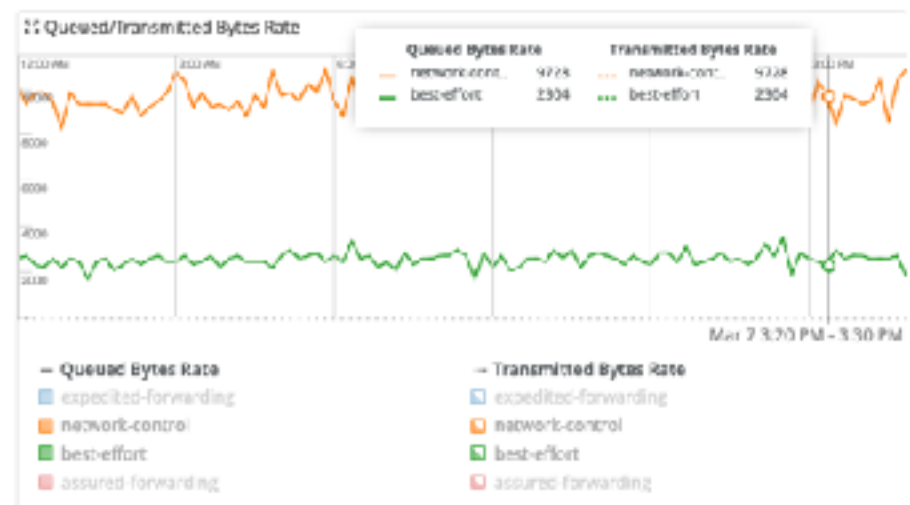
Apply the following CLI commands to adopt a Juniper router

[Copy to Clipboard](#)

```
set system services ssh protocol-version v2
set system authentication-order password
set system login user all-prod class super-user
set system login user all-prod authentication encrypted-password
$6$b5rD591mM2DvStQbVST51Scm8lHjCrg3rtTDRXUNAM4c1NlgaVuegrzbyPc6lchQg7wfk64s2fFA4lpvQLonW10XzDhyi2ue0Gur94y1
set system login user all-prod authentication ssh-rsa "ssh-rsa
AAAAB3NzaC1yc2EAAAADAQABAAQBgQDrwryGVssuNIRGZvika0Wl/mf1Fc3zCfxbW12bahaX+ptUUS1TMjzR5fe+w0ltx1MACgDs9ZUjy
WdXlHjbxTAonCRuERFj08lka3v1D6GTiv
/RuCILr5cBaGN63IDDF+lojvOdthqPFvIN5rkOKRqOqRDYoTav9Dg1M/mcfZuKwdnK3z/5nZw2LmkEp48JnftPS2zzEQGpuhOWBsTpsch9RM
```

Router Insights - Interface Queues

- Find dropped traffic by comparing Q vs TX
- Dropped packets
- Queue depth over time.
- show interface queues egress

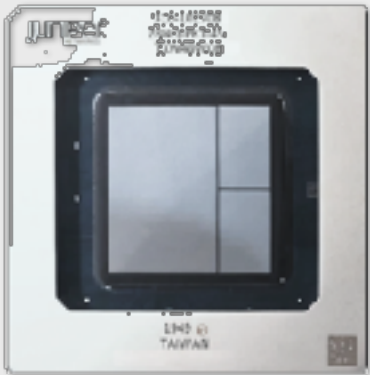




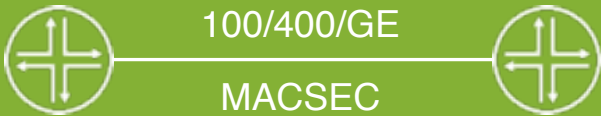
MX301

Juniper Trio 6 ASIC
Optimized for logical scale & flexibility

1.6Tbps per PFE
Up to 9.6Tbps Per Slot

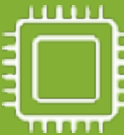


10GE/100GE/400GE
MACsec @ LINE RATE



ONE CHIP,
MULTIPLE USE CASES

Business Edge
Residential Edge



Mobile Edge
DC Edge

PROVEN
PERFORMANCE

13M FIB, 80M RIB, 16K VRF, 4M FLOW,
256K FILTERS, 16K SUBS, 128K
QUEUES

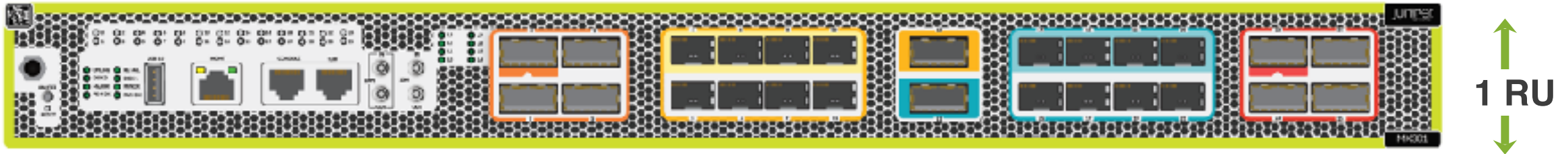
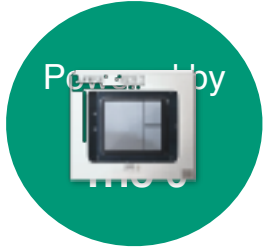
HIGHLIGHTS

- 400G ZR/ZR+ support
- Feature-rich protocol stack w/ Junos
- Future-proofing Scale & Performance
- Proven Trio chipset family

Trio Advantages

- Infinite flexibility with PPE run to completion
- Multi-service scale, routes, tunnels, counters
- Rich telemetry, highest sampling and export rates
- Flexible filters with real integrated DDoS
- Integrated security with MACsec
- Scale ML aggregation operations with Trio 6

Addition to Compact MX Portfolio: MX301

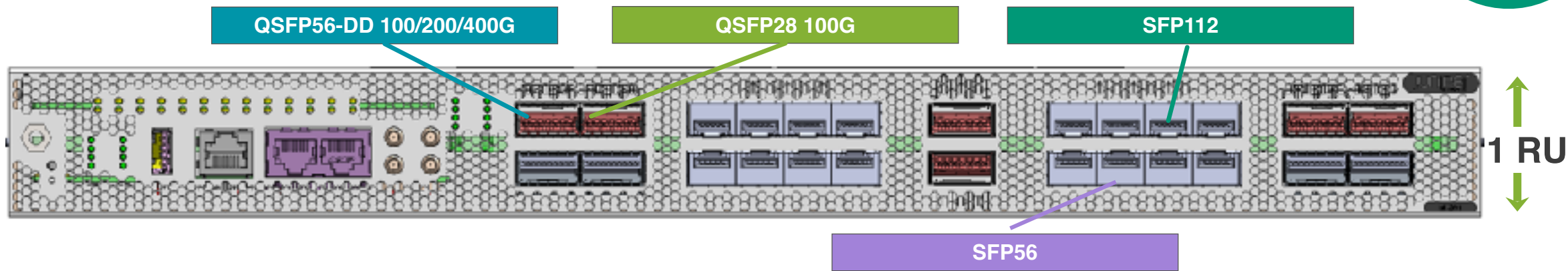
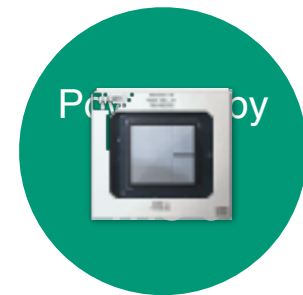


- 1RU MX, 450mm depth
- 1.6T BW based on TRIO 6.0 YT
- 4 X 400G / 16 X 100G# / 16 X SFP56 ports
- Inline IPsec, MACsec, BNG

- Class C* Timing SyncE, PTP
- 400G ZR/ZR+/0dBm, 100G ZR
- Secure Boot, TPM 2.0 DevID
- FIPS, MACsec-CC and NEBS3
- Paragon and Mist Manageability at FRS

16 100G w/ breakout

Model X / MX301 Overview



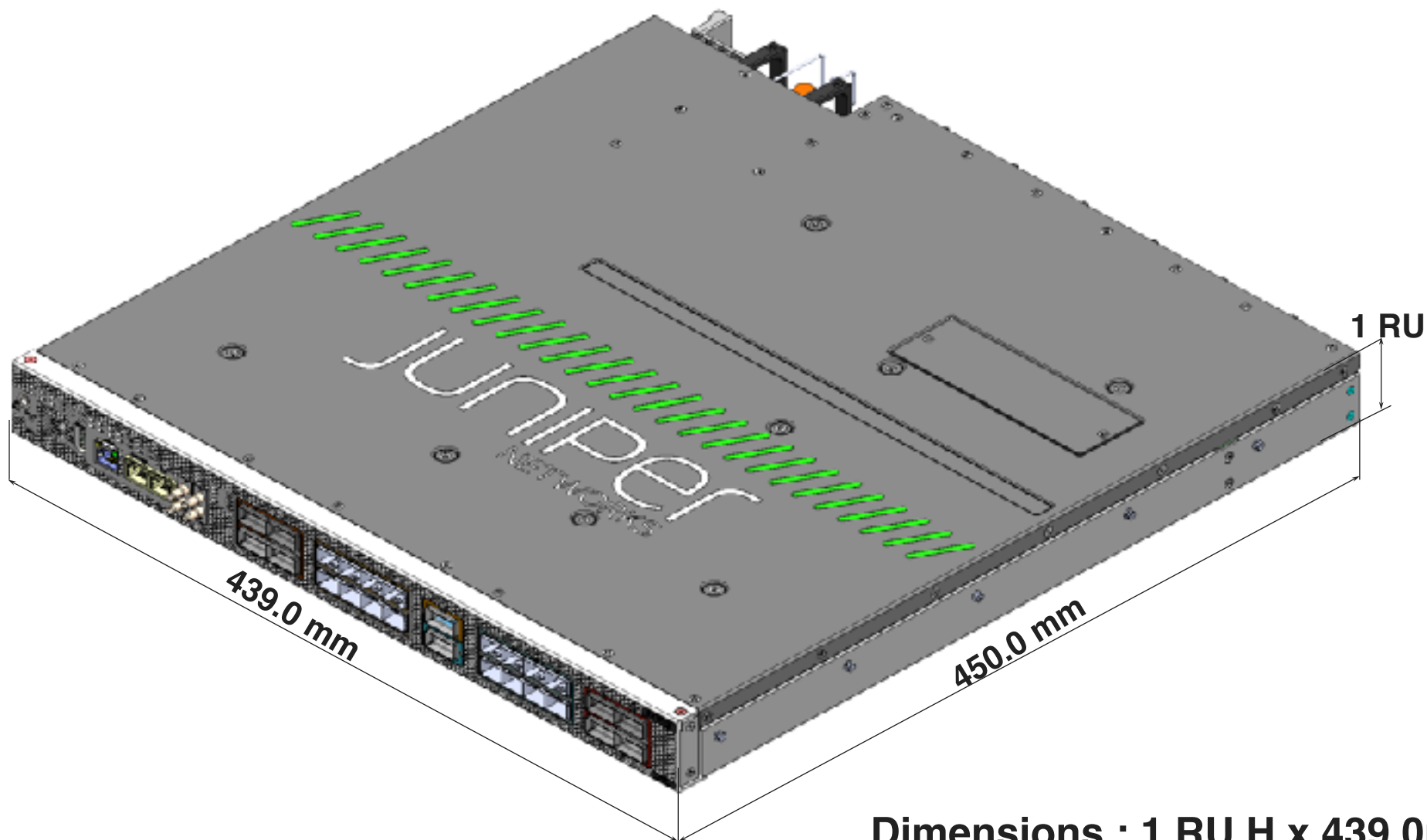
- 1RU MX, 450mm depth
- 1.6T BW based on TRIO 6.0 YT
- 4 X 400G / 16 X 100G# / 16 X SFP56 ports
- Inline IPsec, WAN MACsec, BNG

16 100G w/ breakout

* Post FRS

- Class C* Timing SyncE, PTP
- 400G ZR/ZR+/0dBm, 100G ZR
- Secure Boot, TPM 2.0 DevID
- FIPS, MACsec-CC and NEBS3

Chassis Isometric View



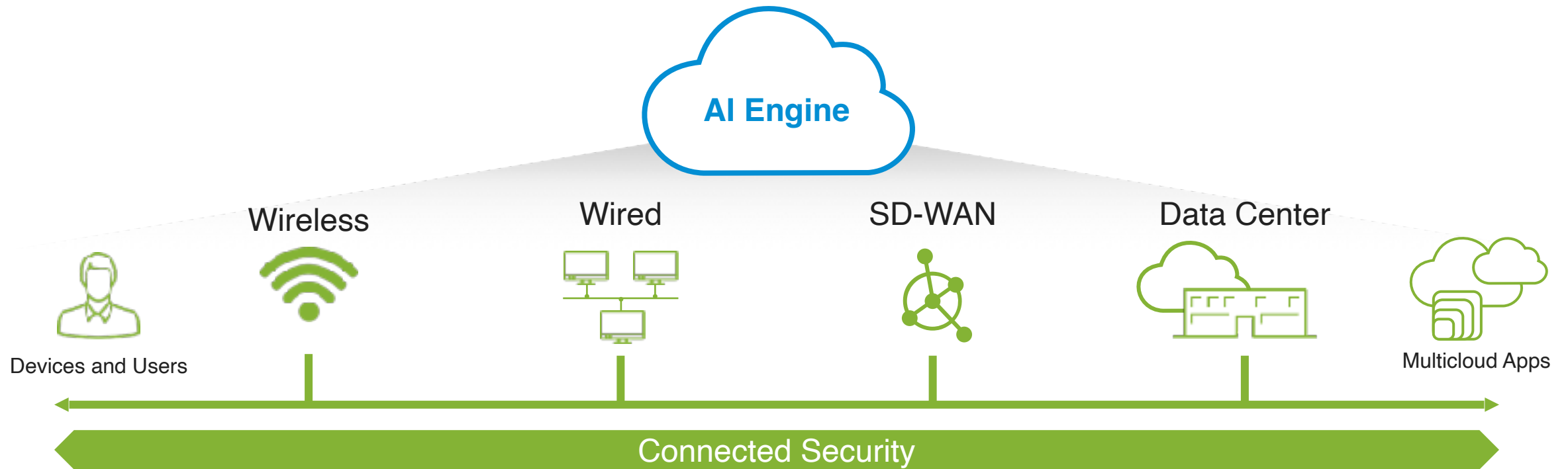
Dimensions : 1 RU H x 439.0mm W x 450.0mm D

MX301 Bring-up Status

- Proto-1A up and running
- Control Path and Data Path both operational
- Able to pass traffic completely
- First time use of MediaTek PHY
- Next Steps –
 - Accessing and validating P1A boards
 - Validating PTP/Timing Domain
 - Validating SFP112



Summary - Our AI Driven Enterprise Mission



Our Mission:

Juniper-Mist is leading a new era of IT that uses AI to save time and money, deliver unprecedented scale and provide unparalleled user experiences.



Thank you!