

Asterfusion

PTP (Precision Time Protocol) Switches Portfolio

Asterfusion Open Networking

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High-Performance for Time-Sensitive Systems

Asterfusion delivers high-performance open networking solutions purpose-built for time-sensitive networks. Our PTP-enabled Ethernet switch portfolio (1G–800G) is designed to meet the stringent synchronization requirements of modern media, broadcasting, and telecom infrastructures.

1G to 800G Portfolio



Nanosecond-Level PTP Precision

Achieve up to **10 ns** Class C accuracy. Built-in compliance with IEEE 1588v2, including telecom profile (ITU-T G.8275.x) and media profiles (SMPTE ST 2059-2, AES67).



Modern Multicast Fabric

Optimal traffic distribution powered by native IGMP/PIM-SM routing and **VXLAN Multicast Underlay**, enabling flexible deployments of AV-over-IP streams.



Open Enterprise SONiC Foundation

Programmable and automation-ready platform supporting RESTful APIs, Netconf, and Redis for seamless SDN integration in modern cloud infrastructures.



Proven Deployment Scenarios



Live Broadcasting



5G O-RAN Sync



Data Center Interconnection

Proven PTP Deployments: Trusted by Industry Leaders

Our high-precision PTP switches establish ultra-reliable, nanosecond-level time synchronization to eliminate packet loss and phase drift, engineered specifically for:

- **Telecommunications:** 5G O-RAN Fronthaul & T-GM Network Infrastructure
- **Media & Broadcasting:** SMPTE 2110 IP Production & Live Sports OB Vans
- **Next-Gen Data Centers:** AI Clusters, Distributed Computing, and DCI Interconnect



Live Streaming OB Truck / Studio

SMPTE ST 2110-Based Broadcasting Network for the Live Broadcast of a Major National Sports Event

- **Hundreds of 1G-400G Switches:** Supporting a highly resilient, full-IP live broadcast network for a major sports event.
- **10ns-level PTP accuracy** as GM/BC/TC with ST2059-2/AES67 profile support
- **IP multicast** with VXLAN multicast underlay capability.
- **Native SONiC-based Redis DB interfaces** for seamless SDN integration.



5G ORAN

Time-Sensitive Networking for O-RAN Fronthaul for One of Asia's Tier-1 Operators

- **1-400G TSN Switches:** Building a high-precision, multi-domain O-RAN fronthaul synchronization network.
- **ITU-T 8275.x Class C level T-GM/T-BC.**
- **Multiple PTP domain** with single grandmaster.
- **PoE++ switches** as grandmaster for flexible smart cell deployment.



DCI # PrecisionSync | Tier-1 Clients

DCI Interconnection for One of Europe's Largest Internet Companies

- **50+ 25G Class C Switches:** Building a unified, multi-site DCI PTP synchronization network.
- **PTP Class C Timing Accuracy:** Meeting strict clock demands for cross-DC distributed databases, AI clusters, and high-frequency trading.
- **SyncE + GNSS + PTP (1588v2):** Seamlessly integrating with DWDM networks to empower future DCI synchronization and AI infrastructure evolution.

25G-800G Class C High-Precision PTP Switches



Core Switches

Model Name	CX864E-N	CX732Q-M-H	CX532P-M-H	CX308P-48Y-M-H	CX306P-48Y-M-H
Product Image					
Port Configuration	64 × 800GE OSFP 2 × 10GE SFP+	32 × 400GE QSFP-DD 2 × 10GE SFP+	32 × 100GE/40GE QSFP28 2 × 10GE SFP+	8 × 100GE/40GE QSFP28 48 × 25GE/10GE SFP28	6 × 100GE/40GE QSFP28 48 × 25GE/10GE SFP28
Management Interface	1× RJ45 Console Port, 1× RJ45 MGMT Port, 1× USB 2.0 Port				
PTP Accuracy Class (ITU-T G.8273.x)	≤10 ns (Class C)	≤10 ns (Class C)	≤10 ns (Class C)	≤10 ns (Class C)	≤10 ns (Class C)
CPU	Intel Xeon-D or Marvell OCTEON 10	Pentium D1508	Pentium D1508	Pentium D1508	Pentium D1508
Memory	32GB DDR4	16GB DDR4	16GB DDR4	16GB DDR4	16GB DDR4
Storage	256GB M.2 SATA	256GB M.2 SATA	256GB M.2 SATA	256GB M.2 SATA	128GB M.2 SATA
Switching Chip Model	Marvell Teralynx 10	Marvell Prestera (Falcon)	Marvell Prestera (Falcon)	Marvell Prestera (Falcon)	Marvell Prestera (Falcon)
Switching Capacity	51.2 Tbps	12.8 Tbps	3.2 Tbps	2.0 Tbps	2.0 Tbps
Input Voltage	200~240V AC/200~320V DC	100-240V AC / 36-72V DC			
Max Power Consumption	2400W	1000W	480W	480W	480W
Dimensions	440mm × 87mm × 650mm	440mm × 44mm × 515mm	440mm × 44mm × 515mm	440mm × 44mm × 515mm	440mm × 44mm × 515mm
Weight	25kg (55.1 lbs)	12.4kg (27.34 lbs)	12kg (26.46 lbs)	11.1kg (24.47 lbs)	10.6kg (23.37 lbs)
Power Supplies	1+1 Hot Pluggable PSUs	1+1 Hot Pluggable PSUs	1+1 Hot Pluggable PSUs	1+1 Hot Pluggable PSUs	1+1 Hot Pluggable PSUs
Fans	3+1 Hot Pluggable Fans	5+1 Hot Pluggable Fans	4+1 Hot Pluggable Fans	3+1 Hot Pluggable Fans	3+1 Hot Pluggable Fans
Air Flow	Front-to-Rear	Front-to-Rear / Rear-to-Front	Front-to-Rear / Rear-to-Front	Front-to-Rear / Rear-to-Front	Front-to-Rear / Rear-to-Front
Operating Temperature	0 – 40°C (32 – 104°F)	0 – 40°C (32 – 104°F)	0 – 45°C (32 – 113°F)	0 – 45°C (32 – 113°F)	0 – 45°C (32 – 113°F)
Relative Humidity	5% - 90% (non-condensing)	10% - 90% (non-condensing)	10% - 90% (non-condensing)	10% - 90% (non-condensing)	10% - 90% (non-condensing)
Variants	-	-	-	-	GNSS, 1~2 DPUs, 1~2 AI Inference

10G-25G Class C High-Precision PTP Switches



Aggregation Switches

Model Name	CX202P-24Y-M-H	CX206P-48S-M-H	CX206P-24S-M-H	CX202P-24S-M-H	CX202P-16S-M-H
Product Image					
Port Configuration	2 × 100GE/40GE QSFP28 24 × 25GE/10GE SFP28	6 × 100GE/40GE QSFP28 48 × 10GE SFP+	6 × 100GE/40GE QSFP28 24 × 10GE SFP+	2 × 100GE/40GE QSFP28 24 × 10GE SFP+	2 × 100GE/40GE QSFP28 16 × 10GE SFP+
Management Interface	1× RJ45 Console Port, 1× RJ45 MGMT Port, 1× USB 2.0 Port				
PTP Accuracy Class (ITU-T G.8273.x)	≤10 ns (Class C)	≤10 ns (Class C)	≤10 ns (Class C)	≤10 ns (Class C)	≤10 ns (Class C)
CPU	OCTEON CN9130	OCTEON CN9130	OCTEON CN9130	OCTEON CN9130	OCTEON CN9130
Memory	4GB DDR4	4GB DDR4	4GB DDR4	4GB DDR4	4GB DDR4
Storage	32GB EMMC	32GB EMMC	32GB EMMC	32GB EMMC	32GB EMMC
Switching Chip Model	Marvell Prestera (Aldrin 3)	Marvell Prestera (Aldrin 2)	Marvell Prestera (Aldrin 2)	Marvell Prestera (Aldrin 2)	Marvell Prestera (Aldrin 2)
Switching Capacity	800 Gbps	1.09 Tbps	1.09 Tbps	1.09 Tbps	1.09 Tbps
Input Voltage	100-240V AC / 36-72V DC				
Max Power Consumption	168W	187W	165W	165W	165W
Dimensions	440mm × 44mm × 470mm	440mm × 44mm × 470mm	440mm × 44mm × 470mm	440mm × 44mm × 470mm	440mm × 44mm × 470mm
Weight	8.6kg (18.96 lbs)	9.1kg (20.06 lbs)	9kg (19.84 lbs)	9kg (19.84 lbs)	9kg (19.84 lbs)
Power Supplies	1+1 Hot Pluggable PSUs	1+1 Hot Pluggable PSUs	1+1 Hot Pluggable PSUs	1+1 Hot Pluggable PSUs	1+1 Hot Pluggable PSUs
Fans	2+1 Hot Pluggable Fans	2+1 Hot Pluggable Fans	2+1 Hot Pluggable Fans	2+1 Hot Pluggable Fans	2+1 Hot Pluggable Fans
Air Flow	Front-to-Rear	Front-to-Rear	Front-to-Rear	Front-to-Rear	Front-to-Rear
Operating Temperature	0 – 45°C (32 – 113°F)	0 – 45°C (32 – 113°F)	0 – 45°C (32 – 113°F)	0 – 45°C (32 – 113°F)	0 – 45°C (32 – 113°F)
Relative Humidity	5% - 90% (non-condensing)	5% - 90% (non-condensing)	5% - 90% (non-condensing)	5% - 90% (non-condensing)	5% - 90% (non-condensing)
Variants	PTP	PTP	PTP	PTP	PTP

1G-2.5G Class C High-Precision PTP Switches



 Access Switches

Model Name	CX204P-4Y48MT-M-H	CX206Y-48MT-M-H	CX206Y-24MT-M-H	CX206Y-48GT-M-H	CX206Y-24GT-M-H
Product Image					
Port Configuration	4 × 100GE/40GE QSFP28 4 × 25GE/10GE SFP28 48 × 2.5GE RJ45	6 × 25GE/10GE SFP28 48 × 2.5GE RJ45	6 × 25GE/10GE SFP28 24 × 2.5GE RJ45	6 × 25GE/10GE SFP28 48 × 1GE RJ45	6 × 25GE/10GE SFP28 24 × 1GE RJ45
PoE++ / PoE+ Port	8 × PoE++ (Ports 1-8) 40 × PoE+ (Ports 9-48)	8 × PoE++ (Ports 1-8) 40 × PoE+ (Ports 9-48)	8 × PoE++ (Ports 1-8) 16 × PoE+ (Ports 9-24)	8 × PoE++ (Ports 1-8) 40 × PoE+ (Ports 9-48)	8 × PoE++ (Ports 1-8) 16 × PoE+ (Ports 9-24)
Management Interface	1× RJ45 Console Port, 1× RJ45 MGMT Port, 1× USB 2.0 Port				
PTP Accuracy Class (ITU-T G.8273.x)	≤10 ns (Class C)	≤10 ns (Class C)	≤10 ns (Class C)	≤10 ns (Class C)	≤10 ns (Class C)
PoE Budget	740W or 1440W	740W or 1440W	740W	740W or 1440W	740W
CPU	OCTEON CN9130	Cortex-A55	Cortex-A55	Cortex-A55	Cortex-A55
Memory	4GB DDR4	4GB DDR4	4GB DDR4	4GB DDR4	4GB DDR4
Storage	32GB EMMC	32GB EMMC	32GB EMMC	32GB EMMC	32GB EMMC
Switching Chip Model	Marvell Prestera (AlleyCat 5P)	Marvell Prestera (AlleyCat 5X)	Marvell Prestera (AlleyCat 5X)	Marvell Prestera (AlleyCat 5X)	Marvell Prestera (AlleyCat 5X)
Switching Capacity	800 Gbps	210 Gbps	210 Gbps	210 Gbps	210 Gbps
Input Voltage	100-240V AC / 36-72V DC				
Max Power Consumption	246W (Without PoE)	70W (Without PoE)	70W (Without PoE)	70W (Without PoE)	70W (Without PoE)
Dimensions	440mm × 44mm × 470mm	440mm × 44mm × 470mm	440mm × 44mm × 470mm	440mm × 44mm × 470mm	440mm × 44mm × 470mm
Weight	9kg (19.84 lbs)	8.3kg (18.30 lbs)	8.3kg (18.30 lbs)	8.3kg (18.30 lbs)	8.3kg (18.30 lbs)
Power Supplies	1+1 Hot Pluggable PSUs	1+1 Hot Pluggable PSUs	1+1 Hot Pluggable PSUs	1+1 Hot Pluggable PSUs	1+1 Hot Pluggable PSUs
Fans	2+1 Hot Pluggable Fans	2+1 Hot Pluggable Fans	2+1 Hot Pluggable Fans	2+1 Hot Pluggable Fans	2+1 Hot Pluggable Fans
Air Flow	Front-to-Rear	Front-to-Rear	Front-to-Rear	Front-to-Rear	Front-to-Rear
Operating Temperature	0 – 45°C (32 – 113°F)	0 – 45°C (32 – 113°F)	0 – 45°C (32 – 113°F)	0 – 45°C (32 – 113°F)	0 – 45°C (32 – 113°F)
Relative Humidity	5% - 90% (non-condensing)	5% - 90% (non-condensing)	5% - 90% (non-condensing)	5% - 90% (non-condensing)	5% - 90% (non-condensing)
Variants	PoE	PoE	GNSS, PoE	PoE	GNSS, PoE

1G-25G Class C High-Precision PTP Switches



Aggregation & Access Switches

Model Name	CX204P-16Y-M-E	CX204P-24S-M-E	CX204Y-24MT-M-S	CX204Y-48GT-M-S	CX204Y-24GT-M-S
Product Image					
Port Configuration	4 × 100GE/40GE QSFP28 16 × 25GE/10GE SFP28	4 × 100GE/40GE QSFP28 24 × 10GE SFP+	4 × 25GE/10GE SFP28 24 × 2.5GE RJ45	4 × 25GE/10GE SFP28 48 × 1GE RJ45	4 × 25GE/10GE SFP28 24 × 1GE RJ45
PoE++ / PoE+ Port	-	-	8 × PoE++ (Ports 1-8) 16 × PoE+ (Ports 9-24)	8 × PoE++ (Ports 1-8) 40 × PoE+ (Ports 9-48)	8 × PoE++ (Ports 1-8) 16 × PoE+ (Ports 9-24)
Management Interface	1× RJ45 Console Port, 1× RJ45 MGMT Port, 1× USB 2.0 Port				
PTP Accuracy Class (ITU-T G.8273.x)	≤10 ns (Class C)	≤10 ns (Class C)	≤10 ns (Class C)	≤10 ns (Class C)	≤10 ns (Class C)
PoE Budget	-	-	740W	740W	370W or 740W
CPU	OCTEON CN9130	OCTEON CN9130	Cortex-A55	Cortex-A55	Cortex-A55
Memory	4GB DDR4	4GB DDR4	4GB DDR4	4GB DDR4	4GB DDR4
Storage	32GB EMMC	32GB EMMC	32GB EMMC	32GB EMMC	32GB EMMC
Switching Chip Model	Marvell Prestera (Aldrin 3)	Marvell Prestera (Aldrin 2)	Marvell Prestera (AlleyCat 5X)	Marvell Prestera (AlleyCat 5X)	Marvell Prestera (AlleyCat 5X)
Switching Capacity	800 Gbps	1.09 Tbps	180 Gbps	180 Gbps	180 Gbps
Input Voltage	100-240V AC / 36-72V DC				
Max Power Consumption	125W	125W	66W (Without PoE)	50W (Without PoE)	40W (Without PoE)
Dimensions	440mm × 44mm × 470mm	440mm × 44mm × 470mm	440mm × 44mm × 290mm	440mm × 44mm × 290mm	440mm × 44mm × 290mm
Weight	9kg (19.84 lbs)	9kg (19.84 lbs)	3.6kg (7.94 lbs)	3.8kg (8.38 lbs)	3.6kg (7.94 lbs)
Power Supplies	1+1 Hot Pluggable PSUs	1+1 Hot Pluggable PSUs	1 Fixed Power Module	1 Fixed Power Module	1 Fixed Power Module
Fans	Front-to-Rear	Front-to-Rear	Right-to-Left	Right-to-Left	Right-to-Left
Air Flow	3 Fixed Fan Modules	3 Fixed Fan Modules	3 Fixed Fan Modules	3 Fixed Fan Modules	3 Fixed Fan Modules
Operating Temperature	0 – 45°C (32 – 113°F)	0 – 45°C (32 – 113°F)	0 – 45°C (32 – 113°F)	0 – 45°C (32 – 113°F)	0 – 45°C (32 – 113°F)
Relative Humidity	5% - 90% (non-condensing)	5% - 90% (non-condensing)	5% - 90% (non-condensing)	5% - 90% (non-condensing)	5% - 90% (non-condensing)
Variants	-	-	PoE	PoE	PoE

1G-2.5G Class A PTP Switches

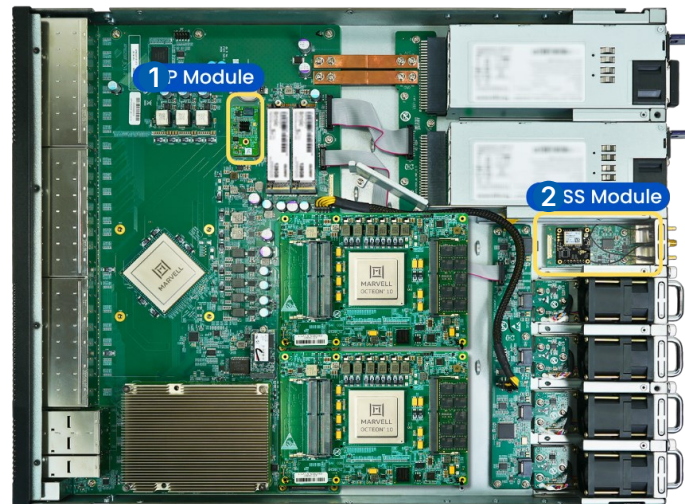


Entry Level Access Switches

Model Name	CX104S-8MT24GT-M-S	CX102S-8MT-M-S	CX102S-16GT-M-S	CX102S-8GT-M-S
Product Image				
Port Configuration	4 × 10GE SFP+ 8 × 2.5GE RJ45, 24 × 1GE RJ45	2 × 10GE SFP+ 8 × 2.5GE RJ45	2 × 10GE SFP+ 16 × 1GE RJ45	2 × 10GE SFP+ 8 × 1GE RJ45
PoE++ / PoE+ Port	8 × PoE++ (Ports 9-16) 16 × PoE+ (Ports 17-32)	8× PoE++ (Ports 1-8)	8× PoE++ (Ports 1-8)	8× PoE++ (Ports 1-8)
Management Interface	1× RJ45 Console Port, 1× RJ45 MGMT Port, 1× USB 2.0 Port			
PTP Accuracy Class (ITU-T G.8273.x)	≤50 ns (Class A)	≤50 ns (Class A)	≤50 ns (Class A)	≤50 ns (Class A)
PoE Budget	370W or 740W	150W	150W	150W
CPU	Cortex-A55	Cortex-A55	Cortex-A55	Cortex-A55
Memory	4GB DDR4	4GB DDR4	4GB DDR4	4GB DDR4
Storage	32GB EMMC	32GB EMMC	32GB EMMC	32GB EMMC
Switching Chip Model	Marvell Prestera (AlleyCat 5Y)	Marvell Prestera (AlleyCat 5Y)	Marvell Prestera (AlleyCat 5Y)	Marvell Prestera (AlleyCat 5Y)
Switching Capacity	86 Gbps	72 Gbps	72 Gbps	72 Gbps
Input Voltage	100-240V AC / 36-72V DC			
Max Power Consumption	50W (Without PoE)	19W (Without PoE)	21W (Without PoE)	18W (Without PoE)
Dimensions	440mm × 44mm × 290mm	215mm × 44mm × 310mm	215mm × 44mm × 310mm	215mm × 44mm × 310mm
Weight	3.6kg (7.94 lbs)	2.2kg (4.85 lbs)	2.2kg (4.85 lbs)	2.2kg (4.85 lbs)
Power Supplies	1 Fixed Power Module	1 Fixed Power Module	1 Fixed Power Module	1 Fixed Power Module
Fans	Right-to-Left	Front-to-Rear	Front-to-Rear	Front-to-Rear
Air Flow	3 Fixed Fan Modules	2 Fixed Fan Modules	2 Fixed Fan Modules	2 Fixed Fan Modules
Operating Temperature	0 – 45°C (32 – 113°F)	0 – 45°C (32 – 113°F)	0 – 45°C (32 – 113°F)	0 – 45°C (32 – 113°F)
Relative Humidity	5% - 90% (non-condensing)	5% - 90% (non-condensing)	5% - 90% (non-condensing)	5% - 90% (non-condensing)
Variants	PoE	PoE	1~2 DPUs, PoE	PoE

GNSS-Integrated PTP Grandmaster Switch

CX306P-48Y-M-H: Class C Precision with Satellite Synchronization



① PTP Module



② GNSS Module



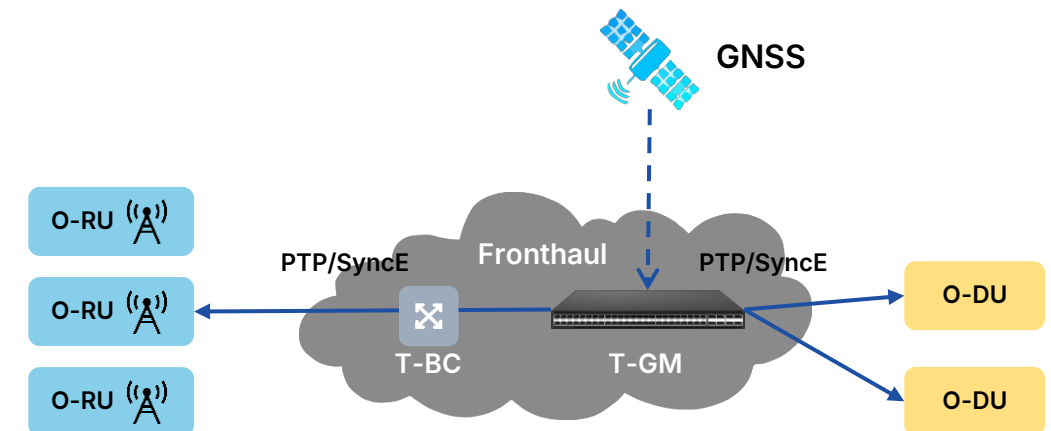
- ③ 1PPS
- ④ GNSS antenna input
- ⑤ 10MHz
- ⑥ ToD RJ45 port



The GNSS module synchronizes with satellites to obtain highly precise timing. When combined with the PTP module, it can operate as a Grandmaster device, making it ideal for 5G O-RAN, broadcast, and DCI interconnection scenarios. The solution achieves time accuracy up to Class C.

Proven Deployment Scenarios

- Live Broadcasting
- 5G O-RAN Sync
- Data Center Interconnection



AsterNOS for Enterprise & Campus Switches



Software Features & Capabilities

Interface

- 1G/2.5G/10G/25G/40G/100G/400G
- Interface Statistics
- Jumbo Frame (10218 Bytes)
- Digital Optical Monitoring (DOM)
- Virtual Interfaces

Layer 2 & Layer 3 Features

- 4096 VLANs
- Voice VLAN
- STP, RSTP, MSTP
- QinQ
- LLDP
- LACP
- IPv4/v6 Dual Stack
- ARP, NDP
- SVI
- Routing Protocols: Static, OSPF v2/v3, BGP, MP-BGP
- Policy Based Routing (PBR)
- Route Map
- ECMP
- DHCPv4/v6

Virtualization

- GRE
- VRF
- Static/Dynamic VXLAN
- VXLAN Centralized/Distributed Gateway
- EVPN Type 1/2/3/4/5
- VXLAN Cross-connect
- VXLAN Multicast Underlay
- Inter-VRF Route Leaking
- Anycast Gateway
- Symmetric IRB

Multicast

- Multicast Route
- IGMP v1/v2/v3
- IGMP Querier
- IGMP Snooping
- PIMv4, PIM-SM

Quality of Service (QoS)

- 8 Queues per Port
- 802.1p Based Classification
- DSCP Based Classification
- Strict Priority/DWRR Queue Scheduling
- Policing/Shaping
- Rate Limiting

Security

- ACL for IPv4/v6
- Ingress/Egress ACL
- Storm Suppression
- TACACS+
- RADIUS
- CoPP
- DAI
- IPSGv4/v6
- 802.1x Authentication
- MAC Authentication Bypass (MAB)
- Portal Authentication
- Dynamic VLAN Assignment
- MACSec

Reliability

- MC-LAG
- VRRPv2/v3
- EVPN MultiHoming
- Monitor Link
- BFD

Management

- Asteria Controller
- Console, SSH, Telnet, REST API, NETCONF
- Industry Standard CLI (Klish)
- ZTP
- Syslog
- sFlow
- SNMPv1/v2/v3
- SPAN/ERSPAN
- **PTP Profile: IEEE 1588v2, ITU-T G.8275.x, SMPTE-2059-2, AES67**
- **PTP Clock Type: GrandMaster, BC, OC, T-GM, T-BC, T-BC-P, T-TSC, T-TSC-P**
- **SyncE**

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