

Overview

As network environments grow more complex, the demand for traffic visualization is now universal. However, traditional dedicated network packet brokers (NPBs) impose heavy capital and operating expenses on operators.

Asterfusion PB-APP disrupts this model. Powered by AsterNOS (our enterprise SONiC distribution) and commercial switching silicon, this containerized application delivers high-performance traffic orchestration. With its intuitive Web UI, configuring, maintaining, and visualizing complex NPB filtering rules has never been easier.

Key Benefits

- **Deep Multi-Tunnel Parsing**

Decapsulates GRE, VXLAN, GTP-U, MPLS, ERSPAN, IPinIP, CFP and PPPoE tunnels. Matches inner-layer 5-tuple metrics for traffic filtering and load balancing.

- **Multi-Dimensional Precision ACL**

Provides L2-L4 full-dimension precision filtering to capture critical traffic. Supports L2, L3, L3V6, EX, EM, and EMV6 ACL types with rich criteria including 5-tuple, VLAN, MAC, port range, TCP flags, VNI, DSCP, and inner/outer IP.

- **Traffic Replication & Distribution**

Replicates a single traffic source into multi-path line-rate outputs to feed multiple analysis systems simultaneously. Supports distribution across single ports, LAGs, or combined port+LAG outputs.

- **Flexible Load Balancing (LAG)**

Features Static, Elastic, Weighted, and Standby LAG modes for zero-disruption failover. Supports custom hash keys, symmetric hashing, and hash seeds to maximize probe bandwidth utilization.

- **Nanosecond Timestamping**

Appends packet-level nanosecond timestamps to headers using IEEE 1588v2 PTP synchronization. Provides exact network timing traceable for performance profiling, security auditing, and fault demarcation.

- **Role-Based Traffic Isolation**

Manages ports by roles via four operational modes: Network, Service, Tool, and Hybrid. Securely isolates production traffic from analysis traffic to eliminate any risk of packet reinjection.

- **Non-Intrusive Port Mirroring**

Supports local SPAN, RSPAN and ERSPAN for full-traffic capture without impacting production lines. Includes hardware packet truncation (down to 128B) to reduce backend processing burdens.

- **Non-Blocking Line-Rate Forwarding**

Guarantees hardware-speed processing and zero packet loss with non-blocking 1G/10G/25G/100G/400G/800G wire-speed forwarding across all ports, even under line-rate short packets and massive ACL databases.

- **Robust Interface Capabilities**

Built for complex network adaptation with high-performance physical layer features. Ready-to-use port breakout (splitting), FEC tuning, loopback testing, and delayed link activation.

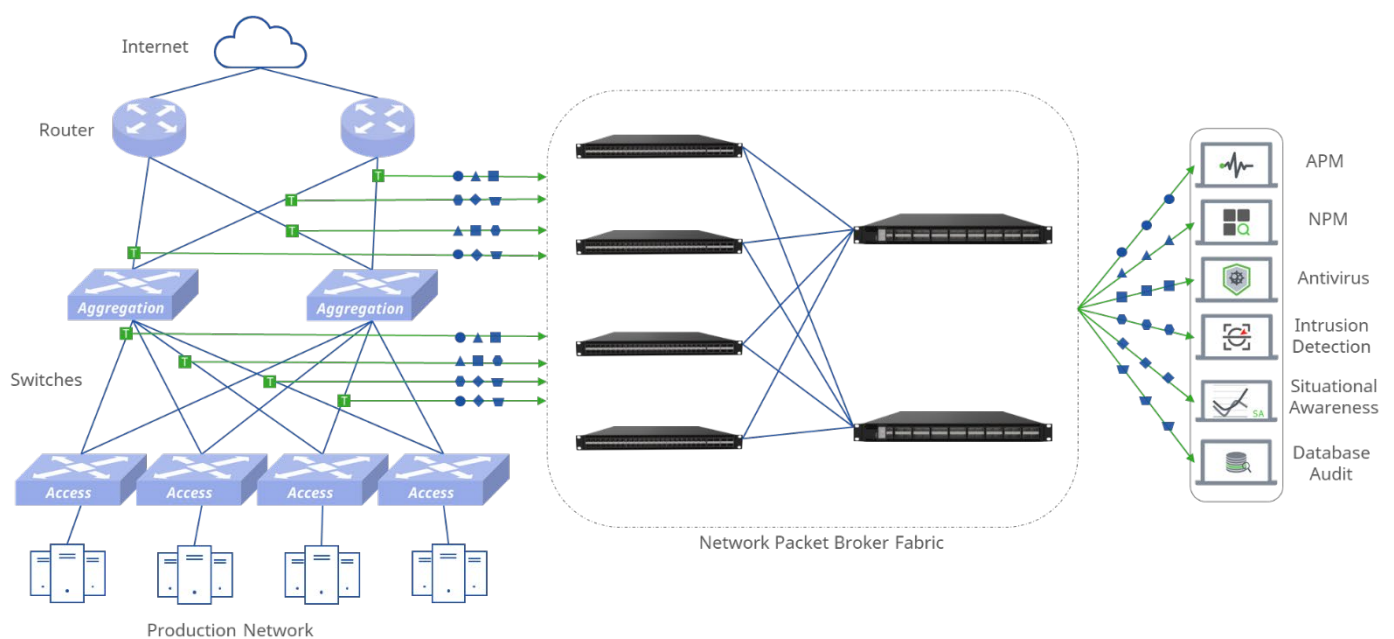
Combines visualized control with seamless O&M platform integration. Features a drag-and-drop policy workflow with real-time hit counters, supporting native integration with SNMP, Syslog, and Prometheus/Grafana stacks.

Deployment

PB-APP is capable of both passive mode and inline mode deployment, delivering a flexible and cost-effective next-generation network monitoring and visualization platform.

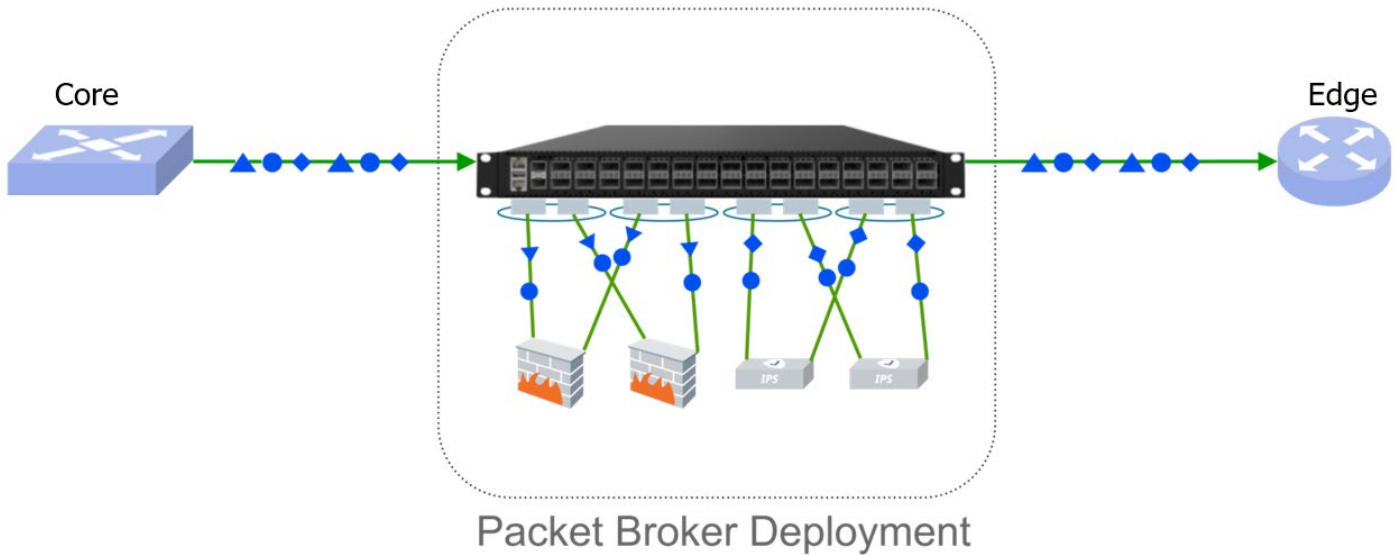
1. Passive Mode

In Passive Mode, the Packet Broker passively monitors network traffic without being in the direct data path.



2. Inline Mode

In Inline Mode, the Packet Broker is placed directly in the data path, enabling active traffic manipulation and security enforcement. This deployment model reduces optical transceiver consumption, and meanwhile enables traffic security service chaining.



Software Features

Level1	Level2	Level3	Level4	
Interface	Ethernet Port	1G/10G		
		25G		
		40G		
		100G		
		400G		
		800G		
	Management	Breakout Mode		4*10G/1G
				4*25G
				4*100G, 2*200G
				2*400G, 4*200G, 8*100G
			Startup & Shutdown	
			Startup Delay	
			FEC	
			Loopback	
		Port Staic		Packets & Bytes
				Multicasts Packets
				Error & Drop & Over Packets
				Speed & Utilization Ratio
			V4/V6 Packets	
			Port Threshold Alarm	
Module Information Acquisition		In-Position Information		
		Manufacturer Information		
		Optical Power Information		

			Relevant Threshold Information
		Port Type	Service
			Network
			Tool
			Hybrid
		Input/Output Multiplexing	
		Traffic Statistics Export	
		Network Config	MAC
			IP
		Batch Port Configuration	
	Show/Hide Columns		
	Hash Mode	Global Hash	Src-dst-ip
			Src-dst-ip-port
			Src-dst-mac
			Src-dst-mac-ip
			Src-dst-mac-ip-port
		Custom Hash	Src-ip
			Dst-ip
			Src-port
Dst-port			
Src-mac			
Dst-mac			
Symmetry MAC			
Symmetry IPv4			
Symmetry IPv6			

			Symmetry L4	
			Custom Symmetry Src IPv4	
			Custom Symmetry Dst IPv4	
			Custom Symmetry Src IPv6	
			Custom Symmetry Dst IPv6	
	Tunnel Stripping		CFP	
			ERSPAN	
			GRE	
			GTP	
			IPinIP	
			PPPoE	
			MPLS	
			VXLAN	
	Rule Type (Ingress)	L2 Rule Filtering		Adjust Priority Based on A Specific Policy
				Source MAC
				Outer VLAN
				EtherType
				VLAN Priority
				Any Combination of The Above Fields
		L3/L3V6 Rule Filtering		IP Version
				Outer VLAN
				Source IP Support Mask
				Destination IPv6 Support Mask
				Destination IPv4 Support Mask
				Source Port

			Destination Port
			IP Protocol
			IPv4 Frag
			DSCP
			ICMP-Type
			VLAN Priority
			Source MAC
		Any Combination of The Above Fields	
		EX Rule Filtering	Destination MAC
			Source MAC
			Source IPV4
			Outer VLAN
			EtherType
			VNI
	TCP Flag		
	EM/EMV6 Rule	Inner Source/Destination IP, Port, Protocol Number	
		Any Combination of The Above Fields	
		Source/Destination IP, Port, Protocol Number	
	Rule Type (Egress)	L3/L3V6 Rule Filtering	Choose Either EM or EMV6 Key to Combine.
			Source IP Support Mask
Destination IP Support Mask			
Protocol Number			
Source Port			
Destination Port			

			Outer VLAN
			VLAN Priority
			Any Combination of The Above Fields
	Port Range Matching		
	Match Mode	Inner Layer Matching after Tunnel Stripping	
		Inner Layer Matching in MPLS Tunnels	
		Filtering in The TX Direction at The Port	
	Action	Add/Modify/Delete Outer VLAN in Forward Mode	
		Add Timestamping	
		Dst MAC Modification	
	Rule Management	Rule Search	
		Rule Hit Num Reflush/Clean	
		Rule Hit Bytes Reflush/Clean	
		Show/Hide Columns	
		Select All Rules	
		Deselect All Rules	
		Select Range Rules	
	Adjust Priorities		Highest Priority
		Lowest Priority	
		Adjust Priority Based on A Specific Policy	
Forward Policy	Mirror	Ports SPAN to Ports	
		Ports SPAN to Port	
		Ports RSPAN to Port	

		Ports ERSPAN to L3 Port	
		Ports/LAG SPAN to Ports with ACL	
		Ports/LAG RSPAN to Port with ACL	
		Truncation of 128 bytes	
	Replication	Ports/LAG Copy to LAG with ACL	
		Ports/LAG Copy to Ports with ACL	
		Ports/LAG Copy to Ports +LAG with ACL	
	Forward	Ports/LAG Forward to LAG with ACL	
		Ports/LAG Forward to Port with ACL	
		Ports/LAG Forward to Drop with ACL	
	Management	Enable/Disable Policy	
		Set Color For Policy	
		Copy A Set of Forwarding Policies for Re-Editing	
		Policy Hit Num Reflush/Clean	
		Policy Hit Bytes Reflush/Clean	
Load Balancing	Mode	Flexible Mode	
		Static Mode	
		Weight Mode	
	Standby Mode	Port Priority	
		LACP Port Preemption	
		Rate-First	
		Priority-First	

			Port Preemption Delay Configuration
	Management	Fixed Load Balancing Members	
		Hash Seed	
Management & Monitoring	Device Management	User Interface	Console
			SSH
			Telnet
			CLI
			RESTful API
			WEB UI
			Radius
			Tacas
		Local AAA	
	Online Update		
	Online Capture		
	Time Sync	PTP	
		NTP	
	License		
	DevOps	Ansible	
LLDP			
File Transfer	FTP		
	TFTP		
Status Monitoring	Millisecond Level Traffic Monitor		
	Temperature Information		
	Fan Information		

		Power Supply Information	
		Version Information	
		System Time	
		Displaying Management Port Information	
		Display CPU/Memory Usage Status	
	Alarms	Temperature Alarms	
		Power Out of position Alarms	
		Fan Out of Position Alarms	
		Traffic Overflow Alarms	
		SNMP	
		Syslog	
		Exporter to Prometheus	

Hardware Specifications

Product Model		CX102S-8GT-M-SWP	CX102S-16GT-M-SWP
Network Interface	1G(RJ45)	8	16
	10G(SFP+)	2	2
Switching Chip	Chip Model	Marvell Prestera (AlleyCat 5Y)	
	Switching Capacity	72Gbps	
	Wildcard Filter	3K	
CPU	CPU	Cortex-A55	
Memory	Memory	4GB DDR4	
Flash	Flash	32GB EMMC	
Variants	Variants	PTP, PoE	PTP, 1~2 DPUs, PoE
Management Interface	USB	1xUSB2.0	
	Console	1xConsole RJ45	
Dimensions	Dimensions (WxHxD mm)	215x44x310	
	Weight	2.2kg	
Electrical Characteristics	Maximum Power Consumption	18W	21W
	Power and Fan	1 Fixed Power Module, 2 Fixed Fan Modules	
	Input Voltage	100-240V AC	
Operating Conditions	Operating Temperature	0-45°C	
	Relative Humidity	5%-90% (Non-Condensing)	

Product Model		CX206P-24S-M-H	CX206P-48S-M-H	CX202P-24Y-M-H
Network Interface	10G(SFP+)	24	48	-
	25GE(SFP28)	-	-	24
	100G(QSFP28)	6	6	2
Switching Chip	Chip Model	Marvell Prestera (Aldrin 2)		Aldrin 3
	Switching Capacity	1.09Tbps		800Gbps
	Wildcard Filter	4.5K		13K
CPU	CPU	OCTEON CN9130		
Memory	Memory	4GB DDR4		
Flash	Flash	32GB EMMC		
Variants	Variants	PTP		
Management Interface	USB	1xUSB2.0		
	Console	1xConsole RJ45		
	MGMT	1xMGMT RJ45		
Dimensions	Dimensions (WxHxD mm)	440x44x470		
	Weight	9kg	9.1kg	8.6kg
Electrical Characteristics	Maximum Power Consumption	165W	187W	168W
	Power and Fan	1+1 Power Modules, 2+1 Fan Modules Hot-Pluggable		
	Input Voltage	100-240V AC		
Operating Conditions	Operating Temperature	0-45°C		
	Relative Humidity	5%-90% (Non-Condensing)		

Product Model	CX308P-48Y-M-H	CX532P-M-H	CX732Q-M-H	
Network Interface	10G(SFP+)	-	2	2
	25G(SFP28)	48	-	-
	100G(QSFP28)	8	32	-
	400G(QSFP-DD)	-	-	32
Switching Chip	Chip Model	Marvell Prestera (Falcon)		
	Switching Capacity	2.0Tbps	3.2Tbps	12.8Tbps
	Wildcard Filter	4.5K		
CPU	CPU	Pentium D1508		
Memory	Memory	16GB DDR4		
Flash	Flash	256GB M.2 SATA		
Variants	Variants	PTP		
Management Interface	USB	1xUSB2.0		
	Console	1xConsole RJ45		
	MGMT	1xMGMT RJ45		
Dimensions	Dimensions (WxHxD mm)	440x44x515		
	Weight	11.1kg	12kg	12.4kg
Electrical Characteristics	Maximum Power Consumption	480W		1000W
	Power and Fan	1+1 Power Modules, 3+1 Fan Modules Hot-Pluggable	1+1 Power Modules, 4+1 Fan Modules Hot-Pluggable	1+1 Power Modules, 5+1 Fan Modules Hot-Pluggable
	Input Voltage	100-240V AC		
Operating Conditions	Operating Temperature	0-45°C		
	Relative Humidity	5%-90% (Non-Condensing)		

Product Model		CX564P-N	CX664D-N	CX864E-N
Network Interface	10G(SFP+)	2	2	2
	100G(QSFP28)	64	-	-
	200G(QSFP56)	-	64	-
	800G(OSFP)	-	-	64
Switching Chip	Chip Model	Marvell Teralynx		
	Switching Capacity	6.4Tbps	12.8Tbps	51.2Tbps
	Wildcard Filter	21K		48K
CPU	CPU	Intel Xeon-D or Marvell OCTEON 10		
Memory	Memory	16GB DDR4		32GB DDR4
Flash	Flash	256GB M.2 SATA		
Variants	Variants	PTP		
	USB	1xUSB2.0		
Management Interface	Console	1xConsole RJ45		
	MGMT	1xMGMT RJ45		
Dimensions	Dimensions (WxHxD mm)	440x87x560	440x87x560	440x87x650
	Weight	16kg	16kg	25kg
Electrical Characteristics	Maximum Power Consumption	850W	950W	2400W
	Power and Fan	1+1 Power modules, 3+1 Fan modules Hot-Pluggable	1+1 Power Modules, 3+1 Fan Modules Hot-Pluggable	1+1 Power Modules, 3+1 Fan Modules Hot-Pluggable
	Input Voltage	100-240V AC		
Operating Conditions	Operating Temperature	0-45°C		
	Relative Humidity	5%-90% (Non-Condensing)		

Ordering Information

Part Number	Description
CX102S-8GT-M-SWP	Managed access switch, 8x1GBase-T, 2x10G SFP+, port1-8 support PoE+/PoE++ with 150W PoE budget, fixed 1xPSU, fixed 2xFAN
CX102S-16GT-M-SWP	Managed access switch, 16x1GBase-T, 2x10G SFP+, port1-8 support PoE+/PoE++ with 150W PoE budget, fixed 1xPSU, fixed 2xFAN
CX206P-24S-M-H	Enterprise aggregation/spine switch system, 24x10G/1G SFP+, 6x100G QSFP28, hot-pluggable 1+1 PSU, hot-pluggable 3+1 FANs, front-to-power airflow
CX206P-48S-M-H	Enterprise aggregation/spine switch system, 48x10G/1G SFP+, 6x100G QSFP28, hot-pluggable 1+1 PSU, hot-pluggable 3+1 FANs, front-to-power airflow
CX202P-24Y-M-H	Enterprise aggregation/spine switch system, 24x25G/10G/1G SFP28, 2x100G QSFP28, hot-pluggable 1+1 PSU, hot-pluggable 3+1 FANs, front-to-power airflow
CX308P-48Y-M-H	Enterprise core/spine switch system, 48x25G/10G SFP28, 8x100G QSFP28, hot-pluggable 1+1 PSU, hot-pluggable 3+1 FANs, front-to-power airflow
CX532P-M-H	Enterprise aggregation/spine , 32x100G QSFP28, hot-pluggable 1+1 PSU, hot-pluggable 4+1 FANs, front-to-power airflow
CX732Q-M-H	Enterprise aggregation/spine , 32x400G QSFP28, hot-pluggable 1+1 PSU, hot-pluggable 5+1 FANs, front-to-power airflow
CX564P-N	Ultra-low latency AIDC switch system, 64x100G QSFP28, hot-pluggable 1+1 PSU, hot-pluggable 3+1 FANs, front-to-power airflow, 2RU height
CX664D-N	Ultra-low latency AIDC switch system, 64x200G QSFP56, hot-pluggable 1+1 PSU, hot-pluggable 3+1 FANs, front-to-power airflow, 2RU height
CX864E-N	Ultra-low latency AIDC switch system, 64x800G OSFP, hot-pluggable 1+1 PSU, hot-pluggable 3+1 FANs, front-to-power airflow, 2RU height
AsterNOS-APP-PB-LIC-1S	Packet broker software application on CX102S switch family
AsterNOS-APP-PB-LIC-2P	Packet broker software application on CX202P/CX206P switch family
AsterNOS-APP-PB-LIC-3P	Packet broker software application on CX308P switch family

AsterNOS-APP-PB-LIC-5P	Packet broker software application on CX532P switch family
AsterNOS-APP-PB-LIC-6D	Packet broker software application on CX664D switch family
AsterNOS-APP-PB-LIC-7Q	Packet broker software application on CX732Q switch family
AsterNOS-APP-PB-LIC-8E	Packet broker software application on CX864E switch family

Warranty and Service Support

Asterfusion PB-APP Packet Broker comes with 2-year Basic H/W service and warranty, preloaded perpetual licensed PB-APP and 1-year PB-APP upgrade subscription.

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