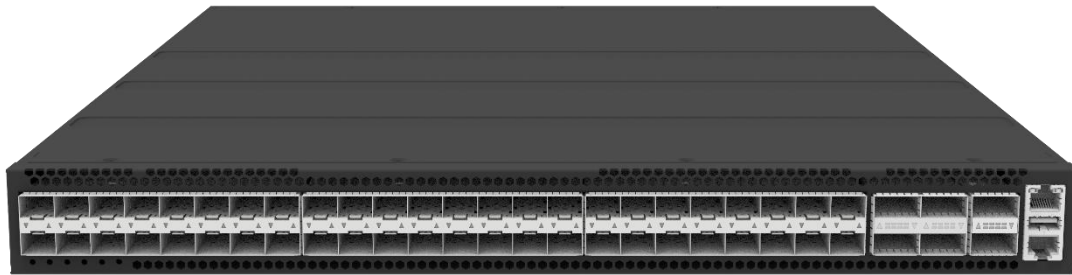


Overview

Asterfusion PX306P-48Y-M is a SONiC-based network packet broker platform designed for advanced network visibility, traffic aggregation, and analysis in modern data center environments. It integrates a Marvell Falcon switch ASIC and an optional OCTEON CN103 DPU, providing enhanced programmability and in-line packet processing capabilities.

The platform supports a flexible mix of $48 \times 10/25\text{GbE}$ and $8 \times 40/100\text{GbE}$ interfaces, enabling scalable deployment across monitoring and security infrastructures. Additionally, the PX306P-48Y-M integrates 1PPS + ToD (Time of Day) Precision Time Protocol (PTP) features, providing high-accuracy time synchronization for time-sensitive applications.

Focusing on metropolitan area network (MAN), internet data center (IDC), and enterprise network visibility and analyzing, it supports not only basic traffic processing and message preprocessing functions but also realize deep business processing via DPU. It provides high-performance, high-density, low power, easy-delivery front-end processing platform for the back-end monitoring and analysis system.



PX306P-48Y-M

Key Features and Benefits

Open, Scalable and Programmable NPB2.0 Architecture

Asterfusion network packet broker PX306P-48Y-M represents a new generation of network visibility platforms built on commercial high-performance switching ASICs and the open SONiC operating system. This evolution replaces traditional proprietary architecture with a fully open and modular software stack, ensuring unparalleled scalability and long-term flexibility.

Multi-level Concurrent Strategy Processing Mechanism

PX306P-48Y-M supports a multi-level concurrent policy processing mechanism, which can implement different traffic policies on the inbound interface, intermediate links and outbound interfaces, and complete

functions such as traffic aggregation, distribution, replication, load balancing, etc., the L2/L3/L4/L7 layer concurrent filtering policy can be flexibly set. PX306P-48Y-M supports the implementation of unified or independent traffic filtering policies while traffic replication can provide customized data sources for different backend monitoring systems.

Resilient Hash Flow Load Balancing

PX306P-48Y-M supports resilient flow load balancing mechanisms. When a link in the load balancing group fails, this mechanism will just redirect the traffic on the failed link onto other links and ensure that the traffic on the original normal link will not be affected and thus minimize the impact of the failure.

Flexible and Efficient In-depth Service Processing

Based on commercial high-performance switching ASICs, PX306P-48Y-M can carry out basic visibility functions such as packet header matching, time stamping, slicing and modification, offering packet processing flexibility with wire speed performance. Besides, PX306P-48Y-M can optionally include 2 DPU extension modules, which can provide advanced service processing functions such as application layer protocol matching, signature matching, packet de-duplication, SSL decryption, and packet header truncation out.

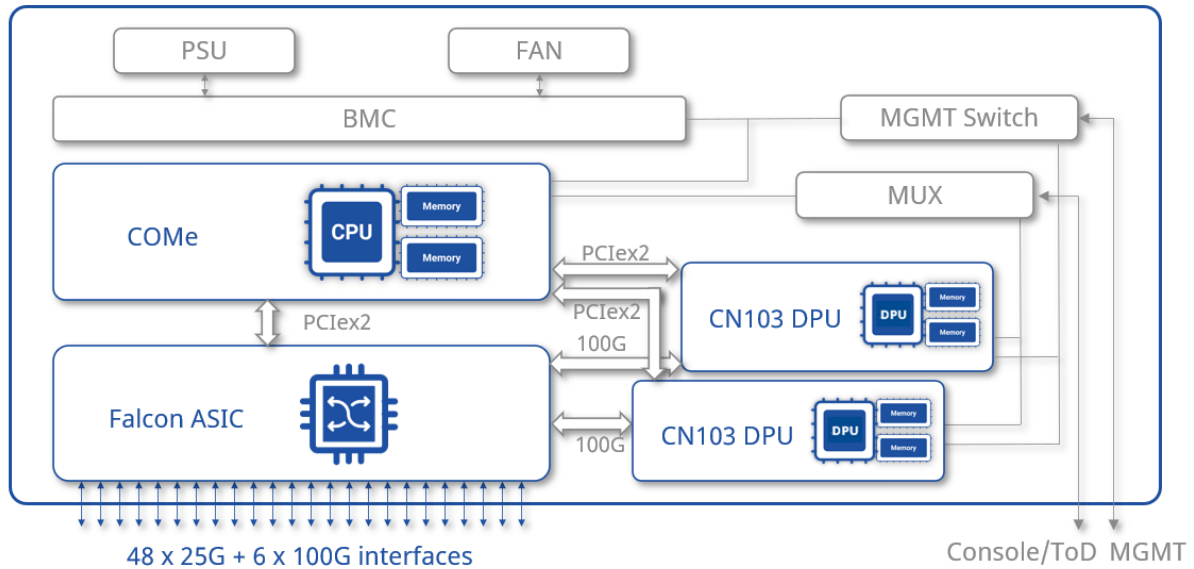
Intelligent Signaling and User Traffic Correlation Marking

PX306P-48Y-M can decode and track identification of signaling protocols running in each interface of mobile core networks, extract and reconstruct specified signaling packets and ensure the delivery of the entire message to back-end analytical systems. PX306P-48Y-M can also support correlation marking between signaling-plane traffic and user-plane traffic, thus allowing for intelligent filtering and distribution of correlated traffic.

Flexible Management Interface

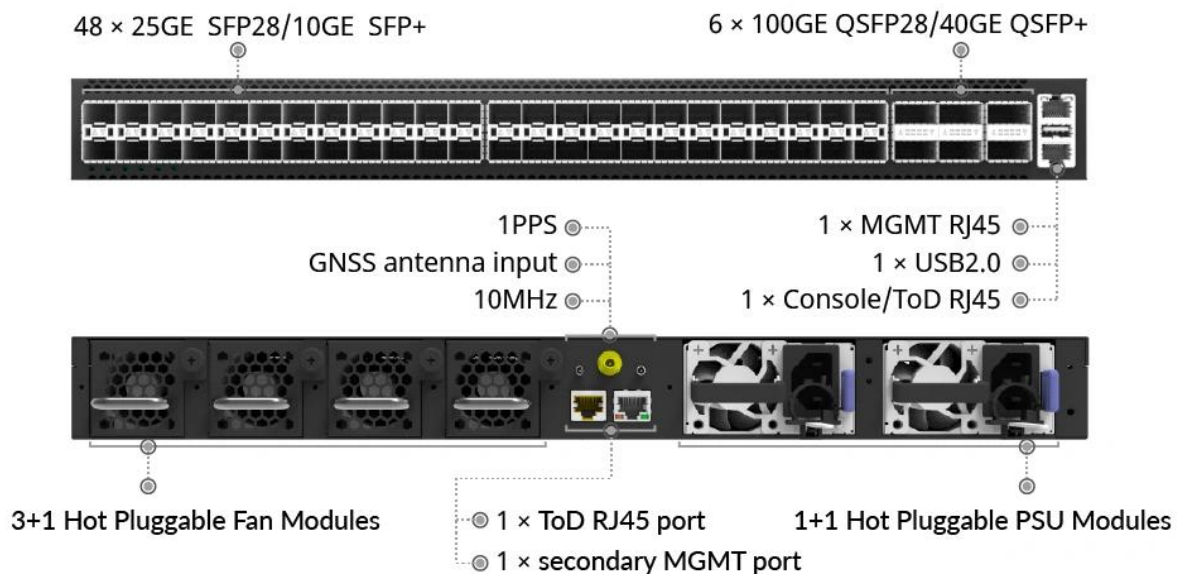
PX306P-48Y-M provides user-friendly management interfaces such as CLI, Web UI, SNMP, Ansible and REST API.

System Architecture



PX306P-48Y-M hardware is designed with 2 optional Marvell OCTEON CN103 data processing unit (DPU), which provides 8 core ARM V9 processing capability. It is preloaded with Asterfusion FusionNOS to realize advanced service processing functions, or to deploy any standard Linux kernel-based applications for a variety of use cases.

Interfaces



Specifications

Product Model		PX306P-48Y-M
Network interface	100G (QSFP28)	6
	25G (SFP28)	48
Switching chip	Chip model	Marvell Prestera (Falcon)
	Switching capacity	2.0Tbps
	Forwarding rate	2600Mpps
CPU	CPU	Broadwell DE D-1508
	Memory	16GB DDR4, extensible to 96GB
	SSD	128G/-, m.2 SATA
DPU	DPU Slot	2
	DPU model	Marvell OCTEON CN103
	DPU core	8 ARM V9 cores
	Memory	16GB DDR5, extensible to 48GB
	SSD	Optional PCIe Gen4 x4 NVME
Management interface	USB	1xUSB2.0
	Console	1xConsole/1PPS+ToD RJ45
	MGMT	2xMGMT RJ45
Dimensions	Dimensions (WxHxD mm)	440x44x560
	Weight	10kg
Electrical characteristics	Maximum power consumption	480W
	Power and fan	1+1 power modules, 3+1 fan modules, hot-pluggable
	Input voltage	100-240V AC / 36-72V DC
Operating conditions	Operating temperature	0-45°C
	Relative humidity	5%-90% (non-condensing)

Function Features

Features		Description
Basic function	Packet identification	Link layer packets, IP packets, ICMP packets, TCP/UDP/SCTP packets, BGP/OSPF/ISIS management packets
		VLAN, VXLAN, MPLS, IP, GTP, GRE, IPsec (AH/ESP), CFP tunnel packets
	Basic matching	N-tuple rules with mask (IPv4/IPv6 5-tuple, MAC, Ether Type, VLAN tags, VNI, TCP Flag, DSCP, Fragment message, etc.)
		Exact IPv4/IPv6 5-tuple rules
		Inner 5-tuple rules with mask
		Inner exact 5-tuple rules
		Supports multi-level concurrency strategies, can execute different traffic strategies on the inbound, intermediate, and outbound interfaces of the pipeline, and supports L2/L3/L4/L7 layer combination policy rules
		Supporting inner layer matching filtering of packets with GTP extension header in 5G network
		Signature rules, payload partial match depth 40 bytes
		Supporting HTTP Get / Post packet filtering
	Flow forwarding	Forwarding by flow classification
		Forwarding by the specified output port
		Load-balancing output by specified output link group
		Traffic replication based on a port or logical interface

	Traffic replication	Supporting traffic replication and applying unified or independent traffic filtering policies
	Load balancing	Load balancing for policies such as source/destination IP, source/destination port, IP 5-tuple, source/destination MAC, etc.
		Load balancing based on inner IP N-tuple hashing in case of tunnel encapsulation
		Fault-tolerant load balancing protection mechanism
		Load balancing strategy with weights
		Hash seeds are flexible and configurable
		Supporting homologous homoclinic load balancing output
	Packet preprocessing	VLAN tag adding/deleting, support stripping multi-layer VLAN tags
		Tagging source port
		Packet slicing, you can set the reserved byte length which is based on ACL rules
		BPDU packets are forwarded by default, and BPDU packets can also be discarded
		Source/destination MAC address modification
	Tunnel preprocessing	GRE encapsulation (supporting configuration with IP and MAC address)
		GTP, GRE, VXLAN, ERSPAN, CFP, IP over IP, MPLS, MPLS over UDP and other tunnel or encapsulated header stripping, support private tunnel or encapsulated header stripping
		GRE/VXLAN termination (Each port can be configured with IP address)

	High reliability	Support interface master/backup and link group master/backup. When the master port fails, the traffic will automatically switch to the backup port for output, and it also supports the automatic recovery mechanism
		Support interface linkage and link group linkage. When an interface fails, all interfaces linked to it will also be down synchronously, and support automatic recovery mechanism
Advanced feature (DPU support)	Enhance matching	Large capacity N-tuple rules with mask (outer/inner), exact 5tuple rules (outer/inner)
		Signaling protocol (S1AP, Diameter, SIP, GTPv0, GTPv1, GTPv2, NGAP, HTTP2/REST, etc.)
		Application layer protocol (HTTP, HTTPs, Email, FTP, POP3, SMTP, DNS, Radius, COAP, etc.)
		Specific IMSI (matching the original signaling that contains specific IMSI information)
		Specific URL (matching based on complete Host field and the specific URL)
		SIP/RTP/RTCP (matching SIP message of VoLTE signaling-plane in S1-U data; matching RTP / RTCP message of VoLTE media-plane in S1-U data)
		Signature rules (supports signature based on L2/L3/L4 fixed offset, signature with fixed position, signature with floating window range)
		Combination rules
		Net flow traffic statistics

	Advanced processing	Header output, only forward the header of the network layer and transport layer of original packets
		Packet deduplication
		IP fragment reassembly
		Time stamping, ns-level
		Masking
		SSL encryption and decryption (optional function)
		Flow sampling (sampling can be performed according to the 5tuple of the hit rule, etc., and the sampling rate can be set)
Statistics feature	Interface statistics	The information about link status, rate, statistics of transmitting and receiving
		Port real-time packet loss statistics
	Hit statistics	Rule hit statistics
Port feature	User-defined port	User-defined ingress and egress ports
	Port reuse	Supporting single fiber receiving/transmitting
	Interface health check	Auto link checking and protecting
	Port buffer	Supporting data burst buffering
	Module information query	Supporting querying the in-position information of modules

	Loopback	Supporting loopback interface
Management feature	Management tools	Supporting serial port, management network port, WEB to log in to the device
	Configuration management	Supporting the following configurations. Management network port IP, modify IP/MAC/gateway, save configuration file, clear configuration file, import and export configuration file, etc.
	Status monitoring and alarm	Supporting reading device information, module presence information, system operating status, power supply status, fan status, etc.
	Performance monitoring and alarm	Supporting port status and information statistics, query of peak traffic, real-time statistics of packet loss, port traffic threshold setting, etc.
	System upgrade	Supporting online security upgrade
	Log and clock	Supporting local log, NTP/PTP clock synchronization
	WEB management	Supporting graphical management, multi-user support, decentralized management, centralized management
	Third-party tool management	SNMP, SNMP Trap, RESTAPI, supporting centralized authentication by RADIUS, TACACS+

Ordering Information

Part Number	Description
PX306P-48Y-M	Network packet broker, 48x25G/10G SFP28, 6x100G QSFP28, 2xDPU extension slots, 1 x 1PPS+ToD port, hot-pluggable 1+1 PSU, hot-pluggable 3+1 FANs, front-to-power airflow
Ordering Components	
MT3608-CX3	8-core CN103 DPU module inside PX306P series, FusionNOS preloaded
HW-WNT-1Y-PX306P-M	Hardware platform warranty for PX306P-M series, 1 Year
AsterNOS-UG-1Y-PX306P-M	Major version upgrade of AsterNOS for PX306P-M series, 1 Year

Warranty and Service Support

Asterfusion PX306P-48Y-M network packet broker comes with 2-year Basic H/W service and warranty, preloaded perpetual licensed AsterNOS and 1-year AsterNOS upgrade subscription.