

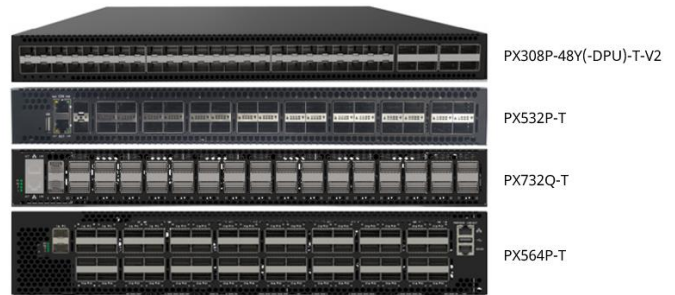
# Asterfusion PX-T Series Intelligent Visibility Switch

## Highlights

- High density Ethernet interface
  - 32x400GE (QSFP-DD)
  - 64x100GE (QSFP28)
  - 32x100GE (QSFP28)
  - 8x100GE (QSFP28) + 48x25GE (SFP28)
- Wire speed traffic aggregation and distribution
- Full wire speed tunnel inner layer IP 5-tuple filtering, load balancing, tunnel stripping
- High performance packet preprocessing, such as time stamping, slicing, VLAN tagging, MAC modification, GRE termination
- Optional 2 DPU extension modules with L4-L7 advanced traffic processing features, such as keyword matching, packet deduplication and passive SSL decryption

## Product Applications

- NPB
- Passive SSL decryption
- 4G/5G mobile networks signaling correlation marking



## Overview

The PX-T series intelligent visibility switch adopts advanced hardware architecture design and provides the industry's high-density 400GE, 100GE, 40GE, 25GE, and 10GE ports access. Focusing on the mobile core network, metropolitan area network (MAN), internet data center (IDC), and enterprise network visibility and analyzing, The PX-T series products support traffic aggregation, filtering, replication, load balancing, message truncation, timestamp, message modification, tunnel encapsulation/decapsulation and other basic traffic processing and message preprocessing functions. It can also realize deep business processing such as SSL decryption, duplicate data deletion, masking, fragmentation reorganization, and out-of-order reorganization. It provides high-performance, high-density, low-power, easy-delivery front-end processing platform for the back-end monitoring and analysis system.

## Open and Programmable High-Performance Hardware Platform

PX-T series adopts the programmable switching chips, which is software-definable for protocol support and packet processing and realize the identification of new network protocols and the identification of tunnels or multi-layer tunnels. At the same time, the forwarding behavior of the PX-T series products also can be defined by software, such as supporting decapsulation processing for various tunnel protocols, as well as supporting the flow distribution operation based on the inner layer IP 5-tuple of the tunnel.

## Multi-level Concurrent Strategy Processing Mechanism

PX-T series products support 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. PX-T series products support the implementation of unified or independent traffic filtering policies while traffic replication, and can provide customized data sources for different back-end monitoring systems.

## Resilient Hash Flow Load Balancing

PX-T series products support resilient flow load balancing mechanism. 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 minimizing the impact of the failure.

## Flexible and Efficient In-depth Service Processing

Based on the programmable switching chips, PX-T series products can carry out basic visibility functions such as packet header matching, time stamping, slicing and modification, offering packet processing flexibility with the wire speed performance. Besides, PX3-T series products 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

PX3-T series products 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. PX3-T series products 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

PX-T series provide the user-friendly management interfaces such as CLI, Web UI, SNMP, and REST API.

## Specifications

Product Model		PX308P-48Y (-DPU)-T-V2	PX532P-T	PX564P-T	PX732Q-T
Network interface	400GE(QSFP-DD)				32
	100GE(QSFP28)	8	32	64	
	25GE(SFP28)	48	2	2	2
Switching chip	Chip model	Barefoot Tofino	Barefoot Tofino	Barefoot Tofino	Barefoot Tofino
	Switching capacity	3.3Tbps	3.3Tbps	6.5Tbps	12.9Tbps
CPU	CPU	Multi-core x86			
	SSD	128GB/-, m.2 SATA			
DPU	DPU model	Marvell Octeon, 24-core ARM64, 1.8GHz	N/A		
	Memory	32GB DDR4, maximum 96GB			
	Flash	64GB eMMC 5.1			
	SSD (optional)	Expandable to 2xM.2 NVME			
Management interface	USB	1xUSB2.0			
	Console	1xConsole RJ45			
	MGMT	1xMGMT GE RJ45			2xMGMT GE RJ45
Electrical characteristics	Fan redundancy	4+2 hot pluggable	4+1 hot pluggable	3+1 hot pluggable	5+1 hot pluggable
	Power redundancy	1+1 hot pluggable			
	Input voltage	100-240V AC or 36-72V DC			100-240V AC
	Maximum power consumption	430W 630W (2 DPUs)	415W	705W	1100W
Dimensions	Height	1U	1U	2U	1U
	Dimensions (W x H x D mm)	440x44x515	440x44x560	440x90x560	440x44x515
Operating conditions	Operating temperature	0 - 40°C			0 - 45°C
	Relative humidity	10% - 90% (non-condensing)			

## Function Features

Features		Description
<b>Basic function</b>	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	Traffic replication based on a port or logical interface
		Supporting traffic replication and apply 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

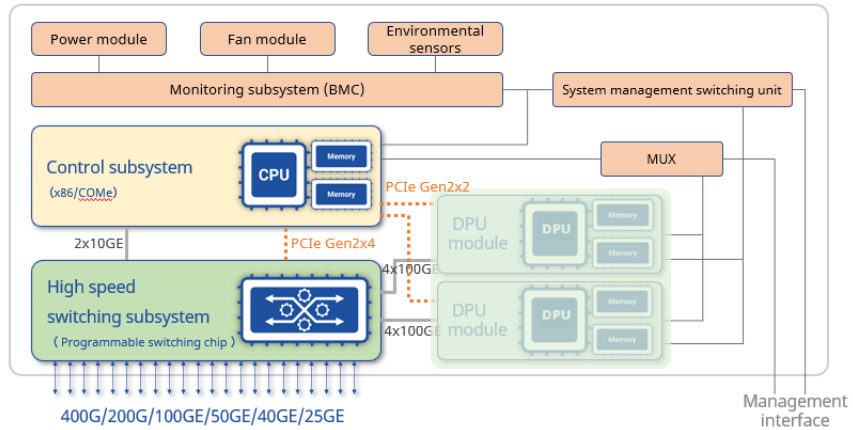
		Load balancing strategy with weights	
		Hash seeds are flexible and configurable	
		Supporting for homologous homoclinic load balancing output	
	Packet preprocessing	VLAN tag adding/deleting, support stripping multi-layer VLAN tags	
		Tagging source port	
		Packet slicing, you can set the reserved byte length which 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 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	
	<b>Advanced feature (DPU support)</b>	Enhance matching	Large capacity N-tuple rules with mask (outer/inner), exact 5-tuple 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	
	Advanced processing		Net flow traffic statistics
			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 5-tuple of the hit rule, etc., and the sampling rate can be set)		
<b>Statistics feature</b>	Interface statistics	The information about link status, rate, statistics of transmitting and receiving	
		Port real-time packet loss statistics	
	Hit statistics	Rule hit statistics	
<b>Port feature</b>	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	
<b>Management feature</b>	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.	

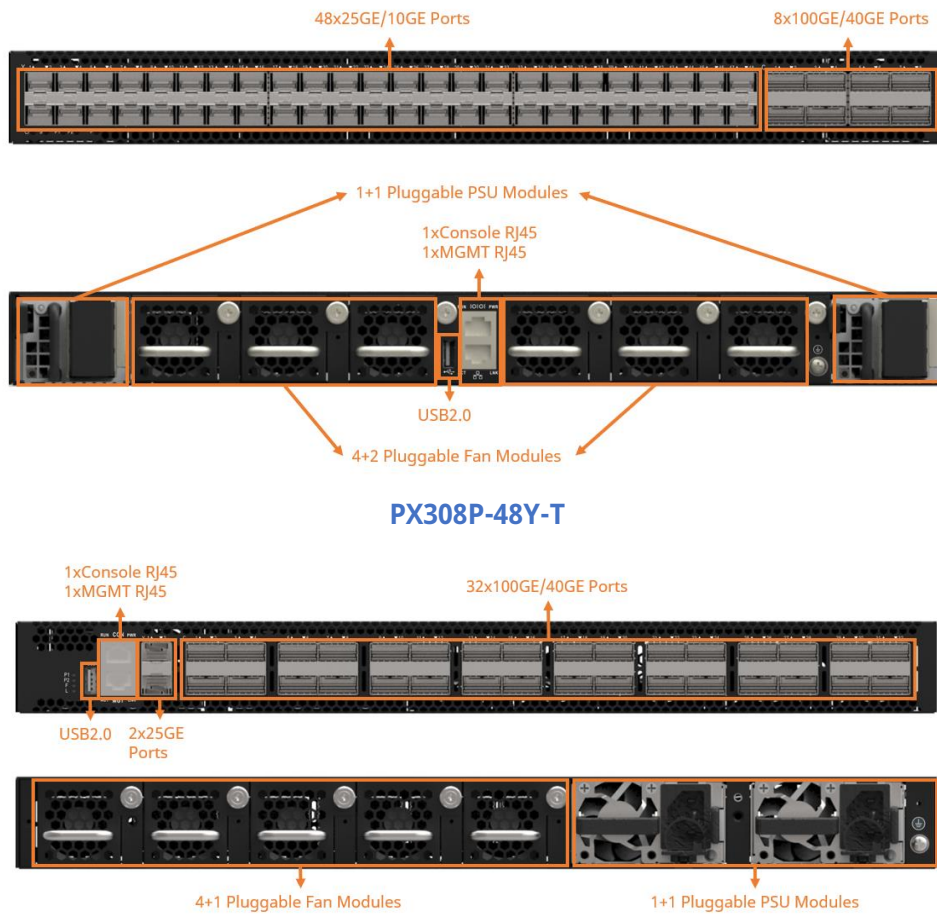
	Status monitoring and alarm	Supporting reading device information, module presence information, system operating status, power supply status, fan status, etc.
	Performance monitoring and alarm	Supporting port status and information statistics, query of peak traffic, real-time statistics of packet loss, 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+

## System Architecture and Panel Illustration

### System Architecture

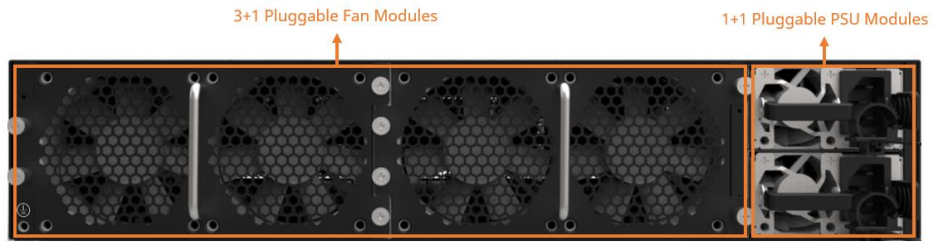
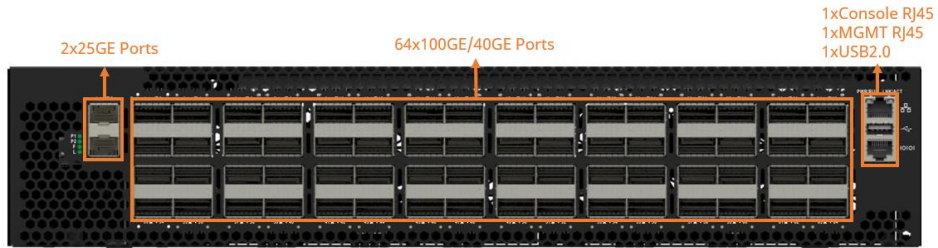


### Panel Illustration

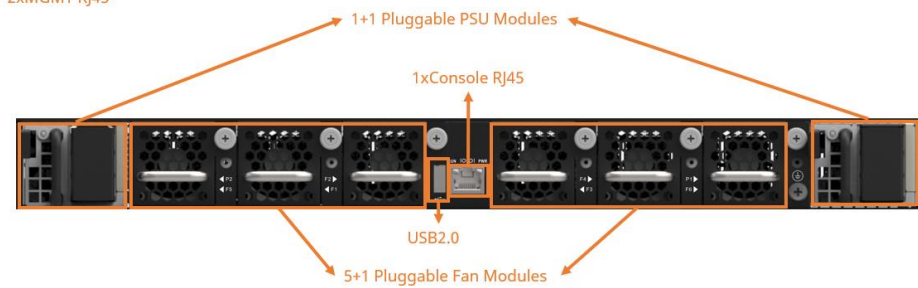
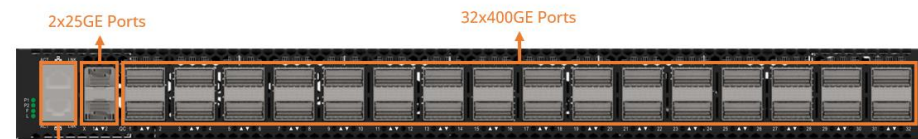


PX532P-T





**PX564P-T**



**PX732Q-T**

## Order Information

Part Number	Description
PX308P-48Y-T-V2	Leaf packet broker system, 44x25G/10G, 4x25G/10G/1G, 8x100G QSFP28; hot-pluggable 1+1 PSU, hot-pluggable 4+2 FANs, front-to-power airflow, 1RU height
PX308P-48Y-DPU-T-V2	All-in-one packet broker system with advanced features, 44x25G/10G, 4x25G/10G/1G, 8x100G QSFP28, 2xDPU extension cards, each 24-core ARM64, 24GB DDR4 RAM; hot-pluggable 1+1 PSU, hot-pluggable 4+2 FANs, front-to-power airflow, 1RU height
PX532P-T	Leaf/spine packet broker system, 32x100G QSFP28, hot-pluggable 1+1 PSU, hot-pluggable 4+1 FANs, front-to-power airflow, 2RU height
PX564P-T	Spine packet broker system, 64x100G QSFP28, hot-pluggable 1+1 PSU, hot-pluggable 3+1 FANs, front-to-power airflow, 2RU height
PX732Q-T	Spine packet broker system, 32x400G QSFP-DD, hot-pluggable 1+1 PSU, hot-pluggable 3+1 FANs, front-to-power airflow, 1RU height
<b>Optional components and spares</b>	
PWR-SlimCRPS-AC-850-AF	850W Slim AC Power (Applicable to PX308P-48Y-T-V2)
PWR-CRPS-AC-550-AF	550W AC Power (Applicable to PX532P-T)
PWR-CRPS-DC48-550-AF	550W DC -48V Power (Applicable to PX532P-T)
PWR-CRPS-AC-1300-AF	1300W AC Power (Applicable to PX564P-T)
PWR-CRPS-DC48-1300-AF	1300W DC -48V Power (Applicable to PX564P-T)
PWR-CRPS-AC-1200-AF	1200W AC Power (Applicable to PX732Q-T)
FAN-AF-II	Fan (Applicable to PX532P-T/PX308P-48Y-T-V2)
FAN-AF-III	Fan (Applicable to PX564P-T)
FAN-AF-IV	Fan (Applicable to PX732Q-T)

## Warranty and Service Support

Asterfusion PX-T series switches come with 2-year Basic H/W service and warranty, preloaded perpetual licensed AsterNOS and 1-year AsterNOS upgrade subscription.

To acquire more info about company, products, and solutions: [www.cloudswit.ch](http://www.cloudswit.ch)  
Sales: [bd@cloudswit.ch](mailto:bd@cloudswit.ch)  
Business Hotline: +86-0512-62982976

©2024 Asterfusion confidential. All rights reserved.

