

PT-3560 Series

Overview

The PT-3560 series is an advanced L3 Fast Ethernet switch designed by Opzoon to offer the cost effective routing switch with enhanced security, great reliability, and multi-service for bandwidth-intensive applications on the network.

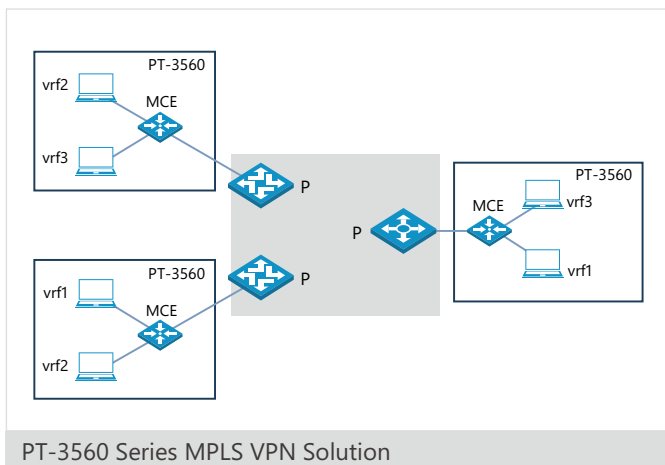
The PT-3560 series can act as an access layer switch for small enterprise, branch-office, and small campus network. It provides hardware IPv4/IPv6 transition, cost effective MPLS VPN, and Opzoon unique expansion features for maximum productivity and investment protection.

With wire-speed L2 to L7 packets forwarding capacity, the PT-3560 series can provide carrier-class high availability to ensure the reliability; it contains Spanning Tree, LLDP, UDLD, VRRP, BFD, GR (Graceful Restart), and various failover mechanism to improve network stability.



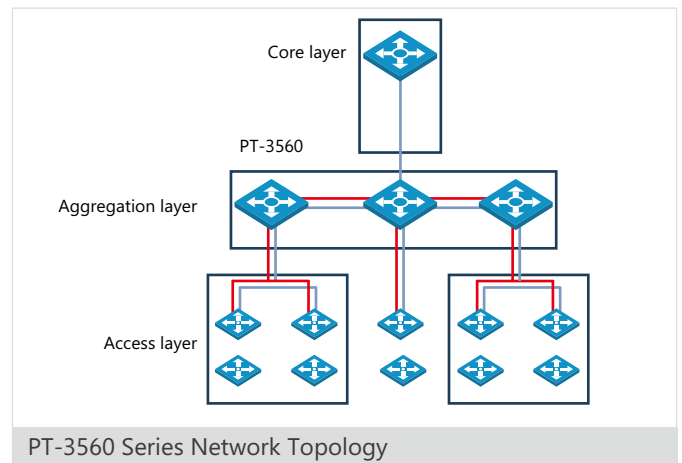
Product Highlights

- Layer 3 switch with expanded Gigabit interface
- Up to 17.6Gbps throughput
- Up to 13.1Mpps forwarding
- Wire-speed L2/L3 forwarding
- MPLS VPN
- Support carrier-class OAM



Basic IPv6 Feature

The PT-3560 series provides hardware IPv4/IPv6 transition and IPv6 routing protocols including DHCPv6, MLD Snooping, ICMPv6, RIPng, OSPFv3, IPv6 ACL, which provide customers more flexibility to build a new IPv6 network

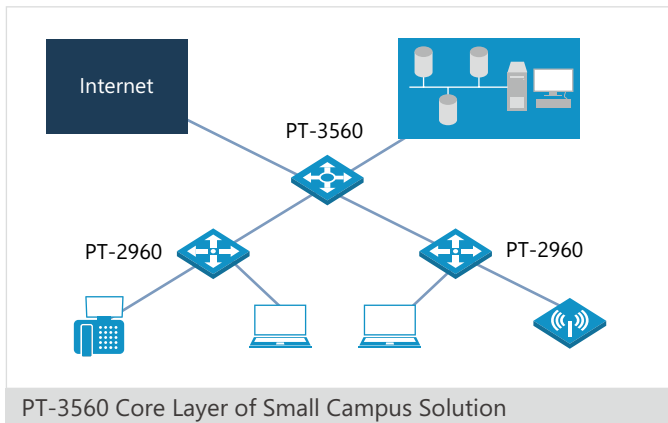


MPLS Multi-VRF Feature

For demands of high private data transmission and high-security requirements like e-government and campus network, MPLS VPN can effectively offer high performance for these private networks.

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The PT-3560 series supports MPLS Multi-VRF which provides the ability to configure and maintain more than one instance of a routing and forwarding table within the same CE (customer edge) router. The MCE (multi-VPN-instance CE) can help to support more than one VPN on a device ensuring customer data security and reducing customers' investment.



Multi-service Capability

The PT-3560 series supports full multicast solutions including PIM-SM, PIM-DM, PIM-SSM, IGMP, IGMP Proxy, Anycast RP, Static unicast, Multicast VLAN, and Multicast control. These functions can efficiently fulfill the demands for IPTV, Video-conference, and Data-distribution which high bandwidth is required. Moreover, flexible Q-in-Q function expands VLAN range to realize the agile packets forwarded by different services, users, priorities, and traffic flows.

The PT-3560 series supports the NAT function. It allows the device to act as an intermediary between the internet and a local network. Only one IP address can be used for communication in an entire group of computers.

Quality of Service Guarantee

Customers who operate the network service run variety of applications as critical traffics. The PT-3560 series switch provides comprehensive QoS mechanisms to guarantee those critical traffics to be transmitted by priority, dedicated bandwidth, and controllable latency; in the meantime, it also ensure that critical traffics do not cause other traffics fails. The PT-3560 series supports QoS features including:

- Up to 8 queues per port

- 802.1p based classification
- DSCP based classification and remarking
- QoS interface trust (COS / DSCP)
- Strict priority queuing
- Weighted Round Robin (WRR) Scheduling
- ACL based DSCP Marking
- ACL based Policing
- Policing/Shaping
- Rate limiting

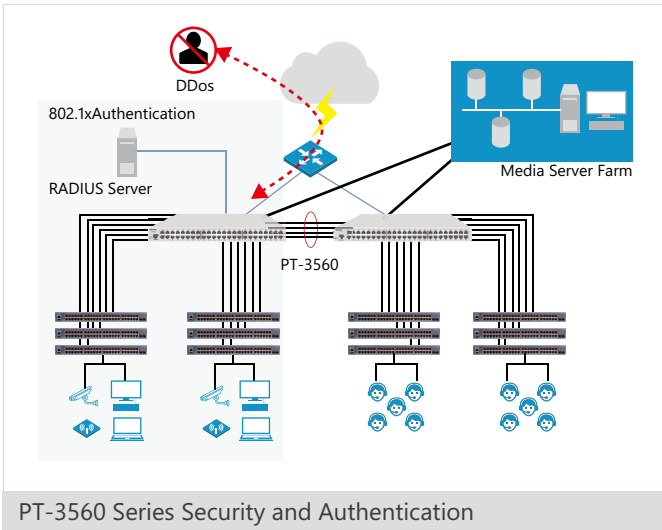
Enhanced Security Protection

The PT-3560 series supports complete ARP intrusion detection and anti-spoofing attack functions, such as ARP-scan, ARP guard, ARP/Port binding, ARP rate-limiting, and DHCP Snooping binding ARP...etc.. All these effectively prevent lots of kind of ARP packet attacks. It also provides multiple features of effective authentication by MAC security and extensive packet filtering from L2 to L7 by hardware ACL to protect the network and become more secure and stable.

Efficient IEEE802.1x for AAA Solution

The PT-3560 series provides standard and proprietary 802.1x features for the customer who requires AAA (Authentication, Authorization, Accounting) solution to accomplish the user account control.

Unauthorized user can be blocked by Port, MAC, traffic flow, and specific time; moreover, to reduce management overhead, the supports of Anti-BT, IP Conflict Prevention, Trust View, Free Resource, Auto VLAN, and Guest VLAN features provide secured and flexible way of user identification regardless of networks which customers connect to.



High Reliability

The PT-3560 series supports STP, RSTP, MSTP, and Smart Link to ensure rapid convergence and network stability. Moreover, the PT-3560 series supports VRRP (Virtual Router Redundancy Protocol) to keep the communication continuous and reliable ensuring network stability.

The PT-3560 series supports GR (Graceful Restart) to prevent routing protocol re-convergence during a processor switchover and also supports ECMP, PBR to guarantee the routing forwarding more flexible.

Simple and Convenient Management

With plenty of secure management functions, the PT-3560 series can be easily managed through SNMPv1/v2/v3, WEB, SSH, Syslog, TELNET, and CLI to complete the configuration, management, access, and monitoring by different levels of administrators for system operation to avoid the risk of unauthorized reconfiguration by non-trusted users.

Standards Compliance

- 802.1D Bridging and Spanning Tree
- 802.1p QOS/COS
- 802.1Q VLAN Tagging
- 802.1w Rapid Spanning Tree
- 802.1s Multiple Spanning Tree Protocol
- 802.1AB Link Layer Discovery Protocol
- 802.3 10BASE-T Ethernet
- 802.3u 100BASE-TX Fast Ethernet
- 802.3ab 1000BASE-T Gigabit Ethernet
- 802.3z 1000BASE-X Gigabit Ethernet
- 802.3ae 10 Gigabit Ethernet
- 802.3ad Link Aggregation (LACP)
- 802.3x Flow control
- RFC 2460 IPv6
- RFC 2461 Neighbor Discovery for IP Version 6 (IPv6)
- RFC 2462 IPv6 Stateless Address Auto configuration
- RFC 2463 Internet Control Message Protocol (ICMPv6)

SNMP MIBs

- RFC 783 TFTP
- RFC 854 Telnet
- RFC 1156 TCP/IP-MIB
- RFC 1157 SNMPv1
- RFC 1212 MIB definitions
- RFC 1213 SNMP MIB II
- RFC 1493 BRIDGE-MIB
- RFC 1650 EtherLike-MIB
- RFC 1657 BGPv4 MIB
- RFC 1724 RIPv2 MIB
- RFC 1757 RMON MIB

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- RFC 1850 OSPFv2 MIB
- RFC 1907 SNMPv2-MIB
- RFC 2021 RMON2 probes
- RFC 2037 ENTITY-MIB
- RFC 2096 IP-FORWARD-MIB
- RFC 2233 IF-MIB
- RFC 2466 MIB for IPV6: ICMPv6 Group
- RFC 2674 Q-BRIDGE-MIB
- LLDP-MIB
- LLDP-EXT-DOT1-MIB
- LLDP-EXT-DOT3-MIB

Specifications

Product	PT-3560-28T	PT-3560-52T
Ports	24 x 10/100 BASE-T Ports + 4 GbE SFP Combo Ports	48 x 10/100 BASE-T Port + 4 GbE SFP Combo Ports
Switching Capacity	13.2Gbps	17.6Gbps
Package Forwarding Rate	9.8Mpps	13.1Mpps
Jumbo frame	9KB	9KB

Hardware configuration

Dimension(W*H*D mm)	442*44*208	442*44*225
Working Humidity	10%~85% Non-condensing	10%~85% Non-condensing
Working Temperature	0°C~60°C	0°C~60°C
Storage Temperature	-40°C~80°C	-40°C~80°C
Power Supply	AC:100-240V, 50-60 Hz	AC:100-240V, 50-60 Hz
Power Consumption	≤60W	≤60W

Layer 2 feature

VLAN	<ul style="list-style-type: none">• Up to 4096 VLANs• Support private Vlan• Supports basic QinQ and selective QinQ• Support port isolation• Support GVRP
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MAC Address Table	<ul style="list-style-type: none">• Up to 16K unicast MAC addresses• Up to 1K multicast MAC address• Support dynamic MAC management• Support Port/MAC-binding• Support MAC quantity control<ul style="list-style-type: none">-Port based MAC quantity control
Reliability	<ul style="list-style-type: none">• Support IEEE 802.1d Spanning Tree Protocol (STP)• Support IEEE 802.1w Rapid Spanning Tree Protocol (RSTP)• Support IEEE 802.1s Multiple Spanning Tree Protocol instances (MSTP)• Support STP Root Guard• Support BPDU Guard• Support GR(Graceful Restart)• Support BFD
Port Mirroring	<ul style="list-style-type: none">• Support one-to-one mirroring• Support many-to-one mirroring• Support flow-based mirroring• Support CPU port mirroring• Support RSPAN
Flow control	<ul style="list-style-type: none">• Support IEEE802.3x flow control and back pressure• Support Storm control
Link aggregation	<ul style="list-style-type: none">• Support LACP(802.3ad)<ul style="list-style-type: none">-8 ports-32 groups per system• Support Static link aggregation

Layer 3 feature

IPv4	<ul style="list-style-type: none">• Support ARP<ul style="list-style-type: none">-ARP basic function and static ARP-ARP proxy and Local ARP proxy-Anti ARP packet attack-ARP re-authentication-ARP and Layer port binding, ARP binding-Anti ARP scan-ARP guard-Gratuitous ARP• Support IP Routing<ul style="list-style-type: none">-Support static routing-Support RIPv1/v2, OSPF, BGP, IS-IS-Support routing convergence, policy-based routing (PBR), VRRP-Support black hole routing• Support ICMP<ul style="list-style-type: none">-ICMP basic function• Support LOOPBACK Interface
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DHCP	<ul style="list-style-type: none">• Support DHCP<ul style="list-style-type: none">-DHCP Server-DHCP Client/ BOOTP-DHCP Relay / DHCP Relay option 82-DHCP Snooping<ul style="list-style-type: none">>Support binding user ip and mac / binding ARP entries / prevent illegal DHCP server / DHCP packets dos attack prevention / DHCP snooping option82
DNS	<ul style="list-style-type: none">• Support DNS Client• Support DNS Proxy
MPLS	<ul style="list-style-type: none">• Support MPLS Multi-VRF feature
Multicast	
Multicast	<ul style="list-style-type: none">• Support IGMP v1/v2/v3 and IGMP snooping v1/v2/v3• Support IGMP Proxy• Support PIM-DM, PIM-SM, static Multicast routing, boundary Multicast routing• Support Controlled Multicast
Security	
Security / Authentication	<ul style="list-style-type: none">• Support IP source guard• Support 802.1x<ul style="list-style-type: none">-Support dot1x packet Transparent Transmission (pass through)-Support port based and mac based authentication-Support EAP(TLS, PEAP, MD5)-Support windows XP standard dot1x CPE-Support guest vlan and auto vlan-Support time-based or traffic-base billing• Support TACACS+• Support RADIUS
Protection	<ul style="list-style-type: none">• CPU protection• Software watchdog<ul style="list-style-type: none">-Support tasks anomaly detection / memory error detection / CPU utilization monitoring / stack anomaly detection / uplink port up / down monitoring• Hardware watchdog<ul style="list-style-type: none">-After the complete collapse of the software or the CPU status is abnormal, the hardware watchdog will automatically reset.
ACL	<ul style="list-style-type: none">• Support standard and extended ACL• Support dynamic ACL

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Management/ Maintenance

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| Management | <ul style="list-style-type: none">• Support image upgrading through FTP, TFTP<ul style="list-style-type: none">-Support TFTP/FTP server-Support TFTP/FTP client• Support System configuration with<ul style="list-style-type: none">-WEB (HTTP,HTTPS and SSL)-SNMP v1/v2c /v3-CLI by console port, Telnet and SSH-Support SNTP-Support NTP |
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| Maintenance | <ul style="list-style-type: none">• Support RMON (Remote Monitoring) v1/v2/v3/v9 groups of MIBs• Support syslog• Support LLDP/LLDP-MED• Support UDLD• Support port loop detection• Support OAM<ul style="list-style-type: none">-802.3ah-802.1ag-ITUT1731• Support network diagnose<ul style="list-style-type: none">-Ping-Traceroute |
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Quality of Service (QoS)

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| QoS | <ul style="list-style-type: none">• Up to 8 queues per port• Support Queue scheduling algorithms including SP(strict priority), WRR(weighted round robin), SWR-R(SP+WRR)• Support 802.1p, ToS, port, DiffServ for traffic classification• Support the use of ACL for traffic classification• Support Traffic Shaping• Support priority Mark / Remark |
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Other feature

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| NAT | <ul style="list-style-type: none">•Support standard NAT(Network Address Translator) |
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Ordering Information

Model Name	Description
PT-3560-28T	Gigabit Three-layer Switch, 24-port 10/100BASE-TX+4-port Gigabit Combo Interface
PT-3560-52T	Gigabit Three-layer Switch, 48-port 10/100BASE-TX+4-port Gigabit Combo Interface
SFP-SX	1000BASE-SX SFP Transceiver(850nm,MMF,550m), LC Connector
SFP-LX	1000BASE-LX SFP Transceiver(1310nm,SMF,10km or MMF,550m), LC Connector
SFP-LX-20	1000BASE-LX SFP Transceiver(1310nm,SMF,20km),LC Connector
SFP-LX-40	1000BASE-LX SFP Transceiver(1310nm,SMF,40km),LC Connector
SFP-LX-80	1000BASE-LX SFP Transceiver(1550nm,SMF,80km),LC Connector
SFP-GT	1000BASE-T SFP Transceiver,RJ-45 Connector

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