# P02 Series

## Data Center Cloud Management Switch & SMB/Enterprise L2 Management Switch

**Features:**

- OOB Management Switch

- Green Ethernet switch, EEE (Energy-Efficient Ethernet) Compliant

- Rich Layer 2 & Advanced Security Functions

- Fan-less & Noise Free

The Xenopt P02 Series is a new generation of layer 2 Ethernet switch, delivering feature-rich and cost-effective Data Center Cloud Management, as well as SMB L2 Management application. It is available in the following configurations:

P02:  48 10/100/1000BaseT + 4   GE Base-X SFP
P02S: 48 10/100/1000BaseT + 4 10GE Base-X SFP+

Achieving high-performance under a tight budget is usually required in today's networking deployments, especially for SMBs. The Xenopt P02 Series is designed for high-performance and cost-effective SMB applications, as well as the data center cloud management network market. The Xenopt P02 Series integrates advanced management and security functions, with fan-less design to keep a noise down, and web management portal for simple administration and management of the network, regardless of whether you are using the switch for SMB or data center cloud management applications. The Xenopt P02 Series meets your CapEx & OpEx requirements and delivers a cost-effective choice.

## Rich Layer 2 Features

Xenopt P02 Series supports 16K MAC address table, and is equipped with full Layer 2 features, such as Spanning Tree Protocol (STP), Link Aggregation Control Protocol (LACP), IGMP Snooping, Port Mirroring. And VLAN. The Spanning Tree Protocol (STP) provides loop-free networking environment. Link Aggregation Control Protocol (LACP) supports flexible throughput adjusting, IGMP Snooping and Port Mirroring provide the best control of multicast traffic and network traffic monitoring. Supported with 802.1Q up to 4094 active VLANs in the Xenopt P02 Series, this switch secures broadcast domain as well as resource access in between each VLAN.

## Advanced Security Functions

Xenopt P02 Series supports robust protection against intentional intruders, and many advanced security functions, such as Static/Dynamic Port Security, 802.1X, RADIUS, TACACS+, HTTPS/SSL (Secured Web), SSH (Secured Telnet session), and Dynamic ARP Inspection (DAI). The port security of the Xenopt P02 Series restricts switch access with the with the proper MAC address. The L2/L3/L4 Access Control List (ACL) feature provides advanced traffic filtering based on the source and destination MAC addresses, IP addresses, or TCP/UDP ports. 802.1X Port-Based and MAC-Based access control makes sure only authorized user are granted access. The Storm Control for unknown unicast, unknown multicast and broadcast packets render the network unable to transport abnormal traffic to secure the networking environment.

## QoS & Bandwidth Control

The QoS technique specifies a priority tag for QoS disciplines to different traffic. Ehen a switch receives the fame, it prioritizes the stream, puts it into the proper queues, and forwards the packets. The Xenopt P02 Series supports 802.1p, DSCP, IP Precedence and TCP/UDP port number, and gives optimal performance for real-time applications like voice and video. The 802.1Q QoS assignment can automatically insert a tag and processes the best effort performance for streaming.

## Simplified Management & IPV6 Supported

The Xenopt P02 Series can be managed through an industry-standard command-line interface (CLI) which reduces training and operating costs. A user-friendly web GUI via a standard web browser makes managing the network easy. The Xenopt P02 Series also supports Simple Network Management Protocol (SNMP) both from standard MIB and private MIB for network administrator to easily configure, monitor, and manage from remote. sFlow provides quantifiable accuracy for network administrator to analyze network traffic. With the evolution from IPv4 to IPv6, the Xenopt P02 Series is an IPv6 integrated management device that supports IPv6 for contemporary and future networking application.

## Eco-friendly Solution

Xenopt P02 Series is fan-less design that provides a noise-free environment. The Xenopt P02 Series is a Green Ethernet Switch that is EEE (Energy-Efficient Ethernet) compliant and optimal energy efficiency to support energy saving.

## Physical ports

- Port Configuration:
  - 48 10BASE-T/100BASE-TX/1000Base-T & 4 1 G SFP ports (P02)
  - 48 10BASE-T/100BASE-TX/1000Base-T & 4 1/10 G SFP+ ports (P02S)
- Management port: Out-of-band management port: 1 (RJ-45, 10/100 Base-TX)
- Console port: 1 RJ-45

## Performance

- Switching capacity: 104 Gbps (P02); 176 Gbps (P02S)
- Maximum forwarding rate: 77,4 Mbps (P02); 130,9 Mbps (P02S)
- Memory: DDR3 256 MB
- Flash: SPI 32 MB, NAND 1GB
- MAC: 16 K

## L2 Features

- Switching Mode: Store-and-Forward
- Spanning Tree:
  - 802.1D, 802.1w & 802.1s
  - Fast Forwarding
  - Edge Port
  - Loop Guard
  - BPDU Filter/Guard
  - Auto Edge
  - TCN Guard
  - Root Guard
- VLAN:
  - IEEE 802.1Q Tagged Base
  - Port-Based
  - Private VLAN
  - 802.1v Protocol VLAN
  - MAC-based VLAN
  - IP-Subnet VLAN
  - QinQ
- Storm Control
  - Broadcast
  - Unknown Multicast
  - DLF (Unknown Multicast)
- IGMP snooping
  - v1/v2/v3
  - v1/v2 Querier
  - Immediate Leave
- Link Aggregation
  - 802.3ad with LACP (64 groups)
  - Static Trunk
  - Unicast/Multicast Traffic Balance over Trunking Port

## QoS Features

- Scheduling for Priority Queue: WRR, Strict, and Hybrid
- COS: 802.1 p, IP TO5 precedence, & DSCP
- Diffserv

## Security Features

- Static and Dynamic port Security (MAC-based)

- 802.1x: Port-based, MAC-based, auto VLAN assignment, guest VLAN, unauthenticated VLAN
- Access Control List: L2/L3/L4
- IPv6 ACL: L3/L4
- RADIUS: Authentication and accounting
- TACACS+: Authentication
- HTTPS and SSL: AES1 28-cbc, 3ES-cbc, Blowfish-cbc
- SSH 1.5/V2.0: AES1 28-cbc, 3ES-cbc, Blowfish-cbc
- User name and password: Local Authentication, Remote Authentication via RADIUS/TACACS+, AAA
- Denial of Service control
- Management IP filtering: SNMP/Web/Telnet/SSH
- MAC filtering
- IP Source Guard
- Dynamic ARP inspection (DAI)
- DHCP snooping

## Management Features

- Industrial command-line interface
- CLI filtering
- Web Based Management/HTTPs
- Telnet/SSH
- Software download/upload: TFTP, FTP, and SCP/SFTP
- Configuration download/upload: TFTP, FTP, and SCP/SFTP
- SNMP v1/v2/v3
- SNMP inform: v2/v3
- RMON 1, 2, 3, & 9
- BOOTP: client/relay
- DHCP client
- EVENT/Error log: Local Flash
- DDNS
- DNS client
- Remote PING
- SNTPv4
- LLDP: 802.1ab
- UDLD
- Port mirroring: SPAN
- sFlow v5
- Cable test

## IPv6 Management

- IPv4/IPv6 Pual Protocol Stack
- ICMPv6
- ICMPv6 Redirect
- IPv6 Path MTU Discovery

- IPv6 Neighbor Discovery
- Stateless Auto-configuration
- Manual Configuration
- DHCPv6 Client
- SNMP over IPv6
- HTTP over IPv6
- SSH over IPv6
- IPv6 Telnet Support
- IPv6 DNS Resolver
- IPv6 RADIUS Support
- IPv6 TACACS+ Support
- IPv6 Syslog Support
- IPv6 SNTP Support
- IPv6 TFTP Support

## Mechanical

- Dimension (HxWxD): 43.5x435x262mm
- Weight: P02/P02S: 3,8 kg/8.38lbs (NET)

## Environmental Specifications

- Operating temperature: 0-45°C
- Operating humidity: 90% maximum relative humidity

## Electrical

- Power requirement: 100-240 VAC, 50/60 Hz
- Power consumption: P02: 33 watts; P02S: 35 W (L2 64B line rate; 10G-SR optjcs, 100% fan duty)
- Safety: UL, cUL, CB
- EMC: CE, FCC

## RoHS

- Reduction of Hazardous Substances 6

## Supported Optics and Cables

- 1000BASE-T: Cat 5e and Cat 6A (100m/330ft)
- DAC cable (SFP+): 0.5 m, 1 m, 1.5 m, 2 m, 2.5 m, 3 m, and 5m
- AOC cable (SFP+, 850 nm, MMF): 1 m, 3 m, 7 m, 10m, 20 m and 100 m
- GE optic (SFP, LC, 850 nm, MMF: GE BASE-SR optic
- GE optic (SFP, LC, 1310 nm, SMF): GE BASE-LR optic
- 10 G optic (SFP+, LC, 850 nm, MMF): 10GBASE-SR optic
- 10 G optic (SFP+, LC, 1310 nm, SMF): 10GBASE-LR optic

**Ordering information**

| PN | Description |
|---|---|
| Switches | |
| X1P02ZZZ0000 | P02,   48 10BASE-T/100BASE-TX/1000Base-T & 4 1 G SFP ports |
| X1P02ZZZ0003 | P02S, 48 10BASE-T/100BASE-TX/1000Base-T & 4 1/10 G SFP+ ports |
| Cables | |
| XC6-UTUTTC0 | 1000BASE-T Cat 6A UTP copper, 100 m |
| XCD-SFSFSgg | 10 Gb Direct attach cable copper, passive, SFP+ to SFP+, gg = {0.5 m, 01  - 1 m, 1.5 m,  02 - 2 m, 2.5 m, 03 -3 m, 05 - 5m} |
| XCE-SFSFSgg | 10GbE Fiber Multimode, Active with SFP+ to SFP+, direct, gg =  {01 - 1 m, 03 - 3 m, 07 - 7 m, 10 - 10 m, 20 - 20 m, C1 - 100 m} |
| Pluggables | |
| XSM851-M5LY | SFP  Multomode, 850 nm, 1 Gbps, 500 m, LC, with DDMI (0 - +70°C) |
| XSS311-10LY | SFP Singlemode, 1310 nm, 1 Gbps, 10 km, LC, with DDMI (0 - +70°C) |
| XTM85A-M3LY | SFP+ Multimode, 850 nm, 10 Gbps, 300 m, LC, with DDMI (0 - +70°C) (P02S) |
| XTS31A-10LY | SFP+ Singlemode, 1310 nm, 10 Gbps, 10 km, LC, with DDMI (0 - +70°C) (P02S) |
| BIDI SFP | In testing, expected to work |
| CWDM | In testing (up to 40 km), expected to work |
| Spare PS | |
| Services | |

To find out more, please contact:

XenOpt