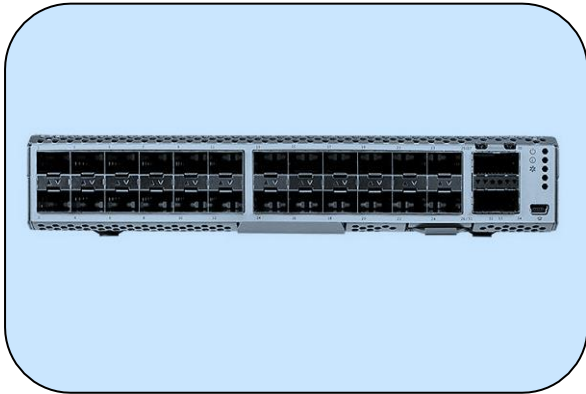




P05

A Powerful Top-of-Rack Switch for Datacenters and Cloud Computing



Features

- Ultra-low Latency
- MLAG OSPF BGP4 ECMP
- Network Automation

The XenOpt P05 is a high performance and low latency layer 2/3/4 Ethernet switch with 24 1/10GbE SFP+ and 2 40GbE QSFP+ ports located in a half-rack width and 1U height rack unit size. The 2 40GbE ports provide 80 Gbps to aggregate bandwidth up to the core switch. Each 40 Gigabit Ethernet port can be independently configured as 40GbE or 4 x 10GbE for total 32 ports of 10GbE.

Simplicity

The XenOpt P05 can be managed through an industry standard command-line interface (CLI) which reduces training and operating costs. The XenOpt P05 also supports Simple Network Management Protocol (SNMP) both from standard MIB and private MIB for easy configuration, monitoring, and remote management for the network administrator. The Auto-Installation feature implemented in the XenOpt P05 helps centralized management to simplify deployment of a truly plug-and-play experience. With the evolution from IPv4 to IPv6, the XenOpt P05 is a IPv6 integrated management device.

High Availability

The XenOpt P05 is designed for high availability from both hardware and software perspective. The key features include:

- Out-of-band management supported
- 802.1w and 802.1s supported
- Up to 32 ports per group (LACP) and up to 64 groups
- Up to 32 paths ECMP routing for load balancing and redundancy
- Virtual Router Redundancy Protocol supported
- Multi-chassis Link Aggregation

High-Performance L2/L3 access deployments

With the compact 1U form factor, high density 24 1/10G SFP+ and 2 40G QSFP+ ports in the front panel, front to back or back to front airflow design, the XenOpt P05 is ideal for top-of-rack deployments in high-performance, highly demanding datacenters. The 640 gigabits per second switching capacity and 476 Mpps forwarding rate with low power consumption make the XenOpt P05 a powerful solution to aggregate high-performance servers in the datacenter.

Physical ports

- **Port Configuration:** 24 1/10GbE SFP+ and 2 40GbE QSFP+ ports
- **Management Port:** Out-of-band management port (RJ-45, 10/100/1000Base-T)
- **Console port:** 1 (RJ-45)
- **USB:** 1 (v 2.0)

Performance

- **Switching Capacity:** 640 Gbps
- **Maximum Forwarding rate:** 476 Mpps
- **Latency:** <1 μs
- **MAC:** 128K

L2 Features

- **Switching mode:** store-and-forward
- **Spanning Tree:**
 - 802.1w, 802.1s
 - Auto Edge
- **VLAN:**
 - IEEE 802.1 Q tagged base
 - Port-Based
 - QinQ (802.1 ad)
- **Storm control:**
 - Broadcast
 - Unknown multicast
 - DLF (Unknown unicast)
- **IGMP snooping:**
 - v1/v2/v3
 - v1/v2 Querier
 - Immediate

Leave

- **Link Aggregation:**
 - 802.3ad with LACP
 - Static Trunk
 - Unicast/Multicast Traffic Balance over Trunking Port
 - LACP Falback
- **Link state**
- **Port backup**
- **Error-Disable Recovery**

QoS Features

- **Scheduling for priority queue:** WRR, Strict, and Hybrid
- **COS:** 802.1p, IP TOS precedence, & DSCP
- **DiffSery**
- **iSCSI optimization**

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

- **SSH 1.5/V2.0**
- **User name and password:** Local Authentication, Remote Authentication via RADIUS/TACACS+, AAA
- **Management IP filtering:** SNMP/Telnet/SSH
- **IP Source Guard**
- **Dynamic ARP inspection (DAI)**
- **DHCP snooping**
- **Control Plane Policing/CoPP**
- **Service Prohibit Access**

Layer 3 features

- **IP Multinetting/CIDR**
- **/31 subnets**
- **Proxy ARP**
- **Static route:** IPv4, IPv6
- **IPv4/IPv6**
- **OSPF**
- **ECMP**
- **BGP4**
- **IGMP v1/v2/v3**
- **PIM-DM/-SM**
- **VRRP**
- **Policy-based routing**
- **BFD**
- **VRF Lite**

IPv6 Layer 3 features

- **OSPFv3**
- **MLD v1/v2**
- **PIM-DM6/-SM6**

Data Center Features

- **Enhanced Transmission Selection (802.1Qaz)**
- **Priority-based Flow Control (802.1Qbb)**
- **DCBX:** DCBX for ETS, DCBX for PFC
- **FCoE Initiation Protocol (FIP) snooping**

SDN

- **OpEN API:** RESTful API

Management Features

- **Industrial standard command-line interface**
- **CLI filtering**
- **Telnet/SSH**
- **Software download/upload:** TFTP/FTP/SCP/SFTP
- **Configuration download/upload:** TFTP/FTP/SCP/SFTP
- **Dual Image**
- **SNMP v1/v2c/v3** Yes (read only)
- **SNMP inform:** v2/v3
- **RMON 1, 2, 3, & 9** Yes (read only)
- **BOOTP:** client/relay
- **DHCP client**
- **DHCP relay**
- **DNS client**
- **DNS relay**

- **Remote PING**
- **Traceroute**
- **SNTPv4**
- **LLDP**
 - 802.1ab
 - 802.MED
 - Potential error detection
- **UDLD**
- **Port mirroring:** SPAN, RSPAN
- **sFlow v5**
- **Email alerting**
- **Auto Install**

IPv6 Management

- **IPv4/IPv6 Dual Protocol Stack**
- **ICMPv6**
- **ICMPv6 Redirect**
- **IPv6 Neighbor Discovery**
- **Stateless Autoconfiguration**
- **Manual Configuration**
- **DHCPv6:** Yes (client)
- **SNMP 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**

High Availability

- **Multi-chassis LAG**

Mechanical

- **Dimension (HxWxD):** 40x220x422 mm
- **Weight:** 3,2 kg/7,04 lbs (NET)

Environmental specifications

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

Electrical

- **Power requirement:** 100~240 VAC, 50/60Hz
- **Power consumption:** 90 watts (L2 64B line rate; 10G-SR optics, 100% fan duty)

Safety

- UL, cUL, CB, BSMI, CCC

EMC

- CE, FCC, VCCI, KCC, BSMI, CCC

RoHS

- **Reduction of Hazardous Substances (RoHS) 6**

Ordering information¹

| PN | Description |
|--------------------|--|
| Switches | |
| X1P05BZZOST8 | Switch, 1U, 24 1/10GbE SFP+ and 2 GbE QSFP+ ports, Air Flow Direction Front to Back, AC |
| X1P05BZZOST9 | Switch, 1U, 24 1/10GbE SFP+ and 2 GbE QSFP+ ports, Air Flow Direction Back to Front, AC |
| Cables UTP | |
| XC6-UTUTTgg | Cable, 1 Gb, UTP, gg = {01 - 1m; 02 - 2m; ...}, specific length on request, CAT 6A |
| Cables 10 G | |
| XCE-SFSFNgg | Cable, 10GbE, Direct attach, Optic, SFP+ to SFP+, length: gg = {01 - 1m; 02 - 2m; 03 - 3m; 04 - 4m; 05 - 5m; 06 - 6m; 07 - 7m; 10 - 10m; 20 - 20m; 50 - 50m; C1 - 100m} |
| XCD-QSSFNgg | Cable, 10 Gb, Direct attach, Copper, QSFP+ to SFP+, Length: gg = {01 - 1m; 03 - 3m; 05 - 5m} |
| XCD-SFSFNgg | Cable, 10 Gb, Direct attach, Copper, SFP+ to SFP+, Length: gg = {01 - 1m; 03 - 3m; 05 - 5m} |
| Cables 40 G | |
| XCE-QSQSNgg | Cable, 40GbE, Direct attach, Optic, QSFP+ to QSFP+, length: gg = {01 - 1m; 02 - 2m; 03 - 3m; 04 - 4m; 05 - 5m; 06 - 6m; 07 - 7m; 10 - 10m; 20 - 20m; 50 - 50m; C1 - 100m} |
| XCE-QS4SNgg | Cable, 40GbE, Direct attach, Optic, QSFP+ to 4xSFP+, length: gg = {01 - 1m; 02 - 2m; 03 - 3m; 04 - 4m; 05 - 5m; 06 - 6m; 07 - 7m; 10 - 10m; 20 - 20m; 50 - 50m; C1 - 100m} |
| XCD-QSQSNgg | Cable, 40 Gb, Direct attach, Copper, QSFP+ to QSFP+, Length: gg = {01 - 1m; 03 - 3m; 05 - 5m} |
| XCD-QS4SNgg | Cable, 40 Gb, Direct attach, Copper, QSFP+ to 4xSFP+, Length: gg = {01 - 1m; 03 - 3m; 05 - 5m} |
| XCM-MMMMMAgg | Cable, MMF, MTP/MPO_male (12 fiber), connectors type A Length: gg = {0H - 0.5m, 01 - 1m, 02 - 2m, 03 - 3m, 05 - 5m, 07 - 7m, 10 - 10m, 20 - 20m, 50 - 50m, C0 - 100m} |
| XCS-ddeeDgg | Cable, 25 Gb, SMF, dd = ee = (LC=LC, E2=E2000, EA=E2000/APC, FA=FC/APC, FC=FC, LA=LC/APC, LC=LC, SA=SA, SC=SC, ST=ST, MU=Miniature Unit), length: gg = {01 - 1m, 02 - 2m, 05 - 5m, 07 - 7m, 10 - 10m, 20 - 20m, 50 - 50m, C0 - 100m}; duplex; longer length on request |
| Pluggables | |
| XTMddA-ffLY | SFP+, MM, dd = {85 - 850 nm, 31 - 1310 nm}, 10 Gbps, length: ff = {M2 - 200 m; M3 - 300 m, 02 - 2 km} |
| XTSddA-ffLY | SFP+, SM, dd = {31 - 1310 nm, 55 - 1550 nm}, 10 Gbps, length: ff = {10 - 10 km; 20 - 20 km, 40 - 40 km, 80 - 80 km, A0 - 100 km} |

| | |
|-------------|--|
| XTCddA-ffLY | SFP+, CWDM, dd: 1270/1290/1310/1330 nm, 10 Gbps, length: ff = {10 – 10 km; 40 – 40 km, 80 – 80 km} |
| XTDddA-ffLY | SFP+, DWDM, dd: ITU Grid 17~61, 10 Gbps, length: ff = {40 – 40 km, 80 – 80 km} |
| XQM853-ffPY | QSFP+, MM, 850 nm, 40 Gbps, length: ff = {M1 – 100 m; M3 - 300 m} |
| XQS313-ffPY | QSFP+, SM, 1310 nm, 40 Gbps, length: ff = {01 – 1 km, 02 – 2 km; 10 - 10 km} |
| XQS313-ffLY | QSFP+, SM, 1310 nm, 40 Gbps, length: ff = {10 – 10 km; 40 - 40 km}, LC |
| XQC273-ffLY | QSFP+, CWDM, 1270/1290/1310/1330 nm, 40 Gbps, length: ff = {10 - 10 km; 30 - 30 km}, LC, with DDMI (0 ± 70°C) |

Services

Rack-Mount-Kit

| | |
|--------------|----------------|
| X1HY9ZZZ058P | Rack mount kit |
|--------------|----------------|

Notes:

¹ For accurate order specification please contact Xenopt reseller before placing an order. The content of this document is subject to change without notice. Xenopt does not guarantee errorless or outdated information. Please specify any compatibility requirements at time of ordering.

Important Notice

Performance figures, data and any illustrative material provided in this data sheet are typical and must be specifically confirmed in writing by XenOpt before they become applicable to any particular order or contract. In accordance with the XenOpt policy of continuous improvement specifications may change without notice.

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