LY3

A Powerful Top-of-Rack Switch for Data Center and Cloud Computing

Overview

The Xenopt LY3 switch is a high performance and low latency layer 2/3/4 Ethernet switch with 40 1/10GBase-T and 8 1/10GBase-X SFP+ ports in a compact rack unit size. The 40 10GBase-T ports are backwards compatible with 10/100/1000-Mbps Ethernet networks. The 8 SFP+ ports can aggregate bandwidth up to the core switch. With the energy saving requirements, LY3 is designed with high power efficiency to save OPEX.

Simplicity

The Xenopt LY3 switch can be managed through industry standard command-line interface (CLI) which reduces the training and operating costs. A user friendly Web GUI is provided via a standard Web browser to manage. The LY3 also supports Simple Network Management Protocol (SNMP) both from standard MIB and private MIB for network administrator to easily configure, monitor, and manage remotely. The Auto-Installation feature implemented in the LY3 helps centralized management to simplify deployment of a truly plug-and-play experience. With the evolution from IPv4 to IPv6, The LY3 is a IPv6 integrated management device.

High Availability

The Xenopt LY3 is designed for high availability from both hardware and software perspective. The key features include:

- 1+1 hot-swappable power supplies
- Out-of-band management supported
- 802.1D, 802.1w, and 802.1s supported
- Up to 8 ports per link aggregation group (LACP) and up to 64 groups
- Multi-chassis LAG for preventing the risks of single point failure
- Up to 32 paths ECMP routing for load balancing and redundancy
- Virtual Router Redundancy Protocol supported

High-Performance L2/L3 access deployments

With the compact 1U form factor, high density 40 1/10GBase-T and 8 1/10GBase-X SFP+ ports in the front panel, front to back or back to front airflow design, the Xenopt LY3 is ideal for top-of-rack deployments in high-performance, highly demanding data centers. The 960 gigabits per second switching capacity and 714Mpps forwarding rate with low power consumption ensure LY3 to be a powerful solution to aggregate high-performance servers in the data center.

Advanced IPv4 and IPv6 routing

The Xenopt LY3 is a full layer 2 and layer 3 routing switch that supports advanced IPv4 and IPv6 routing features such as RIP v1/v2, OSPF/ECMP, RIPng and OSFPv3. The multicast routing features for IGMP v1/v2/v3, DVMRP, PIM-DM/SM, MLD v1/v2 and PIM-DM6/SM6 are all supported in the LY3.

Datacenter application

The Xenopt LY3 is an IEEE DCB-based switch delivering a high-performance solution to integrate server edge access. The key features include:

- Congestion Notification (CN, 802.1Qau)
- Enhanced Transmission Selection (ETS, 802.1Qaz)
- Priority-based Flow Control (PFC, 802.1Qbb)
- FCoE Initiation Protocol (FIP) snooping

Features

Performance

- 40 1/10GBase-T and 8 1/10GbE SFP+ ports in 1RU
- 960 gigabits per second
- 714 million packets per second

Robust hardware

- Redundant and hot-swappable power supply
- Out-of-band management port
- 4 fixed fans

Management

- CLI/Web/SNMP
- sFlow
- IPv6
- Auto-Installation

Layer 3 features

- RIP v1/v2
- OSPF/ECMP
- IGMP v1/v2/v3
- PIM-DM/SM

IPv6 support

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

Data Center application

- Multi-Chassis LAG (MLAG)
- VMTracer
- CN (802.1Qau)
- ETS (802.1Qaz)
- PFC (802.1Qbb)
- DCBX (802.1Qaz)
- FIP snooping

LY3 specifications

Physical ports

- 40 1/10GBase-T and 8 1/10GBase-X
- SFP+ ports
- 1 RJ-45 out-of-band management port
- (10/100/1000)
- 1 RJ-45 console port
- 1 USB2.0 port

Performance

- Switching capacity: 960Gbps
- Forwarding rate: 714Mpps
- Memory: 2GB
- Flash: 64MB
- MAC: 128K
- Packet buffer: 9MB
- Jumbo frame: 12K

L2 features

- Auto-negotiation for port speed and
- duplex
- Flow control: IEEE 802.3x & back-
- pressure
- Switching mode: store-and-forward
- Spanning Tree Protocol:
  - 802.1D, 802.1w, & 802.1s
  - Spanning Tree Fast Forwarding
  - Edge port
  - Loop guard
  - BPDU filter/guard
  - Auto Edge
  - TCN guard
  - Root guard
- VLANs
  - IEEE 802.1Q tagged based dK
  - Port-based (up to 4094 VLANs)
  - Private VLAN
  - GARP/GVRP/GMRP
  - 802.1v protocol VLAN
  - Voice VLAN
  - MAC-based VLAN
  - IP-subnet VLAN
  - QinQ
- VTP v1/v2
- Storm control
  - Broadcast
  - Unknown multicast
  - Unknown unicast
- IGMP snooping
  - IGMP snooping v1/v2/v3
  - IGMP v1/v2 querier
  - IGMP immediate leave
- Link Aggregation
  - 802.3ad with LACP
  - Cisco EtherChannel Like
  - Unicast/Multicast traffic balance over trunking port (dst-ip, dst-mac, src-dst- ip, dst-mac, src-ip, src-mac)
- Multi-chassis LAG (MLAG)
- Link state
- Port backup

QoS

- Priority queues: 8 queues
- Scheduling for priority queue: WRR,
- Strict and hybrid (WRR+Strict)
- COS: 802.1p, IP Precedence, & DSCP
- DiffServ
- Port rate limit
- Auto VoIP
- iSCSI optimization

Security

- Static and dynamic port security (MAC-based
- 802.1x: port-based, MAC-based, auto VLAN assignment, QoS assignment, guest VLAN, unauthenticated VLAN
- ACL: L2/L3/L4
- IPv6 ACL: L3/L4
- RADIUS: authentication and accounting (up to 32 servers)
- TACACS+: authentication (up to 5 servers)
- HTTPS and SSL (AES 128-cbc, 3ES-cbc, Blowfish-cbc)
- SSH 1.5/v2.0 (AES 128-cbc, 3ES-cbc, Blowfish-cbc)
- User name and password: local Authentication and remote authentication via RADIUS/TACACS+
- Denial of Service control
- Management IP filtering (SNMP/Web/Telnet/SSH)
- MAC filtering
- IP Source Guard
- Dynamic ARP inspection (DAI)
- DHCP snooping

Management

- Industrial command-line interface
- CLI filtering
- Telnet/SSH
- Software download/upload: TFTP/Xmodem/FTP
- Configuration download/upload: TFTP/Xmodem/FTP
- Dual image supported
- SNMP v1/v2c/v3
- RMON 1, 2, 3 & 9
- BOOTP: client/relay
- DHCP: client/relay/option 82
- Auto-Installation
- Event/error log: local flash and remote Server via system log (RFC3164)
- DNS: client/relay
- NTP/SNTP
- LLDP (802.1ab, Link Layer Discovery Protocol)
- CDP (Cisco Discovery Protocol) vers. 2
- Port mirroring: one to one & many to one
- sFlow (RFC 3176)
- IPv6 management:
  - IPv4/IPv6 Dual Stack
  - ICMPv6
  - ICMPv6 redirect
  - IPv6 Path MTU Discovery
  - IPv6 Neighbor Discovery
  - stateless auto-configuration
  - manual configuration
  - DHCPv6 (client)
  - SNMP/HTTP/SSH/Telnet over IPv6
  - IPv6 DNS resolver
  - IPv6 RADIUS/TACACS+ support
  - IPv6 Syslog support
  - IPv6 SNTP & NTP
  - IPv6 TFTP
  - IPv6 Ping

Layer 3 features

- CIDR
- ARP (static: 128 & dynamic 3968)
- Proxy ARP
- Local proxy ARP
- Unicast Routing: RIP v1/v2, OSPF
- Static route
- IRDP
- ECMP
- Multicast Routing: IGMP v1/v2/v3, DVMRP, PIM-DM/-SM
- VRRP

IPv6 Layer 3 features

- Static route
- Unicast Routing: RIPng & OSPFv3
- Multicast Routing: MLD v1/v2, PIM-DM6/-SM6
- DHCPv6: relay

Data Center features

- Congestion Notification
- Enhanced Transmission Selection
- Priority-based Flow Control
- Data Center Bridging Extension
- FIP snooping

VM Tracer features

- VMware vSphere support
- VM Auto Discovery
- VM Adaptive Segmentation
- VM host view

Ethernet Virtual Bridge

- Ethernet Virtual Bridging (EVB, IEEE 02.1 Qbg)

Mechanical

- Dimension (HxWxD): 42.8x435x393.7 mm
- Weight: 7.9kg(NET)

Environmental specifications

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

Electrical

- Power consumption: 376W (full loading)

Safety

- UL 60950-1 (2nd Ed.)
- CSA C22.2 60950-1-07 (2nd Ed.)
- IEC 60950-1 (2005)
- EN 60950-1 (2006)

EMC

- FCC 47CFR, Part 15 Class A
- ICES-003 Class A
- EN 55022 Class A
- CISPR 22 Class A
- EN 55024
- EN 61000-3-2
- EN 61000-3-3
- EN 300 386
- CCC

Environmental

- Reduction of Hazardous Substances
- (RoHS) 6

Order information

- LY3 (Front to Back, Back to Front)
- www.xenopt.com

Warranty

- Limited lifetime warranty

Ordering information[1]

PN	Description
Switches	
X1LY3BZZ0ST2	Switch, 1U, 40x10G Base-T+8x10G SFP+, (standard L2/L3 FW), dual PSU, Air Flow Direction Front to Back
X1LY3BZZ0ST3	Switch, 1U, 40x10G Base-T+8x10G SFP+, (standard L2/L3 FW), dual PSU, Air Flow Direction Back to Front
Cables 10 G	
XCD-SFSFNgg	Cable, 10GbE, Direct attach, Copper, SFP+ to SFP+, length: gg = {01 - 1m; 02 - 2m; 03 - 3m; 04 - 4m; 05 - 5m}
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}
Cables 40 G	
XCD-QSQSNgg	Cable, 40GbE, Direct attach, Copper, QSFP+ to QSFP+, length: gg = {01 - 1m; 03 - 3m; 05 - 5m}
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-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}
Pluggables	
XSM311-02LY	SFP, multimode, 1310nm, 1Gbps, 2km, LC, with DDMI (0 ± 70OC)
XSM851-M5LY	SFP, multimode, 850nm, 1Gbps, 500m, LC, with DDMI (0 ± 70OC)
XSSdd1-ffLh	SFP, singlemode, dd = {31 - 1310nm; 55 - 1550nm}, 1Gbps,ff = {20 - 20km; 40 - 40km; 80 - 80km; C0 - 120km; G0 - 160km; I0 - 180km; K0 - 200km} , LC, h = {N - no DDMI; Y - DDMI (0 ± 70OC)}
XSBdd1-ffgh	SFP, bidirectional, dd = {27 - 1270nm; 29 - 1290nm; … ; 61 - 1610nm}, 1Gbps, ff = {20 - 20km; 40 - 40km; 80 - 80km; C0 - 120km}, g = {L - LC, S - SC}, h = {N - no DDMI; Y - DDMI (0 ± 70OC)}
XSCdd1-ffLh	SFP, CWDM, 1Gbps, dd = {lower WL: 27 - 1270nm; … 45 - 1450nm / upper WL: 47 - 1470nm; … ; 61 - 1610nm}, ff = {40 - 40km; 80 - 80km; C0 - 120km; G0 - 160km; I0 - 180km; K0 - 200km}, LC, h = {N - no DDMI; Y - DDMI (0 ± 70OC)}
XSDdd1-ffLY	SFP, DWDM C-BAND, dd = {17 - 61 ITU grid channel}, 1Gbps, ff = {80 - 80km; C0 - 120km}, LC, with DDMI (0 ± 70OC)
XTM85A-M3LY	SFP+, multimode, 850nm, 10Gbps, 300m (OM3), LC, with DDMI (0 ± 70OC)
XTS31A-ffLY	SFP+, singlemode, 1310nm, 10Gbps, ff = {02 - 2km; 10 - 10km; 20 - 20km; 40 - 40km}, LC, with DDMI (0 ± 70OC)
XTS55A-ffLY	SFP+, singlemode, 1550nm, 10Gbps, ff = {40 - 40km; 80 - 80km; A0 - 100km}, LC, with DDMI (0 ± 70OC)

XTBddA-ffLY	SFP+, bidirectional, dd = {27 - 1270nm; 32 - 1330nm; }, 10Gbps, ff = {10 - 10km; 20 - 20km; 40 - 40km; 60 - 60km}, LC, with DDMI (0 ± 70OC)
XTCddA-ffLY	SFP+, CWDM, dd = {27 - 1270nm; 29 - 1290nm; … ; 61 - 1610nm}, 10Gbps, ff = {10 - 10km; 40 - 40km; 80 - 70/80km}, LC, with DDMI (0 ± 70OC)
XTDddA--ffLY	SFP+, DWDM C-BAND, dd = {17 - 61 ITU grid channel}, 10Gbps, ff = {40 - 40km; 80 - 80km*}, LC, with DDMI (0 ± 70OC)
XTDTCA--ffLY	SFP+, DWDM C-BAND, Tunable,10Gbps, ff = {40 - 40km; 80 - 80km}, LC, with DDMI (0 ± 70OC)
XTLTLA--ffLY	SFP+, DWDM L-BAND, Tunable, 10Gbps, ff = {40 - 40km; 80 - 80km}, LC, with DDMI (0 ± 70OC)
XQM853-M1PY	QSFP+, multimode, 850nm, 40Gbps, {100m (OM3); 150m (OM4)}, MPO, with DDMI (0 ± 70OC)
XQM853-M3PY	QSFP+, multimode, 850nm, 40Gbps, {300m (OM3); 400m (OM4)}, MPO, with DDMI (0 ± 70OC)
XQS313-02PY	QSFP+, singlemode, 1310nm, 40Gbps, 2km, MPO, with DDMI (0 ± 70OC)
XQC273-ffLY	QSFP+, CWDM, 1270/1290/1310/1330nm, 40Gbps, ff = {02 - 2km; 10 - 10km; 20 - 20km; 40 - 40km}, LC, with DDMI (0 ± 70OC)
Services	Services
Spare PS Unit	Spare Power Supply Unit
SW&FW	Firmware and software

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.

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