



LY9

A powerful spine/leaf switch for
Datacenter and Cloud Computing



Features

- 10 GBT
- MLAG, OSPF, BGP4, ECMP
- VXLAN
- Network Automation

Product Overview

The XenOpt LY9 is a new generation 10GBASE-T solution for data center networking which provides 48 triple speed (100/1000/10 GBase-T) ports and 6 QSFP+ ports in a 1U form factor. The 40 G QSFP+ port can be independently configured as 40 GbE or 4x10 GbE. With traditional L2/L3 features support as well as software defined network functions, LY9 provides hybrid solutions for the network deployment. By leveraging the benefits of 10 GBASE-T – longer distance connection from switch to server such as ToR, MoR or EoR rack configuration, LY9 offers Infrastructure-as-a-service (IaaS) networking deployment more cost effective performance and perform the best TCO.

Automation

With the rapid adoption of cloud computing and the proliferation of big data and parallel calculations, the need for datacenter network devices is growing exponentially, making network automation a critical factor. Supporting auto installation, XenOpt LY9 facilitates the easy deployment and build-up of mass datacenter IaaS.

Virtualization

Network virtualization is becoming an important topic for datacenters. XenOpt LY9 provides hardware-based VXLAN feature to support virtual machine mobility. Not limited by 4K VLANs, VXLAN helps for the network scaling out across L3 subnets and can support up to 16.7M possible virtual networks.

High Availability

The XenOpt LY9 is designed for high availability from both hardware and software perspectives. The key features include:

- 1+1 hot-swappable power supplies
- N+1 hot-swappable fans
- Out-of-band management support
- Multi-chassis Link Aggregation (MLAG)
- Up to 48 paths ECMP routing for load balancing and redundancy

Physical ports

- **Port configuration:** 48 100/1000/10 GBASE-T and 6 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:** 1.44 Tbps
- **Maximum forwarding rate:** 1071Mpps
- **Latency:** < 3us
- **MAC:** Unified Forwarding Table to dynamically allocate the L2/L3 tables

CPU Board

- **CPU:** Freescale P2020
- **Memory:** 2GB DDR3/ECC
- **Flash:** 128 MB
- **Storage:** 8 GB Micro SD

L2 features

- **Switching Mode:** Store-and-Forward
- **Spanning Tree:**
 - 802.1w & 802.1s
 - Auto Edge
- **VLAN:**
 - IEEE 802.1Q Tagged Base
 - Port-Based
 - QinQ (802.1ad)
- **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 Fallback
- **Multi-chassis LAG (MLAG)**
- **Link State**
- **Port Backup**
- **Error-Disable Recovery**

QoS Features

- **Scheduling for priority queue:** WRR, Strict, Hybrid
- **COS:** 802.1p, IP TOS Precedence, DSCP
- **DiffServ**
- **iSCSI optimization**

Security Features

- **Static and dynamic port security (MAC-based)**
- **802.1x:** Mac-based, port-based, auto VLAN assignment, guest VLAN, unauthenticated VLAN
- **Access Control List:** L2/L3/L4
- **IPv6 ACL:** L3/L4

- **RADIUS:** Authentication, 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**
- **IRDP**
- **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, for PFC
- **FCoE Initiation Protocol (FIP) snooping**

SDN

- **OpEN API:** RESTful API

Management Features

- **Industrial command-line interface**
- **CLI filtering**
- **Telnet/SSH**
- **Software download/upload:** TFTP/FTP/SCP/SFTP
- **Configuration download/upload:** TFTP/Xmodem/FTP/SCP/SFTP
- **Dual Image**
- **SNMP v1/v2c/v3** Yes (read only)
- **SNMP inform**
- **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** YES (SMTP)
- **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**
- **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**

High Availability

- **Redundant power supply:** 1+1
- **Hot-swappable fan tray:** N+1
- **Multi-chassis LAG**

Virtualization Features

- **VXLAN**

Mechanical

- **Dimension (HxWxD):** 44x435x508 mm
- **Weight:** P2020: 9.6kg/ 21.16lbs (NET)

Environmental specifications

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

Electrical

- **Power requirement:** 100~127 VAC; 200~240VAC, 50/60Hz
- **Power consumption:** 330 watts (tested with optics and Cat 6A with 100% loading, AC input)

Safety

- UL, cUL, CB, BSMI, CCC

EMC

- CE, FCC, VCCI, CCC, RCM

RoHS

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

Ordering information¹

| PN | Description |
|----------------------------|--|
| Switches | |
| X1LY9BZZ0ST6 | Switch, 1U, 48 100/1000/10GBASE-T and 6 QSFP+ ports, redundant PSU, Air Flow Direction Front to Back, AC |
| X1LY9BZZ0ST7 | Switch, 1U, 48 100/1000/10GBASE-T and 6 QSFP+ ports, redundant PSU, Air Flow Direction Back to Front, AC |
| Cables UTP | |
| XC6-UTUTTCO | Cable, 1 Gb, UTP, 100 m, CAT 6A |
| XC6-UTUTTgg | Cable, 1 Gb, UTP, gg = {01 - 1m; 02 - 2m; ...}, specific length on request, CAT 6A |
| 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 | |
| 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 | |
| Spare PSU & Fan | |
| X1HY9ZZZ0336 | Power supply unit, Red, Front to back, AC, 750W |
| X1HY9ZZZ0337 | Power supply unit, Blue, Back to front, AC 750W |

| | |
|--------------|---------------------------------|
| X1HY9ZZZ022X | Fan Module, Red, Front to back |
| X1HY9ZZZ022Y | FAN Module, Blue, Back to front |

SW & FW

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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