



QuantaMesh T3048-LY9A

The New Generation
10GBASE-T Ethernet Switch
for Data Center Networking

- **10GBT**
- **VxLAN**
- **Multi-Chassis Link Aggregation (MLAG)**
- **OSPF, BGP4 with ECMP**
- **Network Automation**
- **OpenFlow**

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Rear view

The QuantaMesh T3048-LY9A is a new generation 10GBASE-T solution for data center networking which provides 48 triple speed (100/1000/10GBase-T) ports and 6 QSFP+ ports in a 1U form factor. With 28-nm process PHY design, T3048-LY9A provides more power saving. The 40G QSFP+ port in T3048-LY9A can be independently configured as 40GbE or 4 x 10GbE so that the maximum 10G can be supported up to 72 ports. With traditional L2/L3 features support as well as software defined network functions - OpenFlow, T3048-LY9A provides hybrid solutions for the network deployment. By leveraging the benefits of 10GBASE-T - longer distance connection from switch to server, T3048-LY9A can be flexibility located in ToR, MoR or EoR position for rack implementation to offer 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, RESFful and Ansible, QuantaMesh T3048-LY9A facilitates easy deployment to build-up a mass data center with Infrastructure-as-a-Service (IaaS).

Virtualization

Network virtualization is becoming an important topic of datacenters. QuantaMesh T3048-LY9A offers hardware-based VXLAN feature to support virtual machine mobility. Not limited by 4K VLANs, VXLAN enables for the network scale-out across L3 subnets and can support up to 16.7M possible virtual networks.

High Availability

The QuantaMesh T3048-LY9A 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
- Spanning Tree with Guarding Features
- Up to 64 Groups of LACP with per Group 32 Member Ports
- Multi-chassis Link Aggregation (MLAG)
- Up to 48 paths ECMP routing for load balancing and redundancy
- Virtual Router Redundancy Protocol (VRRP)

Software Defined Network (SDN)

SDN has emerged as a new approach to support open, vendor-agnostic, and programmable networks. QNOS is equipped with OpenFlow v1.3 features to fulfill the needs of modern data center applications.

About QCT

Quanta Cloud Technology (QCT) is a global data center solution provider. We combine the efficiency of hyperscale hardware with infrastructure software from a diversity of industry leaders to solve next-generation data center design and operation challenges. QCT serves cloud service providers, telecoms and enterprises running public, hybrid and private clouds.

Product lines include hyper-converged and software-defined data center solutions as well as servers, storage, switches, integrated racks with a diverse ecosystem of hardware component and software partners. QCT designs, manufactures, integrates and services cutting edge offerings via its own global network. The parent of QCT is Quanta Computer, Inc., a Fortune Global 500 corporation.

QuantaMesh T3048-LY9A Specifications

Physical ports

- **Port configuration:**
48 100/1000/10GBASE-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 (v2.0)

Performance

- **Switching capacity:** 1.44Tbps
- **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:** 128MB
- **Storage:** 8GB Micro SD

Layer 2 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
- **MLD Snooping v1/v2**
- **Link Aggregation:**
 - 802.3ad with LACP
 - Static Trunk
 - Unicast/Multicast Traffic Balance over Trunking Port
 - LACP Falback
- **Link State Tracking**
- **Port Backup**
- **Loopback Detection**
- **Private VLAN**

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 (MD5, MS-CHAPv2):**
 - Port-based
 - MAC-based
 - Auto VLAN assignment
 - Guest VLAN
 - Unauthenticated VLAN
- **Access Control List:** L2/L3/L4
- **IPv6 ACL:** L3/L4
- **RADIUS:** Authentication, Authorization, 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:** IPv4, IPv6
- **Control Plane Policing (CoPP)**
- **Service Prohibit Access**
- **Role Base Access Control (RBAC)**

Layer 3 Features

- **IP Multinetting/CIDR**
- **/31 subnets**
- **Proxy ARP**
- **Static route:** IPv4, IPv6
- **OSPFv2/v3**
- **ECMP**
- **BGP4**
- **IGMP v1/v2/v3**
- **PIM-SM/SM6**
- **MLD v1/v2**
- **VRRPv2**
- **Policy-Based Routing (PBR)**
- **BFD**
- **VRF Lite**

Management Features

- **Industrial command-line interface**
- **CLI filtering**
- **CLI scheduler**
- **Telnet/SSH**
- **Software update:**
TFTP, FTP, SCP, SFTP
- **Configuration download/upload:**
TFTP, FTP, SCP, SFTP
- **Dual Images**
- **SNMP v1/v2c/v3**
- **SNMP inform v2**
- **RMON1 Groups: 1, 2, 3, & 9**
- **BOOTP:** client/relay
- **DHCP client**
- **DHCP relay**
- **EVENT/Error log**
- **DNS client**
- **Remote PING**
- **Traceroute**
- **SNTPv4**
- **LLDP:**
 - 802.1ab
 - 802.MED
 - Potential error detection
- **UDLD**
- **Port mirroring:** SPAN, RSPAN
- **sFlow v5**
- **Email alerting:** SMTP
- **Error-Disable Recovery**
- **Fluentd**

IPv6 Management

- **IPv4/IPv6 Dual Protocol Stack**
- **ICMPv6**
- **ICMPv6 Redirect**
- **IPv6 Neighbor Discovery**
- **Stateless Autoconfiguration**
- **Manual Configuration**
- **DHCPv6 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 Link Aggregation (MLAG)**

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**

Automation

- **Auto Installation**
- **RESTful API**
- **Ansible**

Virtualization Features

- **VxLAN**

SDN

- **OpenFlow v1.3**

Mechanical

- **Dimension (HxWxD):** 43.2x440x508mm
- **Weight:** 9.35kg/20.59lbs (NET)

Environmental Specifications

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

Electrical

- **Power requirement:**
100-127VAC; 200-240VAC, 50/60Hz
- **Power consumption:** 319 watts
(tested with optics and Cat 6A with 100% loading, AC input)

Safety

- **UL, cUL, CB, CCC**

EMC

- **CE, FCC, VCCI, CCC**

RoHS

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

Supported Optics and Cables

- **1000BASE-T:** Cat 5e and Cat 6A (100m/330 ft)
- **10GBAE-T:** Cat 6A (100m/330ft)
- **DAC cable (QSFP+):** 1m, 3m, and 5m
- **DAC cable (QSFP+, fan-out):** 1m, 3m, and 5m
- **AOC cable (QSFP+, 850nm, MMF):** 7m, 10m, and 20m
- **40G optic (QSFP+, MPO, 850nm, MMF):** 40GBASE-SR4
- **40G optic (QSFP+, LC, 1310nm, SMF):** 40GBASE-LR4

Order Information

- **T3048-LY9A (1LY9BZZ0ST2) (F-2-B, AC, P2020)**
- **T3048-LY9A (1LY9BZZ0ST3) (B-2-F, AC, P2020)**
- **PSU - Red (1HY9ZZ071Y) (F-2-B, AC, 750W)**
- **PSU - Blue (1HY9ZZ0720) (B-2-F, AC 750W)**
- **FAN Module (1HY9ZZ022X) (F-2-B, Red)**
- **FAN Module (1HY9ZZ022Y) (B-2-F, Blue)**

