QuantaMesh 5000 Series
T5016-LB8D

A powerful Top-of-Rack Switch for Cloud Datacenters

Product Highlight

Performance
- 16 40GbE QSFP+ ports in 1 RU
- 1.28 terabits per second
- 960 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

Datacenter application
- CN (802.1Qau)
- ETS (802.1Qaz)
- PFC (802.1Qbb)
- DCBX (802.1Qaz)
- FIP snooping

Overview

The QuantaMesh T5016-LB8D is a high performance and low latency layer 2/3/4 Ethernet switch with 16 40GbE QSFP+ ports in a compact rack unit size. Each 40 Gigabit Ethernet port can be independently configured as 40GbE or 4 x 10GbE for total 64 ports of 10GbE.

Simplicity

The QuantaMesh T5016-LB8D can be managed through an industry standard command-line Interface (CLI) which reduces training and operating costs. A user friendly Web GUI is provided via a standard Web browser for switch management. The QuantaMesh T5016-LB8D also supports Simple Network Management Protocol (SNMP) both from standard MIB and private MIB for easy configuration, monitoring, and remote management by the network administrator. The Auto-Installation feature implemented in the QuantaMesh T5016-LB8D helps centralized management to simplify deployment of a truly plug-and-play experience. With the evolution from IPv4 to IPv6, the QuantaMesh T5016-LB8D is a IPv6 integrated management device.

High Availability

The QuantaMesh T5016-LB8D is designed for high availability from both hardware and software perspective. 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 (MLAG) 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 16 QSFP+ ports in the front panel and in the compact 1U form factor, front to back or back to front airflow design, the QuantaMesh T5016-LB8D is ideal for top-of-rack deployments in high-performance, highly demanding datacenters. The 1.28 terabits per second switching capacity and 960Mpps forwarding rate with low power consumption make the QuantaMesh T5016-LB8D a powerful solution to aggregate high-performance servers in the datacenter.

Advanced IPv4 and IPv6 routing

The QuantaMesh T5016-LB8D is a fully layer 2 and layer 3 routing switch that supports advanced IPv4 and IPv6 routing features such as RIP v1/v2, OSPF/ECMP, RIPng and OSPFv3. 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 QuantaMesh T5016-LB8D.

Datacenter application

The QuantaMesh T5016-LB8D is a special 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)
- Datacenter Bridging Extension (DCBX, 802.1Qaz)
- FCoE Initiation Protocol (FIP) snooping

QuantaMesh 5000 Series T5016-LB8D specifications

Physical ports
- 16 40G QSFP+ ports in 1RU
- 1 RJ-45 out-of-band management port (10/100/1000)
- 1 RJ-45 console port

Performance
- Switching capacity: 1.28 Tbps
- Forwarding rate: 960Mpps
- Latency: 1.2 microseconds
- 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
- 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
  - Port-based (up to 4094 VLANs)
  - Private VLAN
  - 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, src-dst-mac, src-ip, src-mac)
- 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 (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) version 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
- IRDP
- Static route
- Unicast Routing: RIP v1/v2, OSPF
- 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 & server

Datacenter features
- Congestion Notification
- Enhanced Transmission Selection
- Priority-based Flow Control
- Datacenter 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 802.1Qbg)

Mechanical
- Dimension (HxWxD): 42.8x435x393.7 mm
- Weight: 7.3kg(NET)

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

Electrical
- Power consumption: 180W (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

Environmental
- Reduction of Hazardous Substances (RoHS) 6

Order information
- T5016-LB8D (1LB8BZZ000H) (Front to Back)
- T5016-LB8D (1LB8BZZ000I) (Back to Front)

Warranty
- Limited lifetime warranty

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