

LA-SWM3-DC100G0448

Managed Switch 48×10 GE SFP+, 2×40GE QSFP+ ports. 4×100GE/40GE QSFP28 ports

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Advanced Hardware
Architecture and
Industry-leading Port
Density



Carrier-Level High
Reliability
Layer-3 Routing
Function



Varied Service
Characteristics
Versatile IPv6
Solution Complete
Security Mechanism



Introduction

LA-SWM3-DC100G0448 is a new generation full-10GE TOR switch oriented for high-performance computing, data center and high-end campuses. It adopts the advanced hardware architecture design.

Providing high-performance L2/L3/L4 wire speed switching capacity by integrating services such as IPv6, network security, flow analysis, virtualization, with high reliable techniques including continuous forwarding, graceful restarting and loop network protection, the work efficiency and maximum running time are guaranteed.

Supports the "GreenTouch" architecture and "Smart@CHIP".

Advanced Hardware Architecture Design & Industry Leading Processing Capacity

- It adopts the industry leading hardware architecture design. IT switch with 1U height supports 48×10 GE SFP+, 2×40GE QSFP+ ports. 4×100GE/40GE QSFP28 ports.
- With high-performance ASIC switch chip and multi-core processor, IT supports 2.56Tbps backplane.

Rich Data Center Services

- **Doubled Performance:** The virtualized system makes the best use of each link in the device and avoids the blocking of STP to the link
- **High-reliability:** Based on the advanced distributed processing technique and the efficient function of cross-physical device link aggregation, it provides with non-stop layer-3 routing forwarding and avoids single points of failure.
- **Flexibility:** With the function of virtual stacking, the distance of virtual stacking system can expand to 80KM, breaking the geographic restriction of traditional cluster technique.
- **Easy Management:** The whole virtual system realizes single IP unified management and simplifies the management of network device and network topology.
- **Large Layer-2 Network Technique:** the switch provides large layer-2 network technique which supports TRILL protocol. With the technique, the network structure has become simple and compress, which can access to data center large-scale servers

Data Center Level High-reliability

- It adopts HPS (Hitless Protection System). The key components such as the power system and the fan system support redundancy design. All system modules support hot-swap and seamless switching without need of manual intervention.
- It supports redundancy protection mechanism such as STP/RSTP/MSTP protocol, VRRP protocol, ring network protection, dual uplink active/standby link protection and LACP link aggregation.
- It supports ISSU (In-Service Software Upgrade), guaranteeing the user data non-stop forwarding when the system is upgrading.
- It supports BFD and realizes fault detection and service recovery in seconds through linking with layer-2 or layer-3 protocol.
- It has perfect Ethernet OAM, 802.3ah, 802.1ag and ITU-Y.1731 which can real time monitor the network operating state and rapidly detect and locate the malfunction.
- High Reliability (99.999%): MTTR is 50ms, meeting the requirement of the carrier-level service.

Comprehensive Service

- It supports complete layer-2 and layer-3 multicast routing protocol and meets the access requirement of IPTV, multi-terminal high-definition video monitoring and high-definition video meeting.
- It supports complete layer-3 routing protocol and a super-large routing table capacity, which make super-large data center network, campus network, enterprise network and industry private networks available.

Comprehensive IPv6 Solutions

- It supports IPv6 Neighbor Discovery, ICMPv6, Path MTU Discovery and DHCPv6.
- It supports IPv6 based Ping, Traceroute, Telnet, SSH, ACL, meeting the need of IPv6 network equipment management and service control.

- It supports IPv6 multicast characteristics including MLD, MLD Snooping and IPv6 layer-3 routing protocols including IPv6 static routing, RIPng, OSPFv3 and BGP4+.
- It supports IPv4-to-IPv6 technologies including IPv6 manual/automatic tunnel, auto tunnel, IPv6-to-IPv4 tunnel, and ISATAP tunnel.

Comprehensive Security Mechanisms

- The switch adopts advanced hardware architecture design, realizing the hierarchical scheduling and protection of the packet. It provides multiple security measures to defend attacks from SYN Flood, UDP Flood, broadcast storm and large flow of DoS or TCP and supports command line authority control based on user levels.
- Reliable Security Certification: It complies with IEEE 802.1x, Radius.
- Enhanced Service Security Mechanism: It supports the plaintext or MD5 authentication of relevant routing protocol; uRRF; DPI (Deep Packet Inspection) and (Deep Packet Filtration); DPI for control packets and data packets.

Innovative Green Environmental Design

- It supports the “GreenTouch” architecture.
- Smart Power Management System: It adopts advanced power system architecture design which can realize the function of efficient power switching, private power monitoring, soft start, real-time monitoring, intelligent adjustment and energy-savin
- Smart Fan Management System: Designed with the intelligent fan and supports switching between front-back mode and back-front mode and fan automatic speed regulation.
- Supports efficient Ethernet and complies with International standard IEEE 802.3az.

Features

- **VLAN** : 4K VLAN entries GVRP 1:1 and N:1 VLAN Mapping Basic Qinq and Selective Qinq ,Private VLAN
- **Data Center** : TRILL*FCoE*VxLAN*
- **MAC Switching Capacity** : Static Configuration and Dynamically Learning of MAC Address,Check and Delete MAC Address, MAC Address Aging Time ,Limit on MAC Address Learning Number ,MAC Address Filtering Function, Black-Hole MAC Items
- **Spanning Tree** : 802.1D (STP) 802.1W (RSTP) and 802.1S (MSTP) BPDU guard, root guard and loopback guard
- **Multicast** : IGMP v1/v2/v3, IGMP Snooping, IGMP Fast Leave, Multicast Group Policy And Multicast Number Limit, Traffic Cross Vlan Duplication, PIM-SM and PIM-DM
- **IPv4** : Static Routing, RIP V1/V2, OSPF and BGP, Policy Routing, Load Balance through Equal-Cost Routing, BFD for OSPF and BGP
- **IPv6** : ICMPv6, DHCPv6, ACLv6 and IPv6 Telnet , IPv6 neighbor discovery, Path MTU discovery ,MLD v1/2, MLD snooping , IPv6 static routing, RIPng, OSPFv3 and BGP4+, Manual Tunnel, ISATAP Tunnel and 6-To-4 Tunnel
- **QoS** : Traffic classification of L2~4 protocol headers ,CAR traffic control, 802.1P/DSCP priority remark ,Multiple queuing algorithms such as SP, WRR or SP+WRR ,Tail-Drop, WRED ,Traffic shaping
- **Reliability** : Dual hot-swap power supply, Static/LACP Link Aggregation and Cross Service Card Link Aggregation, Ring Network Protection Including EAPS and ERPS, VRRP/HSRP, Ethernet OAM 802.3ah/802.1ag/Itu-Y.1731, GR for OSPE and BGP, BFD for OSPF and BGP, ISSU

- **Management** : Console, Telnet, SSH, SNMP v1/v2/v3, Upload and Download of TFTP Files , Remote Network Monitoring (RMON), Statistics Analysis of sflow, Netflow
- **Energy saving** : IEEE 802.3az green Efficient Ethernet
- **Environment** : Operating temperature/humidity: 0°C -50°C ,10%-90% non-condensing , Storage temperature/humidity: -20°C -70°C , 5%-95% non-condensing
- **Certification** : CE,FCC,ROHS

Specification

PART NO	LA-SWM3-DC100G0448
Interface	48×10 GE SFP+, 2×40GE QSFP+ ports. 4×100GE/40GE QSFP28 ports (compatible with 40GE QSFP+ optical transceiver)
Console	1 RJ45 console, 1 MGMT1 RJ45 console, 1 MGMT
Backlane	1920Gbps
Forwarding Rate	1440Gbps
Chassis	Dimensions (WxDxH)(mm): 442x404x44
	Weight (KG)(empty): 8.8
Package	Dimensions (WxDxH)(mm): 616x488x140
	Weight(KG): 10
Power Consumption	No load: 102W
	Full load: 147W
Power Supply(Hot-Swap)	2
Power Status	Support
Total output BTU (1000BTU/H=293W)	501.71
Fan number	4
Noise@25° C (dBA)	57
MTBF(H)	>100,000
Forwarding mode	Store-forward
Flash (MB)	64
DRAM (MB)	512
MAC	64K
Jumbo frame	9K
Routing table	IPv4: 4K
	IPv6: 4K
ARP table	IPv4: 4K
	IPv6: 4K

Total SVI	1K
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Ordering Information

PART NO	DESCRIPTION
LA-SWM3-DC100G0448	Ethernet routing switch with 48 10GE ports, 2 40GE ports and 4 100GE ports (1 console port, 1 out-band port, 48 10GE/GE SFP+ ports, 2 40GE QSFP+ ports, 4 100GE (can expand to 4 10GE ports), 2 power slots with 2 hot-swap AC220V power supplies; 4 fan slots, including 4 fans; 1U, 19-inch rack-mounted installation)

Optical Modules	
10GE Optical Modules	
LA-SFP+SX	10GE SFP+ multi-mode (300m, 850nm, LC)
LA-SFP+LX-10	10GE SFP+ single-mode (10Km, 1310nm, LC, DDM)
LA-SFP+LX-20	10GE SFP+ single-mode (20Km, 1310nm, LC, DDM)
LA-SFP+LX-40	10GE SFP+ single-mode (40Km, 1310nm, LC, DDM)
LA-SFP+LX-80	10GE SFP+ single-mode (80Km, 1550nm, LC, DDM)
Gigabit Optical Modules	
LA-SFP-TX-B	Gigabit SFP optical ports transfers to RJ45 TX port modules
LA-SFP-SX-D	Gigabit SFP multi-mode (500m, 850nm, LC, DDM)
LA-SFP-LX-10-D	Gigabit SFP single mode (10Km, 1310nm, LC, DDM)
LA-SFP-LX-20-D	Gigabit SFP single mode (20Km, 1310nm, LC, DDM)
LA-SFP-LX-40-D	Gigabit SFP single mode (40Km, 1310nm, LC, DDM)
LA-SFP-ZX-80-D	Gigabit SFP single mode (80Km, 1550nm, LC, DDM)
LA-SFP-LX-SM1310/1550-10BIDI	Gigabit SFP single mode, single-core bidirectional (10Km, TX1310/RX1550, LC, DDM) Gigabit SFP single mode, single-core bidirectional (10Km, TX1550/RX1310, LC, DDM)
LA-SFP-LX-SM1310/1550-20BIDI	Gigabit SFP single mode, single-core bidirectional (20Km, TX1310/RX1550, LC, DDM) Gigabit SFP single mode, single-core bidirectional (20Km, TX1550/RX1310, LC, DDM)
LA-SFP-LX-SM1310/1550-40BIDI	Gigabit SFP single mode, single-core bidirectional (40Km, TX1310/RX1550, LC, DDM) Gigabit SFP single mode, single-core bidirectional (40Km, TX1550/RX1310, LC, DDM)
LA-SFP-LX-SM1490/1550-80BIDI	Gigabit SFP single mode, single-core bidirectional (80Km, TX1490/RX1550, LC, DDM) Gigabit SFP single mode, single-core bidirectional (80Km, TX1550/RX1490, LC, DDM)