CS7448-48X4Q

DUAL STACK 40G DATACENTER SWITCH DATASHEET
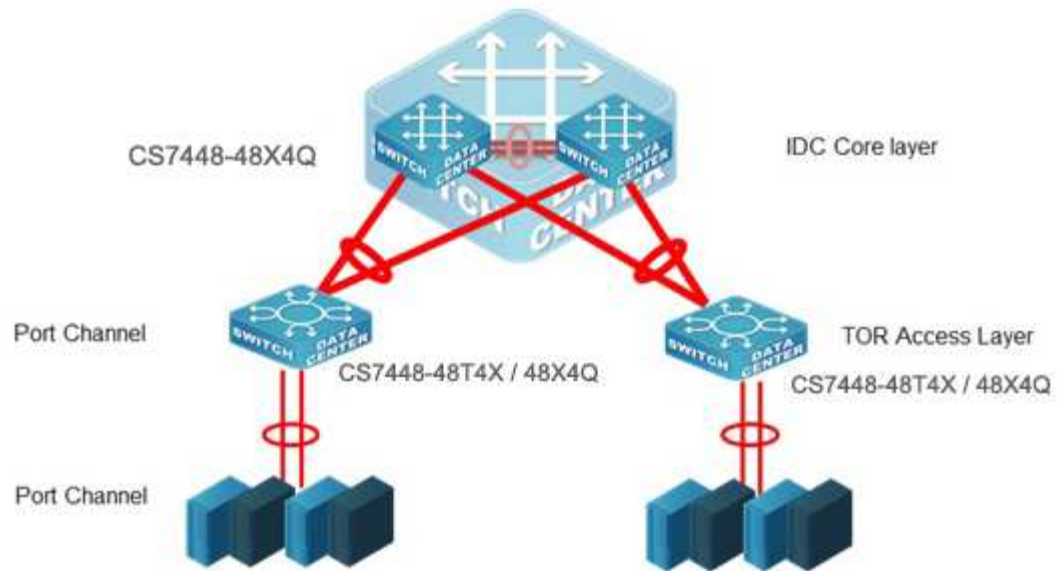
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PRODUCT OVERVIEW

CS7448-48X4Q next-generation data center 40G switch has advanced hardware and software architecture design, built-in modular 1+1 redundant power supplies, 4+1 redundant fans, cross ventilation and wind direction adjustable. CS7448-48X4Q supports data center features such as Data Center Bridging*, FCoE*, VEPA*, Trill* fully applicable to the data center TOR (Top of Rack) application requirements of the switch.

The CS7448-48X4Q supports IPv6 with hardware and pass the IPv6 form certification Phase II. With the abundant ipv6 features, the product can also work for next generation network.
CS7448-48X4Q is ideal for cloud computing data center server access, core switch of small to medium datacenter. For campus or other large network, CS7448-48X4Q could also be deployed at aggregation or core layer as its high performance and reliability.

CS7448-48X4Q

IDC Core layer

Port Channel

CS7448-48T4X / 48X4Q

TOR Access Layer

CS7448-48T4X / 48X4Q

Port Channel

Performance and Scalability

- With high switching capacity, CS7448-48X4Q series switches support wire-speed L2/L3 forwarding and high routing performance for IPv4 and IPv6 protocols.
- The 10 Gigabit Ethernet connectivity of CS7448-48X4Q is accomplished via a hot-pluggable 10 Gigabit XFP/SFP+ transceiver which supports distance up to 300 meters over multimode fiber and 10 to 80km over single-mode fiber(The distancedepends the optical module chosen).
- CS7448-48X4Q series support modular redundant AC and DC power supplies fordifferent environment applications..

VEPA(Virtual Ethernet Port Aggregator)*

- As new generation data center switch, CS7448-48X4Q supports full data center features such as FCoE（Fiber Channel over Ethernet）, TRILL(Transparent Interconnection of Lots of Links) DCB（Data Center Bridging）,VEPA（Virtual Ethernet Port Aggregator）, which not only improves the efficiency, guarantees the flexibility, but also enhanced these capability of datacenter network..

OpenFlow1.0*

- CS7448-48X4Q supports OpenFlow1.0 standard protocol. OpenFlow network is increasingly becoming a trend as the core protocol of SDN network. It makes the network easier programming Openflow brings the high performance to datacenter users via self-defined network. With OpenFlow, this product is ideal to build SDNtest-bed for research institutes and SDN Experimental Bureau for large ISP and operator.

VSF(Virtual Switch Framework)*

- Virtual Switch Framework could virtualize multiple 3ISYS switches into one logical device, achieves the sharing of information and data tables between different switches. The performance and ports density of virtualized device are greatly enlarged by times under VSF. VSF also provided simplified management work for network administrator and more reliability.

Full Optical Port

- CS7448-48X4Q series supports abundant optical connection ports to construct full optical network and increase the performance of networks.
- The CS7448-48X4Q includes 48*10GE SFP+ portsand 4*40G QSFP+ ports.

Strong Multicast

- CS7448-48X4Q series support abundant multicast features. In Layer 2, such as IGMPv1/v2/v3 snooping and fast leave. L3 multicast protocols such as IGMPv1/v2/v3, PIM-DM, PIM-SM, PIM-SSMand even MSDP*. With multicast Vlan Register (MVR), multicast receiver/sender control and illegal multicast source detectfunctions,CS7448-48X4Q provides great application experience for customer.

MPLS/VPLS*

- CS7448-48X4Q series supportMPLS L3 VPN/MPLS L2 VPN(VPLS) and help customer to construct more secure/extendable network. With max 255 VRF instances, CS7448-48X4Q series could be deployed as P & PE devices, guarantees the variety of services

Easy high reliability network

- MRPP is Multi-layer Ring Protection Protocol. It introduces Layer concept for loop at the basis of traditional loop protect protocol. Each loop layer has multiple same-level Ethernet loop networks. With multi-loop layers, it can achieve quick convergence from core to aggregation.
- MRPP can get fast recovery for links at different layers. Compared with spanning tree protocol, it has advantages of much faster convergence, simple protocol calculation, little system resources cost, clear networking idea and so on, which can greatly improve the reliability of Ethernet network operation.

Comprehensive QoS

- With 8 queues per port, CS7448-48X4Q series enable differentiated management of up to 8 traffic types. The traffic is prioritized according to IEEE802.1p, DSCP, IP precedence and TCP/UDP port number, giving optimal performance to real-time applications such as voice and video.
- CS7448-48X4Q series also support Bi-directional rate-limiting, per port or traffic class, preserves network bandwidth and allows full control of network resources.

Enhanced Security

- IEEE 802.1X port-based access control and MAC-based access control ensure all users are authorized before being granted access to the network.
- Ingress/Egress Access Control Lists (ACLs) can be used to restrict access to sensitive

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- Secure Shell (SSH) encrypts network management information via Telnet providing secure network management.
- RADIUS Authentication enables centralized control of the switch and restricts unauthorized users from altering the configuration of the switch.

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Rich L3 Features*

- CS7448-48X4Q series deliver high-performance, hardware based IP routing.
- RIP, OSPF and BGP provide dynamic routing by exchanging routing information with other Layer 3 switches and routers.
- With CS7448-48X4Q series，customers could easily achieve Policy based Route(PBR), which is important when they need multi exit application.

SPECIFICATIONS

Item	CS7448-48X4Q
Physical port	48 * 10G SFP+ and 4 * 40G QSFP+
FC port*	First 16 ports could be configured as SFP+, SFP GE, FC FC port support 1/2/4/8G mode
Management port	10/100/1000Mbps RJ45 Ethernet Management port RJ45 Console port USB2.0 Management port*
Performance	
Switching Capacity	1280Gbps
Throughput	960Mpps
MAC Address	128K

Routing Table	16K
L3 Table	16K
Physical	
Dimension	W*H*D: 438mm*44mm*408mm
Relative Humidity	15%～85% non-condensing
Temperature	Working 0℃～40℃, storage -40℃～75℃
Power Input	AC: 100~240V，50~60 Hz
Power Supply	460W（1+1 Modular Redundant）
Power Consumption	281W
MTBF	>=200000 Hours
Main Features	
L1, L2 Features	IEEE802.3(10Base-T),IEEE802.3u(100Base-TX),IEEE802.3z（1000BASE-X）, IEEE802.3ab（1000Base-T）,IEEE802.3ae（10GBase）,IEEE802.3x IEEE802.3ak(10GBASE-CX4)
	12k Jumbo Frame Port loopback detect LLDP and LLDP-MED UDLD 802.3ad LACP, max 128 group trunk with max 8 ports for each trunk, LACP load balance
	N:1 Port Mirroring RSPAN ERSPAN
	IEEEE802.1d(STP) IEEEE802.1W(RSTP) IEEEE802.1S(MSTP) Root Guard BPDU Guard BPDU Tunnel

	802.1Q, 4096 VLAN
	MAC Vlan, VOICE VLAN, PVLAN, Protocol Vlan, Multicast VLAN,
	QinQ, Selective QinQ, Flexible QinQ
	GVRP
	N:1 VLAN translation
	Broadcast / Multicast / Unicast Storm Control
	IGMP v1/v2/v3 Snooping and L2 query
	ND snooping
	MLDv1/v2 snooping
	Port Security
	Flow control: HOL, IEEE802.3x
	Bandwidth control
L3 Features*	Static Routing,RIPv1/v2,OSPFv2,BGP4
	OSPFv3, BGP4+
	OSPF multiple process
	LPM Routing
	Policy-based Routing(PBR) for IPv4 and IPv6
	VRRP
	URPF,
	ECMP
	BFD
	IGMP v1/2/3, IGMP Proxy,
	DVMRP,PIM-DM,PIM-SM,PIM-SSM, any cast, RP, MSDP
	Static Multicast route
	Multicast receive control
	Illegal multicast source detect
	ARP guard, Local ARP proxy, Proxy ARP, ARP binding, Gratuitous ARP, ARP limit
	Anti ARP/NDP cheat, anti ARP/NDP scan
	DNS client

	GRE Tunnel
IPv6*	6to4 Tunnel, configured Tunnel, ISATAP Tunnel, GRE Tunnel
	ICMPv6,ND,DNSv6
	IPv6 LPM Routing,IPv6 Policy-based Routing(PBR)
	IPv6 VRRPv3,IPv6 URPF, IPv6 RA
	RIPng,OSPFv3,BGP4+
	MLD Snooping,IPv6 Muticast VLAN
	MLDv1/v2,,PIM-SM/DM for IPv6,IPv6 anycast RP, IPv6 ACL,IPv6 QOS
MPLS*	MPLS, VRF, LDP
	MPLS L3 VPN, MPLS L2 VPN(VPLS), VPWS
QoS	8 queues
	SWRR、SP、WRR、DWRR、SDWRR、WRED
	Traffic classification based on 802.1p COS, ToS , DiffServ DSCP, ACL, port number
	Traffic Shaping
	PRI Mark/Remark
ACL	IP ACL ,MAC ACL,IP-MAC ACL
	Standard and expanded ACL Based on source/destination IP or MAC, IP protocol, TCP/UDP port, DSCP, ToS, IP Precedence), VLAN, Tag/Untag,CoS
	REDIRECT and accounting based ACL
	Rules can be configured to port, VLAN, VLAN routing interfaces
	Time ranged ACL
Security	802.1x AAA
	Port, MAC based authentication
	Accounting based on time length and traffic
	Guest vlan and auto vlan
	RADIUS for IPv4 and IPv6
	TACACS+ for IPv4 and IPv6
	MAB

DHCPv4/v6	DHCP Server/Client for IPv4/IPv6
	DHCP Relay/option 82
	DHCP Snooping/option 82
Traffic Monitor	IP FIX traffic monitor, 1:1 *
	sFlow traffic analysis
Security Network Management	CLI, WEB, Telnet, SNMPv1/v2c/v3 through IPv4 and IPv6
	Syslog and external syslog server
	HTTP SSL
	SNMP MIB, SNMP TRAP
	FTP/TFTP
	SNTP/NTP
	RMOM 1, 2, 3, 9
	Authentication by radius
	SSH v1/v2
	Dual firmware images/ configuration files
	802.3ah OAM, 802.1ag OAM*
Data Center Features*	FCoE（Fiber Channel over Ethernet）
	TRILL(Transparent Interconnection of Lots of Links)
	DCB（Data Center Bridging）
	802.1Qbb: Priority-based Flow Control (PFC)
	802.1Qaz: Enhanced Transmission Selection (ETS and DCBX)
	802.1Qau: Congestion Notification (CN/QCN)
	IEEE VEPA（Virtual Ethernet Port Aggregator）
	VSF（Virtual Switch Framework）

1 years

Product Information

Product	Description
CS7448-48X4Q	40G Ethernet Optical Routing Switch, 48 * 10G SFP+ and 4 * 40G QSFP+ports (2 power modules at most, 1+1 redundancy. 5 fan modules at most, 4+1 redundancy. Standard with 1 power module, 5 fan modules) **Note: Only L2 features and static routing are enabled by default. If users want to use L3 features or datacenter features. L3 license or Datacenter license must be bought except the hardware.**
LIC-6500-F-L3*	L3 feature license. It is used to enable L3 features.
3ISYS-6000-AC	AC Power Supply Module(460W) for CS7448-48X4Q.
3ISYS-6000-FAN *	Fan module for CS7448-48X4Q. Could be purchased alone as accessory
CAB-SFPX-0.3M *	CAB-SFPX-0.3M 10G SFP+ cable with two 10G SFP+ module. It is working with VSF feature and the cable length is 0.3 meters.
CAB-SFPX-1M *	CAB-SFPX-1M 10G SFP+ cable with two 10G SFP+ module. It is working with VSF feature and the cable length is 1 meter.
CAB-SFPX-3M *	CAB-SFPX-3M 10G SFP+ cable with two 10G SFP+ module. It is working with VSF feature and the cable length is3 meters.

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notice. All features with * mark will be available by
firmware upgrade.