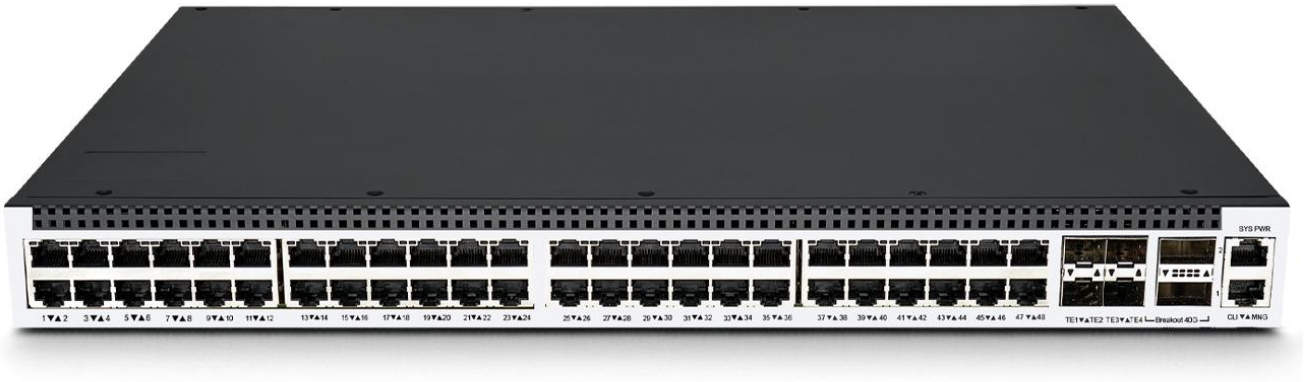
C6500-48TE4X2Q

2.5G Multi-Gigabit Switch with 10G and 40G Uplinks for SMBs and Enterprises



I. Product Overview

6COM C6500-48TE4X2Q is a multi-gigabit Ethernet switch oriented for the next-generation IP metropolitan area network, large campus network, and enterprise network. It adopts the cutting edge hardware architecture and is equipped with the BDROS operating system with independent intellectual property rights. On the basis of providing high-performance L2/L3/L4 wire-speed switching services, C6500-48TE4X2Q further integrates various network services such as IPv6, MPLS VPN and network security. Combined with multiple high-reliability technologies such as uninterrupted upgrade, uninterrupted forwarding, graceful restart, and redundancy protection, this switch ensures the long-term stable communication capability of the network.

C6500-48TE4X2Q supports 48x 100M/1G/2.5G access, 4x 10G SFP+ and 2x 40G QSFP+ high-speed uplink ports, widely used in high-end cyber cafes, E-sports hotels, and high-speed enterprise network.

II. Product Characteristics

Advanced hardware architecture, cutting edge processing capability

- C6500-48TE4X2Q 1U pizza-box switch realizes the ultra-high port density of 48x 2.5G TX ports, 4x 10G SFP+ ports, and 2x 40G QSFP ports. Equipped with high-performance ASIC switch chips, it meets the application requirements of various complex scenarios.

Carrier-level high reliability

- Based on Hitless Protection System (HPS), the key components of the C6500-48TE4X2Q, such as power supply modules, are redundant backup and hot-swappable, which supports seamless switchover in case of failure without manual intervention.

- Supports STP/RSTP/MSTP, VRRP, ring network protection, dual uplink active/standby link protection, LACP and other simple and efficient redundancy protection mechanisms.
- Supports In-Service Software Upgrade (ISSU), ensuring the unremitting data forwarding during system upgrade.
- The ultra-high-precision BFD mechanism, through linkage with Layer 2 and Layer 3 protocols, realizes millisecond-level fault detection and service recovery, which greatly improves the reliability of the network system.
- Perfect Ethernet OAM mechanism, supporting 802.3ah, 802.1ag and ITU-Y.1731, realizes rapid detection and location of faults through real-time monitoring of network operation status.
- The high reliability hardware and software of the C6500-48TE4X2Q meet the fault recovery time requirement of 50ms for carrier-level services, and truly achieve the high reliability (99.999%) of carrier-class core devices.

Rich service features

- Perfect Layer 2 and Layer 3 multicast routing protocols meet the access requirements of IPTV, multi-terminal high-definition video surveillance and video conferencing.
- Complete Layer 3 routing protocols and large routing table capacity meet the needs of various network interconnection, and can built up ultra-large campus network, enterprise network and industry private network.
- Comprehensive Layer 2 and Layer 3 MPLS VPN can built up a super-large MPLS VPN core network to meet the access needs of industry private network VPN users and enterprise network VPN users.

Comprehensive IPv6 solutions

- Supports the IPv6 protocol suite, IPv6 neighbor discovery, ICMPv6, path MTU discovery, DHCPv6, etc.
- Supports Ping, Traceroute, Telnet, SSH, ACL and so on, meeting IPv6 networks' device management and service control requirements.
- Supports IPv6 multicast features such as MLD, MLD Snooping, IPv6 static routing, IPv6 Layer 3 routing protocols such as RIPng, OSPFv3, BGP4+, providing complete IPv6 Layer 2 and Layer 3 solutions.
- Supports a wealth of IPv4 to IPv6 transition technologies, including: IPv6 manual tunnel, automatic tunnel, 6to4 tunnel, and ISATAP tunnel to ensure the smooth transition from IPv4 network to IPv6 network.

Perfect security mechanisms

- Equipment-level security: The advanced hardware infrastructure design realizes the level-based packet schedule and packet protection, prevents DoS-/TCP-related SYN Flood, UDP Flood, Broadcast Storm or large traffic attacks, and supports level-based command line protection, endowing different levels of users

with different management permissions.

- Perfect security authentication mechanisms: IEEE 802.1x, Radius and TACACS+.
- Enhanced service security mechanism: Supports clear text or MD5 authentication of related routing protocols, and Unicast Reverse Path Forwarding (uRPF), which can effectively control illegal services; supports in-depth detection and filtering of control packets and data packets, thereby effectively isolating illegal data packets and improving the security of the network system.

Innovative eco-friendly design

- Intelligent power management system: C6500-48TE4X2Q adopts advanced power system architecture design to achieve efficient power conversion, unique power monitoring, slow start function, real-time monitoring of the running status, intelligent adjustment, and deep energy saving.
- Intelligent fan management system: Intelligent fan design supports automatic speed regulation, effectively reduces the speed, reduces noise, and prolongs the service life of the fan.
- Supports energy efficient Ethernet function and complies with the international standard IEEE 802.3az EEE, effectively reducing energy consumption.

III. Product Specifications

Item	C6500-48TE4X2Q
Interface	48x 2.5G RJ45 ports 4x SFP+ ports 2x 40G QSFP+ ports
Console	1 RJ45 console, 1 MGMT
Switching capacity	600G
Forwarding rate	360M
Chassis Dimensions(HxWxD)(mm)	44*440*300
Chassis Weight(KG)(empty)	5.3
Package Dimensions(HxWxD)(mm)	94*576*448
Package Weight(KG)	6.5
Power consumption no-load	45W
Power consumption full-load	70W
Power supply(hot-swap) AC: 100V-240V 50Hz±10%	2 (1+1 Redundancy) Hot-swap
Power status monitoring	Support
Total output BTU (1000BTU/H=293W)	238.91
Fan number	4 (3+1 Redundancy)

Noise@25°C(dBA)	57
MTBF(H)	> 200,000
Forwarding mode	Store-forward
Flash (MB)	4096
MAC	64K
Buffer size(MB)	4.5
Routing table IPv4	16K
Routing table Ipv6	Not support
Total SVI	1K

IV. **Features**

MAC exchange	➢ Static configuration and dynamic MAC learning ➢ MAC browsing and removal ➢ Configurable aging time of the MAC address ➢ Limited number of learnable MAC addresses ➢ MAC filtration ➢ Black hole MAC entry ➢ IEEE 802.1AE MacSec
VLAN	➢ 4K VLAN ➢ GVRP ➢ 1:1 and N:1 VLAN Mapping ➢ Basic QinQ ➢ Flexible QinQ ➢ Private VLAN
STP	➢ 802.1D (STP), 802.1W (RSTP), 802.1S (MSTP) ➢ BPDU protection, root protection, loop protection
Multicast	➢ IGMP v1/v2/v3 ➢ IGMP Snooping ➢ IGMP Fast Leave ➢ Multicast group policy and quantity limitation ➢ MVR ➢ PIM-SM/DM/SSM
IPv4	➢ Static routing, RIP v1/v2, OSPF, BGP, IS-IS ➢ PBR ➢ ECMP ➢ BFD for OSPF, BGP
IPv6	➢ ICMPv6, DHCPv6, ACLv6, IPv6 Telnet ➢ IPv6 Neighbor discovery ➢ Path MTU discovery ➢ MLD v1/v2

	➢ MLD Snooping ➢ IPv6 static routing, RIPng, OSPFv3, BGP4+ ➢ Manual Tunnel, ISATAP Tunnel, 6to4 Tunnel
MPLS VPN	➢ LDP ➢ MCE
QoS	➢ Flow classification based on L2~4 protocols ➢ CAR ➢ 802.1P/DSCP priority re-labeling ➢ SP, WRR, and “SP+WRR” ➢ Congestion avoidance mechanisms like Tail-Drop and WRED ➢ Flow monitoring and flow shaping ➢ Ingress and Egress ACL, support matching L2, L3, L4 and IP quintuple to copy, forward and discard ➢ Supports Hash-based load balancing algorithm to ensure session integrity
Security	➢ L2~4 ACL flow identification and filtration ➢ DDoS attack prevention, TCP’s SYN Flood attack prevention, UDP Flood attack prevention, etc. ➢ Broadcast/multicast/unknown unicast storm-control ➢ Port isolation ➢ Port security, and “IP+MAC+port” binding ➢ DHCP Snooping, DHCP Option 82 ➢ IEEE 802.1x authentication ➢ Radius, TACACS+ authentication ➢ uRPF ➢ Level-based command line protection
Reliability	➢ Power supply 1+1 backup (optional) ➢ Static/LACP LAG, M-LAG ➢ EAPS, ERPS ➢ HSRP, VRRP ➢ GR for OSPF, BGP ➢ BFD for OSPF, BGP ➢ ISSU

Feature	C6500-48TE4X2Q
Stackability	×
MAC address Capacity	131072
Jumbo frame	16105
ARP Capacity	4096
NDP Capacity	×

VLAN IDs	4094
MSTP Instance Num	32
QoS ipv4 flow entry	ifp：1024 efp：768
QoS ipv6 flow entry	×
IPv4 ACL	ifp：1024 efp：768
IPv6 ACL	×
FIBv4	16000
FIBv6	×
Multicast Routing Table（IPv4)	×
Multicast Routing Table（IPv6)	×
Maximum VRRP Group Num	×
Maximum MLAG Group Num	×
VXLAN tunnel	×

V. Ordering Information

Item	Description
C6500-48TE4X2Q	Multi-Gigabit Ethernet routing switch with 48x 2.5G RJ45 ports + 4x 10G SFP+ ports + 2x 40G QSFP ports (1x RJ45 CLI port, 1x out-band optical port, 48x 2.5G RJ45 ports, 4x 10G/GE SFP+ ports, 2x 40G QSFP ports; dual hot-swap power slots with single AC220V power supply; fan cooling, 1U, standard 19-inch rack-mounted installation)