

CX600 Metro Services Platform

Product Brochure

1. Product Overview

Huawei CX600 Metro Services Platform (MSP) is a Metro Ethernet product (hereafter referred to as the CX600) based on the routing platform. It focuses on Ethernet services access, aggregation and transmission in metro area. It mainly locates at metro access and aggregation point.

CX600 is adapted to hardware forwarding mechanism and non-blocking switching technology, based on routing platform. It has carrier class reliability, line speed forward capability, perfect QoS management, abundant services processing and excellent expansibility.

With its Ethernet access, level 2 switching and EoMPLS transmission capability, CX600 also supports abundant level of IP services. It can provide Triple Play, IP Leased Line, L3VPN services, Mobile service and etc. CX600 can perfectly co-work with some Huawei products such as NE80E, NE40E and ME60 to set up a clearly hierarchical metro Ethernet to multiple services.

The CX600 provides five types of devices: CX600-X16, CX600-X8, CX600-X3, CX600-16, CX600-8.



CX600-X16



CX600-X8



CX600-X3



CX600-16



CX600-8

2. Key Features

- **Enhanced new chassis design**

The CX600-X16 and CX600-X8 new chassis are based on 400G platform which can provide the capacity of 400Gbps per slot. They can fully meet the operators' requirements of network evolution and development when striding to HD Video era. The new chassis features the most compact and energy efficient router currently available in the market, such as the lowest power consumption per GE/10GE and 960 GE ports per rack as well as full backward compatibility with all line-cards, leading to unmatched investment preservation and environmental conservation.

- **Mobile Backhaul Clock Synchronization**

The IEEE 1588v2 is the latest industry standard that enables high-precision clock synchronization and meets the LTE bearer needs of operators. The CX600 series represent the globe's first MAN products that utilize end-to-end IEEE 1588v2 clock synchronization technology. With auxiliary hardware, CX600 can provide the precision of time synchronization at a sub-microsecond level, fully meeting mobile backhaul requirements of various standards.

- **Excellent Scalability**

The CX600 offers an ideal platform for carriers to build scalable Metro Ethernet Network (MEN) with flexible transport choices such as Ethernet, MPLS and IP. It supports H-VPLS, VLL (EoMPLS), L3 MPLS VPN, policy routing to VPN, DHCP Server/Relay/Snooping, PIM SSM etc., enabling the scalability of MEN in terms of multiple services, network topology and network scale.

- **Perfect QoS**

The CX600 has perfect QoS (Quality of Service) scheduling mechanism, supporting various traffic classification methods and service-aware policies, thus it can guarantee the fairness of traffic scheduling and the flexible differentiation of granular services. The CX600 supports PQ, WRR, WFQ, and also Diff-Serv and Inter-Serv mechanism, realizing the integration of the MPLS TE model and Diff-Serv model. It supports 8CT (Class Type) MPLS DS-TE, 5-level HQoS, and VLL/PWE3 QoS, which ensures end-to-end QoS implementation, reasonable configuration and efficient network resource utilization.

- **Scalable Multicast**

The CX600 supports IPv4/IPv6 multicast protocols, including PIM-SM/DM/SSM/MLDv1 /MLDv2 /Embedded RP/IGMPv3 etc. It also supports multicast functions of MEN, including IGMP snooping under VPLS instance and inter-VLAN multicast. Meanwhile, The CX600 supports multicast Call Admission Control (CAC) feature. By configuring the multicast CAC policies, it can control the quantity and bandwidth of different IGMP snooping multicast groups at interface level and global level. The CX600 provides a flexible and scalable solution for BTV, VoD service deployment on various networks.

- **Enhanced Subscriber Management**

The CX600 can act as Multi Service Edge (MSE) to implement access control and management of DHCP, IPoE, and leased line subscribers. It supports dynamic user access, user management, user-based authentication and accounting, and user-based QoS. Meanwhile, the CX600 provides the Bandwidth on Demand (BoD) service for enterprise users and DHCP users. It changes the traditional piping price-scheme into the value-added service price-scheme, embracing the customer-oriented "Granule Operation" era.

- **IPv6 Feature**

The CX600 supports IPv6 basis protocols, IPv6 MPLS VPN (V6 PE), and IS-IS multi-topology. Moreover, the CX600 supports IPv6 over GRE tunnel, IPv6 over IPv4, and IPv4 over IPv6. The CX600 is ready for new network era.

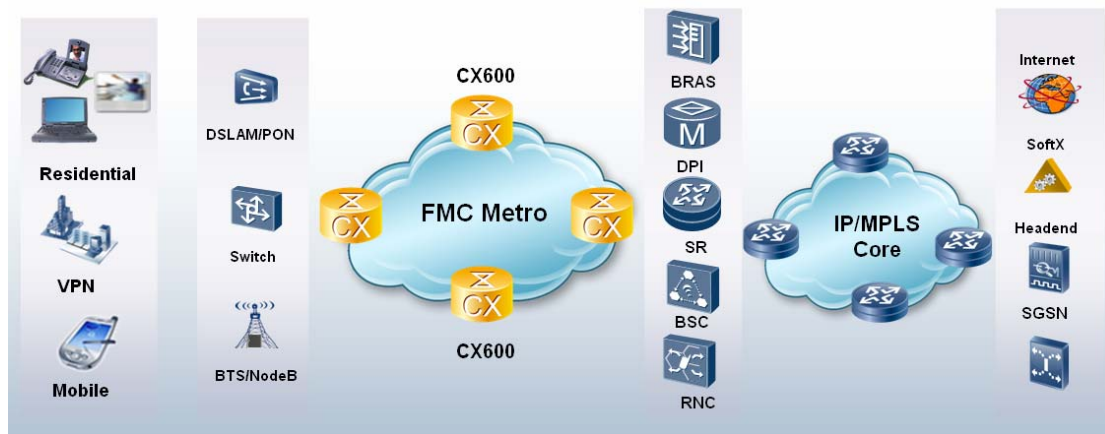
3. Deployment Scenario

The typical deployment scenario of CX600 in Metro Ethernet solution is showed in the following picture. With deployed in MEN aggregation layer, the CX600 can carry Residential, VPN and Mobile services.

Residential Service: CX600 enables the MEN to have a residential hybrid approach of L3 service edge design, e.g. to form a distributed L3 edge for VoIP/IP/BTV/VoD whilst a centralized L3 edge for High Speed Internet (HSI) service. Generally, the CX600 can satisfy middle to large range coverage network requirement of Multi-Play services.

VPN Service: The CX600 support flexible L2 and L3 VPN deployed in the Metro, providing intelligent solutions for different kinds of applications. With its Hierarchical QoS and reliable protection method, CX600 enable the carrier deliver different Service Level Agreements (SLA) for end-users.

Mobile Service: The CX600 is deployed between Base Transceiver Station (BTS) and Base Station Control (BSC) for 2G solution or between NodeB and Radio Node Controller (RNC) for 3G solution, providing an efficient and flexible transport tunnel with E2E PWE3. Besides that, CX600 can fully support Synchronous Ethernet-based clock synchronization mechanisms, as well as the 1588 Version 2 feature (clock and frequency), which can meet the future requirements for fixed mobile convergence and long-term evolution (LTE).



4. Product Specifications

The main specifications of the CX600 are summarized in the following table.



Item	Description				
	CX600-X16	CX600-X8	CX600-X3	CX600-16	CX600-8
Capacity	Switching capacity: 2.56 Tbps Port capacity: 1.28 Tbps Forwarding performance: 1600 Mpps	Switching capacity: 1.44 Tbps Port capacity: 640 Gbps Forwarding performance: 800 Mpps	Switching capacity: 1.08 Tbps Port capacity: 240 Gbps Forwarding performance: 300 Mpps	Switching capacity: 2.56 Tbps Port capacity: 1.28 Tbps Forwarding performance: 1600 Mpps	Switching capacity: 640 Gbps Port capacity: 320 Gbps Forwarding performance: 400 Mpps
Slots	16 for LPUs, 2 for MPUs , 4 for SFUs	8 for LPUs, 2 for SRUs, 1 for SFU	3 for LPUs, 2 for MPUs	16 for LPUs, 2 for MPUs , 4 for SFUs	8 for LPUs, 2 for SRUs, 2 for SFUs
Interface Types	OC-192c/STM-64c POS OC-12c/STM-4c POS OC-3c/STM-1c POS Channelized OC-3/STM-1 GE/FE E1/T1	OC-48c/STM-16c POS OC-12c/STM-4c ATM OC-3c/STM-1c ATM 10GE-WAN/LAN E3/CT3 CE1/CT1			
Service Processing Unit	Netstream, Tunnel & Multicast VPN				
Clock Transmission	Synchronous Ethernet, Adaptive Clock Recovery (ACR), Differential Clock Recovery (DCR), IEEE 1588v2				
L2 Ethernet	IEEE802.1q, IEEE802.1p, IEEE 802.3ad , IEEE 802.1ab, STP/RSTP/MSTP, RRPP, DHCP+, VLAN Switch, and User Binding				



Item	Description				
	CX600-X16	CX600-X8	CX600-X3	CX600-16	CX600-8
IPv4/IPv6 Routing Protocols	Static routing, RIP/RIPng, OSPF/OSPFv3, IS-IS/IS-ISv6, BGPv4/BGP4+, IPv6 over Ethernet, IPv6CP、 IPv6 ACL/Telnet, IPv6 MPLS VPN(V6 PE), IS-IS MT				
L2/L3 VPN	LDP over TE, VPLS/H-VPLS, Policy Routing to VPN, L2 VPN/VLL with Martini and Kompella VLL/VPLS access L3 VPN Instance QinQ, MPLS/BGP L3 VPN, Inter-AS VPN with option A/B/C ATM E1/IMA、 TDM PWE3				
Multicast	IGMP v1/v2/v3, IGMP Snooping, Multicast VPN, IPv6 Multicast, Static Multicast Routing, PIM-DM/SM/SSM, MSDP, MBGP Deploy Multicast and TE at same time Multicast CAC				
QoS	WRED, DS-TE with 8CT, H-QoS with 5 levels, VLL/PWE3 QoS, MPLS H-QoS Access Network QoS Control, User Location Report				
Network Reliability	IS-IS NSR,BGP/IS-IS/OSPF GR/LDP GR/RSVP GR/NSF, VLL/VPLS/L3VPN GR/NSF, BGP/IGP/Multicast Fast Convergence IP/LDP FRR, TE FRR, VPN FRR, VLL FRR, IP Auto FRR, NSR for BGP/IS-IS BFD for Static Routing, IS-IS, RSVP, LDP, TE, LSP, PW, OSPF, BGP, VRRP, PIM, RRPP MPLS OAM N:1 Protect(Trunk port support), Ethernet OAM(L2 LSA , 802.1ag and 802.1ah), PWE3 End to End Protection, PW redundancy, Multicast NSF, ISSU E-Trunk, E-APS, E-STP				



Item	Description				
	CX600-X16	CX600-X8	CX600-X3	CX600-16	CX600-8
Dimensions (WxDxH)	442mm×650mm×1420mm(32U); one CX600-X16 can be installed into a 2.2m standard rack	442mm×650mm×620mm (14U); three CX600-X8 can be installed into a 2.2m standard rack	Chassis (DC): 442mm×650mm×175mm (4U) eleven CX600-X3 can be installed into a 2.2m standard rack Chassis (AC): 442mm×650mm×220mm(5U)	442mm×669mm×1600mm (36U) ; one CX600-16 can be installed into a 2.2m standard rack	442mm×669mm×886mm (20U); two CX600-8 can be installed into a 2.2m standard rack
Weight	238kg (fully configured)	118kg (fully configured)	41kg (DC fully configured) 51kg (AC fully configured)	294kg (fully configured)	147kg (fully configured)
Max. Power Consumption	5360W	2800W	1100W	6000W	2200W
Environment	Long time work temperature: 0°C to 45°C Short time work temperature: -5°C to +55°C Restriction on temperature variation rate: 30°C/hour Long time work humidity: 5% RH to 85% RH, non-condensing Shot time work humidity: 0% RH to 95% RH, non-condensing Long time work altitude: ≤3000 m				



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