Huawei ME60 Series
Multi-Services Control Gateway



HUAWEI TECHNOLOGIES CO., LTD.

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ME60 MSCG Series

Overview

The ME60 Multi-Service Control Gateway (MSCG) series products are characterized as the best BRAS in industry. The first MSCG was deployed in 2002, and 23,600 sets have been deployed. The sophisticated ME60 series include 3 models for sale now: ME60-X3, ME60-X8 and ME60-X16, which have 3, 8 and 16 I/O slots respectively.



ME60-X16



ME60-X8



ME60-X3

Huawei ME60 has been recognized for large capacity & huge concurrent subscribers, outstanding reliability making nonstop services, and full services bearing solution.

Large Capaacity and Huge Concurrent Subscribers

400G hardware platform & 1st 40G BRAS.

The ME60-X series chassis is designed on the 400G hardware platform and 10G/20G/40G flexible plug-in cards which provide the most flexibility to meet different requirements and reduce OPEX. And based on the self-developed chipset and abundant experiences in BRAS area, the 1st 40G BRAS in industry was released. Persistent and long term investment guarantee continuous evolution solution in ultra bandwidth era.

Largest concurrent subscribers.

256K subscribers per chassis and 32K subscribers per LPU can be managed in a ME60, the operation and management are simplified. Meanwhile, Users can access the network through Ethernet, xDSL, WiMAX or PON. In addition, granular management is kept, and ME60 can provide multi-dimensionality management for subscribers, for example, security control, accounting, subscriber and services identifications, etc.

Outstanding Reliability, Making Nonstop Services

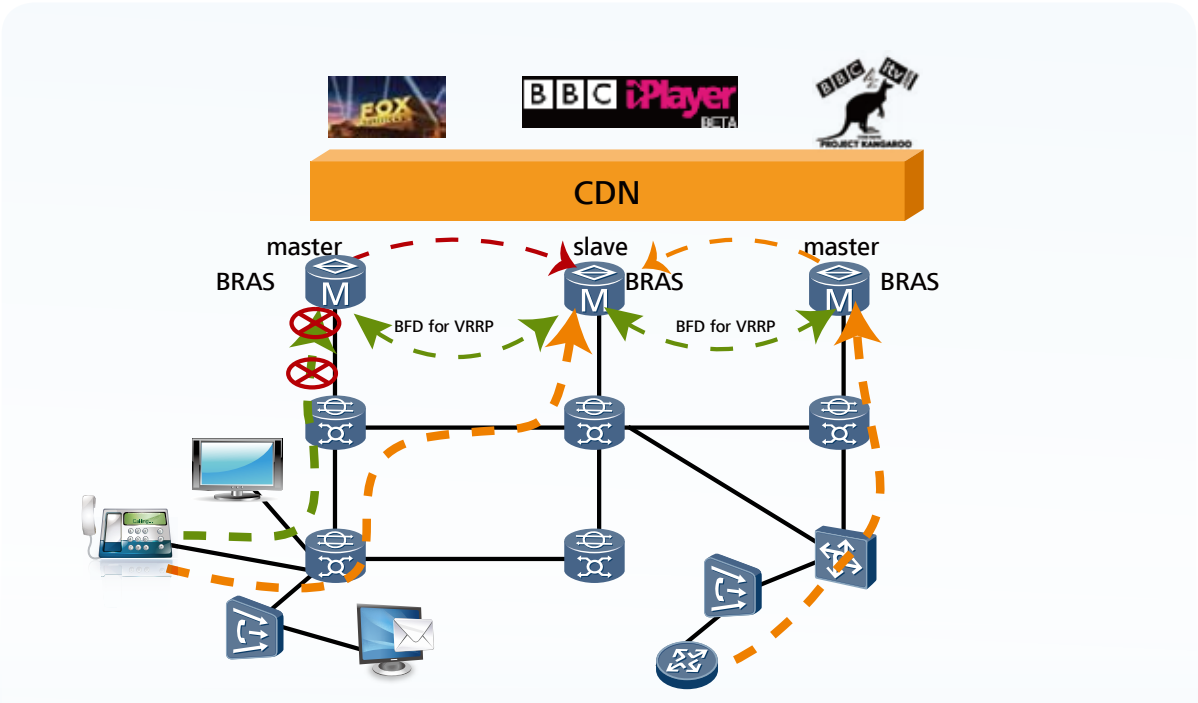
Normally:

- Master and slave BRAS build BRAS Pool
- Slave BRAS SYN master BRAS subscriber session timely.
- N:1/N+1

When Failure Happens:

- Slave BRAS becomes Master BRAS
- New Master BRAS take over all the subscriber traffic within 200ms
- All the service is “Non Stop”

Huawei BRAS Pool meets BBC iPlayer like video high QOE commitment



Unique BRAS Pool: full services hot backup among chassis, 200ms switchover.

By VRRP+, RBSP(Remote Backup Service Protocol), BFD for link, BFD for VRRP, bypass TE tunnel and so on, ME60 supports full services hot backup among chassis in 200ms switchover. It guarantees terminal users excellent online experience and operator steadily growing revenue.

Fast subscribers dial-in speed.

The ME60 can access more than 500 subscribers per BSU and more than 1000 subscribers per chassis per second. It is very important for BRAS to recover services. Take a BRAS with 100,000 subscribers for example, all subscribers can dial-in in 100 seconds.

Full Service Bearing Solution

Elaborate operation capability.

The ME60 is the creator and leader of Multi-Service Control Gateway in industry. With the elaborate operation ability, it can provide total full service bearing solution, making singlemetro and multi-play come true. Meanwhile, with the RACS (resource and admission control system), the ME60 can provide elaborate operation solution to provision Video on demand, QoS on demand, Dynamic Service selection, and so on.

The most complete H-QoS solution, including H-QoS, DS-TE and MPLS HQoS, ensuring E2E QoS deployment.

Complying with the QoS scheduling model defined in DSL TR-059, the ME60 provides QoS scheduling by using a traffic management (TM) chip. The ME60 can:

- Provide 5-level QoS scheduling capability.
- Support the QoS of the access network, thus avoiding network congestion.
- Provide QoS scheduling for each terminal and session.

The policy is separated from behavior, so the QoS is configured flexibly and deployed conveniently. Moreover, the TM is separated from the packet forwarding engine (PFE), so the QoS processing does not decrease the forwarding speed.The ME60 provides QoS scheduling for the IP and MPLS networks. To meet the QoS demands of IPTV and Metro Ethernet, the ME60 performs traffic classification and congestion management on multicast flows and layer 2 information. Thus the quality of new services can be ensured.

FCC and RET solution improve customers' experience.

iVSE is short for integrated Video Value-added Service Enhancement; Fast Channel Change (FCC) and Retransmission (RET) are two function sub-modules of the iVSE module.

FCC is used to address the problem of slow switching between IPTV channels.

RET is used to address the problem of packet loss. Packet loss in IPTV services may cause problems such as erratic display or even dark screens.





Specification

Attribute	ME60-X16	ME60 -X8	ME60 -X3
Switching Capacity	12.58 Tbps	7.08Tbps	1.08 Tbps
Forwarding Performance	3200 Mpps	1600 Mpps	300 Mpps
Number of Slots	22 slots, including 2 MPUs (1:1backup), 4 SFUs (3+1 backup), and 16 LPUs	11 slots, including 2 SRUs (1:1backup), 1 SFUs (2+1 backup), and 8 LPUs	5 slots, including 2 MPUs (1:1backup) and 3 LPUs
Dimension (W × D × H)	442mmx650mmx14200mm (32U)	442mmx650mmx620mm (14U)	442mm × 650mm × 175 mm (DC 4U) 442mm × 650mm × 220 mm (AC 5U)
Maximum power consumption	6500W(100G)	3300W(100G)	1100W
Weight in full configuration	267kg	130kg	41kg (DC) 51kg (AC)
Interface type	10GE- LAN /WAN OC-192c/STM-64c POS OC-3c/STM-1c POS OC-12c/STM-4c ATM	GE/FE OC-48c/STM-16c POS Channelized OC-3/STM-1 E3/CT3 CE1/CT1	OC-12c/STM-4c POS OC-3c/STM-1c ATM E1/T1
BRAS	**User access protocol:** PPPoX, IPoX, 802.1X, DHCP, and ND **User authentication protocol:** PAP, CHAP, MSCHAP, RADIUS, and HWTACACS **User accounting protocol:** RADIUS, HWTACACS, and COPS **User authorization protocol:** RADIUS, HWTACACS, and COPS **Policy protocol:** COPS, COA		
IPv4	Supports the static routing protocol and IPv4 dynamic routing protocols such as RIP, OSPF, IS-IS, and BGP-4.		
IPv6	Supports various technologies for transition from IPv4 to IPv6: manual tunnel configurations, automatic tunnel configurations, IPv6-to-IPv4 (6-to-4) tunneling, Generic Routing Encapsulation (GRE) tunneling, and Intra-Site Automatic Tunnel Addressing Protocol (ISATAP) tunneling. Supports IPv4 over IPv6 tunneling and IPv6 Provider Edge Router (6PE). Supports the IPv6 static routing protocol. Supports IPv6 dynamic routing protocols such as RIP Next Generation (RIPng), OSPFv3, IS-ISv6, and BGP4+. Supports IPv6 neighbor discovery and path Maximum Transmission Unit (PMTU) discovery. Supports Transmission Control Protocol Version 6 (TCP6), ping IPv6, traceroute IPv6, socket IPv6, static IPv6 Domain Name System (DNS), specifying the IPv6 DNS server, Trivial File Transfer Protocol (TFTP) IPv6 client, and IPv6 policy-based routing. Supports Internet Control Message Protocol Version 6 (ICMPv6) Management Information Base (MIB), User Datagram Protocol Version 6 (UDP6) MIB, TCP6 MIB, and IPv6 MIB.		

Attribute	ME60-X16	ME60 -X8	ME60 -X3
MPLS	Supports LDP over TE, VPLS, H-VPLS, policy-based routing in VPN. Supports MPLS L2VPNs in either Martini or Kompella mode. Supports VLL/VPLS access L3VPNs. Supports QinQ, MPLS/BGP L3VPN, and inter-AS VPN Option A/B/C. Supports Asynchronous Transfer Mode (ATM) E1, Inverse Multiplexing over ATM (IMA), and Time-Division Multiplexing (TDM) PWE3. Supports MPLS-TP		
Layer 2 feature	**Supports IEEE802.1q, IEEE802.1p, IEEE 802.3ad, and IEEE 802.1ab. Supports the Spanning Tree Protocol (STP), Rapid Spanning Tree Protocol (RSTP), Multiple Spanning Tree Protocol (MSTP), RRPP, DHCP+, VLAN switching, and user binding.**		
Reliability	Supports BGP GR, IS-IS GR, and OSPF GR. Supports LDP GR, Resource-Reservation Protocol (RSVP) GR, and Non-Stop Forwarding (NSF). Supports VLL/VPLS/L3VPN GR/NSF. Supports multicast NSF. Supports BGP/IS-IS/OSPF/LDP/RSVP-TE/PIM/ISSU Non-Stop Routing (NSR). Supports In-Service Software Upgrade (ISSU). Supports fast convergence of Interior Gateway Protocols (IGPs), BGP, and multicast routing Supports IP/LDP/VPN/TE/VLL FRR. Supports IP Auto FRR. Supports BFD for the static routing protocol and protocols such as IS-IS, RSVP, LDP, TE, Label Switched Path (LSP), PW, OSPF, BGP, VRRP, PIM, and RRPP. Supports RRPP. Supports MPLS OAM and Ethernet OAM, Y.1731. Supports backup of service routers, PW redundancy, and PWE3 end-to-end protection. Supports E-Trunk, E-APS, E-STP.		
QoS	Supports Weighted Random Early Detection (WRED), DS-TE capability with a maximum of eight CTs, five-level H-QoS scheduling, VLL/PWE3 QoS, and MPLS H-QoS. Supports the last mile QoS. Supports multicast replication of IPoE access users.		
Multicast	Supports IGMPv1, IGMPv2, IGMPv3, IGMP snooping, multicast VPN, and IPv6 multicast. Supports static multicast routes. Supports multicast routing protocols: PIM-DM, PIM-SM, PIM-SSM, Multicast source Discovery Protocol (MSDP), and Multiprotocol BGP (MBGP). Supports the deployment of both multicast and TE. Supports multicast CAC.		
Security	Supports ACL filtering, URPF, GTSM, DHCP Snooping, Supports anti-ARP attack、anti-DOS attack Supports MAC address limitation, bonding between MAC and IP Supports SSH, SSH v2 Supports NetStream Supports IPSec.		





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Version No.: M3-028710-20120628-C-2.0

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