

Cisco ME 1200 Series Carrier Ethernet Access Devices

Maintaining Quality of Service (QoS) simply and at a lower cost. Those are the exciting benefits provided by the Cisco® ME 1200 Series Carrier Ethernet Access Device. This Gigabit Ethernet demarcation point redefines the demarcation between the customer LAN and a service provider's mobile and cloud applications. It provides standards-based demarcation as defined by the Metro Ethernet Forum (MEF) for services such as Ethernet Point-to-Point Line (ELINE) and Ethernet Multipoint-to-Multipoint (ELAN) services, with advanced clocking and QoS. The Cisco ME 1200 Series is designed to be deployed as a "touchless" Network Interface Device (NID). That means zero-touch provisioning to simplify deployment. To minimize the number of touchpoints in the network, a controller is available on selected Cisco IOS® Software platforms that virtualizes and represents the NID. And the Cisco ME 1200 Series is now fully integrated into the Cisco Evolved Programmable Network infrastructure for service providers. Additionally, the Cisco ME 1200 Series has a small physical and carbon footprint; its energy efficient design allows for less than 10 Watts of power consumption without compromising performance or features. So why spend thousands of dollars on a managed services router or switch for network demarcation when the low-cost, easy-to-operate Cisco ME 1200 Series is available?

Figure 1. The Cisco ME 1200 Series Carrier Ethernet Access Device



Product Overview

The Cisco ME 1200 Series Ethernet Access Device comes in a small form factor (1RU) and is fixed in these configurations:

- Cisco ME 1200-4S-A Ethernet Access Device with an AC power supply, two RJ45 Gigabit Ethernet interfaces, four Fiber Gigabit Ethernet interfaces, and a 12V power input for redundant optional backup power.

Figure 2. Cisco ME 1200-4S-A Ethernet Access Device



- Cisco ME 1200-4S-D Ethernet Access Device with a DC power supply, two RJ45 Gigabit Ethernet interfaces, four Gigabit Ethernet interfaces, and a 12V power input for redundant and optional backup power.

Figure 3. Cisco ME1200-4S-D Ethernet Access Device



Designed for Ethernet demarcation and Carrier Ethernet access, the Cisco ME 1200 Series differentiating features include:

- Line rate performance for all Layer 2 interfaces
- Built on a Carrier Ethernet ASIC with critical functions in hardware
- EVC architecture and QoS model as per MEF standards
- Flexible clocking options: 1588v2 and Synchronous Ethernet (SyncE)
- Extended operating temperatures
- Small form factor: 1 rack unit (RU) with 7.2 in. depth
- Redundant power and passive cooling
- Low power consumption (<10 Watts)

Benefits

Touchless Operation

To simplify the operation of the touchless NID, a controller is available that allows remote operation of the Cisco ME 1200 Series Ethernet Access Device. The controller function is built into Cisco IOS Software and is available initially on Cisco ME 3600X Series Ethernet Access Switches and Cisco ME 3800X Series Carrier Ethernet Switch Routers. The controller offers great benefits with a single point of management and virtualization of the NIDs on the host. The controller comes with a template allowing for the replication of configurations among the many NID devices. This helps you minimize time spent on configurations and thereby reduces operational expenditures (OpEx). Initialization of the Cisco ME 1200 Series can be fully automated with zero-touch provisioning.

Low Footprint and Energy Efficiency

The Cisco ME 1200 Series Ethernet Access Device is designed for energy efficiency and consumes a maximum of 10W while still providing Gigabit line rate performance and low latency as expected of Carrier Ethernet applications. With low power consumption, heat generation is also reduced, allowing the platform to run without fans and eliminating excess noise.

Ethernet Services with Enhanced QoS

The Cisco ME 1200 Series Ethernet Access Device provides all the features required for MEF 2.0 service initiation, including services such as ELINE, ELAN, and EACCESS. To help maintain proper QoS for these services, the Cisco ME 1200 Series offers rich traffic classification and hierarchical QoS for per-port per services. To help ensure that service level agreements (SLAs) are enforced, ingress traffic policing and egress shaping are also supported.

Rich OAM for Service Assurance

Service assurance is provided through a rich feature set of operations, administration, and maintenance (OAM) functionalities. The performance management traffic is time stamped in hardware to help ensure great accuracy. The Cisco ME 1200 Series Ethernet Access Device offers standards-based fault and performance management in adherence with 1731 PM and 802.1ag connectivity fault management (CFM) standards. The Cisco ME 1200 Series comes with service turn-up capabilities (RFC 2544 and Y.1564) that include both generation and reflection of traffic. This feature contributes to significant reduction in OpEx and allows for troubleshooting without expensive truck rolls.

Advanced Timing Services

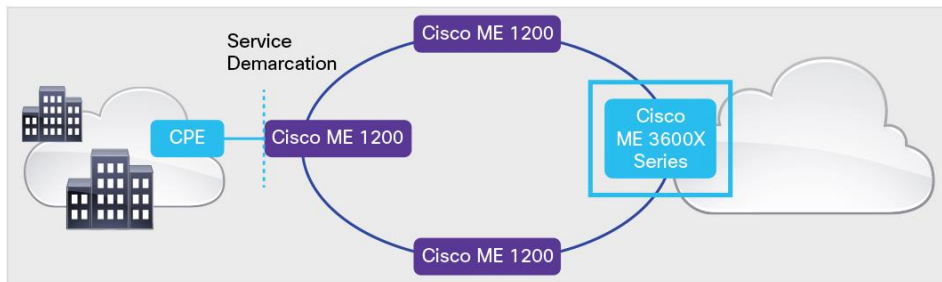
For mobile deployments, the Cisco ME 1200 Series Ethernet Access Device offers Synchronous Ethernet (SyncE) and IEEE 1588v2 with ordinary, transparent, and boundary clock capabilities. To provide the exceptional accuracy, the platform is built with an oven-controlled crystal oscillator (OCXO).

Major Applications

Carrier Ethernet Business Services

Deployed at the demarcation point, the Cisco ME 1200 Series Ethernet Access Device can be directly connected to a Cisco ME 3600X Series switch or a Cisco ME 3800X Series router. Services can be configured on the controller and distributed to the NID. The operator can take advantage of platform and service templates on the controller. To optimize the Fiber utilization, the Cisco ME 1200 Series can be daisy chained or deployed in a ring as shown in Figure 2. The G.8032 protocol runs in the ME ring.

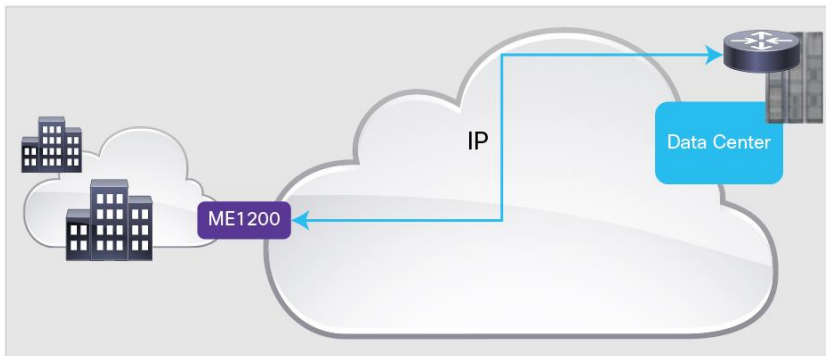
Figure 4. Cisco ME 1200 Series Ethernet Access Device Deployment



Cloud Based Services

As more advanced network services move into the cloud or data center, there is a need for a device with a low port density with carrier grade Ethernet, advanced QoS, and performance measurement capabilities. With low latency and OAM performed in hardware, the Cisco ME 1200 Series Ethernet Access Device resides close to the customer, providing service assurance while network services are remote in the data center.

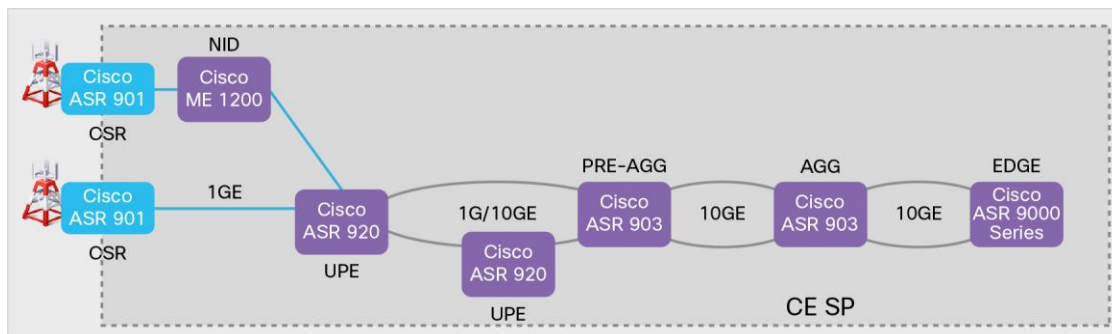
Figure 5. Cloud Based Services Deployment



Mobile Backhaul

The Cisco ME 1200 Series Ethernet Access Device can complement small and macro cell routers to provide service assurance and carrier grade transport required for mobile applications.

Figure 6. Mobile Backhaul Deployment



Components and Options

Hardware

Table 1 provides the hardware parts available with the Cisco ME 1200 Series.

Table 1. Cisco ME 1200 Series Ethernet Access Device Hardware Components

Part Number	Description
ME1200-4S-A	ME1200 Ethernet Access device with AC power
ME1200-4S-D	ME1200 Ethernet Access device with DC power
ME1200-4S-A=	Spare ME1200 Ethernet Access device with AC power
ME1200-4S-D=	Spare ME1200 Ethernet Access device with DC power
PWR-ME1200-A	AC Power Adapter for redundant power option
PWR-ME1200-A=	Spare AC Power Adapter for redundant power option
ME1200-CAB-MNGT	Cable management part
ME1200-CAB-MNGT=	Spare cable management part
RCKMNT-ME12-19IN	Rackmount 19" bracket
RCKMNT-ME12-19IN=	Spare rackmount 19" bracket
RCKMNT-ME12-23IN	Rackmount 23" bracket
RCKMNT-ME12-23IN=	Spare rackmount 23" bracket
RCKMNT-ME12-ETSI	Rackmount ETSI bracket
RCKMNT-ME12-ETSI=	Spare rackmount ETSI bracket
RCKMNT-ME12-WALL	Wall mount bracket
RCKMNT-ME12-WALL=	Spare wall mount bracket
ME1200-ACC-KIT	Access Kit for AC Model
ME1200-ACC-KIT=	Spare Access Kit for AC Model
ME1200-ACC-KIT-D	Access Kit for DC Model
ME1200-ACC-KIT-D=	Spare Access Kit for DC Model

Software

Table 2 provides the software parts available with Cisco ME 1200 Series.

Table 2. Cisco ME 1200 Series Software Components

Part Number	Description
ME1200-OS-1542SN	ME1200 Operating Software Release 15.4.2SN image
ME1200-OS-1543SN	ME1200 Operating Software Release 15.4.3SN image
ME1200-RTU-1588B	Right to Use ME1200 1588 Boundary clock (BC)
ME1200-RTU-1588B=	Spare Right to Use ME1200 1588 Boundary clock (BC)

Major Features

Table 3 lists the features of the Cisco ME 1200 Series Ethernet Access Device.

Table 3. Cisco ME 1200 Series Ethernet Access Device Features

Features
Ethernet Services
• EVCs for: ◦ 802.1q ◦ 802.1ad ◦ Selective QinQ ◦ Inner and outer VLAN classification • IEEE bridging • 802.1s (MSTP), 802.1w (RSTP) • 802.3ad Link Aggregation Bundles • 802.3x Flow Control • Dynamic Host Configuration Protocol (DHCP) Client • Link Layer Discovery Protocol (LLDP) • L2 Protocol Peering, Forwarding, and Tunneling • Jumbo Frames support (10,000Bytes) • Configurable MTU per interface • 802.1ab (LLDP) • Link Layer Discovery protocol-Media (LLDP-MED) • Configurable per vlan MAC learning • SPAN and RSPAN
QoS
• IEEE 802.1p QoS • IP Precedence Type of Service (ToS) • Differentiated Services Code Point (DSCP) • 2 levels ingress hierarchical QoS policing • Priority queuing • 2-rate 3-color (2R3C) color aware policing • Egress shaping per queue • Egress policing • Hierarchical QoS (HQoS scheduling and shaping) with 3 levels • Classification based on class of service (CoS), VLAN ID, DSCP, or IP precedence • QoS ingress and egress statistics • Layer 2 QoS ACL • ACL QoS on IPv4 • IPv6 QoS
OAM
• IEEE 802.1ag Connectivity Fault Management (CFM) • IEEE 802.3ah Link OAM • Y.1731 Fault Management (AIS, RDI, LCK) • Y.1731 Performance Management (LM, DM) • Y.1731 PM with hardware time stamping • Ethernet loopback with MAC swap and QoS • RFC2544 support • Dying Gasp on loss of power • Link State Tracking

Features
Security • Authentication, authorization, and accounting (AAA) with TACACS+ and RADIUS • Layer 2-4 ACLs • Broadcast/unicast/multicast storm control • Control Plane Policing • DHCP option 82 insertion • Static Access port • MAC security on EVC • Dynamic ARP inspection • BPDU Guard, BPDU Filtering, Loopguard • Port Security • Mac address changes notification
Availability • G.8032 • G.8031 • IEEE 802.1s MSTP
Clocking • ITU-T Synchronous Ethernet (SyncE) • SyncE SSM • G.8264 (ESMC) • IEEE 1588-2008 Ordinary Clock, Transparent Clock, Boundary Clock • IEEE 1588-2008 Best Master Clock Selection (BMCA) • PTP over IPv4 • PTP over Ethernet • NTP • G.8273.2 Telecom BC Profile
Manageability • Management Options ◦ Standalone mode with Webgui ◦ Standalone mode with Prime Network, Prime Provisioning, Prime Performance ◦ Controller mode with Controller on ME3600X and ME3800X • Zero Touch provisioning (ZTP) • Syslog • SNMP v1, v2, v3 (crypto, non-crypto) • DHCPv4 client • DHCP server • RMON • SSL • Simple Network Management Protocol (SNMP) • XML over HTTPS • WSDL data model

Product Specifications

Tables 4, 5, and 6 list product, power, and environmental specifications for the Cisco ME 1200 Series Ethernet Access Device. Table 7 provides safety and compliance information.

Table 4. Cisco ME 1200 Series System Specifications

Description	Cisco ME 1200 Series Specification
Dimensions (H x W x D)	10.6"(W) x 1.75"(H) x 7.1"(D) 269mm(W) x 44mm(H) x 180mm(D)
Weight	ME1200-4S-A: 2.84 lb (1.29 Kg) ME1200-4S-D: 3.13 lb (1.42 Kg)
Mean Time Between Failure (MTBF)	572,752 hours
Rack mounts	19" rack mount kit 23" rack mount kit (optional) ETSI rack mount kit (optional) Wall mount (optional)
Connectors and Cabling	10/100/1000 ports 10/100/1000 BASE-TX ports: RJ-45 connectors, 4-pair Category 5 unshielded twisted pair (UTP) cabling SFP ports 10/100/1000BASE-T SFP-based ports: RJ-45 connectors, 4-pair Category 5 UTP cabling 100BASE-FX and -LX: Duplex LC receptacle fiber connectors (multimode and single-mode) 100BASE-BX: Single-fiber LC receptacle connector (single-mode fiber) 100BASE-EX: SFP module for 100 Mb port, 1310 nm wavelength, 40 km over single-mode fiber 100BASE-ZX: SFP module for 100 Mb port, 1550 nm wavelength, 80 km over single-mode fiber 1000BASE-BX: Single-fiber LC receptacle connector (single-mode fiber) 1000BASE-SX, -LX/LH, and -ZX and CWDM and DWDM: Duplex LC receptacle fiber connectors (multimode and single-mode fiber) - Management console port: RJ-45-to-DB9 cable for PC connections
SFP	Part Numbers: GLC-FE-100FX, GLC-FE-100FX-RGD, GLC-FE-100EX, GLC-FE-100ZX, GLC-FE-100LX, GLC-FE-100LX-RGD, GLC-FE-100BX-U, GLC-FE-100BX-D, GLC-LH-SM, GLC-LH-SMD, GLC-LH-SM-RGD, GLC-SX-MM, GLC-SX-MMD, GLC-SX-MM-RGD, GLC-EX-SM, GLC-EX-SMD, GLC-EX-SM-RGD, GLC-ZX-SM, GLC-ZX-SMD, GLC-ZX-SM-RGD, GLC-T, GLC-BX-U, GLC-BX-D, SFP-GE-L, SFP-GE-S, SFP-GE-Z, SFP-GE-T, GLC-TE, CWDM-SFP-xxxx (8 colors), DWDM-SFP-xxxx (40 wavelengths), GLC-BX40-D-I, GLC-BX40-DA-I, GLC-BX40-U-I, GLC-BX80-D-I, GLC-BX80-U-I
Indicators	Per-port status LEDs: Link integrity, port disabled, and activity indications Zero Touch Provisioning (ZTP) status LED
Performance	Forwarding bandwidth full duplex: Cisco ME1200 AC or DC: 6 Gbps
Memory	DRAM: 1GB Flash: 64MB Packet Buffer: 1MB

Table 5. Power Specifications

Description	Cisco ME 1200 Series Specifications
Power consumption	ME1200-4S-A: Typical @ 110V: 8.25W Typical @ 220V: 8.8W ME1200-4S-D: Typical @ 24V: 8.64W Typical @ 48V: 8.16W
AC input voltage and frequency	100-240VAC, 50-60Hz
DC input voltage	20.5V to 72VDC

Table 6. Environmental Specifications

Description	Cisco ME 1200 Series
Operating temperature ¹	-40°C to +65°C
Storage environment	-40° to 75°C
Relative humidity	5% to 90%

Table 7. Safety and Compliance

Type	Standards
Safety	• UL/CSA 60950-1 • IEC/EN 60950-1 • AS/NZS 609501
Emissions compliance	• FCC 47CFR15, Class A • EN55022, Class A • CISPR 22, Class A • AS/NZS CISPR 22, Class A • ICES 003, Class A • VCCI, Class A • CNS-13438 Class A
Metro Ethernet Forum (MEF)	• MEF CE 2.0 for ELINE and EACCESS
NEBS	• GR-1089-CORE, NEBS EMC and Safety • GR-63-CORE, NEBS Physical Protection

Warranty Information

Warranty information is available on Cisco.com at the [Product Warranties](#) page.

Service and Support

Cisco offers a wide range of services programs to accelerate customer success. These innovative programs are delivered through a unique combination of people, processes, tools, and partners, promoting high levels of customer satisfaction. Cisco Services help you protect your network investment, optimize network operations, and prepare your network for new applications to extend network intelligence and the power of your business. For more information about Cisco Services, refer to Cisco Technical Support Services or Cisco Advanced Services.

Cisco is committed to reducing your total cost of ownership. We offer a portfolio of technical support services to help ensure that Cisco products operate efficiently, remain highly available, and benefit from the most up-to-date system software. The services and support programs described in Table 8 are available as part of the Cisco Carrier Ethernet Switching Service and Support Solution and are available directly from Cisco and through resellers.

Table 8. Service and Support

Advanced Services	Features	Benefits
Cisco Total Implementation Solutions (TIS), available directly from Cisco Cisco Packaged TIS, available through resellers	• Project management • Site survey, configuration, and deployment • Installation, test, and cutover • Training • Major moves, adds, and changes • Design review and product staging	• Supplement existing staff • Help ensure functions meet needs • Mitigate risk
Cisco SP Base Support and Service-Provider-Based Onsite Support, available directly from Cisco Cisco Packaged Service-Provider-Based Support, available through resellers	• 24-hour access to software updates • Web access to technical repositories • Telephone support through the Cisco Technical Assistance Center (TAC) • Advance replacement of hardware parts	• Facilitate proactive or expedited problem resolution • Lower total cost of ownership by taking advantage of Cisco expertise and knowledge • Reduce network downtime

For More Information

<http://www.cisco.com/c/en/us/support/switches/me-1200-series-carrier-ethernet-access-devices/tsd-products-support-series-home.html>



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