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# Refurbished CISCO ME-3400EG-12CS-M Datasheet

CISCO > SWITCHES

## Cisco ME 3400E Series Ethernet Access Switches

### UNI/ENI/NNI Default Behaviors

| Default Behaviors | Benefits |
|---|---|
| **UNI/ENI default: Down** | Ports must be activated by the service provider before customers can receive service. |
| **UNI/ENI default: No local switching** | Circuit-like behavior protects customers from each other. |
| **UNI/ENI default: Configurable control plane security enabled** | Control-plane packets ingressing from the UNI/ENI are dropped in hardware to protect against denial-of-service (DoS) attacks by default. Unlike UNI ports, ENI ports give service providers the flexibility to selectively discard or peer with customer's control plane traffic on a per-port, per-protocol basis for the following Layer 2 protocols: Cisco Discovery Protocol, Link Layer Discovery Protocol (LLDP), Link Aggregation Control Protocol (LACP), Port Aggregation Protocol (PAgP), and Spanning Tree Protocol. |
| **NNI default: Up** | Enables automated configuration of the switch through a Dynamic Host Configuration Protocol (DHCP) or BOOTP server. |

### Features and Benefits

#### Service Breadth

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| **Intelligent Ethernet demarcation** | Industry-standard OAM&P 802.1ag (CFM) feature supports end-to-end network monitoring and troubleshooting. This reduces operating expense by reducing the site visits needed to troubleshoot network problems.<br>E-LMI enables service providers to communicate service configuration and status information to the customer-edge device. Ethernet in the First Mile OAM&P (802.3ah) provides support for monitoring, remote failure indication, loopback, and OAM discovery on the link between the customer equipment and service provider network.<br>Traffic loopback allows quick service activation and verification.<br>Carrier-class redundancy features (Flexlink, RSTP, REP) support both hub-and-spoke and ring networks. |
| **Layer 2 VPN service** | Standard 802.1Q Tunneling creates a hierarchy of 802.1Q tags, helping service providers use a single VLAN to support customers who have multiple VLANs while preserving customer VLAN IDs and segregating traffic from different customers within the service provider infrastructure.<br>2-rate 3-color policer allows service providers to provide more flexible control on incoming traffic rate.<br>1:1 VLAN mapping gives service providers the flexibility to translate customer VLAN ID into a service provider VLAN ID to support overlapping customer VLAN IDs.<br>Selective QinQ (1:2 VLAN mapping) enables service providers to multiplex multiple services on a single UNI (MEF EVPL for example).<br>Inner-to-outer CoS value propagation for QinQ helps ensure that customer QoS setting is honored in the service provider network.<br>L2PT allows for transport of the customer's control protocols, thereby allowing for transparency across the service provider's shared infrastructure. |

#### Availability and Scalability

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| **Superior redundancy for fault backup** | Field-replaceable integrated power supply and fan module increases network uptime.<br>IEEE 802.1w Rapid Spanning Tree Protocol (RSTP) provides rapid spanning-tree convergence independent of spanning-tree timers and offers the benefit of distributed processing.<br>Per-VLAN Rapid Spanning Tree (PVRST+) allows rapid spanning-tree reconvergence on a per-VLAN spanning-tree basis, without requiring the implementation of spanning-tree instances.<br>Cisco Hot Standby Router Protocol (HSRP) is supported to create redundant, fail-safe routing topologies.<br>Unidirectional Link Detection Protocol (UDLD) and Aggressive UDLD allow unidirectional links caused by incorrect fiber-optic connections or port faults to be detected and disabled on fiber-optic interfaces.<br>Flexlink provides fast failover of ports without overhead of control protocols such as the Spanning Tree Protocol.<br>Switch-port autorecovery (errdisable) automatically attempts to reactivate a link that is disabled because of a network error.<br>Equal-cost routing provides for load balancing and redundancy.<br>Bandwidth aggregation up to 8 Gbps through Cisco EtherChannel technology enhances fault tolerance and offers greater aggregated bandwidth between switches and to routers and individual |

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| | servers.<br>Link-State Tracking helps accelerate Layer 3 reconvergence by taking UNI down when the associated NNI is down.<br>Resilient Ethernet Protocol (REP) provides fast Layer 2 reconvergence in a ring network and offers an alternative to Spanning Tree Protocol. |
| **Multicast** | |
| **Efficient multicast distribution** | Multicast VLAN Registration provides efficient multicast distribution in ring networks by dedicating a single VLAN for multicast traffic, thereby removing duplicate multicast traffic in other VLANs.<br>PIM-SM provides efficient routing of multicast traffic by establishing distribution trees across WANs.<br>Source Specific Multicast (SSM) reduces the need for IP Multicast address management and prevents DoS attacks against receivers.<br>SSM mapping provides a mapping of source to group, which allows listeners to find/connect to multicast sources dynamically, reducing dependencies on the application. |
| **QoS and Control** | |
| **Advanced QoS** | The Cisco Modular QoS CLI provides a modular and highly extensible framework for deploying QoS, by standardizing the CLI and semantics for QoS features across all platforms that are supported by Cisco IOS Software.<br>2-rate 3-color policer enables service provider to provide more flexible QoS offerings.<br>Standard 802.1p class of service (CoS) and differentiated services code point (DSCP) field classification are provided, using marking and reclassification on a per-packet basis by source and destination IP address, source and destination MAC address, VLAN ID, or Layer 4 TCP/UDP port number.<br>Cisco control-plane and data-plane QoS ACLs on all ports help ensure proper marking on a per-packet basis.<br>Shaped Round Robin (SRR) scheduling helps ensure differential prioritization of packet flows by intelligently servicing the queues.<br>Weighted Tail Drop (WTD) provides per QoS class congestion avoidance at the queues before a disruption occurs.<br>Strict priority queuing helps ensure that the highest-priority packets are serviced ahead of all other traffic.<br>Priority queue rate limiting provides optional protection against lower-priority queue starvation.<br>Configurable control plane queue assignment allows service providers to assign control plane traffic to specific egress queue.<br>Prioritization of control plane traffic enables service providers to set QoS markings globally for CPU-generated traffic so these protocol packets will receive priority in the network.<br>There is no performance penalty for advanced QoS functions. |
| **Manageability** | |
| **Superior manageability** | The Cisco IOS CLI provides a common user interface and command set with all Cisco routers and Cisco Catalyst desktop switches.<br>Cisco Service Assurance Agent (SAA) provides service-level management throughout the network.<br>IEEE 802.1ag Connectivity Fault Management provides standard support for transport fault management. It allows for discovery and verification of path for Layer 2 services.<br>Ethernet Local Management Interface enables service providers to communicate service configuration and status information to the customer-edge device IEEE 802.3ah Ethernet in the First Mile provides standard support for monitoring, remote failure indication, loopback, and OAM discovery on the link between the customer equipment and service provider network.<br>ITU-T Y.1731 introduces the support for fault management functions, including alarm indication signal (AIS), remote defect indication (RDI) and locked signal (LCK) to detect and signal a failure in the service path.<br>The Cisco ME 3400E Series supports ITU-T Y.1731 Performance Monitoring function to measure frame delays in the network.<br>Switching Database Manager templates for Layer 2 and Layer 3 deployment allow administrators to easily optimize memory allocation to the desired features based on deployment-specific requirements.<br>VLAN trunks can be created from any port, using standards-based 802.1Q tagging. Up to 1005 VLANs per switch and up to 128 spanning-tree instances per switch are supported.<br>4096 VLAN IDs are supported.<br>RSPAN allows administrators to remotely monitor ports in a Layer 2 switch network from any other switch in the same network.<br>For enhanced traffic management, monitoring, and analysis, the embedded Remote Monitoring (RMON) software agent supports four RMON groups (history, statistics, alarms, and events).<br>Layer 2 traceroute eases troubleshooting by identifying the physical path that a packet takes from source to destination.<br>All nine RMON groups are supported through a SPAN port, permitting traffic monitoring of a single port, a group of ports, or the entire stack from a single network analyzer or RMON probe.<br>Domain Name System (DNS) provides IP address resolution with user-defined device names.<br>Trivial File Transfer Protocol (TFTP) reduces the cost of administering software upgrades by downloading from a centralized location.<br>Network Timing Protocol (NTP) provides an accurate and consistent time stamp to all intranet switches.<br>The Cisco ME 3400 Series supports the Cisco CNS 2100 Series Intelligence Engine and SNMP for networkwide management.<br>Cisco ISC applications help reduce administration and management costs by providing automated resource management and rapid profile-based provisioning capabilities.<br>Configuration Rollback helps in error recovery by providing the capability to replace the current running configuration with any saved Cisco IOS configuration file.<br>Embedded Events Manager (EEM) offers the ability to monitor events and take user-defined action when the monitored events occur or a threshold is reached. |

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| | Dynamic Host Configuration Protocol (DHCP)-based auto configuration and image update simplifies management of large number of switches by automatically downloading specified configuration and image.<br>Service Diagnostics automates a set of network diagnostic procedures derived from the vast troubleshooting experiences of Cisco network experts. These diagnostic tools help customers increase network uptime, reduce time to repair and improve service levels.<br>Digital optical monitoring (DOM) support enable service providers to perform in-service transceiver monitoring and troubleshooting operations. DOM threshold functions allow the monitoring of real time optical parameters on DOM SFPs and the comparison against factory-reset values, generating alarm and warning thresholds. |
| **CiscoWorks support** | CiscoWorks network management software provides management capabilities on a per-port and per-switch basis, providing a common management interface for Cisco routers, switches, and hubs.<br>SNMP Versions 1, 2c, and 3 and Telnet provide comprehensive in-band management, and a CLI-based management console provides detailed out-of-band management.<br>Cisco Discovery Protocol Versions 1 and 2 help enable automatic switch discovery for a CiscoWorks network management station.<br>CiscoWorks 2000 LAN Management Solution is supported. |

## Product Specifications

### Description

| Description | Specification |
|---|---|
| **Performance** | Forwarding bandwidth:<br>Cisco ME 3400EG-12CS AC or DC: 32 Gbps<br>Cisco ME 3400EG-2CS AC: 8 Gbps<br>Cisco ME 3400E-24TS, AC or DC: 8 Gbps<br>Forwarding rate:<br>Cisco ME 3400EG-12CS, AC or DC: 26 mpps<br>Cisco ME 3400EG-2CS AC: 6.5 mpps<br>Cisco ME 3400E-24TS, AC or DC: 6.5 mpps<br>128 -MB DRAM and 32 MB flash memory<br>Configurable up to 8000 MAC addresses<br>Configurable up to 5000 unicast routes<br>Configurable up to 1000 IGMP groups and multicast routes<br>Configurable maximum transmission unit (MTU) of up to 9000 bytes, for bridging on Gigabit Ethernet ports, and up to 1998 bytes for bridging and routing on Fast Ethernet ports |
| **Connectors and cabling** | 10/100 Ports:<br>10/100BASE-TX ports: RJ-45 connectors, 2-pair Category 5 unshielded twisted pair (UTP) cabling<br>SFP Ports:<br>1000BASE-T SFP-based ports: RJ-45 connectors, 4-pair Category 5 UTP cabling, 10/100/1000BASE-T operation in host systems with SGMII interface<br>100BASE-FX and -LX: Duplex LC receptacle fiber connectors (multimode and single-mode)<br>100BASE-BX: Single-fiber LC receptacle connector (single-mode fiber)<br>1000BASE-EX: Single Mode Fiber with DOM support<br>100BASE-EX: SFP module for 100 Mb port, 1310 nm wavelength, 40 km over single-mode fiber<br>100BASE-ZX: SFP module for 100 Mb port, 1550 nm wavelength, 80 km over single-mode fiber<br>1000BASE-BX: Single-fiber LC receptacle connector (single-mode fiber)<br>1000BASE-SX, -LX/LH, and -ZX and CWDM and DWDM: Duplex LC receptacle fiber connectors (multimode and single-mode fiber)<br>Cisco Catalyst 3560 SFP Interconnect Cable<br>Management console port: RJ45-to-DB9 cable for PC connections |
| **Indicators** | Per-port status LEDs: Link integrity, port disabled, and activity indications<br>System-status LED |
| **Dimensions (H x W x D)** | Cisco ME 3400EG-12CS-M,: 1.75 x 17.5 x 12.0 in. (4.45 x 44.5 x 30.5 cm)<br>Cisco ME 3400EG-12CS-M with AC or DC: 1.75 x 17.5 x 12.5 in. (4.45 x 44.5 x 31.8 cm)<br>Cisco ME 3400EG-2CS AC: 1.73 x 10.6 x 7.2 in. (4.4 x 26.9 x 18.3 cm)<br>Cisco ME 3400E-24TS-M: 1.75 x 17.5 x 9.3 in. (4.45 x 44.5 x 23.6 cm)<br>Cisco ME 3400E-24TS-M with AC or DC: 1.75 x 17.5 x 9.8 in. (4.45 x 44.5 x 24.9 cm) |
| **Weight** | Cisco ME 3400EG-12CS-M: 8.5 lb (3.9 kg)<br>Cisco ME 3400EG-2CS AC: 3.4 lb (1.5 kg)<br>Cisco ME 3400E-24TS-M: 6.4 lb (2.9 kg)<br>Cisco ME 3400E AC field-replaceable unit with two integrated fans: 1.7 lb (0.77 kg)<br>Cisco ME 3400E DC field-replaceable unit with two integrated fans: 1.8 lb (0.82 kg)<br>Cisco ME 3400E field-replaceable unit slot cover: 0.3 lb (0.14 kg) |
| **Mean time between failure (MTBF)** | Cisco ME 3400EG-12CS with one AC or one DC: 196,391 hours<br>Cisco ME 3400EG-2CS AC: 526,490 hours<br>Cisco ME 3400E-24TS with one AC or one DC: 245,917 hours<br>Cisco ME 3400E-24TS with two AC or two DC: 462,163 hours |

## Power Specifications

| Description | Specification |
|---|---|
| **Power consumption** | Cisco ME 3400EG-12CS-M, one AC: 50W (typical), 80W (maximum), 171 Btus per hour (typical)<br>Cisco ME 3400EG-12CS-M, two AC: 60W (typical), 95W (maximum), 205 Btus per hour (typical)<br>Cisco ME 3400EG-12CS-M, one DC: 60W (typical), 99W (maximum), 205 Btus per hour (typical)<br>Cisco ME 3400EG-12CS-M, two DC: 70W (typical), 115W (maximum), 239 Btus per hour (typical)<br>Cisco ME 3400EG-2CS AC: 22W (typical), 30W (maximum), 75 Btus per hour (typical)<br>Cisco ME 3400E-24TS-M, one AC: 36W (typical), 40W (maximum), 123 Btus per hour (typical)<br>Cisco ME 3400E-24TS-M, two AC: 38W (typical), 54W (maximum), 130 Btus per hour (typical)<br>Cisco ME 3400E-24TS-M, one DC: 38W (typical), 48W (maximum), 130 Btus per hour (typical)<br>Cisco ME 3400E-24TS-M, two DC: 48W (typical), 72W (maximum), 164 Btus per hour (typical) |
| **AC input voltage and frequency** | Cisco ME340X-PWR- AC: 100 to 240 VAC (+/- 10% autoranging), 1.5 to 0.7A, 50 to 60 Hz |
| **DC input voltages** | Cisco ME340X-PWR- DC: 18 to 72 VDC, 8 to 4A (18 to 36V), 4 to 2A (36 to 72V) |

## Safety and Compliance

| Type | Standards |
|---|---|
| **Electromagnetic emissions compliance** | FCC Part 15 Class A<br>EN 55022 Class A (CISPR22 Class A)<br>EN 55024<br>EN 300 386<br>GR-1089 CORE Issue 4<br>GR-63 CORE Issue 3<br>VCCI Class A<br>AS/NZS 3548 Class A or AS/NZS CISPR22 Class A<br>KCC<br>CE Marking |
| **Safety** | UL 60950-1, First Edition<br>CUL to CAN/CSA 22.2 No.60950-1, First Edition<br>TUV/GS to EN 60950-1<br>CB report/certificate to IEC 60950 with all country deviations<br>NOM to NOM-019-SCFI (through distributors)<br>CE Marking |
| **NEBS** | GR-63-CORE and GR-1089-CORE: Level 3, Type 2<br>CLEI Coding |
| **ETSI** | EN 300 019: Storage Class 1.2, Transportation Class 2.3, In-Use Class 3.2 |
| **Noise specifications** | Cisco Office Product Specification:<br>48 dBA (sound pressure)<br>4.8 bels (sound power)<br>EN 300 753 |
| **Operating environment** | Temperature: 0 to 65ºC (See table 9 for more details on model and configuration requirements. Temperature versus altitude curve follows NEBS specifications)<br>Altitude: Up to 13,000 ft (4000m)<br>Relative humidity: 10 to 95% noncondensing |
| **Storage environment** | Temperature: -40 to 70ºC<br>Altitude: 15,000 ft (4570 m) |

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