

# Cisco ME 3400E Series Ethernet Access Switches

## Product Overview








- Q.** What are the Cisco® ME 3400E Series Ethernet Access Switches?
- A.** The Cisco ME 3400E Series is an exciting addition to the Cisco ME 3400 Series, one of the most successful Carrier Ethernet access switches in the world giving service providers greater availability, flexibility, manageability, and security.
- Q.** How does the market positioning of the Cisco ME 3400E Series differ from that of the Cisco ME 3400 Series?
- A.** The Cisco ME 3400 Series will continue to be the standard access product for business and residential services. The Cisco ME 3400E Series is targeted for business customers that demand more carrier-grade features and differentiated services.
- Q.** What are the benefits of the high-availability features in the Cisco ME 3400E Series?
- A.** The Cisco ME 3400E Series provides carrier-grade features such as redundant, integrated, field-replaceable power and fan modules that increase the uptime of business-critical services. In addition, the Cisco ME 3400E Series provides alarm contacts to detect changes in environmental conditions, dying gasp notifications when there is a loss of power, and loopback capabilities to quickly troubleshoot issues in the network.
- Q.** What other high-availability features does the Cisco ME 3400E Series offer?
- A.** In addition to the high-availability features mentioned previously, the Cisco ME 3400E Series also offers Resilient Ethernet Protocol (REP), Flexlink, Link-State Tracking, and EtherChannel to increase the overall uptime of the network. By delivering all these solutions in a single platform, the Cisco ME 3400E Series helps your service provider organization to offer differentiated services with high profit margins.
- Q.** What other management and diagnostic tools are available on the Cisco ME 3400E Series to increase service availability?
- A.** The Cisco ME 3400E Series provides an Ethernet management console for out-of-band provisioning and monitoring capabilities. To help you take proactive actions before service-impacting events occur, the Cisco ME 3400E Series also includes Generic On-Line Diagnostics (GOLD) and Onboard Failure Logging (OBFL) to help you to troubleshoot and diagnose potential issues.
- Q.** How can I benefit from the service flexibility features in the Cisco ME 3400E Series?
- A.** The Cisco ME 3400E Series provides 1:1 VLAN Translation, which enables you to accept any customer VLAN ID without worrying about VLAN ID overlap. To increase VLAN manageability and scalability, Cisco ME 3400E Series offers Selective QinQ to help you to offer more service.
- Q.** What quality-of-service (QoS) features does the Cisco ME 3400E Series provide to enhance service flexibility?
- A.** The Cisco ME 3400E Series provides two-rate three-color (2R3C) policer with byte-level statistics and inner-to-outer class of service (CoS) propagation to enable you to offer differentiated services and generate more revenue. In addition, the Cisco ME 3400E Series also offers granular egress shaper range to help you offer your customers stringent service-level agreements (SLAs) with high profit margins and to use the network bandwidth more efficiently.

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- Q.** Is the Cisco ME 3400E Series certified to support industry-standard services?
- A.** The Cisco ME 3400E Series will attain Metro Ethernet Forum (MEF) 9 and 14 certification to support standard Layer 2 services and QoS.
- Q.** How is the Cisco ME 3400EG-2CS Switch, as an intelligent Ethernet demarcation device, different from a network interface device (NID)?
- A.** An NID is a simple device designed to provide media conversation or distance extension function. However, as a carrier-grade Ethernet demarcation device, it lacks many essential functions.
- The Cisco ME 3400EG-2CS Switch supports industry-standard operations, administration, maintenance, and provisioning (OAM&P) functions for end-to-end network monitoring and troubleshooting. In addition, it offers advanced functions such as Flexlink for link redundancy, QoS for differentiated services, traffic loopback for ease of service deployment and verification, dry input alarm contacts to detect changes in environmental conditions, and Layer 3 routing for advanced IP services.
- Q.** What benefits do the traffic loopback features on the Cisco ME 3400E Series provide?
- A.** The Cisco ME 3400E Series provides two types of loopbacks: port loopback and VLAN loopback. Port loopback returns all traffic on a given port back to the source. VLAN loopback allows service providers to select particular VLAN traffic to be examined without service interruption on other VLANs. Both types of loopbacks help service providers to verify new services and troubleshoot existing connections remotely without expensive truck rolls. The Cisco ME 3400E Series currently supports port loopback only but will support VLAN loopback in near future.
- Q.** Why does the Cisco ME 3400E Series provide the option to use either +24 VDC or –48 VDC?
- A.** Many service providers wish to use the Cisco ME 3400E Series switches for cell backhaul applications. In this deployment scenario, +24V DC is the preferred voltage used at cell tower sites.
- Q.** How is the Cisco ME 3400EG-12CS Switch positioned?
- A.** The primary positioning of the Cisco ME 3400EG-12CS Switch is for Gigabit Ethernet access. With enterprise applications demanding higher bandwidth, service providers are planning services above 100 Mbps. With advanced QoS functionalities, the Cisco ME 3400EG-12CS allows service providers to offer bandwidth from 1 to 1000 Mbps on a single platform. With carrier-grade features such as modular field-replaceable units (FRUs), dying gasp for loss of power, and alarm contacts to detect changes in environmental conditions, the Cisco ME 3400EG-12CS is ideally positioned as an in-building aggregator for high-density buildings where multiple access devices are needed.
- Q.** Is there any plan to discontinue the Cisco ME 3400 Series?
- A.** No, there is no plan to end the sale of the Cisco ME 3400 Series. The Cisco ME 3400 Series is targeted for standard business access and residential triple-play services. New Metro Ethernet features are planned and under development for the Cisco ME 3400 Series.

**Q.** What configuration options are available for the Cisco ME 3400E Series?

**A.** Table 1 shows the complete list of Cisco ME 3400 Series Ethernet Access Switches and options.

**Table 1.** Cisco ME 3400E Series Ethernet Access Switches

Product Name (Part Number)	Description
<b>Cisco ME 3400E-24TS Ethernet Access Switch chassis</b> <b>(ME-3400E-24-TS-M)</b> 	<ul style="list-style-type: none"> <li>• 24 Ethernet 10/100</li> <li>• 2 Small Form-Factor Pluggable (SFP)-based Gigabit Ethernet and 10/100/1000 dual-purpose ports</li> <li>• 2 slots for field-replaceable power supplies and fan modules</li> <li>• Ethernet/serial management console</li> <li>• 4 external alarm inputs</li> <li>• 8.5-mpps forwarding rate</li> <li>• 1-rack unit (RU) multilayer switch</li> <li>• Ethernet access switch for Metro Ethernet market</li> <li>• 2 Cisco IOS® Software feature image options (METROACCESS and METROIPACCESS)</li> </ul>
<b>Cisco ME 3400EG-12CS Ethernet Access Switch chassis</b> <b>(ME-3400EG-12CS-M)</b> 	<ul style="list-style-type: none"> <li>• 12 dual-purpose (10/100/1000 and SFP) ports</li> <li>• 4 SFP-based Gigabit Ethernet and 100BASE-X ports</li> <li>• 2 slots for field-replaceable power supplies and fan modules</li> <li>• Ethernet/serial management console</li> <li>• 4 external alarm inputs</li> <li>• 31.2-mpps forwarding rate</li> <li>• 1-RU multilayer switch</li> <li>• Gigabit Ethernet access switch for the Metro Ethernet market</li> <li>• 2 Cisco IOS Software feature image options (METROACCESS and METROIPACCESS)</li> </ul>
<b>Cisco ME 3400EG-2CS-A AC Ethernet Access Switch</b> <b>(ME-3400EG-2CS-A)</b> 	<ul style="list-style-type: none"> <li>• 2 dual-purpose (10/100/1000 and SFP) ports</li> <li>• 2 SFP-based Gigabit Ethernet and 100BASE-X ports</li> <li>• AC power supplies</li> <li>• Ethernet/serial management console</li> <li>• 4 external alarm inputs</li> <li>• 7.8-mpps forwarding rate</li> <li>• 1-RU small-form factor multilayer switch</li> <li>• Intelligent Ethernet demarcation switch</li> <li>• 2 Cisco IOS Software feature image options (METROACCESS and METROIPACCESS)</li> </ul>
<b>Cisco ME 3400E Series field-replaceable AC power supply and fan module</b> <b>(ME34X-PWR-AC)</b> 	<ul style="list-style-type: none"> <li>• AC power supply and fan module for ME-3400E-24TS-M and ME-3400EG-12CS-M</li> </ul>
<b>Cisco ME 3400E Series field-replaceable DC power supply and fan module</b> <b>(ME34X-PWR-DC)</b> 	<ul style="list-style-type: none"> <li>• DC power supply and fan module for ME-3400E-24TS-M and ME-3400EG-12CS-M</li> </ul>
<b>Cisco ME 3400E Series Metro Access Software feature image</b> <b>(S340XA-12244EY)</b> 	<ul style="list-style-type: none"> <li>• Enhanced Layer 2 feature image targeted for Layer 2 VPN services</li> <li>• Advanced Layer 2 Tunneling: 802.1q tunneling and Layer 2 Protocol Tunneling (L2PT)</li> <li>• Industry-standard Layer 2 management: 802.1ag (CFM) and E-LMI</li> <li>• Fast convergence: Flexlink, Link-State Tracking, Resilient Ethernet Protocol (REP)</li> </ul>
<b>Cisco ME 3400E Series METROIPACCESS Software feature image</b> <b>(S340XI-12244EY)</b> 	<ul style="list-style-type: none"> <li>• Layer 3 feature images targeted for Layer 3 VPN services</li> <li>• IP routing (RIP versions 1 and 2, EIGRP, OSPF, IS-IS, and BGPv4)</li> <li>• Secured Layer 3: Multi-VRF CE</li> <li>• Enhanced routing: Policy Based Routing</li> </ul>
<b>Upgrade Kit for METROIPACCESS from METROACCESS</b> <b>(CD-ME3400-A2I=)</b>	METROIPACCESS image upgrade kit from METROACCESS image

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- Q.** What Cisco IOS Software feature images does the Cisco ME 3400E Series support?
- A.** The Cisco ME 3400E Series supports two different Cisco IOS Software feature images: METROACCESS and METROIPACCESS. The METROACCESS includes features for advanced Layer 2 VPN services. The METROIPACCESS image contains all the features in METROACCESS plus features for Layer 3 VPN services. Upgrade options are also available for future service requirements.
- Q.** Do the Cisco ME 3400E and ME 3400 Series run the same software image?
- A.** The Cisco ME 3400E Series and the Cisco ME 3400 Series will have the identical METROACCESS and METROIPACCESS images. During the first few months after its initial release, the Cisco ME 3400E Series will run on special versions of METROACCESS and METROIPACCESS specifically for the new switches. Afterward, both series will share the same images.
- Q.** Do I have options to select the software version?
- A.** The Cisco ME 3400E Series supports the Assemble To Order (ATO) fulfillment process. This enables you to select the version of software you want to be loaded on the switch. In addition, you can select the type of accessories that come with the switch.

## Technology Overview

- Q.** What hardware features are available on the Cisco ME 3400E Series?
- A.** Cisco ME 3400E Series hardware is designed to simplify deployment and troubleshooting in the field. It features a compact design and flexible mounting options for deployment where space is limited. The Cisco ME 3400E Series also has all connectors in the front of the chassis for easier cable access. The Cisco ME 3400E-24TS-M and Cisco ME 3400EG-12CS-M give you the option to configure dual power supplies and fans to offer high-availability service to your customers.
- Q.** What is the operating temperature range for the Cisco ME 3400E Series?
- A.** Cisco ME 3400E Series can operate reliably at temperature up to 65°C depending on the specific switch model and the SFPs used. Please refer to the ME 3400E Series datasheet for complete details.
- Q.** What telco certifications has the Cisco ME 3400E Series obtained?
- A.** The Cisco ME 3400E Series is currently being certified for both the Network Equipment Building Systems Level 3 (NEBS3) certification and European Telecommunications Standards Institute (ETSI) certifications.

**Q.** What are the key features in each software feature image?

**A.** The key features in each software feature image are listed in Table 2.

**Table 2.** Key Features for Each Software Feature Image

METROACCESS		METROIPACCESS
UNI/ENI/NNI	802.1Q Tunneling, L2PT	All METROACCESS features
Internet Group Management Protocol (IGMP) Filtering and Throttling	Ethernet OAM (802.1ag, 802.3ah, E-LMI)	Static routing
Multicast VLAN Registration (MVR)	Configurable per-VLAN MAC Learning	Multi-VRF CE (VRF-lite)
Advanced QoS	Flexlink	PBR
Configurable Control Plane Security	Dynamic ARP Inspection, IP Source Guard	RIP versions 1 and 2
Configuration File Security	Per Port Per VLAN Ingress Policing	EIGRP, OSPF, and IS-IS
DHCP Snooping	Link-State Tracking	BGPv4
Private VLAN	Resilient Ethernet Protocol (REP)	NNI configurable on all ports
Configuration Rollback	Ethernet IP SLA	Source Specific Multicast (SSM)
DHCP-based auto configuration and image update	Embedded Event Manager	Source Specific Multicast Mapping
Configurable Control Plane Queue Assignent		Multicast support for VRF (mVRF-Lite)
MAC address learning and aging notifications		VRF-aware services (ARP, Ping, SNMP, HSRP, uRPF Syslog, Traceroute, FTP, and TFTP)

**Q.** What is UNI/ENI/NNI?

**A.** UNI/NNI is the classification of port types designed for the Metro Ethernet market to simplify deployment, management, and troubleshooting. UNI, User Network Interface, is the interface that faces the subscriber, and ENI, Enhanced Network Interface, is similar to UNI and is subscriber-facing but with added flexibility to selectively discard or peer with a customer's control plane traffic on a per-port, per-protocol basis. NNI, Network Node Interface, is the interface that faces the service provider network. By labeling each port as UNI, ENI, or NNI, the software can optimize each port for the role. Table 3 lists some default behaviors for each port type and the benefits.

**Table 3.** UNI/ENI/NNI Default Behaviors and Benefits

Default Behaviors	Benefits
<b>UNI/ENI Default: Down</b>	Ports are activated only when the service provider configures all the parameters and turns on the port, helping prevent unauthorized access to services.
<b>UNI/ENI Default: No Local Switching</b>	Creates circuit-like behavior to separate customers' traffic from each other.
<b>UNI/ENI Default: Control Plane Security Enabled</b>	Control plane packet ingresses from UNI are dropped in hardware to protect against denial-of-service (DoS) attacks.
<b>NNI Default: Up</b>	Helps enable automated configuration of the switch through the Dynamic Host Configuration Protocol (DHCP)/BOOTP server.

**Q.** What is the Control Plane Security feature?

**A.** This feature protects the switch CPU by dropping control protocols on UNIs. It is enabled on the UNI by default. Some of the control protocols dropped are bridge protocol data unit (BPDU), Cisco Discovery Protocol, VLAN Trunking Protocol (VTP), Unidirectional Link Detection Protocol (UDLD), and Link Aggregation Protocol (LACP). Users can turn on L2PT for those features on a per-port basis. Users can also rate-limit ingress on the UNI for some of the control protocols.

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**Q.** What multicast features are supported on the Cisco ME 3400E Series?

**A.** The Cisco ME 3400E Series offers both granular IGMP control features and efficient multicast distribution features to support robust video services. For fine control of IGMP messages, the Cisco ME 3400E Series supports the IGMP Fast Leaves feature for quick channel changing, IGMP filtering for control of which groups users can access, and IGMP throttling for control of how many groups users can access. The Cisco ME 3400E Series provides efficient multicast distribution features such as Multicast VLAN Registration (MVR) and Protocol Independent Multicast (PIM) routing. The MVR feature reduces duplication of multicast traffic across multiple VLANs in Layer 2 ring networks by centralizing the distribution of multicast traffic in a single video VLAN. PIM routing provides intelligent multicast routing by building a distribution tree base on Layer 3 information.

**Q.** What QoS features are available on the Cisco ME 3400E Series?

**A.** The Cisco ME 3400E Series provides advanced QoS features to enable differentiated services and the ability to police ingress and shape egress traffic. Each packet that is transmitted through the switch goes through four stages of QoS:

- **Stage 1**, ingress classification: Each packet is classified based on Layer 2–4 information, including 802.1p Class of Service (CoS), differentiated services code point (DSCP), MAC address, IP address, and Layer 4 socket information.  
  
For ingress port configured as dot1q tunnel, the inner VLAN tag CoS is automatically copied to the outer VLAN tag CoS. Users can then match and set CoS based on the outer VLAN tag CoS.
- **Stage 2**, ingress policing: Classified packets are rate-limited to the peak information rate (PIR). In-profile traffic is transmitted while out-of-profile traffic is either dropped or re-marked.
- **Stage 3**, egress queuing: Classified packets are placed in one of the four queues available on each port (three user-configurable queues and one default queue).
- **Stage 4**, shaping and sharing: Queues are serviced by the Shaped Round Robin (SRR) algorithm. They can be shared by the weight configured on the queue or shaped by the bandwidth configured on the queue. One of the queues can be configured as the low-latency queue (LLQ) to provide the shortest delay possible. The LLQ can also have an optional rate-limiting parameter to control the amount of traffic allowed into the queue. This feature provides queue starvation protections in case of misconfiguration.

**Q.** What traffic management features are available on the Cisco ME 3400E Series?

**A.** The Cisco ME 3400E Series provides the following traffic management features:

- **1:1 VLAN Translation:** C-VLAN in single tagged frame can be translated to service-provider-specified S-VLAN
- **Selective QinQ:** Singled tagged Ethernet frames are double tagged with S-VLAN based on C-VLAN tag and ingress port

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**Q.** What Ethernet OAM&P features are supported on the Cisco ME 3400E Series?

**A.** The Cisco ME 3400E Series supports both 802.1ag Connectivity Fault Management and Ethernet Local Management Interface (E-LMI). The 802.1ag feature provides the tools to monitor and troubleshoot end-to-end Ethernet networks. It allows service providers to check for end-to-end connectivity, isolate network issues, and identify customers affected by network issues.

E-LMI enables service providers to automatically configure customer-edge devices to match the subscribed service. This automatic provisioning not only reduces the effort to set up the service, but also reduces the amount of coordination required between the service provider and enterprise customer. In addition the Cisco ME 3400E Series also supports port loopback with destination and source MAC address swap functionality to activate and verify new services without expensive truck rolls.

**Q.** What security features are available on the Cisco ME 3400E Series?

**A.** The Cisco ME 3400E Series provides a comprehensive security solution for Ethernet access products. By dividing security into three areas – subscriber security, switch security, and network security – and providing features for each, the Cisco ME 3400E Series can deliver a highly secure solution at the edge of your service provider network.

Subscriber security helps prevent one user from affecting another one on their shared network. The Cisco ME 3400E Series provides the UNI/ENI/NNI feature to create a circuit-like behavior to separate users' traffic streams. It also provides DHCP Snooping, Dynamic ARP Inspection, and IP Source Guard to help you identify each user's MAC address, IP address, and port information, thereby preventing malicious users from unauthorized access.

Switch security is about protecting the switch from attacks. The Cisco ME 3400E Series offers features to protect the CPU and configuration files from DoS attacks, when dropped process control protocol packets could result in network outage. Features such as Control Plane Security and Storm Control help protect the CPU against malicious attacks. Port Security allows you to control how many MAC addresses are allowed from each subscriber. This protects switch memory from being overwhelmed. In addition, the Cisco ME 3400E Series provides dry input alarm contacts to notify you when unauthorized physical access to the switches is detected.

Network security consists of features that filter all incoming traffic to ensure that only valid traffic is allowed through the switch. The Cisco ME 3400E Series uses features such as access control lists (ACLs) and IEEE 802.1x to identify users that are allowed to transmit traffic through the switch.

**Q.** Can the Cisco ME 3400E-24TS-M and ME 3400EG-12CS-M switches run on one power supply?

**A.** The Cisco ME 3400E-24TS-M and ME 3400EG-12CS-M support one or two field-replaceable integrated power supply and fan modules. Only one module is needed for operation of the switch. When both modules are used, power and fan redundancy and load sharing are also available. In addition, the Cisco ME 3400E-24TS-M and ME 3400EG-12CS-M can also operate in a mixed AC and DC configuration where a chassis has an AC power supply and fan module in one slot and a DC power supply and fan module in the second slot.

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- Q.** What SFP modules are supported on the Cisco ME 3400E Series?
- A.** Cisco ME 3400E Series switches support both 100-Mbps and 1000-Mbps SFP modules. The options include Cisco 100BASE-LX, 100BASE-EX, 100BASE-FX, 100BASE-BX, 100BASE-ZX, 1000BASE-LX, 1000BASE-SX, 1000BASE-ZX, and 1000BASE-T SFP modules plus coarse wavelength-division multiplexing (CWDM) and dense wavelength-division multiplexing (DWDM) SFP modules.
- Q.** What is a dual-purpose port?
- A.** A dual-purpose port is a combination of one 10/100/1000-TX copper port and one SFP-based Gigabit Ethernet port. One of these two ports can be used at a time. This added flexibility allows cost-effective use of interfaces to customers at various distances.
- Q.** What is 802.1Q Tunneling? Is it an IEEE standard?
- A.** With 802.1Q Tunneling, a service provider's switch can tag on a second 802.1Q tag on top of the customer's 802.1Q tag. This feature is sometimes referred to as "Q-in-Q". 802.1ad Provider Bridge, the standard version of 802.1Q tunneling, will be supported in a future software release.
- Q.** Is there a way to integrate Metro Ethernet Layer 2 service with an existing Frame Relay/ATM network?
- A.** Yes, by using Cisco 7600 Series and Cisco Catalyst® 6500 Series equipment, service providers can integrate Frame Relay/ATM networks with Cisco Metro Ethernet switching.
- Q.** Does the Cisco ME 3400E Series support HQF or MPLS features?
- A.** No; however, those features are supported on the Cisco ME 3600X Series Ethernet Access Switches.

## Management Overview

- Q.** What are the management capabilities of the Cisco ME 3400E Series?
- A.** The Cisco ME 3400E Series supports numerous management features. Support for Simple Network Management Protocol (SNMP) Versions 1, 2c, and 3 and Telnet interface support enable comprehensive in-band management, and a command-line-based management console enables detailed out-of-band management.
- The Cisco ME 3400E Series can also be managed by Cisco Active Network Abstraction (ANA). ANA is a flexible and powerful vendor-neutral network resource management system that doubles as an enabling platform for value-added network and service management applications in a multitechnology, multiservice network environment.
- CiscoWorks network management software provides management capabilities to the Cisco ME 3400E Series on a per-port and per-switch basis, providing a common management interface for Cisco routers, switches, and hubs.



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## Software Updates

- Q.** For which fixed-configuration and stackable Cisco Catalyst switches can I obtain a “no additional cost” Cisco IOS Software update?
- A.** Cisco offers ongoing Cisco IOS Software updates for the following fixed-configuration and stackable Cisco Catalyst switches at no additional cost. For the life of the switch, updates within the Cisco IOS package purchased will be made available to customers.

- Cisco Catalyst Express 500 Series Switches
- Cisco Catalyst 2900 XL Series Switches
- Cisco Catalyst 2940 Series Switches
- Cisco Catalyst 2950 Series Switches
- Cisco Catalyst 2955 Series Switches
- Cisco Catalyst 2960 Series Switches
- Cisco Catalyst 3550 Series Switches
- Cisco Catalyst 3560 Series Switches
- Cisco Catalyst 3750 Series Switches
- Cisco ME 2400 Series Ethernet Access Switches
- Cisco ME 3400 Series Ethernet Access Switches
- Cisco ME 3400E Series Ethernet Access Switches

Note that upgrades are different from updates. For example, an upgrade from the IP Base Package to the IP Services Package provides significant new functions; therefore, this upgrade requires the purchase of a software license upgrade. Updates are incremental software features and bug fixes that are released within a Cisco IOS package for which you own a license.

This statement supersedes any previous warranty or software statement and is subject to change without notice.

- Q.** How do I get a “no additional cost” Cisco IOS Software update for my fixed-configuration or stackable Cisco ME switch?
- A.** Customers that own a software license for any of the fixed-configuration or stackable Cisco Catalyst switches listed previously may obtain a software update from Cisco.com.

From the Cisco.com home page, click “Downloads” and select “Switch Software.” To download software, you will be required to log in using your Cisco.com username and password. If you do not have a Cisco.com username, you can obtain one by clicking “Register” at the top of any Cisco.com Webpage.

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## Warranty and Service

**Q.** What is the warranty for the Cisco ME 3400E Series?

**A.** The Cisco ME 3400E Series includes the Cisco 90-Day Limited Warranty.

**Q.** What types of services and support packages are available for the Cisco ME 3400E Series?

**A.** A full complement of lifecycle services and support is available for the Cisco ME 3400E Series. From implementation to operation and optimization, Cisco offers technical support services and advanced services delivered either directly or through one of its partners.

Cisco SP Base support, offered for service providers as part of Cisco Technical Support Services, is designed to provide enhancement and maintenance support resources during the operational lifetime of your Cisco network. It extends and enhances the operational lifetime of your Cisco networking devices and Cisco IOS Software, and it protects your network investment with Cisco Technical Support Services. Cisco SP Base support helps improve productivity and increase your operational efficiency by complementing your in-house resources with Cisco networking expertise. Cisco SP Base support can also help maximize availability and minimize risks for systems running mission-critical applications by delivering:

- Ongoing Cisco IOS Software updates
- Rapid technical problem resolution with 24-hour global access to expert technical engineers, online or on the telephone
- Knowledge transfer of Cisco expertise, enhancing in-house technical skills
- Advance hardware replacement, reducing the risk of network downtime
- Registered access to an array of powerful online tools, allowing you to more quickly address common network problems
- 24-hour access to comprehensive technical information and a collection of configuration, installation, troubleshooting, and service request management tools
- A broad base of expertise in networking technology, including data, voice, and video communications

For more information about Cisco SP Base support, visit:

[www.cisco.com/en/US/products/svcs/ps3034/ps2827/ps2960/serv\\_datasheet09186a0080234131.html](http://www.cisco.com/en/US/products/svcs/ps3034/ps2827/ps2960/serv_datasheet09186a0080234131.html).

## For More Information

For detailed product information about the Cisco ME 3400E Series Ethernet Access Switches, refer to:

<http://www.cisco.com/en/US/products/ps9637/index.html>.



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