



Cisco ME 6524 Ethernet Switch

Next-Generation, Fixed-Configuration Switch for Carrier Ethernet Access and Aggregation Networks

Product Overview

The Cisco® ME 6524 Ethernet Switch is a next-generation, Layer 2 and Layer 3 fixed-configuration switch built for Carrier Ethernet networks.

Based on the industry-leading Cisco Catalyst® 6500 Series technology, the Cisco ME 6524 is a space- and power-optimized Ethernet access switch which helps to cost-effectively enable hardware-based triple-play and VPN services for Ethernet-to-the-Home (EttH), Ethernet-to-the-Business (EttB), and DSLAM aggregation deployments.

By providing highly advanced hardware-accelerate multicast and IPv6 features for Carrier Ethernet access, the Cisco ME 6524 offers scalable and service-rich Gigabit Ethernet (GE) access for both fiber and copper deployments.

The Cisco ME 6524 is available in two configurations:

- 24 GE Small Form-Factor Pluggable (SFP) downlinks and 8 GE SFP uplinks, with redundant DC power supplies
- 24 Ethernet 10/100/1000 downlinks and 8 GE uplinks, with redundant DC power supplies

Figure 1. The Cisco ME 6524 Fiber Configuration



Advantages

The Cisco ME 6524 Ethernet Switch enhanced the industry-leading Carrier Ethernet solution portfolio from Cisco by extending hardware-enabled Multiprotocol Label Switching (MPLS), quality of service (QoS), multicast, and IPv6 features into Ethernet access and aggregation networks.

Scalability and Flexibility

- *Operational efficiency* for Carrier Ethernet access and aggregation networks requiring small compact form factor with lower power consumption.
- *Performance is optimized* for service provider access and aggregation deployments with 32-Gbps switching capacity and 15 mpps for IP traffic.
- *High-density Gigabit Ethernet support*—With up to 32 GE ports, all fiber-based, the Cisco ME 6524 can aggregate fiber-to-the-x (FTTx) customers who require Gigabit Ethernet connectivity.
- *High-performance CPU* for Layer 2 and Layer 3 protocols provides convergence and stability.
- *Optimized switching capabilities and scalable IP routing/MPLS* functionalities are delivered in hardware without performance impact.

Up to a Maximum of	
MAC Table Entries	96k
IPv4 Routes	256k
IPv6 Routes	128k
MPLS VPNs	512
EoMPLS Tunnels	4096
Netflow Entries	128k
Number of ACL Labels	4096
Number of ACL Entries	32k

- The Cisco ME 6524 *supports a broad range of connectivity options* by offering 10/100/1000, GE SFP, and coarse wavelength-division multiplexing (CWDM) and dense wavelength-division multiplexing (DWDM) optics on the uplink interfaces.
- Enhanced *service richness* by supporting standard-based Layer 2/Layer 3 and MPLS service enablers, such as access ports, 802.1Q trunk ports, hardware-enabled 802.1Q Tunneling, Layer 2

Tunneling Protocol, hardware-enabled MPLS VPNs, and Ethernet over MPLS (EoMPLS).

- Support for H-VPLS architecture, with L2 access and MPLS access network.

Security

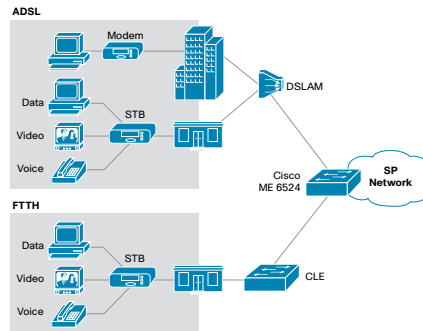
- **Industry-Leading Integrated Security**—The ME 6524 offers a comprehensive set of security features to mitigate Denial of Service attacks, to restrict the access to the Service Provider network, and to safeguard subscribers' and network resources.
- Memory protection, fault containment, and improved scalability through dedicated TCAMs for Netflow, ACLs, Security, and QoS deployments.
- Protect the Service Provider's network by enabling Control Plane Policing and Hardware Rate limiters.
- Flexible mechanisms to safeguard Service Provider's MAC table and optimize MAC learning, through Port Security and Per-VLAN MAC Learning/limiting.
- Protect Service Provider's CPU through Port/VLAN/MAC-Based ACLs enabled in hardware.
- Protection from unauthorized end users through 802.1x, DHCP Snooping, Dynamic ARP Inspection.
- Subscribers protection and traffic isolation through Private VLAN.

Service Availability

- Redundant 400W DC powers supplies, field replaceable and hot-swappable to minimize service outage in case of a power supply failure.
- Support for Software Modularity helps ensure high availability by offering memory protection, fault containment, stateful process restart, and subsystem In Service Software Upgrade (ISSU), all key benefits necessary for Carrier Ethernet deployments.

- Improved L2 fast convergence over hub-and-spoke topologies by enabling Flexlink, to obviate the need for Spanning Tree.
- Optimized Layer 2 fast convergence by enabling IEEE 802.1w (RSTP) and IEEE 802.1s (MSTP).
- Increased resiliency in MPLS deployments by supporting MPLS Traffic Engineering (TE) and Fast Reroute (FRR) Quality of Service and Multicast.
- Advanced QoS mechanism allows concurrent triple-play and VPN services.
- Flexible policing functionalities classify and rate-limit subscriber's traffic based on port, VLAN, and port + VLAN information.
- Layer 3 per-port egress policing allows the delivery of multipoint services with tight SLA requirements
- Intelligent queuing mechanism helps ensure that the highest-priority data gets services ahead of other traffic.
- Shaped Round Robin (SRR) enhances the scheduling algorithm by shaping the traffic that egresses each queue.
- Ethernet OAM protocol IEEE 802.1ag Connectivity Fault Management provides end-to-end per service connectivity management and fault isolation. IEEE 802.3ah offers point-to-point OAM discovery, link monitoring, and remote failure indication functionality.
- Hardware-accelerated multicast protocols enable efficient and scalable video applications delivery. Protocols such as Protocol Independent Multicast (PIM), PIM Sparse Mode (PIM-SM), Internet Group Management Protocol (IGMP), and IGMP Snooping allow scaling triple-play offerings to multiple DSL or FTTx subscribers.

Figure 2. Triple Play Services with the Cisco ME 6524

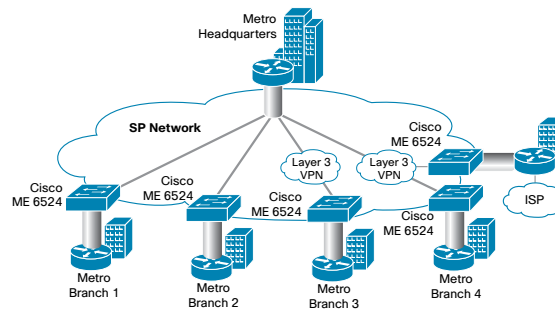


Applications

The Cisco ME 6524 helps Carrier Ethernet service providers to offer hardware-accelerated VPN services for EttB, EttH, and DSLAM aggregation deployments.

- Key service enablers are hardware-enabled multicast protocols for an intelligent video distribution, security features to isolate subscriber traffic streams and to protect against malicious user attacks, QoS features to concurrently support multiple classes of service and prioritize traffic that is sensitive to drops, delays, and jitter.

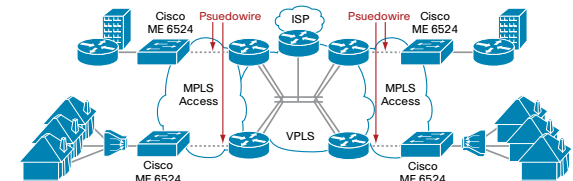
Figure 3. Layer 2 and Layer 3 VPNs



- Layer 2 VPNs are delivered over a pure Layer 2 infrastructure or over hardware-accelerated EoMPLS tunnels.

- MPLS VPN hardware is scalable for greater service breath and network flexibility.

Figure 4. Hierarchical Virtual Private LAN (H-VPLS)



- EoMPLS VC Type 4 or VC Type 5, MPLS EXP bit marking, and MPLS TE and FRR enhance flexibility in H-VPLS deployments while strengthening QoS and resiliency.

Ordering Information

Part Number	Description
ME-C6524GS-8S	24 Gigabit Ethernet Small Form-Factor Pluggable (SFP) interfaces + 8 Gigabit Ethernet SFP uplinks, 1 Fan Tray
ME-C6524GT-8S	24 Ethernet 10/100/1000 interfaces + 8 Gigabit Ethernet SFP uplinks, 1 Fan Tray
PWR-400W-DC	400W DC Power Supply for the Cisco ME 6524
S523IBL-12233SXH	Cisco ME 6524 IOS IP BASE LAN only
S523IBK9L-12233SXH	Cisco ME 6524 IOS IP BASE SSH LAN only
S523AIK9L-12233SXH	Cisco ME 6524 IOS Advanced IP Services

Additional Products

Related or additional products or technologies may include:

- Cisco ME 6524 Ethernet Switch
<http://www.cisco.com/en/US/products/ps6845/index.html>
- Cisco Catalyst 6500 Series
<http://www.cisco.com/en/US/products/hw/switches/ps708/index.html>