Cisco Catalyst 6500 Series Enterprise WAN

At-A-Glance

Enterprise WAN on Cisco Catalyst 6500 Series Value Proposition

The Cisco® Catalyst® 6500 Series is a high-performance modular switch and router ideal for convergence of data center, campus, and WAN in a single system.

Enterprise WAN, Internet access, data center connectivity features such as Multiprotocol Label Switching (MPLS), high availability, quality of service (QoS), and security together with Cisco IOS® Software modularity offer investment protection in the LAN and extend that value proposition to the WAN.

Cisco Catalyst 6500 WAN Hardware Support
Supervisor Engines 32, 32-PISA, and 720
SIP-200, SIP-400, SIP-600 with SPAs
Enhanced FlexWAN with Port Adapters
VPN SPAs
FWSM, IDSM, ACE, NAM Service Modules

Support for a broad range of connectivity options with interfaces ranging from DS0 to OC192/STM64, 10Mbps to 10-GE line cards.

Interface Type	Interface Speed
Ethernet	10 Mbps to 10 Gbps
POS	OC3/STM1 to OC192/STM64
Serial	DS0 to T3
ATM	DS3 to OC48/STM16

Preserve common hardware: sparing and single image benefits of an end-to-end LAN-enterprise WAN architecture

Integrate Deep Packet Inspection: enhanced security and application intelligence with Supervisor Engine 32-PISA

Provide end-to-end solution-level testing and assurance of Safe Harbor and FTL for enterprise including EWAN

Cisco Catalyst 6500 Enterprise WAN Places In the Network

The Cisco Catalyst 6500 Series Switches employ the following common features in all places in the network to help with scalable, resilient, and secure WAN deployment.

Features	Benefits
Cisco IOS® Software Modularity	Maximizes uptime on a WAN router
Integrated security with FWSM, IDSM	Advanced security and systems Protection
NBAR and FPM with Supervisor Engine 32-PISA	Application optimization, stops worms/viruses over WAN links

Enterprise WAN Edge Aggregation

- Leadership with routing, IPv4, and IPv6 features
- Leading MPLS features, including Layer 2 and 3 VPN, MPLS traffic engineering, and Virtual Private LAN Service (VPLS)
- Scalable IPsec VPN solution

Internet Edge

- High scalability and density
- Wire-rate access control list (ACL)
- 1 million routes in hardware

Data Center WAN Layer 2 Connectivity

- Scalable solution with VPLS and Hierarchical VPLS
- Support for Ethernet over MPLS
- Support for WAN optimization services such as Cisco Wide Area Application Services (WAAS)

MPLS with Cisco Catalyst 6500 Enterprise WAN

- Self-managed MAN with QinQ and VPLS
- Enterprise virtualization with L2 and L3 MPLS VPN, up to 1000 VRFs
- VRF-aware security, ACLs, QoS
- mVPN

Cisco Catalyst 6500 Series: The Foundation

The Cisco Catalyst 6500 Series Switches form the foundation of enterprise WAN architectures by providing leading IP routing, hardware-enabled IPv4, IPv6, MPLS, and high-performance integrated in a single platform. The Cisco Catalyst 6500 Series is the premier Cisco Layer 3 switching platform for the enterprise WAN, access, aggregation, and core edge of the enterprise network with the following important advantages.

Scalability and Flexibility

- 720 Gbps integrated switch fabric capacity with Cisco Catalyst 6500 Series Supervisor Engine 720
- Ability to scale up to 400 Mpps switching/routing performance with distributed forwarding
- 32 Gbps bus-based architecture ideal for low-speed WAN aggregation
- High-performance CPU for Layer 3 protocol convergence and stability
- Scalable IP routing and MPLS functions accelerated in hardware, without performance impact

	Up to a Maximum Of
IPv4 Routes	1,000,000
IPv6 Routes	500,000
MPLS VPNs	1,000
EoMPLS Tunnels	4,096

Cisco Catalyst 6500 Series Enterprise WAN

Security

- Memory protection, fault containment, and improved scalability through dedicated TCAMs for NetFlow, ACLs, security, and QoS deployments
- Protect enterprise networks against DoS attacks and unauthorized access with hardware-assisted security features

Tunneling	Description
Security ACL Entries	32K
Reflexive ACL	128K
uRPF Checkin Hardware	Up to 6 paths
CPU Rate Limiter	Yes

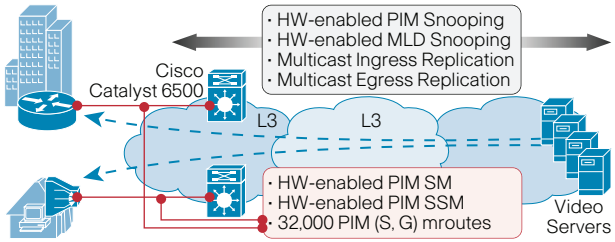
- Integrated firewall and intrusion detection service modules provide superior security, reliability, and performance, stopping attacks on the WAN edge of the network

High Availability

- Cisco IOS® Software modularity to deliver fault containment, memory protection, process restartability, and In Service Software Upgrade (ISSU) for patch fixes
- Hardware redundancy for fans, power supplies, fabrics, and clocks for nonstop operation
- Complete separation of control and data planes for enhanced resiliency
- Leadership in high availability and service uptime; Nonstop forwarding (NSF) and stateful switchover (SSO) help ensure minimal traffic loss and subsecond recovery in IP networks
- Increased data path protection through Bidirectional Forwarding Detection (BFD), Performance Routing (PfR), MPLS Fast Reroute (FRR), and MPLS Traffic Engineering (TE)

QoS and Multicast

- Advanced Quality-of-Service mechanism to enable triple play and TLS services on the same infrastructure, such as per-port policing and DSCP/VLAN-based traffic classification
- Granular traffic queuing and congestion avoidance and management mechanisms such as Priority Queuing, WRED, SRR to guarantee low jitter, low latency, and minimal or null packet loss for sensitive and real-time classes of service
- Advanced and innovative IP Multicast features to support triple play services and optimize video delivery



Operational Control

- Enhanced and scalable network monitoring, traffic profiling, and capacity planning by enabling hardware-based NetFlow, up to a maximum of 256,000 entries with Cisco Catalyst 6500 Series Sup720-3BXL
- Proactively manage your network through On Board Failure Logging (OBFL), Embedded Event Manager (EEM), Generic On-Line Diagnostics (GOLD), Call Home, proactively detect and address potential faults in the switch
- Safe Harbor testing for Cisco Catalyst 6500 Series WAN deployments delivers customers a certified Cisco OS version for critical deployment to increase overall network stability

Key Enterprise WAN/Metro Ethernet Features on Cisco Catalyst 6500 Series Switches

IP Routing Features
IPv4 Forwarding
IPv6 Forwarding
WCCP (v1, v2)
Policy-Based Routing
OSPF/EIGRP/ISIS/BGP4/RIP
Performance Routing
eBGPv4
eBGPv4 Multihop
eBGPv4 Load-Balancing
RIPng, IS-IS for v6, OSPFv3
Tunneling
GRE
Hardware-Enabled EoMPLS
L2/L3 MPLS VPN
MVPN Extranet
Encrypted Mcast over GRE
VRF-Aware Features
VRF-Aware uRPF
VRF-Aware Firewall
VRF-Aware NAT
VRF-Aware IPsec
VRF-Aware Ping
VRF-Aware HSRP

C45-415740-01 7/09