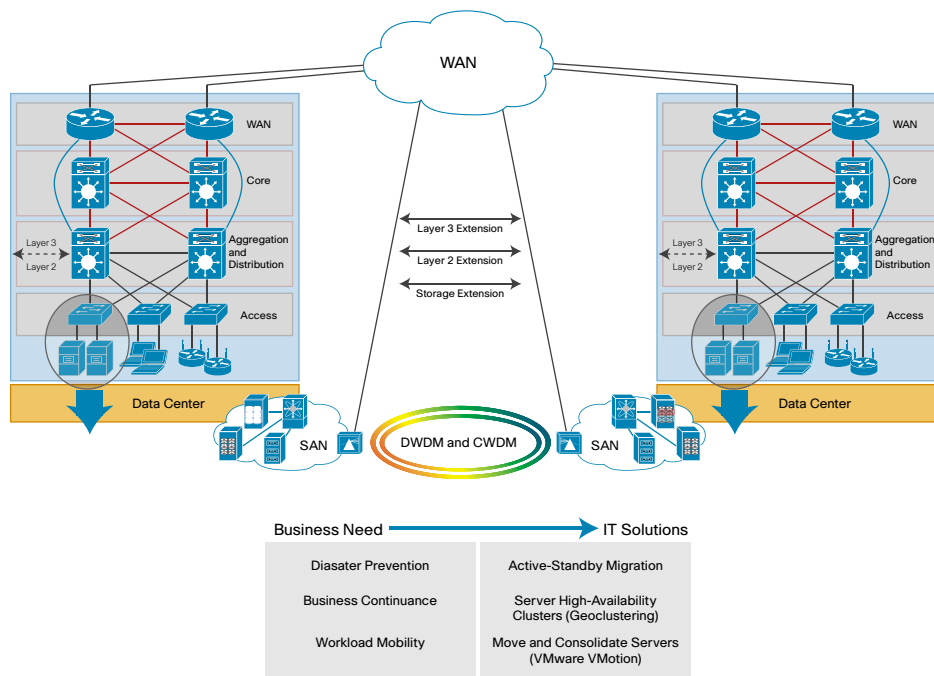


Why Is Data Center Interconnect Important?

Today's business is more distributed and mobile than ever, and companies are moving existing servers, building new data centers, and clustering servers in geographically separate locations (geo-clustering) to provide high-performance, nonstop access to critical business applications and information (Figure 1).

Figure 1. Data Center Interconnect: Business Needs and IT Solutions



Why Cisco Data Center Interconnect Solutions?

Cisco® Data Center Interconnect (DCI) solutions offer:

- Technology breadth: Comprehensive DCI solution for LAN, Layer 3, and SAN extensions
- Flexibility: No physically bound application areas, enabling application mobility

Cisco DCI LAN Extension Solutions

A loop-free LAN extension stretching across the data center WAN is a crucial part of Cisco DCI solutions.

Cisco offers a range of multisite DCI solutions for redundant, scalable, and secure LAN extension across WAN networks based on dark fiber, Multiprotocol Label Switching (MPLS), and IP technologies (Table 1).

Table 1. Cisco DCI LAN Extension Solutions

Requirement	Solution	Platform
Layer 2 over fiber	Virtual switching system (VSS)	Cisco Catalyst® 6500 Series VSS
	Virtual PortChannel (vPC)	Cisco Nexus® 7000 Series Switches vPC
Layer 2 over MPLS	Ethernet over MPLS (EoMPLS)	Cisco Catalyst 6500 Series Switches and Cisco ASR 1000 Series Aggregation Services Routers
	Virtual private LAN service (VPLS) Advanced VPLS (A-VPLS)	Cisco Catalyst 6500 Series A-VPLS with Cisco Catalyst 6500 Series with Cisco Shared-Port Adapter (SPA) Interface Processor-400 (SIP-400) or Ethernet Services Plus linecard (ES+) VPLS with Cisco Catalyst 6500 Series with Cisco SIP-600
Layer 2 over IP	EoMPLS over generic routing encapsulation (EoMPLSoGRE)	Cisco Catalyst 6500 Series and Cisco ASR 1000 Series
	A-VPLS over GRE (A-VPLSoGRE)	Cisco Catalyst 6500 Series Cisco SIP-400 (A-VPLSoGRE) or Ethernet Services Plus line card (ES+)
Encryption	IEEE 802.1ae	Cisco Nexus 7000 Series
	IP Security (IPsec)	Cisco Catalyst 6500 Series and Cisco ASR 1000 Series
Multilevel quality of service (QoS)	Hierarchical QoS (HQoS)	Cisco Catalyst 6500 Series and Cisco ASR 1000 Series



Figure 2 and Table 2 provide details of this solution.

Figure 2. Cisco DCI LAN Extension over Dark Fiber WAN

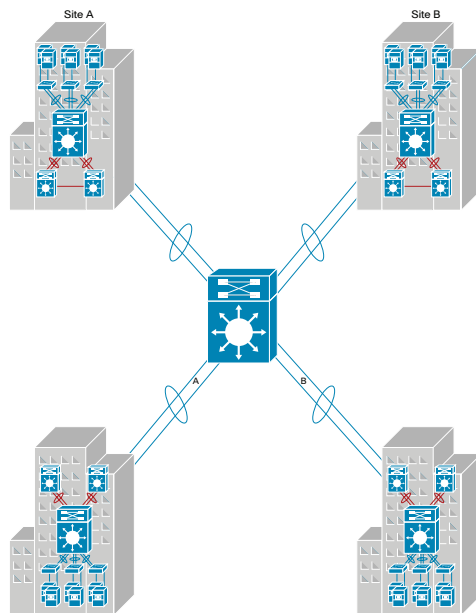


Table 2. Cisco DCI Solutions over Dark Fiber WAN

Requirement	Solution	Platform
Layer 2 over fiber	VSS and MEC	Cisco Catalyst 6500 Series VSS
	vPC	Cisco Nexus 7000 Series vPC
Encryption	IEEE 802.1ae	Cisco Nexus 7000 Series

Figure 3 and Table 3 provide details of this solution.

Figure 3. DCI LAN Extension over IP- or MPLS-Based WAN

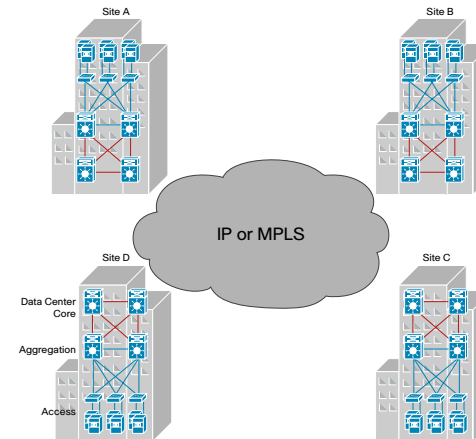


Table 3. Cisco DCI Solutions over IP- or MPLS-Based WAN

Requirement	Solution	Platform
Layer 2 over MPLS	EoMPLS	Catalyst 6500 Series with Cisco SIP-400 or SIP-600 or ES+, or Cisco ASR 1000 Series
	VPLS A-VPLS	Catalyst 6500 Series with Cisco SIP-400 / ES+ (A-VPLS) or SIP-600 (VPLS)
Layer 2 over IP	EoMPLSoGRE	Catalyst 6500 Series with Cisco SIP-400 or ES+, and Cisco ASR 1000 Series
	A-VPLSoGRE	Catalyst 6500 Series with A-VPLSoGRE on Cisco SIP-400 or ES+
Encryption	IEEE 802.1ae	Cisco Nexus 7000 Series
	IPsec	Catalyst 6500 Series with Cisco SPA Services Card 600 (SSC-600) or VPN SPA (VSPA), and Cisco ASR 1000 Series
Multilevel QoS	HQoS	Catalyst 6500 Series with Cisco SIP-400, SIP-600 or ES+, and Cisco ASR 1000 Series

For More Information

Visit <http://www.cisco.com/go/dci>