

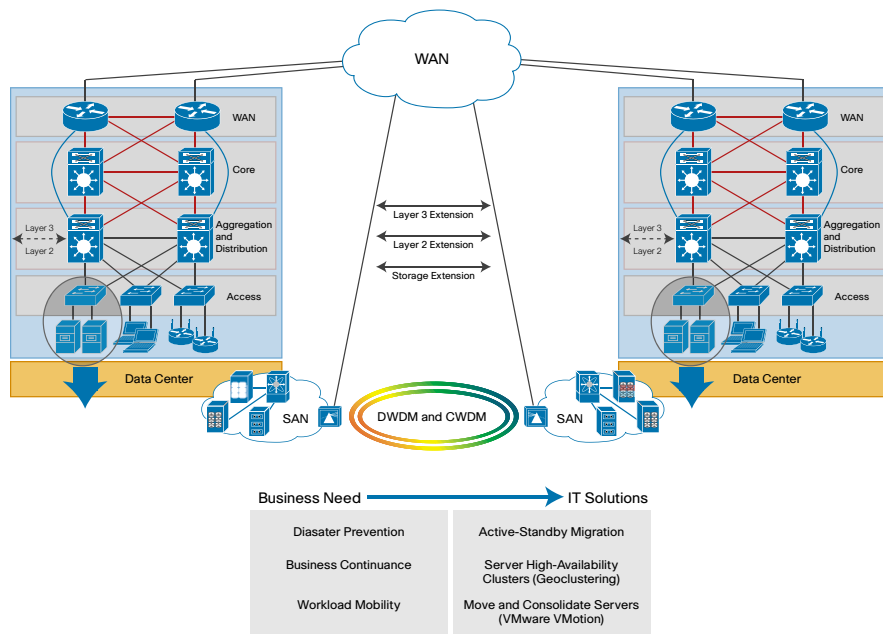
Cisco Data Center Interconnect



Why Is Cisco 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 (geocustering) to provide high-performance, nonstop access to critical business applications and information (Figure 1).

Figure 1. Cisco DCI: Business Needs and IT Solutions



Why Cisco Data Center Interconnect Solutions?

Cisco® Data Center Interconnect (DCI) solutions offer:

- Technology breadth: Comprehensive Cisco 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 or Cisco ASR 1000 Series Aggregation Services Routers
	Virtual private LAN service (VPLS)	Cisco Catalyst 6500 Series
	Advanced VPLS (A-VPLS)	<ul style="list-style-type: none"> Supervisor Engine 2T (Sup2T): VPLS (native support) Supervisor Engine 720 (Sup720): For A-VPLS, needs Cisco Shared Port Adapter Interface Processor 400 (SIP-400) or Ethernet Services Plus (ES+) line cards; for VPLS, needs SIP-400 or SIP-600 or ES+ line cards
Layer 2 over IP	EoMPLS over generic routing encapsulation (EoMPLSoGRE)	Cisco Catalyst 6500 Series or Cisco ASR 1000 Series
	A-VPLS over GRE (A-VPLSoGRE)	Cisco Catalyst 6500 Series Sup720 (needs Cisco SIP-400 or ES+ line card)
Encryption	IEEE 802.1ae	Cisco Nexus 7000 Series or Cisco Catalyst 6500 Series Sup2T
	IP Security (IPsec)	Cisco Catalyst 6500 Series Sup720 (with VPN SPA [VSPA] module and Cisco SPA Services Card 600 [SSC-600]) or Cisco ASR 1000 Series
Multilevel quality of service (QoS)	Hierarchical QoS (HQoS)	Cisco Catalyst 6500 Series Sup720 or Cisco ASR 1000 Series



Cisco Data Center Interconnect Solutions

Figure 2 and Table 2 provide details of the Cisco DCI LAN extension over dark fiber WAN solution.

Figure 2. Cisco DCI LAN Extension over Dark Fiber WAN

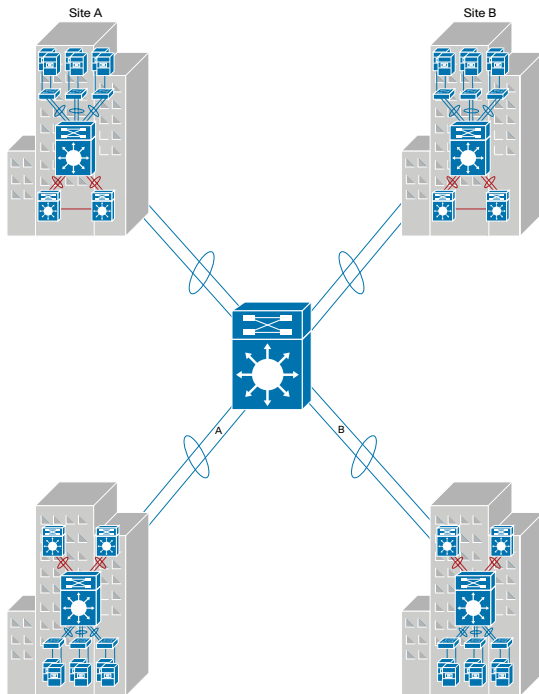


Table 2. Cisco DCI Solutions over Dark Fiber WAN

Requirement	Solution	Platform
Layer 2 over fiber	VSS and Multichassis EtherChannel (MEC)	Cisco Catalyst 6500 Series VSS
	vPC	Cisco Nexus 7000 Series vPC
Encryption	IEEE 802.1ae	Cisco Nexus 7000 Series or Cisco Catalyst 6500 Series with Sup2T

Figure 3 and Table 3 provide details of the Cisco DCI LAN extension over IP- or MPLS-based WAN solution.

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

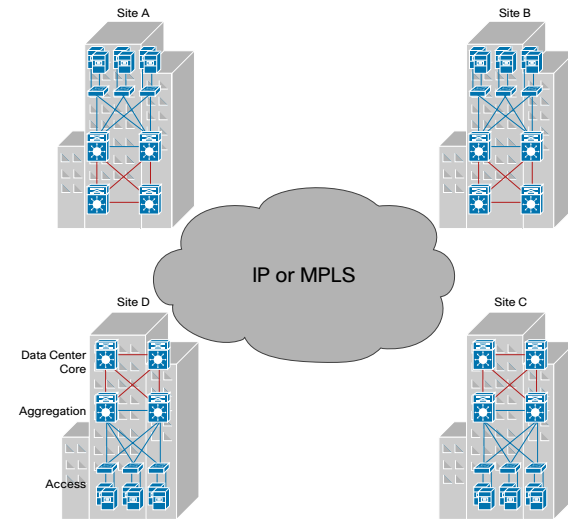


Table 3. Cisco DCI Solutions over IP- or MPLS-Based WAN

Requirement	Solution	Platform
Layer 2 over MPLS	EoMPLS	Cisco Catalyst 6500 Series or Cisco ASR 1000 Series
	VPLS	Sup2T: VPLS (native)
	A-VPLS	Sup720: A-VPLS needs SIP-400 or ES+ line cards; VPLS needs SIP-400 or SIP-600 or ES+ line cards
Layer 2 over IP	EoMPLSoGRE	Cisco Catalyst 6500 Series or Cisco ASR 1000 Series
	A-VPLSoGRE	Cisco Catalyst 6500 Series Sup720 with Cisco SIP-400 or ES+
Encryption	IEEE 802.1ae	Cisco Nexus 7000 Series or Cisco Catalyst 6500 Series Sup2T
	IPsec	Cisco Catalyst 6500 Series Sup720 (with Cisco SSC-600 and VSPA), or Cisco ASR 1000 Series
Multilevel QoS	HQoS	Cisco Catalyst 6500 Series Sup720 (with Cisco SIP-400 or SIP-600 or ES+), or Cisco ASR 1000 Series

For More Information

http://www.cisco.com/en/US/prod/switches/ps5718/ps708/data_center_interconnect_promo.html.