

DC Interconnect

Q. What is DC interconnect?

A. DC interconnect is an acronym for data center interconnect. As the name suggests, DC interconnect refers to a set of solutions for connecting two or more peer data centers.

Q. What is DC L2 interconnect?

A. DC L2 interconnect means extending the Layer 2 infrastructure existing within a single data center to span across two or more peer data centers.

Q. Why do we need to extend Layer 2 to across multiple data centers?

A. The business requirements driving the need for data center interconnect typically are enterprise applications, which demand a specific type of interconnect solution over the WAN core. For example, data center applications such as geocustering, VMotion, and so on require that an existing Layer 2 LAN segment within a data center be extended across the WAN interconnect to one or more "peer" data centers.

Q. What solutions are available on the Cisco® Catalyst® 6500 to extend Layer 2 across data centers?

A. The available design solutions used for extending the DC Layer 2 are based on the transport mechanism used in the interconnect. This interconnect or WAN might use different underlying transport infrastructures to provide Layer 2 interconnectivity. The typical transport types used in the WAN interconnect are:

- Dark fiber
- Multiprotocol Label Switching (MPLS)
- IP

Q. Does the Cisco Catalyst 6500 offer solutions for each of these transport mechanisms?

A. Yes, the Cisco Catalyst 6500 offers fundamentally two solutions for Layer 2 interconnectivity: a [Virtual Switching System]-based solution if a customer has access to dark fiber and the any transport over Multi-protocol label switching over generic routing encapsulation (ATOMoGRE) solution, which allows extending the Layer 2 VLAN infrastructure over an interconnect, which may be based on IP or MPLS.

Both the VSS-based dark fiber solution and the ATOMoGRE solution on the Cisco Catalyst 6500 are redundant, scalable, and secure.

Q. What is the VSS-based dark fiber-based solution?

A. When a data center customer has access to dark fiber, one option is to take advantage of dark fiber solutions based on the VSS available on the Cisco Catalyst 6500.

A possible Layer 2 interconnect design option using VSS on the Cisco Catalyst 6500 can be found in slides 8–15 in the presentation here.

Q. What if the customer has an existing MPLS-based WAN interconnect and is interested in extending the Layer 2 over this MPLS WAN?

A. For enterprise customers with an MPLS core, the Cisco Catalyst 6500 offers Ethernet Over Multi-protocol label switching-based solutions for point-to-point connections between two data

centers. For multipoint connections, the Cisco Catalyst 6500 offers Virtual Private LAN service-based solutions using the Shared Port Adapter Interface Processor 400 (SIP-400) (SIP) line cards for uplink connections to the VPLS core.

Q. What if the customer has an existing IP-based WAN interconnect and wants an IP-based Layer 2 interconnect solution?

A. Starting in Cisco IOS® Software Release 12.2(33)SXI (Whitney 2), the Cisco Catalyst 6500 offers a new feature called ATOMoGRE, which allows ATOM-based services on an existing WAN IP core. This means that enterprise customers who desire the versatility of ATOM-based services but dislike the complexity of an MPLS-based core can now use the ATOMoGRE feature on the Cisco Catalyst 6500 to deploy such services on an IP core.

Q. Are there any hardware or software requirements for the ATOMoGRE feature on the Cisco Catalyst 6500?

A. The ATOMoGRE feature is currently supported on the Cisco Catalyst 6500 only on the SIP-400 line card. Any SIP-400-compatible SPA Shared Port Adapter can be used. Also, the image must be upgraded to the 12.2(33)SXI release.

Q. What is the first customer ship date for Cisco IOS Software Release 12.2(33)SXI?

A. First customer ship is expected in September 2008.



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