

Chapter 16

CCC Overview

Circuit cross-connect (CCC) allows you to configure transparent connections between two circuits, where a circuit can be a Frame Relay DLCI, an ATM VC, a PPP interface, a Cisco HDLC interface, or an MPLS label-switched path (LSP). Using CCC, packets from the source circuit are delivered to the destination circuit with, at most, the Layer 2 address being changed. No other processing—such as header checksums, TTL decrementing, or protocol processing—is done.

CCC circuits fall into two categories: logical interfaces, which include DLCIs, VCs, VLAN IDs, PPP and Cisco HDLC interfaces; and LSPs. The two circuit categories provide three types of cross-connect:

Layer 2 switching—Cross-connects between logical interfaces provide what is essentially Layer 2 switching. The interfaces that you connect must be of the same type.

MPLS tunneling—Cross-connects between interfaces and LSPs allow you to connect two distant interface circuits of the same type by creating MPLS tunnels that use LSPs as the conduit.

LSP stitching—Cross-connects between LSPs provide a way to “stitch” together two label-switched paths, including paths that fall in two different TED areas.

For Layer 2 switching and MPLS tunneling, the cross-connect is bidirectional, so packets received on the first interface are transmitted out the second interface, and those received on the second interface are transmitted out the first. For LSP stitching, the cross connect is unidirectional.

For CCC connections that connect interfaces, the interfaces must be of the same type; that is, ATM to ATM, Frame Relay to Frame Relay, PPP to PPP, or Cisco HDLC to Cisco HDLC.

