

Chapter 18

Summary of CCC and TCC Configuration Statements

This chapter provides a reference for each of the circuit cross-connect (CCC) configuration statements. The statements are organized alphabetically.

connections

Syntax	<pre>connections { interface-switch <i>connection-name</i> { interface <i>interface-name.unit-number</i>; interface <i>interface-name.unit-number</i>; } lsp-switch <i>connection-name</i> { transmit-lsp <i>label-switched-path</i>; receive-lsp <i>label-switched-path</i>; } remote-interface-switch <i>connection-name</i> { interface <i>interface-name.unit-number</i>; transmit-lsp <i>label-switched-path</i>; receive-lsp <i>label-switched-path</i>; } }</pre>
Hierarchy Level	[edit protocols]
Description	Define the connection between two circuits in a CCC connection.
Options	The statements are explained separately.
Usage Guidelines	See “CCC and TCC Overview” on page 229 and the <i>JUNOS Internet Software Configuration Guide: Network Interfaces and Class of Service</i> .
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

encapsulation

encapsulation (Physical Interface)

Syntax	encapsulation (atm-ccc-cell-relay atm-pvc cisco-hdlc cisco-hdlc-ccc cisco-hdlc-tcc ethernet-ccc ethernet-tcc frame-relay frame-relay-ccc frame-relay-tcc multilink-frame-relay-uni-nni ppp ppp-ccc ppp-tcc vlan-ccc extended-vlan-ccc extended-vlan-tcc);
Hierarchy Level	[edit interfaces <i>interface-name</i>]
Description	Physical link-layer encapsulation type.
Options	<p>atm-ccc-cell-relay—Use ATM cell relay encapsulation.</p> <p>atm-pvc—Use ATM PVC encapsulation.</p> <p>cisco-hdlc—Use Cisco-compatible HDLC framing.</p> <p>cisco-hdlc-ccc—Use Cisco-compatible HDLC framing on circuit cross-connect (CCC) circuits.</p> <p>cisco-hdlc-tcc—Use Cisco-compatible HDLC framing on translational cross-connect (TCC) circuits for connecting unlike media.</p> <p>ethernet-ccc—Use Ethernet CCC encapsulation on Ethernet interfaces that must accept packets carrying standard Tag Protocol ID (TPID) values.</p> <p>ethernet-tcc—For interfaces that carry IPv4 traffic, use Ethernet TCC encapsulation on interfaces that must accept packets carrying standard Tag Protocol ID (TPID) values. Ethernet TCC is not supported on Fast Ethernet 48-port PICs.</p> <p>extended-vlan-ccc—Use extended VLAN encapsulation on CCC circuits with Gigabit Ethernet and four-port Fast Ethernet interfaces that must accept packets carrying 802.1Q values.</p> <p>extended-vlan-tcc—For interfaces that carry IPv4 traffic, use extended VLAN encapsulation on TCC circuits with Gigabit Ethernet interfaces on which you want to use 802.1Q tagging. Extended Ethernet TCC is not supported on Fast Ethernet 48-port PICs.</p> <p>frame-relay—Use Frame Relay encapsulation.</p> <p>frame-relay-ccc—Use plain Frame Relay encapsulation or Frame Relay encapsulation on circuit cross-connect (CCC) circuits.</p> <p>frame-relay-tcc—Use Frame Relay encapsulation on TCC circuits to connect unlike media.</p> <p>multilink-frame-relay-uni-nni—Use only on link services interfaces functioning as FRF.16 bundles and their constituent T1, E1, or NxDS-0 interfaces.</p> <p>ppp—Use serial point-to-point (PPP) encapsulation.</p> <p>ppp-ccc—Use serial PPP encapsulation on CCC circuits. When you use this encapsulation, you can configure the family ccc only.</p>

ppp-tcc—Use serial PPP encapsulation on TCC circuits for connecting unlike media. When you use this encapsulation, you can configure the family tcc only.

vlan-ccc—Use Ethernet Virtual Local Area Network (VLAN) encapsulation on CCC circuits.

Default PPP encapsulation.

Usage Guidelines See “Define the CCC Encapsulation for Layer 2 Switching Cross-Connects” on page 234, “Define the CCC Encapsulation for LSP Tunnel Cross-Connects” on page 241, and “Define the Encapsulation for the Layer 2 Switching TCCs” on page 246. For more information on how to configure interfaces, see the *JUNOS Internet Software Configuration Guide: Network Interfaces and Class of Service*.

Required Privilege Level interface—To view this statement in the configuration.
interface-control—To add this statement to the configuration.

encapsulation (Logical Interface)

Syntax encapsulation (atm-ccc-cell-relay | atm-ccc-vc-mux | atm-tcc-vc-mux | atm-cisco-nlpid | atm-nlpid | atm-snap | atm-tcc-snap | atm-vc-mux | ether-over-atm-llc | ether-vpls-over-atm-llc | frame-relay-ccc | frame-relay-tcc | multilink-frame-relay-end-to-end | multilink-ppp | vlan-ccc);

Hierarchy Level [edit interfaces *interface-name* unit *logical-unit-number*]

Description Logical link-layer encapsulation type.

Options atm-ccc-cell-relay—Use ATM cell relay encapsulation.

atm-ccc-vc-mux—Use ATM VC multiplex encapsulation on circuit cross-connect (CCC) circuits. When you use this encapsulation, you can configure the family ccc only.

atm-tcc-vc-mux—Use ATM VC multiplex encapsulation on translational cross-connect (TCC) circuits. When you use this encapsulation, you can configure the family tcc only.

atm-cisco-nlpid—Use Cisco ATM NLPID encapsulation. When you use this encapsulation, you can configure the family inet only.

atm-nlpid—Use ATM NLPID encapsulation. When you use this encapsulation, you can configure the family inet only.

atm-snap—Use ATM SNAP encapsulation.

atm-tcc-snap—Use ATM SNAP encapsulation on translational cross-connect (TCC) circuits.

atm-vc-mux—Use ATM VC multiplex encapsulation. When you use this encapsulation, you can configure the family inet only.

ether-over-atm-llc—For interfaces that carry IPv4 traffic, use Ethernet over ATM LLC encapsulation. When you use this encapsulation, you cannot configure multipoint interfaces.

ether-vpls-over-atm-llc—Use Ethernet VPLS over ATM LLC encapsulation. This encapsulation type enables a VPLS instance to support bridging between Ethernet interfaces and ATM interfaces, as described in RFC 2684, Multiprotocol Encapsulation over ATM Adaptation Layer 5. This encapsulation type is used only on ATM 2 interfaces.

frame-relay-ccc—Use Frame Relay encapsulation on circuit cross-connect (CCC) circuits. When you use this encapsulation, you can configure the family ccc only.

frame-relay-tcc—Use Frame Relay encapsulation on TCC circuits for connecting unlike media. When you use this encapsulation, you can configure the family tcc only.

multilink-frame-relay-end-to-end—Use Multilink Frame Relay (MLFR) FRF.15 encapsulation for multilink and link services interfaces and their constituent T1 or E1 interfaces.

multilink-ppp—Use Multilink Point-to-Point Protocol (MLPPP) encapsulation. This encapsulation is used only on multilink interfaces and their constituent T1 or E1 interfaces.

vlan-ccc—Use Ethernet Virtual Local Area Network (VLAN) encapsulation on circuit cross-connect (CCC) circuits. When you use this encapsulation, you can configure the family ccc only.

Usage Guidelines See “Define the CCC Encapsulation for Layer 2 Switching Cross-Connects” on page 234, “Define the CCC Encapsulation for LSP Tunnel Cross-Connects” on page 241, and “Define the Encapsulation for the Layer 2 Switching TCCs” on page 246. For more information on how to configure interfaces, see the *JUNOS Internet Software Configuration Guide: Network Interfaces and Class of Service*.

Required Privilege Level interface—To view this statement in the configuration.
interface-control—To add this statement to the configuration.

interface-switch

Syntax interface-switch *connection-name* {
 interface *interface-name.unit-number*;
 interface *interface-name.unit-number*;
}

Hierarchy Level [edit protocols connections]

Description Configure Layer 2 switching cross-connects. 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 Layer 2 switching cross-connects to work, you must also configure MPLS.

Options *connection-name*—Connection name.

interface *interface-name.unit-number*—Interface name. Include the logical portion of the name, which corresponds to the logical unit number.

Usage Guidelines See “Define the CCC Connection for Layer 2 Switching Cross-Connects” on page 237.

Required Privilege Level routing—To view this statement in the configuration.
routing-control—To add this statement to the configuration

lsp-switch

Syntax	lsp-switch <i>connection-name</i> { transmit-lsp <i>label-switched-path</i> ; receive-lsp <i>label-switched-path</i> ; }
Hierarchy Level	[edit protocols connections]
Description	Configure Layer 2 switching cross-connects.
Options	<i>connection-name</i> —Connection name. <i>receive-lsp label-switched-path</i> —Name of the LSP from the connection's source. <i>transmit-lsp label-switched-path</i> —Name of the LSP to the connection's destination.
Usage Guidelines	See “CCC and TCC Overview” on page 229, “Configure LSP Stitching Cross-Connects” on page 244, and “Define the Connection for the Layer 2 Switching TCC” on page 249.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

remote-interface-switch

Syntax	remote-interface-switch <i>connection-name</i> { interface <i>interface-name.unit-number</i> ; transmit-lsp <i>label-switched-path</i> ; receive-lsp <i>label-switched-path</i> ; }
Hierarchy Level	[edit protocols connections]
Description	Configure MPLS LSP tunnel cross-connects.
Options	<i>connection-name</i> —Connection name. <i>interface interface-name.unit-number</i> —Interface name. Include the logical portion of the name, which corresponds to the logical unit number. <i>receive-lsp label-switched-path</i> —Name of the LSP from the connection's source. <i>transmit-lsp label-switched-path</i> —Name of the LSP to the connection's destination.
Usage Guidelines	See “CCC and TCC Overview” on page 229 and “Configure MPLS LSP Tunnel Cross-Connects” on page 240.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

