

Chapter 16

Summary of VPLS Configuration Statements

The following sections explain the major routing-instances and interfaces configuration statements that apply specifically to virtual private LAN service (VPLS). The statements are organized alphabetically. The routing instance statements at the [edit routing-instances *routing-instance-name*] hierarchy level are explained in the *JUNOS Internet Software Routing Protocols Configuration Guide*. The interface statements at the [edit interfaces *interface-name*] hierarchy level are explained in the *JUNOS Internet Software Network Interfaces and Class of Service Configuration Guide*.

encapsulation

Syntax	encapsulation (ethernet-vpls ether-vpls-over-atm-llc extended-vlan-vpls vlan-vpls);
Hierarchy Level	[edit interfaces <i>interface-name</i>], [edit logical-routers <i>logical-router-name</i> interfaces <i>interface-name</i>]
Description	Physical link-layer encapsulation type for VPLS interfaces. This statement summary for the encapsulation statement describes encapsulations supported for VPLS only. For a full description of the encapsulation statement, see encapsulation on page 84.
Options	<p>ethernet-vpls—Use Ethernet VPLS encapsulation on Ethernet interfaces that have VPLS enabled and that must accept packets carrying standard Tag Protocol ID (TPID) values. On M-series routers, the 4-port Fast Ethernet TX PIC, and the 1-port, 2-port, and 4-port, 4-slot Gigabit Ethernet PICs can use the Ethernet VPLS encapsulation type.</p> <p>ether-vpls-over-atm-llc—For ATM intelligent queuing (IQ) interfaces only, use the Ethernet virtual private LAN service (VPLS) over ATM LLC encapsulation to bridge Ethernet interfaces and ATM interfaces over a VPLS routing instance (as described in RFC 2684, <i>Multiprotocol Encapsulation over ATM Adaptation Layer 5</i>). Packets from the ATM interfaces are converted to standard ENET2/802.3 encapsulated Ethernet frames with the frame check sequence (FCS) field removed.</p> <p>extended-vlan-vpls—Use extended virtual local area network (VLAN) VPLS encapsulation on Ethernet interfaces that have VLAN 802.1Q tagging and VPLS enabled and that must accept packets carrying TPIDs 0x8100, 0x9100, and 0x9901. On M-series routers, the 4-port Fast Ethernet TX PIC and the 1-port, 2-port, and 4-port, 4-slot Gigabit Ethernet PICs can use the Ethernet VPLS encapsulation type.</p> <p>vlan-vpls—Use VLAN VPLS encapsulation on Ethernet interfaces with VLAN tagging and VPLS enabled. Interfaces with VLAN VPLS encapsulation accept packets carrying standard TPID values only. On M-series routers, the 4-port Fast Ethernet TX PIC, and the 1-port, 2-port, and 4-port, 4-slot Gigabit Ethernet PICs can use the Ethernet VPLS encapsulation type.</p>
Usage Guidelines	See “Configure the Interface Encapsulation” on page 333.
Required Privilege Level	interface—To view this statement in the configuration. interface-control—To add this statement to the configuration.

mac-table-size

Syntax	mac-table-size <i>size</i> ;
Hierarchy Level	[edit logical-routers <i>logical-router-name</i> routing-instances <i>routing-instance-name</i> protocols vpls], [edit routing-instances <i>routing-instance-name</i> protocols vpls]
Description	Modify the size of the VPLS media access control (MAC) address table.
Options	<i>size</i> —Specify the size of the MAC address table. Range: 16 through 65,536 MAC addresses Default: 512 MAC addresses
Usage Guidelines	See “Configure the Size of the VPLS MAC Address Table” on page 336.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

site

Syntax	site <i>site-name</i> { site-identifier <i>number</i> ; }
Hierarchy Level	[edit logical-routers <i>logical-router-name</i> routing-instances <i>routing-instance-name</i> protocols vpls], [edit routing-instances <i>routing-instance-name</i> protocols vpls]
Description	Specify the site name and site identifier for a site. Allows you to configure a remote site ID for remote sites.
Options	<i>site site-name</i> —Name of the site. The other statement is explained separately.
Usage Guidelines	See “Configure the VPLS Site” on page 335.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

site-identifier

Syntax	site-identifier <i>identifier</i> ;
Hierarchy Level	[edit logical-routers <i>logical-router-name</i> routing-instances <i>routing-instance-name</i> protocols vpls site <i>site-name</i>], [edit routing-instances <i>routing-instance-name</i> protocols vpls site <i>site-name</i>]
Description	Specify the numerical identifier for the site used as a default reference for the remote site ID. It is an unsigned 16-bit number greater than zero.
Usage Guidelines	See “Configure the VPLS Site” on page 335.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

site-range

Syntax	site-range <i>number</i> ;
Hierarchy Level	[edit logical-routers <i>logical-router-name</i> routing-instances <i>routing-instance-name</i> protocols vpls], [edit routing-instances <i>routing-instance-name</i> protocols vpls]
Description	Specify the maximum number of sites allowed for the VPLS domain. The value must be between 1 and 65,534.
Usage Guidelines	See “Configure the Site Range” on page 336.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

traceoptions

Syntax traceoptions {
 file *filename* <replace> <size *size*> <files *number*> <no-stamp>
 <no-world-readable> <world-readable>;
 flag *flag* <*flag-modifier*> <disable>;
 }

Hierarchy Level [edit logical-routers *logical-router-name* routing-instances *routing-instance-name*
 protocols vpls]
 [edit routing-instances *routing-instance-name* protocols vpls]

Description Trace traffic flowing through a VPLS.

Options disable—(Optional) Disable the tracing operation. You can use this option to disable a single operation when you have defined a broad group of tracing operations, such as all.

file *filename*—Name of the file to receive the output of the tracing operation. Enclose the name in quotation marks (" ").

files *number*—(Optional) Maximum number of trace files. When a trace file named *trace-file* reaches this size, it is renamed *trace-file.0*. When *trace-file* again reaches its maximum size, *trace-file.0* is renamed *trace-file.1* and *trace-file* is renamed *trace-file.0*. This renaming scheme continues until the maximum number of trace files is reached. Then the oldest trace file is overwritten.

If you specify a maximum number of files, you also must specify a maximum file size with the size option.

Range: 2 through 1000 files

Default: 2 files

flag *flag*—Tracing operation to perform. To specify more than one tracing operation, include multiple flag statements.

all—All VPLS tracing options

connections—VPLS connections (events and state changes)

error—Error conditions

nlri—VPLS advertisements received or sent by means of the Border Gateway Protocol (BGP)

route—Routing information

topology—VPLS topology changes caused by reconfiguration or advertisements received from other provider edge (PE) routers using BGP

flag-modifier—(Optional) Modifier for the tracing flag. You can specify the following modifier:

detail—Provide detailed trace information

no-stamp—(Optional) Do not place timestamp information at the beginning of each line in the trace file.

Default: If you do not include this option, timestamp information is placed at the beginning of each line of the tracing output.

no-world-readable—Do not allow any user to read the log file.

replace—(Optional) Replace an existing trace file if there is one.

Default: If you do not include this option, tracing output is appended to an existing trace file.

size *size*—(Optional) Maximum size of each trace file, in kilobytes (KB), megabytes (MB), or gigabytes (GB). When a trace file named *trace-file* reaches this size, it is renamed *trace-file.0*. When *trace-file* again reaches its maximum size, *trace-file.0* is renamed *trace-file.1* and *trace-file* is renamed *trace-file.0*. This renaming scheme continues until the maximum number of trace files is reached. Then the oldest trace file is overwritten.

If you specify a maximum file size, you also must specify a maximum number of trace files with the *files* option.

Syntax: *xk* to specify KB, *xm* to specify MB, or *xg* to specify GB

Range: 10 KB through the maximum file size supported on your system

Default: 1 MB

world-readable—Allow any user to read the log file.

Usage Guidelines See “Trace VPLS Traffic and Operations” on page 345.

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

vlan-id

Syntax	vlan-id <i>number</i> ;
Hierarchy Level	[edit interfaces <i>interface-name</i> unit <i>logical-unit-number</i>], [edit logical-routers <i>logical-router-name</i> interfaces <i>interface-name</i> unit <i>logical-unit-number</i>]
Description	For Fast Ethernet and Gigabit Ethernet interfaces only, bind an 802.1Q VLAN tag ID to a logical interface.
Options	<i>number</i> —A valid VLAN identifier. Range: For 4-port Fast Ethernet PICs configured to handle VPLS traffic, 512 through 1023. For 1-port and 10-port Gigabit Ethernet PICs configured to handle VPLS traffic, 512 through 4094.
Usage Guidelines	See “Enable VLAN Tagging” on page 334.
Required Privilege Level	interface—To view this statement in the configuration. interface-control—To add this statement to the configuration.

vlan-tagging

Syntax	vlan-tagging;
Hierarchy Level	[edit interfaces <i>interface-name</i>], [edit logical-routers <i>logical-router-name</i> interfaces <i>interface-name</i>]
Description	For Fast Ethernet and Gigabit Ethernet interfaces only, enable the reception and transmission of 802.1Q VLAN-tagged frames on the interface.
Usage Guidelines	See “Enable VLAN Tagging” on page 334.
Required Privilege Level	interface—To view this statement in the configuration. interface-control—To add this statement to the configuration.

vpls

Syntax	vpls;
Hierarchy Level	[edit interfaces <i>interface-name</i> unit <i>logical-unit-number</i> family], [edit logical-routers <i>logical-router-name</i> interfaces <i>interface-name</i> unit <i>logical-unit-number</i> family]
Description	Specify the VPLS protocol family information for the logical interface.
Usage Guidelines	See “Configure Interfaces for VPLS Routing” on page 331.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

