Chapter 17

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 Routing Protocols Configuration Guide*. The interface statements at the [edit interfaces *interface-name*] hierarchy level are explained in the *JUNOS 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 *interface-name*],
[edit logical-routers *logical-router-name* interfaces *interface-name*]

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 102.

Options 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 routing platforms, except the M320, 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.

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, *Multiprotocol Encapsulation over ATM Adaptation Layer 5*). Packets from the ATM interfaces are converted to standard ENET2/802.3 encapsulated Ethernet frames with the frame check sequence (FCS) field removed.

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 routing platforms, except the M320, 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.

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 routing platforms, except the M320, 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.

Usage Guidelines See “Configuring the Interface Encapsulation” on page 352.

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 *size*;

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

Description Modify the size of the VPLS media access control (MAC) address table.

Options *size*—Specify the size of the MAC address table.

Range: 16 through 65,536 MAC addresses
Default: 512 MAC addresses

Usage Guidelines See "Configuring the Size of the VPLS MAC Address Table" on page 356.

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

site

Syntax
```
site site-name {
    site-identifier number;
}
```

Hierarchy Level [edit logical-routers *logical-router-name* routing-instances *routing-instance-name* protocols vpls],
[edit routing-instances *routing-instance-name* 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 site *site-name*—Name of the site.

The other statement is explained separately.

Usage Guidelines See "Configuring the VPLS Site" on page 355.

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 *identifier*;

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

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 “Configuring the VPLS Site” on page 355.

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 *number*;

Hierarchy Level [edit logical-routers *logical-router-name* routing-instances *routing-instance-name* protocols vpls],
[edit routing-instances *routing-instance-name* 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 “Configuring the Site Range” on page 355.

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: *x*k to specify KB, *x*m to specify MB, or *x*g 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 “Tracing VPLS Traffic and Operations” on page 366.

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

tunnel-services

Syntax
```
tunnel-services {
    devices device-names;
    primary primary-device-name;
}
```

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

Description Specifies that traffic for particular VPLS routing instances be forwarded to specific virtual tunnel (VT) interfaces, allowing you to load-balance VPLS traffic among all the available VT interfaces on the router.

Options devices—Specifies the VT interfaces acceptable for use by the VPLS routing instance. If you do not configure this option, all VT interfaces available to the router can be used for de-encapsulating traffic for this instance.

primary—Specifies the primary VT interface to be used by the VPLS routing instance. The VT interface specified is used to de-encapsulate all VPLS traffic from the MPLS core network for this routing instance. If the VT interface specified is unavailable, then one of the other acceptable VT interfaces is used for handling the VPLS traffic. If you do not configure this option, any acceptable VT interface can be used to de-encapsulate VPLS traffic from the core.

Usage Guidelines See “Specifying the VT Interfaces Used by VPLS Routing Instances” on page 365.

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 number;
```

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

Description For Fast Ethernet and Gigabit Ethernet interfaces only, bind an 802.1Q VLAN tag ID to a logical interface.

Options *number*—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 “Enabling VLAN Tagging” on page 354.

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 *interface-name*],
[edit logical-routers *logical-router-name* interfaces *interface-name*]

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 “Enabling VLAN Tagging” on page 354.

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 *interface-name* unit *logical-unit-number* family],
[edit logical-routers *logical-router-name* interfaces *interface-name* unit *logical-unit-number* family]

Description Specify the VPLS protocol family information for the logical interface.

Usage Guidelines See “Configuring Interfaces for VPLS Routing” on page 350.

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