Chapter 25

Summary of Layer 2 Circuit Configuration Statements

The following sections explain the major protocol configuration statements that apply specifically to Layer 2 circuits. The statements are organized alphabetically. Protocols and the statements at the [edit protocols] hierarchy level are explained in the *JUNOS Routing Protocols Configuration Guide*.

bandwidth

Syntax bandwidth (*bandwidth* | ct*number bandwidth*);

Hierarchy Level [edit logical-routers *logical-router-name* protocols l2circuit neighbor *address* interface *interface-name*],
[edit protocols l2circuit neighbor *address* interface *interface-name*]

Description Specify bandwidth allocation for a Layer 2 circuit or for the class types of a Layer 2 circuit.

Options *bandwidth*—Configure the bandwidth in bits per second for the Layer 2 circuit. You cannot configure the bandwidth for the Layer 2 circuit and for the class types at the same time.

ct*number bandwidth*—Configure the bandwidth in bits per second for a class type on the Layer 2 circuit. You can configure bandwidth for up to 4 class types (ct0, ct1, ct2, ct3) per Layer 2 circuit. If you configure the class types, you must configure them in order, starting with class type ct0.

Usage Guidelines See "Configuring Bandwidth Allocation and Call Admission Control" on page 472.

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

community

Syntax
```
community community-name {
    invert-match;
    members community-members;
}
```

Hierarchy Level
```
[edit logical-routers logical-router-name policy-options],
[edit logical-routers logical-router-name protocols l2circuit neighbor address
interface interface-name],
[edit policy-options],
[edit protocols l2circuit neighbor address interface interface-name]
```

Description Specify the community for the Layer 2 circuit.

Options invert-match—Invert the results of the community expression match.

members *community-members*—Specify the members of the community.

Usage Guidelines See “Configuring the Layer 2 Circuit Community” on page 466.

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

control-word

Syntax
```
(control-word | no-control-word);
```

Hierarchy Level
```
[edit logical-routers logical-router-name protocols l2circuit neighbor address
interface interface-name],
[edit logical-routers logical-router-name routing-instances routing-instance-name
protocols l2vpn],
[edit protocols l2circuit neighbor address interface interface-name],
[edit routing-instances routing-instance-name protocols l2vpn]
```

Description Specify the control word. The control word is 4 bytes long and is inserted between the Layer 2 protocol data unit (PDU) being transported and the virtual circuit (VC) label that is used for demultiplexing.

control-word—Enables the use of the control word.
Default: A null control word is enabled by default. You can also configure the control word explicitly using the control-word statement.

no-control-word—Disable the use of the control word.

Usage Guidelines See “Configuring the Control Word for Frame Relay Interfaces” on page 469.

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

description

Syntax description *text*;

Hierarchy Level [edit logical-routers *logical-router-name* protocols l2circuit neighbor *address* interface *interface-name*],
[edit protocols l2circuit neighbor *address* interface *interface-name*]

Description Provide a text description for the Layer 2 circuit. If the text includes one or more spaces, enclose the entire text string in quotation marks (" ").

Usage Guidelines See “Configuring the Description” on page 18.

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

end-interface

Syntax
```
end-interface {
    interface interface-name;
    protect-interface interface-name;
}
```

Hierarchy Level [edit logical-routers *logical-router-name* protocols l2circuit local-switching interface *interface-name*],
[edit protocols l2circuit local-switching interface *interface-name*]

Description Specify the end interface for a local interface switch.

The remaining statements are explained separately

Usage Guidelines See “Configuring Local Interface Switching” on page 464.

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

install-nexthop

Syntax install-nexthop (except | lsp *lsp-name* | lsp-regex *lsp-regular-expression*);

Hierarchy Level [edit logical-routers *logical-router-name* policy-options policy-statement *policy-name* term *term-name* then],
[edit policy-options policy-statement *policy-name* term *term-name* then]

Description Select a specific label-switched path (LSP), or select an LSP from a set of similarly named LSPs as the traffic destination for the configured community. Also can prevent the installation of any matching next hops.

Options except—Prevent the installation of any matching next hops.

lsp *lsp-name*—Configure a specific LSP.

lsp-regex *lsp-regular-expression*—Configure a range of similarly named LSPs. You can use the following wildcard characters when configuring an LSP regular expression:

Asterisk (*)—Match any characters.

Period (.)—Match any single digit.

Usage Guidelines See “Configuring the Policy Statement for the Layer 2 Circuit Community” on page 467.

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

interface

Syntax
```
interface interface-name {
    community community-name;
    (control-word | no-control-word);
    description text;
    mtu mtu-number;
    protect-interface interface-name;
    virtual-circuit-id identifier;
}
```

Hierarchy Level [edit logical-routers *logical-router-name* protocols l2circuit neighbor *address*],
[edit protocols l2circuit neighbor *address*]

Description Interface over which Layer 2 circuit traffic travels.

Options *interface-name*—Name of the interface to configure.

The remaining statements are explained separately.

Usage Guidelines See “Configuring the Neighbor and Interface” on page 461.

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

l2circuit

Syntax

```
l2circuit {
    local-switching {
        interface interface-name {
            description text;
            end-interface {
                interface interface-name;
                protect-interface interface-name;
            }
            protect-interface interface-name;
        }
    }
    neighbor address {
        interface interface-name {
            community community-name;
            (control-word | no-control-word);
            description text;
            mtu mtu-number;
            protect-interface interface-name;
            virtual-circuit-id identifier;
        }
    }
    traceoptions {
        file filename <replace> <size size> <files number> <nostamp>;
        flag flag <flag-modifier> <disable>;
    }
}
```

Hierarchy Level [edit logical-routers *logical-router-name* protocols l2circuit],
[edit protocols l2circuit]

Description Enables a Layer 2 circuit.

The remaining statements are explained separately.

Usage Guidelines See “Layer 2 Circuit Configuration Guidelines” on page 459.

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

local-switching

Syntax

```
local-switching {
    interface interface-name {
        description text;
        end-interface {
            interface interface-name;
            protect-interface interface-name;
        }
        protect-interface interface-name;
    }
}
```

Hierarchy Level [edit logical-routers *logical-router-name* protocols l2circuit],
[edit protocols l2circuit]

Description Configure a local switching interface. A local switching interface allows you to terminate a virtual circuit on the local router.

The remaining statements are explained separately.

Usage Guidelines See “Configuring Local Interface Switching” on page 464.

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

mtu

Syntax mtu *mtu-number*;

Hierarchy Level [edit logical-routers *logical-router-name* protocols l2circuit neighbor *address* interface *interface-name*],
[edit protocols l2circuit neighbor *address* interface *interface-name*]

Description Configure the MTU to be advertised for the Layer 2 circuit.

Options *mtu-number*—MTU number to be advertised for the Layer 2 circuit.

Usage Guidelines See “Configuring the MTU Advertised for a Layer 2 Circuit” on page 463.

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

neighbor

Syntax neighbor *address*

Hierarchy Level [edit logical-routers *logical-router-name* protocols l2circuit],
[edit protocols l2circuit]

Description Each Layer 2 circuit is represented by the logical interface connecting the local provider edge (PE) router to the local customer edge (CE) router. All the Layer 2 circuits using a particular remote PE router designated for remote CE routers are listed under the neighbor statement (neighbor designates the PE router). Each neighbor is identified by its IP address and is usually the end-point destination for the LSP tunnel (transporting the Layer 2 circuit).

Options *address*—IP address of a neighboring router.

Usage Guidelines See “Configuring the Neighbor and Interface” on page 461.

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

no-control-word

See control-word on page 484

protect-interface

Syntax protect-interface *interface-name*;

Hierarchy Level [edit logical-routers *logical-router-name* protocols l2circuit neighbor *address* interface *interface-name*],
[edit logical-routers *logical-router-name* protocols l2circuit local-switching interface *interface-name*],
[edit logical-routers *logical-router-name* protocols l2circuit local-switching interface *interface-name* end-interface],
[edit protocols l2circuit local-switching interface *interface-name*],
[edit protocols l2circuit neighbor *address* interface *interface-name*],
[edit protocols l2circuit local-switching interface *interface-name* end-interface]

Description Provide a backup for the protected interface in case of failure. Network traffic uses the primary interface only, as long as the primary interface functions.

Options *interface-name*—Name of the protect interface to configure.

Usage Guidelines See “Configuring the Protect Interface” on page 461.

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* protocols l2circuit],
[edit protocols l2circuit]

Description Trace traffic flowing through a Layer 2 circuit.

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 its maximum size, it is renamed *trace-file*.0, then *trace-file*.1, and so on, 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.

connections—Layer 2 circuit connections (events and state changes)

error—Error conditions

FEC—Layer 2 circuit advertisements received or sent by means of the Label Distribution Protocol (LDP)

topology—Layer 2 circuit topology changes caused by reconfiguration or advertisements received from other PE routers

flag-modifier—(Optional) Modifier for the tracing flag. You can specify the detail modifier if you want to 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—(Optional) 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 the *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—(Optional) Allow any user to read the log file.

Usage Guidelines See “Tracing Layer 2 Circuit Creation and Changes” on page 474.

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

virtual-circuit-id

Syntax virtual-circuit-id *identifier*;

Hierarchy Level [edit logical-routers *logical-router-name* protocols l2circuit neighbor *address* interface *interface-name*],
[edit protocols l2circuit neighbor *address* interface *interface-name*]

Description Uniquely identify a Layer 2 circuit.

Usage Guidelines See “Configuring the Virtual Circuit ID” on page 465.

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