

## Configuring BFD for VCCV for Layer 2 VPNs, Layer 2 Circuits, and VPLS

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Bidirectional Forwarding Detection (BFD) support for virtual circuit connection verification (VCCV) allows you to configure a control channel for a pseudowire, in addition to the corresponding operations and management functions to be used over that control channel. BFD provides a low resource mechanism for the continuous monitoring of the pseudowire data path and for detecting data plane failures.

This feature provides support for asynchronous mode BFD for VCCV as described in draft-ietf-pseudowire3-vccv-bfd-02.txt, *Bidirectional Forwarding Detection (BFD) for the Pseudowire Virtual Circuit Connectivity Verification (VCCV)*. You can also use a ping operation to detect pseudowire failures. However, the processing resources required for a ping operation are greater than what is needed for BFD. In addition, BFD is capable of detecting data plane failure faster than VCCV ping. BFD for pseudowires is supported for Layer 2 circuits (LDP-based), Layer 2 VPNs (BGP-based), and VPLS (LDP-based or BGP-based).

To configure OAM and BFD for Layer 2 VPNs, include the `oam` statement and sub-statements at the `[edit routing-instances routing-instance-name protocols l2vpn]` hierarchy level:

```
oam {
  bfd-liveness-detection {
    detection-time {
      threshold milliseconds;
    }
    minimum-interval milliseconds;
    minimum-receive-interval milliseconds;
    multiplier number;
    no-adaptation;
    transmit-interval {
      minimum-interval milliseconds;
      threshold milliseconds;
    }
    version bfd-protocol-version;
  }
  control-channel {
    pwe3-control-word;
    pseudowire-label-ttl-1;
    router-alert-label;
  }
}
```

For more information about how to configure BFD, see the *JUNOS Routing Protocols Configuration Guide*.

You can configure many of the same OAM statements for VPLS and Layer 2 circuits:

- To enable OAM for VPLS, configure the `oam` statement and substatements at the `[edit routing-instances routing-instance-name protocols vpls]` hierarchy level and at the `[edit routing-instances routing-instance-name protocols vpls neighbor address]` hierarchy level. The `pwe3-control-word` statement configured at the `[edit`

`routing-instances routing-instance-name protocols l2vpn oam control-channel`] hierarchy level is not applicable to VPLS configurations.

- To enable OAM for Layer 2 circuits, configure the `oam` statement and substatements at the `[edit protocols l2circuit neighbor address interface interface-name]` hierarchy level. The `control-channel` statement and sub-statements configured at the `[edit routing-instances routing-instance-name protocols l2vpn oam]` hierarchy level do not apply to Layer 2 circuit configurations.

You can use the `show ldp database extensive` command to display information about the VCCV control channel and the `show bfd session extensive` command to display information about BFD for Layer 2 VPNs, Layer 2 circuits, and VPLS.

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