



## BFD on BDI Interfaces

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The Cisco BFD on BDI Interfaces feature alleviates limitations on the maximum number of interfaces per system that switched virtual interfaces (SVI) impose. This document describes how to configure the Bidirectional Forwarding Detection (BFD) protocol on bridge domain interfaces (BDIs).

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## Information About BFD on Bridge Domain Interfaces

### BFD on Bridge Domain Interfaces

Each BDI is associated with a bridge domain on which traffic is mapped using criteria defined and configured on the associated Ethernet flow points (EFPs). You can associate either single or multiple EFPs with a given bridge domain. Thus you can establish a BFD single-hop session over BDI interfaces that are defined in either a global table or a VPN routing and forwarding (VRF) table, and all existing single-hop BFD clients will be supported for BFD over BDI.

The Cisco BFD on BDI feature does not affect BFD stateful switchover (SSO) on platforms that are SSO capable.

## How to Configure BFD on BDI Interfaces

### Enabling BFD on a Bridge Domain Interface

Perform these steps to enable single hop BFD on an individual BDI interface.



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**Note** Multihop BFD is not interface specific so you do not need BDI interface-level configuration to establish multihop BFD sessions.

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**Before you begin**

Two or more nodes must be connected.

**SUMMARY STEPS**

1. **enable**
2. **configure terminal**
3. **bfd-template single-hop** *template-name*
4. **interval min-tx** *milliseconds* **min-rx** *milliseconds* **multiplier** *multiplier-value*
5. **interface** *type number*
6. **ip address** *ip-address mask*
7. **bfd template** *template name*
8. **exit**

**DETAILED STEPS**

	Command or Action	Purpose
<b>Step 1</b>	<b>enable</b> <b>Example:</b> <pre>Router&gt; enable</pre>	Enables privileged EXEC mode. <ul style="list-style-type: none"> <li>• Enter your password if prompted.</li> </ul>
<b>Step 2</b>	<b>configure terminal</b> <b>Example:</b> <pre>Router# configure terminal</pre>	Enters global configuration mode.
<b>Step 3</b>	<b>bfd-template single-hop</b> <i>template-name</i> <b>Example:</b> <pre>Router(config)# bfd-template single-hop bfdtemplate1</pre>	Creates a single-hop BFD template and enters BFD configuration mode.
<b>Step 4</b>	<b>interval min-tx</b> <i>milliseconds</i> <b>min-rx</b> <i>milliseconds</i> <b>multiplier</b> <i>multiplier-value</i> <b>Example:</b> <pre>Router(bfd-config)# interval min-tx 120 min-rx 100 multiplier 3</pre>	Configures the transmit and receive intervals between BFD packets, and specifies the number of consecutive BFD control packets that must be missed before BFD declares that a peer is unavailable.
<b>Step 5</b>	<b>interface</b> <i>type number</i> <b>Example:</b> <pre>Router(config)# interface bdi 100</pre>	Configures a bridge domain interface and enters interface configuration mode.
<b>Step 6</b>	<b>ip address</b> <i>ip-address mask</i> <b>Example:</b>	Configures an IP address for the interface.

	Command or Action	Purpose
	Router(config-if)# ip address 10.201.201.1 255.255.255.0	
<b>Step 7</b>	<b>bfd template</b> <i>template name</i>	Enables the BFD template.
<b>Step 8</b>	<b>exit</b>  <b>Example:</b>  Router(config-if)# exit	Exits interface configuration mode and returns to global configuration mode.

## Associating an Ethernet Flow Point with a Bridge Domain

### Before you begin

BFD must be enabled on both nodes.

### SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **interface** *type slot/subslot/port*
4. **no ip address**
5. **negotiation auto**
6. **cdp enable**
7. **service instance** *id service-type*
8. **encapsulation dot1q** *vlan-id*
9. **rewrite ingress tag pop 1 symmetric**
10. **exit**
11. **exit**
12. **bridge-domain** *vlan-id*

### DETAILED STEPS

	Command or Action	Purpose
<b>Step 1</b>	<b>enable</b>  <b>Example:</b>  Router> enable	Enables privileged EXEC mode.  • Enter your password if prompted.
<b>Step 2</b>	<b>configure terminal</b>  <b>Example:</b>  Router# configure terminal	Enters global configuration mode.

	<b>Command or Action</b>	<b>Purpose</b>
<b>Step 3</b>	<b>interface</b> <i>type slot/subslot/port</i> <b>Example:</b>  Router(config)# interface GigabitEthernet0/0/3	Configures an interface type and enters interface configuration mode.
<b>Step 4</b>	<b>no ip address</b> <b>Example:</b>  Router(config-if)# no ip address	Disables IP processing.
<b>Step 5</b>	<b>negotiation auto</b> <b>Example:</b>  Router(config-if)# negotiation auto	Enables the autonegotiation protocol to configure the speed, duplex, and automatic flow control of the interface.
<b>Step 6</b>	<b>cdp enable</b> <b>Example:</b>  Router(config-if)# cdp enable	Enables Cisco Discovery Protocol on the interface.
<b>Step 7</b>	<b>service instance</b> <i>id service-type</i> <b>Example:</b>  Router(config-if)# service instance 2 ethernet	Configures an Ethernet service instance and enters service instance configuration mode.
<b>Step 8</b>	<b>encapsulation dot1q</b> <i>vlan-id</i> <b>Example:</b>  Router(config-if-srv)# encapsulation dot1q 2	Enables IEEE 802.1Q encapsulation of traffic on the subinterface.
<b>Step 9</b>	<b>rewrite ingress tag pop 1 symmetric</b> <b>Example:</b>  Router(config-if-srv)# rewrite ingress tag pop 1 symmetric	Specifies removal of the outermost tag from the frame ingressing the service instance and the addition of a tag in the egress direction.
<b>Step 10</b>	<b>exit</b> <b>Example:</b>  Router(config-if)# exit	Exits service instance configuration mode and returns to interface configuration mode.
<b>Step 11</b>	<b>exit</b> <b>Example:</b>  Router(config-if)# exit	Exits interface configuration mode and returns to global configuration mode.
<b>Step 12</b>	<b>bridge-domain</b> <i>vlan-id</i> <b>Example:</b>  Router(config)# bridge-domain 2	Associates the bridge domain with the Ethernet flow point.

**Example:****What to do next**

# Configuration Examples for BFD on BDI Interfaces

## Examples for BFD on BDI Interfaces

The following example shows how to configure BFD on a BDI.

```
Router#show bfd neighbors

IPv4 Sessions
NeighAddr          LD/RD          RH/RS          State          Int
10.1.1.2           2049/1         Up             Up             BD2
Router#
Router#show running interface gi0/0/3
Building configuration...

Current configuration : 230 bytes
!
interface GigabitEthernet0/0/3
no ip address
ip pim passive
ip igmp version 3
negotiation auto
cdp enable
service instance 2 ethernet
  encapsulation dot1q 2
  rewrite ingress tag pop 1 symmetric
  bridge-domain 2
!
end

Router#show running interface bdi2
Building configuration...

Current configuration : 127 bytes
!
interface BDI2
ip address 10.1.1.3 255.255.255.0
bfd interval 100 min_rx 100 multiplier 3
bfd neighbor ipv4 10.1.1.2
end
```

And similarly for the other node:

```
Router2#show running interface bdi2
```

Building configuration...

```
Current configuration : 127 bytes
!
interface BDI2
ip address 10.1.1.2 255.255.255.0
bfd interval 100 min_rx 100 multiplier 3
bfd neighbor ipv4 10.1.1.3
end
```

```
ED3#show run int gig0/0/3
Building configuration...
```

```
Current configuration : 195 bytes
!
interface GigabitEthernet0/0/3
no ip address
negotiation auto
cdp enable
service instance 2 ethernet
  encapsulation dot1q 2
  rewrite ingress tag pop 1 symmetric
  bridge-domain 2
!
end
```

```
Router2#show bfd neighbors
```

```
IPv4 Sessions
NeighAddr                LD/RD          RH/RS          State          Int
10.1.1.3                  1/2049        Up             Up             BD2
ED3#
```