



## Configuration

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## BFD Configuration Commands

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# Chapter 1 BFD Configuration Commands

BFD configuration commands are shown as follows:

- `bfd init-mode`
- `bfd slow-timers`
- `bfd demand enable`
- `bfd echo enable`
- `bfd enable`
- `bfd neighbor`
- `bfd min_echo_rx_interval`
- `bfd authentication-mode`
- `show bfd`

## 1.1.1 bfd init-mode

To enable the initial BFD mode, run the following command:

**bfd init-mode** [*active* | *passive*]

**no bfd init-mode**

Parameter

Parameter	Description
<i>active</i>	Means that the BFD neighbor sends the control packets actively to establish the BFD connection.
<i>passive</i>	Means that the BFD neighbor won't send any BFD packets when BFD neighbor is down.

Default value

The value of the **init-mode** parameter is **active**.

Command mode

Global configuration mode

## Explanation

The BFD connection requires one terminal to be active in its initial mode, or the BFD connection cannot be set up.

## Example

The following example shows how to set the BFD mode of local system to **passive**.

```
Switch#  
Switch#conf  
Switch_config#bfd init-mode passive
```

## Related command

**bfd slow-timers**

### 1.1.2 bfd slow-timers

To set the slow timer of BFD, run **bfd slow-timers**; to resume the default settings, run **no bfd slow-timers**.

**bfd slow-timers** <value>

**no bfd slow-timers**

## Parameter

Parameter	Description
<i>value</i>	It ranges between 1000ms and 30000ms.

## Default value

The default value of slow-timers is 1.

## Command mode

Global configuration mode

## Explanation

This command is used to set the BFD slow-timers, which is 1 second by default. The BFD neighbor transmits control packets at an interval of this configured time before it is up. This is mainly to prevent those not-up sessions from consuming too much bandwidth.

When the echo function is activated, echo packets are responsible for conducting real connectivity checkup. Hence, BFD control packets are not frequently forwarded and

the system takes this configured slow-timers as the interval for transmitting control packets.

### Example

The following example shows how to set the slow-timers of BFD to 2 seconds:

```
Switch#
```

```
Switch#conf
```

```
Switch_config#bfd slow-timers 2000
```

### Related command

**bfd init-mode**

## 1.1.3 bfd demand enable

To activate the BFD query mode, run **bfd demand enable**; to disable the BFD query mode, run **no bfd demand enable**.

**bfd demand enable**

**no bfd demand enable**

### Parameter

N/A

### Default value

The BFD query mode is not activated by default.

### Command mode

Interface configuration mode

### Explanation

In query mode, we suppose that each system has an independent method to confirm its connection with other systems. Once a BFD session is conducted, the system stops transmitting BFD control packets unless a certain system requires explicit connectivity checkup. In a system where explicit connectivity checkup is required, the system transmits short-sequence BFD control packets and claims the session is down if it doesn't receive the response packets in the checkup period.

### Example

The following example shows how to enable the VLAN1 BFD query mode.

```
Switch_config#
```

```
Switch_config# interface vlan 1
Switch_config_v1#bfd enable
Switch_config_v1#bfd demand enable
```

Related command

**bfd enable**

#### 1.1.4 bfd echo enable

To activate BFD echo, run **bfd echo enable**; to disable BFD echo, run **no bfd echo enable**.

**bfd echo enable** *<cr>/<number>*

**no bfd echo enable**

Parameter

Parameter	Description
<i>number</i>	Stands for the allowable maximum number of dropped echo packets, which is 3 by default and ranges from 3 to 10.

Default value

The BFD echo is not activated by default.

Command mode

Interface configuration mode

Explanation

After BFD echo is activated, connectivity checkup is conducted by the echo packets.

Example

The following example shows how to activate VLAN1 BFD echo and set the allowable maximum number of echo packet losses to **4**.

```
Switch_config#
Switch_config#int vlan1
Switch_config_v1#bfd enable
Switch_config_v1#bfd echo enable 4
```

Related command

**bfd enable**

**bfd min\_echo\_rx\_interval****1.1.5 bfd enable**

To activate BFD on a port, run **bfd enable**; to disable BFD on a port, run **no bfd enable**.

**bfd enable**      *<cr> | [**min\_tx\_interval** <tx\_value> **min\_rx\_interval** <rx\_value> **multiplier** <m\_value>]*

**no bfd enable**

## Parameter

Parameter	Description
<i>tx_value</i>	Sets the minimum interval of transmitting control packets, which ranges from 10ms to 999ms and the default value of which is 50ms.
<i>rx_value</i>	Sets the minimum interval of receiving control packets, which ranges from 10ms to 999ms and the default value of which is 50ms.
<i>m_value</i>	Sets the checkup coefficient of BFD control packets, which ranges from 3 to 50 and the default value of which is 3.

## Default value

The BFD function is not activated on ports.

## Command mode

Interface configuration mode

## Explanation

The precondition for activating BFD on a port is that the IP address of this port must exist.

Note:

Both **min\_tx\_interval** and **min\_rx\_interval** are used as references for the local BFD and the peer BFD. They are not real intervals of packet reception and transmission. The multiplier has no role in the local BFD, but is used for the peer BFD to calculate the checkup time.

## Example

The following example shows how to enable VLAN1 BFD, set the minimum intervals of both transmitting and receiving control packets to **80ms** and the checkup coefficient to **5**.

```
Switch_config#
```



```
Switch_config#int vlan1
Switch_config_v1#bfd enable min_tx 80 min_rx 80 multi 5
```

Related command

**ip address**

### 1.1.6 bfd neighbor

To set the static BFD neighbor, run **bfd neighbor**; to delete the static BFD neighbor, run **no bfd neighbor**.

**bfd neighbor** <ip-add>

**no bfd neighbor** <ip-add>

Parameter

Parameter	Description
<i>ip-add</i>	Stands for the to-be-configured IP address.

Default value

No static BFD neighbor exists on the port.

Command mode

Interface configuration mode

Explanation

BFD is a two-way checkup protocol. If it is used to check the unidirectional paths such as static route, a problem may arise that no BFD neighbor exists on the peer end. Hence you have to use this command to set a static neighbor. Of course, you can solve this problem through dynamic protocol.

Example

The following example shows how to set static BFD 172.16.1.100 on interface vlan1.

```
Switch_config#
Switch_config#int vlan1
Switch_config_v1#bfd enable
Switch_config_v1#bfd neighbor 172.16.1.100
```

Related command

**bfd enable**

### 1.1.7 bfd min\_echo\_rx\_interval

To set the minimum interval of receiving BFD echo packets, run **bfd min\_echo\_rx\_interval**; to resume the default settings, run **no bfd min\_echo\_rx\_interval**.

**bfd min\_echo\_rx\_interval** <value>

**no bfd min\_echo\_rx\_interval**

#### Parameter

Parameter	Description
<i>value</i>	<10-999>, unit: millisecond

#### Default value

The default value of **min\_echo\_rx\_interval** is 50ms.

#### Command mode

Interface configuration mode

#### Explanation

This command is used to set the minimum interval of receiving BFD echo packets. Because echo packets are locally transmitted and locally received, the echo packet transmission interval in the local system is also set via this command.

#### Example

The following example shows how to activate BFD echo on interface vlan1 and set the minimum interval of receiving BFD echo packets to 80ms.

```
Switch_config#  
Switch_config#int vlan1  
Switch_config_v1#bfd enable  
Switch_config_v1#bfd echo enable  
Switch_config_v1#bfd min_echo_rx_interval 80
```

#### Related command

**bfd enable**

**bfd echo enable**

### 1.1.8 bfd authentication-mode

To set the authentication of BFD packets, run **bfd authentication-mode**; to disable the authentication of BFD packets, run **no bfd authentication-mode**.

**bfd authentication-mode** [*md5* | *meticulous md5* | *simple* ] <key id> <key>

**no bfd authentication-mode**

#### Parameter

Parameter	Description
<b>md5</b>	MD5 authentication
<b>meticulous md5</b>	Securer MD5 authentication
<b>simple</b>	Simple password authentication
<i>key id</i>	Authentication ID
<i>key</i>	Authentication password (up to 16 characters)

#### Default value

The authentication function is not enabled.

#### Command mode

Interface configuration mode

#### Explanation

After BFD authentication is configured, BFD will transmit control packets with the authentication field. Normal link checkup can be performed only when two BFD terminals have the same authentication configuration.

Note: Those BFD neighbors in UP state are not subject to authentication changes.

#### Example

The following example shows how to enable BFD MD5 authentication on interface VLAN1:

```
Switch_config#
Switch_config#int vlan1
Switch_config_v1#bfd enable
Switch_config_v1#bfd authentication-mode md5 1
```

#### Related command

**bfd enable**

### 1.1.9 show bfd

To display the BFD-related information, run the following command:

**show bfd interfaces** *[details]* | **neighbors** *[details]*

Parameter

N/A

Default value

Command mode

Global configuration mode

Explanation

This command is used to set the BFD-related information.

Example

N/A

Related command

**bfd enable**

**bfd neighbor**