



## REP Fast

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## REP Fast Overview

The Resilient Ethernet Protocol (REP) Fast feature allows faster link failure detection and convergence on the switch copper Gigabit Ethernet (GE) ports.

This document describes only REP Fast.

REP was originally designed for Fast Ethernet (FE 10/100) ports. Link down detection time on FE ports is 10 milliseconds (ms) and convergence time is about 50 ms. On Fiber GE ports, link down time is 10 ms, but on GE copper interfaces, the IEEE 802.3 specification mandates the link drop detection and recovery times to be 750 ms for a master and 350 ms for a slave. As a result, link loss and recovery can be detected a lot more quickly on GE fiber interfaces than on corresponding copper interfaces. This in turn means that the convergence time for REP is a lot higher when using GE copper interfaces.

To improve link down detection time, a real-time operating system (RTOS)/beacon mechanism is implemented to trigger faster link failure detection (within 5-10 ms) when a REP interface is configured for REP Fast mode. RTOS has two timers for each REP interface. The first timer is triggered every 3 ms to transmit the beacon frame to the neighbor node. After successful transmission and reception of the frame, both the timers are reset. If the packet is not received after the transmission, then the second timer is triggered to check the reception within 10 ms. If the packet is not received, upon the timer expiry, a link down packet is sent to the switch.

If the neighbor acknowledges and is configured for REP Fast mode, convergence occurs within 50 ms. If a neighbor switch does not support RTOS, normal REP mode must be used for link up/down detection. In this case, you need to disable fastmode on both ends of the link.

## Configuring REP Fast

Follow these steps to configure REP Fast:

**Before you begin**

Enable REP on the switch and configure the REP topology as described in [Configuring Resilient Ethernet Protocol](#).

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- Step 1** Enter global configuration mode:  
**configure terminal**
- Step 2** Specify the interface and enter interface configuration mode:  
**interface interface-id**
- Step 3** Enable REP Fast:  
**rep fastmode**
- Step 4** Return to privileged exec mode:  
**end**
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**Example**

```
Switch# configure terminal
Switch(config)# int gi 1/4
Switch(config-if)# rep fastmode
Switch(config-if)# end
Switch# sh run int gi 1/4
interface GigabitEthernet1/4
switchport trunk allowed vlan 1-10
switchport mode trunk
rep segment 1 edge
rep fastmode
```

## Displaying REP Fast Beacon Information

When REP Fast is enabled, the system sends beacon frames to the neighbor node for link status detection. Use the following command to display the number of beacon frames sent and received on an interface.

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In privileged exec mode, enter:

**show platform rep beacon interface interface-id**

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**Example**

```
Switch# sh platform rep beacon GigabitEthernet 1/4
Beacon RX : 43984
Beacon TX : 46826
```

## Feature History

| Feature Name | Release              | Feature Information                                       |
|--------------|----------------------|---|
| REP Fast     | Cisco IOS XE 16.11.1 | Initial support on Cisco Catalyst IE 3200, 3300, and 3400 |

