



Configuring Resilient Ethernet Protocol

This chapter describes how to configure the Resilient Ethernet Protocol in Cisco IOS Software Release 15.0(1)S.

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Understanding Resilient Ethernet Protocol

Resilient Ethernet Protocol (REP) is a Cisco proprietary protocol that provides an alternative to Spanning Tree Protocol (STP) to support L2 resiliency and fast failover with Ethernet networks. REP provides functionality to:

- Control network loops
- Handle link failures
- Improve convergence time

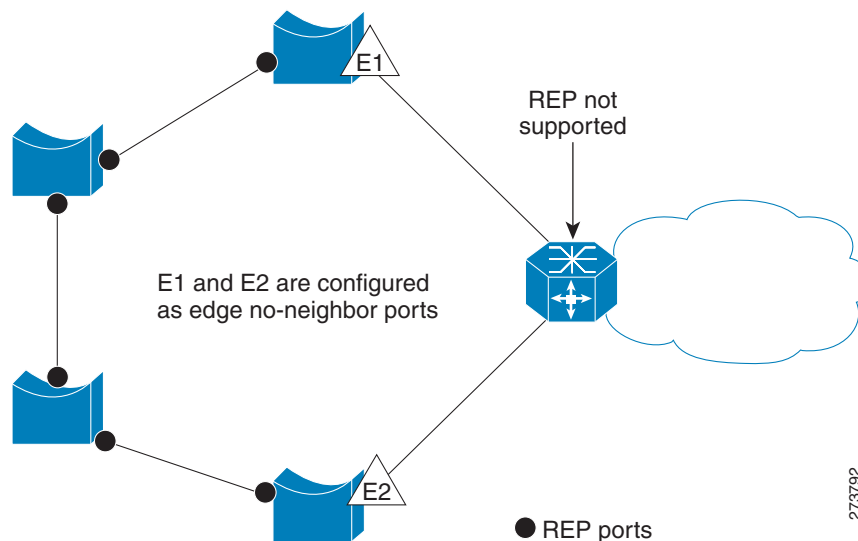
An REP segment is a connected chain of ports configured with a segment ID. Each segment consists of standard (non-edge) segment ports and two user-configured edge ports. REP is supported on Layer 2 trunk interfaces and EVC ports. REP controls a group of ports connected in a segment, ensures that the segment does not create any bridging loops, and responds to link failures within the segment. REP provides a basis for constructing more complex networks and supports VLAN load balancing. REP extends the network resiliency across Cisco IP Next-Generation Network (NGN) Carrier Ethernet Design. REP is designed to provide network and application convergence within 50 to 200 ms. REP is a segment protocol that integrates easily into existing Carrier Ethernet networks. It allows network architects to limit the scope of STP domains. REP can also notify the STP about potential topology changes, allowing interoperability with Spanning Tree.

REP is a distributed and secure protocol and does not rely on a master node controlling the status of the ring. Hence, the failures can be detected locally either through loss of signal (LOS) or loss of neighbor adjacency. Any REP port can initiate a switchover after acquiring the secure key to unblock the alternate port. An REP segment is a chain of ports connected to each other and configured with the same segment ID. Each end of a segment terminates on an edge switch. The port where the segment terminates is called the edge port.

REP Edge No-Neighbor

Effective from Cisco IOS release 15.1.(01)S, a new functionality provides capability to configure the non-rep switch facing ports as edge no-neighbor ports. These ports inherit the properties of edge ports, and overcomes the limitation of not being able to converge quickly during a failure.

Figure 67-1 Edge No-Neighbor Ports



In access ring topologies, the neighboring switch might not support REP, as shown in Figure 59-1. In this case, you can configure the non-REP facing ports (E1 and E2) as edge no-neighbor ports. These ports inherit all properties of edge ports, and you can configure them the same as any edge port, including configuring them to send STP or REP topology change notices to the aggregation switch. In this case the STP Topology Change Notice (TCN) that is sent is a Multiple Spanning-Tree (MST) STP message.

Configuring Resilient Ethernet Protocol

For information on Configuring REP over Ethernet Virtual Circuit, see:

http://www.cisco.com/en/US/docs/routers/7600/install_config/ES40_config_guide/es40_chap4.html

For information on Configuring Resilient Ethernet Protocol Configurable Timers, see:

http://www.cisco.com/en/US/docs/routers/7600/install_config/ES40_config_guide/es40_chap4.html#wp1607518