CHAPTER 18

Using Resilient Ethernet Protocol Command

Resilient Ethernet Protocol (REP) is a key part of the Carrier Ethernet and Mobile Transport over Packet (MToP) access network for fast and predictable convergence of Ethernet transport. REP is used primarily among access and aggregation devices that are connected in the Ethernet ring topologies.

Cisco Prime Network discovers and displays the following REP attributes in the Logical Inventory tree of the Prime Network Vision application:

- REP Segments. All of these segments are identified by a REP segment identifier that is locally configured on the network element. These segments, discovered on a switch, include the following attributes:
  - REP segment port 1 (interface name, port channel, or link aggregation group [LAG]).
  - REP segment port 2 (interface name, port channel, or LAG).
  - REP segment complete. This indicates whether the segment is complete so that no port is in the failed state.
- Global REP configuration details:
  - REP version used on the device.
  - REP administrative VLAN.
  - REP notification enabled.
  - Process and its status.
  - REP on EVC.
  - REP no neighbour.
  - REP on port-channel.

The following REP port attributes are modeled in Prime Network:

- REP segment ID.
- REP port ID.
- REP port state.
- REP port type (regular REP segment port, REP edge port, and primary REP edge port).
- REP port role (Open, Alternate, and Failed).
- Operational link state of the REP port (none, initDown, noNeighbour, oneWay, twoWay, flapping, wait, and unknown).

- Link status layer age-out timer (time, in milliseconds, for which the REP interface remains up without receiving a hello from a neighbor). REP must be configured on Layer 2 trunk ports (Network Node Interface (NNI) ports on access switches).
- VLAN load balancing configurations on REP primary edge ports. This includes:
  - REP alternate port (the port to be blocked for VLAN load balancing).
  - Blocked VLAN list.
  - Preempt timer.
- Remote device name, MAC and port interface.

REP details (port or interface) are not displayed in the Physical Inventory tree of the Cisco Prime Network Vision application.

You can view the REP port roles (open, alternate, and failed) in the Cisco Prime Network Vision map. The REP port role is displayed as a tool-tip between the REP enabled trunk ports in the Ethernet links. Using the Cisco Prime Network Vision map, you can identify if the segment is open or closed.

The map displays the forwarding direction (REP port roles) along the Physical links within VLAN overlays. It also displays the forwarding direction along the VLAN links among the switching elements within the VLAN logical domain topology.

In Prime Network 3.8, REP implementation supports the following faults:

- A REP Port Role change to Failed service event will be generated when a REP port role is change from Alternate or Open to Failed.
- A REP Port Role change to OK clearing service event will be generated when a REP port role is change from Failed to Alternate or Open.

Correlation to these service events to physical layer events (for example Link down or Port down will also be performed in Prime Network 3.8.

Supported Network Elements

You can run the REP commands on the following network elements:

- Cisco 7600 Series Routers
- Cisco MWR 2941 Mobile Wireless Routers
- Cisco ME 3600X and Cisco ME 3800X Carrier Ethernet Switches
- Cisco Catalyst 3750 Metro Series Switches
- All Cisco Catalyst Switches

See Part 1—Cisco VNEs for details on the software versions Prime Network supports for these network elements. To run the REP commands, the software on the network element must support the REP technology.

Displaying REP Segment Data

Use the **Show REP Segment Information** command to get the REP topology information for the specified segment.

Step 1 In the inventory window, expand the Logical Inventory tree and Resilient Ethernet Protocol node.

Step 2 Choose SegmentId and right-click **Commands > REP > Show REP Segment Information**. The Show REP Segment Information dialog box opens.

Step 3 By default, the General tab is selected. To see the commands that will be applied on the device, click **Preview**.

You can view the commands in the Result tab.

Step 4 To schedule the command, click the Scheduling tab. For more details on scheduling, see Scheduling a Command.

Step 5 To run the commands, click **Execute Now**.

The result contains information about all ports in the segment, including which one was configured and selected as the primary edge port.

Any errors are displayed in the Result tab.

Step 6 To close the dialog box, click **Close**.