# Default REP Configuration



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Default configuration for REP and REP features is as follows:

- REP is disabled on all interfaces. When enabled, the
- When REP is enabled:
  - The interface is a regular segment port unless it is configured as an edge port.
  - The sending of segment topology change notices (STCNs) is disabled.
  - All VLANs are blocked.

    When VLAN load balancing is enabled, the default is manual preemption with the delay timer disabled. If VLAN load balancing is not configured, the default after manual preemption is to block all VLANs at the primary edge port.
  - The administrative VLAN is VLAN 1.
  - REP Segment-ID Autodiscovery is enabled.
  - REP ZTP is enabled globally and disabled on interfaces.

## REP Configuration Guidelines

Follow these guidelines when configuring REP:

- We recommend that you begin by configuring one port and then configure the contiguous ports to minimize the number of segments and the number of blocked ports.
- If more than two ports in a segment fail when no external neighbors are configured, one port changes to a forwarding state for the data path to help maintain connectivity during configuration. In the show rep interface privileged EXEC command output, the Port Role for this port shows as *Fail Logical Open* ;

the Port Role for the other failed port shows as *Fail No Ext Neighbor*. When the external neighbors for the failed ports are configured, the ports go through the alternate port state transitions and eventually go to an open state or remain as the alternate port, based on the alternate port election mechanism.

- REP ports must be Layer 2 trunk ports.
- Be careful when configuring REP through a Telnet connection. Because REP blocks all VLANs until another REP interface sends a message to unblock it, you might lose connectivity to the switch if you enable REP in a Telnet session that accesses the switch through the same interface.
- You cannot run REP and STP or REP and Flex Links on the same segment or interface.
- If you connect an STP network to the REP segment, be sure that the connection is at the segment edge. An STP connection that is not at the edge could cause a bridging loop because STP does not run on REP segments. All STP BPDUs are dropped at REP interfaces.
- You must configure all trunk ports in the segment with the same set of allowed VLANs, or a misconfiguration occurs. It is not recommended to have a trunk port without explicitly specifying an allowed VLAN list for that trunk, to avoid flooding and impact to convergence.
- REP ports follow these rules:
  - There is no limit to the number of REP ports on a switch; however, only two ports on a switch can belong to the same REP segment.
  - If only one port on a switch is configured in a segment, the port should be an edge port.
  - If two ports on a switch belong to the same segment, they must be both edge ports, both regular segment ports, or one regular port and one edge no-neighbor port. An edge port and regular segment port on a switch cannot belong to the same segment.
  - If two ports on a switch belong to the same segment and one is configured as an edge port and one as a regular segment port (a misconfiguration), the edge port is treated as a regular segment port.
- REP interfaces come up in a blocked state and remains in a blocked state until notified that it is safe to unblock. You need to be aware of this to avoid sudden connection losses.
- REP sends all LSL PDUs in untagged frames on the native VLAN. The BPA message sent to the Cisco multicast address is sent on the administration VLAN, which is VLAN 1 by default.
- You can configure how long a REP interface remains up without receiving a hello from a neighbor. You can use the**rep lsl-age-timer** *value* interface configuration command to set the time from 120 ms to 10000 ms. The LSL hello timer is then set to the age-timer value divided by 3. In normal operation, three LSL hellos are sent before the age timer on the peer switch expires and checks for hello messages.
  - In Cisco IOS Release 12.2(52)SE, the LSL age-timer range changed from 3000 to 10000 ms in 500-ms increments to 120 to 10000 ms in 40-ms increments. If the REP neighbor device is not running Cisco IOS release 12.2(52)SE or later, do not configure a timer value less than 3000 ms. Configuring a value less than 3000 ms causes the port to shut down because the neighbor switch does not respond within the requested time period.
  - EtherChannel port channel interfaces do not support LSL age-timer values less than 1000 ms. If you try to configure a value less than 1000 ms on a port channel, you receive an error message and the command is rejected.
- When configuring the REP LSL age timer, make sure that both ends of the link have the same time value configured. Configuring different values on ports at each end of the link results in a REP link flap.

- REP ports cannot be configured as one of these port types:
  - SPAN destination port
  - Tunnel port
  - Access port
- REP is supported on EtherChannels, but not on an individual port that belongs to an EtherChannel.
- In a stacked switch configuration, the maximum number of REP segments depends on the topology and the mix of features enabled on the switch and across the network. The recommended number of REP segments per switch for a stacked switch environment is 8, and the recommended maximum number of switches per segment is 24.
- REP Negotiated can be configured only on the first two uplink ports of the switch:
  - IE3000 and IE4000—GigabitEthernet 1/1 and GigabitEthernet 1/2
  - IE4010 and IE5000 (without 10G ports)—GigabitEthernet 1/25 and GigabitEthernet 1/26
  - IE5000 with 10G ports—TenGigabitEthernet 1/25 and TenGigabitEthernet 1/26

# REP Administrative VLAN

To avoid the delay introduced by relaying messages in software for link-failure or VLAN-blocking notification during load balancing, REP floods packets at the hardware flood layer (HFL) to a regular multicast address. These messages are flooded to the whole network, not just the REP segment. You can control flooding of these messages by configuring an administrative VLAN for the whole domain.

Follow these guidelines when configuring the REP administrative VLAN:

- If you do not configure an administrative VLAN, the default is VLAN 1.
- It is recommended to have a unique administrative VLAN per segment on a switch.
- The administrative VLAN cannot be the RSPAN VLAN.