



Configuring Link State Tracking

This chapter describes how to configure the Link State Tracking in Cisco IOS Software Release 15.1(01)S.



Note

For complete syntax and usage information for the commands used in this chapter, see the Cisco 7600 Series Router Cisco IOS Command Reference at this URL:

http://www.cisco.com/en/US/products/ps6922/prod_command_reference_list.html

This chapter includes the following sections:

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Understanding How Link State Tracking Works

When a link failure occurs on a REP and MST segment, the associated protocols handle the link failure event. However, if the primary link to the switch is enabled even though the corresponding uplink ports on the switch are disabled, the REP and MST protocol is unaware of backbone side, and does not trigger a failover. The router continues to receive the traffic from the access side and then drops it discreetly due to lack of backbone connectivity. Link state tracking provides a solution to this problem by allowing the uplink interfaces to bind the link status to the down link ports. Uplink state tracking is configured such that when a set of uplink ports are disabled, other ports linked through CLI commands are disabled as well. The state of all the downlink interfaces are error-disabled only when all the upstream interfaces are disabled.

The LST triggers REP/MST re-convergence on the access side depending on the state of the core-facing interface. The link state of the core facing interface and the access facing interface are bound by link state tracking group.

LST facilitates:

- Enabling and disabling of link state group tracking.
- Removal of downstream interfaces from a link state group.
- Performing shut/no shut on error disabled interface.

Restrictions and Usage Guidelines

Follow these restrictions and usage guidelines when you configure the LST:

- Ensure that the management interfaces are not part of a link state group.
- REP port cannot be configured as uplink port.
- LST does not allow any interface, upstream or downstream, to be part of more than one link state group.
- You can configure a maximum of 10 link state groups.
- When you configure LST for the first time, you must add upstream interfaces to the link state group before adding downstream, otherwise the state of the downlink interfaces are error-disabled.
- The configurable interfaces are physical (both routed and switch port), port-channel, sub-interface and VLAN.
- Upstream interfaces are required to be among:
 - L3 interface(physical or portchannel)
 - SVI
- Downstream interfaces are required to be among:
 - L2 interface
 - L2 Port-channel
 - EVC

Configuring Link State Tracking

Perform the following tasks to configure a Link State Tracking:

	Command or Action	Purpose
Step 1	enable Example: Router> enable	Enables privileged EXEC mode.
Step 2	configure terminal Example: Router# configure terminal	Enters global configuration mode.
Step 3	link state track <i>number</i> Example: Router(config)# link state track 1	Creates a link-state group, and enables LST. The acceptable range is 1-10; the default value is 1.
Step 4	interface <i>slot/port</i> Example: Router(config)# interface gigabitethernet 2/1	Configures an interface.

	Command or Action	Purpose
Step 5	link state group <i>[number]</i> { upstream downstream } Example: Router(config-if)# link state group 1 upstream	Specifies a link-state group and configures the interface as either an upstream or downstream interface in the group. The group number can be 1 to 10; the default value is 1.
Step 6	end Example: Router(config-if)# end	Exits the CLI to privileged EXEC mode.

This example shows how to create a link-state group and configure the interfaces:

```
Router# configure terminal
Router(config)# link state track 1
Router(config)# interface gigabitethernet3/1
Router(config-if)# link state group 1 upstream
Router(config-if)# interface gigabitethernet3/3
Router(config-if)# link state group 1 upstream
Router(config-if)# interface gigabitethernet3/5
Router(config-if)# link state group 1 downstream
Router(config-if)# interface gigabitethernet3/7
Router(config-if)# link state group 1 downstream
Router(config-if)# end
```

This example shows how to verify the configuration:

The **show link state group** command displays the link-state group information.

```
Router> show link state group 1
Link State Group: 1 Status: Enabled, Down
```

The **show link state group detail** command displays detailed information about the group.

```
Router> show link state group detail
(Up):Interface up (Dwn):Interface Down (Dis):Interface disabled
Link State Group: 1 Status: Enabled, Down
Upstream Interfaces : Gi3/5(Dwn) Gi3/6(Dwn)
Downstream Interfaces : Gi3/1(Dis) Gi3/2(Dis) Gi3/3(Dis) Gi3/4(Dis)
Link State Group: 2 Status: Enabled, Down
Upstream Interfaces : Gi3/15(Dwn) Gi3/16(Dwn) Gi3/17(Dwn)
Downstream Interfaces : Gi3/11(Dis) Gi3/12(Dis) Gi3/13(Dis) Gi3/14(Dis)
(Up):Interface up (Dwn):Interface Down (Dis):Interface disabled
```

Troubleshooting the Link State Tracking

Table 69-1 lists the troubleshooting issues while configuring LST:

Table 69-1 Troubleshooting LST Issues

Problem	Solution
The downstream interface is in error-disabled state even though the upstream interfaces are up.	Use the show interfaces <interface> status err-disabled command to check why the interface is in such state. Use the show errdisable recovery command to view information about the error-disable recovery timer.

