

Chapter 16

Summary of LDP Configuration Statements

This chapter provides a reference for each Label Distribution Protocol (LDP) configuration statement. The statements are organized alphabetically.

authentication-key

Syntax	authentication-key <i>md5-authentication-key</i> ;
Hierarchy Level	[edit logical-routers <i>logical-router-name</i> protocols ldp session <i>address</i>], [edit logical-routers <i>logical-router-name</i> routing instances <i>routing-instance-name</i> protocols ldp session <i>address</i>] [edit protocols ldp session <i>address</i>], [edit routing instances <i>routing-instance-name</i> protocols ldp session <i>address</i>]
Description	Configure the MD5 authentication signature.
Usage Guidelines	See “Configure the TCP MD5 Signature for LDP Session” on page 292.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

deaggregate

Syntax	deaggregate no-deaggregate;
Hierarchy Level	[edit logical-routers <i>logical-router-name</i> protocols ldp], [edit logical-routers <i>logical-router-name</i> routing instances <i>routing-instance-name</i> protocols ldp] [edit protocols ldp], [edit routing instances <i>routing-instance-name</i> protocols ldp]
Description	Control FEC deaggregation on the router. deaggregate—Deaggregate FECs. no-deaggregate—Aggregate FECs.
Default	Deaggregation is disabled on the router.
Usage Guidelines	See “Configure FEC Deaggregation” on page 283.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

disable

Syntax	disable;
Hierarchy Level	[edit logical-routers <i>logical-router-name</i> protocols ldp graceful-restart] [edit logical-routers <i>logical-router-name</i> routing instances <i>routing-instance-name</i> routing-options graceful-restart] [edit logical-routers <i>logical-router-name</i> protocols ldp interface <i>interface-name</i>] [edit logical-routers <i>logical-router-name</i> routing instances <i>routing-instance-name</i> protocols ldp interface <i>interface-name</i>] [edit protocols ldp graceful-restart] [edit routing instances <i>routing-instance-name</i> routing-options graceful-restart] [edit protocols ldp interface <i>interface-name</i>] [edit routing instances <i>routing-instance-name</i> protocols ldp interface <i>interface-name</i>]
Description	Explicitly disable LDP on an interface, or explicitly disable LDP graceful restart.
Default	LDP is enabled on interfaces configured with the LDP interface statement. LDP graceful restart is automatically enabled when graceful restart is enabled under the [edit routing-options] hierarchy level.
Usage Guidelines	See “Enable LDP” on page 273 and “Configure LDP Graceful Restart” on page 275.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

egress-policy

Syntax	<code>egress-policy [policy-name]</code>
Hierarchy Level	[edit logical-routers <i>logical-router-name</i> protocols ldp], [edit logical-routers <i>logical-router-name</i> routing instances <i>routing-instance-name</i> protocols ldp] [edit protocols ldp], [edit routing instances <i>routing-instance-name</i> protocols ldp]
Description	Control the prefixes advertised into LDP.
Options	<i>policy-name</i> —Name of one or more routing policies.
Default	Only the loopback address is advertised.
Usage Guidelines	See “Configure the LDP Egress Policy” on page 282.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

explicit-null

Syntax	<code>explicit-null;</code>
Hierarchy Level	[edit logical-routers <i>logical-router-name</i> protocols ldp], [edit logical-routers <i>logical-router-name</i> routing instances <i>routing-instance-name</i> protocols ldp] [edit protocols ldp], [edit routing instances <i>routing-instance-name</i> protocols ldp]
Description	Advertise label 0 to the egress router of an LSP.
Default	If you do not include the explicit-null statement in the MPLS configuration, label 3 (implicit null) is advertised.
Usage Guidelines	See “Configure MPLS and LDP to Pop the Label on the Ultimate-Hop Router” on page 291.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

export

Syntax	export [<i>policy-name</i>];
Hierarchy Level	[edit logical-routers <i>logical-router-name</i> protocols ldp], [edit logical-routers <i>logical-router-name</i> routing instances <i>routing-instance-name</i> protocols ldp] [edit protocols ldp], [edit routing instances <i>routing-instance-name</i> protocols ldp]
Description	Apply policy filters to outbound LDP label bindings. Filters are applied to all label bindings from all neighbors.
Options	<i>policy-name</i> —Name of one or more routing policies.
Usage Guidelines	See “Configure LDP Outbound Label Filtering” on page 279.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

graceful-restart

Syntax	graceful-restart { disable; helper-disable; maximum-recovery-time <i>value</i> ; recovery-time <i>value</i> ; }
Hierarchy Level	[edit logical-routers <i>logical-router-name</i> protocols ldp], [edit logical-routers <i>logical-router-name</i> routing instances <i>routing-instance-name</i> protocols ldp] [edit protocols ldp], [edit routing instances <i>routing-instance-name</i> protocols ldp]
Description	Enable LDP graceful restart on the LDP master protocol instance or for a specific routing instance.
Usage Guidelines	See “Configure LDP Graceful Restart” on page 275.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

hello-interval

Syntax	hello-interval <i>seconds</i> ;
Hierarchy Level	[edit logical-routers <i>logical-router-name</i> protocols ldp interface <i>interface-name</i>], [edit logical-routers <i>logical-router-name</i> routing instances <i>routing-instance-name</i> protocols ldp interface <i>interface-name</i>] [edit protocols ldp interface <i>interface-name</i>], [edit routing instances <i>routing-instance-name</i> protocols ldp interface <i>interface-name</i>]
Description	Control the rate at which hello messages are sent on the interface.
Options	<i>seconds</i> —Length of time between hello packets. Range: 1 through 65,535 seconds Default: 5 seconds
Usage Guidelines	See “Configure the LDP Hello Interval” on page 273.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

helper-disable

Syntax	helper-disable;
Hierarchy Level	[edit logical-routers <i>logical-router-name</i> protocols ldp graceful-restart], [edit logical-routers <i>logical-router-name</i> routing instances <i>routing-instance-name</i> protocols ldp graceful-restart] [edit protocols ldp graceful-restart], [edit routing instances <i>routing-instance-name</i> protocols ldp graceful-restart]
Description	Disables helper mode for LDP graceful restart. When helper mode is disabled, a router cannot help a neighboring router that is attempting to restart LDP.
Default	Helper mode is enabled by default on all routing protocols (including LDP) that support graceful restart.
Usage Guidelines	See “Configure LDP Graceful Restart” on page 275.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

hold-time

Syntax	hold-time <i>seconds</i> ;
Hierarchy Level	[edit logical-routers <i>logical-router-name</i> protocols ldp interface <i>interface-name</i>], [edit logical-routers <i>logical-router-name</i> routing instances <i>routing-instance-name</i> protocols ldp interface <i>interface-name</i>] [edit protocols ldp interface <i>interface-name</i>], [edit routing instances <i>routing-instance-name</i> protocols ldp interface <i>interface-name</i>]
Description	How long a neighbor should consider the sending router to be operative. The hold time is advertised in LDP hello packets.
Options	<i>seconds</i> —Hold-time value. Range: 1 through 65,535 Default: 15 seconds
Usage Guidelines	See “Configure the LDP Hold Time” on page 274.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

import

Syntax	import [<i>policy-name</i>];
Hierarchy Level	[edit logical-routers <i>logical-router-name</i> protocols ldp], [edit logical-routers <i>logical-router-name</i> routing instances <i>routing-instance-name</i> protocols ldp] [edit protocols ldp], [edit routing instances <i>routing-instance-name</i> protocols ldp]
Description	Apply policy filters to received LDP label bindings. Filters are applied to all label bindings from all neighbors.
Options	<i>policy-name</i> —Name of one or more routing policies.
Usage Guidelines	See “Configure LDP Received Label Filtering” on page 277.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

interface

Syntax	interface <i>interface-name</i> { disable; hello-interval <i>seconds</i> ; hold-time <i>seconds</i> ; transport-address (interface loopback); }
Hierarchy Level	[edit logical-routers <i>logical-router-name</i> protocols ldp], [edit logical-routers <i>logical-router-name</i> routing instances <i>routing-instance-name</i> protocols ldp] [edit protocols ldp], [edit routing instances <i>routing-instance-name</i> protocols ldp]
Description	Enable LDP on one or more router interfaces.
Default	LDP is disabled on all interfaces.
Options	<i>interface-name</i> —Name of an interface. To configure all interfaces, specify all. The remaining statements are explained separately.
Usage Guidelines	See “Enable LDP” on page 273.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

keepalive-interval

Syntax	keepalive-interval <i>seconds</i> ;
Hierarchy Level	[edit logical-routers <i>logical-router-name</i> protocols ldp], [edit logical-routers <i>logical-router-name</i> routing instances <i>routing-instance-name</i> protocols ldp] [edit protocols ldp], [edit routing instances <i>routing-instance-name</i> protocols ldp]
Description	Set the keepalive interval value.
Options	<i>seconds</i> —Keepalive value. Range: 1 through 65,535 Default: 10 seconds
Usage Guidelines	See “Configure the LDP Keepalive Interval” on page 274.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

keepalive-timeout

Syntax	keepalive-timeout <i>seconds</i> ;
Hierarchy Level	[edit logical-routers <i>logical-router-name</i> protocols ldp], [edit logical-routers <i>logical-router-name</i> routing instances <i>routing-instance-name</i> protocols ldp] [edit protocols ldp], [edit routing instances <i>routing-instance-name</i> protocols ldp]
Description	Set the keepalive timeout value.
Options	<i>seconds</i> —Keepalive timeout value. Range: 1 through 65,535 Default: 30 seconds
Usage Guidelines	See “Configure the LDP Keepalive Timeout” on page 274.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

ldp

Syntax	ldp { ... }
Hierarchy Level	[edit logical-routers <i>logical-router-name</i> protocols], [edit logical-routers <i>logical-router-name</i> routing instances <i>routing-instance-name</i> protocols] [edit protocols], [edit routing instances <i>routing-instance-name</i> protocols]
Description	Enable LDP routing on the router. You must include the ldp statement in the configuration to enable LDP on the router.
Default	LDP is disabled on the router.
Usage Guidelines	See “Enable LDP” on page 273.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

maximum-recovery-time

Syntax	maximum-recovery-time <i>seconds</i> ;
Hierarchy Level	[edit logical-routers <i>logical-router-name</i> protocols ldp graceful-restart], [edit logical-routers <i>logical-router-name</i> routing instances <i>routing-instance-name</i> protocols ldp graceful-restart] [edit protocols ldp graceful-restart], [edit routing instances <i>routing-instance-name</i> protocols ldp graceful-restart]
Description	Specify the maximum amount of time to wait before giving up on an attempt to gracefully restart.
Options	<i>seconds</i> —Configure the maximum recovery time, in seconds. Range: 120 through 1800 seconds Default: 140 seconds
Usage Guidelines	See “Configure Recovery Time and Maximum Recovery Time” on page 277.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

no-deaggregate

See deaggregate on page 296.

no-forwarding

Syntax	no-forwarding;
Hierarchy Level	[edit logical-routers <i>logical-router-name</i> protocols ldp], [edit logical-routers <i>logical-router-name</i> routing instances <i>routing-instance-name</i> protocols ldp] [edit protocols ldp], [edit routing instances <i>routing-instance-name</i> protocols ldp]
Description	Do not add ingress routes to the inet.0 routing table even if traffic-engineering bgp-igp (configured at the [edit protocols mpls] hierarchy level) is enabled.
Default	The no-forwarding statement is disabled. Ingress routes are added to the inet.0 routing table instead of the inet.3 routing table when traffic-engineering bgp-igp is enabled
Usage Guidelines	See “Prevent Ingress Routes from Being Added to inet.0” on page 290.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

preference

Syntax	<code>preference preference;</code>
Hierarchy Level	[edit logical-routers <i>logical-router-name</i> protocols ldp], [edit logical-routers <i>logical-router-name</i> routing instances <i>routing-instance-name</i> protocols ldp], [edit protocols ldp interface <i>interface-name</i>], [edit routing instances <i>routing-instance-name</i> protocols ldp interface <i>interface-name</i>]
Description	Set the route preference level for LDP routes.
Options	<i>preference</i> —Preferred value. Range: 0 through 255 Default: 9
Usage Guidelines	See “Configure LDP Route Preferences” on page 275.
Required Privilege Level	interface—To view this statement in the configuration. interface-control—To add this statement to the configuration.

recovery-time

Syntax	<code>recovery-time seconds;</code>
Hierarchy Level	[edit logical-routers <i>logical-router-name</i> protocols ldp graceful-restart], [edit logical-routers <i>logical-router-name</i> routing instances <i>routing-instance-name</i> protocols ldp graceful-restart], [edit protocols ldp graceful-restart], [edit routing instances <i>routing-instance-name</i> protocols ldp graceful-restart]
Description	Specifies the amount of time a router waits for LDP to restart gracefully.
Options	<i>seconds</i> —Configure the recovery time, in seconds. Range: 120 through 1800 seconds Default: 140 seconds
Usage Guidelines	See “Configure Recovery Time and Maximum Recovery Time” on page 277.
Required Privilege Level	interface—To view this statement in the configuration. interface-control—To add this statement to the configuration.

session

Syntax	session <i>address</i> { authentication-key <i>authentication-key</i> ; }
Hierarchy Level	[edit logical-routers <i>logical-router-name</i> protocols ldp], [edit logical-routers <i>logical-router-name</i> routing instances <i>routing-instance-name</i> protocols ldp] [edit protocols ldp], [edit routing instances <i>routing-instance-name</i> protocols ldp]
Description	Allows you to specify the LDP session to which you want to attach the TCP MD5 signature. Configure the <i>address</i> for the remote end of the LDP session. The remaining statement is explained separately.
Usage Guidelines	See “Configure the TCP MD5 Signature for LDP Session” on page 292.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

traceoptions

Syntax traceoptions {
 file *filename* <replace> <size *size*> <files *number*> <no-stamp>
 <(world-readable | no-world-readable)>;
 flag *flag* <flag-modifier> <disable>;
 }

Hierarchy Level [edit logical-routers *logical-router-name* protocols ldp],
 [edit logical-routers *logical-router-name* routing instances *routing-instance-name*
 protocols ldp],
 [edit protocols ldp],
 [edit routing instances *routing-instance-name* protocols ldp]

Description LDP protocol-level trace options.

Default The default LDP protocol-level trace options are inherited from the routing protocols traceoptions statement included at the [edit routing-options] hierarchy level.

Options disable—(Optional) Disable the tracing operation. You can use this option to disable a single operation when you have defined a broad group of tracing operations, such as all.

filename—Name of the file to receive the output of the tracing operation. Enclose the name within quotation marks. All files are placed in the directory /var/log. We recommend that you place LDP tracing output in the file ldp-log.

files number—(Optional) Maximum number of trace files. When a trace file named *trace-file* reaches its maximum size, it is renamed *trace-file.0*, then *trace-file.1*, and so on, until the maximum number of trace files is reached. Then, the oldest trace file is overwritten.

If you specify a maximum number of files, you also must specify a maximum file size with the size option.

Range: 2 to 1000

Default: 2 files

flag—Tracing operation to perform. To specify more than one tracing operation, include multiple flag statements.

address—Operation of address and address withdrawal messages

binding—Label-binding operations

error—Error conditions

event—Protocol events

initialization—Operation of Initialization messages

label—Operation of Label Request, Label Map, Label Withdrawal, and Label Release messages

notification—Operation of Notification messages

packets—Equivalent to setting address, initialization, label, notification, and periodic flags

path—Label-switched path operations

periodic—Operation of hello and keepalive messages

route—Operation of route messages

state—Protocol state transitions

flag-modifier—(Optional) Modifier for the tracing flag. You can specify one or more of these modifiers:

detail—Provide detailed trace information.

disable—Disable this trace flag.

filter—Filter to apply to this flag. The filter flag modifier can only be applied to the route, path, and binding flags. This flag modifier has the following options:

match-on—Match on argument specified. The match-on option has the following suboption: *fec*, a filter based on the FEC associated with the traced object.

policy *policy-name*—Specify the filter policy.

receive—Packets being received.

send—Packets being transmitted.

no-stamp—(Optional) Do not place timestamp information at the beginning of each line in the trace file.

Default: If you omit this option, timestamp information is placed at the beginning of each line of the tracing output.

no-world-readable—(Optional) Disallow any user to read the log file.

replace—(Optional) Replace an existing trace file if there is one.

Default: If you do not include this option, tracing output is appended to an existing trace file.

size *size*—(Optional) Maximum size of each trace file, in kilobytes (KB), megabytes (MB), or gigabytes (GB). When a trace file named *trace-file* reaches this size, it is renamed *trace-file.0*. When *trace-file* again reaches its maximum size, *trace-file.0* is renamed *trace-file.1* and *trace-file* is renamed *trace-file.0*. This renaming scheme continues until the maximum number of trace files is reached. Then, the oldest trace file is overwritten.

If you specify a maximum file size, you also must specify a maximum number of trace files with the *files* option.

Syntax: *xk* to specify KB, *xm* to specify MB, or *xg* to specify GB

Range: 10 KB through the maximum file size supported on your system

Default: 1 MB

world-readable—(Optional) Allow any user to read the log file.

Usage Guidelines See “Trace LDP Protocol Traffic” on page 287 and the *JUNOS Internet Software Network Management Configuration Guide*.

Required Privilege Level routing and trace—To view this statement in the configuration.
routing-control and trace-control—To add this statement to the configuration.

track-igp-metric

Syntax track-igp-metric;

Hierarchy Level [edit logical-routers *logical-router-name* protocols ldp],
[edit logical-routers *logical-router-name* routing instances *routing-instance-name* protocols ldp]
[edit protocols ldp],
[edit routing instances *routing-instance-name* protocols ldp]

Description Causes the IGP route metric to be used for the LDP routes instead of the default LDP route metric (the default LDP route metric is 1).

Usage Guidelines See “Configure LDP to Use the IGP Route Metric” on page 290.

Required Privilege Level interface—To view this statement in the configuration.
interface-control—To add this statement to the configuration.

traffic-statistics

Syntax traffic-statistics {
 file *filename* <replace> <size *size*> <files *number*>
 <(world-readable | no-world-readable)>;
 interval *interval*;
 no-penultimate-hop;
 }

Hierarchy Level [edit logical-routers *logical-router-name* protocols ldp],
 [edit logical-routers *logical-router-name* routing instances *routing-instance-name*
 protocols ldp],
 [edit protocols ldp],
 [edit routing instances *routing-instance-name* protocols ldp]

Description LDP traffic statistics display the amount of traffic passed through a router for a particular forwarding equivalence class (FEC).

Options file *filename*—Name of the file to receive the output of the LDP statistics operation. Enclose the name within quotation marks. All files are placed in the directory /var/log.

files *number*—(Optional) Maximum number of LDP statistics files. When a statistics file named *ldp-stat* reaches its maximum size, it is renamed *ldp-stat.0*, then *ldp-stat.1*, and so on, until the maximum number of LDP statistics files is reached. Then the oldest file is overwritten.

If you specify a maximum number of files, you also must specify a maximum file size with the size option.

Range: 2 to 1000

Default: 2 files

no-penultimate-hop—(Optional) Do not collect traffic statistics on the penultimate hop router.

no-world-readable—(Optional) Do not allow any user to read the log file.

replace—(Optional) Replace an existing statistics file, if there is one.

Default: If you do not include this option, LDP statistics output is appended to an existing statistics file.

size size—(Optional) Maximum size of each statistics file, in kilobytes (KB), megabytes (MB), or gigabytes (GB). When a statistics file named *trace-file* reaches this size, it is renamed *trace-file.0*. When *trace-file* again reaches its maximum size, *ldp-stat.0* is renamed *ldp-stat.1* and *ldp-stat* is renamed *ldp-stat.0*. This renaming scheme continues until the maximum number of statistics files is reached. Then the oldest statistics file is overwritten.

If you specify a maximum file size, you also must specify a maximum number of trace files with the *files* option.

Syntax: *xk* to specify KB, *xm* to specify MB, or *xg* to specify GB

Range: 10 KB through the maximum file size supported on your system

Default: 1 MB

world-readable—(Optional) Allow any user to read the log file.

interval interval—(Optional) Specifies the interval at which the statistics are polled and written to the file.

Default: 300 seconds (5 minutes)

Usage Guidelines See “Collect LDP Statistics” on page 284.

Required Privilege Level routing—To view this statement in the configuration.
 routing-control—To add this statement to the configuration.

transport-address

Syntax transport-address (router-id | interface);

Hierarchy Level [edit logical-routers *logical-router-name* protocols ldp],
 [edit logical-routers *logical-router-name* routing instances *routing-instance-name* protocols ldp],
 [edit protocols ldp interface *interface-name*],
 [edit routing instances *routing-instance-name* protocols ldp interface *interface-name*]

Description Allows control of the transport address used by LDP.

Options router-id—The router identifier is used as the transport address.

interface—The first IP address on the interface is used as the transport address.

Default router-id

Usage Guidelines See “Configure LDP Transport Address Control” on page 281.

Required Privilege Level interface—To view this statement in the configuration.
 interface-control—To add this statement to the configuration.