

Chapter 29

Summary of BGP Configuration Statements

The following sections explain each of the BGP configuration statements. The statements are organized alphabetically.

advertise-inactive

Syntax	advertise-inactive;
Hierarchy Level	[edit protocols bgp], [edit protocols bgp group <i>group-name</i>], [edit protocols bgp group <i>group-name</i> neighbor <i>address</i>]
Description	Have BGP advertise its routes even if the routing table did not select them to be active routes.
Usage Guidelines	See “Have BGP Advertise Nonactive Routes” on page 339.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

allow

Syntax	allow [<i>network/mask-length</i>];
Hierarchy Level	[edit protocols bgp group <i>group-name</i>]
Description	Implicitly configure BGP peers, allowing peer connections from any of the specified networks or hosts. To configure multiple BGP peers, configure one or more networks and hosts within a single allow statement or include multiple allow statements.
Options	<i>network/mask-length</i> —IP network number of a single address or a range of allowable addresses for BGP peers, followed by the number of significant bits in the subnet mask. To allow all addresses, you can specify all, which is equivalent to 0.0.0.0/0.
Usage Guidelines	See “Define BGP Groups and Peers” on page 306 and “Minimum BGP Configuration” on page 303.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.
See Also	neighbor on page 353

authentication-key

Syntax	authentication-key <i>key</i> ;
Hierarchy Level	[edit protocols bgp], [edit protocols bgp group <i>group-name</i>], [edit protocols bgp group <i>group-name</i> neighbor <i>address</i>]
Description	Configure an MD5 authentication key (password). Neighboring routers use the same password to verify the authenticity of BGP packets sent from this system.
Options	<i>key</i> —Authentication password. It can be up to 255 characters. Characters can include any ASCII strings. If you include spaces, enclose all characters in quotation marks (" ").
Usage Guidelines	See “Configure Authentication” on page 315.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

bgp

Syntax	bgp { ... }
Hierarchy Level	[edit protocols]
Description	Enable BGP on the router.
Default	BGP is disabled.
Usage Guidelines	See “Enable BGP” on page 304.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

cluster

Syntax	cluster <i>cluster-identifier</i> ;
Hierarchy Level	[edit protocols bgp] [edit protocols bgp group <i>group-name</i>] [edit protocols bgp group <i>group-name</i> neighbor <i>address</i>]
Description	Specify the cluster identifier to be used by the route reflector cluster in an internal BGP group.
Options	<i>cluster-identifier</i> —IP address to use as the cluster identifier.
Usage Guidelines	See “Configure Route Reflection” on page 328.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.
See Also	no-client-reflect on page 354

damping

Syntax	damping;
Hierarchy Level	[edit protocols bgp], [edit protocols bgp group <i>group-name</i>], [edit protocols bgp group <i>group-name</i> neighbor <i>address</i>]
Description	Enable route flap damping.
Default	Flap damping is disabled on the router.
Usage Guidelines	See “Enable Route Flap Damping” on page 333 and “Configure Damping Parameters” on page 77.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

description

Syntax	description <i>text-description</i> ;
Hierarchy Level	[edit protocols bgp], [edit protocols bgp group <i>group-name</i>], [edit protocols bgp group <i>group-name</i> neighbor <i>address</i>]
Description	Text description of the global, group, or neighbor configuration.
Options	<i>text-description</i> —Text description of the configuration.
Usage Guidelines	See “Define BGP Global Properties” on page 305, “Define Group Properties” on page 308, and “Define Peer Properties” on page 309.
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 protocols bgp]
Description	Disable BGP on the system.
Usage Guidelines	See “Define BGP Global Properties” on page 305.
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-names</i>];
Hierarchy Level	[edit protocols bgp], [edit protocols bgp group <i>group-name</i>], [edit protocols bgp group <i>group-name</i> neighbor <i>address</i>]
Description	Apply one or more policies to routes being exported from the routing table into BGP.
Options	<i>policy-names</i> —Name of one or more policies.
Usage Guidelines	See “Configure BGP Routing Policy” on page 336 and “Configure Routing Policy” on page 35.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.
See Also	import on page 348, policy-statement on page 87

family

Syntax	family inet { (any multicast unicast) { prefix-limit { maximum <i>number</i> ; teardown < <i>percentage</i> >; } } }
Hierarchy Level	[edit protocols bgp], [edit protocols bgp group <i>group-name</i>], [edit protocols bgp group <i>group-name</i> neighbor <i>address</i>]
Description	Enable multiprotocol BGP (MBGP) by configuring BGP to carry network layer reachability information (NLRI) for address families other than unicast IPv4.
Options	any—Configure the family type to be both unicast and multicast. multicast—Configure the family type to be multicast. This means that the BGP peers are being used only to carry the unicast routes that are being used by multicast for resolving the multicast routes. unicast—Configure the family type to be unicast. This means that the BGP peers are being used only to carry the unicast routes that are being used for unicast forwarding purposes. Default: unicast The remaining statements are explained separately.
Usage Guidelines	See “Enable Multiprotocol BGP” on page 334.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

group

```

Syntax  group group-name {
    advertise-inactive;
    allow [ network/masklength ];
    authentication-key key;
    cluster cluster-identifier;
    damping;
    description text-description;
    export policy-name;
    family inet {
        (any | multicast | unicast) {
            prefix-limit {
                maximum number;
                teardown <percentage>;
            }
        }
    }
    hold-time seconds;
    import policy-name;
    keep (all | none);
    local-address address;
    local-as autonomous-system <private>;
    local-preference local-preference;
    log-updown;
    metric-out metric;
    multihop <ttl-value>;
    multipath;
    no-aggregator-id;
    no-client-reflect;
    out-delay seconds;
    passive;
    peer-as autonomous-system;
    preference preference;
    protocol protocol;
    remove-private;
    traceoptions {
        file name <replace> <size size> <files number> <no-stamp>
          <(world-readable | no-world-readable)>;
        flag flag <flag-modifier> <disable>;
    }
    type type;
    neighbor address {
        numerous peer-specific options;
    }
}

```

Hierarchy Level [edit protocols bgp]

Description Define a BGP peer group. BGP peer groups share a common type, peer AS number, and cluster ID, if present. To configure multiple BGP groups, include multiple group statements.

By default, the group's options are identical to the global BGP options. To override the global options, include group-specific options within the group statement.

The group statement is one of the statements you must include in the configuration to run BGP on the router. See "Minimum BGP Configuration" on page 303.

Options *group-name*—Name of the BGP group.

The remaining statements within the group statement are explained separately.

Usage Guidelines See “Define BGP Groups and Peers” on page 306.

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 *seconds*;

Hierarchy Level [edit protocols bgp],
[edit protocols bgp group *group-name*],
[edit protocols bgp group *group-name* neighbor *address*]

Description Hold-time value to use when negotiating a connection with the peer. The hold-time value is advertised in open packets and indicates to the peer the length of time that it should consider the sender valid. If the peer does not receive a keepalive, update, or notification message within the specified hold time, the BGP connection to the peer is closed and routers through that peer become unavailable.

The hold time is three times the interval at which keepalive messages are sent.

Options *seconds*—Hold time. If you set the hold-time value to 0, the hold timer is never started and the router never sends keepalive messages.
Range: 0 (no keepalive messages are sent), 6 through 65535 seconds
Default: 90 seconds

Usage Guidelines See “Modify the Hold-Time Value” on page 314.

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

import

Syntax import [*policy-names*];

Hierarchy Level [edit protocols bgp],
[edit protocols bgp group *group-name*],
[edit protocols bgp group *group-name* neighbor *address*]

Description Apply one or more routing policies to routes being imported into the JUNOS routing table from BGP.

Options *policy-names*—Name of one or more policies.

Usage Guidelines See “Configure BGP Routing Policy” on page 336 and “Configure Routing Policy” on page 35.

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

See Also export on page 346, policy-statement on page 87

keep

Syntax	keep (all none);
Hierarchy Level	[edit protocols bgp], [edit protocols bgp group <i>group-name</i>], [edit protocols bgp group <i>group-name</i> neighbor <i>address</i>]
Description	Specify whether routes learned from a BGP peer are retained in the routing table even if they contain an AS number that was exported from the local AS.
Default	If you do not include this statement, most routes are retained in the routing table.
Options	all—Retain all routes. none—Retain none of the routes.
Usage Guidelines	See “Configure How Often BGP Exchanges Routes with the Routing Table” on page 339.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

local-address

Syntax	local-address <i>address</i> ;
Hierarchy Level	[edit protocols bgp], [edit protocols bgp group <i>group-name</i>], [edit protocols bgp group <i>group-name</i> neighbor <i>address</i>]
Description	Address of the local end of a BGP session. This address is used to accept incoming connections to the peer and to establish connections to the remote peer. When none of the operational interfaces are configured with the specified local address, a session with a BGP peer is placed in the idle state.
Default	If you do not configure a local address, BGP uses the router’s source address selection rules to set the local address. For more information, see the <i>JUNOS Internet Software Configuration Guide: Interfaces and Chassis</i> .
Options	<i>address</i> —IP address of the local end of the connection.
Usage Guidelines	See “Assign a BGP Identifier” on page 305.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.
See Also	router-id on page 152

local-as

Syntax	local-as <i>autonomous-system</i> <private>;
Hierarchy Level	[edit protocols bgp], [edit protocols bgp group <i>group-name</i>], [edit protocols bgp group <i>group-name</i> neighbor <i>address</i>]
Description	Set the local AS number.
Options	<i>autonomous-system</i> —AS number. <i>private</i> —(Optional) Hide the local AS in paths learned from this peering.
Usage Guidelines	See “Configure a Local AS” on page 324.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

local-preference

Syntax	local-preference <i>local-preference</i> ;
Hierarchy Level	[edit protocols bgp], [edit protocols bgp group <i>group-name</i>], [edit protocols bgp group <i>group-name</i> neighbor <i>address</i>]
Description	Modify the value of the LOCAL_PREF path attribute, which is a metric used by internal BGP sessions to indicate the degree of preference for an external route. The route with the highest local preference value is preferred. The LOCAL_PREF path attribute always is advertised to internal BGP peers and to neighboring confederations. It never is advertised to external BGP peers.
Default	If you do omit this statement, the LOCAL_PREF path attribute, if present, is not modified.
Options	<i>local-preference</i> —Preference to assign to routes learned from BGP or from the group or peer. Range: 0 through 4294967295 ($2^{32} - 1$) Default: If the LOCAL_PREF path attribute is present, do not modify its value. If a BGP route is received without a LOCAL_PREF attribute, the route is handled locally (it is stored in the routing table and advertised by BGP) as if it were received with a LOCAL_PREF value of 100. A non-BGP route that is advertised by BGP is advertised with a LOCAL_PREF value of 100 by default.
Usage Guidelines	See “Configure the BGP Local Preference” on page 320.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.
See Also	preference on page 357

log-updown

Syntax	log-updown;
Hierarchy Level	[edit protocols bgp], [edit protocols bgp group <i>group-name</i>], [edit protocols bgp group <i>group-name</i> neighbor <i>address</i>]
Description	Log a message whenever a BGP peer makes a state transition. Messages are logged using the syslog mechanism.
Usage Guidelines	See “Configure BGP to Log Syslog Messages” on page 340 and <i>JUNOS Internet Software Configuration Guide: Installation and System Management</i> .
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.
See Also	traceoptions on page 360

metric-out

Syntax	metric-out (<i>metric</i> minimum-igp igp);
Hierarchy Level	[edit protocols bgp], [edit protocols bgp group <i>group-name</i>], [edit protocols bgp group <i>group-name</i> neighbor <i>address</i>]
Description	Metric for all routes sent using the multiple exit discriminator (MED, or MULTI_EXIT_DISC) path attribute in update messages. This path attribute is used to discriminate among multiple exit points to a neighboring AS. If all other factors are equal, the exit point with the lowest metric is preferred. You can specify a constant metric value by including the <i>metric</i> option. For configurations in which a BGP peer sends third-party next hops that require the local system to perform next-hop resolution—IBGP configurations, configurations within confederation peers, or EBGP configurations that include the multihop command—you can specify a variable metric by including the minimum-igp or igp option.
Options	igp—Set the metric to the most-recent metric value calculated in the IGP. <i>metric</i> —Primary metric on all routes sent to peers. Range: 0 through 4294967295 ($2^{32} - 1$) Default: No metric is sent. minimum-igp—Set the metric to the minimum metric value calculated in the IGP. If a newly calculated metric is greater than the minimum metric value, the metric value remains unchanged. If a newly calculated metric is lower, the metric value is lowered to that value.
Usage Guidelines	See “Configure the Multiple Exit Discriminator Metric” on page 316.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

multihop

Syntax multihop < *tvl-value* > ;

Hierarchy Level [edit protocols bgp],
[edit protocols bgp group *group-name*],
[edit protocols bgp group *group-name* neighbor *address*]

Description Configure an EBGp multihop session.

For confederation peerings, you do not need to configure multihop sessions explicitly; multihop behavior is implied.

Default If you omit this statement, all EBGp peers are assumed to be directly connected (that is, you are establishing a nonmultihop, or “regular,” BGP session), and the default TTL value is 1.

Options *tvl-value*—Configure the maximum TTL value for the TTL in the IP header of BGP packets.
Range: 1 through 255
Default: 64 (for multihop EBGp sessions, confederations, and internal BGP sessions)

Usage Guidelines See “Configure an EBGp Multihop Session” on page 320.

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

multipath

Syntax multipath;

Hierarchy Level [edit protocols bgp group *group-name*],
[edit protocols bgp group *group-name* neighbor *address*]

Description Allow load-sharing among multiple EBGp paths.

Usage Guidelines See “Configure BGP to Select Multiple EBGp Paths” on page 323.

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

neighbor

Syntax [edit protocols bgp group *group-name* neighbor *address*]

```

advertise-inactive;
authentication-key key;
cluster cluster-identifier;
damping;
description text-description;
export [ policy-names ];
family inet {
    (any | multicast | unicast) {
        prefix-limit {
            maximum number;
            teardown <percentage>;
        }
    }
}
hold-time seconds;
import [ policy-names ];
keep (all | none);
local-address address;
local-as autonomous-system <private>;
local-preference preference;
log-updown;
metric-out metric;
multihop <ttl-value>;
multipath;
no-aggregator-id;
no-client-reflect;
out-delay seconds;
passive;
peer-as autonomous-system;
preference preference;
traceoptions {
    file name <replace> <size size> <files number> <no-stamp>
        <(world-readable | no-world-readable)>;
    flag flag <flag-modifier> <disable>;
}

```

Hierarchy Level [edit protocols bgp group *group-name*]

Description Explicitly configure a neighbor (peer). To configure multiple BGP peers, include multiple neighbor statements.

By default, the peer's options are identical to those of the group. You can override these options by including peer-specific option statements within the neighbor statement.

The neighbor statement is one of the statements you can include in the configuration to define a minimal BGP configuration on the router. (You can include an allow all statement in place of a neighbor statement.)

Options *address*—IP address of a single peer.

The remaining statements are explained separately.

Usage Guidelines See “Minimum BGP Configuration” on page 303 and “Define BGP Groups and Peers” on page 306.

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

no-aggregator-id

Syntax no-aggregator-id;

Hierarchy Level [edit protocols bgp],
[edit protocols bgp group *group-name*],
[edit protocols bgp group *group-name* neighbor *address*]

Description Set the router ID in the BGP aggregator path attribute to zero. (This is one of the path attributes included in BGP update messages.) Doing this prevents different routers within an AS from creating aggregate routes that contain different AS paths.

Default If you omit this statement, the router ID is included in the BGP aggregator path attribute.

Usage Guidelines See “Update Messages” on page 299 and “Control the Aggregator Path Attribute” on page 319.

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

no-client-reflect

Syntax no-client-reflect;

Hierarchy Level [edit protocols bgp],
[edit protocols bgp group *group-name*],
[edit protocols bgp group *group-name* neighbor *address*]

Description Disable intracluster route redistribution by the system acting as the route reflector. Include this statement when the client cluster is fully meshed to prevent the sending of redundant route advertisements.

Usage Guidelines See “Configure Route Reflection” on page 328.

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

See Also cluster on page 344

out-delay

Syntax	out-delay <i>seconds</i> ;
Hierarchy Level	[edit protocols bgp], [edit protocols bgp group <i>group-name</i>], [edit protocols bgp group <i>group-name</i> neighbor <i>address</i>]
Description	How long a route must be present in the JUNOS routing table before it is exported to BGP. Use this time delay to help bundle routing updates.
Default	If you omit this statement, routes are exported to BGP immediately after they have been added to the routing table.
Options	<i>seconds</i> —Output delay time. Range: 0 to 65,535 Default: 0 seconds
Usage Guidelines	See “Configure How Often BGP Exchanges Routes with the Routing Table” on page 339.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

passive

Syntax	passive;
Hierarchy Level	[edit protocols bgp], [edit protocols bgp group <i>group-name</i>], [edit protocols bgp group <i>group-name</i> neighbor <i>address</i>]
Description	Do not send active open messages to the peer. Rather, wait for the peer to issue an open request.
Default	If you omit this statement, all explicitly configured peers are active, and each peer periodically sends open requests until its peer responds.
Usage Guidelines	See “Open a Peer Connection Passively” on page 316.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

path-selection

Syntax	path-selection (cisco-non-deterministic always-compare-med);
Hierarchy Level	[edit protocols bgp]
Description	Configures BGP path selection.
Options	cisco-non-deterministic—Configure routing table path selection so that it is performed using the same nondeterministic behavior as does the Cisco IOS software. The active path is always first. All nonactive, but eligible, paths follow the active path and are maintained in the order in which they were received, with the most recent path first. Ineligible paths remain at the end of the list.



Note

We recommend that you not configure nondeterministic behavior.

always-compare-med—Always compare MEDs whether or not the peer ASs of the compared routes are the same.

Default	If the path-selection statement is not included in the configuration, only the MEDs of routes that have the same peer ASs are compared.
Usage Guidelines	See “Configure Routing Table Path Selection” on page 322.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

peer-as

Syntax	peer-as <i>autonomous-system</i> ;
Hierarchy Level	[edit protocols bgp], [edit protocols bgp group <i>group-name</i>], [edit protocols bgp group <i>group-name</i> neighbor <i>address</i>]
Description	Neighbor (peer) AS number.
Options	<i>autonomous-system</i> —AS number.
Usage Guidelines	See “Define BGP Groups and Peers” on page 306.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

preference

Syntax	preference <i>preference</i> ;
Hierarchy Level	[edit protocols bgp], [edit protocols bgp group <i>group-name</i>], [edit protocols bgp group <i>group-name</i> neighbor <i>address</i>]
Description	Preference for routes learned from BGP. At the BGP protocol level, the preference statement sets the preference for routes learned from BGP. You can override this preference in a BGP group or peer preference statement. At the group or peer level, the preference statement sets the preference for routes learned from the group or peer. Use this statement to override the preference set in the BGP global preference statement when you want to favor routes from one group or peer over those of another.
Options	<i>preference</i> —Preference to assign to routes learned from BGP or from the group or peer. Range: 0 through 4294967295 ($2^{32} - 1$) Default: 170 for the primary preference
Usage Guidelines	See “Control Route Preference” on page 321.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.
See Also	local-preference on page 350

prefix-limit

Syntax	prefix-limit { maximum <i>number</i> ; teardown < <i>percentage</i> >; }
Hierarchy Level	[edit protocols bgp family inet (any multicast unicast)], [edit protocols bgp group <i>group-name</i> family inet (any multicast unicast)], [edit protocols bgp group <i>group-name</i> neighbor <i>address</i> family inet (any multicast unicast)]
Description	Limit the number of prefixes on a BGP peering and a rate-limit logging when injected prefixes exceed a set limit.
Options	maximum <i>number</i> —Specify the maximum number of prefixes to allow before tearing down the peering. Range: 1 through 4294967295 teardown < <i>percentage</i> >—Percentage of maximum prefixes at which to begin logging messages. Range: 0 through 100
Usage Guidelines	See “Enable Multiprotocol BGP” on page 334.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

protocol

Syntax	protocol <i>protocol</i> ;
Hierarchy Level	[edit protocols bgp group <i>group-name</i>]
Description	IGP that BGP should use to resolve the next hop for BGP routes.
Default	If you do not include this statement, BGP uses all active routes when resolving next hops.
Options	<i>protocol</i> —Protocol name. It can be isis or ospf.
Usage Guidelines	See “Choose the Protocol Used to Determine the Next Hop” on page 320.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

remove-private

Syntax	remove-private;
Hierarchy Level	[edit protocols bgp], [edit protocols bgp group <i>group-name</i>], [edit protocols bgp group <i>group-name</i> neighbor <i>address</i>]
Description	<p>When advertising AS paths to remote systems, have the local system to strip private AS numbers from the AS path. The numbers are stripped from the AS path starting at the left end of the AS path (the end where AS paths have been most recently added). This operation takes place after any confederation member ASs have already been removed from the AS path, if applicable.</p> <p>The software recognizes the set of AS numbers that is considered private, a range that is defined in the IANA assigned numbers document. The set of reserved AS numbers are in the range 64512 through 65534, inclusive.</p>
Usage Guidelines	See “Remove Private AS Numbers from AS Paths” on page 327.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.

rib-group

Syntax	rib-group <i>routing-table-name</i> ;
Hierarchy Level	[edit protocols bgp family inet (unicast multicast)] [edit protocols bgp group <i>groupname</i> family inet (unicast multicast)] [edit protocols bgp group <i>group-name</i> neighbor <i>address</i> family inet (unicast multicast)]
Description	Add unicast prefixes to unicast and multicast tables.
Options	<i>routing-table-name</i> —Name of the routing table group. The name must start with a letter and can include letters, numbers, and hyphens. You generally specify only one routing table group.
Usage Guidelines	See “Configure BGP Routing Table Groups” on page 335, “Configure How Interface Routes Are Imported into Routing Tables” on page 124, and “Create Routing Table Groups” on page 123.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.
See Also	interface-routes on page 141, rib-group on page 150

traceoptions

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

Hierarchy Level [edit protocols bgp],
 [edit protocols bgp group *group-name*],
 [edit protocols bgp group *group-name* neighbor *address*]

Description Configure BGP protocol-level tracing options.

To specify more than one tracing operation, include multiple flag statements.

Default The default BGP protocol-level tracing options are those inherited from the routing protocols traceoptions statement included at the [edit routing-options] hierarchy level. The default group-level trace options are those inherited from the BGP protocol-level traceoptions statement. The default peer-level trace options are those inherited from the group-level traceoptions statement.

Options disable—(Optional) Disable the tracing operation. You can use this option is 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 BGP tracing output in the file bgp-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 through 1000 files

Default: 2 files

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

BGP Tracing Flags

aspath—AS path regular expression operations.

damping—Damping operations.

keepalive—BGP keepalive messages.

open—Open packets. These packets are sent between peers when they are establishing a connection.

packets—All BGP protocol packets.

update—Update packets. These packets provide routing updates to BGP systems.

Global Tracing Flags

all—All tracing operations.

general—A combination of the normal and route trace operations.

normal—All normal operations.

Default: If you do not specify this option, only unusual or abnormal operations are traced.

policy—Policy operations and actions.

route—Routing table changes.

state—State transitions.

task—Interface transactions and processing.

timer—Timer usage.

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

detail—Provide detailed trace information.

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 the *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 BGP Protocol Traffic” on page 341.

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.

See Also log-updown on page 351

type

Syntax type *type*;

Hierarchy Level [edit protocols bgp group *group-name*]

Description Type of BGP peer group.

Options *type*—Type of group:

- internal—Internal group
- external—External group

Usage Guidelines See “Define BGP Groups and Peers” on page 306.

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