BIG-IP® Advanced Routing™
Border Gateway Protocol
Command Line Interface Reference Guide

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CHAPTER 1 ZebOS Command Line Interface Environment

Network administrators and application developers who configure the ZebOS® Network Platform use this command reference which includes the following information:

- An overview of the ZebOS Command Line Interface
- A complete reference of the commands used for Border Gateway Protocol (BGP) configuration

You can give the commands described in this manual locally from the console of a device running ZebOS or remotely from a terminal emulator such as `putty` or `xterm`.

Command Line Interface Overview

The ZebOS® Command Line Interface (CLI) is a text-based command interface. Each command is usually associated with a specific task. The commands can be used in scripts to automate configuration tasks.

Starting the Command Line Interface

You must start daemons as described in this section before you can use the CLI. The general steps are listed below. For details about the ZebOS daemons, see the *ZebOS Network Platform Installation Guide.*

1. Start your terminal emulator and connect to the device or go to the console of the device running ZebOS.
2. Connect to the directory where you installed the ZebOS executables.
3. Start the Network Services Manager (NSM).
   ```
   # ./nsm -d
   ```
4. Start the protocol module daemons that your organization uses, such as `mstpd`, `ospf6d`, or `ripd`.
   ```
   # ./mstpd –d
   ```
5. Start the Integrated Management Interface (IMI) daemon.
   ```
   # ./imi -d
   ```
6. Start the IMI shell.
   ```
   # ./imish
   ```
   Note: Your organization may use a ZebOS build that does not include `imish`. If that is the case, you must connect to a port on which a protocol daemon is listening. For details, see the *ZebOS Network Platform Installation Guide.*

You can now begin using the CLI.

Command Line Interface Help

You access the CLI help by entering a full or partial command string and a question mark “?”. The CLI displays the command keywords or parameters along with a short description. For example, at the CLI command prompt, type:

```
ZebOS> show ?
```

The CLI displays this keyword list with short descriptions for each keyword:

```
ZebOS>show ?
  application-priority          Application Priority
  arp                           Internet Protocol (IP)
  bfd                           Bidirectional Forwarding Detection (BFD)
  bgp                           Border Gateway Protocol (BGP)
  bi-lsp                        Bi-directional lsp status and configuration
  bridge                        Bridge group commands
  ce-vlan                       COS Preservation for Customer Edge VLAN
  class-map                     Class map entry
  cli                           Show CLI tree of current mode
  clns                          Connectionless-Mode Network Service (CLNS)
  control-adjacency             Control Adjacency status and configuration
  control-channel               Control Channel status and configuration
  cspf                          CSPF Information
  customer                      Display Customer spanning-tree
  cvlan                         Display CVLAN information
  debugging                     Debugging functions (see also 'undebug')
  dot1x                         IEEE 802.1X Port-Based Access Control
  etherchannel                  LACP etherchannel
  ethernet                      Layer-2
...
```

If you type the ? in the middle of a keyword, the CLI displays help for that keyword only.

```
ZebOS> show de?
  debugging  Debugging functions (see also 'undebug')
```

If the ? is typed in the middle of a keyword, but the incomplete keyword matches several other keywords, ZebOS displays help for all matching keywords.

`ZebOS> show i?` (CLI does not display the question mark).

```
  interface  Interface status and configuration
  ip         IP information
  isis       ISIS information
```

Command Completion

The CLI can complete the spelling of a command or a parameter. Begin typing the command or parameter and then press the tab key. For example, at the CLI command prompt type `sh`:

```
ZebOS> sh
```

Press the tab key. The CLI displays:

```
ZebOS> show
```

If the command or parameter spelling is ambiguous, the ZebOS CLI displays the choices that match the abbreviation. Type `show i` and press the tab key. The CLI displays:

```
ZebOS> show i
interface  ip         ipv6       isis
ZebOS> show i
```

The CLI displays the `interface` and `ip` keywords. Type n to select `interface` and press the tab key. The CLI displays:

```
ZebOS> show in
ZebOS> show interface
```

Type ? and the CLI displays the list of parameters for the `show interface` command.

```
ZebOS> show interface
```

```
IFNAME  Interface name
|       Output modifiers
>       Output redirection
<cr>
```

The CLI displays the only parameter associated with this command, the `IFNAME` parameter.

Command Abbreviations

The CLI accepts abbreviations that uniquely identify a keyword in commands. For example

```
sh in eth0
```

is an abbreviation for the `show interface` command.

Command Line Errors

Any unknown spelling variation causes the CLI to display the error `Unrecognized command` in response to the ?. The CLI displays the command again as last entered.

```
ZebOS>show dd?
% Unrecognized command
ZebOS>show dd
```

When you press the Enter key after typing an invalid command, the CLI displays:

```
ZebOS(config)#router ospf here
                           ^
% Invalid input detected at '^' marker.
```

where the ^ points to the first character in error in the command.

If a command is incomplete, the CLI displays the following message:

```
ZebOS> show
% Incomplete command.
```

Some commands are too long for the display line and can wrap in mid-parameter or mid-keyword, as shown below:

```
area 10.10.0.18 virtual-link 10.10.0.19 authent
ication-key 57393
```

Command Negation

Many commands can be negated using the `no` keyword. Depending on the command or the parameters, some command negation can disable one feature or a feature for a specific ID, interface, address or other identifier. However, some negation is for the base command only and the negated form does not take a parameter.

Typographic Conventions

The following table describes the typographic conventions used in this reference.

Convention	Description	Example
`Monospaced font`	Command strings entered on a command line	`show ip ospf`
`lowercase`	Keywords that you enter exactly as shown in the command syntax.	`show ip ospf`
UPPERCASE	See Variable Placeholders	`IFNAME`
`()`	Optional parameters, from which you must select one. Vertical bars delimit the selections. Do not enter the parentheses or vertical bars as part of the command.	`(A.B.C.D|<0-4294967295>)`
`()`	Optional parameters, from which you select one or none. Vertical bars delimit the selections. Do not enter the parentheses or vertical bars as part of the command.	`(A.B.C.D|<0-4294967295>|)`
`()`	Optional parameter which you can specify or omit. Do not enter the parentheses or vertical bar as part of the command.	`(IFNAME|)`
`{}`	Optional parameters, from which you must select one or more. Vertical bars delimit the selections. Do not enter the braces or vertical bars as part of the command.	`{intra-area <1-255>|inter-area <1-255>|external <1-255>}`
`[]`	Optional parameters, from which you select zero or more. Vertical bars delimit the selections. Do not enter the brackets or vertical bars as part of the command. A '?' before a parameter in square brackets limits that parameter to one occurrence in a command string.	`[<1-65535>|AA:NN|internet|local-AS|no-advertise|no-export]`
`.`	Repeatable parameter. The parameter that follows a period can be repeated more than once. Do not enter the period as part of the command.	`set as-path prepend .<1-65535>`

Variable Placeholders

The command syntax use the following tokens to represent command line variables for which you supply a value:

Token	Description
WORD	A contiguous text string (excluding spaces), such as IFNAME for the name of an interface
LINE	A text string, including spaces; no other parameters can follow this parameter
A.B.C.D	IPv4 address
A.B.C.D/M	IPv4 address and mask/prefix
X:X::X:X	IPv6 address
X:X::X:X/M	IPv6 address and mask/prefix
HH:MM:SS	Time format
AA:NN	BGP community value
XX:XX:XX:XX:XX:XX	MAC address
<1-5> <1-65535> <0-2147483647> <0-4294967295>	Numeric range

Command Description Format

The following table explains the sections used to describe each command in this reference.

Section	Description
Command Name	The command, what the command does, and when should it be used
Command Syntax	The syntax of the command
Parameters	Parameters and options for the command
Default	The status before the command is executed
Command Mode	The name of the mode in which this command is used. Examples include Exec or Configure modes.
Example	An example of the command being executed

Keyboard Operations

You can perform these operations from the keyboard:

Key combination	Operation
Left arrow or Ctrl+b	Moves one character to the left. When a command extends beyond a single line, you can press left arrow or Ctrl+b repeatedly to scroll toward the beginning of the line, or you can press Ctrl+a to go directly to the beginning of the line.
Right arrow or Ctrl-f	Moves one character to the right. When a command extends beyond a single line, you can press right arrow or Ctrl+f repeatedly to scroll toward the end of the line, or you can press Ctrl+e to go directly to the end of the line.
Esc, b	Moves back one word
Esc, f	Moves forward one word
Ctrl+e	Moves to end of the line
Ctrl+a	Moves to the beginning of the line
Ctrl+u	Deletes the line
Ctrl+w	Deletes from the cursor to the previous whitespace
Alt+d	Deletes the current word
Ctrl+k	Deletes from the cursor to the end of line
Ctrl+y	Pastes text previously deleted with Ctrl+k, Alt+d, Ctrl+w, or Ctrl+u at the cursor
Ctrl+t	Transposes the current character with the previous character
Ctrl+c	Ignores the current line and redisplays the command prompt
Ctrl+z	Ends configuration mode and returns to exec mode
Ctrl+l	Clears the screen
Up Arrow or Ctrl+p	Scroll backward through command history
Down Arrow or Ctrl+n	Scroll forward through command history

Show Command Tokens

You can use two tokens to modify the output of a `show` command. Enter a question mark to display these tokens:

```
ZebOS# show users ?
  | Output modifiers
  > Output redirection
```

Output Modifiers

You can type the | (vertical bar character) to use output modifiers. For example:

```
ZebOS>show rsvp | ?
```

```
  begin     Begin with the line that matches
  exclude   Exclude lines that match
  include   Include lines that match
  redirect  Redirect output
```

Begin Modifier

The `begin` modifier displays the output beginning with the first line that contains the input string (everything typed after the `begin` keyword). For example:

```
ZebOS# show run | begin eth1
...skipping
interface eth1
 ipv6 address fe80::204:75ff:fee6:5393/64
!
interface eth2
 ipv6 address fe80::20d:56ff:fe96:725a/64
!
line con 0
 login
!
end
```

You can specify a regular expression after the `begin` keyword, This example begins the output at a line with either “eth3” or “eth4”:

```
ZebOS#show run | begin eth[3-4]

...skipping
interface eth3
 shutdown
!
interface eth4
 shutdown
!
interface svlan0.1
 no shutdown
!
route-map myroute permit 3
!
route-map mymap1 permit 10
!
route-map rmap1 permit 3
!
line con 0
 login
line vty 0 4
 login
!
end
```

Include Modifier

The `include` modifier includes only those lines of output that contain the input string. In the output below, all lines containing the word “input” are included:

```
ZebOS# show interface eth1 | include input
    input packets 80434552, bytes 2147483647, dropped 0, multicast packets 0
    input errors 0, length 0, overrun 0, CRC 0, frame 0, fifo 1, missed 0
```

You can specify a regular expression after the `include` keyword. This examples includes all lines with “input” or “output”:

```
ZebOS#show int eth0 | include (in|out)put
    input packets 597058, bytes 338081476, dropped 0, multicast packets 0
    input errors 0, length 0, overrun 0, CRC 0, frame 0, fifo 0, missed 0
    output packets 613147, bytes 126055987, dropped 0
    output errors 0, aborted 0, carrier 0, fifo 0, heartbeat 0, window 0
```

Exclude Modifier

The `exclude` modifier excludes all lines of output that contain the input string. In the following output example, all lines containing the word “input” are excluded:

```
ZebOS# show interface eth1 | exclude input
Interface eth1
  Scope: both
  Hardware is Ethernet, address is 0004.75e6.5393
  index 3 metric 1 mtu 1500 <UP,BROADCAST,RUNNING,MULTICAST>
  VRF Binding: Not bound
  Administrative Group(s): None
  DSTE Bandwidth Constraint Mode is MAM
  inet6 fe80::204:75ff:fee6:5393/64
    output packets 4438, bytes 394940, dropped 0
    output errors 0, aborted 0, carrier 0, fifo 0, heartbeat 0, window 0
    collisions 0
```

You can specify a regular expression after the `exclude` keyword. This example excludes lines with “output” or “input”:

```
ZebOS#show interface eth0 | exclude (in|out)put
Interface eth0
  Scope: both
  Hardware is Ethernet  Current HW addr: 001b.2139.6c4a
  Physical:001b.2139.6c4a  Logical:(not set)
  index 2 metric 1 mtu 1500 duplex-full arp ageing timeout 3000
  <UP,BROADCAST,RUNNING,MULTICAST>
  VRF Binding: Not bound
  Bandwidth 100m
  DHCP client is disabled.
  inet 10.1.2.173/24 broadcast 10.1.2.255
  VRRP Master of :  VRRP is not configured on this interface.
  inet6 fe80::21b:21ff:fe39:6c4a/64
    collisions 0
```

Redirect Modifier

The `redirect` modifier writes the output into a file. The output is not displayed.

```
ZebOS# show history | redirect /var/frame.txt
```

The output redirection token (>) does the same thing:

```
ZebOS# show history >/var/frame.txt
```

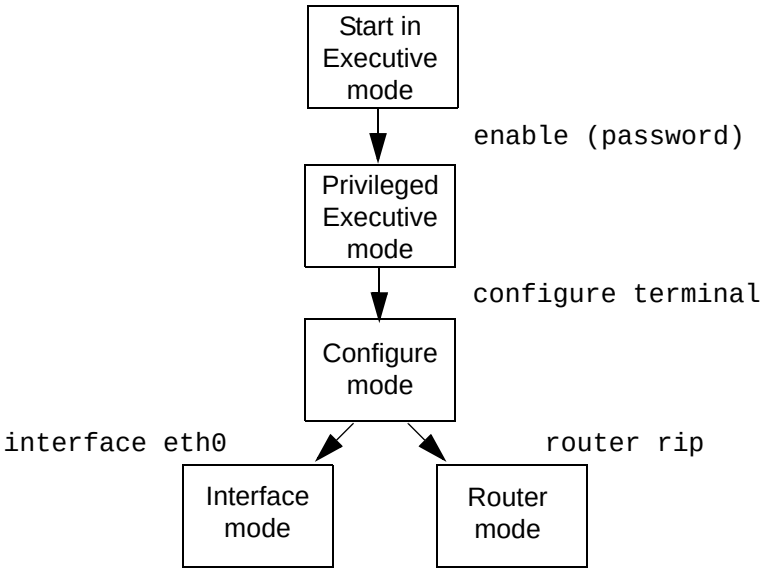
Common Command Modes

Commands are grouped into modes arranged in a hierarchy. Each mode has its own set of commands. The command modes common to all protocols are listed below.

Name	Description
Executive Mode	Also called the *view* mode, this the first mode to appear after you start the CLI. It is a base mode from where you can perform basic commands such as `show`, `exit`, `quit`, `help`, `list`, and `enable`.
Privileged Executive Mode	Also called the *enable* mode, in this mode you can run additional basic commands such as `debug`, `write`, and `show`.
Configure Mode	Also called Configure Terminal mode, in this mode you can run configuration commands and go into other modes such as Interface, Router, Route Map, Key Chain, and Address Family.
Interface Mode	In this mode you can configure protocol-specific settings for a particular interface. Any setting you configure in this mode overrides a setting configured in Router mode.
Router Mode	This mode is used to configure router-specific settings for a protocol such as RIP or OSPF.

Common Command Mode Tree

The diagram below shows the common command mode hierarchy.



To change modes:

1. Enter Privileged Executive mode by entering `enable` in Executive mode.
2. Enter Configure mode by entering `configure terminal` in Privileged Executive mode.

The example below shows starting `imish` and then moving from Executive mode to Privileged Executive mode to Configure mode and finally to Router mode:

```
# ./imish
ZebOS>enable mypassword
ZebOS#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
ZebOS(config)#router rip
ZebOS(config-router)#
```

See the *ZebOS Network Platform NSM Command Line Interface Reference Guide* for information about other command modes.

Note: Each protocol can have modes in addition to the common command modes. See the command reference for the respective protocol for details.

CHAPTER 2 BGP Commands

This chapter provides an alphabetized reference for each of the BGP configuration commands. Refer to Chapter 4, BGP Show Commands to view all of the BGP show commands.

This chapter includes the following commands:

address-family

Use the address family command to enter the IPv4 or IPv6 address family mode allowing configuration of address-family specific parameters. To leave the address family mode and return to the Configure mode use the exit-address-family command.

Use the no parameter with this command to disable this function.

Command Syntax

```
address-family [ipv4 (multicast|unicast|)] [ipv6 (unicast|labeled-unicast]
no address-family [ipv4] [ipv6]
```

Parameters

ipv4	Specify the IPv4 address family
ipv6	Specify the IPv6 address family
multicast	Specify multicast as an address family modifier for IPv4 (only)
unicast	Specify unicast as an address family modifier
labeled-unicast	Specify labeled-unicast as an address family modifier for IPv6 (only)

Command Mode

Router mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#router bgp 7657
ZebOS(config-router)#neighbor 3ffe:506::1 remote-as 7657
ZebOS(config-router)#neighbor 3ffe:506::1 interface eth1

ZebOS#configure terminal
ZebOS(config)#router bgp 7657
ZebOS(config-router)#address-family ipv6
ZebOS(config-router-af)#neighbor 3ffe:506::1 activate
ZebOS(config-router-af)#exit-address-family
```

Related Commands

exit, exit-address-family

aggregate-address

Use this command to configure BGP aggregate entries.

Aggregates are used to minimize the size of routing tables. Aggregation combines the characteristics of several different routes and advertises a single route.The `aggregate-address` command creates an aggregate entry in the BGP routing table if any more-specific BGP routes are available in the specified range. Using the `summary-only` parameter advertises the prefix only, suppressing the more-specific routes to all neighbors. In the following example Router1 will propagate network 172.0.0.0 and suppresses the more specific route 172.10.0.0.

The `as-set` parameter creates an aggregate entry advertising the path for this route, consisting of all elements contained in all paths being summarized. Use this parameter to reduce the size of path information by listing the AS number only once, even if it was included in multiple paths that were aggregated. The `as-set` parameter is useful when aggregation of information results in an incomplete path information.

Use the `no` parameter with this command to disable this function.

Command Syntax

```
aggregate-address [A.B.C.D/M (as-set|summary-only)]
no aggregate-address A.B.C.D/M (as-set|summary-only)
```

Parameters

`A.B.C.D/M`	Specify the aggregate prefix.
`as-set`	Generates AS set path information.
`summary-only`	Filters more specific routes from updates.

Default

Disabled

Command Mode

Router mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#router bgp 100
ZebOS(config-router)#aggregate-address 10.0.0.0/8 as-set summary-only

ZebOS(config)#router bgp 100
ZebOS(config-router)#no aggregate-address 10.0.0.0/8 as-set summary-only
```

auto-summary

Use this command to enable sending summarized routes by a BGP speaker to its peers in the router configuration mode or in the address-family configuration mode. Auto-summary is used by a BGP router to advertise summarized routes to its peers. Auto-summary can be enabled if certain routes have already been advertised: in this case, configuring auto-summary advertises the summarized routes first, then corresponding non-summarized routes are withdrawn. If certain routes have already been advertised, and auto-summary is disabled, non-summarized routes are first advertised, then the corresponding summarized routes are withdrawn from all the connected peers.

Use the `no` parameter with this command to disable this function.

Command Syntax

```
auto-summary
no auto-summary
```

Parameters

None

Default

Disabled

Command Mode

Router mode and Address Family IPv4 mode

Examples

The following example enables auto-summary in Router mode.

```
ZebOS#configure terminal
ZebOS(config)#router bgp 11
ZebOS(config-router)#auto-summary
```

The following example enables auto-summary in the IPv4 address family.

```
ZebOS#configure terminal
ZebOS(config)#router bgp 1
ZebOS(config)#address-family ipv4
ZebOS(config-af)#auto-summary
```

bgp aggregate-nexthop-check

Use this command to set the BGP option to perform aggregation only when next-hop matches the specified IP address.

Use the no parameter with this command to disable this function.

Command Syntax

```
bgp aggregate-nexthop-check
no bgp aggregate-nexthop-check
```

Parameters

None

Default

Disabled

Command Mode

Configure mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#bgp aggregate-nexthop-check
```

bgp always-compare-med

Use this command to compare the Multi Exit Discriminator (MED) for paths from neighbors in different autonomous systems. Multi Exit Discriminator (MED) is used in best path selection by BGP. MED is compared after BGP attributes weight, local preference, AS-path and origin have been compared and are equal. MED comparison is done only among paths from the same autonomous system (AS). Use `bgp always-compare-med` command to allow comparison of MEDs from different ASs. The MED parameter is used to select the best path. A path with lower MED is preferred. If the bgp table shows the following and the always-compare-med is enabled:

```
Route1: as-path 400, med 300
Route2: as-path 200, med 200
Route3: as-path 400, med 250
```

Route1 is compared to Route2. Route2 is best of the two (lower MED). Next, Route2 is compared to Route3 and Route2 is chosen best path again (lower MED). If always-compare-med was disabled, MED is not taken into account when Route1 and Route2 are compared, because of different ASs and MED is compared for only Route1 and Route3. In this case, Route3 would be the best path. The selected route is also affected by the `bgp deterministic-med` command. Please see `bgp deterministic-med` command for details. If this command is used to compare MEDs for all paths, it should be configured on every BGP router in the AS.

Use the `no` parameter with this command to disallow the comparison.

Command Syntax

```
bgp always-compare-med
no bgp always-compare-med
```

Parameters

None

Default

Disabled

Command Mode

Router mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#router bgp 100
ZebOS(config-router)#bgp always-compare-med
```

bgp as-local-count

Use this command to set the number of times the local-AS (Autonomous System) is to be prepended.

Use the no parameter with this command to disable this command.

Command Syntax

```
bgp as-local-count <2-64>
no bgp as-local-count <2-64>
```

Parameter

<2-64>	Set the number of times the local-AS is to be prepended

Command Mode

Router mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#router bgp 100
ZebOS(config-router)#bgp as-local-count 55

ZebOS(config)#router bgp 100
ZebOS(config-router)#no bgp as-local-count 55
```

bgp bestpath as-path ignore

Use this command to prevent the router from considering the autonomous system (AS) path length as a factor in the algorithm for choosing a best path route.

Use the no parameter with this command to allow the router to consider as-path in choosing a route.

Command Syntax

```
bgp bestpath as-path ignore
```

```
no bgp bestpath as-path ignore
```

Parameters

None

Command Mode

Router mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#router bgp 100
ZebOS(config-router)#bgp bestpath as-path ignore

ZebOS(config)#router bgp 100
ZebOS(config-router)#no bgp bestpath as-path ignore
```

bgp bestpath compare-confed-aspath

Use this command to allow comparing of the confederation AS path length. This command specifies that the AS confederation path length must be used when available in the BGP best path decision process. It is effective only when `bgp bestpath as-path ignore` command has not been used

Use the `no` parameter with this command to revert the selection and ignore AS confederation path length in the BGP best path selection.

Command Syntax

```
bgp bestpath compare-confed-aspath
```

```
no bgp bestpath compare-confed-aspath
```

Parameters

None

Default

BGP receives routes with identical eBGP paths from eBGP peers and selects the first route received as the best path.

Command Mode

Router mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#router bgp 100
ZebOS(config-router)#bgp bestpath compare-confed-aspath

ZebOS(config)#router bgp 100
ZebOS(config-router)#no bgp bestpath compare-confed-aspath
```

Related Commands

bgp bestpath as-path ignore

bgp bestpath compare-routerid

Use this command to compare router-id for identical eBGP paths. When comparing similar routes from peers the BGP router does not consider router ID of the routes. By default, it selects the first received route. Use this command to include router ID in the selection process; similar routes are compared and the route with lowest router ID is selected. The router-id is the highest IP address on the router, with preference given to loopback addresses. Router-id can be manually set by using the bgp router-id command.

Use the no parameter with this command to disable this function.

Command Syntax

```
bgp bestpath compare-routerid
```

```
no bgp bestpath compare-routerid
```

Parameters

None

Default

BGP receives routes with identical eBGP paths from eBGP peers and selects the first route received as the best path.

Command Mode

Router mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#router bgp 100
ZebOS(config-router)#bgp bestpath compare-routerid

ZebOS(config)#router bgp 100
ZebOS(config-router)#no bgp bestpath compare-routerid
```

Related Commands

show ip bgp, show ip bgp neighbors

bgp bestpath dont-compare-originator-id

Use this command to change the default bestpath selection by not comparing an originator-ID for an identical EBGP path.

Use the no parameter with this command to disable this function.

Command Syntax

```
bgp bestpath dont-compare-originator-id
```

```
no bgp bestpath dont-compare-originator-id
```

Parameters

None

Command Mode

Router mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#router bgp 100
ZebOS(config-router)#bgp bestpath dont-compare-originator-id

ZebOS(config)#router bgp 100
ZebOS(config-router)#no bgp bestpath dont-compare-originator-id
```

Related Commands

show ip bgp, show ip bgp neighbors

bgp bestpath med

Use this command to specify two MED (Multi Exit Discriminator) attributes--confed and missing-as-worst. The confed attribute enables MED comparison among paths learned from confederation peers. The MEDs are compared only if there is no external Autonomous System (an AS not within the confederation) in the path. If there is an external autonomous system in the path, the MED comparison is not made. For example in the following paths, the MED is not compared with Route3 as it is not in the confederation. MED is compared for Route1 and Route2 only.

```
Path1 = 32000 32004, med=4
Path2 = 32001 32004, med=2
Path3 = 32003 1, med=1
```

The missing-as-worst attribute to consider a missing MED attribute in a path as having a value of infinity, making the path without a MED value the least desirable path. If missing-as-worst is disabled, the missing MED is assigned the value of 0, making the path with the missing MED attribute the best path.

Use the `no` parameter with this command to prevent BGP from considering the MED attribute in comparing paths.

Command Syntax

```
bgp bestpath med [confed (missing-as-worst)|missing-as-worst (confed)|remove-recv-
  med|remove-recv-med]
```

```
no bgp bestpath med [confed (missing-as-worst)|missing-as-worst (confed)|remove-
  recv-med|remove-recv-med]
```

Parameters

`confed`	Compares MED among confederation paths
`missing-as-worst`	Treats missing MED as the least preferred one
`remove-recv-med`	To remove rcvd MED attribute
`remove-send-med`	To remove send MED attribute

Command Mode

Router mode

Default

MED value is zero.

Examples

```
ZebOS#configure terminal
ZebOS(config)#router bgp 100
ZebOS(config-router)#bgp bestpath med missing-as-worst

ZebOS(config)#router bgp 100
ZebOS(config-router)#bgp bestpath med remove-recv-med
ZebOS(config-router)#no bgp bestpath med remove-recv-med

ZebOS(config)#router bgp 100
ZebOS(config-router)#bgp bestpath med remove-send-med
ZebOS(config-router)#no bgp bestpath med remove-send-med
```

bgp bestpath tie-break-on-age

Use this command to select always the older preferred route even when the `bgp bestpath stompare-route-id` command is set.

Use the no parameter with this command to disable this function.

Command Syntax

```
bgp bestpath tie-break-on-age
no bgp bestpath tie-break-on-age
```

Parameters

None

Command Mode

Router mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#router bgp 100
ZebOS(config-router)#bgp bestpath tie-break-on-age

ZebOS(config)#router bgp 100
ZebOS(config-router)#no bgp bestpath tie-break-on-age
```

Related Commands

show ip bgp, show ip bgp neighbors

bgp client-to-client

Use this command to configure routers as route reflectors. Route reflectors are used when all Interior Border Gateway Protocol (iBGP) speakers are not fully meshed. If the clients are fully meshed the route reflector is not required, use `no bgp client-to-client reflection` command to disable the client-to-client route reflection.

Use the `no` parameter with this command to turn off client-to-client reflection.

Command Syntax

```
bgp client-to-client [reflection]
no bgp client-to-client [reflection]
```

Parameters

`reflection`	Allows reflection of routes

Default

When a router is configured as a route reflector, client-to-client reflection is enabled by default.

Command Mode

Router mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#router bgp 100
ZebOS(config-router)#bgp client-to-client reflection

ZebOS(config)#router bgp 100
ZebOS(config-router)#no bgp client-to-client reflection
```

Related Commands

bgp cluster-id, neighbor route-reflector-client, show ip bgp

bgp cluster-id

Use this command to configure the cluster ID if the BGP cluster has more than one route reflector. A cluster includes route reflectors and its clients. Usually, each cluster is identified by the router ID of its single route reflector but to increase redundancy sometimes a cluster may have more than one route reflector. All router reflectors in such a cluster are then identified by a cluster ID. The `bgp cluster-id` command is used to configure the 4 byte cluster ID for clusters with more than one route reflectors.

Use the `no` parameter with this command (without any arguments) to remove the cluster ID.

Command Syntax

```
bgp cluster-id [<1-4294967295>|A.B.C.D]
no bgp cluster-id
```

Parameters

`<1-4294967295>`	Specify the cluster ID of this router acting as a route reflector, either as IP address or as a maximum of 4 bytes
`A.B.C.D`	Set the route reflector cluster-ID as an IP address format

Command Mode

Router mode

Examples

The following configuration creates a cluster-id 5 including two route-reflector-clients.

```
ZebOS#configure terminal
ZebOS(config)#router bgp 100
ZebOS(config-router)#neighbor 2.2.2.2 remote-as 200
ZebOS(config-router)#neighbor 3.3.3.3 remote-as 200
ZebOS(config-router)#neighbor 3.3.3.3 route-reflector-client
ZebOS(config-router)#neighbor 5.5.5.5 remote-as 200
ZebOS(config-router)#neighbor 5.5.5.5 route-reflector-client
ZebOS(config-router)#neighbor 6.6.6.6 remote-as 200
ZebOS(config-router)#bgp cluster-id 5
```

Related Commands

bgp client-to-client reflection, neighbor route-reflector-client, show ip bgp

bgp confederation identifier

Use this command to specify a BGP confederation identifier.

Use the no parameter with this command to remove the BGP confederation identifier.

Command Syntax

```
bgp confederation identifier <1-65535>
no bgp confederation identifier
```

Parameter

<1-65535>	Set the routing domain confederation AS number

Command Mode

Router mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#router bgp 100
ZebOS(config-router)#bgp confederation identifier 1
```

Related Commands

bgp confederation peers

bgp confederation peers

Use this command to configure the Autonomous Systems (AS) that belong to a confederation. A confederation allows an AS to be divided into several ASs. The AS is given a confederation identifier. External routers view only the whole confederation as one AS. Each AS is fully meshed within itself and is visible internally to the confederation.

Use the no parameter with this command to remove an autonomous system from the confederation.

Command Syntax

```
bgp confederation peers <1-65535>
no bgp confederation peers <1-65535>
```

Parameter

<1-65535>	AS numbers of eBGP peers that are under same confederation but in a different sub-AS.

Command Mode

Router mode

Examples

In the following configuration example, the neighbor 172.210.30.2 and 172.210.20.1 have iBGP connection within AS 100, neighbor 173.213.30.1 is a BGP connection with a confederation peer 200 and neighbor 6.6.6.6 has an eBGP connection to external AS 300.

```
ZebOS#configure terminal
ZebOS(config)#router bgp 100
ZebOS(config-router)#bgp confederation identifier 300
ZebOS(config-router)#bgp confederation peer 200
ZebOS(config-router)#neighbor 172.210.30.2 remote-as 100
ZebOS(config-router)#neighbor 172.210.20.1 remote-as 100
ZebOS(config-router)#neighbor 173.213.30.1 remote-as 200
ZebOS(config-router)#neighbor 6.6.6.6 remote-as 300
```

In this configuration, the neighbor 5.5.5.4 has an eBGP connection to confederation 300.

```
ZebOS#configure terminal
ZebOS(config)#router bgp 500
ZebOS(config-router)#neighbor 5.5.5.4 remote-as 300
```

Related Commands

bgp confederation identifier

bgp config-type

Use this command to set the BGP configuration to the `standard` type. After setting the configuration to be the `standard` type, make sure to use the `neighbor send-community` command to send out BGP community attributes. The `zebos` configuration type is the default and requires no specific configuration for sending out BGP standard community and extended community attributes. For the `standard` type, the `no synchronization` command is always shown in the configuration, whereas, for the `Zebos` type this command is the default.

Use the `no` parameter with this command to remove this configuration.

Command Syntax

```
bgp config-type [standard|zebos]
no bgp config-type
```

Parameters

`standard`	Specify the industry-standard style configuration
`zebos`	Specify the ZebOS-style configuration

Default

The default configuration type is: `bgp config-type zebos`

Command Mode

Configure mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#bgp config-type standard
```

Related Commands

neighbor send-community

bgp dampening

Use this command to set the bgp route dampening parameters. Route dampening minimizes the instability caused by route flapping. A penalty is added for every flap in a flapping route. As soon as the total penalty reaches the `suppress` limit the advertisement of the route is suppressed. This penalty is decayed according to the configured `half time` value. Once the penalty is lower than the `reuse` limit, the route advertisement is un-suppressed. The dampening information is purged from the router once the penalty becomes less than half of the `reuse` limit.

Use the `no` parameter with this command to unset the bgp dampening parameters.

Command Syntax

```
bgp dampening [route-map (WORD)] [<1-45>] [<1-20000>|<1-20000>|<1-255>|<1-45>]
no bgp dampening [route-map (WORD)] [<1-45>] (<1-20000>|<1-20000>|<1-255>|<1-45>]
```

Parameters

`routemap`	Route-map to specify criteria for dampening.
`WORD`	Specify the name of the route-map.
`<1-45>`	Specify the reachability half-life time in minutes. The time for the penalty to decrease to one-half of its current value. The default is 15 minutes.
`<1-20000>`	Specify the reuse limit value. When the penalty for a suppressed route decays below the reuse value, the routes become unsuppressed. The default reuse limit is 750
`<1-20000>`	Specify the suppress limit value. When the penalty for a route exceeds the suppress value, the route is suppressed. The default suppress limit is 2000.
`<1-255>`	Specify the max-suppress-time. Maximum time that a dampened route is suppressed. The default max-suppress value is 4 times the half-life time (60 minutes).
`<1-45>`	Specify the un-reachability half-life time for penalty, in minutes.

Command Mode

Router mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#router bgp 11
ZebOS(config-router)#bgp dampening 20 800 2500 80 25
```

bgp default ipv4-unicast

Use this command to configure BGP defaults and activate IPv4-unicast for a peer by default. This affects the BGP global configuration

Use the no parameter with this command to disable the default behavior of the BGP routing process of exchanging IPv4 addressing information with BGP neighbor routers.

Command Syntax

```
bgp default ipv4-unicast
no bgp default ipv4-unicast
```

Parameters

None

Default

The `bgp default ipv4 unicast` is the default behavior.

Command Mode

Router mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#router bgp 100
ZebOS(config-router)#bgp default ipv4-unicast
```

bgp default local-preference

Use this command to change the default local preference value.Local preference indicates the preferred path when there are multiple paths to the same destination. The path having a higher preference is preferred. The preference is sent to all routers and access servers in the local autonomous system.

Use the no parameter with this command to revert to the default setting.

Command Syntax

```
bgp default local-preference <0-4294967295>
no bgp default local-preference <0-4294967295>
```

Parameter

`<0-4294967295>` Configure default local preference value.

Default

The default local preference value is 100.

Command Mode

Router mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#router bgp 100
ZebOS(config-router)#bgp default local-preference 2345555
```

Related Commands

set local-preference

bgp deterministic-med

Use this command to have the software compare the Multi Exit Discriminator (MED) variable when choosing among routes advertised by different peers in the same autonomous system. MED is used in best path selection by BGP. MED is compared after BGP attributes weight, local preference, AS-path and origin have been compared and are equal.

For a correct comparison result, enable this command on all routers in a local AS. After enabling this command, all paths for the same prefix are grouped together and arranged according to their MED value. Based on this comparison, the best path is then chosen. This command compares MED variable when choosing routes advertised by different peers in the same AS, to compare MED, when choosing routes from neighbors in different ASs use the bgp always-compare-med command.

When the bgp deterministic-med command is enabled, routes from the same AS are grouped together, and the best routes of each group are compared. If the BGP table showed:

```
Route1: as-path 200, med 300, internal
Route2: as-path 400, med 200, internal
Route3: as-path 400, med 250, external
```

BGP would have a group of Route1 and a second group of Route2 and Route3 (the same ASs). The best of each group is compared. Route1 is the best of its group because it is the only route from AS 200. Route1 is compared to the Route2, the best of group AS 400 (the lower MED). Since the two routes are not from the same AS, the MED is not considered in the comparison. The external BGP route is preferred over the internal BGP route, making Route3 the best route; the preferred route would be different if `always-compare-med` command is enabled (See `always-compare-med` command).

Use the `no` parameter with this command to disallow this setting.

Command Syntax

```
bgp deterministic-med
```

```
no bgp deterministic-med
```

Parameters

None

Default

Disabled

Command Mode

Router mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#router bgp 100
ZebOS(config-router)#bgp deterministic-med

ZebOS(config)#router bgp 100
ZebOS(config-router)#no bgp deterministic-med
```

Related Commands

show ip bgp, show ip bgp neighbors

bgp enforce-first-as

Use this command to enforce the first AS for the eBGP routes. This command specifies that any updates received from an external neighbor that do not have the neighbor's configured Autonomous System (AS) at the beginning of the AS_PATH in the received update must be denied. Enabling this feature adds to the security of the BGP network by not allowing traffic from unauthorized systems.

Using the no parameter with this command to disable this feature.

Command Syntax

```
bgp enforce-first-as
no bgp enforce-first-as
```

Parameters

None

Command Mode

Router mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#router bgp 100
ZebOS(config-router)#bgp enforce-first-as

ZebOS(config)#router bgp 100
ZebOS(config-router)#no bgp enforce-first-as
```

bgp extended-asn-cap

Use this command to configure a BGP router to send 4-octet ASN capabilities.

Using the no parameter with this command prevents a BGP router from sending 4-octet ASN capabilities.

Command Syntax

```
bgp extended-asn-cap
no bgp extended-asn-cap
```

Parameters

None

Default

Disabled

Command Mode

Configure mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#bgp extended-asn-cap
```

bgp fast-external-failover

Use this command to reset a BGP session immediately, if the interface used for BGP connection goes down.

Use the no parameter with this command to disable this feature.

Command Syntax

```
bgp fast-external-failover
no bgp fast-external-failover
```

Parameters

None

Default

Enabled

Command Mode

Router mode

Example

```
ZebOS#configure terminal
ZebOS(config)#router bgp 100
ZebOS(config-router)#bgp fast-external-failover
```

bgp g-shut

Use this command to gracefully shut down all BGP IPv4 and IPv6 sessions under this router. The BGP graceful shutdown feature reduces packet loss during maintenance activity.

Use the `no` parameter with this command to bring up all the sessions under this router. This command can be given only after graceful shutdown of all sessions under this router is complete.

Note: The `bgp g-shut` command cannot be given on a router running an IBGP session.

For details about the graceful shutdown feature, see the *ZebOS Border Gateway Protocol Developer Guide*.

Command Syntax

```
bgp g-shut
no bgp g-shut
```

Parameters

None

Default

Disabled

Command Mode

Router mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#router bgp 100
ZebOS(config-router)#bgp g-shut

ZebOS#configure terminal
ZebOS(config)#router bgp 100
ZebOS(config-router)#no bgp g-shut
```

bgp g-shut-capable

Use this command to enable the graceful shutdown capability at the router level and make available the graceful-shutdown related commands at the router and BGP neighbor levels.

Use the no parameter with this command to disable the graceful shutdown capability on a router.

For details about the graceful shutdown capability, see the *Border Gateway Protocol Developer Guide*.

Note: The graceful shutdown capability cannot be disabled on a router that is in a graceful shutdown state until it comes out this state meaning after the graceful shutdown has been initiated and the impacted BGP sessions are up again.

Command Syntax

```
bgp g-shut-capable
no bgp g-shut-capable
```

Parameters

None

Default

Disabled

Command Mode

Router mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#router bgp 100
ZebOS(config-router)#bgp g-shut-capable

ZebOS#configure terminal
ZebOS(config)#router bgp 100
ZebOS(config-router)#no bgp g-shut-capable
```

bgp g-shut-local-preference

Use this command to configure the local preference value of the routes (learned from `g-shut neighbor`) to be used during graceful shutdown. The local preference value is used to indicate the preferred route when there are multiple routes to the same destination in a single routing database. The route having a higher preference value is the preferred one. The preferred route is sent to all routers and access servers in the local autonomous system.

Use the `no` parameter with this command to revert to the default setting.

Command Syntax

```
bgp g-shut-local-preference <0-4294967295>
no bgp g-shut-local-preference <0-4294967295>
```

Parameters

`<0-4294967295>` Specify the local preference value

Default

By default, the local preference value is set to 0.

Command Mode

Router mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#router bgp 100
ZebOS(config-router)#bgp g-shut-local-preference  22
```

bgp graceful-restart

Use this command to enable BGP graceful-restart capabilities. The restart-time parameter is used for setting the maximum time that a graceful-restart neighbor waits to come back up after a restart. This value is applied to all neighbors unless you explicitly override it by configuring the corresponding value on the neighbor. The stalepath-time parameter is used to set the maximum time to preserve stale paths from a gracefully restarted neighbor. All stalepaths, unless reinstated by the neighbor after a re-establishment, will be deleted at the expiration of this timer.

Use the no parameter with this command to restore the router to its default state.

Command Syntax

```
bgp graceful-restart [graceful-reset|restart-time <1-3600>|stalepath-time <1-3600>]
no bgp graceful-restart [graceful-reset|restart-time|stalepath-time]
```

Parameters

`graceful-reset`	Sets a graceful-reset capability. This feature provides a graceful restart mechanism for a BGP session reset in which the BGP daemon is not restarted, so that any changes in network configurations that cause BGP reset do not affect packet forwarding.
`restart-time`	Maximum time needed for neighbors to restart. Default is 120 seconds.
`<1-3600>`	Specify a delay value in seconds.
`stalepath-time`	Maximum time to retain stale paths from restarting neighbors. Default is 360 seconds.
`<1-3600>`	Specify a delay value in seconds.

Default

The default restart time is 120 seconds and the default stalepath-time is 360 seconds.

Command Mode

Router mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#router bgp 10
ZebOS(config-router)#bgp graceful-restart restart-time 150

ZebOS#configure terminal
ZebOS(config)#router bgp 10
ZebOS(config-router)#bgp graceful-restart restart-time 150
ZebOS(config-router)#bgp graceful-restart graceful-reset
```

bgp log-neighbor-changes

Use this command to enable logging of status change messages without turning on debug bgp commands. ZebOS has many logging services for neighbor status, including debug bgp fsm and debug bgp events. However, these commands create a significant hit in system performance. If you need to log neighbor status changes only, F5 Networks recommends turning off all the debug commands and using the bgp log-neighbor-changes command. A sample output of this log is:

```
%Protocol-Severity-Events: Message-text
```

A sample output of the log for an `interface down` event is:

```
%BGP-5-ADJCHANGE: neighbor 10.10.0.24 Down Interface flap
```

This command logs the following events:

- BGP Notification Received
- Erroneous BGP Update Received
- User reset request
- Peer time-out
- Peer Closing down the session
- Interface flap
- Router ID changed
- Neighbor deleted
- Member added to peer group
- Administrative shutdown
- Remote AS changed
- RR client configuration modification
- Soft reconfiguration modification

Use the `no` parameter with this command to disable this feature.

Command Syntax

```
bgp log-neighbor-changes
no bgp log-neighbor-changes
```

Parameters

None

Default

Disabled

Command Mode

Router mode

Example

```
ZebOS(config)#router bgp 100
ZebOS(config-router)#bgp log-neighbor-changes
```

bgp multiple-instance

Use this command to enable or disable the BGP multiple instance support.

Use the no parameter with this command to disable this function.

Command Syntax

```
bgp multiple-instance (allow-same-peer)
no bgp multiple-instance (allow-same-peer)
```

Parameters

`allow-same-peer`

Allows the same peer to be activated in multiple views.

Note: The `no bgp multiple-instance` command is not valid if there are any BGP instances present.

Default

No multiple-instance support

Command Mode

Configure mode

Examples

The following example shows the use of the `bgp multiple-instance` command allowing the configuration of two instances.

```
ZebOS(config)#bgp multiple-instance

ZebOS(config)#quit
ZebOS#show run

Current configuration:
hostname ZebOS
password zebra
log stdout
!
debug bgp
debug bgp events
debug bgp updates
debug bgp fsm
!
bgp multiple-instance
!
router bgp 11
 bgp router-id 10.10.10.50
 neighbor 10.10.10.51 remote-as 11
!
```

bgp nexthop-trigger-count

Use this command to configure the display of BGP nexthop-tracking status.

Use the no parameter with this command to disable this function.

Command Syntax

```
bgp nexthop-trigger-count <0-127>
no bgp nexthop-trigger-count <0-127>
```

Parameter

<0-127>	The BGP nexthop-tracking status.

Command Mode

Router mode

Example

```
ZebOS(config)#router bgp 100
ZebOS(config-router)#bgp nexthop-trigger-count 10
```

bgp nexthop-trigger delay

Use this command to set the delay time for nexthop address tracking. This command configures the delay interval between routing table walks for nexthop delay tracking, after which BGP does a routing table scan on receiving a nexthop change trigger from NSM. The time period determines how long BGP waits before it walks the full BGP table to determine which prefixes are affected by the nexthop changes, after it receives the trigger from NSM about one or more nexthop changes.

Use the no parameter with this command to reset the timer value to the default value.

Command Syntax

```
bgp nexthop-trigger delay <1-100>
no bgp nexthop-trigger delay
```

Parameter

<1-100>	Specify a delay time in seconds.

Default

The default nexthop delay time is 5 seconds.

Command Mode

Configure mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#bgp nexthop-trigger delay 6

ZebOS#configure terminal
ZebOS(config)#no bgp nexthop-trigger delay
```

bgp nexthop-trigger enable

Use this command to enable nexthop address tracking. Nexthop address tracking is an event-driven notification system that monitors the status of routes installed in the Routing Information Base (RIB) and reports nexthop changes that affect internal BGP (iBGP) or external BGP (eBGP) prefixes directly to the BGP process. This improves the overall BGP convergence time, by allowing BGP to respond rapidly to nexthop changes for routes installed in the RIB.

If nexthop tracking is enabled after certain routes are learned, the registration of all nexthops for selected BGP routes is done after the nexthop tracking feature is enabled. If nexthop tracking is disabled, and if there are still some selected BGP routes, BGP de-registers the nexthops of all selected BGP routes from NSM.

Use the no parameter with this command to disable this feature. If the no command is given when nexthop tracking is in the process of execution, an error appears and nexthop tracking is not disabled. However, if the nexthop tracking timer is running at the time of negation, the nexthop tracking timer is stopped, and nexthop tracking is disabled.

Command Syntax

```
bgp nexthop-trigger enable
```

```
no bgp nexthop-trigger enable
```

Parameters

None

Default

Nexthop tracking is disabled by default, however, when nexthop tracking is enabled, and the delay time interval is not configured, the default nexthop delay time-interval is taken, which is 5 seconds.

Command Mode

Configure mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#bgp nexthop-trigger enable
```

bgp rfc1771-path-select

Use this command to set RFC1771 compatible path selection mechanism.

Use the no parameter with this command to revert this setting.

Command Syntax

```
bgp rfc1771-path-select
no bgp rfc1771-path-select
```

Parameters

None

Default

Industry standard compatible path selection mechanism.

Command Mode

Configure mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#bgp rfc1771-path-select
```

bgp rfc1771-strict

Use this command to set the Strict RFC1771 setting.

Use the no parameter with this command to revert this setting.

Command Syntax

```
bgp rfc1771-strict
no bgp rfc1771-strict
```

Parameters

None

Default

Disabled

Command Mode

Configure mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#bgp rfc1771-strict
```

bgp router-id

Use this command to manually configure a fixed router ID as a BGP router identifier.

Use the no parameter with this command to disable this function

Command Syntax

```
bgp router-id [A.B.C.D]
no bgp router-id [A.B.C.D]
```

Parameter

A.B.C.D	Specify a manually configured router ID.

Default

Disabled

Command Mode

Router mode

Default

In case the loopback interface is configured the router-id is set to the IP address of a loopback interface. If not, the highest IP address is the router-id.

Examples

```
ZebOS#configure terminal
ZebOS(config)#router bgp 100
ZebOS(config-router)#bgp router-id 1.1.2.3

ZebOS(config)#router bgp 100
ZebOS(config-router)#no bgp router-id 1.1.2.3
```

bgp scan-time

Use this command to configure scanning intervals of BGP routers. This interval is the period after which router checks the validity of the routes in its database. To disable BGP scanning, set the scan-time interval to 0 seconds.

Use the no parameter with this command to disable this function.

Command Syntax

```
bgp scan-time <0-60>
no bgp scan-time <0-60>
```

Parameter

<0-60>	Scanning interval in seconds. The default scan-time interval is 60 seconds.

Default

Disabled

Command Mode

Router mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#router bgp 100
ZebOS(config-router)#bgp scan-time 10
```

bgp update-delay

Use this command to specify the update-delay value for a graceful-restart capable router. The update-delay value is the maximum time a graceful-restart capable router, which is restarting, will defer route-selection and advertisements to all its graceful-restart capable neighbors. This maximum time starts from the instance the first neighbor attains established state after restart. The restarting router prematurely terminates this timer when end-of-rib markers are received from all its graceful-restart capable neighbors.

Use the no parameter with this command to revert to the default update-delay value.

Command Syntax

```
bgp update-delay <1-3600>
no bgp update-delay <1-3600>
```

Parameters

<1-3600>	Set a delay value (in seconds)

Default

The default update-delay value is 120 seconds.

Command Mode

Router mode

Example

```
ZebOS#configure terminal
ZebOS(config)#router bgp 10
ZebOS(config-router)#bgp update-delay 345
```

clear bgp *

Use this command to reset the BGP connection for all peers.

Command Syntax

```
clear bgp * [in (prefix-filter)|out|soft (in|out)]
```

Parameters

`in`	Indicates that incoming advertised routes should be cleared.
`prefix-filter`	Indicates the push out prefix-list ORF and do inbound soft reconfig.
`out`	Indicates that outgoing advertised routes should be cleared.
`soft`	Indicates that both incoming and outgoing routes should be cleared (in|out).
`in`	Indicates soft reconfig inbound update.
`out`	Indicates soft reconfig outbound update.

Command Mode

Privileged Exec mode

Example

```
ZebOS#clear bgp * soft in
```

clear bgp <1-4294967295>

Use this command to reset the BGP connection for peers in the specified Autonomous System.

Command Syntax

```
clear bgp <1-4294967295> [in (prefix-filter)|out|soft (in|out)]
```

Parameters

`in`	Indicates that incoming advertised routes should be cleared.
`prefix-filter`	Indicates the push out prefix-list ORF and do inbound soft reconfig.
`out`	Indicates that outgoing advertised routes should be cleared.
`soft`	Indicates that both incoming and outgoing routes should be cleared (in|out).
`in`	Indicates soft reconfig inbound update.
`out`	Indicates soft reconfig outbound update.

Command Mode

Privileged Exec mode

Example

```
ZebOS#clear bgp 300 in prefix-filter
ZebOS#clear bgp 300 soft in
ZebOS#clear bgp 1 in prefix-filter
```

clear bgp A.B.C.D

Use this command to reset the BGP neighbor addresses to clear.

Command Syntax

```
clear bgp A.B.C.D [in (prefix-filter)|out|soft (in|out)]
```

Parameters

`in`	Indicates that incoming advertised routes should be cleared.
`prefix-filter`	Indicates the push out prefix-list ORF and do inbound soft reconfig.
`out`	Indicates that outgoing advertised routes should be cleared.
`soft`	Indicates that both incoming and outgoing routes should be cleared (in|out).
`in`	Indicates soft reconfig inbound update.
`out`	Indicates soft reconfig outbound update.

Command Mode

Privileged Exec mode

Example

```
ZebOS#clear bgp 3.3.3.3 in prefix-filter
```

clear bgp X:X::X:X

Use this command to reset the BGP IPv6 neighbor addresses to clear.

Command Syntax

```
clear bgp X:X::X:X[in (prefix-filter)|out|soft (in|out)]
```

Parameters

`in`	Indicates that incoming advertised routes should be cleared.
`prefix-filter`	Indicates the push out prefix-list ORF and do inbound soft reconfig.
`out`	Indicates that outgoing advertised routes should be cleared.
`soft`	Indicates that both incoming and outgoing routes should be cleared (in|out).
`in`	Indicates soft reconfig inbound update.
`out`	Indicates soft reconfig outbound update.

Command Mode

Privileged Exec mode

Example

```
ZebOS#clear bgp 12:3::4:1 in prefix-filter
```

clear bgp external

Use this command to reset the BGP connection for all external peers.

Command Syntax

```
clear bgp external [in (prefix-filter)|out|soft (in|out)]
```

Parameters

`in`	Indicates that incoming advertised routes should be cleared.
`prefix-filter`	Indicates the push out prefix-list ORF and do inbound soft reconfig.
`out`	Indicates that outgoing advertised routes should be cleared.
`soft`	Indicates that both incoming and outgoing routes should be cleared (in|out).
`in`	Indicates soft reconfig inbound update.
`out`	Indicates soft reconfig outbound update.

Command Mode

Privileged Exec mode

Example

```
ZebOS#clear bgp external soft in
```

clear bgp ipv4

Use this command to reset the BGP connection for IPv4.

Command Syntax

```
clear bgp ipv4 [multicast|unicast (dampening|flap-statistics {A.B.C.D|A.B.C.D/M})]
```

Parameters

`multicast`	Indicates the address family modifier as multicast.
`unicast`	Indicates the address family modifier as unicast.
`dampening`	Clears route flap dampening information.
`flap-statistics`	Clears route flap statistics.
`A.B.C.D`	Indicates the IP prefix <network> (for example, 35.0.0.0)
`A.B.C.D/M`	Indicates the IP prefix <network>/<length> (for example, 35.0.0.0/8)

Command Mode

Privileged Exec mode

Example

```
ZebOS#clear bgp ipv4 unicast dampening 1.1.1.1
```

clear bgp peer-group

Use this command to reset the BGP connection for all members of a peer group.

Command Syntax

```
clear bgp peer-group [(WORD)|in (prefix-filter)|out|soft (in|out)]
```

Parameters

WORD	BGP peer-group name
in	Indicates that incoming advertised routes should be cleared.
prefix-filter	Indicates the push out prefix-list ORF and do inbound soft reconfig.
out	Indicates that outgoing advertised routes should be cleared.
soft	Indicates that both incoming and outgoing routes should be cleared (in|out).
in	Indicates soft reconfig inbound update.
out	Indicates soft reconfig outbound update.

Command Mode

Privileged Exec mode

Examples

```
ZebOS#clear bgp peer-group P1 soft in
```

clear bgp view

Use this command to reset all BGP connections.

Command Syntax

```
clear bgp view [WORD|*|soft (in|out)]
```

Parameters

WORD	BGP view name
*	Clear all peers
soft	Indicates that both incoming and outgoing routes should be cleared (in|out).
in	Indicates soft reconfig inbound update.
out	Indicates soft reconfig outbound update.

Command Mode

Privileged Exec mode

Examples

```
ZebOS#clear bgp view instance1 * soft in
```

clear ip bgp *

Use this command to reset a BGP connection for all peers.

Command Syntax

```
clear ip bgp * [in (prefix-filter)] [ipv4 (multicast|unicast)|in {prefix-
  filter}|out|soft {in|out}] [out] [ipv6 (multicast|unicast)|in {prefix-
  filter}|out|soft {in|out}] [out] [soft (in|out)]
```

Parameters

`in`	Indicates that incoming advertised routes should be cleared.
`prefix-filter`	Indicates the push out prefix-list ORF and do inbound soft reconfig.
`ipv4`	Indicates that incoming advertised routes should be cleared.
`multicast`	Indicates the address family modifier as multicast.
`unicast`	Indicates the address family modifier as unicast.
	Indicates that incoming advertised routes should be cleared.
`in`	Indicates that incoming advertised routes should be cleared.
`prefix-filter`	Indicates the push out prefix-list ORF and do inbound soft reconfig.
`out`	Indicates that outgoing advertised routes should be cleared.
`soft`	Indicates that both incoming and outgoing routes should be cleared (in|out).
`in`	Indicates soft reconfig inbound update.
`out`	Indicates soft reconfig outbound update.
`ipv6`	Indicates that incoming advertised routes should be cleared.
`unicast`	Indicates the address family modifier as unicast.
	Indicates that incoming advertised routes should be cleared.
`in`	Indicates that incoming advertised routes should be cleared.
`out`	Indicates that outgoing advertised routes should be cleared.
`soft`	Indicates that both incoming and outgoing routes should be cleared (in|out).
`in`	Indicates soft reconfig inbound update.
`out`	Indicates soft reconfig outbound update.
`out`	Indicates that outgoing advertised routes should be cleared.
`soft`	Indicates that both incoming and outgoing routes should be cleared (in|out).
`in`	Indicates soft reconfig inbound update.
`out`	Indicates soft reconfig outbound update.

Command Mode

Privileged Exec mode

Examples

```
ZebOS#clear ip bgp *
ZebOS#clear ip bgp * ipv4 unicast in prefix-filter
```

clear ip bgp <1-4294967295>

Use this command to reset a BGP connection for all peers in a specified Autonomous System.

Command Syntax

```
clear ip bgp <1-4294967295> [in (prefix-filter)] [ipv4 (multicast|unicast)|in
  {prefix-filter}|out|soft {in|out}] [out] [ipv6 (multicast|unicast)|in {prefix-
  filter}|out|soft {in|out}] [out] [soft (in|out)]
```

Parameters

`in`	Indicates that incoming advertised routes should be cleared.
`prefix-filter`	Indicates the push out prefix-list ORF and do inbound soft reconfig.
`ipv4`	Indicates that incoming advertised routes should be cleared.
`multicast`	Indicates the address family modifier as multicast.
`unicast`	Indicates the address family modifier as unicast.
	Indicates that incoming advertised routes should be cleared.
`in`	Indicates that incoming advertised routes should be cleared.
`prefix-filter`	Indicates the push out prefix-list ORF and do inbound soft reconfig.
`out`	Indicates that outgoing advertised routes should be cleared.
`soft`	Indicates that both incoming and outgoing routes should be cleared (in|out).
`in`	Indicates soft reconfig inbound update.
`out`	Indicates soft reconfig outbound update.
`ipv6`	Indicates that incoming advertised routes should be cleared.
`unicast`	Indicates the address family modifier as unicast.
	Indicates that incoming advertised routes should be cleared.
`in`	Indicates that incoming advertised routes should be cleared.
`out`	Indicates that outgoing advertised routes should be cleared.
`soft`	Indicates that both incoming and outgoing routes should be cleared (in|out).
`in`	Indicates soft reconfig inbound update.
`out`	Indicates soft reconfig outbound update.
`out`	Indicates that outgoing advertised routes should be cleared.
`soft`	Indicates that both incoming and outgoing routes should be cleared (in|out).
`in`	Indicates soft reconfig inbound update.
`out`	Indicates soft reconfig outbound update.

Command Mode

Privileged Exec mode

Examples

```
ZebOS#clear ip bgp 100
ZebOS#clear ip bgp 200 ipv4 unicast in prefix-filter
```

clear ip bgp A.B.C.D

Use this command to reset an IPv4 BGP connection for a specific IP address.

Command Syntax

```
clear ip bgp A.B.C.D [in (prefix-filter)] [ipv4 (multicast|unicast)|in {prefix-
  filter}|out|soft {in|out}] [out] [out] [soft (in|out)]
```

Parameters

`in`	Indicates that incoming advertised routes should be cleared.
`prefix-filter`	Indicates the push out prefix-list ORF and do inbound soft reconfig.
`ipv4`	Indicates that incoming advertised routes should be cleared.
`multicast`	Indicates the address family modifier as multicast.
`unicast`	Indicates the address family modifier as unicast.
	Indicates that incoming advertised routes should be cleared.
`in`	Indicates that incoming advertised routes should be cleared.
`prefix-filter`	Indicates the push out prefix-list ORF and do inbound soft reconfig.
`out`	Indicates that outgoing advertised routes should be cleared.
`soft`	Indicates that both incoming and outgoing routes should be cleared (in|out).
`in`	Indicates soft reconfig inbound update.
`out`	Indicates soft reconfig outbound update.
`out`	Indicates that outgoing advertised routes should be cleared.
`soft`	Indicates that both incoming and outgoing routes should be cleared (in|out).
`in`	Indicates soft reconfig inbound update.
`out`	Indicates soft reconfig outbound update.

Command Mode

Privileged Exec mode

Examples

```
ZebOS#clear ip bgp 10.10.0.12 soft
ZebOS#clear ip bgp 10.10.0.10 in prefix
```

clear ip bgp X:X::X:X

Use this command to reset an IPv6 BGP connection for a specific IP address.

Command Syntax

```
clear ip bgp X:X::X:X [in (prefix-filter)] [out] [out] [soft (in|out)]
```

Parameters

`in`	Indicates that incoming advertised routes should be cleared.
`out`	Indicates that outgoing advertised routes should be cleared.
`soft`	Indicates that both incoming and outgoing routes should be cleared (in|out).
`in`	Indicates soft reconfig inbound update.
`out`	Indicates soft reconfig outbound update.

Command Mode

Privileged Exec mode

Examples

```
ZebOS#clear ip bgp 10:10::0:12 soft
```

clear ip bgp dampening

Use this command to reset all dampened BGP routes under the specified address family.

Command Syntax

```
clear ip bgp dampening [A.B.C.D|A.B.C.D/M]
```

Parameters

A.B.C.D	Indicates the IP prefix <network> (for example, 35.0.0.0)
A.B.C.D/M	Indicates the IP prefix <network>/<length> (for example, 35.0.0.0/8)

Command Mode

Privileged Exec mode

Examples

```
ZebOS#clear ip bgp dampening 10.10.0.121
ZebOS#clear ip bgp ipv4 unicast dampening
```

clear ip bgp external

Use this command to reset a BGP connection for all external peers.

Command Syntax

```
clear ip bgp external [in (prefix-filter)] [ipv4 (multicast|unicast)|in {prefix-
  filter}|out|soft {in|out}] [out] [out] [soft (in|out)]
```

Parameters

`in`	Indicates that incoming advertised routes should be cleared.
`prefix-filter`	Indicates the push out prefix-list ORF and do inbound soft reconfig.
`ipv4`	Indicates that incoming advertised routes should be cleared.
`multicast`	Indicates the address family modifier as multicast.
`unicast`	Indicates the address family modifier as unicast.
	Indicates that incoming advertised routes should be cleared.
`in`	Indicates that incoming advertised routes should be cleared.
`prefix-filter`	Indicates the push out prefix-list ORF and do inbound soft reconfig.
`out`	Indicates that outgoing advertised routes should be cleared.
`soft`	Indicates that both incoming and outgoing routes should be cleared (in|out).
`in`	Indicates soft reconfig inbound update.
`out`	Indicates soft reconfig outbound update.
`out`	Indicates that outgoing advertised routes should be cleared.
`soft`	Indicates that both incoming and outgoing routes should be cleared (in|out).
`in`	Indicates soft reconfig inbound update.
`out`	Indicates soft reconfig outbound update.

Command Mode

Privileged Exec mode

Examples

```
ZebOS#clear ip bgp external out
ZebOS#clear ip bgp external ipv4 unicast in prefix-filter
```

clear ip bgp flap-statistics

Use this command to clear the flap count and history duration for all the prefixes under the specified address family.

Command Syntax

```
clear ip bgp flap-statistics [A.B.C.D|A.B.C.D/M]
```

Parameters

A.B.C.D	Indicates the IP prefix <network> (for example, 35.0.0.0)
A.B.C.D/M	Indicates the IP prefix <network>/<length> (for example, 35.0.0.0/8)

Command Mode

Privileged Exec mode

Examples

```
ZebOS#clear ip bgp flap-statistics 10.10.0.121
ZebOS#clear ip bgp ipv4 unicast flap-statistics
```

clear ip bgp ipv4

Use this command to reset the IP BGP connection for either IPv4.

Command Syntax

```
clear ip bgp ipv4 [multicast|unicast] (dampening|flap-statistics) {A.B.C.D|A.B.C.D/M}
```

Parameters

`multicast`	Indicates the address family modifier as multicast.
`unicast`	Indicates the address family modifier as unicast.
`dampening`	Clears route flap dampening information.
`flap-statistics`	Clears route flap statistics.
`A.B.C.D`	Indicates the IP prefix <network> (for example, 35.0.0.0)
`A.B.C.D/M`	Indicates the IP prefix <network>/<length> (for example, 35.0.0.0/8)

Command Mode

Privileged Exec mode

Examples

```
ZebOS#clear ip bgp ipv4 unicast dampening 1.1.1.1
```

clear ip bgp ipv6

Use this command to reset the IP BGP connection for either IPv6.

Command Syntax

```
clear ip bgp ipv6 [unicast] (dampening|flap-statistics) {X:X::X:X|X:X::X:X/M}
```

Parameters

`unicast`	Indicates the address family modifier as unicast.
`dampening`	Clears route flap dampening information.
`flap-statistics`	Clears route flap statistics.
`X:X::X:X`	Indicates the IP prefix <network> (for example, 35.0.0.0)
`X:X::X:X/M`	Indicates the IP prefix <network>/<length> (for example, 35.0.0.0/8)

Command Mode

Privileged Exec mode

Examples

```
ZebOS#clear ip bgp ipv6 unicast dampening 1.1.1.1
```

clear ip bgp peer-group

Use this command to reset a BGP connection for all members of a peer group.

Command Syntax

```
clear ip bgp external [in (prefix-filter)] [ipv4 (multicast|unicast)|in {prefix-
  filter}|out|soft {in|out}] [out] [out] [soft (in|out)]
```

Parameters

`in`	Indicates that incoming advertised routes should be cleared.
`prefix-filter`	Indicates the push out prefix-list ORF and do inbound soft reconfig.
`ipv4`	Indicates that incoming advertised routes should be cleared.
`multicast`	Indicates the address family modifier as multicast.
`unicast`	Indicates the address family modifier as unicast.
	Indicates that incoming advertised routes should be cleared.
`in`	Indicates that incoming advertised routes should be cleared.
`prefix-filter`	Indicates the push out prefix-list ORF and do inbound soft reconfig.
`out`	Indicates that outgoing advertised routes should be cleared.
`soft`	Indicates that both incoming and outgoing routes should be cleared (in|out).
`in`	Indicates soft reconfig inbound update.
`out`	Indicates soft reconfig outbound update.
`out`	Indicates that outgoing advertised routes should be cleared.
`soft`	Indicates that both incoming and outgoing routes should be cleared (in|out).
`in`	Indicates soft reconfig inbound update.
`out`	Indicates soft reconfig outbound update.

Command Mode

Privileged Exec mode

Examples

```
ZebOS#clear ip bgp peer-group Peer1 out
ZebOS#clear ip bgp peer-group mypeer ipv4 unicast in prefix-filter
```

clear ip bgp view

Use this command to reset a BGP IPv4 connection, as well as, to reset the bgp instance for a specified view (`WORD`); use the `clear ip bgp` command to reset the default instance.

Command Syntax

```
clear ip bgp view (WORD) [*|in (prefix-filter)] [ipv4 (multicast|unicast)|in
  {prefix-filter}|soft {in|out}] [soft (in|out)]
```

Parameters

`WORD`	Indicates the BGP peer-group name.
`*`	Indicates that all peers should be cleared.
`in`	Indicates that incoming advertised routes should be cleared.
`prefix-filter`	Indicates the push out prefix-list ORF and do inbound soft reconfig.
`ipv4`	Indicates that incoming advertised routes should be cleared.
`multicast`	Indicates the address family modifier as multicast.
`unicast`	Indicates the address family modifier as unicast.
	Indicates that incoming advertised routes should be cleared.
`in`	Indicates that incoming advertised routes should be cleared.
`prefix-filter`	Indicates the push out prefix-list ORF and do inbound soft reconfig.
`soft`	Indicates that both incoming and outgoing routes should be cleared (in|out).
`in`	Indicates soft reconfig inbound update.
`out`	Indicates soft reconfig outbound update.
`soft`	Indicates that both incoming and outgoing routes should be cleared (in|out).
`in`	Indicates soft reconfig inbound update.
`out`	Indicates soft reconfig outbound update.

Command Mode

Privileged Exec mode

Examples

```
ZebOS#clear ip bgp view I4 * in prefix-filter
ZebOS#clear ip bgp view I2 ipv4 unicast soft in
```

debug bgp

Use this command to enable all BGP troubleshooting functions. Use this command without any parameters to turn on normal bgp debug information.

Use the no parameter with this command to disable this function.

Command Syntax

```
debug bgp [all|bfd|dampening|events|filters|fsm|keepalives|nht|nsm|updates
  (in|out)]
no debug bgp [all|bfd|dampening|events|filters|fsm|keepalives|nht|nsm|updates]
```

Parameters

`all`	Used with the no form exclusively; turns off all debugging for BGP.
`bfd`	Specified debugging for BGP Bidirectional Forwarding Detection.
`dampening`	Specify debugging for BGP dampening.
`events`	Specify debugging for BGP events.
`filters`	Specify debugging for BGP filters.
`fsm`	Specify debugging for BGP Finite State Machine (FSM).
`keepalives`	Specify debugging for BGP keepalives.
`nht`	Specify debugging for BGP NHT.
`nsm`	Specify debugging for NSM messages.
`updates`	Updates (in|out) Specify debugging for BGP updates.
`in`	Inbound updates.
`out`	Outbound updates.

Command Mode

Privileged Exec mode and Configure Mode

Examples

```
ZebOS#debug bgp
ZebOS#debug bgp events
```

distance bgp

Use this command to define an administrative distance. This distance is a rating of trustworthiness of a router. The higher the distance the lower the trust rating. The administrative distance can be set for external, internal and local routes. External paths are routes learned from a neighbor out of the AS. The internal routes are routes learned from another router within the same AS. Local routes are for the router that is being redistributed from another process.

If the administrative distance is changed, it could create inconsistency in the routing table and obstruct routing. Use this command in Router mode to set the administrative distance for all address families. Use this command in Address Family mode to set the administrative distance per an IPv4 or IPv6 family.

Use the no parameter with this command to remove an administrative distance.

Command Syntax

```
distance bgp [<1-255>|<1-255>|<1-255>]
no distance bgp [<1-255>|<1-255>|<1-255>]
```

Parameters

<1-255>	Specify the distance for BGP external routes. Default distance for external routes is 20.
<1-255>	Specify the distance for BGP internal routes. Default distance for internal routes is 200.
<1-255>	Specify the distance for BGP local routes. Default distance for local routes is 200.

Command Mode

Router mode, Address Family IPv4 mode, and Address Family IPv6 mode

Examples

The following example shows how to set the administrative distance for BGP for all address families.

```
ZebOS#configure terminal
ZebOS(config)#router bgp 100
ZebOS(config-router)#distance bgp 34 23 15
```

The following example shows how to set the administrative distance for BGP for an IPv6 address family.

```
ZebOS(config)#router bgp 100
ZebOS(config-router)#address family ipv6
ZebOS(config-router-af)#distance bgp 34 23 14
```

dump bgp all

Use this command to dump all BGP packets.

This command is available only when configuration option `--HAVE_BGP_DUMP` is enabled when compiling ZebOS. For detailed information about all compilation options for ZebOS, refer to the *ZebOS Network Platform Installation Guide*.

Use the no option with this command to disable this function.

Command Syntax

```
dump bgp all [PATH]
no dump bgp all [PATH|INTERVAL]
```

Parameters

`PATH`	Specify the output filename.
`INTERVAL`	Specify an interval for dumping BGP packets.

Command Mode

Configure mode

Example

```
ZebOS#configure terminal
ZebOS(config)#dump bgp all
```

exit-address-family

Use this command to exit the `address family` mode. See address-family on page 25 for steps on how to enter the address family mode.

Command Syntax

```
exit-address-family
```

Parameters

None

Command Mode

Address Family mode

Examples

The following example shows the use of `exit-address-family` command and the change in the prompt after using this command.

```
ZebOS#configure terminal
ZebOS(config)#router bgp 100
ZebOS(config-router)#address-family ipv4 multicast
ZebOS(config-router-af)#exit-address-family
ZebOS(config-router)#
```

Related Commands

address family

ip as-path access-list

Use this command to define a BGP Autonomous System (AS) path access list. A named community list is a filter based on regular expressions. If the regular expression matches the specified string representing the AS path of the route, then the permit or deny condition applies. Use this command to define the BGP access list globally, use the neighbor router configuration command to apply a specific access list.

Use the no parameter with this command to disable use of the access list**.**

Command Syntax

```
ip as-path access-list [WORD] (deny|permit) {LINE}
no ip as-path access-list [WORD] (deny|permit) {LINE}
```

Parameters

WORD	Specify the name of the access list.
deny	Denies access to matching conditions.
permit	Permits access to matching conditions.
LINE	Specify a regular expression to match the BGP AS paths. Refer to the Regular Expressions on page 295" for more details.

Command Mode

Configure mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#ip as-path access-list mylist deny ^65535$
```

ip community-list <1-99>

Use this command to specify a standard community list that specifies BGP community attributes.

Use the no parameter with this command to delete the community list entry.

Command Syntax

```
ip community-list <1-99> (deny|permit) {AA:NN|local-AS|no-advertise|no-export}
no ip community-list <1-99> (deny|permit) {AA:NN|local-AS|no-advertise|no-export}
```

Parameters

WORD	Specify the community listname.
deny	Specify the community to reject.
permit	Specify the community to accept.
AA:NN	Specify the valid value for the community number.
local-AS	Specify routes not to be advertised to external BGP peers.
no-advertise	Specify routes not to be advertised to other BGP peers.
no-export	Specify routes not to be advertised outside of Autonomous System boundary.

Command Mode

Configure mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#ip community-list 55 permit 7675:80 7675:90

ZebOS(config)#no ip community-list 55 permit 7675:80 7675:90
```

Related Commands

ip community-list standard, ip community-list expanded

ip community-list <100-199>

Use this command to specify a expanded community list that specifies BGP community attributes.

Use the no parameter with this command to delete the community list entry.

Command Syntax

```
ip community-list <100-199> (deny|permit) {LINE}
no ip community-list <100-199> (deny|permit) {LINE}
```

Parameters

WORD	Specify the name of the access list.
deny	Denies access to matching conditions.
permit	Permits access to matching conditions.
LINE	Specify a regular expression to match the BGP AS paths. Refer to the Regular Expressions on page 295" for more details.

Command Mode

Configure mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#ip community-list 125 permit 6789906
ZebOS(config)#ip community-list expanded CLIST permit .*
```

ip community-list WORD

Use the community-lists to specify BGP community attributes. The community attribute is used for implementing policy routing. It is an optional, transitive attribute and facilitates transfer of local policies through different autonomous systems. There are two kinds of community-lists: the expanded and standard. The `standard community-list` defines the community attributes in a specified format and not with regular expressions. The `expanded community-list` defines the community attributes with regular expressions.

Use the `no` parameter with this command to delete the community list entry.

Command Syntax

```
ip community-list [WORD] (deny|permit) {AA:NN|local-AS|no-advertise|no-export}
no ip community-list [WORD] (deny|permit) {AA:NN|local-AS|no-advertise|no-export}
```

Parameters

`WORD`	Specify the community listname.
`deny`	Specify the community to reject.
`permit`	Specify the community to accept.
`AA:NN`	Specify the valid value for the community number.
`local-AS`	Specify routes not to be advertised to external BGP peers.
`no-advertise`	Specify routes not to be advertised to other BGP peers.
`no-export`	Specify routes not to be advertised outside of Autonomous System boundary.

Command Mode

Configure mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#ip community-list mylist permit 7675:80 7675:90

ZebOS(config)#no ip community-list mylist permit 7675:80 7675:90
```

Related Commands

ip community-list standard, ip community-list expanded

ip community-list expanded

Use the community-lists to specify BGP community attributes. The community attribute is used for implementing policy routing. It is an optional, transitive attribute and facilitates transfer of local policies through different autonomous systems. It includes community values that are 32 bits long.

There are two kinds of community-lists: expanded and standard. The standard community-list defines the community attributes in a specified format and not with regular expressions. The expanded community-list defines the community attributes with regular expressions.Use the `no` parameter with this command to delete the community list entry.

Command Syntax

```
ip community-list [WORD] (deny|permit) {LINE}
no ip community-list [WORD] (deny|permit) {LINE}
```

Parameters

`WORD`	Specify the name of the access list.
`deny`	Denies access to matching conditions.
`permit`	Permits access to matching conditions.
`LINE`	Specify a regular expression to match the BGP AS paths. Refer to the Regular Expressions on page 295" for more details.

Command Mode

Configure mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#ip community-list 125 permit 6789906
ZebOS(config)#ip community-list expanded CLIST permit .*
```

Related Commands

ip community-list, ip community-list standard

ip community-list standard

Use the community-lists to specify BGP community attributes. The community attribute is used for implementing policy routing. It is an optional, transitive attribute and facilitates transfer of local policies through different autonomous systems. It includes community values that are 32 bits long. There are two kinds of community-lists: expanded and standard. The standard community-list defines the community attributes in a specified format without regular expressions. The expanded community-list defines the community attributes with regular expressions.

Use this command to add a standard community-list entry. The standard community-list is compiled into binary format and is directly compared with the BGP communities attribute in the BGP updates. The comparison is faster than the expanded community-list. Any community value that does not match the standard community value is automatically treated as expanded.

Use the `no` parameter with this command to delete the standard community-list entry.

Command Syntax

```
ip community-list standard [WORD] (deny|permit) {AA:NN|local-AS|no-advertise|no-export}
no ip community-list standard [WORD] (deny|permit) {AA:NN|local-AS|no-advertise|no-export}
```

Parameters

`WORD`	Specify the community listname.
`deny`	Specify the community to reject.
`permit`	Specify the community to accept.
`AA:NN`	Specify the valid value for the community number.
`local-AS`	Specify routes not to be advertised to external BGP peers.
`no-advertise`	Specify routes not to be advertised to other BGP peers.
`no-export`	Specify routes not to be advertised outside of Autonomous System boundary.

Command Mode

Configure mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#ip community-list standard CLIST permit 7675:80 7675:90 no-export
ZebOS(config)#ip community-list 34 permit 5675:50 no-advertise
```

Related Commands

ip community-list, ip community-list expanded

ip extcommunity-list <1-99>

Use this command to create a standard extended community list.

Use the no parameter with this command to delete the community-list entry.

Command Syntax

```
ip extcommunity-list <1-99> (deny|permit) {LINE}
no ip extcommunity-list <1-99> (deny|permit) {LINE}
```

Parameters

WORD		Expanded community list number.
	deny	Specify community to reject.
	permit	Specify community to accept.
		LINE Specify a regular expression to match the BGP AS paths. Refer to the Regular Expressions on page 295" for more details.
		rt Route target extended community in aa:nn or IPaddr:nn format OR
		soo Site-of-origin extended community in aa:nn or IPaddr:nn format.

Command Mode

Configure mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#ip extcommunity-list 125 permit 4567335
ZebOS(config)#ip extcommunity-list expanded CLIST permit .*
```

Related Commands

ip extcommunity-list standard

ip extcommunity-list <100-199>

Use this command to create a expanded extended community list.

Use the no parameter with this command to delete the community-list entry.

Command Syntax

```
ip extcommunity-list <100-199> (deny|permit) {LINE}
no ip extcommunity-list <100-199> (deny|permit) {LINE}
```

Parameters

WORD	Expanded community list number.
deny	Specify community to reject.
permit	Specify community to accept.
LINE	Specify a regular expression to match the BGP AS paths. Refer to the Regular Expressions on page 295" for more details.

Command Mode

Configure mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#ip extcommunity-list 125 permit 4567335
ZebOS(config)#ip extcommunity-list expanded CLIST permit .*
```

Related Commands

ip extcommunity-list standard

ip extcommunity-list expanded

Use this command to create an expanded extended community list.

Use the no parameter with this command to delete the extended community-list entry.

Command Syntax

```
ip extcommunity-list expanded [WORD] (deny|permit) {LINE}
no ip extcommunity-list expanded [WORD] (deny|permit) {LINE}
```

Parameters

WORD	Expanded community list number.
deny	Specify community to reject.
permit	Specify community to accept.
LINE	Specify a regular expression to match the BGP AS paths. Refer to the Regular Expressions on page 295" for more details.

Command Mode

Configure mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#ip extcommunity-list 125 permit 4567335
ZebOS(config)#ip extcommunity-list expanded CLIST permit .*
```

Related Commands

ip extcommunity-list standard

ip extcommunity-list standard

Use this command to create and delete a standard extended-community list. The extended community attribute is 8 bytes in 2 formats. The sub-type can be route target (`rt`) or site of origin (`soo`). Thus, the sub-type of each community must be specified when creating the extended community list. Regarding the formats, an extended community is based on the 6 byte value; these 6 bytes are represented in 4btyes:2bytes format:

- Format 1, AA:NN: The 16 bit value of the AS number is represented in higher-order 4 bytes. If the extended ASN capability is enabled, the AS number is represented using higher-order 4 bytes. The NN assigned value is represented in low-order 2 bytes in both cases.
- Format 2, IPaddr:NN: In this format, the higher-order 4 bytes are used to represent the IP address, and the low-order 2 bytes are used to represent the assigned value.

Use the `no` parameter with this command to delete the extended-community-list entry.

Command Syntax

```
ip extcommunity-list standard [WORD] (deny|permit) {LINE [rt|soo]}
no ip extcommunity-list standard [WORD] (deny|permit) {LINE [rt|soo]}
```

Parameters

`WORD`	Expanded community list number.
`deny`	Specify community to reject.
`permit`	Specify community to accept.
`LINE`	Specify a regular expression to match the BGP AS paths. Refer to the Regular Expressions on page 295" for more details.
`rt`	Route target extended community in aa:nn or IPaddr:nn format OR
`soo`	Site-of-origin extended community in aa:nn or IPaddr:nn format.

Command Mode

Configure mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#ip extcommunity-list 36 permit rt 5675:50
ZebOS(config)#ip extcommunity-list standard CLIST permit soo 7645:70
```

match ip peer

Use this command to apply policies based on the route source of which the BGP TCP/IP session formed using an IPv4 address in the update message.

Use the no parameter with this command to disable this function.

Command Syntax

```
match ip peer [<1-199>|<1300-2699>|WORD]
no match ip peer [<1-199>|<1300-2699>|WORD]
```

Parameters

<1-199>	Access-list number.
<1300-2699>	Expanded range access-list number.
WORD	Access-list name.

Command Mode

Route-map mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#route-map in-A permit 10
ZebOS(route-map)#match ip peer 1
```

neighbor activate

Use this command to enable the exchange of the specified AF routes with a neighboring router. After the TCP connection is opened with the neighbor, use this command to enable or disable the exchange of the specified AF information with a neighboring router.

Use the no parameter with this command to disable exchange of information with a neighbor.

Command Syntax

```
neighbor (A.B.C.D|X:X::X:X|WORD) activate
no neighbor (A.B.C.D|X:X::X:X|WORD) activate
```

Parameters

A.B.C.D	Specify the address of the BGP neighbor in an IPv4 format.
X:X::X:X	Specify the address of the BGP neighbor in an IPv6 format.
WORD	Name of an existing peer-group. For information on how to create peer groups, refer to the neighbor peer-group and neighbor remote-as commands. When this parameter is used with a command, the command applies on all peers in the specified group.

Command Mode

Address Family mode and Router mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#router bgp 10
ZebOS(config-router)#neighbor 1.2.3.4 activate
```

Related Commands

neighbor remote-as

neighbor advertisement-interval

Use this command to set the minimum interval between the sending of BGP routing updates. To reduce the flapping of routes to internet, a minimum advertisement interval is set, so that the BGP routing updates are sent only per interval seconds. BGP dampening can also be used to control the effects of flapping routes.

Use the no parameter with this command to set the interval time to default.

Command Syntax

```
neighbor (A.B.C.D|X:X::X:X|WORD) advertisement-interval <0-600>
no neighbor (A.B.C.D|X:X::X:X|WORD) advertisement-interval <0-600>
```

Parameters

A.B.C.D	Specify the address of the BGP neighbor in an IPv4 format.
X:X::X:X	Specify the address of the BGP neighbor in an IPv6 format.
WORD	Name of an existing peer-group. For information on how to create peer groups, refer to the neighbor peer-group and neighbor remote-as commands. When this parameter is used with a command, the command applies on all peers in the specified group.
<0-600>	Advertisement-interval value in seconds.

Command Mode

Router mode

Example

```
ZebOS#configure terminal
ZebOS(config)#router bgp 10
ZebOS(config-router)#neighbor 10.10.0.3 advertisement-interval 45
```

neighbor allowas-in

Use this command to set the Accept As-path to include the AS number.

Use the no parameter with this command to reset to default.

Command Syntax

```
neighbor (A.B.C.D|X:X::X:X|WORD) allowas-in <1-10>
no neighbor (A.B.C.D|X:X::X:X|WORD) allowas-in <1-10>
```

Parameters

A.B.C.D	Specify the address of the BGP neighbor in an IPv4 format.
X:X::X:X	Specify the address of the BGP neighbor in an IPv6 format.
WORD	Name of an existing peer-group. For information on how to create peer groups, refer to the neighbor peer-group and neighbor remote-as commands. When this parameter is used with a command, the command applies on all peers in the specified group.
<1-10>	Number of occurrences of AS number

Command Mode

Router mode and Address Family mode

Example

```
ZebOS#configure terminal
ZebOS(config)#router bgp 10
ZebOS(config-router)#neighbor 10.10.0.3 allowas-in 4
```

neighbor attribute-unchanged

Use this command to advertise unchanged BGP attributes to the specified neighbor.

Use the no parameter with this command to disable this function.

Command Syntax

```
neighbor (A.B.C.D|X:X::X:X|WORD) attribute-unchanged (as-path|next-hop|med)
no neighbor (A.B.C.D|X:X::X:X|WORD) attribute-unchanged (as-path|next-hop|med)
```

Parameters

A.B.C.D	Specify the address of the BGP neighbor in an IPv4 format.
X:X::X:X	Specify the address of the BGP neighbor in an IPv6 format.
WORD	Name of an existing peer-group. For information on how to create peer groups, refer to the neighbor peer-group and neighbor remote-as commands. When this parameter is used with a command, the command applies on all peers in the specified group.
as-path	AS path attribute
next-hop	Nexthop attribute
med	Multi-exit discriminator attribute

Command Mode

Router mode and Address Family mode

Example

```
ZebOS#configure terminal
ZebOS(config)#router bgp 10
ZebOS(config-router)#neighbor 10.10.0.75 attribute-unchanged as-path med
```

neighbor as-origination-interval

Use this command to set the minimum interval between the sending of AS-origination routing updates.

Use the no parameter with this command to disable this function.

Command Syntax

```
neighbor (A.B.C.D|X:X::X:X|WORD) as-origination-interval <0-600>
no neighbor (A.B.C.D|X:X::X:X|WORD) as-origination-interval <0-600>
```

Parameters

A.B.C.D	Specify the address of the BGP neighbor in an IPv4 format.
X:X::X:X	Specify the address of the BGP neighbor in an IPv6 format.
WORD	Name of an existing peer-group. For information on how to create peer groups, refer to the neighbor peer-group and neighbor remote-as commands. When this parameter is used with a command, the command applies on all peers in the specified group.
<0-600>	Set the time in seconds.

Command Mode

Router mode

Example

```
ZebOS#configure terminal
ZebOS(config)#router bgp 10
ZebOS(config-router)#neighbor 10.10.0.75 as-origination-interval 555
```

neighbor capability dynamic

Use this command to enable the dynamic capability for a specific peer. This command allows a BGP speaker to advertise or withdraw an address family capability to a peer in a non-disruptive manner.

Use the no parameter with this command to disable the dynamic capability.

Command Syntax

```
neighbor (A.B.C.D|X:X::X:X|WORD) capability dynamic
no neighbor (A.B.C.D|X:X::X:X|WORD) capability dynamic
```

Parameters

A.B.C.D	Specify the address of the BGP neighbor in an IPv4 format.
X:X::X:X	Specify the address of the BGP neighbor in an IPv6 format.
WORD	Name of an existing peer-group. For information on how to create peer groups, refer to the neighbor peer-group and neighbor remote-as commands. When this parameter is used with a command, the command applies on all peers in the specified group.

Default

Disabled

Command Mode

Router mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#router bgp 10
ZebOS(config-router)#neighbor 10.10.10.1 capability dynamic
```

neighbor capability graceful-restart

Use this command to configure the router to advertise the Graceful Restart Capability to the neighbors. This configuration indicates that the BGP speaker has the ability to preserve its forwarding state for the address family when BGP restarts. Use this command to advertise to the neighbor routers the capability of graceful restart. However, users must first specify a neighbor's `remote-as` identification number assigned by the neighbor router.

This command is available only when configuration option `--enable-restart` is enabled when compiling ZebOS.

Note: The graceful restart capability is advertised only when the graceful restart capability has been enabled using the `bgp graceful-restart` command.

Use the `no` parameter with this command to configure router so it does not advertise the Graceful Restart Capability to its neighbor.

Command Syntax

```
neighbor (A.B.C.D|X:X::X:X|WORD) capability graceful-restart
no neighbor (A.B.C.D|X:X::X:X|WORD) capability graceful-restart
```

Parameters

`A.B.C.D`	Specify the address of the BGP neighbor in an IPv4 format.
`X:X::X:X`	Specify the address of the BGP neighbor in an IPv6 format.
`WORD`	Name of an existing peer-group. For information on how to create peer groups, refer to the neighbor peer-group and neighbor remote-as commands. When this parameter is used with a command, the command applies on all peers in the specified group.

Default

Disabled

Command Mode

Router mode and Address Family mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#router bgp 10
ZebOS(config-router)#neighbor 10.10.10.50 capability graceful-restart
```

Related Commands

bgp graceful-restart

neighbor capability orf

Use this command to enable Outbound Router Filtering (ORF), and advertise the ORF capability to its neighbors. The ORFs send and receive capabilities to lessen the number of updates exchanged between neighbors. By filtering updates, this option minimizes generating and processing of updates. The local router advertises the ORF capability in `send` mode, and the remote router receives the ORF capability in `receive` mode applying the filter as outbound policy. The two routers exchange updates to maintain the ORF for each router. Only an individual router or a peer group can be configured to be in `receive` or `send mode`. A peer-group member cannot be configured to be in `receive` or `send` mode.

Use the `no` parameter with this command to disable this function.

Command Syntax

```
neighbor (A.B.C.D|X:X::X:X|WORD) capability orf [prefix-list (both|receive|send)]
no neighbor (A.B.C.D|X:X::X:X|WORD) capability orf [prefix-list
  (both|receive|send)]
```

Parameters

`A.B.C.D`		Specify the address of the BGP neighbor in an IPv4 format.
`X:X::X:X`		Specify the address of the BGP neighbor in an IPv6 format.
`WORD`		Name of an existing peer-group. For information on how to create peer groups, refer to the neighbor peer-group and neighbor remote-as commands. When this parameter is used with a command, the command applies on all peers in the specified group.
	`prefix-list`	Advertise prefix list ORF capability to this neighbor
	`both`	Indicates that the local router can send ORF entries to its peer, as well as receive ORF entries from its peer.
	`receive`	Indicates that the local router is willing to receive ORF entries from its peer.
	`send`	Indicates that the local router is willing to send ORF entries to its peer.

Default

Disabled

Command Mode

Router mode and Address Family (IPv4 unicast, IPv4 multicast, IPv6) mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#router bgp 10
ZebOS(config-router)#neighbor 10.10.0.5 capability orf prefix-list both
ZebOS(config-router)#neighbor effe:2897::0003:3ed5 capability orf prefix-list
receive
```

neighbor capability route-refresh

Use this command to advertise to peer about route refresh capability support. If route refresh capability is supported, then router can dynamically request that the peer re-advertises its Adj-RIB-Out.

Use the no parameter with this command to disable this function

Command Syntax

```
neighbor (A.B.C.D|X:X::X:X|WORD) capability route-refresh
no neighbor (A.B.C.D|X:X::X:X|WORD) capability route-refresh
```

Parameters

A.B.C.D	Specify the address of the BGP neighbor in an IPv4 format.
X:X::X:X	Specify the address of the BGP neighbor in an IPv6 format.
WORD	Name of an existing peer-group. For information on how to create peer groups, refer to the neighbor peer-group and neighbor remote-as commands. When this parameter is used with a command, the command applies on all peers in the specified group.

Default

Disabled

Command Mode

Router mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#router bgp 10
ZebOS(config-router)#neighbor 10.10.10.1 capability route-refresh
```

neighbor collide-established

Use this command to specify including a neighbor, already in an established state, for conflict resolution when a TCP connection collision is detected. This command is not required for most network deployments, so users should only use this command when required.

Note: The associated functionality of including an 'established' neighbor into TCP connection collision conflict resolution is automatically enabled when a neighbor is configured for BGP graceful-restart.

Use the no option with this command to turn this feature off.

Command Syntax

```
neighbor (A.B.C.D|X:X::X:X|WORD) collide-established
no neighbor (A.B.C.D|X:X::X:X|WORD) collide-established
```

Parameters

A.B.C.D	Specify the address of the BGP neighbor in an IPv4 format.
X:X::X:X	Specify the address of the BGP neighbor in an IPv6 format.
WORD	Name of an existing peer-group. For information on how to create peer groups, refer to the neighbor peer-group and neighbor remote-as commands. When this parameter is used with a command, the command applies on all peers in the specified group.

Default

Disabled

Command Mode

Router mode

Example

```
ZebOS#configure terminal
ZebOS(config)#router bgp 10
ZebOS(config-router)#neighbor 3.3.3.3 collide-established
```

neighbor connection-retry-time

Use this command to set the connection retry time for a specific BGP neighbor.

Use the no parameter with this command to clear the connection retry time for a specific BGP neighbor.

Command Syntax

```
neighbor (A.B.C.D|X:X::X:X|WORD) connection-retry-time <1-65535>
no neighbor (A.B.C.D|X:X::X:X|WORD) connection-retry-time <1-65535>
```

Parameters

A.B.C.D	Specify the address of the BGP neighbor in an IPv4 format.
X:X::X:X	Specify the address of the BGP neighbor in an IPv6 format.
WORD	Name of an existing peer-group. For information on how to create peer groups, refer to the neighbor peer-group and neighbor remote-as commands. When this parameter is used with a command, the command applies on all peers in the specified group.
<1-65535>	Specify the connection retry time in seconds. Default is 120 seconds.

Default

Disabled

Command Mode

Router mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#router bgp 12
ZebOS(config-router)#neighbor 10.10.10.10 connection-retry-time 125
```

neighbor default-originate

Use this command to allow a BGP local router to send the default route 0.0.0.0 to a neighbor. This command can be used with standard or extended access lists.

Use the no parameter with this command to send no route as a default.

Command Syntax

```
neighbor (A.B.C.D|X:X::X:X|WORD) default-originate (route-map|WORD)
no neighbor (A.B.C.D|X:X::X:X|WORD) default-originate (route-map|WORD)
```

Parameters

A.B.C.D	Specify the address of the BGP neighbor in an IPv4 format.
X:X::X:X	Specify the address of the BGP neighbor in an IPv6 format.
WORD	Name of an existing peer-group. For information on how to create peer groups, refer to the neighbor peer-group and neighbor remote-as commands. When this parameter is used with a command, the command applies on all peers in the specified group.
route-map	The route-map to specify criteria to originate default routes.
WORD	Add the route map name.

Default

Disabled

Command Mode

Router mode and Address Family (IPv4 unicast, IPv4 multicast, IPv6) mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#router bgp 10
ZebOS(config-router)#neighbor 10.10.10.1 default-originate route-map myroute
```

neighbor description

Use this command to associate a description with a neighbor. This command helps in identifying a neighbor quickly. It is useful for an ISP that has multiple neighbor relationships.

Use the no parameter with this command to remove the description.

Command Syntax

```
neighbor (A.B.C.D|X:X::X:X|WORD) description (LINE)
no neighbor (A.B.C.D|X:X::X:X|WORD) description (LINE)
```

Parameters

A.B.C.D	Specify the address of the BGP neighbor in an IPv4 format.
X:X::X:X	Specify the address of the BGP neighbor in an IPv6 format.
WORD	Name of an existing peer-group. For information on how to create peer groups, refer to the neighbor peer-group and neighbor remote-as commands. When this parameter is used with a command, the command applies on all peers in the specified group.
LINE	Up to 80 characters of text describing the neighbor.

Command Mode

Router mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#router bgp 10
ZebOS(config-router)#neighbor 1.2.3.4 description Backup router for sales
```

neighbor disallow-infinite-holdtime

Use this command to disallow configuration of infinite hold-time. This command enables the local BGP speaker to reject a hold-time of “0” seconds from the peer (during exchange of open messages) or the user (during configuration).

The no form of this command allows the BGP speaker to accept a hold-time of “0” from the peer or during configuration.

Command Syntax

```
neighbor (A.B.C.D|X:X::X:X|WORD) disallow-infinite-holdtime
no neighbor (A.B.C.D|X:X::X:X|WORD) disallow-infinite-holdtime
```

Parameters

A.B.C.D	Specify the address of the BGP neighbor in an IPv4 format.
X:X::X:X	Specify the address of the BGP neighbor in an IPv6 format.
WORD	Name of an existing peer-group. For information on how to create peer groups, refer to the neighbor peer-group and neighbor remote-as commands. When this parameter is used with a command, the command applies on all peers in the specified group.

Command Mode

Router mode

Examples

```
ZebOS(config-router)#neighbor 10.11.4.26 disallow-infinite-holdtime
ZebOS(config-router)#neighbor 3ffe::45 disallow-infinite-holdtime
```

neighbor distribute-list

Use this command to filter route update from a particular BGP neighbor. Use only one distribute-list per BGP neighbor.

Use the no parameter with this command to remove an entry.

Command Syntax

```
neighbor (A.B.C.D|X:X::X:X|WORD) distribute-list (WORD|<1-199>|<1300-2699>)
  [in|out]
no neighbor (A.B.C.D|X:X::X:X|WORD) distribute-list (WORD|<1-199>|<1300-2699>)
  [in|out]
```

Parameters

A.B.C.D	Specify the address of the BGP neighbor in an IPv4 format.
X:X::X:X	Specify the address of the BGP neighbor in an IPv6 format.
WORD	Name of an existing peer-group. For information on how to create peer groups, refer to the neighbor peer-group and neighbor remote-as commands. When this parameter is used with a command, the command applies on all peers in the specified group.
WORD	The name of IP access-list.
<1-199>	The IP access-list number.
<1300-2699>	The expanded-range IP access-list number.
in	Indicates that incoming advertised routes will be filtered.
out	Indicates that outgoing advertised routes will be filtered.

Command Mode

Router mode and Address Family mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#router bgp 10
ZebOS(config-router)#neighbor 1.2.3.4 distribute-list mylist out
```

neighbor dont-capability-negotiate

Use this command to disable capability negotiation. The capability negotiation is performed by default. This command is used to allow compatibility with older BGP versions that have no capability parameters used in open messages between peers.

Use the no parameter with this command to enable capability negotiation.

Command Syntax

```
neighbor (A.B.C.D|X:X::X:X|WORD) dont-capability-negotiate
no neighbor (A.B.C.D|X:X::X:X|WORD) dont-capability-negotiate
```

Parameters

A.B.C.D	Specify the address of the BGP neighbor in an IPv4 format.
X:X::X:X	Specify the address of the BGP neighbor in an IPv6 format.
WORD	Name of an existing peer-group. For information on how to create peer groups, refer to the neighbor peer-group and neighbor remote-as commands. When this parameter is used with a command, the command applies on all peers in the specified group.

Command Mode

Router mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#router bgp 10
ZebOS(config-router)#neighbor 10.10.0.34 dont-capability-negotiate
```

neighbor ebgp-multihop

Use this command to accept and attempt BGP connections to external peers on indirectly connected networks. Multihop is not established if the only route to the multihop peer is a default route. This avoids loop formation.

Use the no parameter with this command to return to the default.

Command Syntax

```
neighbor (A.B.C.D|X:X::X:X|WORD) ebgp-multihop <1-255>
no neighbor (A.B.C.D|X:X::X:X|WORD) ebgp-multihop <1-255>
```

Parameters

A.B.C.D	Specify the address of the BGP neighbor in an IPv4 format.
X:X::X:X	Specify the address of the BGP neighbor in an IPv6 format.
WORD	Name of an existing peer-group. For information on how to create peer groups, refer to the neighbor peer-group and neighbor remote-as commands. When this parameter is used with a command, the command applies on all peers in the specified group.
<1-255>	Maximum hop count. If the maximum hop count is not set the hop count is 255.

Command Mode

Router mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#router bgp 10
ZebOS(config-router)#neighbor 10.10.10.34 remote-as 20
ZebOS(config-router)#neighbor 10.10.10.34 ebgp-multihop 5
```

neighbor enforce-multihop

Use this command to turn on the enforcement of eBGP neighbors perform multihop.

Use the no parameter with this command to turn off this feature.

Command Syntax

```
neighbor (A.B.C.D|X:X::X:X|WORD) enforce-multihop
no neighbor (A.B.C.D|X:X::X:X|WORD) enforce-multihop
```

Parameters

A.B.C.D	Specify the address of the BGP neighbor in an IPv4 format.
X:X::X:X	Specify the address of the BGP neighbor in an IPv6 format.
WORD	Name of an existing peer-group. For information on how to create peer groups, refer to the neighbor peer-group and neighbor remote-as commands. When this parameter is used with a command, the command applies on all peers in the specified group.

Command Mode

Router mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#router bgp 10
ZebOS(config-router)#neighbor 10.10.0.34 remote-as 20
ZebOS(config-router)#neighbor 10.10.0.34 enforce-multihop
```

neighbor fall-over

Use this command to configure fall-over detection for BGP.

Use the no parameter with this command to disable this function.

Command Syntax

```
neighbor (A.B.C.D|X:X::X:X|WORD) fall-over (bfd|multihop)
no neighbor (A.B.C.D|X:X::X:X|WORD) fall-over (bfd|multihop)
```

Parameters

A.B.C.D	Specify the address of the BGP neighbor in an IPv4 format.
X:X::X:X	Specify the address of the BGP neighbor in an IPv6 format.
WORD	Name of an existing peer-group. For information on how to create peer groups, refer to the neighbor peer-group and neighbor remote-as commands. When this parameter is used with a command, the command applies on all peers in the specified group.
bfd	Specify bidirectional forwarding detection (BFD)
multihop	Enable multihop

Command Mode

Router mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#router bgp 10
ZebOS(config-router)#neighbor 10.10.0.34 remote-as 20
ZebOS(config-router)#neighbor 10.10.0.34 fall-over bfd multihop
```

neighbor filter-list

Use this command to set up a BGP filter. This command specifies an access list filter on updates based on the BGP autonomous system paths. Each filter is an access list based on regular expressions.

Use the no parameter with this command to disable this function.

Command Syntax

```
neighbor (A.B.C.D|X:X::X:X|WORD) filter-list (WORD [in|out])
no neighbor (A.B.C.D|X:X::X:X|WORD) filter-list (WORD [in|out])
```

Parameters

A.B.C.D	Specify the address of the BGP neighbor in an IPv4 format.
X:X::X:X	Specify the address of the BGP neighbor in an IPv6 format.
WORD	Name of an existing peer-group. For information on how to create peer groups, refer to the neighbor peer-group and neighbor remote-as commands. When this parameter is used with a command, the command applies on all peers in the specified group.
WORD	The name of an autonomous system path access list.
in	Indicates that incoming advertised routes should be filtered.
out	Indicates that outgoing advertised routes should be filtered.

Command Mode

Router mode and Address Family mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#router bgp 10
ZebOS(config-router)#neighbor 10.10.0.34 remote-as 20
ZebOS(config-router)#neighbor 10.10.0.34 filter-list out in
```

neighbor g-shut

Use this command to initiate a graceful shutdown for the BGP session of the specified BGP neighbor. The BGP session for this neighbor is shut down after the graceful shutdown timer expires.

If there is no alternate route available for traffic to flow prior the actual shutdown of the BGP session, this route is made available for 60 seconds or for configured time after which the route is no longer available and traffic is dropped.

Use the `no` parameter with this command to bring up the session again for the specified BGP neighbor whose BGP session had been shut down using this command.

Note: You cannot apply the `no neighbor g-shut` command to the router during the actual graceful shutdown process for the BGP session.

Note: The graceful shutdown capability is not supported on iBGP sessions.

Command Syntax

```
neighbor <neighbor address> g-shut
no neighbor <neighbor address> g-shut
```

Parameters

`neighbor address`

Specify a BGP neighbor IP address

Default

Disabled

Command Mode

Router mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#router bgp 100
ZebOS(config-router)#neighbor 1.1.1.2 g-shut

ZebOS#configure terminal
ZebOS(config)#router bgp 100
ZebOS(config-router)#no neighbor 1.1.1.2 g-shut
```

neighbor g-shut-timer

Use this command to configure the value of the graceful shutdown timer. After the timer expires, the BGP session initiated for graceful shutdown is shut down.

Use the no parameter with this command to revert to the default setting.

Command Syntax

```
neighbor (A.B.C.D|X:X::X:X) g-shut-timer <10-65535>
no neighbor (A.B.C.D|X:X::X:X) g-shut-timer <10-65535>
```

Parameters

A.B.C.D	Specify the address of the BGP neighbor in an IPv4 format
X:X::X:X	Specify the address of the BGP neighbor in an IPv6 format
<10-65535>	The value of the graceful shutdown timer in seconds

Default

By default, the timer value is set to 60 seconds.

Command Mode

Router mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#router bgp 100
ZebOS(config-router)#neighbor 1.1.1.2 g-shut-timer 120
```

neighbor interface

Use this command to specify the interface name of a BGP neighbor.

Use the no parameter with this command to disable this command.

Command Syntax

```
neighbor (A.B.C.D|X:X::X:X|WORD) interface IFNAME
no neighbor (A.B.C.D|X:X::X:X|WORD) interface IFNAME
```

Parameters

A.B.C.D	Specify the address of the BGP neighbor in an IPv4 format.
X:X::X:X	Specify the address of the BGP neighbor in an IPv6 format.
WORD	Name of an existing peer-group. For information on how to create peer groups, refer to the neighbor peer-group and neighbor remote-as commands. When this parameter is used with a command, the command applies on all peers in the specified group.
IFNAME	Specify the interface name of BGP neighbor.

Command Mode

Router mode

Example

```
ZebOS#configure terminal
ZebOS(config)#router bgp 11
ZebOS(config-router)#neighbor 10.10.9.34 interface INT7
```

neighbor local-as

Use this command to specify an AS (autonomous system) number to use with BGP neighbor.

Use the no parameter with this command to disable this command.

Command Syntax

```
neighbor (A.B.C.D|X:X::X:X|WORD) local-as <1-4294967295>
no neighbor (A.B.C.D|X:X::X:X|WORD) local-as <1-4294967295>
```

Parameters

A.B.C.D	Specify the address of the BGP neighbor in an IPv4 format.
X:X::X:X	Specify the address of the BGP neighbor in an IPv6 format.
WORD	Name of an existing peer-group. For information on how to create peer groups, refer to the neighbor peer-group and neighbor remote-as commands. When this parameter is used with a command, the command applies on all peers in the specified group.
<1-4294967295>	Neighbor's autonomous system (AS) number.

Note: The AS number 23456 is a reserved 2-octet AS number. An old BGP speaker (2-byte implementation) should be configured with 23456 as its remote AS number while peering with a non-mappable new BGP speaker (4-byte implementation).

Command Mode

Router mode

Example

```
ZebOS#configure terminal
ZebOS(config)#router bgp 11
ZebOS(config-router)#neighbor 10.10.0.34 local-as 12345
```

neighbor maximum-prefix

Use this command to control the number of prefixes that can be received from a neighbor. This command allows the configuration of a specified number of prefixes that a BGP router is allowed to receive from a neighbor. When the `warning-only` option is not used, if any extra prefixes are received, the router ends the peering. A terminated peer stays down until the `clear ip bgp command` is used.

Use the `no` parameter with this command to disable this function.

Command Syntax

```
neighbor (A.B.C.D|X:X::X:X|WORD) maximum-prefix [<1-4294967295>|<1-100>|warning-
  only]
no neighbor  (A.B.C.D|X:X::X:X|WORD) maximum-prefix [<1-4294967295>|<1-
  100>|warning-only]
```

Parameters

`A.B.C.D`	Specify the address of the BGP neighbor in an IPv4 format.
`X:X::X:X`	Specify the address of the BGP neighbor in an IPv6 format.
`WORD`	Name of an existing peer-group. For information on how to create peer groups, refer to the neighbor peer-group and neighbor remote-as commands. When this parameter is used with a command, the command applies on all peers in the specified group.
`<1-4294967295>`	Specify the maximum number of prefixes permitted.
`<1-100>`	Specify the threshold value, 1 to 100 percent.
`warning-only`	Only gives a warning message when the limit is exceeded.

Command Mode

Router mode and Address Family mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#router bgp 10
ZebOS(config-router)#neighbor 10.10.0.72 maximum-prefix 1244 warning-only
```

neighbor next-hop-self

Use this command to configure the router as the next hop for a BGP-speaking neighbor or peer group. This command allows a BGP router to change the nexthop information that is sent to the iBGP peer. The nexthop information is set to the IP address of the interface used to communicate with the neighbor.

Use the no parameter with this command to disable this feature.

Command Syntax

```
neighbor (A.B.C.D|X:X::X:X|WORD) next-hop-self
no neighbor (A.B.C.D|X:X::X:X|WORD) next-hop-self
```

Parameters

A.B.C.D	Specify the address of the BGP neighbor in an IPv4 format.
X:X::X:X	Specify the address of the BGP neighbor in an IPv6 format.
WORD	Name of an existing peer-group. For information on how to create peer groups, refer to the neighbor peer-group and neighbor remote-as commands. When this parameter is used with a command, the command applies on all peers in the specified group.

Command Mode

Router mode and Address Family mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#router bgp 10
ZebOS(config-router)#neighbor 10.10.0.72 remote-as 100
ZebOS(config-router)#neighbor 10.10.0.72 next-hop-self
```

neighbor override-capability

Use this command to override a capability negotiation result.

Use the no parameter with this command to disable this function

Command Syntax

```
neighbor (A.B.C.D|X:X::X:X|WORD) override-capability
no neighbor (A.B.C.D|X:X::X:X|WORD) override-capability
```

Parameters

A.B.C.D	Specify the address of the BGP neighbor in an IPv4 format.
X:X::X:X	Specify the address of the BGP neighbor in an IPv6 format.
WORD	Name of an existing peer-group. For information on how to create peer groups, refer to the neighbor peer-group and neighbor remote-as commands. When this parameter is used with a command, the command applies on all peers in the specified group.

Command Mode

Router mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#router bgp 12
ZebOS(config-router)#neighbor 10.10.10.10 override-capability
```

neighbor passive

Use this command to set a BGP neighbor as passive.

Use the no parameter with this command to disable this function.

Command Syntax

```
neighbor (A.B.C.D|X:X::X:X|WORD) passive
no neighbor (A.B.C.D|X:X::X:X|WORD) passive
```

Parameters

A.B.C.D	Specify the address of the BGP neighbor in an IPv4 format.
X:X::X:X	Specify the address of the BGP neighbor in an IPv6 format.
WORD	Name of an existing peer-group. For information on how to create peer groups, refer to the neighbor peer-group and neighbor remote-as commands. When this parameter is used with a command, the command applies on all peers in the specified group.

Command Mode

Router mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#router bgp 12
ZebOS(config-router)#neighbor 10.10.10.10 passive
```

neighbor password

Use this command to set the password for a BGP neighbor. This command enables MD5 authentication on a TCP connection between two BGP peers.

Use the no parameter with this command to disable this function.

Command Syntax

```
neighbor (A.B.C.D|X:X::X:X|WORD) password WORD
no neighbor (A.B.C.D|X:X::X:X|WORD) password WORD
```

Parameters

A.B.C.D	Specify the address of the BGP neighbor in an IPv4 format.
X:X::X:X	Specify the address of the BGP neighbor in an IPv6 format.
WORD	Name of an existing peer-group. For information on how to create peer groups, refer to the neighbor peer-group and neighbor remote-as commands. When this parameter is used with a command, the command applies on all peers in the specified group.
WORD	Specify a password. The string can contain any alphanumeric characters, including spaces.

Command Mode

Router mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#router bgp 200
ZebOS(config-router)#neighbor 10.10.3.7 password newPassWord10
```

neighbor peer-group

Use this command to add a neighbor to an existing peer-group. Neighbors with the same update policies are grouped into peer groups. This facilitates the updates of various policies, such as, distribute and filter lists. The peer-group is then configured easily with any of the neighbor commands. Any changes made to the peer group affect all members. To create a peer-group use the `neighbor peer-group create` command and then use this command to add neighbors to the group.

Use the `no` parameter with this command to disable this function.

Command Syntax

```
neighbor (A.B.C.D|X:X::X:X|WORD) peer-group
no neighbor (A.B.C.D|X:X::X:X|WORD) peer-group
```

Parameters

`A.B.C.D`	Specify the address of the BGP neighbor in an IPv4 format.
`X:X::X:X`	Specify the address of the BGP neighbor in an IPv6 format.
`WORD`	Name of an existing peer-group. For information on how to create peer groups, refer to the neighbor peer-group and neighbor remote-as commands. When this parameter is used with a command, the command applies on all peers in the specified group.

Command Mode

Router mode

Example

This example shows a new peer-group `group1` and the adding of a neighbor `10.10.0.63` to the group.

```
ZebOS#configure terminal
ZebOS(config)#router bgp 10
ZebOS(config-router)#neighbor group1 peer-group
ZebOS(config-router)#neighbor 10.10.0.63 peer-group group1
```

This example create a peer-group.

```
ZebOS#configure terminal
ZebOS(config)#router bgp 10
ZebOS(config-router)#neighbor group1 peer-group
```

neighbor port

Use this command to specify the BGP port of a neighbor.

Use the no parameter with this command to disable this function

Command Syntax

```
neighbor (A.B.C.D|X:X::X:X|WORD) port <0-65535>
no neighbor (A.B.C.D|X:X::X:X|WORD) port <0-65535>
```

Parameters

A.B.C.D	Specify the address of the BGP neighbor in an IPv4 format.
X:X::X:X	Specify the address of the BGP neighbor in an IPv6 format.
WORD	Name of an existing peer-group. For information on how to create peer groups, refer to the neighbor peer-group and neighbor remote-as commands. When this parameter is used with a command, the command applies on all peers in the specified group.
<0-65535>	Specify the TCP port number.

Command Mode

Router mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#router bgp 12
ZebOS(config-router)#neighbor 10.10.10.10 port 643
```

neighbor prefix-list

Use this command to specify a prefix list for filtering BGP advertisements. Filtering by prefix list matches the prefixes of routes with those listed in the prefix list. If there is a match, the route is used. An empty prefix list permits all prefixes. If a given prefix does not match any entries of a prefix list, the route is denied access. When multiple entries of a prefix list match a prefix, the entry with the smallest sequence number is considered to be a real match.

The router begins the search at the top of the prefix list, with the sequence number 1. Once a match or deny occurs, the router does not need to go through the rest of the prefix list. For efficiency the most common matches or denies are listed at the top. The `neighbor distribute-list` command is an alternative to this command and only one of them can be used for filtering to the same neighbor in any direction.

Use the `no` parameter with this command to remove an entry.

Command Syntax

```
neighbor (A.B.C.D|X:X::X:X|WORD) prefix-list (WORD [in|out])
no neighbor (A.B.C.D|X:X::X:X|WORD) prefix-list (WORD [in|out])
```

Parameters

`A.B.C.D`	Specify the address of the BGP neighbor in an IPv4 format.
`X:X::X:X`	Specify the address of the BGP neighbor in an IPv6 format.
`WORD`	Name of an existing peer-group. For information on how to create peer groups, refer to the neighbor peer-group and neighbor remote-as commands. When this parameter is used with a command, the command applies on all peers in the specified group.
`WORD`	The number of an AS-path access list.
`in`	Specify that the access list applies to incoming advertisements.
`out`	Specify that the access list applies to outgoing advertisements.

Command Mode

Router mode and Address Family mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#ip prefix-list list1 deny 30.0.0.0/24
ZebOS(config)#router bgp 12
ZebOS(config-router)#neighbor 10.10.10.10 prefix-list list1 in
```

Related Commands

ip prefix-list (refer to the *NSM Command Reference*)

neighbor remote-as

This command establishes BGP peering with a customer edge router.

Use this command to specify a neighbor's autonomous system number. If the specified ASN matches the ASN number specified in the router bgp global configuration, the neighbor is identified as internal, if not (ASN does not match) then external, to the local AS. The specified neighbor exchanges only unicast address prefixes, unless the neighbor is also activated using the `neighbor activate` command which allows the exchange of other routing information.

Use the `no` parameter with this command to delete this peering.

Command Syntax

```
neighbor (A.B.C.D|X:X::X:X|WORD) remote-as <1-4294967295>
no neighbor (A.B.C.D|X:X::X:X|WORD) remote-as <1-4294967295>
```

Parameters

`A.B.C.D`	Specify the address of the BGP neighbor in an IPv4 format.
`X:X::X:X`	Specify the address of the BGP neighbor in an IPv6 format.
`WORD`	Name of an existing peer-group. For information on how to create peer groups, refer to the neighbor peer-group and neighbor remote-as commands. When this parameter is used with a command, the command applies on all peers in the specified group.
`<1-4294967295>`	Neighbor's autonomous system (AS) number.

Note: The AS number 23456 is a reserved 2-octet AS number. An old BGP speaker (2-byte implementation) should be configured with 23456 as its remote AS number while peering with a non-mappable new BGP speaker (4-byte implementation).

Command Mode

Router mode

Example

```
ZebOS#configure terminal
ZebOS(config)#router bgp 11
ZebOS(config-router)#neighbor 10.10.0.73 remote-as 345
ZebOS(config-router)#neighbor 11.11.0.74 remote-as 23456
```

Note: The last command in the above example should be given when the local speaker is OBGP and the neighbor is NBGP with 4-octet ASN.

neighbor remove-private-AS

Use this command to remove the private Autonomous System (AS) number from outbound updates. Private AS numbers are not advertised to the Internet. This command is used with external BGP peers only. The router removes the AS numbers only if the update includes private AS numbers. If the update includes both private and public AS numbers, the system treats it as an error.

Use the no parameter with this command to revert to default.

Command Syntax

```
neighbor (A.B.C.D|X:X::X:X|WORD) remove-private-AS
no neighbor (A.B.C.D|X:X::X:X|WORD) remove-private-AS
```

Parameters

A.B.C.D	Specify the address of the BGP neighbor in an IPv4 format.
X:X::X:X	Specify the address of the BGP neighbor in an IPv6 format.
WORD	Name of an existing peer-group. For information on how to create peer groups, refer to the neighbor peer-group and neighbor remote-as commands. When this parameter is used with a command, the command applies on all peers in the specified group.

Default

Disabled

Command Mode

Router mode and Address Family mode

Example

```
ZebOS#configure terminal
ZebOS(config)#router bgp 10
ZebOS(config-router)#neighbor 10.10.0.63 remove-private-AS
```

neighbor restart-time

Use this command to set a different restart-time other than the global restart-time configured using the bgp graceful-restart command. This command takes precedence over the restart-time value specified using the bgp graceful-restart command. The restart-time value is the maximum time that a graceful-restart neighbor waits to come back up after a restart. The default value is 120 seconds. Make sure that the restart time specified using this command does not exceed the stalepath-time specified in the Router mode.

Use the no parameter with this command to restore the router to its default state.

Command Syntax

```
neighbor (A.B.C.D|X:X::X:X|WORD) restart-time <1-3600>
no neighbor (A.B.C.D|X:X::X:X|WORD) restart-time <1-3600>
```

Parameters

A.B.C.D	Specify the address of the BGP neighbor in an IPv4 format.
X:X::X:X	Specify the address of the BGP neighbor in an IPv6 format.
WORD	Name of an existing peer-group. For information on how to create peer groups, refer to the neighbor peer-group and neighbor remote-as commands. When this parameter is used with a command, the command applies on all peers in the specified group.
<1-3600>	Delay value measured in seconds.

Command Mode

Router mode

Example

```
ZebOS#configure terminal
ZebOS(config)#router bgp 10
ZebOS(config-router)#neighbor 3.3.3.3 restart-time 45
```

Related Commands

bgp graceful-restart

neighbor route-map

Use this command to apply a route map to incoming or outgoing routes. This command filters updates and modifies attributes. A route map is applied to inbound or outbound updates. Only the routes that pass the route map are sent or accepted in updates.

Use the no parameter with this command to a route map.

Command Syntax

```
neighbor (A.B.C.D|X:X::X:X|WORD) route-map (WORD [in|out])
no neighbor (A.B.C.D|X:X::X:X|WORD) route-map (WORD [in|out])
```

Parameters

A.B.C.D	Specify the address of the BGP neighbor in an IPv4 format.
X:X::X:X	Specify the address of the BGP neighbor in an IPv6 format.
WORD	Name of an existing peer-group. For information on how to create peer groups, refer to the neighbor peer-group and neighbor remote-as commands. When this parameter is used with a command, the command applies on all peers in the specified group.
WORD	Specify name of the route-map.
in	Specify that the access list applies to incoming advertisements.
out	Specify that the access list applies to outgoing advertisements.

Command Mode

Router mode and Address Family mode

Examples

The following example shows the configuration of the route-map name rmap2 and then the use of this map name in the neighbor route-map command.

```
ZebOS#configure terminal
ZebOS(config)#route-map rmap2 permit 6
ZebOS(config-route-map)#match origin incomplete
ZebOS(config-route-map)#set metric 100
ZebOS(config-route-map)#exit
ZebOS(config)#router bgp 12
ZebOS(config-router)#neighbor 10.10.10.10 route-map rmap2 in
```

neighbor route-reflector-client

Use this command to configure the router as a BGP route reflector and configure the specified neighbor as its client. Route reflectors are a solution for the explosion of iBGP peering within an autonomous system. By route reflection the number of iBGP peers within an AS is reduced. Use this command to configure the local router as the route reflector and specify neighbors as its client. An AS can have more than one route reflector. One route reflector treats the other route reflector as another iBGP speaker.

Use the `no` parameter with this command to indicate that the neighbor is not a client.

Command Syntax

```
neighbor (A.B.C.D|X:X::X:X|WORD) route-reflector-client
no neighbor (A.B.C.D|X:X::X:X|WORD) route-reflector-client
```

Parameters

`A.B.C.D`	Specify the address of the BGP neighbor in an IPv4 format.
`X:X::X:X`	Specify the address of the BGP neighbor in an IPv6 format.
`WORD`	Name of an existing peer-group. For information on how to create peer groups, refer to the neighbor peer-group and neighbor remote-as commands. When this parameter is used with a command, the command applies on all peers in the specified group.

Command Mode

Router mode and Address Family mode

Examples

In the following configuration, Router1 is the route reflector for clients 3.3.3.3 and 2.2.2.2; it also has a non-client peer 6.6.6.6.

```
ZebOS#configure terminal
ZebOS(config)#router bgp 200
ZebOS(config-router)#neighbor 3.3.3.3 remote-as 200
ZebOS(config-router)#neighbor 3.3.3.3 route-reflector-client
ZebOS(config-router)#neighbor 2.2.2.2 remote-as 200
ZebOS(config-router)#neighbor 2.2.2.2 route-reflector-client
ZebOS(config-router)#neighbor 6.6.6.6 remote-as 200
```

neighbor route-server-client

Use this command to configure a neighbor as the Route Server client.

Command Syntax

```
neighbor (A.B.C.D|X:X::X:X|WORD) route-server-client
```

Parameters

A.B.C.D	Specify the address of the BGP neighbor in an IPv4 format.
X:X::X:X	Specify the address of the BGP neighbor in an IPv6 format.
WORD	Name of an existing peer-group. For information on how to create peer groups, refer to the neighbor peer-group and neighbor remote-as commands. When this parameter is used with a command, the command applies on all peers in the specified group.

Command Mode

Router mode

Example

```
ZebOS#configure terminal
ZebOS(config)#router bgp 10
ZebOS(config-router)#neighbor 10.10.0.72 route-server-client
```

neighbor send-community

Use this command to specify that a community attribute should be sent to a BGP neighbor. The community attribute groups destinations in a certain community and applies routing decisions according to those communities. On receiving community attributes the router reannounces them to the neighbor. Only when the no parameter is used with this command the community attributes are not reannounced to the neighbor. By default, both `standard` and `extended` community attributes are sent to a neighbor. To explicitly send only the `standard` or `extended` community attribute, run the `bgp config-type` command with the `standard` parameter, before running this command.

Use the no parameter with this command to remove the entry. Use the `extended` and no parameters to remove extended communities. Specifying no other parameter with no removes standard communities only.

Command Syntax

```
neighbor (A.B.C.D|X:X::X:X|WORD) send-community (both|extended|standard)
no neighbor (A.B.C.D|X:X::X:X|WORD) send-community (both|extended|standard)
```

Parameters

`A.B.C.D`	Specify the address of the BGP neighbor in an IPv4 format.
`X:X::X:X`	Specify the address of the BGP neighbor in an IPv6 format.
`WORD`	Name of an existing peer-group. For information on how to create peer groups, refer to the neighbor peer-group and neighbor remote-as commands. When this parameter is used with a command, the command applies on all peers in the specified group.
`both`	Sends Standard and Extended Community attributes.
`extended`	Sends Extended Community attributes.
`standard`	Sends Standard Community attributes.

Default

Both `standard` and `extended` community attributes are sent to a neighbor.

Command Mode

Router mode and Address Family mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#bgp config-type standard
ZebOS(config)#router bgp 10
ZebOS(config-router)#neighbor 10.10.0.72 send-community extended
```

Related Commands

bgp config-type

neighbor shutdown

Use this command to disable a neighbor. This command shuts down any active session for the specified neighbor and clears all related routing data.

Use the no parameter with this command to re-enable the neighbor.

Command Syntax

```
neighbor (A.B.C.D|X:X::X:X|WORD) shutdown
no neighbor (A.B.C.D|X:X::X:X|WORD) shutdown
```

Parameters

A.B.C.D	Specify the address of the BGP neighbor in an IPv4 format.
X:X::X:X	Specify the address of the BGP neighbor in an IPv6 format.
WORD	Name of an existing peer-group. For information on how to create peer groups, refer to the neighbor peer-group and neighbor remote-as commands. When this parameter is used with a command, the command applies on all peers in the specified group.

Command Mode

Router mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#router bgp 10
ZebOS(config-router)#neighbor 10.10.0.72 shutdown
```

neighbor soft-reconfiguration

Use this command to store updates for inbound soft reconfiguration. Soft-reconfiguration may be used in lieu of BGP route refresh capability. Using this command enables local storage of all the received routes and their attributes. This requires additional memory. When a soft reset (inbound) is done on this neighbor, the locally stored routes are re-processed according to the inbound policy. The BGP neighbor connection is not affected.

Use the no parameter with this command to disable this function.

Command Syntax

```
neighbor (A.B.C.D|X:X::X:X|WORD) soft-reconfiguration [inbound]
no neighbor (A.B.C.D|X:X::X:X|WORD) soft-reconfiguration [inbound]
```

Parameters

A.B.C.D	Specify the address of the BGP neighbor in an IPv4 format.
X:X::X:X	Specify the address of the BGP neighbor in an IPv6 format.
WORD	Name of an existing peer-group. For information on how to create peer groups, refer to the neighbor peer-group and neighbor remote-as commands. When this parameter is used with a command, the command applies on all peers in the specified group.
inbound	Allow inbound soft reconfiguration for this neighbor

Command Mode

Router mode and Address Family (IPv4 unicast, IPv4 multicast, IPv6) mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#router bgp 12
ZebOS(config-router)#neighbor 10.10.10.10 soft-reconfiguration inbound
```

neighbor strict-capability-match

Use this command to close the BGP connection if capability value does not completely match to remote peer.

Use the no parameter with this command to disable this function

Command Syntax

```
neighbor (A.B.C.D|X:X::X:X|WORD) strict-capability-match
no neighbor (A.B.C.D|X:X::X:X|WORD) strict-capability-match
```

Parameters

A.B.C.D	Specify the address of the BGP neighbor in an IPv4 format.
X:X::X:X	Specify the address of the BGP neighbor in an IPv6 format.
WORD	Name of an existing peer-group. For information on how to create peer groups, refer to the neighbor peer-group and neighbor remote-as commands. When this parameter is used with a command, the command applies on all peers in the specified group.

Command Mode

Router mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#router bgp 12
ZebOS(config-router)#neighbor 10.10.10.10 strict-capability-match
```

neighbor timers

Use this command to set the timers for a specific BGP neighbor. Keepalive messages are sent by a router to inform another router that the BGP connection between the two is still active. The keepalive interval is the period of time between each keepalive message sent by the router. The holdtime interval is the time the router waits to receive a keepalive message and if it does not receive a message for this period it declares the neighbor dead.

Use the no parameter with this command to clear the timers for a specific BGP neighbor

Command Syntax

```
neighbor (A.B.C.D|X:X::X:X|WORD) timers [<0-65535> (<0-65535>)|connect <0-65535>]
no neighbor (A.B.C.D|X:X::X:X|WORD) timers [connect]
```

Parameters

A.B.C.D	Specify the address of the BGP neighbor in an IPv4 format.
X:X::X:X	Specify the address of the BGP neighbor in an IPv6 format.
WORD	Name of an existing peer-group. For information on how to create peer groups, refer to the neighbor peer-group and neighbor remote-as commands. When this parameter is used with a command, the command applies on all peers in the specified group.
<0-65535>	Interval after which, on not receiving a keepalive message, the router declares a neighbor dead. The default is 180 seconds.
<0-65535>	Specify the holdtime
connect	Specify the BGP connect timer
<1-65535>	Specify the connect timer

Command Mode

Router mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#router bgp 12
ZebOS(config-router)#neighbor 10.10.10.10 timers 60 120
ZebOS(config-router)#neighbor 10.10.10.10 timers connect 10

ZebOS(config-router)#no neighbor 10.10.10.10 timers connect
```

neighbor transparent-as

Use this command to specify not to append your AS path number even if the peer is an eBGP peer.

Command Syntax

```
neighbor (A.B.C.D|X:X::X:X|WORD) transparent-as
```

Parameters

Parameters

A.B.C.D	Specify the address of the BGP neighbor in an IPv4 format.
X:X::X:X	Specify the address of the BGP neighbor in an IPv6 format.
WORD	Name of an existing peer-group. For information on how to create peer groups, refer to the neighbor peer-group and neighbor remote-as commands. When this parameter is used with a command, the command applies on all peers in the specified group.

Command Mode

Router mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#router bgp 12
ZebOS(config-router)#neighbor 10.10.10.10 transparent-as
```

neighbor transparent-nexthop

Use this command to keep the nexthop value of the route even if the peer is an eBGP peer.

Command Syntax

```
neighbor (A.B.C.D|X:X::X:X|WORD) transparent-nexthop
```

Parameters

A.B.C.D	Specify the address of the BGP neighbor in an IPv4 format.
X:X::X:X	Specify the address of the BGP neighbor in an IPv6 format.
WORD	Name of an existing peer-group. For information on how to create peer groups, refer to the neighbor peer-group and neighbor remote-as commands. When this parameter is used with a command, the command applies on all peers in the specified group.

Command Mode

Router mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#router bgp 12
ZebOS(config-router)#neighbor 10.10.10.10 transparent-nexthop
```

neighbor unsuppress-map

Use this command to selectively leak more-specific routes to a particular neighbor. When the `aggregate-address` command is used with the `summary-only` option, the more-specific routes of the aggregate are suppressed to all neighbors. Use the `unsuppress-map` command to selectively leak more-specific routes to a particular neighbor.

Use the `no` parameter with this command to restore the setting to the default level.

Command Syntax

```
neighbor (A.B.C.D|X:X::X:X|WORD) unsuppress-map (WORD)
no neighbor (A.B.C.D|X:X::X:X|WORD) unsuppress-map (WORD)
```

Parameters

`A.B.C.D`	Specify the address of the BGP neighbor in an IPv4 format.
`X:X::X:X`	Specify the address of the BGP neighbor in an IPv6 format.
`WORD`	Name of an existing peer-group. For information on how to create peer groups, refer to the neighbor peer-group and neighbor remote-as commands. When this parameter is used with a command, the command applies on all peers in the specified group.
`WORD`	The name of the route-map used to select routes to be unsuppressed.

Command Mode

Router mode and Address Family mode

Example

```
ZebOS#configure terminal
ZebOS(config)#router bgp 10
ZebOS(config-router)#neighbor 10.10.0.73 unsuppress-map mymap

ZebOS#configure terminal
ZebOS(config)#router bgp 10
ZebOS(config-router)#address-family ipv4 unicast
ZebOS(config-router-af)#neighbor 10.10.0.70 unsuppress-map mymap
```

neighbor update-source

This command allows internal BGP sessions to use any operational interface for TCP connections. Use this command in conjunction with any specified interface on the router. The loopback interface is the interface that is most commonly used with this command. The use of loopback interface eliminates a dependency and BGP does not have to rely on the availability of a particular interface for making TCP connections.

Use the no parameter with this command to restore the interface assignment to the closest interface.

Command Syntax

```
neighbor (A.B.C.D|X:X::X:X|WORD) update-source (WORD)
no neighbor (A.B.C.D|X:X::X:X|WORD) update-source (WORD)
```

Parameters

A.B.C.D	Specify the address of the BGP neighbor in an IPv4 format.
X:X::X:X	Specify the address of the BGP neighbor in an IPv6 format.
WORD	Name of an existing peer-group. For information on how to create peer groups, refer to the neighbor peer-group and neighbor remote-as commands. When this parameter is used with a command, the command applies on all peers in the specified group.
WORD	The loopback interface name.

Command Mode

Router mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#router bgp 10
ZebOS(config-router)#neighbor 10.10.0.72 update-source myif
```

neighbor version

Use this command to configure the ZebOS software to accept only a particular BGP version. By default, the system uses BGP version 4 and on request dynamically negotiates down to version 2. Using this command disables the router's version-negotiation capability and forces the router to use only a specified version with the neighbor.

Use the no parameter with this command to use the default version level of a neighbor.

Command Syntax

```
neighbor (A.B.C.D|X:X::X:X|WORD) version <4>
no neighbor (A.B.C.D|X:X::X:X|WORD) version
```

Parameters

A.B.C.D	Specify the address of the BGP neighbor in an IPv4 format.
X:X::X:X	Specify the address of the BGP neighbor in an IPv6 format.
WORD	Name of an existing peer-group. For information on how to create peer groups, refer to the neighbor peer-group and neighbor remote-as commands. When this parameter is used with a command, the command applies on all peers in the specified group.
4	Specify the BGP version number.

Command Mode

Router mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#router bgp 12
ZebOS(config-router)#neighbor 10.10.10.10 version 4

ZebOS(config)#router bgp 12
ZebOS(config-router)#no neighbor 10.10.10.10 version
```

neighbor weight

Use this command to specify a weight value, per address-family, to all routes learned from a neighbor. The route with the highest weight gets preference when the same prefix is learned from more than one peer. Unlike the local-preference attribute, the weight attribute is relevant only to the local router. The weights assigned using the `set weight` command override the weights assigned using this command.

Use this command in Router mode to specify a weight value for all address families. Use this command in Address Family mode to specify a weight value per IPv4/IPv6 address family,

When the weight is set for a peer group, all members of the peer group get the same weight. This command can also be used to assign a different weight to an individual peer-group member. When an individually-configured weight of a peer-group member is removed, its weight is reset to its peer-group's weight.

Use the `no` parameter with this command to remove a weight assignment.

Command Syntax

```
neighbor (A.B.C.D|X:X::X:X|WORD) weight <0-65535>
no neighbor (A.B.C.D|X:X::X:X|WORD) weight <0-65535>
```

Parameters

`A.B.C.D`	Specify the address of the BGP neighbor in an IPv4 format.
`X:X::X:X`	Specify the address of the BGP neighbor in an IPv6 format.
`WORD`	Name of an existing peer-group. For information on how to create peer groups, refer to the neighbor peer-group and neighbor remote-as commands. When this parameter is used with a command, the command applies on all peers in the specified group.
`<0-65535>`	Specify the weight this command assigns to the route.

Command Mode

Router mode, Address-Family mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#router bgp 12
ZebOS(config-router)#neighbor 10.10.10.10 weight 60

ZebOS(config-router)#no neighbor 10.10.10.10 weight 60
```

network

Use this command to specify the networks to be advertised by the BGP routing process. A unicast network address without a mask is accepted if it falls into the natural boundary of its class. A class-boundary mask is derived if the address matches its natural class-boundary.

Use the `backdoor` parameter to specify a backdoor route to a BGP border router that will provide better information about the network. For data to be advertised by BGP, its routing table must include a route to the specified network. This command specifies the networks to be advertised. The network command works if the network being advertised is known to the router.

The `backdoor` parameter enables a route to be the preferred route even if it has a greater distance. A network that is specified as a backdoor network is dynamically assigned an administrative distance of 200 ensuring that IGP learned routes are preferred. If a backdoor network is not sourced by the local router, the network is learned from the external routers. If the route is learned from eBGP for a backdoor network, the distance is set to 20 or 200.

Use the `no` form of this command to remove a network route entry.

Command Syntax

```
network [A.B.C.D|A.B.C.D/M|synchronization] (backdoor|routemap (WORD)|mask
  {A.B.C.D})
no network [A.B.C.D|A.B.C.D/M|synchronization] (backdoor|routemap (WORD)|mask
  {A.B.C.D})
```

Parameters

`A.B.C.D/M`	IP prefix <network>/<length>, for example., 35.0.0.0/8
`A.B.C.D`	IP prefix <network>, for example, 35.0.0.0
`synchronization`	
	Perform IGP synchronization on network routes
`backdoor`	Specify a BGP backdoor route
`routemap`	Route map used to modify the attributes
`WORD`	Name of the route map
`mask`	Network mask, for example, 255.255.0.0
`A.B.C.D`	Network mask, e.g., 255.255.0.0

Command Mode

Router mode and Address-family mode

Examples

The following example illustrates a Class-A address configured as a network route. The natural Class-A network prefix mask length of 8 is internally derived, that is, 2.0.0.0/8.

```
ZebOS(config)#router bgp 1
ZebOS(config-router)#network 2.0.0.0
```

The following example enables IGP synchronization of BGP static network routes in the router configuration mode.

```
ZebOS#configure terminal
ZebOS(config)#router bgp 11
ZebOS(config-router)#network synchronization
```

The following example enables IGP synchronization of BGP static network routes in the IPv6-Unicast address family.

```
ZebOS#configure terminal
ZebOS(config)#router bgp 11
ZebOS(config)#address-family ipv6 unicast
ZebOS(config-af)#network synchronization
```

redistribute

Use this command to inject routes from one routing process into another. Redistribution is used by routing protocols to advertise routes that are learned by some other means, such as by another routing protocol or by static routes. Since all internal routes are dumped into BGP, careful filtering is applied to make sure that only routes to be advertised reach the internet, not everything. This command allows redistribution by injecting prefixes from one routing protocol into another routing protocol.

Use the `no` parameter with this command to disable this function.

Command Syntax

```
redistribute [connected|isis|kernel|ospf|rip|static] (route-map {WORD})
no redistribute [connected|isis|kernel|ospf|rip|static] (route-map {WORD})
```

Parameters

`connected`	Redistribute connected routes
`isis`	Redistribute connected ISO IS-IS routes
`kernel`	Redistribute connected kernel routes
`ospf`	Redistribute OSPFv2 or OSPFv3 routes
`rip`	Redistribute RIP routes
`static`	Redistribute static routes
`route-map`	Specify a route map reference
`WORD`	A pointer to route-map entries

Command Mode

Router mode and Address Family IPv6 mode

Examples

The following example shows the configuration of the route-map name `rmap1` and then the use of this map name in the `redistribute route-map` command.

```
ZebOS#configure terminal
ZebOS(config)#route-map rmap1 permit 1
ZebOS(config-route-map)#match origin incomplete
ZebOS(config-route-map)#set metric 100
ZebOS(config-route-map)#exit
ZebOS(config)#router bgp 12
ZebOS(config-router)#redistribute ospf route-map rmap1
```

restart bgp graceful

Use this command to enable BGP-speaker router for graceful restart. This command stops the whole BGP process and makes ZebOS retain the BGP routes and mark them as stale. Receiving BGP speakers, retain and mark as stale all BGP routes received from the restarting speaker for all the address families received in the Graceful Restart Capability exchange.

This command is available only when configuration option `--enable-restart` is enabled when compiling ZebOS. For detailed information about all compilation options for ZebOS, refer to the *ZebOS Network Platform Installation Guide*.

Command Syntax

```
restart bgp graceful
```

Parameters

None

Command Mode

Privileged Exec mode

Examples

```
ZebOS#restart bgp graceful
```

Related Commands

neighbor capability graceful-restart

router bgp

Use this command to enter the BGP router mode.

Use the no parameter with this command to disable a routing process.

Command Syntax

```
router bgp <1-4294967295>
no router bgp <1-4294967295>
```

Parameters

`<1-4294967295>` Specify the Autonomous System (AS) number.

Command Mode

Configure mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#router bgp 12
ZebOS(config-router)#
```

router bgp view

Use this command to configure a BGP routing view.

Use the no parameter with this command to disable a routing view.

Command Syntax

```
router bgp (<1-4294967295>|view [WORD])
no router bgp (<1-4294967295>|view [WORD])
```

Parameters

<1-4294967295>	Specify the Autonomous System (AS) number.
WORD	Specify the view name

Command Mode

Configure mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#router bgp 12 view 1
ZebOS(config-router)#
```

Related Commands

router bgp

set-overload-bit

Use this command to set the overload-bit in self-LSPs. If the overload-bit is set in LSPs, the router is not used as a transit router during SPF calculation. This command causes a router to update its own LSP with the overload bit set and causes the other routers not to use this router as a transit or forwarding router. The router continues to receive LSPs when the overload bit is set. If the `on-startup` option is specified, the router sets the overload bit only at startup, then clears the bit after the specified interval has elapsed. If the `on-startup` option is specified using the `wait-for-bgp` option, the overload bit is setup at startup, then the bit is cleared after the BGP router signals it has finished converging or if the router does not signal it has finished converging in 10 minutes. If there is no BGP process running, the overload bit clears immediately.

If the BGP process is started later than the overload bit is set, the bit clears after the BGP router signals it has finished converging or if the BGP router does not signal it has finished converging in 10 minutes. If the `suppress` option is specified, the router suppresses the redistribution of specified types of reachability data during overload state. The `suppress` option can be used with the `external` or `interlevel` parameters, or both parameters.

Use the no parameter to clear the overload-bit from self-LSPs.

Command Syntax

```
set-overload-bit [on-startup|<5-86400>|wait-for-bgp|suppress (external|
  interlevel)]
set-overload-bit [suppress (external|interlevel)|on-startup|<5-86400>|wait-for-
  bgp]
no set-overload-bit
```

Parameters

`on-startup`	Specify an interval in seconds after which the overload state is exited.
`suppress`	Specify to suppress specific types of IP prefixes.
`<5-86400>`	Specify the time in seconds to advertise one self as overloaded after reboot.
`wait-for-bgp`	Specify how BGP determines when to unset the overload bit.
`external`	Specify to redistribute external reachability (to prevent the IP prefixes learned from other protocols from being advertised).
`interlevel`	Specify to redistribute interlevel reachability.

Default

By default, no overload-bit is set.

Command Mode

Router mode

Example

This example sets overload bit at startup, does not unset the overload bit until BGP converges, suppresses redistribution between levels, and suppresses redistribution from external routing protocols while the overload bit is set.

```
ZebOS(config)#router isis bb
ZebOS(config-router)#set-overload-bit on-startup wait-for-bgp suppress
interlevel external
```

synchronization

Use this command to enable IGP synchronization of Internal BGP (iBGP) learned routes with the Internal Gateway Protocol (IGP) system in the router configuration mode or in the address-family configuration mode.

Synchronization is used when a BGP router should not advertise routes learned from iBGP neighbors, unless those routes are also present in an IGP (for example, OSPF). Synchronization may be enabled when all the routers in an autonomous system do not speak BGP, and the autonomous system is a transit for other autonomous systems.

The `no synchronization` command is used when BGP router can advertise routes learned from its iBGP neighbors without waiting for the IGP reachability to be present.

Command Syntax

```
synchronization
no synchronization
```

Parameters

None

Default

IGP synchronization is disabled.

Command Mode

Router mode and Address Family modes

Examples

The following example enables IGP synchronization of iBGP routes in Router mode.

```
ZebOS#configure terminal
ZebOS(config)#router bgp 11
ZebOS(config-router)#synchronization
```

The following example enables IGP synchronization of iBGP routes in the IPv6-Unicast address family.

```
ZebOS#configure terminal
ZebOS(config)#router bgp 11
ZebOS(config-router)#address-family ipv6 unicast
ZebOS(config-af)#synchronization
```

timers bgp

Use this command to globally set or reset the keepalive and holdtime values for all the neighbors.

Use the no parameter with this command to reset timers to default value.

Command Syntax

```
timers bgp [<0-65535>|<0-65535>]
no timers bgp [<0-65535>|<0-65535>]
```

Parameters

<0-65535>	The frequency with which the keepalive messages are sent to the neighbors. The default keepalive value is 30 seconds.
<0-65535>	The interval after which the neighbor is considered dead if keepalive messages are not received. The default holdtime value is 90 seconds.

Default

IGP synchronization is disabled.

Command Mode

Router mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#router bgp 10
ZebOS(config-router)#timers bgp 40 120
```

undebug bgp

Use this command to disable BGP debugging functions.

Command Syntax

```
undebug bgp (all|bfd|dampening|events|filters|fsm|keepalives|nht|nsm|updates)
```

Parameters

`all`	Disable all debugging for BGP.
`bfd`	Disable debugging for BGP Bidirectional Forwarding Detection (BFD).
`dampening`	Disable debugging for BGP dampening.
`events`	Disable debugging for BGP events.
`filters`	Disable debugging for BGP filters.
`fsm`	Disable debugging for BGP Finite State Machine (FSM).
`keepalives`	Disable debugging for BGP keepalives.
`nht`	Disable debugging for BGP NHT messages.
`nsm`	Disable debugging for NSM messages.
`updates`	Disable debugging for BGP updates.

Command Mode

Privileged Exec mode

Examples

```
ZebOS#undebug bgp events
```

CHAPTER 3 BGP4+ Command

This chapter lists and describes all of the BGP4+ configuration commands. Refer to Chapter 4, BGP Show Commands to view all of the BGP show commands.

This chapter includes the following commands:

aggregate-address

Use this command to configure BGP aggregate entries.

Aggregates are used to minimize the size of routing tables. Aggregation combines the characteristics of several different routes and advertises a single route. This command creates an aggregate entry in the BGP routing table if any more-specific BGP routes are available in the specified range. Using the `summary-only` parameter advertises the prefix only, suppressing more-specific routes to neighbors.

The `as-set` parameter creates an aggregate entry advertising the path for this route, consisting of all elements contained in all paths being summarized. Use the `as-set` parameter to reduce the size of path information by listing the AS number only once, even if it was included in multiple paths that were aggregated. The `as-set` parameter is useful when aggregation of information results in an incomplete path information.

Use the no parameter with this command to disable this function.

Command Syntax

```
aggregate-address [A.B.C.D/M (as-set|summary-only)]
no aggregate-address [A.B.C.D/M (as-set|summary-only)]
```

Parameters

`X:X::X:X/M`	A.B.C.D/M Specify the aggregate prefix.
`as-set`	Generates AS set path information.
`summary-only`	Filters more specific routes from updates.

Command Mode

Address Family mode

Default

Disabled

Examples

```
ZebOS#configure terminal
ZebOS(config)#router bgp 100
ZebOS(config-router)#neighbor 2.2.2.2 remote-as 100
ZebOS(config-router)#neighbor 3.3.3.3 remote-as 200
ZebOS(config-router)#address-family ipv6
ZebOS(config-router-af)#aggregate-address 3ffe::/32 as-set summary-only
```

clear bgp X:X::X:X

Use this command to reset the BGP IPv6 neighbor addresses to clear.

Command Syntax

```
clear bgp X:X::X:X [in (prefix-filter)|out|soft (in|out)]
```

Parameters

`in`	Indicates that incoming advertised routes should be cleared.
`prefix-filter`	Indicates the push out prefix-list ORF and do inbound soft reconfig.
`out`	Indicates that outgoing advertised routes should be cleared.
`soft`	Indicates that both incoming and outgoing routes should be cleared (in|out).
`in`	Indicates soft reconfig inbound update.
`out`	Indicates soft reconfig outbound update.

Command Mode

Privileged Exec mode

Examples

```
ZebOS#clear bgp 3:3::3:3 in prefix-filter
```

clear bgp ipv6 *

Use this command to reset the BGP connection for all IPv6 peers.

Command Syntax

```
clear bgp ipv6 * [in (prefix-filter)|out|soft (in|out)]
```

Parameters

`in`	Indicates that incoming advertised routes should be cleared.
`prefix-filter`	Indicates the push out prefix-list ORF and do inbound soft reconfig.
`out`	Indicates that outgoing advertised routes should be cleared.
`soft`	Indicates that both incoming and outgoing routes should be cleared (in|out).
`in`	Indicates soft reconfig inbound update.
`out`	Indicates soft reconfig outbound update.

Command Mode

Privileged Exec mode

Example

```
ZebOS#clear bgp ipv6 * soft in
```

clear bgp ipv6 <1-4294967295>

Use this command to reset the BGP connection with a specified AS (Autonomous System) number for IPv6 peers.

Command Syntax

```
clear bgp ipv6 <1-4294967295> [in (prefix-filter)|out|soft (in|out)]
```

Parameters

`in`	Indicates that incoming advertised routes should be cleared.
`prefix-filter`	Indicates the push out prefix-list ORF and do inbound soft reconfig.
`out`	Indicates that outgoing advertised routes should be cleared.
`soft`	Indicates that both incoming and outgoing routes should be cleared (in|out).
`in`	Indicates soft reconfig inbound update.
`out`	Indicates soft reconfig outbound update.

Command Mode

Privileged Exec mode

Example

```
ZebOS#clear bgp ipv6 12345 in
```

clear bgp ipv6 A.B.C.D

Use this command to reset the BGP neighbor addresses for IPv6 peers.

Command Syntax

```
clear bgp ipv6 A.B.C.D [in (prefix-filter)|out|soft (in|out)]
```

Parameters

`in`	Indicates that incoming advertised routes should be cleared.
`prefix-filter`	Indicates the push out prefix-list ORF and do inbound soft reconfig.
`out`	Indicates that outgoing advertised routes should be cleared.
`soft`	Indicates that both incoming and outgoing routes should be cleared (in|out).
`in`	Indicates soft reconfig inbound update.
`out`	Indicates soft reconfig outbound update.

Command Mode

Privileged Exec mode

Example

```
ZebOS#clear bgp ipv6 3.3.3.3 in prefix-filter
```

clear bgp ipv6 X:X::X:X

Use this command to reset the BGP IPv6 neighbor addresses to clear.

Command Syntax

```
clear bgp ipv6 X:X::X:X [in (prefix-filter)|out|soft (in|out)]
```

Parameters

`in`	Indicates that incoming advertised routes should be cleared.
`prefix-filter`	Indicates the push out prefix-list ORF and do inbound soft reconfig.
`out`	Indicates that outgoing advertised routes should be cleared.
`soft`	Indicates that both incoming and outgoing routes should be cleared (in|out).
`in`	Indicates soft reconfig inbound update.
`out`	Indicates soft reconfig outbound update.

Command Mode

Privileged Exec mode

Example

```
ZebOS#clear bgp ipv6 12:3::4:1 in prefix-filter
```

clear bgp ipv6 external

Use this command to reset the BGP connection for all external IPv6 peers.

Command Syntax

```
clear bgp ipv6 external [in (prefix-filter)|out|soft (in|out)]
```

Parameters

`in`	Indicates that incoming advertised routes should be cleared.
`prefix-filter`	Indicates the push out prefix-list ORF and do inbound soft reconfig.
`out`	Indicates that outgoing advertised routes should be cleared.
`soft`	Indicates that both incoming and outgoing routes should be cleared (in|out).
`in`	Indicates soft reconfig inbound update.
`out`	Indicates soft reconfig outbound update.

Command Mode

Privileged Exec mode

Example

```
ZebOS#clear bgp ipv6 external soft in
```

clear bgp ipv6 peer-group

Use this command to reset the BGP connection for all members of a IPv6 peer group.

Command Syntax

```
clear bgp ipv6 peer-group (WORD) [in (prefix-filter)|out|soft (in|out)]
```

Parameters

WORD	BGP peer-group name
in	Indicates that incoming advertised routes should be cleared.
prefix-filter	Indicates the push out prefix-list ORF and do inbound soft reconfig.
out	Indicates that outgoing advertised routes should be cleared.
soft	Indicates that both incoming and outgoing routes should be cleared (in|out).
in	Indicates soft reconfig inbound update.
out	Indicates soft reconfig outbound update.

Command Mode

Privileged Exec mode

Examples

```
ZebOS#clear bgp ipv6 peer-group P1 soft in
```

clear bgp ipv6 unicast

Use this command to reset the BGP connection for IPv6.

Command Syntax

```
clear bgp ipv6 unicast [dampening|flap-statistics (X:X::X:X|X:X::X:X/M)]
```

Parameters

`dampening`	Clears route flap dampening information.
`flap-statistics`	Clears route flap statistics.
`X:X::X:X`	IPv6 prefix <network>, e.g., 2003::
`X:X::X:X/M`	IPv6 prefix <network>/<length>, e.g., 2003::/16

Command Mode

Privileged Exec mode

Example

```
ZebOS#clear bgp ipv6 unicast dampening 1:2::3:4/7
```

match ipv6 peer

Use this command to apply policies based on the route source of which the BGP TCP/IP session is formed using the IPv6 address, unlike the nexthop in the update message.

Use the no parameter with this command to disable this function.

Command Syntax

```
match ipv6 peer [<1-199>|<1300-2699>|WORD]
no match ipv6 peer [<1-199>|<1300-2699>|WORD]
```

Parameters

<1-199>	Access-list number.
<1300-2699>	Expanded range access-list number.
WORD	Access-list name.

Command Mode

Configure mode

Example

```
ZebOS#configure terminal
ZebOS(config)#route-map in-A permit 10
ZebOS(route-map)#match ipv6 peer 1
```

neighbor activate

Use this command to enable the exchange of the specified AF routes with a neighboring router. After the TCP connection is opened with the neighbor, use this command to enable or disable the exchange of the specified AF information with a neighboring router.

Use the no parameter with this command to disable exchange of information with a neighbor.

Command Syntax

Command Syntax

```
neighbor (A.B.C.D|X:X::X:X|WORD) activate (A.B.C.D|X:X::X:X|WORD)
no neighbor (A.B.C.D|X:X::X:X|WORD) activate (A.B.C.D|X:X::X:X|WORD)
```

Parameters

A.B.C.D	Specify the address of the BGP neighbor in an IPv4 format.
X:X::X:X	Specify the address of the BGP neighbor in an IPv6 format.
WORD	Name of an existing peer-group. For information on how to create peer groups, refer to the neighbor peer-group and neighbor remote-as commands. When this parameter is used with a command, the command applies on all peers in the specified group.

Command Mode

Address Family mode and Router mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#router bgp 10
ZebOS(config-router)#neighbor 1.2.3.4 activate
```

Related Commands

neighbor remote-as, neighbor peer-group

neighbor attribute-unchanged

Use this command to advertise unchanged BGP attributes to the specified neighbor.

Use the no parameter with this command to disable this function.

Command Syntax

```
neighbor (A.B.C.D|X:X::X:X|WORD) attribute-unchanged (A.B.C.D|X:X::X:X|WORD){as-path|next-hop|med}
no neighbor (A.B.C.D|X:X::X:X|WORD) attribute-unchanged (A.B.C.D|X:X::X:X|WORD){as-path|next-hop|med}
```

Parameters

A.B.C.D	Specify the address of the BGP neighbor in an IPv4 format.
X:X::X:X	Specify the address of the BGP neighbor in an IPv6 format.
WORD	Name of an existing peer-group. For information on how to create peer groups, refer to the neighbor peer-group and neighbor remote-as commands. When this parameter is used with a command, the command applies on all peers in the specified group.
as-path	AS path attribute
next-hop	Nexthop attribute
med	Multi-exit Discriminator attribute

Command Mode

Router mode and Address Family mode

Example

```
ZebOS#configure terminal
ZebOS(config)#router bgp 10
ZebOS(config-router)#neighbor 10.10.0.75 attribute-unchanged as-path med
```

neighbor capability

Use this command to enable Outbound Router Filtering (ORF), and advertise the ORF capability to its neighbors. The ORFs send and receive capabilities to lessen the number of updates exchanged between neighbors. By filtering updates, this option minimizes generating and processing of updates. The local router advertises the ORF capability in `send` mode, and the remote router receives the ORF capability in `receive` mode applying the filter as outbound policy. The two routers exchange updates to maintain the ORF for each router. Only an individual router or a peer group can be configured to be in `receive` or `send mode`. A peer-group member cannot be configured to be in `receive` or `send` mode.

Use the `no` parameter with this command to disable this function.

Command Syntax

```
neighbor (A.B.C.D|X:X::X:X|WORD) capability [orf|prefix-list (both|receive|send)]
no neighbor (A.B.C.D|X:X::X:X|WORD) capability [orf|prefix-list
  (both|receive|send)]
```

Parameters

`A.B.C.D`	Specify the address of the BGP neighbor in an IPv4 format.
`X:X::X:X`	Specify the address of the BGP neighbor in an IPv6 format.
`WORD`	Name of an existing peer-group. For information on how to create peer groups, refer to the neighbor peer-group and neighbor remote-as commands. When this parameter is used with a command, the command applies on all peers in the specified group.
`orf`	Advertises ORF capability to its neighbors.
`both`	Indicates that the local router can send ORF entries to its peer, as well as receive ORF entries from its peer.
`receive`	Indicates that the local router is willing to receive ORF entries from its peer.
`send`	Indicates that the local router is willing to send ORF entries to its peer.

Default

Disabled

Command Mode

Router mode and Address Family (IPv4 unicast, IPv4 multicast, IPv6) mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#router bgp 10
ZebOS(config-router)#neighbor 10.10.0.5 capability orf prefix-list both
ZebOS(config-router)#neighbor effe:2897::0003:3ed5 capability orf prefix-list
receive
```

neighbor default-originate

Use this command to allow a BGP local router to send the default route 0.0.0.0 to a neighbor for use as a default route. This command can be used with standard or extended access lists.

Use the no parameter with this command to send no route as a default.

Use this command to allow a BGP local router to send the default route 0.0.0.0 to a neighbor. This command can be used with standard or extended access lists.

Use the no parameter with this command to send no route as a default.

Command Syntax

```
neighbor (A.B.C.D|X:X::X:X|WORD) default-originate (route-map|WORD)
no neighbor (A.B.C.D|X:X::X:X|WORD) default-originate (route-map|WORD)
```

Parameters

A.B.C.D	Specify the address of the BGP neighbor in an IPv4 format.
X:X::X:X	Specify the address of the BGP neighbor in an IPv6 format.
WORD	Name of an existing peer-group. For information on how to create peer groups, refer to the neighbor peer-group and neighbor remote-as commands. When this parameter is used with a command, the command applies on all peers in the specified group.
route-map	The route-map to specify criteria to originate default routes.
WORD	Add the route map name.

Default

Disabled

Command Mode

Router mode and Address Family mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#router bgp 10
ZebOS(config-router)#neighbor 10.10.10.1 default-originate route-map myroute
```

neighbor distribute-list

Use this command to filter route update from a particular BGP neighbor. Use only one distribute-list per BGP neighbor.

Use the no parameter with this command to remove an entry.

Command Syntax

```
neighbor (A.B.C.D|X:X::X:X|WORD) distribute-list (WORD|<1-199>|<1300-2699>)
  [in|out]
no neighbor (A.B.C.D|X:X::X:X|WORD) distribute-list (WORD|<1-199>|<1300-2699>)
  [in|out]
```

Parameters

A.B.C.D	Specify the address of the BGP neighbor in an IPv4 format.
X:X::X:X	Specify the address of the BGP neighbor in an IPv6 format.
WORD	Name of an existing peer-group. For information on how to create peer groups, refer to the neighbor peer-group and neighbor remote-as commands. When this parameter is used with a command, the command applies on all peers in the specified group.
WORD	The name of IP access-list.
<1-199>	The IP access-list number.
<1300-2699>	The expanded-range IP access-list number.
in	Indicates that incoming advertised routes will be filtered.
out	Indicates that outgoing advertised routes will be filtered.

Command Mode

Router mode and Address Family mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#router bgp 10
ZebOS(config-router)#neighbor 1.2.3.4 distribute-list mylist out
```

neighbor filter-list

Use this command to set up a BGP filter. This command specifies an access list filter on updates based on the BGP autonomous system paths. Each filter is an access list based on regular expressions.

Use the no parameter with this command to disable this function.

Command Syntax

```
neighbor (A.B.C.D|X:X::X:X|WORD) filter-list (WORD [in|out])
no neighbor (A.B.C.D|X:X::X:X|WORD) filter-list (WORD [in|out])
```

Parameters

A.B.C.D	Specify the address of the BGP neighbor in an IPv4 format.
X:X::X:X	Specify the address of the BGP neighbor in an IPv6 format.
WORD	Name of an existing peer-group. For information on how to create peer groups, refer to the neighbor peer-group and neighbor remote-as commands. When this parameter is used with a command, the command applies on all peers in the specified group.
WORD	The name of an autonomous system path access list.
in	Indicates that incoming advertised routes should be filtered.
out	Indicates that outgoing advertised routes should be filtered.

Command Mode

Router mode and Address Family mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#router bgp 10
ZebOS(config-router)#neighbor 10.10.0.34 filter-list out
```

neighbor maximum-prefix

Use this command to control the number of prefixes that can be received from a neighbor. This command allows the configuration of a specified number of prefixes that a BGP router is allowed to receive from a neighbor. When the `warning-only` option is not used, if any extra prefixes are received, the router ends the peering. A terminated pee stays down until the `clear ip bgp command` is used.

Use the `no` parameter with this command to disable this function.

Command Syntax

```
neighbor (A.B.C.D|X:X::X:X|WORD) maximum-prefix [<1-4294967295>|<1-100>|warning-
  only]
no neighbor (A.B.C.D|X:X::X:X|WORD) maximum-prefix [<1-4294967295>|<1-100>|warning-
  only]
```

Parameters

`A.B.C.D`	Specify the address of the BGP neighbor in an IPv4 format.
`X:X::X:X`	Specify the address of the BGP neighbor in an IPv6 format.
`WORD`	Name of an existing peer-group. For information on how to create peer groups, refer to the neighbor peer-group and neighbor remote-as commands. When this parameter is used with a command, the command applies on all peers in the specified group.
`<1-4294967295>`	Specify the maximum number of prefixes permitted <1-4294967295>.
`<1-100>`	Specify the threshold value, 1 to 100 percent <1-100>.
`warning-only`	Only gives a warning message when the limit is exceeded.

Command Mode

Router mode and Address Family mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#router bgp 10
ZebOS(config-router)#neighbor 10.10.0.72 maximum-prefix 1244 warning-only
```

Related Commands

neighbor remote-as, neighbor peer-group

neighbor next-hop-self

Use this command to configure the router as the next hop for a BGP-speaking neighbor or peer group. This command allows a BGP router to change the nexthop information that is sent to the iBGP peer. The nexthop information is set to the IP address of the interface used to communicate with the neighbor.

Use the no parameter with this command to disable this feature.

Command Syntax

```
neighbor (A.B.C.D|X:X::X:X|WORD) next-hop-self
no neighbor (A.B.C.D|X:X::X:X|WORD) next-hop-self
```

Parameters

A.B.C.D	Specify the address of the BGP neighbor in an IPv4 format.
X:X::X:X	Specify the address of the BGP neighbor in an IPv6 format.
WORD	Name of an existing peer-group. For information on how to create peer groups, refer to the neighbor peer-group and neighbor remote-as commands. When this parameter is used with a command, the command applies on all peers in the specified group.

Command Mode

Router mode and Address Family mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#router bgp 10
ZebOS(config-router)#neighbor 10.10.0.72 remote-as 100
ZebOS(config-router)#neighbor 10.10.0.72 next-hop-self
```

neighbor peer-group

Use this command so that Neighbors with the same update policies are grouped into peer groups. This facilitates the updates of various policies, such as, distribute and filter lists. The peer-group is then configured easily with any of the neighbor commands. Any changes made to the peer group affects all members. To create a peer-group, use the `neighbor peer-group create` command and then use this command to add neighbors to the group.

Use the `no` parameter with this command to disable this function.

Command Syntax

```
neighbor (A.B.C.D|X:X::X:X|WORD) peer-group
no neighbor (A.B.C.D|X:X::X:X|WORD) peer-group
```

Parameters

`A.B.C.D`	Specify the address of the BGP neighbor in an IPv4 format.
`X:X::X:X`	Specify the address of the BGP neighbor in an IPv6 format.
`WORD`	Name of an existing peer-group. For information on how to create peer groups, refer to the neighbor peer-group and neighbor remote-as commands. When this parameter is used with a command, the command applies on all peers in the specified group.

Command Mode

Router mode

Example

This example shows a new peer-group, `group1`, and addition of a neighbor, `10.10.0.63`, to the group.

```
ZebOS#configure terminal
ZebOS(config)#router bgp 10
ZebOS(config-router)#neighbor group1 peer-group
ZebOS(config-router)#neighbor 10.10.0.63 peer-group group1
```

neighbor prefix-list

Use this command to specify a prefix list for filtering BGP advertisements. Filtering by prefix list matches the prefixes of routes with those listed in the prefix list. If there is a match, the route is used. An empty prefix list permits all prefixes. If a given prefix does not match any entries of a prefix list, the route is denied access. When multiple entries of a prefix list match a prefix, the entry with the smallest sequence number is considered to be a real match.

The router begins the search at the top of the prefix list, with the sequence number 1. Once a match or deny occurs, the router does not need to go through the rest of the prefix list. For efficiency the most common matches or denies are listed at the top. The `neighbor distribute-list` command is an alternative to this command and only one of them can be used for filtering to the same neighbor in any direction.

Use the `no` parameter with this command to remove an entry.

Command Syntax

```
neighbor (A.B.C.D|X:X::X:X|WORD) prefix-list (WORD [in|out])
no neighbor (A.B.C.D|X:X::X:X|WORD) prefix-list (WORD [in|out])
```

Parameters

`A.B.C.D`	Specify the address of the BGP neighbor in an IPv4 format.
`X:X::X:X`	Specify the address of the BGP neighbor in an IPv6 format.
`WORD`	Name of an existing peer-group. For information on how to create peer groups, refer to the neighbor peer-group and neighbor remote-as commands. When this parameter is used with a command, the command applies on all peers in the specified group.
`WORD`	The number of an AS-path access list.
`in`	Specify that the access list applies to incoming advertisements.
`out`	Specify that the access list applies to outgoing advertisements.

Command Mode

Router mode and Address Family mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#ip prefix-list list1 deny 30.0.0.0/24
ZebOS(config)#router bgp 12
ZebOS(config-router)#neighbor 10.10.10.10 prefix-list list1 in
```

Related Commands

ip prefix-list (refer to the *NSM Command Reference*)

neighbor remove-private-AS

Use this command to remove the private Autonomous System (AS) number from outbound updates.

Private AS numbers are not advertised to the Internet. This command is used with external BGP peers only. The router removes the AS numbers only if the update includes private AS numbers. If the update includes both private and public AS numbers, the system treats it as an error.

Use the no parameter with this command to revert to default.

Command Syntax

```
neighbor (A.B.C.D|X:X::X:X|WORD) remove-private-AS
no neighbor (A.B.C.D|X:X::X:X|WORD) remove-private-AS
```

Parameters

A.B.C.D	Specify the address of the BGP neighbor in an IPv4 format.
X:X::X:X	Specify the address of the BGP neighbor in an IPv6 format.
WORD	Name of an existing peer-group. For information on how to create peer groups, refer to the neighbor peer-group and neighbor remote-as commands. When this parameter is used with a command, the command applies on all peers in the specified group.

Default

Disabled

Command Mode

Router mode

Example

```
ZebOS#configure terminal
ZebOS(config)#router bgp 10
ZebOS(config-router)#neighbor 10.10.0.63 remove-private-AS
```

neighbor route-map

Use this command to apply a route map to incoming or outgoing routes. A route map is applied to inbound or outbound updates. Only the routes that pass the route map are sent or accepted in updates.

Use the no parameter with this command to remove a route map.

Command Syntax

```
neighbor (A.B.C.D|X:X::X:X|WORD) route-map (WORD [in|out])
no neighbor (A.B.C.D|X:X::X:X|WORD) route-map (WORD [in|out])
```

Parameters

A.B.C.D	Specify the address of the BGP neighbor in an IPv4 format.
X:X::X:X	Specify the address of the BGP neighbor in an IPv6 format.
WORD	Name of an existing peer-group. For information on how to create peer groups, refer to the neighbor peer-group and neighbor remote-as commands. When this parameter is used with a command, the command applies on all peers in the specified group.
WORD	Specify name of the route-map.
in	Specify that the access list applies to incoming advertisements.
out	Specify that the access list applies to outgoing advertisements.

Command Mode

Router mode and Address Family mode

Examples

The following example shows the configuration of the route-map name rmap2 and then the use of this map name in the neighbor route-map command.

```
ZebOS#configure terminal
ZebOS(config)#route-map rmap2 permit 6
ZebOS(config-route-map)#match origin incomplete
ZebOS(config-route-map)#set metric 100
ZebOS(config-route-map)#exit
ZebOS(config)#router bgp 12
ZebOS(config-router)#neighbor 10.10.10.10 route-map rmap2 in
```

neighbor route-reflector-client

Use this command to configure the router as a BGP route reflector and configure the specified neighbor as its client.

Route reflectors are a solution for the explosion of iBGP peering within an autonomous system. By route reflection the number of iBGP peers within an AS is reduced. Use the neighbor route-reflector-client command to configure the local router as the route reflector and specify neighbors as its client. An AS can have more than one route reflector. One route reflector treats the other route reflector as another iBGP speaker.

Use the no parameter with this command to indicate that the neighbor is not a client.

Command Syntax

```
neighbor (A.B.C.D|X:X::X:X|WORD) route-reflector-client
no neighbor (A.B.C.D|X:X::X:X|WORD) route-reflector-client
```

Parameters

A.B.C.D	Specify the address of the BGP neighbor in an IPv4 format.
X:X::X:X	Specify the address of the BGP neighbor in an IPv6 format.
WORD	Name of an existing peer-group. For information on how to create peer groups, refer to the neighbor peer-group and neighbor remote-as commands. When this parameter is used with a command, the command applies on all peers in the specified group.

Command Mode

Router mode and Address Family mode

Examples

In the following configuration, Router1 is the route reflector for clients 3.3.3.3 and 2.2.2.2; it also has a non-client peer 6.6.6.6.

```
ZebOS#configure terminal
ZebOS(config)#router bgp 200
ZebOS(config-router)#neighbor 3.3.3.3 remote-as 200
ZebOS(config-router)#neighbor 3.3.3.3 route-reflector-client
ZebOS(config-router)#neighbor 2.2.2.2 remote-as 200
ZebOS(config-router)#neighbor 2.2.2.2 route-reflector-client
ZebOS(config-router)#neighbor 6.6.6.6 remote-as 200
```

neighbor send-community

Use this command to specify a community attribute to be sent to a neighbor. The community attribute groups destinations in a certain community and applies routing decisions according to those communities. By default, on receiving the communities attribute the router re-announces them to the neighbor. Only when the no parameter is used with this command the community attributes are not re-announced to the neighbor.

Use the no parameter with this command to remove the entry.

Command Syntax

```
neighbor (A.B.C.D|X:X::X:X|WORD) send-community (both|extended|standard)
no neighbor (A.B.C.D|X:X::X:X|WORD) send-community (both|extended|standard)
```

Parameters

A.B.C.D	Specify the address of the BGP neighbor in an IPv4 format.
X:X::X:X	Specify the address of the BGP neighbor in an IPv6 format.
WORD	Name of an existing peer-group. For information on how to create peer groups, refer to the neighbor peer-group and neighbor remote-as commands. When this parameter is used with a command, the command applies on all peers in the specified group.
both	Sends Standard and Extended Community attributes.
extended	Sends Extended Community attributes.
standard	Sends Standard Community attributes.

Default

Both standard and extended community attributes are sent to a neighbor.

Command Mode

Router mode and Address Family mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#router bgp 10
ZebOS(config-router)#neighbor 10.10.0.72 send-community extended
```

neighbor soft-reconfiguration

Use this command to store updates for inbound soft reconfiguration. Soft-reconfiguration may be used in lieu of BGP route refresh capability. Using this command enables local storage of all the received routes and their attributes. This requires additional memory. When a soft reset (inbound) is done on this neighbor, the locally stored routes are re-processed according to the inbound policy. The BGP neighbor connection is not affected.

Use the no parameter with this command to disable this function.

Command Syntax

```
neighbor (A.B.C.D|X:X::X:X|WORD) soft-reconfiguration [inbound]
no neighbor (A.B.C.D|X:X::X:X|WORD) soft-reconfiguration [inbound]
```

Parameters

A.B.C.D	Specify the address of the BGP neighbor in an IPv4 format.
X:X::X:X	Specify the address of the BGP neighbor in an IPv6 format.
WORD	Name of an existing peer-group. For information on how to create peer groups, refer to the neighbor peer-group and neighbor remote-as commands. When this parameter is used with a command, the command applies on all peers in the specified group.
inbound	Allow inbound soft reconfiguration for this neighbor.

Command Mode

Router mode and Address Family mode

Examples

```
ZebOS#configure terminal
ZebOS(config)#router bgp 12
ZebOS(config-router)#neighbor 10.10.10.10 soft-reconfiguration inbound
```

neighbor unsuppress-map

Use this command to selectively leak more-specific routes to a particular neighbor. When the `aggregate-address` command is used with the `summary-only` option, the more-specific routes of the aggregate are suppressed to all neighbors. Use the `unsuppress-map` command to selectively leak more-specific routes to a particular neighbor.

Command Syntax

```
neighbor (A.B.C.D|X:X::X:X|WORD) unsuppress-map [WORD]
no neighbor (A.B.C.D|X:X::X:X|WORD) unsuppress-map [WORD]
```

Parameters

`A.B.C.D`	Specify the address of the BGP neighbor in an IPv4 format.
`X:X::X:X`	Specify the address of the BGP neighbor in an IPv6 format.
`WORD`	Name of an existing peer-group. For information on how to create peer groups, refer to the neighbor peer-group and neighbor remote-as commands. When this parameter is used with a command, the command applies on all peers in the specified group.
`WORD`	The name of the route-map used to select routes to be unsuppressed.

Command Mode

Router mode and Address Family (ipv4 unicast|ipv4 multicast|ipv6) mode

Example

```
ZebOS#configure terminal
ZebOS(config)#router bgp 10
ZebOS(config-router)#neighbor 10.10.0.73 unsuppress-map mymap

ZebOS#configure terminal
ZebOS(config)#router bgp 10
ZebOS(config-router)#address-family ipv4 unicast
ZebOS(config-router-af)#neighbor 10.10.0.70 unsuppress-map mymap
```

network

Use this command to specify the networks to be advertised by the BGP routing process. A unicast network address without a mask is accepted if it falls into the natural boundary of its class. A class-boundary mask is derived if the address matches its natural class-boundary.

Use the `backdoor` parameter to specify a backdoor route to a BGP border router that will provide better information about the network. For data to be advertised by BGP, its routing table must include a route to the specified network. This command specifies the networks to be advertised. The network command works if the network being advertised is known to the router.

The backdoor parameter enables a route to be the preferred route even if it has a greater distance. A network that is specified as a backdoor network is dynamically assigned an administrative distance of 200 ensuring that IGP learned routes are preferred. If a backdoor network is not sourced by the local router, the network is learned from the external routers. If the route is learned from eBGP for a backdoor network, the distance is set to 20 or 200.

Use the `no` parameter with this command to remove an entry.

Command Syntax

```
network [X:X::X:X|X:X::X:X/M|synchronization] (backdoor|routemap (WORD)|mask
  {X:X::X:X})
no network [X:X::X:X|X:X::X:X/M|synchronization] (backdoor|routemap (WORD)|mask
  {X:X::X:X})
```

Parameters

`X:X::X:X/M`	IPv6 prefix <network>/<length>, for example, 2003::/16
`X:X::X:X`	IPv6 prefix <network>, for example, 2003::
`synchronization`	Perform IGP synchronization on network routes
`backdoor`	Specify a BGP backdoor route
`routemap`	Route map used to modify the attributes
`WORD`	Name of the route map
`mask`	Network mask
`X:X::X:X`	Network mask

Command Mode

Router mode and Address Family mode

Examples

```
ZebOS(config)#router bgp 10
ZebOS(config-router)#network 172.26.0.0/16
```

If Router1 receives updates from 172.10.0.0 via two routing protocols RIP (distance 120) and eBGP (distance 20), router1 chooses the shorter route. Use the `backdoor` parameter to allows Router1 to learn about 172.10.0.0 via RIP.

```
ZebOS(config)#router rip
ZebOS(config)#network 172.10.0.0
ZebOS(config)#router bgp 200
ZebOS(config)#neighbor 3.3.3.3 remote-as 500
ZebOS(config)#network 172.10.0.0 backdoor

ZebOS(config-router)#network 172.16.1.0/24 route-map ipi
```

redistribute

Use this command to inject routes from one routing process into another. Redistribution is used by routing protocols to advertise routes that are learned by some other means, such as by another routing protocol or by static routes. Since all internal routes are dumped into BGP, careful filtering is applied to make sure that only routes to be advertised reach the internet, not everything. This command allows redistribution by injecting prefixes from one routing protocol into another routing protocol.

Use the `no` parameter with this command to disable this function.

Command Syntax

```
redistribute [connected|isis|kernel|ospf|rip|static] [(route-map WORD)]
no redistribute [connected|isis|kernel|ospf|rip|static] [(route-map WORD)]
```

Parameters

`connected`	Redistribute connected routes
`isis`	Redistribute connected ISO IS-IS routes
`kernel`	Redistribute connected kernel routes
`ospf`	Redistribute OSPFv2 or OSPFv3 routes
`rip`	Redistribute RIP routes
`static`	Redistribute static routes
`route-map`	Specify a route map reference
`WORD`	A pointer to route-map entries

Command Mode

Address Family-vrf mode

Examples

The following example shows the configuration of the route-map name `rmap1` and then the use of this map name in the `redistribute route-map` command.

```
ZebOS(config)#route-map rmap1 permit 1
ZebOS(config-route-map)#match origin incomplete
ZebOS(config-route-map)#set metric 100
ZebOS(config-route-map)#exit
ZebOS(config)#router bgp 12
ZebOS(config-router)#redistribute ospf route-map rmap1
```

CHAPTER 4 BGP Show Commands

This chapter provides an alphabetized reference for each of the BGP show commands. It includes the following commands:

show bgp X:X::X:X

Use this command to display BGP network information.

Command Syntax

```
show bgp X:X::X:X
```

Parameters

None

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show bgp ipv6 3ffe::8
```

show bgp X:X::X:X/M

Use this command to display BGP network information along with mask information.

Command Syntax

```
show bgp X:X::X:X/M [longer-prefixes]
```

Parameters

`longer-prefixes` Display route as well a specific route.

Command Mode

Privileged Exec mode and Exec mode

Examples

```
ZebOS#show bgp 3ffe::8/8
ZebOS#show bgp 3ffe::8/8 longer-prefixes
```

show bgp community

Use this command to display routes matching the communities.

Command Syntax

```
show bgp community [AA:NN|local-AS|no-advertise|no-export] (exact-match)
```

Parameters

AA:NN	Specify a valid value for a community number.
local-AS	Do not send outside local AS (well-known community).
no-advertise	Do not advertise to any peer (well-known community).
no-export	Do not export to next AS (well-known community).
exact-match	Specify that ZebOS display the exact match of the communities.

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show bgp community local-AS exact-match
```

show bgp community-list

Use this command to display routes matching the community-list.

Command Syntax

```
show bgp community-list [WORD (exact-match)]
```

Parameters

WORD	Specify a community-list name
exact-match	Specify that ZebOS display the exact match of the communities.

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show bgp community-list mylist exact-match
```

show bgp dampening

Use this command to display detailed information about dampening.

Command Syntax

```
show bgp dampening [dampened-paths|flap-statistics|parameters]
```

Parameters

`dampened-paths`	Display paths suppressed due to dampening.
`flap-statistics`	Display flap statistics of routes.
`parameters`	Display details of configured dampening parameters.

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show bgp dampening dampened-paths
```

show bgp filter-list

Use this command to display routes conforming to the filter-list.

Command Syntax

```
show bgp filter-list [WORD]
```

Parameters

WORD	Specify the regular-expression access list name.

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show bgp filter-list mylist
```

show bgp inconsistent-as

Use this command to display routes with inconsistent AS Paths.

Command Syntax

```
show bgp inconsistent-as
```

Parameters

None

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show bgp inconsistent-as
```

show bgp ipv4 multicast A.B.C.D

Use this command to display multicast route information for a single IP in an IPv4 environment.

Command Syntax

```
show bgp ipv4 multicast A.B.C.D
```

Parameters

None

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show bgp ipv4 multicast 1.2.3.4
```

show bgp ipv4 multicast A.B.C.D/M

Use this command to display multicast route information for a single IP and length in an IPv4 environment.

Command Syntax

```
show bgp ipv4 multicast A.B.C.D/M
```

Parameters

None

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show bgp ipv4 multicast 1.2.3.4/5
```

show bgp ipv4 multicast community

Use this command to display multicast route information that match communities within an IPv4 environment.

Command Syntax

```
show bgp ipv4 multicast [AA:NN|local-AS|no-advertise|no-export] (exact-match)
```

Parameters

AA:NN	Specify a valid value for a community number.
local-AS	Do not send outside local AS (well-known community).
no-advertise	Do not advertise to any peer (well-known community).
no-export	Do not export to next AS (well-known community).
exact-match	Specify that ZebOS display the exact match of the communities.

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show bgp ipv4 multicast community 12:34 exact-match
```

show bgp ipv4 multicast community-list

Use this command to display multicast route information that match a community-list within an IPv4 environment.

Command Syntax

```
show bgp ipv4 multicast community-list [WORD (exact-match)]
```

Parameters

WORD	Specify a community-list name
exact-match	Specify that ZebOS display the exact match of the communities.

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show bgp ipv4 multicast community-list mylist exact-match
```

show bgp ipv4 multicast dampening

Use this command to display multicast dampening information within an IPv4 environment.

Command Syntax

```
show bgp ipv4 multicast dampening [dampened-paths|flap-statistics|parameters]
```

Parameters

`dampened-paths`	Display paths suppressed due to dampening.
`flap-statistics`	Display flap statistics of routes.
`parameters`	Display details of configured dampening parameters.

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show bgp ipv4 multicast dampening dampened-paths
```

show bgp ipv4 multicast filter-list

Use this command to display multicast route information that conform to a filter-list within an IPv4 environment.

Command Syntax

```
show bgp ipv4 multicast filter-list [WORD]
```

Parameters

WORD	Specify the regular-expression access list name.

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show bgp ipv4 multicast filter-list mylist
```

show bgp ipv4 multicast inconsistent-as

Use this command to display multicast route information for inconsistent AS paths within an IPv4 environment.

Command Syntax

```
show bgp ipv4 multicast inconsistent-as
```

Parameters

None

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show bgp ipv4 multicast inconsistent-as
```

show bgp ipv4 multicast neighbors

Use this command to display multicast route information for TCP and BGP neighbor connections within an IPv4 environment.

Command Syntax

```
show bgp ipv4 multicast neighbors [A.B.C.D|X:X::X:X] (advertised-routes|received
  {prefix-filter}|received-routes|routes)
```

Parameters

`A.B.C.D`	Specify an IPv4 address.
`X:X::X:X`	Specify an IPv6 address
`advertised-routes`	Displays the routes advertised to a BGP neighbor.
`received`	Display information received from a BGP neighbor.
`prefix-filter`	Display the prefix list filter
`received-routes`	Displays the received routes from neighbor. To display all the received routes from the neighbor, configure the BGP soft reconfigure first.
`routes`	Displays all accepted routes learned from neighbors.

Command Mode

Privileged Exec mode and Exec mode

Example

The following output displays detailed information about the neighbor.

```
ZebOS#show bgp ipv4 multicast neighbors 1.2.3.4 advertised-routes
```

show bgp ipv4 multicast paths

Use this command to display multicast route information for BGP paths within an IPv4 environment.

Command Syntax

```
show bgp ipv4 multicast paths
```

Parameters

None

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show bgp ipv4 multicast paths

Address       Refcnt Path
[0x81fa578:0] (239)
```

show bgp ipv4 multicast prefix-list

Use this command to display multicast route information that match a prefix-list within an IPv4 environment.

Command Syntax

```
show bgp ipv4 multicast prefix-list [WORD]
```

Parameters

WORD	Specify the name of the IP prefix list.

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show bgp ipv4 multicast prefix-list mylist
```

show bgp ipv4 multicast quote-regexp

Use this command to display multicast route information for an AS path regular expression within an IPv4 environment. Users must use quotes to enclose the regular expression.

Command Syntax

```
show bgp ipv4 multicast quote-regexp [WORD]
```

Parameters

WORD	Specify a regular-expression to match the BGP AS paths.

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show bgp ipv4 multicast quote-regexp “IPI”
```

show bgp ipv4 multicast regexp

Use this command to display multicast route information that match the AS path regular expression within an IPv4 environment.

Command Syntax

```
show bgp ipv4 multicast regexp [LINE]
```

Parameters

LINE	Specify a regular-expression to match the BGP AS paths.

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show bgp ipv4 multicast regexp myexpression
```

show bgp ipv4 multicast route-map

Use this command to display multicast route information that match the specified route-map within an IPv4 environment.

Command Syntax

```
show bgp ipv4 multicast route-map [WORD]
```

Parameters

WORD	Specify a route-map that is matched.

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show bgp ipv4 multicast route-map IPI
```

show bgp ipv4 multicast summary

Use this command to display a multicast route summary of a BGP neighbor status within an IPv4 environment.

Command Syntax

```
show bgp ipv4 multicast summary
```

Parameters

None

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show bgp ipv4 multicast summary
```

show bgp ipv4 neighbors

Use this command to display routes on TCP and BGP neighbor connections within an IPv4 environment.

Command Syntax

```
show bgp ipv4 neighbors [A.B.C.D|X:X::X:X] (advertised-routes|received {prefix-
  filter}|received-routes|routes)
```

Parameters

`A.B.C.D`	Specify an IPv4 address.
`X:X::X:X`	Specify an IPv6 address
`advertised-routes`	Displays the routes advertised to a BGP neighbor.
`received`	Display information received from a BGP neighbor.
`prefix-filter`	Display the prefix list filter
`received-routes`	Displays the received routes from neighbor. To display all the received routes from the neighbor, configure the BGP soft reconfigure first.
`routes`	Displays all accepted routes learned from neighbors.

Command Mode

Privileged Exec mode and Exec mode

Example

The following output displays detailed information about the neighbor.

```
ZebOS#show bgp ipv4 neighbors 1.2.3.4 advertised-routes
```

show bgp ipv4 paths

Use this command to display BGP path information within an IPv4 environment.

Command Syntax

```
show bgp ipv4 paths
```

Parameters

None

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show bgp ipv4 paths

Address       Refcnt Path
[0x81fa578:0] (239)
```

show bgp ipv4 prefix-list

Use this command to display routes matching the prefix-list within an IPv4 environment.

Command Syntax

```
show bgp ipv4 prefix-list [WORD]
```

Parameters

WORD	Specify the name of the IP prefix list.

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show bgp ipv4 prefix-list mylist
```

show bgp ipv4 quote-regexp

Use this command to display route information for an AS path regular expression within an IPv4 environment. Users must use quotes to enclose the regular expression.

Command Syntax

```
show bgp ipv4 quote-regexp [WORD]
```

Parameters

WORD	Specify a regular-expression to match the BGP AS paths.

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show bgp ipv4 quote-regexp “IPI”
```

show bgp ipv4 summary

Use this command to display a route summary of a BGP neighbor status within an IPv4 environment.

Command Syntax

```
show bgp ipv4 summary
```

Parameters

None

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show bgp ipv4 summary
```

show bgp ipv4 unicast A.B.C.D

Use this command to display unicast route information for a single IP in an IPv4 environment.

Command Syntax

```
show bgp ipv4 unicast A.B.C.D
```

Parameters

None

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show bgp ipv4 unicast 1.2.3.4
```

show bgp ipv4 unicast A.B.C.D/M

Use this command to display unicast route information for a single IP and length in an IPv4 environment.

Command Syntax

```
show bgp ipv4 unicast A.B.C.D/M
```

Parameters

None

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show bgp ipv4 unicast 1.2.3.4/5
```

show bgp ipv4 unicast community

Use this command to display unicast route information that match communities within an IPv4 environment.

Command Syntax

```
show bgp ipv4 unicast [AA:NN|local-AS|no-advertise|no-export] (exact-match)
```

Parameters

AA:NN	Specify a valid value for a community number.
local-AS	Do not send outside local AS (well-known community).
no-advertise	Do not advertise to any peer (well-known community).
no-export	Do not export to next AS (well-known community).
exact-match	Specify that ZebOS display the exact match of the communities.

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show bgp ipv4 unicast community 12:34 exact-match
```

show bgp ipv4 unicast community-list

Use this command to display unicast route information that match a community-list within an IPv4 environment.

Command Syntax

```
show bgp ipv4 unicast community-list [WORD (exact-match)]
```

Parameters

WORD	Specify a community-list name
exact-match	Specify that ZebOS display the exact match of the communities.

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show bgp ipv4 unicast community-list mylist exact-match
```

show bgp ipv4 unicast dampening

Use this command to display unicast dampening information within an IPv4 environment.

Command Syntax

```
show bgp ipv4 unicast dampening [dampened-paths|flap-statistics|parameters]
```

Parameters

`dampened-paths`	Display paths suppressed due to dampening.
`flap-statistics`	Display flap statistics of routes.
`parameters`	Display details of configured dampening parameters.

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show bgp ipv4 unicast dampening dampened-paths
```

show bgp ipv4 unicast filter-list

Use this command to display unicast route information that conforming to a filter-list within an IPv4 environment.

Command Syntax

```
show bgp ipv4 unicast filter-list [WORD]
```

Parameters

WORD	Specify the regular-expression access list name.

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show bgp ipv4 unicast filter-list mylist
```

show bgp ipv4 unicast inconsistent-as

Use this command to display unicast route information that have inconsistent AS paths within an IPv4 environment.

Command Syntax

```
show bgp ipv4 unicast inconsistent-as
```

Parameters

None

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show bgp ipv4 unicast inconsistent-as
```

show bgp ipv4 unicast neighbors

Use this command to display unicast route information on TCP and BGP neighbor connections within an IPv4 environment.

Command Syntax

```
show bgp ipv4 unicast neighbors [A.B.C.D|X:X::X:X] (advertised-routes|received
  {prefix-filter}|received-routes|routes)
```

Parameters

`A.B.C.D`	Specify an IPv4 address.
`X:X::X:X`	Specify an IPv6 address
`advertised-routes`	Displays the routes advertised to a BGP neighbor.
`received`	Display information received from a BGP neighbor.
`prefix-filter`	Display the prefix list filter
`received-routes`	Displays the received routes from neighbor. To display all the received routes from the neighbor, configure the BGP soft reconfigure first.
`routes`	Displays all accepted routes learned from neighbors.

Command Mode

Privileged Exec mode and Exec mode

Example

The following output displays detailed information about the neighbor.

```
ZebOS#show bgp ipv4 unicast neighbors 1.2.3.4 advertised-routes
```

show bgp ipv4 unicast paths

Use this command to display unicast BGP path information within an IPv4 environment.

Command Syntax

```
show bgp ipv4 unicast paths
```

Parameters

None

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show bgp ipv4 unicast paths

Address       Refcnt Path
[0x81fa578:0] (239)
```

show bgp ipv4 unicast prefix-list

Use this command to display unicast route information that match the prefix-list within an IPv4 environment.

Command Syntax

```
show bgp ipv4 unicast prefix-list [WORD]
```

Parameters

WORD	Specify the name of the IP prefix list.

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show bgp ipv4 unicast prefix-list mylist
```

show bgp ipv4 unicast quote-regexp

Use this command to display unicast routes matching the AS path regular expression in quotes within an IPv4 environment.

Command Syntax

```
show bgp ipv4 unicast quote-regexp [WORD]
```

Parameters

WORD	Specify a regular-expression to match the BGP AS paths.

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show bgp ipv4 unicast quote-regexp “IPI”
```

show bgp ipv4 unicast regexp

Use this command to display unicast route information that match the AS path regular expression within an IPv4 environment.

Command Syntax

```
show bgp ipv4 unicast regexp [LINE]
```

Parameters

LINE	Specify a regular-expression to match the BGP AS paths.

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show bgp ipv4 unicast regexp myexpression
```

show bgp ipv4 unicast route-map

Use this command to display unicast route information that match the specified route-map within an IPv4 environment.

Command Syntax

```
show bgp ipv4 unicast route-map [WORD]
```

Parameters

WORD	Specify a route-map that is matched.

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show bgp ipv4 unicast route-map IPI
```

show bgp ipv4 unicast summary

Use this command to display a unicast route summary of the BGP neighbor status within an IPv4 environment.

Command Syntax

```
show bgp ipv4 unicast summary
```

Parameters

None

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show bgp ipv4 unicast summary
```

show bgp ipv6 X:X::X:X

Use this command to display IPv6 prefix information.

Command Syntax

```
show bgp ipv4 X:X::X:X
```

Parameters

None

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show bgp ipv6 1:2::3:4
```

show bgp ipv6 X:X::X:X/M

Use this command to display IPv6 prefix information along with mask information.

Command Syntax

```
show bgp ipv4 X:X::X:X/M
```

Parameters

None

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show bgp ipv6 1:2::3:4/5
```

show bgp ipv6 community

Use this command to display route information that match communities within an IPv6 environment.

Command Syntax

```
show bgp ipv6 [AA:NN|local-AS|no-advertise|no-export] (exact-match)
```

Parameters

AA:NN	Specify a valid value for a community number.
local-AS	Do not send outside local AS (well-known community).
no-advertise	Do not advertise to any peer (well-known community).
no-export	Do not export to next AS (well-known community).
exact-match	Specify that ZebOS display the exact match of the communities.

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show bgp ipv6 community 12:34 exact-match
```

show bgp ipv6 community-list

Use this command to display route information that match a community-list within an IPv6 environment.

Command Syntax

```
show bgp ipv6 community-list [WORD (exact-match)]
```

Parameters

`WORD`	Specify a community-list name
`exact-match`	Specify that ZebOS display the exact match of the communities.

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show bgp ipv6 community-list mylist exact-match
```

show bgp ipv6 dampening

Use this command to display detailed information about dampening in IPv6 environments. Enable BGP IPv6 dampening to maintain dampened-path information in memory.

Command Syntax

```
show bgp ipv6 dampening [dampened-paths|flap-statistics|parameters]
```

Parameters

`dampened-paths`	Display paths suppressed due to dampening.
`flap-statistics`	Display flap statistics of routes.
`parameters`	Display details of configured dampening parameters.

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show bgp ipv6 dampening dampened-paths
```

show bgp ipv6 filter-list

Use this command to display route information that conform to a filter-list within an IPv6 environment.

Command Syntax

```
show bgp ipv6 filter-list [WORD]
```

Parameters

WORD	Specify the regular-expression access list name.

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show bgp ipv6 filter-list mylist
```

show bgp ipv6 inconsistent-as

Use this command to display route information for inconsistent AS paths within an IPv6 environment.

Command Syntax

```
show bgp ipv6 multicast inconsistent-as
```

Parameters

None

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show bgp ipv6 inconsistent-as
```

show bgp ipv6 multicast

Use this command to display multicast IPv6 routes.

Command Syntax

```
show bgp ipv6 multicast [X:X::X:X|X:X::X:X/M (longer-prefixes)]
```

Parameters

`X:X::X:X`	IPv6 prefix <network>, for example, 3ffe:a::
`X:X::X:X/M`	IPv6 prefix <network>/<length>, for example, 3ffe:a::/64
`longer-prefixes`	Display route as well as a specific routes.

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show bgp ipv6 multicast 3ffe:a::/64
```

show bgp ipv6 neighbors

Use this command to display route information on TCP and BGP neighbor connections within an IPv6 environment.

Command Syntax

```
show bgp ipv6 neighbors [A.B.C.D|X:X::X:X] (advertised-routes|received {prefix-
  filter}|received-routes|routes)
```

Parameters

`A.B.C.D`	Specify an IPv4 address.
`X:X::X:X`	Specify an IPv6 address
`advertised-routes`	Displays the routes advertised to a BGP neighbor.
`received`	Display information received from a BGP neighbor.
`prefix-filter`	Display the prefix list filter
`received-routes`	Displays the received routes from neighbor. To display all the received routes from the neighbor, configure the BGP soft reconfigure first.
`routes`	Displays all accepted routes learned from neighbors.

Command Mode

Privileged Exec mode and Exec mode

Example

The following output displays detailed information about the neighbor.

```
ZebOS#show bgp ipv6 neighbors 1.2.3.4 advertised-routes
```

show bgp ipv6 paths

Use this command to display BGP path information within an IPv6 environment.

Command Syntax

```
show bgp ipv6 paths
```

Parameters

None

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show bgp ipv6 paths

Address       Refcnt Path
[0x81fa578:0] (239)
```

show bgp ipv6 prefix-list

Use this command to display routes matching the prefix-list within an IPv6 environment.

Command Syntax

```
show bgp ipv6 prefix-list [WORD]
```

Parameters

WORD	Specify the name of the IP prefix list.

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show bgp ipv6 prefix-list mylist
```

show bgp ipv6 quote-regexp

Use this command to display route information for an AS path regular expression within an IPv6 environment. Users must use quotes to enclose the regular expression.

Command Syntax

```
show bgp ipv6 quote-regexp [WORD]
```

Parameters

WORD	Specify a regular-expression to match the BGP AS paths.

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show bgp ipv6 quote-regexp “IPI”
```

show bgp ipv6 route-map

Use this command to display route information that match the specified route-map within an IPv6 environment.

Command Syntax

```
show bgp ipv6 route-map [WORD]
```

Parameters

WORD	Specify a route-map that is matched.

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show bgp ipv6 route-map IPI
```

show bgp ipv6 summary

Use this command to display a route summary of a BGP neighbor status within an IPv6 environment.

Command Syntax

```
show bgp ipv6 summary
```

Parameters

None

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show bgp ipv6 summary
```

show bgp ipv6 unicast

Use this command to display unicast IPv6 routes.

Command Syntax

```
show bgp ipv6 unicast [X:X::X:X|X:X::X:X/M (longer-prefixes)]
```

Parameters

`X:X::X:X`	IPv6 prefix <network>, for example, 3ffe:a::
`X:X::X:X/M`	IPv6 prefix <network>/<length>, for example, 3ffe:a::/64
`longer-prefixes`	Display route as well as a specific route.

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show bgp ipv6 unicast 3ffe:a::/64
```

show bgp ipv6 view

Use this command to display information on a specific BGP view.

Command Syntax

```
show bgp ipv6 view [WORD]
```

Parameter

WORD	A BGP view name.

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show bgp ipv6 view myview
```

show bgp neighbors

Use this command to display detailed information on TCP and BGP neighbor connections.

Command Syntax

```
show bgp neighbors [A.B.C.D|X:X::X:X] (advertised-routes|received {prefix-
  filter}|received-routes|routes)
```

Parameters

`A.B.C.D`	Specify an IPv4 address.
`X:X::X:X`	Specify an IPv6 address
`advertised-routes`	Displays the routes advertised to a BGP neighbor.
`received`	Display information received from a BGP neighbor.
`prefix-filter`	Display the prefix list filter
`received-routes`	Displays the received routes from neighbor. To display all the received routes from the neighbor, configure the BGP soft reconfigure first.
`routes`	Displays all accepted routes learned from neighbors.

Command Mode

Privileged Exec mode and Exec mode

Example

The following output displays detailed information about the neighbor.

```
ZebOS#show bgp neighbors
BGP neighbor is fe80::203:47ff:feb0:d72b, remote AS 10, local AS 10, internal
link
  BGP version 4, remote router ID 10.10.10.50
  BGP state = Established, up for 00:02:01
  Last read 00:00:01, hold time is 180, keepalive interval is 60 seconds
  Neighbor capabilities:
    Route refresh: advertised and received (old and new)
    Address family IPv4 Unicast: advertised and received
    Address family IPv6 Unicast: advertised and received
  Received 3 messages, 0 notifications, 0 in queue
  Sent 5 messages, 0 notifications, 0 in queue
  Route refresh request: received 0, sent 0
  Minimum time between advertisement runs is 5 seconds
 For address family: IPv4 Unicast
  Community attribute sent to this neighbor (both)
  0 accepted prefixes
  0 announced prefixes
```

show bgp nexthop-tracking

Use this command to display BGP nexthop-tracking status.

Command Syntax

```
show bgp nexthop-tracking
```

Parameters

None

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show bgp nexthop-tracking
Configured NHT: ENABLED
NHT Delay time-interval : 6
BGP VRF: (Default) VRF_ID 0
BGP Instance: (Default), AS: 100, router-id 4.4.4.40
NHT is Enabled
Recvd Msg count from NSM: 0
NHT delay-timer remaining seconds: 0
BGP nexthop(s):
Total number of IPV4 nexthops : 0
Total number of IPV6 nexthops : 0

BGP VRF: VRF_A VRF_ID 2
BGP Instance: (Default), AS: 100, router-id 4.4.4.40
NHT is Enabled
Recvd Msg count from NSM: 0
NHT delay-timer remaining seconds: 0
BGP nexthop(s):
Total number of IPV4 nexthops : 0
Total number of IPV6 nexthops : 0
```

show bgp nexthop-tree-details

Use this command to display BGP nexthop-tree details.

Command Syntax

```
show bgp nexthop-tree-details
```

Parameters

None

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show bgp nexthop-tree-details
Configured NHT: ENABLED
NHT Delay time-interval : 6
BGP VRF: (Default) VRF_ID 0
BGP Instance: (Default), AS: 100, router-id 4.4.4.40
NHT is Enabled
Recvd Msg count from NSM: 0
NHT delay-timer remaining seconds: 0
BGP nexthop(s):
Total number of IPV4 nexthops : 0
Total number of IPV6 nexthops : 0

BGP VRF: VRF_A VRF_ID 2
BGP Instance: (Default), AS: 100, router-id 4.4.4.40
NHT is Enabled
Recvd Msg count from NSM: 0
NHT delay-timer remaining seconds: 0
BGP nexthop(s):
Total number of IPV4 nexthops : 0
Total number of IPV6 nexthops : 0

TSUP40#
TSUP40#show bgp nexthop-tree-details
BGP Instance: (Default), AS: 100, router-id 4.4.4.40
AFI_IP Nexthop count : 0
AFI_IP6 Nexthop count : 0

BGP Instance: (Default), AS: 0, router-id 0.0.0.0
AFI_IP Nexthop count : 0
AFI_IP6 Nexthop count : 0

BGP Instance: (Default), AS: 100, router-id 4.4.4.40
```

show bgp paths

Use this command to display BGP path information.

Command Syntax

```
show bgp paths
```

Parameters

None

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show bgp paths

Address       Refcnt Path
[0x81fa578:0] (239)
```

show bgp prefix-list

Use this command to display routes matching the prefix-list.

Command Syntax

```
show bgp prefix-list [WORD]
```

Parameters

WORD	Specify the name of the IP prefix list.

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show bgp prefix-list mylist
```

show bgp quote-regexp

Use this command to display route information for an AS path regular expression. Users must use quotes to enclose the regular expression.

Command Syntax

```
show bgp quote-regexp [WORD]
```

Parameters

WORD	Specify a regular-expression to match the BGP AS paths.

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show bgp quote-regexp “IPI”
```

show bgp regexp

Use this command to display routes matching the AS path regular expression.

Command Syntax

```
show bgp regexp [LINE]
```

Parameters

LINE	Specify a regular-expression to match the BGP AS paths.

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show bgp regexp myexpression
```

show bgp route-map

Use this command to display routes that match the specified route-map.

Command Syntax

```
show bgp route-map [WORD]
```

Parameters

WORD	Specify a route-map that is matched.

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show bgp route-map IPI
```

show bgp summary

Use this command to display a summary of BGP neighbor status.

Command Syntax

```
show bgp summary
```

Parameters

None

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show bgp summary
```

show debugging bgp

Use this command to display the BGP debugging option set.

Command Syntax

```
show debugging bgp
```

Parameters

None

Command Mode

Privileged Exec mode and Exec mode

Example

This is a sample output from the show debugging bgp command.

```
ZebOS#show debugging bgp
BGP debugging status:
 BGP debugging is on
 BGP events debugging is on
 BGP updates debugging is on
 BGP fsm debugging is on
```

show ip bgp A.B.C.D

Use this command to display BGP network information for a specific IP address.

Command Syntax

```
show ip bgp A.B.C.D
```

Parameters

None

Command Mode

Privileged Exec mode and Exec mode

Example

This is a sample output from the `show ip bgp` command displaying BGP network information.

```
ZebOS#show ip bgp 192.10.23.67
BGP table version is 7, local router ID is 80.80.80.80
Status codes: s suppressed, d damped, h history, * valid, > best, i -
internal,
              S Stale
Origin codes: i - IGP, e - EGP,? - incomplete
   Network          Next Hop            Metric LocPrf Weight Path
S>i10.70.0.0/24     192.10.23.67             0    100      0 ?
S>i30.30.30.30/32   192.10.23.67             0    100      0 ?
S>i63.63.63.1/32    192.10.23.67             0    100      0 ?
S>i67.67.67.67/32   192.10.23.67             0    100      0 ?
S>i172.22.10.0/24   192.10.23.67             0    100      0 ?
S>i192.10.21.0      192.10.23.67             0    100      0 ?
S>i192.10.23.0      192.10.23.67             0    100      0 ?
Total number of prefixes 7
```

show ip bgp A.B.C.D/M

Use this command to display BGP network information for a specific IP address and length.

Command Syntax

```
show ip bgp A.B.C.D/M
```

Parameters

None

Command Mode

Privileged Exec mode and Exec mode

Example

This is a sample output from the `show ip bgp` command displaying BGP network information.

```
ZebOS#show ip bgp 192.10.23.67/1
```

show ip bgp attribute-info

Use this command to show internal attribute hash information.

Command Syntax

```
show ip bgp attribute-info
```

Parameters

None

Command Mode

Privileged Exec mode and Exec mode

Example

This is a sample output from the `show ip bgp attribute-info` command displaying internal attribute information.

```
ZebOS#show ip bgp attribute-info
attr[1] nexthop 0.0.0.0
attr[1] nexthop 10.10.10.10
```

show ip bgp cidr-only

Use this command to display routes with non-natural network masks.

Command Syntax

```
show ip bgp cidr-only
```

Parameters

None

Command Mode

Privileged Exec mode and Exec mode

Example

This is a sample output from the `show ip bgp cidr-only` command.

```
ZebOS#show ip bgp cidr-only
BGP table version is 0, local router ID is 10.10.10.50
Status codes: s suppressed, d damped, h history, p stale, * valid, > best, i -
internal
Origin codes: i - IGP, e - EGP, ? - incomplete
   Network          Next Hop            Metric LocPrf Weight Path
*> 3.3.3.0/24       10.10.10.10                              0 11 i
Total number of prefixes 2
```

show ip bgp community

Use this command to display routes matching the communities.

Command Syntax

```
show ip bgp community [AA:NN|local-AS|no-advertise|no-export] (exact-match)
```

Parameters

AA:NN	Specify a valid value for a community number.
local-AS	Do not send outside local AS (well-known community).
no-advertise	Do not advertise to any peer (well-known community).
no-export	Do not export to next AS (well-known community).
exact-match	Exact match of the communities.

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show ip bgp community 10:23 exact-match
```

show ip bgp community-info

Use this command to list all BGP community information.

Command Syntax

```
show ip bgp community-info
```

Parameters

None

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show ip bgp community-info

Address Refcnt Community
```

show ip bgp community-list

Use this command to display routes that match the community-list.

Command Syntax

```
show ip bgp community-list [WORD (exact-match)]
```

Parameters

WORD	Specify the community list name.
exact-match	Displays only routes that have exactly the same specified communities.

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show ip bgp community-list mylist exact-match
```

show ip bgp dampening

Use this command to display detailed information about dampening.

Command Syntax

```
show ip bgp dampening [dampened-paths|flap-statistics|parameters]
```

Parameters

`dampened-paths`	Display paths suppressed due to dampening.
`flap-statistics`	Display flap statistics of routes.
`parameters`	Display details of configured dampening parameters.

Command Mode

Privileged Exec mode and Exec mode

Examples

Enable BGP dampening to maintain dampened-path information in memory. The following is a sample output displaying all the dampening parameters:

```
ZebOS#show ip bgp dampening parameters
 dampening 15 750 2000 60 15
 Reachability Half-Life time   : 15 min
  Reuse penalty                : 750
  Suppress penalty             : 2000
  Max suppress time            : 60 min
  Un-reachability Half-Life time : 15 min
  Max penalty (ceil)           : 11999
```

This sample output shows that the internal route (`i`), has flapped 3 times and is now categorized as history (`h`).

```
ZebOS#show ip bgp dampening flap-statistics
BGP table version is 1, local router ID is 30.30.30.77
Status codes: s suppressed, d damped, h history, * valid, > best, i -
internal, S Stale
Origin codes: i - IGP, e - EGP, ? - incomplete
   Network          From            Flaps  Duration  Reuse   Path
 hi1.1.1.0/24       10.100.0.62         3  00:01:20            i
```

show ip bgp filter-list

Use this command to display routes conforming to the filter-list.

Command Syntax

```
show ip bgp filter-list [WORD]
```

Parameters

WORD	Specify the regular-expression access list name.

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show ip bgp filter-list mylist
```

show ip bgp inconsistent-as

Use this command to display routes with inconsistent AS Paths.

Command Syntax

```
show ip bgp inconsistent-as
```

Parameters

None

Command Mode

Privileged Exec mode and Exec mode

Examples

```
ZebOS#show ip bgp inconsistent-as
ZebOS#show ip bgp ipv4 unicast inconsistent-as
```

show ip bgp ipv4 A.B.C.D

Use this command to display either multicast or unicast route information for a single IP in an IPv4 environment.

Command Syntax

```
show ip bgp ipv4 [multicast|unicast] A.B.C.D
```

Parameters

`multicast`	Indicate multicast as an address family modifier
`unicast`	Indicate multicast as an address family modifier

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show ip bgp ipv4 multicast 1.2.3.4
```

show ip bgp ipv4 A.B.C.D/M

Use this command to display either multicast or unicast information for a single IP and length in an IPv4 environment.

Command Syntax

```
show ip bgp ipv4 [multicast|unicast] A.B.C.D/M
```

Parameters

`multicast`	Indicate multicast as an address family modifier
`unicast`	Indicate multicast as an address family modifier

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show ip bgp ipv4 multicast 1.2.3.4/5
```

show ip bgp ipv4 community

Use this command to display either multicast or unicast route information that match communities within an IPv4 environment.

Command Syntax

```
show ip bgp ipv4 [multicast|unicast] (AA:NN|local-AS|no-advertise|no-export)
  {exact-match}
```

Parameters

`multicast`	Indicate multicast as an address family modifier
`unicast`	Indicate multicast as an address family modifier
`AA:NN`	Specify a valid value for a community number.
`local-AS`	Do not send outside local AS (well-known community).
`no-advertise`	Do not advertise to any peer (well-known community).
`no-export`	Do not export to next AS (well-known community).
`exact-match`	Specify that ZebOS display the exact match of the communities.

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show ip bgp ipv4 multicast community 12:34 exact-match
```

show ip bgp ipv4 community-list

Use this command to display either multicast or unicast route information that match a community-list within an IPv4 environment.

Command Syntax

```
show ip bgp ipv4 [multicast|unicast] community-list [WORD (exact-match)]
```

Parameters

`multicast`	Indicate multicast as an address family modifier
`unicast`	Indicate multicast as an address family modifier
`WORD`	Specify a community-list name
`exact-match`	Specify that ZebOS display the exact match of the communities.

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show ip bgp ipv4 multicast community-list mylist exact-match
```

show ip bgp ipv4 dampening

Use this command to display either multicast or unicast dampening information within an IPv4 environment.

Command Syntax

```
show ip bgp ipv4 [multicast|unicast] dampening [dampened-paths|flap-
  statistics|parameters]
```

Parameters

`multicast`	Indicate multicast as an address family modifier
`unicast`	Indicate multicast as an address family modifier
`dampened-paths`	Display paths suppressed due to dampening.
`flap-statistics`	Display flap statistics of routes.
`parameters`	Display details of configured dampening parameters.

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show ip bgp ipv4 multicast dampening dampened-paths
```

show ip bgp ipv4 filter-list

Use this command to display either multicast or unicast route information that conform to a filter-list within an IPv4 environment.

Command Syntax

```
show ip bgp ipv4 [multicast|unicast] filter-list [WORD]
```

Parameters

`multicast`	Indicate multicast as an address family modifier
`unicast`	Indicate multicast as an address family modifier
`WORD`	Specify the regular-expression access list name.

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show ip bgp ipv4 multicast filter-list mylist
```

show ip bgp ipv4 inconsistent-as

Use this command to display either multicast or unicast route information for inconsistent AS paths within an IPv4 environment.

Command Syntax

```
show ip bgp ipv4 [multicast|unicast] inconsistent-as
```

Parameters

`multicast`	Indicate multicast as an address family modifier
`unicast`	Indicate multicast as an address family modifier

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show ip bgp ipv4 multicast inconsistent-as
```

show ip bgp ipv4 neighbors

Use this command to display either multicast or unicast route information for TCP and BGP neighbor connections within an IPv4 environment.

Command Syntax

```
show ip bgp ipv4 [multicast|unicast] neighbors [A.B.C.D|X:X::X:X] (advertised-
  routes|received {prefix-filter}|received-routes|routes)
```

Parameters

`multicast`	Indicate multicast as an address family modifier
`unicast`	Indicate multicast as an address family modifier
`A.B.C.D`	Specify an IPv4 address.
`X:X::X:X`	Specify an IPv6 address
`advertised-routes`	Displays the routes advertised to a BGP neighbor.
`received`	Display information received from a BGP neighbor.
`prefix-filter`	Display the prefix list filter
`received-routes`	Displays the received routes from neighbor. To display all the received routes from the neighbor, configure the BGP soft reconfigure first.
`routes`	Displays all accepted routes learned from neighbors.

Command Mode

Privileged Exec mode and Exec mode

Example

The following output displays detailed information about the neighbor.

```
ZebOS#show ip bgp ipv4 multicast neighbors 1.2.3.4 advertised-routes
```

show ip bgp ipv4 paths

Use this command to display either multicast or unicast route information for BGP paths within an IPv4 environment.

Command Syntax

```
show ip bgp ipv4 [multicast|unicast] paths
```

Parameters

`multicast`	Indicate multicast as an address family modifier
`unicast`	Indicate multicast as an address family modifier

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show ip bgp ipv4 unicast paths

Address       Refcnt Path
[0x81fa578:0] (239)
```

show ip bgp ipv4 prefix-list

Use this command to display either multicast or unicast route information that match a prefix-list within an IPv4 environment.

Command Syntax

```
show ip bgp ipv4 [multicast|unicast] prefix-list [WORD]
```

Parameters

multicast	Indicate multicast as an address family modifier
unicast	Indicate multicast as an address family modifier
WORD	Specify the name of the IP prefix list.

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show ip bgp ipv4 multicast prefix-list mylist
```

show ip bgp ipv4 quote-regexp

Use this command to display either multicast or unicast route information for an AS path regular expression within an IPv4 environment. Users must use quotes to enclose the regular expression.

Command Syntax

```
show ip bgp ipv4 [multicast|unicast] quote-regexp [WORD]
```

Parameters

`multicast`	Indicate multicast as an address family modifier
`unicast`	Indicate multicast as an address family modifier
`WORD`	Specify a regular-expression to match the BGP AS paths.

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show ip bgp ipv4 unicast quote-regexp “IPI”
```

show ip bgp ipv4 regexp

Use this command to display either multicast or unicast route information that match the AS path regular expression within an IPv4 environment.

Command Syntax

```
show ip bgp ipv4 [multicast|unicast] regexp [LINE]
```

Parameters

multicast	Indicate multicast as an address family modifier
unicast	Indicate multicast as an address family modifier
LINE	Specify a regular-expression to match the BGP AS paths.

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show ip bgp ipv4 multicast regexp myexpression
```

show ip bgp ipv4 route-map

Use this command to display either multicast or unicast route information that match the specified route-map within an IPv4 environment.

Command Syntax

```
show ip bgp ipv4 [multicast|unicast] route-map [WORD]
```

Parameters

`multicast`	Indicate multicast as an address family modifier
`unicast`	Indicate multicast as an address family modifier
`WORD`	Specify a route-map that is matched.

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show ip bgp ipv4 unicast route-map IPI
```

show ip bgp ipv4 summary

Use this command to display either multicast or unicast route summary of a BGP neighbor status within an IPv4 environment.

Command Syntax

```
show ip bgp ipv4 [multicast|unicast] summary
```

Parameters

`multicast`	Indicate multicast as an address family modifier
`unicast`	Indicate multicast as an address family modifier

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show ip bgp ipv4 multicast summary
```

show ip bgp neighbors

Use this command to display detailed information on TCP and BGP neighbor connections.

Command Syntax

```
show ip bgp neighbors [A.B.C.D|X:X::X:X] (advertised-routes|connection-
  retrytime|hold-time|keepalive|keepalive-interval|notification|open|rcvd-
  msgs|received {prefix-filter}|received-routes|routes|sent-msgs|update)
```

Parameters

`A.B.C.D` Specify an IPv4 address.

`X:X::X:X` Specify an IPv6 address

`advertised-routes`

Displays the routes advertised to a BGP neighbor.

`connection-retrytime`

Display the configured connection-retry-time value of the peer at the session establishment time with the neighbor.

`hold-time` Display the configured hold-time value of the peer at the session establishment time with the neighbor.

`keepalive` Display the number of keepalive messages sent to the neighbor from the peer throughout the session.

`keepalive-interval`

Display the configured keepalive-interval value of the peer at the session establishment time with the neighbor.

`notification`

Display the number of notification messages sent to the neighbor from the peer throughout the session.

`open` Display the number of open messages sent to neighbors from peers throughout a session.

`rcvd-msgs` Display the number of messages received by a neighbor from peers throughout a session.

`received` Display information received from a BGP neighbor.

`prefix-filter`

Display the prefix list filter mode

`received-routes`

Displays the received routes from neighbor. To display all the received routes from the neighbor, configure the BGP soft reconfigure first.

`routes` Displays all accepted routes learned from neighbors.

`sent-msgs` Display the number of messages sent to the neighbor from the peer throughout the session.

`update` Display the number of update messages sent to the neighbor from the peer throughout the session.

Command Mode

Privileged Exec mode and Exec mode

Example

This sample output from the `show ip bgp neighbors` command displays information about the specified neighbor.

```
ZebOS#show ip bgp neighbors
BGP neighbor is 192.10.23.67, remote AS 1, local AS 1, internal link
  BGP version 4, remote router ID 172.22.10.10
  BGP state = Established, up for 00:00:22
  Last read 00:00:22, hold time is 240, keepalive interval is 60 seconds
  Neighbor capabilities:
    Route refresh: advertised and received (old and new)
    Address family IPv4 Unicast: advertised and received
  Received 3 messages, 0 notifications, 0 in queue
  Sent 3 messages, 0 notifications, 0 in queue
  Route refresh request: received 0, sent 0
  Minimum time between advertisement runs is 5 seconds
 For address family: IPv4 Unicast
  BGP table version 1, neighbor version 1
  Index 1, Offset 0, Mask 0x2
  AF-dependant capabilities:
    Graceful restart: advertised, received
 Community attribute sent to this neighbor (both)

ZebOS#show ip bgp neighbors 3ffe::5 connection-retrytime

ZebOS#show ip bgp neighbors 3ffe::5/64 hold-time

ZebOS#show ip bgp neighbors 3ffe::5 keepalive

ZebOS#show ip bgp neighbors 10.11.4.26 keepalive-interval

ZebOS#show ip bgp neighbors 10.11.4.26 notification

ZebOS#show ip bgp neighbors 10.11.4.26 open

ZebOS#show ip bgp neighbors 10.11.4.26 rcvd-msgs

ZebOS#show ip bgp neighbors 10.11.4.26 sent-msgs
```

show ip bgp paths

Use this command to display BGP path information.

Command Syntax

```
show ip bgp paths
```

Parameters

None

Command Mode

Privileged Exec mode

Example

```
ZebOS#show ip bgp paths
```

show ip bgp prefix-list

Use this command to display routes matching the prefix-list.

Command Syntax

```
show ip bgp prefix-list [LIST]
```

Parameters

LIST	Specify the name of the IP prefix list.

Command Mode

Privileged Exec mode

Example

```
ZebOS#show ip bgp prefix-list mylist
```

show ip bgp quote-regexp

Use this command to display routes matching the AS path regular expression in quotes.

Command Syntax

```
show ip bgp quote-regexp [WORD]
```

Parameters

WORD	Specify a regular-expression to match the BGP AS paths.

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show ip bgp quote-regexp “IPI”
```

show ip bgp regexp

Use this command to display routes matching the AS path regular expression.

Command Syntax

```
show ip bgp regexp [LINE]
```

Parameters

LINE	Specify a regular-expression to match the BGP AS paths. Refer to the appendix “Regular Expressions” for further details.

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show ip bgp regexp myexpression
```

show ip bgp route-map

Use this command to display routes that match the specified route-map.

Command Syntax

```
show ip bgp route-map [WORD]
```

Parameters

WORD	Specify a route-map that is matched.

Command Mode

Privileged Exec mode and Exec mode

Examples

```
ZebOS#show ip bgp route-map IPI
ZebOS#show ip bgp ipv4 unicast route-map IPI
```

show ip bgp scan

Use this command to display BGP scan status.

Command Syntax

```
show ip bgp scan
```

Parameters

None

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show ip bgp scan
BGP scan is running
BGP scan interval is 60
BGP instance: AS is 11,DEFAULT
Current BGP nexthop cache:
BGP connected route:
 10.10.10.0/24
 10.10.11.0/24
```

show ip bgp summary

Use this command to display a summary of BGP neighbor status.

Command Syntax

```
show ip bgp summary
```

Parameters

None

Command Mode

Privileged Exec mode and Exec mode

Example

This is a sample output from the `show ip bgp summary` command displaying a summary of BGP neighbor status.

```
ZebOS#show ip bgp summary
BGP router identifier 10.10.15.50, local AS number 65000
1 BGP AS-PATH entries
0 BGP community entries

Neighbor        V    AS MsgRcvd MsgSent   TblVer InQ OutQ Up/Down State/
PfxRcd10.10.9.50      4 65000     460     595       0    0      00:17:48
3
10.10.14.51     4   100    93     120       0       0    0      00:42:16
0

Total number of neighbors 2
```

show ip bgp view

Use this command to view the neighbors of the given instance.

Command Syntax

```
show ip bgp view [WORD|A.B.C.D|A.B.C.D/M|ipv4 (multicast|unicast
  {summary})|neighbors (A.B.C.D|X:X::X:X)|summary]
```

Parameters

WORD	Display a BGP view name
A.B.C.D	Network in the BGP routing table to display
A.B.C.D/M	IP prefix <network>/<length>, e.g., 35.0.0.0/8
ipv4	Address family
multicast	Indicate multicast as an address family modifier
unicast	Indicate multicast as an address family modifier
summary	Summary of BGP neighbor status
neighbors	Detailed information on TCP and BGP neighbor connections
A.B.C.D	Neighbor to display information about
X:X::X:X	Neighbor to display information about
summary	Summary of BGP neighbor status

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show ip bgp view I2
BGP table version is 0, local router ID is 10.10.10.50
Status codes: s suppressed, d damped, h history, p stale, * valid, > best, i -
internal
Origin codes: i - IGP, e - EGP, ? - incomplete

   Network          Next Hop            Metric LocPrf Weight Path
*>i100.156.70.0/24  10.10.10.52                  0      0 i
*>i100.156.71.0/24  10.10.10.52                  0      0 i
*>i100.156.72.0/24  10.10.10.52                  0      0 i
*>i100.156.73.0/24  10.10.10.52                  0      0 i
*>i100.156.74.0/24  10.10.10.52                  0      0 i

Total number of prefixes 5
```

show ip extcommunity-list

Use this command to display a configured extcommunity-list.

Command Syntax

```
show ip extcommunity-list [<1-199>|WORD]
```

Parameters

<1-199>	Extcommunity-list number.
WORD	Extcommunity-list name.

Command Mode

Privileged Exec mode and Exec mode

Example

```
ZebOS#show ip extcommunity-list 33
```

show ip protocols bgp

Use this command to display BGP process parameters and statistics.

Command Syntax

```
show ip protocols bgp
```

Parameters

None

Command Mode

Privileged Exec mode and Exec mode

Example

This is an example of the output from the show ip protocols command:

```
ZebOS#show ip protocols bgp
Routing Protocol is "bgp 100"
Sending updates every 30 seconds with +/-50%, next due in 12 seconds
Timeout after 180 seconds, garbage collect after 120 seconds
Outgoing update filter list for all interface is not set
Incoming update filter list for all interface is not set
Default redistribution metric is 1
Redistributing: connected static
Default version control: send version 2, receive version 2
Interface        Send  Recv   Key-chain
   eth0                 2     2
Routing for Networks:
  10.10.0.0/24
Routing Information Sources:
  Gateway          BadPackets BadRoutes  Distance Last Update
 Distance: (default is 120
```

Appendix A Regular Expressions

This appendix describes regular expression special characters. Used in commands such as `ip as-path access-list` and `ip community-list expanded`. You can use these characters in combination to build complex regular expressions.

Symbol	Character	Meaning
^	Caret	Used to match the beginning of the input string. When used at the beginning of a string of characters, it negates a pattern match.
$	Dollar sign	Used to match the end of the input string.
.	Period	Used to match a single character (white spaces included).
*	Asterisk	Used to match none or more sequences of a pattern.
+	Plus sign	Used to match one or more sequences of a pattern.
?	Question mark	Used to match none or one occurrence of a pattern.
_	Underscore	Used to match spaces, commas, braces, parenthesis, or the beginning and end of an input string.
[]	Brackets	Specify a range of single-characters.
-	Hyphen	Separates the end points of a range.

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