



Introduction

This book describes the commands used to configure and monitor IP routing capabilities and features. The commands in this book are organized alphabetically. The following section provides a high-level structure of routing protocols commands organized by each protocol. All commands within each section are cross-referenced to the corresponding command reference pages in this book.

- [BGP Commands, page 1](#)
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For IP routing configuration tasks and examples, refer to the “IP Routing Protocols” chapter in the *Cisco IOS IP Configuration Guide*.

BGP Commands

Use the following commands to configure and monitor the Border Gateway Protocol (BGP):

- [**aggregate-address**](#)
- [**auto-summary \(BGP\)**](#)
- [**bgp always-compare-med**](#)
- [**bgp bestpath compare-routerid**](#)
- [**bgp bestpath compare-routerid**](#)
- [**bgp bestpath med confed**](#)
- [**bgp bestpath med missing-as-worst**](#)
- [**bgp client-to-client reflection**](#)
- [**bgp cluster-id**](#)
- [**bgp confederation identifier**](#)
- [**bgp confederation peers**](#)

- **bgp dampening**
- **bgp default ipv4-unicast**
- **bgp default local-preference**
- **bgp deterministic-med**
- **bgp fast-external-fallover**
- **bgp graceful-restart**
- **bgp inject-map exist-map**
- **bgp log-neighbor-changes**
- **bgp redistribute-internal**
- **bgp router-id**
- **bgp rr-group**
- **bgp upgrade-cli**
- **bgp-policy**
- **clear ip bgp**
- **clear ip bgp dampening**
- **clear ip bgp external**
- **clear ip bgp flap-statistics**
- **clear ip bgp peer-group**
- **clear ip prefix-list**
- **default-information originate (BGP)**
- **default-metric (BGP)**
- **distance bgp**
- **distribute-list out (BGP)**
- **distribute-list out (BGP)**
- **export map**
- **ip as-path access-list**
- **ip bgp-community new-format**
- **ip community-list**
- **ip extcommunity-list**
- **ip policy-list**
- **ip prefix-list**
- **ip prefix-list description**
- **ip prefix-list sequence-number**
- **match as-path**
- **match community**
- **match extcommunity**
- **match policy-list**
- **maximum-paths eibgp**

- **maximum-paths ibgp**
- **neighbor advertise-map**
- **neighbor advertisement-interval**
- **neighbor default-originate**
- **neighbor description**
- **neighbor disable-connected-check**
- **neighbor distribute-list**
- **neighbor dmzlink-bw**
- **neighbor ebgp-multihop**
- **neighbor filter-list**
- **neighbor local-as**
- **neighbor maximum-prefix**
- **neighbor next-hop-self**
- **neighbor orf prefix-filter**
- **neighbor password**
- **neighbor peer-group (assigning members)**
- **neighbor peer-group (creating)**
- **neighbor prefix-list**
- **neighbor remote-as**
- **neighbor remove-private-as**
- **neighbor route-map**
- **neighbor route-reflector-client**
- **neighbor send-community**
- **neighbor shutdown**
- **neighbor soft-reconfiguration**
- **neighbor timers**
- **neighbor unsuppress-map**
- **neighbor update-source**
- **neighbor version**
- **neighbor weight**
- **network (BGP and multiprotocol BGP)**
- **network backdoor**
- **router bgp**
- **set as-path**
- **set comm-list delete**
- **set community**
- **set dampening**
- **set extcommunity**

- **set ip next-hop (BGP)**
- **set metric-type internal**
- **set origin (BGP)**
- **set traffic-index**
- **set weight**
- **show ip bgp**
- **show ip bgp cidr-only**
- **show ip bgp community**
- **show ip bgp community-list**
- **show ip bgp dampened-paths**
- **show ip bgp filter-list**
- **show ip bgp flap-statistics**
- **show ip bgp inconsistent-as**
- **show ip bgp injected-paths**
- **show ip bgp ipv4**
- **show ip bgp neighbors**
- **show ip bgp paths**
- **show ip bgp peer-group**
- **show ip bgp regexp**
- **show ip bgp summary**
- **show ip community-list**
- **show ip extcommunity-list**
- **show ip policy-list**
- **show ip prefix-list**
- **synchronization**
- **table-map**
- **timers bgp**

EIGRP Commands

Use the following commands to configure and monitor Enhanced Interior Gateway Routing Protocol (EIGRP):

- **address-family ipv4 (EIGRP)**
- **auto-summary (EIGRP)**
- **clear ip eigrp neighbors**
- **clear ip eigrp vrf neighbor**
- **default-information**
- **default-metric (EIGRP)**

- **distance eigrp**
- **domain-tag**
- **eigrp log-neighbor-warnings**
- **eigrp stub**
- **exit-address-family**
- **ip authentication key-chain eigrp**
- **ip authentication mode eigrp**
- **ip bandwidth-percent eigrp**
- **ip hello-interval eigrp**
- **ip hold-time eigrp**
- **ip next-hop-self eigrp**
- **ip split-horizon eigrp**
- **ip summary-address eigrp**
- **metric holddown**
- **metric maximum-hops**
- **metric weights (EIGRP)**
- **neighbor (EIGRP)**
- **network (EIGRP)**
- **offset-list (EIGRP)**
- **router eigrp**
- **set metric (EIGRP)**
- **show ip eigrp interfaces**
- **show ip eigrp neighbors**
- **show ip eigrp topology**
- **show ip eigrp traffic**
- **show ip eigrp vrf interfaces**
- **show ip eigrp vrf neighbors**
- **show ip eigrp vrf topology**
- **show ip eigrp vrf traffic**
- **timers active-time**
- **timers nsf route-hold**
- **traffic-share balanced**
- **variance (EIGRP)**

Integrated IS-IS Commands

Use the following commands to configure and monitor the Intermediate System-to-Intermediate System (IS-IS) routing protocol:

- **area-password**
- **authentication key-chain**
- **authentication mode**
- **authentication send-only**
- **default-information originate (IS-IS)**
- **domain-password**
- **ip router isis**
- **isis authentication key-chain**
- **isis authentication mode**
- **isis authentication send-only**
- **isis circuit-type**
- **isis csnp-interval**
- **isis display delimiter**
- **isis hello padding**
- **isis hello-multiplier**
- **isis lsp-interval**
- **isis mesh-group**
- **isis metric**
- **isis network point-to-point**
- **isis password**
- **isis priority**
- **isis retransmit-interval**
- **isis retransmit-throttle-interval**
- **is-type**
- **lsp-gen-interval (IS-IS)**
- **net**
- **partition avoidance**
- **prc-interval**
- **router isis**
- **show isis database**
- **show isis spf-log**
- **show isis topology**
- **spf-interval**
- **summary-address (IS-IS)**

Multiprotocol BGP Commands

Use the following commands to configure and monitor multiprotocol BGP:

- `address-family ipv4 (BGP)`
- `address-family nsap`
- `address-family vpnv4`
- `clear bgp nsap`
- `clear bgp nsap dampening`
- `clear bgp nsap external`
- `clear bgp nsap flap-statistics`
- `clear bgp nsap peer-group`
- `ip dvmrp metric`
- `ip multicast cache-headers`
- `redistribute (BGP to ISO IS-IS)`
- `redistribute (ISO ISIS to BGP)`
- `redistribute dvmrp`
- `show bgp nsap`
- `show bgp nsap community`
- `show bgp nsap community-list`
- `show bgp nsap dampened-paths`
- `show bgp nsap filter-list`
- `show bgp nsap flap-statistics`
- `show bgp nsap inconsistent-as`
- `show bgp nsap neighbors`
- `show bgp nsap paths`
- `show bgp nsap quote-regexp`
- `show bgp nsap regexp`
- `show bgp nsap summary`
- `show ip bgp ipv4 multicast`
- `show ip bgp ipv4 multicast summary`

ODR Commands

Use the following commands to configure and monitor the On-Demand Routing (ODR) routing protocol:

- `router odr`
- `timers basic (ODR)`

OSPF Commands

Use the following commands to configure and monitor the Open Shortest Path First (OSPF) routing protocol:

- **area authentication**
- **area default-cost**
- **area filter-list**
- **area nssa**
- **area nssa translate**
- **area range**
- **area sham-link cost**
- **area stub**
- **area virtual-link**
- **auto-cost**
- **capability ll**
- **capability vrf-lite**
- **clear ip ospf**
- **compatible rfc1583**
- **default-information originate (OSPF)**
- **default-metric (OSPF)**
- **discard-route**
- **distance ospf**
- **domain-tag**
- **ignore lsa mospf**
- **ip ospf authentication**
- **ip ospf authentication-key**
- **ip ospf cost**
- **ip ospf database-filter all out**
- **ip ospf dead-interval**
- **ip ospf demand-circuit**
- **ip ospf flood-reduction**
- **ip ospf hello-interval**
- **ip ospf message-digest-key**
- **ip ospf mtu-ignore**
- **ip ospf name-lookup**
- **ip ospf network**
- **ip ospf priority**
- **ip ospf resync-timeout**

- **ip ospf retransmit-interval**
- **ip ospf transmit-delay**
- **limit retransmissions**
- **log-adjacency-changes**
- **max-area-addresses**
- **neighbor (OSPF)**
- **neighbor database-filter all out**
- **network area**
- **router-id**
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- **show ip ospf**
- **show ip ospf border-routers**
- **show ip ospf database**
- **show ip ospf flood-list**
- **show ip ospf interface**
- **show ip ospf neighbor**
- **show ip ospf request-list**
- **show ip ospf retransmission-list**
- **show ip ospf sham-links**
- **show ip ospf summary-address**
- **show ip ospf virtual-links**
- **summary-address (OSPF)**
- **timers pacing flood**
- **timers pacing lsa-group**
- **timers pacing retransmission**
- **timers spf**
- **timers throttle spf**

Protocol-Independent Commands

Use the following protocol-independent commands to configure and monitor routing protocols.

- **accept-lifetime**
- **dampening**
- **distance (IP)**
- **distribute-list in (IP)**
- **distribute-list out (IP)**
- **ip default-network**
- **ip local policy route-map**

- **ip policy route-map**
- **ip rip v2-broadcast**
- **key chain**
- **key**
- **key-string (authentication)**
- **match interface (IP)**
- **match ip address**
- **match ip next-hop**
- **match ip route-source**
- **match length**
- **match metric (IP)**
- **match route-type (IP)**
- **match tag**
- **maximum-paths**
- **passive-interface**
- **redistribute (IP)**
- **route-map (IP)**
- **send-lifetime**
- **set automatic-tag**
- **set default interface**
- **set interface**
- **set ip default next-hop**
- **set ip default next-hop verify-availability**
- **set ip next-hop**
- **set ip next-hop verify-availability**
- **set ip precedence**
- **set level (IP)**
- **set local-preference**
- **set metric (BGP, OSPF, RIP)**
- **set metric-type**
- **set next-hop**
- **set tag (IP)**
- **show dampening interface**
- **show interface dampening**
- **show ip cache policy**
- **show ip local policy**
- **show ip policy**
- **show ip protocols**

- **show ip route**
- **show ip route summary**
- **show ip route supernets-only**
- **show key chain**
- **show route-map**
- **traffic-share min**

RIP Commands

Use the following commands to configure and monitor the Routing Information Protocol (RIP):

- **auto-summary (RIP)**
- **default-information originate (RIP)**
- **default-metric (RIP)**
- **flash-update-threshold**
- **input-queue**
- **ip rip authentication key-chain**
- **ip rip authentication mode**
- **ip rip receive version**
- **ip rip send version**
- **ip rip triggered**
- **ip split-horizon (RIP)**
- **ip summary-address rip**
- **neighbor (RIP)**
- **network (RIP)**
- **offset-list (RIP)**
- **output-delay**
- **router rip**
- **show ip rip database**
- **timers basic (RIP)**
- **validate-update-source**
- **version**

