IP Router Command Reference

Command Hierarchies

Configuration Commands

```
config
    — router [router-name]
        — aggregate ip-prefix/ip-prefix-length [summary-only] [as-set] [aggregator as-number: ip-
            address] [community comm-id] [black-hole | indirect ip-address]
        — no aggregate ip-prefix/mask
        — autonomous-system autonomous-system
        — no autonomous-system
        — confederation confed-as-num members as-number [as-number...(up to 15 max)]
        — no confederation [confed-as-num members as-number....(up to 15 max)]
        — ecmp max-ecmp-routes
        — no ecmp
        — fib-priority {high | standard}
        — [no] ignore-icmp-redirect
        — [no] ip-fast-reroute
        — mc-maximum-routes number [log-only] [threshold threshold]
        — no mc-maximum-routes
        — mpls-labels
            — static-label max-lsp-labels number static-svc-labels number
            — no static-label
        — multicast-info policy-name
        — no multicast-info
        — multicast-info
            — description description-string
            — no description
        — router-id ip-address
        — no router-id
        — service-prefix {ip-prefix/mask | ip-prefix netmask}[exclusive]
        — no service-prefix ip-prefix/mask | ip-prefix netmask}
        — sgt-qos
            — application dscp-app-name dscp {dscp-value | dscp-name}
            — application dot1p-app-name dot1p dot1p-priority
            — no application {dscp-app-name | dot1p-app-name}
            — dscp dscp-name fc fc-name
            — [no] dscp dscp-name
        — single-sfm-overload [holdoff-time holdoff-time]
        — no single-sfm-overload
        — [no] static-route {ip-prefix/prefix-length | ip-prefix netmask} [preference preference] [met-
            ric metric] [tag tag] [community comm-id] [enable | disable] next-hop ip-int-name | ip-
            address [mcast-family] [bfd-enable | {cpe-check cpe-ip-address [interval seconds] [drop-
            count count] [log]}] [ldp-sync]
        — [no] static-route {ip-prefix/prefix-length | ip-prefix netmask} [preference preference] [met-
            ric metric] [tag tag] [community comm-id] [enable | disable] indirect ip-address [ldp |
            rsvp-te [disallow-igp]] [cpe-check cpe-ip-address [interval seconds] [drop-count count]
            [log]]
        — [no] static-route {ip-prefix/prefix-length | ip-prefix netmask} [preference preference] [met-
            ric metric] [tag tag] [community comm-id] [enable | disable] black-hole [mcast-family]
        — [no] triggered-policy
```

Router BFD commands

```
config
    — router
        — bfd
        — bfd-template name [create]
        — bfd-template name
                — transmit-interval transmit-interval
                — no transmit-interval
                — receive-interval receive-interval
                — no receive-interval
                — cv-tx transmit-interval
                — no cv-tx
                — echo-receive echo-interval
                — no echo-receive
                — multiplier multiplier
                — no multiplier
                — [no] type cpm-np
```

Router L2TP Commands

```
config
    — router [router-name]
        — l2tp
                        — calling-number-format ascii-spec
                        — no calling-number-format
                        — challenge {always}
                        — no challenge
                        — destruct-timeout destruct-timeout
                        — no destruct-timeout
                        — exclude-avps calling-number
                        — no exclude-avps
                        — group tunnel-group-name [create]
                        — no group tunnel-group-name
                                — avp-hiding sensitive | always
                                — no avp-hiding
                                — challenge always
                                — no challenge
                                — description description-string
                                — no description
                                — destruct-timeout destruct-timeout
                                — no destruct-timeout
                                — hello-interval hello-interval
                                — no hello-interval
                                — idle-timeout idle-timeout
                                — no idle-timeout
                                — lns-group lns-group-id
                                — no lns-group
                                — load-balance-method {per-session|per-tunnel}
                                — no load-balance-method
                                — local-address ip-address
                                — no local-address
                                — local-name host-name
                                — no local-name
                                — max-retries-estab max-retries
                                — no max-retries-estab
                                — max-retries-not-estab max-retries
                                — no max-retries-not-estab
                                — password password [hash | hash2]
                                — no password
                                — ppp
                                        — authentication {chap|pap|pref-chap}
                                        — authentication-policy auth-policy-name
                                        — no authentication-policy
                                        — default-group-interface ip-int-name service-id service-id
                                        — no default-group-interface
                                        — keepalive seconds [hold-up-multiplier multiplier]
                                        — no keepalive
                                        — mtu mtu-bytes
                                        — no mtu
                                        — [no] proxy-authentication
                                        — [no] proxy-lcp
                                        — user-db local-user-db-name
                                        — no user-db
```

- — **session-assign-method** *weighted*
- — **no** **session-assign-method**
- — **session-limit** *session-limit*
- — **no** **session-limit**
- — **tunnel** *tunnel-name* [**create**]
- — **no** **tunnel** *tunnel-name*
  - — [**no**] **auto-establish**
  - — **avp-hiding** {**never** | **sensitive** | **always**}
  - — **no** **avp-hiding**
  - — **challenge** *challenge-mode*
  - — **no** **challenge**
  - — **description** *description-string*
  - — **no** **description**
  - — **destruct-timeout** *destruct-timeout*
  - — **no** **destruct-timeout**
  - — **hello-interval** *hello-interval*
  - — **hello-interval** **infinite**
  - — **no** **hello-interval**
  - — **idle-timeout** *idle-timeout*
  - — **idle-timeout** **infinite**
  - — **no** **idle-timeout**
  - — **load-balance-method** {**per-session**|**per-tunnel**}
  - — **no** **load-balance-method**
  - — **local-address** *ip-address*
  - — **no** **local-address**
  - — **local-name** *host-name*
  - — **no** **local-name**
  - — **max-retries-estab** *max-retries*
  - — **no** **max-retries-estab**
  - — **max-retries-not-estab** *max-retries*
  - — **no** **max-retries-not-estab**
  - — **password** *password* [**hash** | **hash2**]
  - — **no** **password**
  - — **peer** *ip-address*
  - — **no** **peer**
  - — **preference** *preference*
  - — **no** **preference**
  - — **remote-name** *host-name*
  - — **no** **remote-name**
  - — **session-limit** *session-limit*
  - — **no** **session-limit**
  - — [**no**] **shutdown**
- — **next-attempt** {**same-preference-level** | **next-preference-level**}
- — **no** **next-attempt**
- — **replace-result-code** *code* [code...(upto 3 max)]
- — **no** **replace-result-code**
- — **peer-address-change-policy** {**accept** | **ignore** | **reject**}
- — **receive-window-size** *[4..1024]*
- — **no** **receive-window-size**
- — [**no**] **shutdown**

```
configure
    — router
        — l2tp
            — tunnel-selection-blacklist
                — add-tunnel never
                — add-tunnel on reason>[reason...(upto 8 max)]
                — no add-tunnel
                — add-tunnel
                — max-list-length count
                — no max-list-length
                — max-time minutes
                — no max-time
                — timeout-action action
                — no timeout-action
```

Router Interface Commands

config
  — **router** [*router-name*]
    — [**no**] **interface** *ip-int-name* [**unnumbered-mpls-tp**]
      — **address** {*ip-address/mask* | *ip-address netmask*} [**broadcast** {**all-ones** | **host-ones**}]
      — **no address**
      — [**no**] **allow-directed-broadcasts**
      — **arp-timeout** *seconds*
      — **no arp-timeout**
      — **bfd** *transmit-interval* [**receive** *receive-interval*] [**multiplier** *multiplier*] [**echo-receive** *echo-interval* [**type cpm-np**]
      — **no bfd**
      — **cflowd** {**acl** | **interface**} [**direction**]
      — **no cflowd**
      — **cpu-protection** *policy-id*
      — **no cpu-protection**
      — **delayed-enable** *seconds*
      — **no delayed-enable**
      — **description** *description-string*
      — **no description**
      — **dist-cpu-protection** *policy-name*
      — **no dist-cpu-protection**
      — **egress**
        — **filter ip** *ip-filter-id*
        — **filter ipv6** *ipv6-filter-id*
        — **no filter** [**ip** *ip-filter-id*] [**ipv6** *ipv6-filter-id*]
      — [**no**] **enable-ingress-stats**
      — [**no**] **enable-mac-accounting**
      — **icmp**
        — [**no**] **mask-reply**
        — **redirects** [*number seconds*]
        — **no redirects**
        — **ttl-expired** [*number seconds*]
        — **no ttl-expired**
        — **unreachables** [*number seconds*]
        — **no unreachables**
      — **if-attribute**
        — [**no**] **if-admin-group** *group-name* [*group-name*...(upto 5 max)]
        — [**no**] **if-admin-group** *group-name* [*group-name*...(upto 5 max)]
      — **ingress**
        — **filter ip** *ip-filter-id*
        — **filter ipv6** *ipv6-filter-id*
        — **no filter** [**ip** *ip-filter-id*][**ipv6** *ipv6-filter-id*]
        — [**no**] **flowspec**
        — [**no**] **flowspec-ipv6**
      — **lag-link-map-profile** *lnk-map-profile-id*
      — **no lag-link-map-profile**
      — [**no**] **ldp-shortcut**
      — **ldp-sync-timer** *seconds*
      — **no ldp-sync-timer**
      — [**no**] **local-proxy-arp**
      — [**no**] **loopback**
      — **lsr-load-balancing** *hashing-algorithm*

- — no **lsr-load-balancing**
- — **mac** *ieee-mac-addr*
- — no **mac**
- — [no] **multihoming** **primary|secondary** [**hold-time** *holdover-time*]
- — **network-domain** *network-domain-name*
- — no **network-domain**
- — [no] **ntp-broadcast**
- — **port** *port-name*
- — no **port**
- — [no] **proxy-arp-policy**
- — [no] **ptp-hw-assist**
- — **qos-route-lookup** [**source** | **destination**]
- — no **qos-route-lookup**
- — **qos** *network-policy-id* [**egress-port-redirect-group** *queue-group-name*] [**egress-instance** *instance-id*]] [**ingress-fp- redirect-group** *queue-group-name* **ingress-instance** *instance-id*]
- — no **qos**
- — [no] **remote-proxy-arp**
- — **secondary** {[*ip-addr/mask* | *ip-addr*][*netmask*]} [**broadcast** {*all-ones* | *host-ones*}] [**igp-inhibit**]
- — no **secondary** [*ip-addr/mask* | *ip-addr*][*netmask*]
- — [no] **shutdown**
- — **static-arp** *ip-addr ieee-mac-addr unnumbered*
- — no **static-arp** *unnumbered*
- — [no] **strip-label**
- — **tos-marking-state** {**trusted** | **untrusted**}
- — no **tos-marking-state**
- — **unnumbered** [*ip-addr* | *ip-int-name*]
- — no **unnumbered**
- — [no] **urpf-check**
    - — **mode** {**strict|loose|strict-no-ecmp**}
    - — no **mode**
- — [no] **mh-primary-interface**
    - — **address** {*ip-address/mask* | *ip-address netmask*}
    - — no **address**
    - — **description** *description-string*
    - — no **description**
    - — [no] **shutdown**
- — [no] **mh-secondary-interface**
    - — **hold-time** *holdover-time*
    - — no **hold-time**
    - — **address** {*ip-address/mask* | *ip-address netmask*}
    - — no **address**
    - — **description** *description-string*
    - — no **description**
    - — [no] **shutdown**

For router interface VRRP commands, see

Router Interface IPv6 Commands

```
config
    — router [router-name]
        — [no] interface ip-int-name
            — [no] ipv6
                — address ipv6-address/prefix-length [eui-64]
                — no address ipv6-address/prefix-length
                — bfd transmit-interval [receive receive-interval] [multiplier multiplier]
                    [echo-receive echo-interval [type cpm-np]
                — no bfd
                — icmp6
                    — packet-too-big [number seconds]
                    — no packet-too-big
                    — param-problem [number seconds]
                    — no param-problem
                    — redirects [number seconds]
                    — no redirects
                    — time-exceeded [number seconds]
                    — no time-exceeded
                    — unreachables [number seconds]
                    — no unreachables
                — [no] local-proxy-nd
                — neighbor ipv6-address [mac-address]
                — no neighbor ipv6-address
                — proxy-nd-policy policy-name [ policy-name...(up to 5 max)]
                — no proxy-nd-policy
                — [no] qos-route-lookup
                — [no] urpf-check
                    — mode {strict | loose | strict-no-ecmp}
                    — no mode
            — [no] qos-route-lookup
            — [no] urpf-check
                — mode {strict | loose}
                — no mode
```

Router Advertisement Commands

config
    — **router**
        — [**no**] **router-advertisement**
            — [**no**] **interface** *ip-int-name*
                — **current-hop-limit** *number*
                — **no current-hop-limit**
                — [**no**] **managed-configuration**
                — **max-advertisement-interval** *seconds*
                — **no max-advertisement-interval**
                — **min-advertisement-interval** *seconds*
                — **no min-advertisement-interval**
                — **mtu** *mtu-bytes*
                — **no mtu**
                — [**no**] **other-stateful-configuration**
                — **prefix** [*ipv6-prefix/prefix-length*]
                    — [**no**] **autonomous**
                    — [**no**] **on-link**
                    — **preferred-lifetime** {*seconds* | **infinite**}
                    — **no preferred-lifetime**
                    — **valid-lifetime** {*seconds* | **infinite**}
                    — **no valid-lifetime**
              — **reachable-time** *milli-seconds*
              — **no reachable-time**
              — **retransmit-time** *milli-seconds*
              — **no retransmit-time**
              — **router-lifetime** *seconds*
              — **no router-lifetime**
              — [**no**] **shutdown**
              — [**no**] **use-virtual-mac**

Show Commands

show
— **router** *router-instance*
— **router service-name** *service-name*
    — **aggregate** [**family**] [*active*]
    — **arp** [*ip-int-name* | *ip-address/mask* | **mac** *ieee-mac-address* | **summary**] [**local** | **dynamic** | **static** | **managed**]
    — **authentication**
        — **statistics**
        — **statistics interface** [*ip-int-name* | *ip-address*]
        — **statistics policy** *name*
    — **bfd**
        — **bfd-template** *template-name*
        — **interface** [*interface-name*]
        — **session** [**src** *ip-address* [**dst** *ip-address*] | [**detail**]]
        — **session** [**type** *type*]
        — **session** [**summary**]
    — **dhcp**
        — **statistics** [*ip-int-name* | *ip-address*]
        — **summary**
    — **dhcp6**
        — **statistics** [*ip-int-name* | *ip-address*]
        — **summary**
    — **ecmp**
    — **fib** *slot-number* [*family*] [*ip-prefix/prefix-length* [*longer*]] [*secondary*]
    — **fib** *slot-number* [*family*] **summary**
    — **fib** *slot-number* **nh-table-usage**
    — **icmp6**
        — **interface** [*interface-name*]
    — **interface** [{[*ip-address* | *ip-int-name*] [**detail**] [*family*]} | [**summary**] | [**exclude-services**]
    — **interface** *family* [**detail**]
    — **interface** <*ip-address* | *ip-int-name*> **stastistics**
    — **l2tp**
        — **group** [*tunnel-group-name* [**statistics**]]
        — **group connection-id** *connection-id* [**detail**]|
        — **group** [**detail**] [**session-id** *session-id* (v2)] [**state** *session-state*][**peer** *ip-address*] [**group** *group-name*] [**assignment-id** *assignment-id*] [**local-name***local-host-name*] [**remote-name** *remote-host-name*] [**tunnel-id** *tunnel-id (v2)*]|
        — **session** [**detail**] [**state** *session-state*] [**peer** *ip-address*] [**group** *group-name*] [**assignment-id** *assignment-id*] [**local-name** *local-host-name*] [**remote-name** *remote-host-name*] [**control-connection-id** *connection-id (v3)*]
        — **statistics**
        — **tunnel** [**statistics**] [**detail**] [**peer** *ip-address*] [**state** *tunnel-state*] [**remote-connection-id** *remote-connection-id (v3)*] [**group** *group-name*] [**assignment-id** *assignment-id*] [**local-name** *host-name*] [**remote-name** *host-name*]| **tunnel** [**statistics**] [**detail**] [**peer** *ip-address*] [**state** *tunnel-state*] [**remote-tunnel-id** *remote-tunnel-id (v2)*] [**group** *group-name*] [**assignment-id** *assignment-id*] [**local-name** *host-name*] [**remote-name** *host-name*]
        — **tunnel tunnel-id** *tunnel-id (v2)* [**statistics**] [**detail**]
        — **tunnel connection-id** *connection-id (v3)* [**statistics**] [**detail**]
    — **ldp**
        — **bindings active**
    — **mvpn**
    — **neighbor** [*ip-address* | *ip-int-name* | **mac** *ieee-mac-address* | **summary**]

— **network-domains** [**detail**] [*network-domain-name*]
— **policy** [*name* | **damping** | **prefix-list** *name* | **as-path** *name* | **community** *name* | **admin**]
— **policy-edits**
— **route-table** [*ip-prefix*[*/prefix-length*] [**longer** | **exact** | **protocol**]] | [**protocol** *protocol-name*]
  [**next-hop-type tunneled**][**all**]]
— **route-table** [**family**] **summary**
— **route-table** *tunnel-endpoints* [*ip-prefix*[*/prefix-length*] [**longer** | **exact** | **protocol**]
— **route-table** [*ip-prefix*[*/prefix-length*] **next-hop-type tunneled**
— **rtr-advertisement** [**interface** *interface-name*] [**prefix** *ipv6-prefix[/prefix-length*] [**conflicts**]
— **service-prefix**
— **sgt-qos**
    — **application** [*app-name*] [**dscp-dot1p**]
    — **dscp-map** [*dscp-name*]
— **static-arp** [*ip-address* | *ip-int-name* | **mac** *ieee-mac-addr*]
— **static-route** [family] [[*ip-prefix /mask*]| [**preference** *preference*] | [**next-hop** *ip-address*] |
  [**tag** *tag*] [**detail**]
— **status**
— **tms** routes
— **tunnel-table** [*ip-address*[*/mask*]] | [**protocol** *protocol* | **sdp** *sdp-id*] [**summary**]
— **neighbor** [*interface-name*]

Clear Commands

clear
— **router** [*router-instance*]
    — **arp** {**all** | *ip-addr* | **interface** {*ip-int-name* | *ip-addr*}}
    — **bfd**
        — **session** **src-ip** *ip-address* **dst-ip** *ip-address*
        — **statistics** **src-ip** *ip-address* **dst-ip** *ip-address*
        — **statistics** **all**
    — **dhcp**
        — **statistics** [*ip-int-name* | *ip-address*]
    — **dhcp6**
        — **statistics** [*ip-int-name* | *ip-address*]
    — **forwarding-table** [*slot-number*]
    — **grt-lookup**
    — **icmp-redirect-route** {**all** | *ip-address*}
    — **icmp6 all**
    — **icmp6 global**
    — **icmp6 interface** *interface-name*
    — **interface** [*ip-int-name* | *ip-addr*] [**icmp**] [urpf-stats] [statistics]
    — **l2tp**
        — **group** *tunnel-group-name*
            — **statistics**
        — **statistics**
        — **tunnel** *tunnel-id*
            — **statistics**
    — **neighbor** {**all** | *ip-address*}
    — **neighbor** [**interface** *ip-int-name* | *ip-address*]
    — **router-advertisement all**
    — **router-advertisement** [**interface** *interface-name*]
    — **forwarding-table** [*slot-number*]
    — **interface** [*ip-int-name* | *ip-addr*] [**icmp**]

Debug Commands

debug
— **trace**
    — **destination** *trace-destination*
    — **enable**
    — [**no**] **trace-point** [**module** *module-name*] [**type** *event-type*] [**class** *event-class*] [**task** *task-name*] [**function** *function-name*]
— **router** *router-instance*
    — **ip**
        — [**no**] **arp**
        — **icmp**
        — **no icmp**
        — **icmp6** [*ip-int-name*]
        — **no icmp6**
        — [**no**] **interface** [*ip-int-name* | *ip-address*]
        — [**no**] **neighbor**
        — **packet** [*ip-int-name* | *ip-address*] [**headers**] [*protocol-id*]
        — **no packet** [*ip-int-name* | *ip-address*]
        — **route-table** [*ip-prefix/prefix-length*] [**longer**]
        — **no route-table**
        — **tunnel-table** [*ip-address*] [**ldp** | **rsvp** [**tunnel-id** *tunnel-id*]| **sdp** [**sdp-id** *sdp-id*]]
    — **mtrace**
        — [**no**] **misc**
        — [**no**] **packet** [**query** | **request** | **response**]
    — **tms** [**interface** *tms-interface*] **api** [**detail**] *tms-interface*