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# Chapter 3

## Command List

This chapter lists all the commands in the CLI. The commands are listed in two ways:

- All commands are listed together in a single alphabetic list. See “Complete Command List” on page 3-1.
- Commands are listed separately for each CLI level (for example, global CONFIG level, BGP4 level, and so on). See “Commands Listed by CLI Level” on page 3-16.

In each list, the page numbers in this reference that describe the commands are listed.

### Complete Command List

The following table lists all the CLI commands on Layer 2 switches and Layer 2/3 routing switches.

**Table 3.1: Complete Layer 2/3 Command List**

aaa	6-1
access-list (standard)	6-2
access-list (extended)	6-3
activate	16-1
address-filter	14-1
advertise-backup	16-1
aggregate-address	14-2
all-client	6-7
always-compare-med	14-2
appletalk address	7-1
appletalk arp-age	6-7
appletalk arp-retransmit-count	6-7
appletalk arp-retransmit-interval	6-7
appletalk cable-range	7-1
appletalk-cable-vlan	17-1

**Table 3.1: Complete Layer 2/3 Command List (Continued)**

appletalk deny	7-1
appletalk deny additional-zones	7-2
appletalk glean-packets	6-8
appletalk permit	7-2
appletalk-ping	4-1
appletalk qos socket	6-8
appletalk routing	7-2
appletalk rtmp-update-interval	6-8
appletalk zip-query-interval	6-8
appletalk zone-name	7-3
area	13-1
area <num>   <ip-addr> virtual-link	13-2
area range	13-3
arp	6-9
as-path-filter	14-2
atalk-proto	17-1
auth-type	16-1
auto-summary	14-3
backup	16-1
backup-hello-interval	16-1
boot system bootp	5-1
boot system flash primary	5-2
boot system flash secondary	5-2
boot system tftp	5-2
bootp-relay-max-hops	6-10
broadcast filter	6-10
broadcast limit	6-11
bsr-candidate	12-1
chassis name	6-12
chassis poll-time	6-12
chassis trap-log	6-12
clear appletalk arp	5-2
clear appletalk cache	5-2

**Table 3.1: Complete Layer 2/3 Command List (Continued)**

clear appletalk route	5-3
clear appletalk traffic	5-3
clear arp	5-3
clear dvmrp cache	5-3
clear dvmrp flow	5-4
clear dvmrp route	5-4
clear ip bgp neighbor	5-4
clear ip bgp traffic	5-5
clear ip cache	5-5
clear ip route	5-5
clear ip vrrp-stat	5-5
clear ipx cache	5-5
clear ipx route	5-6
clear logging	5-6
clear mac-address	5-6
clear pim cache	5-6
clear pim flow	5-6
clear statistics	5-6
clear web-connection	5-7
client-to-client-reflection	14-3
clock	5-7
clock summer-time	6-12
clock timezone	6-12
cluster-id	14-4
community-filter	14-4
confederation	14-5
configure terminal	5-7
confirm-port-up	6-13
console	6-14
copy flash flash	5-7
copy flash tftp	5-8
copy running-config tftp	5-8
copy startup-config tftp	5-8

**Table 3.1: Complete Layer 2/3 Command List (Continued)**

copy tftp flash	5-8
copy tftp startup-config	5-9
dampening	14-5
database-overflow-interval	13-3
dead-interval	16-2
decnet-proto	17-2
default-information-originate	13-3, 14-6
default-local-preference	14-6
default-metric	14-6, 13-4
default-vlan-id	17-2
default-gateway	11-1
default-metric	13-4, 9-1
default-vlan-id	6-14
deny redistribute	13-4, 9-1
dhcp-gateway-list	6-14, 7-3
disable	7-3
distance	13-5, 14-6
enable	7-3
enable <password>	4-1
enable <username> <password>	4-2
enable password	6-15
enable skip-page-display	6-15
enable snmp config-radius	6-15
enable snmp config-tacacs	6-16
enable telnet authentication	6-16
enable telnet password	6-16
encap-control	8-1
end	6-16
erase flash primary	5-9
erase flash secondary	5-9
erase startup-config	5-9
exclude-ports	10-1, 10-3
exit	6-16

**Table 3.1: Complete Layer 2/3 Command List (Continued)**

external-lsdb-limit	13-6
fastboot	4-2, 5-10
fast-external-fallover	14-7
fast port-span	6-17
fast-reload	5-10
fast uplink-span	6-17
filter	9-2
filter-group	9-3
flow-control	6-17, 7-4
gig-default	6-18, 7-4
graft-retransmit-timer	11-2
hello-interval	16-2
hostname	6-18
interface	6-18
ip access-list	6-19
ip access-policy	6-20
ip access-policy-group	7-5
ip address	6-23, 7-5
ip-address	16-2
ip arp-age	6-23
ip as-path	6-23
ip community-list	6-24
ip bootp-gateway	7-6
ip default-gateway	6-24
ip default-network	6-25
ip directed-broadcast	6-25
ip dns domain-name	6-25
ip dns server-address	6-25
ip dont-advertise	7-6
ip dont-use-acl	6-26
ip dvmrp advertise local	7-6
ip dvmrp metric	7-7
ip dvmrp ttl-threshold	7-7

**Table 3.1: Complete Layer 2/3 Command List (Continued)**

ip encapsulation	7-7
ip follow	7-7
ip forward-protocol	6-27
ip helper-address	7-8
ip igmp group-membership-time	6-27
ip igmp max-response-time	6-28
ip igmp query-interval	6-28
ip irdp	6-28
ip load-sharing	6-28
ip metric	7-8
ip mroute	6-29
ip mtu	7-9
ip multicast	6-29
ip-multicast-disable	7-9
ip multicast-routing	6-30
ip ospf area	7-9
ip ospf authentication-key	7-9
ip ospf cost	7-10
ip ospf database-filter	7-10
ip ospf dead-interval	7-11
ip ospf hello-interval	7-11
ip ospf md5-authentication	7-11
ip ospf passive	7-12
ip ospf priority	7-12
ip ospf retransmit-interval	7-12
ip ospf transmit-delay	7-12
ip pim-sparse	7-13
ip-policy	7-13
ip prefix-list	6-30
ip-proto	17-3
ip proxy-arp	6-31
ip rarp	6-31
ip rip	7-13

Table 3.1: Complete Layer 2/3 Command List (Continued)

ip rip filter-group	7-13
ip rip learn-default	7-14
ip rip poison-reverse	7-14
ip route	6-31
ip router-id	6-32
ip show-subnet-length	6-32
ip srp address preference	7-14
ip srp address track-port	7-14
ip srp address vir-rtr-ip	7-15
ip srp address vir-rtr-ip other-rtr-ip	7-15
ip srp <ip-addr> keep-alive-time	7-15
ip srp <ip-addr> router-dead-time	7-16
ip-subnet	17-4
ip source-route	6-32
ip ttl	6-32
ip tunnel	7-16
ip vrrp	7-16
ip vrrp	7-16
ipg10	7-17
ipg100	7-17
ipg1000	7-18
ipx forward-filter	6-33
ipx forward-filter-group	7-18
ipx gns-reply-disable	7-18
ipx gns-round-robin	6-33
ipx netbios-allow	6-33, 7-19
ipx network	7-19
ipx-network	17-4
ipx output-gns-filter	7-19
ipx-proto	17-5
ipx rip-filter	6-33
ipx rip-filter-group	6-34, 7-19
ipx rip-max-packetsize	7-20

**Table 3.1: Complete Layer 2/3 Command List (Continued)**

ipx rip-multiplier	7-20
ipx sap-access-list	6-34
ipx sap-filter	6-35
ipx sap-filter-group	6-35, 7-20
ipx sap-interval	7-21
ipx sap-max-packetsize	7-21
ipx sap-multiplier	7-21
ipx update-time	7-21
kill	5-10
learn-default	9-3
local-as	14-7
lock-address ethernet	6-35
logging	6-35
m2 active-management	6-37
m2 load-standby-source	6-38
m2 sync boot-standby	6-38
m2 sync-running-config	5-11, 6-39
m2 temperature shutdown	5-11
m2 temperature warning	5-11
mac-age-time	6-39
mac filter	6-39
mac filter log_en	6-41
mac filter-group	7-22
mac filter-group log_en	7-22
match	15-1
max-attribute-entries	14-8
maximum-paths	14-8
max-neighbors	14-8
maximum-number-of-lsa	13-6
max-routes	14-9, 13-7
message-interval	12-2
metric	8-2
metric-type	13-7

**Table 3.1: Complete Layer 2/3 Command List (Continued)**

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mirror-port ethernet	6-41
module	6-42
monitor	7-22
mrinfo	5-12
mtracert	5-12
multicast filter	6-43
multicast limit	6-44
nbr-timeout	11-2
neighbor	14-9, 9-4
netbios-proto	17-5
network	14-11
no	6-44
non-preempt-mode	16-2
other-proto	17-6
owner	16-2
page-display	5-13
password-change	6-44
perf-mode	6-45
permit redistribute	13-8, 9-4
phy-mode	7-22
pim-graft-retransmit-timer	12-2
pim-hello-timer	12-3
pim-inactivity-timer	12-3
pim-nbr-timeout	12-3
pim-prune-timer	12-3
ping	4-2
port <num> disable	18-1
port <num> keepalive	18-2
port <num> status_code	18-2
port <num> url	18-3
port-name	7-23
priority	7-23, 17-7
privilege	6-46

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**Table 3.1: Complete Layer 2/3 Command List (Continued)**

probe-interval	11-2
prune-age	11-2
qos mechanism	6-47
qos name	6-47
qos profile	6-47
qos tagged-priority	6-48
quit	6-49
radius-server	6-49
rarp	6-50
redistribute connected	14-12
redistribute ospf	14-12
redistribute rip	14-13
redistribute static	14-13
relative-utilization	6-50
redistribution	13-8, 9-5
reload	5-14
report-interval	11-3
reset	5-14
rfc1583-compatibility	13-9
rmon alarm	6-51
rmon event	6-51
rmon history	6-51
route-discard-time	11-3
route-expire-time	11-3
route-map	6-52
route-only	6-52, 7-24
router appletalk	6-53
router bgp	6-53
router dvmrp	6-53
router srp	6-55
router-interface	17-7
router ipx	6-54
router ospf	6-54

**Table 3.1: Complete Layer 2/3 Command List (Continued)**

router pim	6-54
router rip	6-54
router vrrp	6-55
rp-address	12-4
rp-candidate	12-4
server port	6-55
server real-name	6-56
service password-encryption	6-56
set	15-2
show appletalk arp	20-1
show appletalk cache	20-1
show appletalk globals	20-2
show appletalk interface	20-2
show appletalk route	20-3
show appletalk traffic	20-3
show appletalk zone	20-4
show arp	20-5
show chassis	20-5
show clock	20-6
show configuration	20-6
show default	20-6
show flash	20-8
show interfaces	20-8
show interfaces brief	20-9
show ip	20-9
show ip access-lists	20-10
show ip as-path-access-lists	20-10
show ip bgp <ip-addr>	20-10
show ip bgp attribute-entries	20-10
show ip bgp neighbors	20-11
show ip bgp routes	20-12
show ip bgp summary	20-13
show ip cache	20-14

**Table 3.1: Complete Layer 2/3 Command List (Continued)**

show ip community-access-lists	20-14
show ip dvmrp	20-14
show ip dvmrp flowcache	20-15
show ip dvmrp graft	20-15
show ip dvmrp group	20-15
show ip dvmrp interface	20-16
show ip dvmrp mcache	20-16
show ip dvmrp nbr	20-16
show ip dvmrp prune	20-17
show ip dvmrp route	20-17
show ip dvmrp traffic	20-17
show ip flow-cache	20-18
show ip interface	20-18
show ip mroute	20-18
show ip multicast	20-18
show ip ospf area	20-18
show ip ospf border-routers	20-19
show ip ospf config	20-19
show ip ospf database external-link-state	20-20
show ip ospf general	20-21
show ip ospf interface	20-21
show ip ospf database link-state	20-22
show ip ospf neighbor	20-22
show ip ospf routes	20-23
show ip ospf trap	20-23
show ip ospf virtual-link	20-24
show ip ospf virtual-neighbor	20-24
show ip pim bsr	20-24
show ip pim flowcache	20-25
show ip pim group	20-25
show ip pim interface	20-26
show ip pim mcache	20-26
show ip pim nbr	20-27

**Table 3.1: Complete Layer 2/3 Command List (Continued)**

show ip pim prune	20-27
show ip pim rp-candidate	20-27
show ip pim rp-hash	20-28
show ip pim rp-map	20-28
show ip pim rp-set	20-28
show ip pim sparse	20-29
show ip pim traffic	20-29
show ip policy	20-30
show ip prefix-lists	20-30
show ip rip	20-30
show ip route	20-31
show ip srp	20-18
show ip traffic	20-32
show ip vrrp	20-32
show ipx	20-33
show ipx cache	20-33
show ipx interface	20-33
show ipx route	20-34
show ipx servers	20-34
show ipx traffic	20-35
show logging	20-35
show mac-address	20-57
show mac-address statistics	20-58
show media	20-59
show module	20-59
show priority-mapping	20-59
show qos-profiles	20-60
show relative-utilization	20-60
show reload	20-60
show rmon alarm	20-61
show rmon event	20-61
show rmon history	20-61
show rmon statistics	20-61

**Table 3.1: Complete Layer 2/3 Command List (Continued)**

show running-config	20-62
show server	20-62
show snmp server	20-62
show span	20-63
show span vlan	20-64
show statistics	20-64
show tech	20-65
show telnet	20-66
show trunk	20-66
show users	20-67
show version	20-67
show vlans	20-68
show web-connection	20-69
show who	20-69
skip-page-display	5-15
snmp-client	6-56
snmp-server community	6-57
snmp-server contact	6-57
snmp-server enable traps	6-57
snmp-server host	6-58
snmp-server location	6-59
snmp-server pw-check	6-59
snmp-server trap-source	6-59
sntp poll-interval	6-59
sntp server	6-59
sntp sync	5-15
spanning-tree	6-60, 7-24, 17-7
spanning-tree <parameter>	6-60
spanning-tree single <parameter>	6-61
speed-duplex	7-24
spt-threshold	12-5
summary-address	13-11
stop-traceroute	4-3

**Table 3.1: Complete Layer 2/3 Command List (Continued)**

---

summary-address	13-9
synchronization	14-13
system-max	6-61
table-map	14-14
tacacs-server	6-62
tagged	17-8
tag-type	6-62
tcp keepalive	19-2
telnet	5-15
telnet-client	6-63
telnet-server	6-63
telnet-timeout	6-63
timers	13-10, 14-14
traceroute	4-3
track-port	16-3
trap	13-11
trigger-interval	11-4
trunk	6-64
ttl-threshold	8-2
unknown-unicast limit	6-65
untagged	17-9
update-time	9-5
username	6-65
use-vrrp-path	9-5
vlan	6-66
vlan max-vlans	6-66
web-client	6-66
web-management	6-67
whois	5-16
write memory	6-67
write terminal	6-67

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## Commands Listed by CLI Level

The following sections contain tables that list the CLI commands within each level of the CLI.

### EXEC Level

There are two different levels of EXEC commands, the *User Level* and the *Privileged Level*. The User level commands are at the top of the CLI hierarchy. These are the first commands that you have access to when connected to the switch or router through the CLI. At this level, you can view basic system information and verify connectivity but cannot make any changes to the switch or router configuration. To make changes to the configuration, you must move to other levels of the CLI hierarchy. This is accomplished by the User EXEC level command **enable** at initial log-on. This command takes you to the Privileged EXEC level, from which you can reach the configuration command levels.

**Table 3.2: User EXEC Commands**

appletalk-ping	4-1
enable	4-1
enable <password>	4-1
enable <username> <password>	4-2
fastboot	4-2
ping	4-2
show	4-3
stop-traceroute	4-3
traceroute	4-3

### Privileged Level

The Privileged EXEC level commands primarily enable you to transfer and store switch or router software images and configuration files between the network and the system, and review the configuration.

You reach this level by entering **enable [<password>]** or **enable <username> <password>** at the User EXEC level.

**Table 3.3: Privileged EXEC Commands**

appletalk-ping	5-1
boot system bootp	5-1
boot system flash primary	5-2
boot system flash secondary	5-2
boot system tftp	5-2
clear appletalk arp	5-2
clear appletalk cache	5-2
clear appletalk route	5-3
clear appletalk traffic	5-3
clear arp	5-3

**Table 3.3: Privileged EXEC Commands (Continued)**

clear dvmrp cache	5-3
clear dvmrp flow	5-4
clear dvmrp route	5-4
clear ip bgp neighbor	5-4
clear ip bgp traffic	5-5
clear ip cache	5-5
clear ip route	5-5
clear ip vrrp-stat	5-5
clear ipx cache	5-5
clear ipx route	5-6
clear logging	5-6
clear mac-address	5-6
clear pim cache	5-6
clear pim flow	5-6
clear statistics	5-6
clear web-connection	5-7
clock	5-7
configure terminal	5-7
copy flash flash	5-7
copy flash tftp	5-8
copy running-config tftp	5-8
copy startup-config tftp	5-8
copy tftp flash	5-8
copy tftp startup-config	5-9
erase flash primary	5-9
erase flash secondary	5-9
erase startup-config	5-9
exit	5-9
fastboot	5-10
fast-reload	5-10
kill	5-10
m2 sync-running-config	5-11
m2 temperature shutdown	5-11

**Table 3.3: Privileged EXEC Commands (Continued)**

m2 temperature warning	5-11
mrinfo	5-12
mtrace	5-12
page-display	5-13
ping	5-13
quit	5-14
reload	5-14
reset	5-14
show	5-15
skip-page-display	5-15
sntp sync	5-15
stop-traceroute	5-15
telnet	5-15
traceroute	5-16
whois	5-16
write memory	5-16
write terminal	5-16

## CONFIG Commands

CONFIG commands modify the configuration of a switch or routing switch. This reference describes the following CONFIG CLI levels.

### Global Level

The global CONFIG level allows you to globally apply or modify parameters for ports on the switch or router. You reach this level by entering **configure terminal** at the privileged EXEC level.

**Table 3.4: Global CONFIG Commands**

aaa	6-1
access-list (standard)	6-2
access-list (extended)	6-3
all-client	6-7
appletalk arp-age	6-7
appletalk arp-retransmit-count	6-7
appletalk arp-retransmit-interval	6-7
appletalk glean-packets	6-8
appletalk qos socket	6-8

**Table 3.4: Global CONFIG Commands (Continued)**

---

appletalk rtmp-update-interval	6-8
appletalk zip-query-interval	6-8
arp	6-9
boot system bootp	6-9
boot system flash primary	6-9
boot system flash secondary	6-9
boot system tftp	6-10
bootp-relay-max-hops	6-10
broadcast filter	6-10
broadcast limit	6-11
chassis name	6-12
chassis poll-time	6-12
chassis trap-log	6-12
clock summer-time	6-12
clock timezone	6-12
confirm-port-up	6-13
console	6-14
default-vlan-id	6-14
dhcp-gateway-list	6-14
enable password	6-15
enable skip-page-display	6-15
enable snmp config-radius	6-15
enable snmp config-tacacs	6-16
enable telnet authentication	6-16
enable telnet password	6-16
end	6-16
exit	6-16
fast port-span	6-17
fast uplink-span	6-17
gig-default	6-18
hostname	6-18
interface	6-18
ip access-list	6-19

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**Table 3.4: Global CONFIG Commands (Continued)**

ip access-policy	6-20
ip address	6-23
ip arp-age	6-23
ip as-path	6-23
ip community-list	6-24
ip default-gateway	6-24
ip default-network	6-25
ip directed-broadcast	6-25
ip dns domain-name	6-25
ip dns server-address	6-25
ip dont-use-acl	6-26
ip forward-protocol	6-27
ip igmp group-membership-time	6-27
ip igmp max-response-time	6-28
ip igmp query-interval	6-28
ip irdp	6-28
ip load-sharing	6-28
ip mroute	6-29
ip multicast	6-29
ip multicast-routing	6-30
ip prefix-list	6-30
ip proxy-arp	6-31
ip rarp	6-31
ip route	6-31
ip router-id	6-32
ip show-subnet-length	6-32
ip source-route	6-32
ip ttl	6-32
ipx forward-filter	6-33
ipx gns-round-robin	6-33
ipx netbios-allow	6-33
ipx rip-filter	6-33
ipx rip-filter-group	6-34

**Table 3.4: Global CONFIG Commands (Continued)**

ipx sap-access-list	6-34
ipx sap-filter	6-35
ipx sap-filter-group	6-35
lock-address ethernet	6-35
logging	6-35
m2 active-management	6-37
m2 load-standby-source	6-38
m2 sync boot-standby	6-38
m2 sync running-config	6-39
mac-age-time	6-39
mac filter	6-39
mac filter log_en	6-41
mirror-port ethernet	6-41
module	6-42
multicast filter	6-43
multicast limit	6-44
no	6-44
password-change	6-44
perf-mode	6-45
ping	6-45
privilege	6-46
qos mechanism	6-47
qos name	6-47
qos profile	6-47
qos tagged-priority	6-48
quit	6-49
radius-server	6-49
rarp	6-50
rmon alarm	6-51
rmon event	6-51
rmon history	6-51
route-map	6-52
route-only	6-52

**Table 3.4: Global CONFIG Commands (Continued)**

router appletalk	6-53
router bgp	6-53
router dvmrp	6-53
router srp	6-55
router ipx	6-54
router ospf	6-54
router pim	6-54
router rip	6-54
router vrrp	6-55
server port	6-55
server real-name	6-56
service password-encryption	6-56
show	6-56
snmp-client	6-56
snmp-server community	6-57
snmp-server contact	6-57
snmp-server enable traps	6-57
snmp-server host	6-58
snmp-server location	6-59
snmp-server pw-check	6-59
snmp-server trap-source	6-59
sntp poll-interval	6-59
sntp server	6-59
spanning-tree	6-60
spanning-tree <parameter>	6-60
spanning-tree single <parameter>	6-61
static-mac-address	6-61
system-max	6-61
tacacs-server	6-62
tag-type	6-62
telnet-client	6-63
telnet-server	6-63
telnet-timeout	6-63

**Table 3.4: Global CONFIG Commands (Continued)**

trunk	6-64
unknown-unicast	6-65
username	6-65
vlan	6-66
vlan max-vlans	6-66
web-client	6-66
web-management	6-67
write memory	6-67
write terminal	6-67

**Interface Level**

The interface level allows you to assign or modify specific port parameters on a port-by-port basis. You reach this level by entering **interface ethernet** <portnum>, **interface loopback** <num>, **interface ve** <num>, or **interface pos** <portnum> at the global CONFIG level.

**Table 3.5: Interface Commands**

appletalk address	7-1
appletalk cable-range	7-1
appletalk deny	7-1
appletalk deny additional-zones	7-2
appletalk permit	7-2
appletalk routing	7-2
appletalk zone-name	7-3
dhcp-gateway-list	7-3
disable	7-3
enable	7-3
end	7-4
exit	7-4
flow-control	7-4
gig-default	7-4
ip access-policy-group	7-5
ip address	7-5
ip bootp-gateway	7-6
ip dont-advertise	7-6
ip dvmrp advertise local	7-6

**Table 3.5: Interface Commands (Continued)**

ip dvmrp metric	7-7
ip dvmrp ttl-threshold	7-7
ip encapsulation	7-7
ip follow	7-7
ip helper-address	7-8
ip metric	7-8
ip mtu	7-9
ip-multicast-disable	7-9
ip ospf area	7-9
ip ospf authentication-key	7-9
ip ospf cost	7-10
ip ospf database-filter	7-10
ip ospf dead-interval	7-11
ip ospf hello-interval	7-11
ip ospf md5-authentication	7-11
ip ospf passive	7-12
ip ospf priority	7-12
ip ospf retransmit-interval	7-12
ip ospf transmit-delay	7-12
ip pim-sparse	7-13
ip-policy	7-13
ip rip	7-13
ip rip filter-group	7-13
ip rip learn-default	7-14
ip rip poison-reverse	7-14
ip srp address preference	7-14
ip srp address track-port	7-14
ip srp address vir-rtr-ip	7-15
ip srp address vir-rtr-ip other-rtr-ip	7-15
ip srp <ip-addr> keep-alive-time	7-15
ip srp <ip-addr> router-dead-time	7-16
ip tunnel	7-16
ip vrrp	7-16

**Table 3.5: Interface Commands (Continued)**

ip vrrp auth-type	7-16
ipg10	7-17
ipg100	7-17
ipg1000	7-18
ipx forward-filter-group	7-18
ipx gns-reply-disable	7-18
ipx netbios-allow	7-19
ipx network	7-19
ipx output-gns-filter	7-19
ipx rip-filter-group	7-19
ipx rip-max-packetsize	7-20
ipx rip-multiplier	7-20
ipx sap-filter-group	7-20
ipx sap-interval	7-21
ipx sap-max-packetsize	7-21
ipx sap-multiplier	7-21
ipx update-time	7-21
mac filter-group	7-22
mac filter-group log_en	7-22
monitor	7-22
no	7-22
phy-mode	7-22
port-name	7-23
priority	7-23
quit	7-23
route-only	7-24
show	7-24
spanning-tree	7-24
speed-duplex	7-24
write memory	7-25
write terminal	7-25

**IP Tunnel Level (routers only)**

The IP tunnel level allows you to define parameters for IP-in-IP tunnels to pass data through non-DVMRP and non-PIM IP multicast routers.

You reach this level by entering the **ip tunnel...** command at the interface CONFIG level.

**Table 3.6: IP Tunnel Commands**

encap-control	8-1
end	8-1
exit	8-1
metric	8-2
no	8-2
quit	8-2
show	8-2
ttl-threshold	8-2
write memory	8-2
write terminal	8-3

**Broadcast Filter Level**

The broadcast filter level allows you to assign broadcast filters to specific ports. You reach this level by entering **broadcast filter...** at the global CONFIG level.

**Table 3.7: Broadcast Filter Commands**

end	10-1
exclude-ports	10-1
exit	10-2
no	10-2
quit	10-2
show	10-2
write memory	10-2
write terminal	10-3

**Multicast Filter Level**

The multicast filter level allows you to assign multicast filters to specific ports. You reach this level by entering **multicast filter...** at the global CONFIG level.

**Table 3.8: Multicast Filter Commands**

end	10-3
exclude-ports	10-3
exit	10-4

**Table 3.8: Multicast Filter Commands (Continued)**

no	10-4
quit	10-4
show	10-4
write memory	10-4
write terminal	10-4

**BGP Level (routers only)**

The BGP level allows you to configure routing switches for Border Gateway Protocol version 4 (BGP4). You reach this level by entering the **router bgp** command at the global CONFIG level.

**Table 3.9: BGP4 Commands**

address-filter	14-1
aggregate-address	14-2
always-compare-med	14-2
as-path-filter	14-2
auto-summary	14-3
client-to-client-reflection	14-3
cluster-id	14-4
community-filter	14-4
confederation	14-5
dampening	14-5
default-information-originate	14-6
default-local-preference	14-6
default-metric	14-6
distance	14-6
end	14-7
exit	14-7
fast-external-falover	14-7
local-as	14-7
max-attribute-entries	14-8
maximum-paths	14-8
max-neighbors	14-8
max-routes	14-9
neighbor	14-9
network	14-11

**Table 3.9: BGP4 Commands (Continued)**

no	14-11
quit	14-11
redistribute connected	14-12
redistribute ospf	14-12
redistribute rip	14-13
redistribute static	14-13
show	14-13
synchronization	14-13
table-map	14-14
timers	14-14
write memory	14-14
write terminal	14-15

**Router DVMRP Level (routers only)**

The DVMRP level allows you to configure details for the DVMRP multicast protocol. You reach this level by entering the **router dvmrp** command at the global CONFIG level.

---

**NOTE:** The interface and IP tunnel parameters for DVMRP are configured at the Interface and IP Tunnel levels, respectively. See those sections of this reference for specific examples.

---

**Table 3.10: DVMRP Commands**

default-gateway	11-1
end	11-1
exit	11-1
graft-retransmit-time	11-2
nbr-timeout	11-2
no	11-2
probe-interval	11-2
prune-age	11-2
quit	11-3
report-interval	11-3
route-discard-time	11-3
route-expire-time	11-3
show	11-4
trigger interval	11-4

**Table 3.10: DVMRP Commands (Continued)**

write memory	11-4
write terminal	11-4

**Router OSPF Level (routers only)**

The OSPF level allows you to configure parameters for the OSPF routing protocol. You reach this level by entering the **router ospf** command at the global CONFIG level.

**Table 3.11: OSPF Commands**

area	13-1
area <num>   <ip-addr> virtual-link	13-2
area range	13-3
database-overflow-interval	13-3
default-information-originate	13-3
default-metric	13-4
deny redistribute	13-4
distance	13-5
end	13-6
exit	13-6
external-lsdb-limit	13-6
maximum-number-of-lsa	13-6
max-routes	13-7
metric-type	13-7
no	13-8
permit redistribute	13-8
quit	13-8
redistribution	13-8
rfc1583-compatibility	13-9
show	13-9
summary-address	13-9
timers	13-10
trap	13-11
write memory	13-12
write terminal	13-12

**Router PIM Level (router only)**

The PIM level allows you to configure parameters for the Protocol Independent Multicast (PIM) routing protocol. You reach this level by entering the **router pim** command at the global CONFIG level.

**Table 3.12: PIM Commands**

bsr-candidate	12-1
end	12-1
exit	12-2
message-interval	12-2
no	12-2
pim-graft-retransmit-timer	12-2
pim-hello-timer	12-3
pim-inactivity-timer	12-3
pim-nbr-timeout	12-3
pim-prune-timer	12-3
quit	12-4
rp-address	12-4
rp-candidate	12-4
show	12-5
spt-threshold	12-5
write memory	12-5
write terminal	12-6

**Router RIP Level (router only)**

The RIP level allows you to configure parameters for the RIP routing protocol. You reach this level by entering the **router rip** command at the global CONFIG level.

**Table 3.13: RIP Commands**

default-metric	9-1
deny redistribute	9-1
end	9-2
exit	9-2
filter	9-2
filter-group	9-3
learn-default	9-3
neighbor	9-4
no	9-4

**Table 3.13: RIP Commands (Continued)**

permit redistribute	9-4
quit	9-4
redistribution	9-5
show	9-5
update-time	9-5
use-vrrp-path	9-5
write memory	9-5
write terminal	9-5

**Real Server Level (router only)**

The Real Server level allows you to configure router-based health check parameters for a routing switch to assist with Globally-distributed Server Load Balancing (SLB). See the “Route Health Injection” chapter of the *Advanced Configuration and Management Guide*. You reach this level by entering the **server real...** command at the global CONFIG level.

**Table 3.14: Real Server Commands**

end	18-1
exit	18-1
no	18-1
port <num> disable	18-1
port <num> keepalive	18-2
port <num> status_code	18-2
port <num> url	18-3
quit	18-3
show	18-3
write memory	18-3
write terminal	18-4

**Application Port Level (router only)**

The Application Port level allows you to configure health check parameters for a TCP HTTP port. The commands at this level apply only when you are configuring a routing switch to assist third-party SLBs or web servers with globally-distributed SLB. See the “Route Health Injection” chapter of the *Advanced Configuration and Management Guide*. You reach this level by entering the **server port http | <tcp/udp-portnum>** command at the global CONFIG level.

---

**NOTE:** If you enter **server port ?**, numerous well-known port names are listed. The current software release supports only HTTP ports.

---

**Table 3.15: Application Port Commands**

end	19-1
exit	19-1
no	19-1
quit	19-1
show	19-2
tcp keepalive	19-2
write memory	19-2
write terminal	19-2

**Route Map Level (router only)**

The Route Map level allows you to configure parameters for a BGP4 route map. You reach this level by entering the **route-map** <name> command at the global CONFIG level.

**Table 3.16: Route Map Commands**

end	15-1
exit	15-1
match	15-1
no	15-2
quit	15-2
set	15-2
show	15-4
write memory	15-4
write terminal	15-4

**Router VRRP Level (router only)**

The VRRP level allows you to configure parameters for the Virtual Router Redundancy Protocol (VRRP). You reach this level by entering the **router vrrp** command at the global CONFIG level. Some of the commands described here are for individual virtual router IDs (VRIDs).

**Table 3.17: VRRP Commands**

activate	16-1
advertise-backup	16-1
auth-type	16-1
backup	16-1
backup-hello-interval	16-1
dead-interval	16-2

**Table 3.17: VRRP Commands (Continued)**

end	16-2
exit	16-2
hello-interval	16-2
ip-address	16-2
no	16-2
non-preempt-mode	16-2
owner	16-2
quit	16-3
show	16-3
track-port	16-3
write memory	16-3
write terminal	16-3

**VLAN Level**

Policy-based VLANs allow you to assign VLANs on a protocol (IP, IPX, Decnet, AppleTalk, NetBIOS, Others), sub-net (IP sub-net and IPX network), AppleTalk cable, port, or 802.1q tagged basis.

You reach this level by entering the **vlan <vlan-id> by port** command at the Global CONFIG Level.

**Table 3.18: VLAN Commands**

appletalk-cable-vlan	17-1
atalk-proto	17-1
decnet-proto	17-2
default-vlan-id	17-2
end	17-3
exit	17-3
ip-proto	17-3
ip-subnet	17-4
ipx-network	17-4
ipx-proto	17-5
netbios-proto	17-5
no	17-6
other-proto	17-6
priority	17-7
quit	17-7
router-interface	17-7

**Table 3.18: VLAN Commands (Continued)**

show	17-7
spanning-tree	17-7
static-mac-address	17-8
tagged	17-8
untagged	17-9
write memory	17-9
write terminal	17-9

**Show Commands**

The show commands display configuration information and statistics. You can enter these commands from any level of the CLI.

**Table 3.19: Show Commands**

show appletalk arp	20-1
show appletalk cache	20-1
show appletalk globals	20-2
show appletalk interface	20-2
show appletalk route	20-3
show appletalk traffic	20-3
show appletalk zone	20-4
show arp	20-5
show chassis	20-5
show clock	20-6
show configuration	20-6
show default	20-6
show flash	20-8
show interfaces	20-8
show interfaces brief	20-9
show ip	20-9
show ip access-lists	20-10
show ip as-path-access-lists	20-10
show ip bgp <ip-addr>	20-10
show ip bgp attribute-entries	20-10
show ip bgp neighbors	20-11
show ip bgp routes	20-12

**Table 3.19: Show Commands (Continued)**

show ip bgp summary	20-13
show ip cache	20-14
show ip community-access-lists	20-14
show ip dvmrp	20-14
show ip dvmrp flowcache	20-15
show ip dvmrp graft	20-15
show ip dvmrp group	20-15
show ip dvmrp interface	20-16
show ip dvmrp mcache	20-16
show ip dvmrp nbr	20-16
show ip dvmrp prune	20-17
show ip dvmrp route	20-17
show ip dvmrp traffic	20-17
show ip flow-cache	20-18
show ip interface	20-18
show ip mroute	20-18
show ip multicast	20-18
show ip ospf area	20-18
show ip ospf border-routers	20-19
show ip ospf config	20-19
show ip ospf database external-link-state	20-20
show ip ospf general	20-21
show ip ospf interface	20-21
show ip ospf database link-state	20-22
show ip ospf neighbor	20-22
show ip ospf routes	20-23
show ip ospf trap	20-23
show ip ospf virtual-link	20-24
show ip ospf virtual-neighbor	20-24
show ip pim bsr	20-24
show ip pim flowcache	20-25
show ip pim group	20-25
show ip pim interface	20-26

**Table 3.19: Show Commands (Continued)**

show ip pim mcache	20-26
show ip pim nbr	20-27
show ip pim prune	20-27
show ip pim rp-candidate	20-27
show ip pim rp-hash	20-28
show ip pim rp-map	20-28
show ip pim rp-set	20-28
show ip pim sparse	20-29
show ip pim traffic	20-29
show ip policy	20-30
show ip prefix-lists	20-30
show ip rip	20-30
show ip route	20-31
show ip srp	20-18
show ip traffic	20-32
show ip vrrp	20-32
show ipx	20-33
show ipx cache	20-33
show ipx interface	20-33
show ipx route	20-34
show ipx servers	20-34
show ipx traffic	20-35
show logging	20-35
show mac-address	20-57
show mac-address statistics	20-58
show media	20-59
show module	20-59
show priority-mapping	20-59
show qos-profiles	20-60
show relative-utilization	20-60
show reload	20-60
show rmon alarm	20-61
show rmon event	20-61

**Table 3.19: Show Commands (Continued)**

show rmon history	20-61
show rmon statistics	20-61
show running-config	20-62
show server	20-62
show snmp server	20-62
show span	20-63
show span vlan	20-64
show statistics	20-64
show tech	20-65
show telnet	20-66
show trunk	20-66
show users	20-67
show version	20-67
show vlans	20-68
show web-connection	20-69
show who	20-69

