

CLI Quick Reference

CMM Commands

reload [primary | secondary] [in [hours:] minutes | at hour:minute [month day / day month]]
reload [primary | secondary] cancel
reload working {rollback-timeout minutes | no rollback-timeout} [in [hours:] minutes | at hour:minute]
[configure] copy running-config working
[configure] write memory
[configure] copy certified working
[configure] copy working certified [flash-synchro]
[configure] copy flash-synchro
takeover
debug chassis auto-reboot {enable | disable}
show running-directory
show reload [status]
show microcode [working | certified | loaded]
show microcode history [working | certified]

Chassis Management and Monitoring Commands

system contact *text_string*
system name *text_string*
system location *text_string*
system date [mm/dd/yyyy]
system time [hh:mm:ss]
system time-and-date synchro
system timezone [timezone_abbrev | offset_value | time_notation]
system daylight savings time [{enable | disable} | start {week} {day} in {month} at {hh:mm} end {week} {day} in {month} at {hh:mm} [by min]]
reload ni [slot] *number*
reload all [in [hours:] minutes | at hour:minute [month day / day month]]
reload all cancel
reload pass-through *slot-number*
power ni [slot] *slot-number*
no power ni [slot] *slot-number*
temp-threshold *temp*
stack set slot *slot-number* saved-slot *saved-slot-number* [reload]
stack clear slot *slot-number* [immediate]
fabric standby *number*
power fabric *number*
no power fabric *number*
show system
show hardware info
show chassis [*number*]
show cmm [*number*]
show ni [*number*]
show module [*number*]
show module long [*number*]
show module status [*number*]
show power [supply] [*number*]
show fan [*number*]
show temperature [*number*]
show stack topology [*slot-number*]
show stack status
show fabric [*number*]

Chassis MAC Server (CMS) Commands

```
mac-range eeprom start_mac_address count
show mac-range [index]
show mac-range [index] alloc
```

Power over Ethernet (PoE) Commands

```
lanpower start {slot/port | slot}
lanpower stop {slot/port | slot}
lanpower {slot/port | slot} power milliwatts
lanpower {slot/port | slot} maxpower watts
lanpower slot/port priority {critical | high | low}
lanpower slot priority-disconnect {enable | disable}
lanpower redundant-power {enable | disable}
lanpower slot capacitor-detection {enable | disable}
show lanpower slot
show lanpower capacitor-detection slot
show lanpower priority-disconnect slot
show lanpower slot-priority slot
```

Network Time Protocol Commands

```
ntp server {ip_address | domain_name} [key key | version version | minpoll exponent / prefer]
no ntp server {ip_address | domain_name}
ntp client {enable | disable}
ntp broadcast {enable | disable}
ntp broadcast delay microseconds
ntp key key [trusted | untrusted]
ntp key load
show ntp client
show ntp client server-list
show ntp server status [ip_address | domain_name]
show ntp keys
```

Session Management Commands

```
session login-attempt integer
session login-timeout seconds
session banner {cli | ftp} file_name
session banner no {cli | ftp}
session timeout {cli | http | ftp} minutes
session prompt default [string]
session xon-xoff {enable | disable}
prompt [user] [time] [date] [string string] [prefix]
no prompt
show prefix
alias alias command_name
show alias
user profile save
user profile reset
history size number
show history [parameters]
!{! | n}
command-log {enable | disable}
kill session_number
exit
whoami
who
show session config
```

show session xon-xoff
more size *lines*
more
no more
show more
telnet {*host_name* | *ip_address*}
ssh {*host_name* | *ip_address*}
show command-log
show command-log status

File Management Commands

cd [*path*]
pwd
mkdir [*path*]/*dir*
rmdir [*path*]/*dir*
ls [-r] [[*path*]/*dir*]
dir [[*path*]/*dir*]
rename [*path*]/*old_name* [*path*]/*new_name*
rm [-r] [*path*]/*filename*
delete [*path*]/*filename*
cp [-r] [*path*]/*orig_filename* [*dest_path*]/*dupl_filename*
mv { [*path*]/*filename* *dest_path*[/*new_filename*] | [*path*]/*dir* *dest_path*[/*new_dir*]}
move { [*path*]/*filename* *dest_path*[/*new_filename*] | [*path*]/*dir* *dest_path*[/*new_dir*]}
chmod { +w | -w } [*path*]/*file*
attrib { +w | -w } [*path*]/*file*
freespace [/flash]
fsck /flash
newfs /flash
rcp *slot* *source_filepath* *destination_file*
rrm *slot* *filepath*
rls *slot* *directory* [*file_name*]
vi [*path*]/*filename*
view [*path*]/*filename*
tty *lines* *columns*
show tty
more [*path*]/*file*
ftp {*host_name* | *ip_address*}
rz
install *file* [*argument*]

Web Management Commands

[*ip*] http server
no [*ip*] http server
[*ip*] http ssl
no [*ip*] http ssl
debug http sessiondb
show [*ip*] http

Configuration File Manager Commands

configuration apply *filename* [at *hh:mm* *month* *dd* [*year*]] | [in *hh[:mm]*] [verbose]
configuration error-file *limit* *number*
show configuration status
configuration cancel
configuration syntax check *path/filename* [verbose]
configuration snapshot *feature_list* [*path/filename*]
show configuration snapshot [*feature_list*]
write terminal

SNMP Commands

```
snmp station ip_address {[udp_port] [username] [v1 | v2 | v3] [enable | disable]}
no snmp station ip_address
show snmp station
snmp community map community_string {[user useraccount_name] | {enable | disable}}
no snmp community map community_string
snmp community map mode {enable | disable}
show snmp community map
snmp security {no security | authentication set | authentication all | privacy set | privacy all | trap only}
show snmp security
show snmp statistics
show snmp mib family [table_name]
snmp trap absorption {enable | disable}
snmp trap to webview {enable | disable}
snmp trap replay ip_address {seq_id}
snmp trap filter ip_address trap_id_list
no snmp trap filter ip_address trap_id_list
snmp authentication trap {enable | disable}
show snmp trap replay
show snmp trap filter
show snmp authentication trap
show snmp trap config
```

Hardware Routing Engine (HRE) Commands

```
hre mode configuration slot/slice mode [number hash_function]
hre clear changes {all | slot/slice mode}
hre apply changes
show hre changes slot/slice
show hre configuration slot/slice
show hre pcam utilization slot/slice
show hre statistics slot/slice
show hre cache utilization slot/slice
```

DNS Commands

```
ip domain-lookup
no ip domain-lookup
ip name-server server-address1 [server-address2 [server-address3]]
ip domain-name name
no ip domain-name
show dns
```

Link Aggregation Commands

```
static linkagg agg_num size size [name name] [admin state {enable | disable}]
no static linkagg agg_num
static linkagg agg_num name name
static linkagg agg_num no name
static linkagg agg_num admin state {enable | disable}
static agg [ethernet | fastethernet | gigaehternet] slot/port agg num agg_num
static agg no [ethernet | fastethernet | gigaehternet] slot/port
lACP linkagg agg_num size size
no lACP linkagg agg_num
lACP linkagg agg_num name name
lACP linkagg agg_num no name
lACP linkagg agg_num admin state {enable | disable}
lACP linkagg agg_num actor admin key actor_admin_key
lACP linkagg agg_num no actor admin key
```

```

lACP linkagg agg_num actor system priority actor_system_priority
lACP linkagg agg_num no actor system priority
lACP linkagg agg_num actor system id actor_system_id
lACP linkagg agg_num no actor system id
lACP linkagg agg_num partner system id partner_system_id
lACP linkagg agg_num no partner system id
lACP linkagg agg_num partner system priority partner_system_priority
lACP linkagg agg_num no partner system priority
lACP linkagg agg_num partner admin key partner_admin_key
lACP linkagg agg_num no partner admin key
lACP agg [ethernet | fastethernet | gigaehternet] slot/port actor admin key actor_admin_key
lACP agg no [ethernet | fastethernet | gigaehternet] slot/port
lACP agg [ethernet | fastethernet | gigaehternet] slot/port actor admin state {[active] [timeout] [aggregate] [synchronize]
[collect] [distribute] [default] [expire] | none}
lACP agg [ethernet | fastethernet | gigaehternet] slot/port actor admin state {[no] active} [[no] timeout] [[no] aggregate] [[no]
synchronize] [[no] collect] [[no] distribute] [[no] default] [[no] expire] | none}
lACP agg [ethernet | fastethernet | gigaehternet] slot/port actor system id actor_system_id
lACP agg [ethernet | fastethernet | gigaehternet] slot/port no actor system id
lACP agg [ethernet | fastethernet | gigaehternet] slot/port actor system priority actor_system_priority
lACP agg [ethernet | fastethernet | gigaehternet] slot/port no actor system priority
lACP agg [ethernet | fastethernet | gigaehternet] slot/port partner admin state {[active] [timeout] [aggregate] [synchronize]
[collect] [distribute] [default] [expire] | none}
lACP agg [ethernet | fastethernet | gigaehternet] slot/port partner admin state {[no] active} [[no] timeout] [[no] aggregate] [[no]
synchronize] [[no] collect] [[no] distribute] [[no] default] [[no] expire] | none}
lACP agg [ethernet | fastethernet | gigaehternet] slot/port partner admin system id partner_admin_system_id
lACP agg [ethernet | fastethernet | gigaehternet] slot/port no partner admin system id
lACP agg [ethernet | fastethernet | gigaehternet] slot/port partner admin key partner_admin_key
lACP agg [ethernet | fastethernet | gigaehternet] slot/port no partner admin key
lACP agg [ethernet | fastethernet | gigaehternet] slot/port partner admin system priority partner_admin_system_priority
lACP agg [ethernet | fastethernet | gigaehternet] slot/port no partner admin system priority
lACP agg [ethernet | fastethernet | gigaehternet] slot/port actor port priority actor_port_priority
lACP agg [ethernet | fastethernet | gigaehternet] slot/port no actor port priority
lACP agg [ethernet | fastethernet | gigaehternet] slot/port partner admin port partner_admin_port
lACP agg [ethernet | fastethernet | gigaehternet] slot/port no partner admin port
lACP agg [ethernet | fastethernet | gigaehternet] slot/port partner admin port priority partner_admin_port_priority
lACP agg [ethernet | fastethernet | gigaehternet] slot/port no partner admin port priority
linkagg slot slot optimization {enable | disable}
linkagg slot slot single
linkagg slot slot multiple
show linkagg [agg_num]
show linkagg port [slot/port]
show linkagg slot slot optimization

```

Interswitch Protocol Commands

```

amap {enable | disable}
amap discovery [time] seconds
amap common [time] seconds
show amap
gmap {enable | disable}
gmap gap [time] milliseconds
gmap update [time] seconds
gmap hold [time] minutes
show gmap

```

802.1Q Commands

```

vlan vid 802.1q {slot/port | aggregate_id} [description]
vlan vid no 802.1q {slot/port | aggregate_id}

```

```
vlan 802.1q slot/port frame type {all | tagged}
vlan 802.1q slot/port force tag internal {on | off}
debug 802.1q {slot/port | aggregate_id}
show 802.1q {slot/port | aggregate_id}
```

Distributed Spanning Tree Commands

```
bridge mode {flat | 1x1}
bridge vid protocol {1d | 1w}
bridge vid bpdu-switching {enable | disable}
bridge vid priority priority
bridge vid hello time seconds
bridge vid max age seconds
bridge vid forward delay seconds
bridge vid {slot/port | logical_port} {on | off | enable | disable}
bridge vid {slot/port | logical_port} priority priority
bridge vid {slot/port | logical_port} path cost path_cost
bridge vid {slot/port | logical_port} mode {forwarding | blocking | dynamic}
bridge vid {slot/port | logical_port} connection {noptp | ptp | autoptp | edgeport}
show spantree [vid]
show spantree [vid] ports [forwarding | blocking]
```

Source Learning Commands

```
mac-address-table [permanent | reset | timeout] mac_address {slot/port | linkagg link_agg} vid [bridging | filtering]
no mac-address-table [permanent | reset | timeout | learned] mac_address {slot/port | link_agg} vid
mac-address-table aging-time seconds [vlan vid]
no mac-address-table aging-time [vlan vid]
show mac-address-table [permanent | reset | timeout | learned] [mac_address] [slot slot | slot/port] [linkagg link_agg] [vid]
show mac-address-table count [mac_address] [slot slot | slot/port] [linkagg link_agg] [vid]
show mac-address-table aging-time [vlan vid]
```

Learned Port Security Commands

```
port-security slot/port [enable | disable]
no port security slot/port
port-security shutdown minutes
port-security slot/port maximum number
port-security slot/port mac mac_address
port-security slot/port no mac mac_address
port-security slot/port mac-range [low mac_address / high mac_address / low mac_address high mac_address]
port-security slot/port violation {restrict | shutdown}
show port-security {slot/port | slot}
show port-security shutdown
```

Ethernet Port Commands

```
trap slot[/port[-port2]] port link {enable | disable | on | off}
flow [ethernet | fastethernet | gigasethernet] slot[/port[-port2]]
no flow [ethernet | fastethernet | gigasethernet] slot[/port[-port2]]
flow [ethernet | fastethernet | gigasethernet] slot[/port[-port2]] wait [time] microseconds
flow [ethernet | fastethernet | gigasethernet] slot[/port[-port2]] no wait [time]
interfaces [ethernet | fastethernet | gigasethernet] slot[/port[-port2]] speed {auto | 10 | 100 | 1000 | 10000 | max {100 | 1000}}
interfaces [ethernet | fastethernet | gigasethernet] slot[/port[-port2]] autoneg {enable | disable | on | off}
interfaces [ethernet | fastethernet | gigasethernet] slot[/port[-port2]] crossover {auto | mdix | mdi | disable}
interfaces [ethernet | fastethernet | gigasethernet] slot[/port[-port2]] flow {enable | disable | on | off}
interfaces [ethernet | fastethernet | gigasethernet] slot[/port[-port2]] duplex {full | half | auto}
interfaces [ethernet | fastethernet | gigasethernet] slot[/port[-port2]] admin {up | down}
interfaces [ethernet | fastethernet | gigasethernet] slot/port alias description
interfaces [ethernet | fastethernet | gigasethernet] slot[/port[-port2]] ifg bytes
```

```

interfaces [ethernet | fastethernet | gigaehternet] slot[/port[-port2]] no 12 statistics
interfaces [ethernet | fastethernet | gigaehternet] slot[/port[-port2]] long {enable | disable}
interfaces [gigaehternet] slot[/port[-port2]] max frame bytes
interfaces [ethernet | fastethernet | gigaehternet] slot[/port[-port2]] runt {enable | disable}
interfaces [ethernet | fastethernet | gigaehternet] slot[/port[-port2]] runsize framesize
interfaces [ethernet | fastethernet | gigaehternet] slot[/port[-port2]] flood
interfaces [ethernet | fastethernet | gigaehternet] slot flood multicast
interfaces [ethernet | fastethernet | gigaehternet] slot[/port[-port2]] flood rate Mbps
interfaces [ethernet | fastethernet | gigaehternet] slot[/port[-port2]] hybrid preferred-fiber
interfaces [ethernet | fastethernet | gigaehternet] slot[/port[-port2]] hybrid preferred-copper
interfaces [ethernet | fastethernet | gigaehternet] slot[/port[-port2]] hybrid forced-fiber
interfaces [ethernet | fastethernet | gigaehternet] slot[/port[-port2]] hybrid forced-copper
interfaces [ethernet | fastethernet | gigaehternet] slot[/port[-port2]] hybrid {fiber | copper} autoneg {enable | disable | on | off}
interfaces [ethernet | fastethernet | gigaehternet] slot[/port[-port2]] hybrid {fiber | copper} crossover {auto | mdix | mdi |
    disable}
interfaces [ethernet | fastethernet | gigaehternet] slot[/port[-port2]] hybrid {fiber | copper} duplex {full | half | auto}
interfaces [ethernet | fastethernet | gigaehternet] slot[/port[-port2]] speed hybrid {fiber | copper} {auto | 10 | 100 | 1000 | 10000
    | max {100 | 1000}}
10gig slot slot {phy-a | phy-b}
show interfaces [ethernet | fastethernet | gigaehternet] [slot[/port[-port2]]] flow [control]
show interfaces [ethernet | fastethernet | gigaehternet] [slot[/port[-port2]]]
show interfaces [ethernet | fastethernet | gigaehternet] [slot[/port[-port2]]] capability
show interfaces [ethernet | fastethernet | gigaehternet] [slot[/port[-port2]]] accounting
show interfaces [ethernet | fastethernet | gigaehternet] [slot[/port[-port2]]] counters
show interfaces [ethernet | fastethernet | gigaehternet] [slot[/port[-port2]]] counters errors
show interfaces [ethernet | fastethernet | gigaehternet] [slot[/port[-port2]]] collisions
show interfaces [ethernet | fastethernet | gigaehternet] [slot[/port[-port2]]] status
show interfaces [ethernet | fastethernet | gigaehternet] [slot[/port[-port2]]] port
show interfaces [ethernet | fastethernet | gigaehternet] [slot[/port[-port2]]] ifg
show interfaces [ethernet | fastethernet | gigaehternet] [slot[/port[-port2]]] flood rate
show interfaces [ethernet | fastethernet | gigaehternet] [slot[/port[-port2]]] traffic
show interfaces [ethernet | fastethernet | gigaehternet] [slot[/port[-port2]]] hybrid {fiber |copper}
show interfaces [ethernet | fastethernet | gigaehternet] [slot[/port[-port2]]] hybrid {fiber |copper} status
show interfaces [ethernet | fastethernet | gigaehternet] [slot[/port[-port2]]] hybrid {fiber |copper} flow control
show interfaces [ethernet | fastethernet | gigaehternet] [slot[/port[-port2]]] hybrid {fiber |copper} capability
show interfaces [ethernet | fastethernet | gigaehternet] [slot[/port[-port2]]] hybrid {fiber |copper} accounting
show interfaces [ethernet | fastethernet | gigaehternet] [slot[/port[-port2]]] hybrid {fiber |copper} counters
show interfaces [ethernet | fastethernet | gigaehternet] [slot[/port[-port2]]] hybrid {fiber |copper} counters errors
show interfaces [ethernet | fastethernet | gigaehternet] [slot[/port[-port2]]] hybrid {fiber |copper} collisions
show interfaces [ethernet | fastethernet | gigaehternet] [slot[/port[-port2]]] hybrid {fiber |copper} traffic
show interfaces [ethernet | fastethernet | gigaehternet] [slot[/port[-port2]]] hybrid {fiber |copper} port
show interfaces [ethernet | fastethernet | gigaehternet] [slot[/port[-port2]]] hybrid {fiber |copper} flood rate
show interfaces [ethernet | fastethernet | gigaehternet] [slot[/port[-port2]]] hybrid {fiber |copper} ifg
show 10gig [slot slot]
debug interfaces set [slot] backpressure {enable | disable}
debug interfaces [slot] backpressure

```

Port Mobility Commands

```

vlan vid dhcp mac mac_address
vlan vid no dhcp mac mac_address
vlan vid dhcp mac range low_mac_address high_mac_address
vlan vid no dhcp mac range low_mac_address
vlan vid dhcp port slot/port
vlan vid no dhcp port slot/port
vlan vid dhcp generic
vlan vid no dhcp generic
vlan vid binding mac-ip-port mac_address ip_address slot/port
vlan vid no binding mac-ip-port mac_address

```

```

vlan vid binding mac-port-protocol mac_address slot/port {ip-e2 | ip-snap | ipx-e2 | ipx-novell | ipx-llc | ipx-snap | decnet |
  appletalk | etherstype type | dsapssap dsap/ssap | snap snapttype}
vlan vid no binding mac-port-protocol mac_address {ip-e2 | ip-snap | ipx-e2 | ipx-novell | ipx-llc | ipx-snap | decnet | appletalk
  | etherstype type | dsapssap dsap/ssap | snap snapttype}
vlan vid binding mac-port mac_address slot/port
vlan vid no binding mac-port mac_address
vlan vid binding mac-ip mac_address ip_address
vlan vid no binding mac-ip mac_address
vlan vid binding ip-port ip_address slot/port
vlan vid no binding ip-port ip_address
vlan vid binding port-protocol slot/port {ip-e2 | ip-snap | ipv6 | ipx-e2 | ipx-novell | ipx-llc | ipx-snap | decnet | appletalk |
  etherstype type | dsapssap dsap/ssap | snap snapttype}
vlan vid no binding port-protocol slot/port {ip-e2 | ip-snap | ipx-e2 | ipx-novell | ipx-llc | ipx-snap | decnet | appletalk | etherstype
  type | dsapssap dsap/ssap | snap snapttype}
vlan vid mac mac_address
vlan vid no mac mac_address
vlan vid mac range low_mac_address high_mac_address
vlan vid no mac range low_mac_address
vlan vid ip ip_address [subnet_mask]
vlan vid no ip ip_address [subnet_mask]
vlan vid ipx ipx_net [e2 | llc | snap | novell]
vlan vid no ipx ipx_net
vlan vid protocol {ip-e2 | ip-snap | ipv6 | ipx-e2 | ipx-novell | ipx-llc | ipx-snap | decnet | appletalk | etherstype type | dsapssap
  dsap/ssap | snap snapttype}
vlan vid no protocol {ip-e2 | ip-snap | ipx-e2 | ipx-nov | ipx-llc | ipx-snap | decnet | appletalk | etherstype type | dsapssap dsap/
  ssap | snap snapttype}
vlan vid user offset value mask
vlan vid no user offset value
vlan vid port slot/port
vlan vid no port slot/port
vlan port mobile slot/port [bpdu ignore {enable | disable}]
vlan no port mobile slot/port
vlan port slot/port default vlan restore {enable | disable}
vlan port slot/port default vlan {enable | disable}
vlan port slot/port authenticate {enable | disable}
vlan port slot/port 802.1x {enable | disable}
show vlan [vid] rules
show vlan port mobile [slot/port]

```

VLAN Management Commands

```

vlan vid [enable | disable] [name description]
no vlan vid
vlan vid [1x1 | flat ] stp {enable | disable}
vlan vid mobile-tag {enable | disable}
vlan vid authentication {enable | disable}
vlan vid router ip ip_address [[mask] subnet_mask] [forward | no forward] [e2 | snap] [local-proxy-arp | no local-proxy-arp]
vlan vid no router ip
vlan vid router ipx ipx_net [rip | active | inactive | triggered] [e2 | llc | snap | novell] [timeticks ticks]
vlan vid no router ipx
vlan router mac multiple {enable | disable}
vlan vid mtu-ip size
vlan vid port default {slot/port / link_agg}
vlan vid no port default {slot/port / link_agg}
show vlan [vid]
show vlan [vid] port {slot/port / link_agg}
show vlan router mac status
show vlan router ip

```


IP Commands

```
ip router primary-address ip_address
ip router router-id ip_address
ip static-route ip_address [mask mask] gateway gateway [metric metric]
no ip static-route ip_address [mask mask] gateway ip_address [metric metric]
ip default-ttl hops
ping {ip_address | hostname} [count count] [size packet_size] [interval seconds] [timeout seconds]
traceroute {ip_address | hostname} [max-hop max_hop_count]
ip directed-broadcast {on | off}
ip service { all | ftp | ssh | telnet | http | secure-http | avlan-http | avlan-secure-http | avlan-telnet | udp-relay | network-time |
snmp | port service_port }
no ip service { all | ftp | ssh | telnet | http | secure-http | avlan-http | avlan-secure-http | avlan-telnet | udp-relay | network-time
| snmp | port service_port }
arp ip_address hardware_address [alias]
no arp ip_address [alias]
clear arp-cache
icmp type type code code {{enable | disable} | min-pkt-gap gap}
icmp unreachable [net-unreachable | host-unreachable | protocol-unreachable | port-unreachable] {{enable | disable} | min-pkt-
gap gap}
icmp echo [request | reply] {{enable | disable} | min-pkt-gap gap}
icmp timestamp [request | reply] {{enable | disable} | min-pkt-gap gap}
icmp add-mask [request | reply] {{enable | disable} | min-pkt-gap gap}
icmp messages {enable | disable}
ip dos scan close-port-penalty penalty_value
ip dos scan tcp open-port-penalty penalty_value
ip dos scan udp open-port-penalty penalty_value
ip dos scan threshold threshold_value
ip dos scan trap {enable | disable}
ip dos scan decay decay_value
show ip traffic
show ip interface [emp | vlan vlan id]
show ip route [summary]
show ip router database [protocol type / gateway ip_address / dest ip_address mask]
show ip emp-route
show ip config
show ip protocols
show ip service
show arp [ip_address | hardware_address]
show icmp control
show icmp [statistics]
show tcp statistics
show tcp ports
show udp statistics
show udp ports
show ip dos config
show ip dos statistics
debug ip packet [start] [timeout seconds] [stop] [direction {in | out | all}] [format {header | text | all}] [output {console | file
filename}] [board {cmm | ni [1-16] | all | none} [ether-type {arp | ip | hex [hex_number] | all}] [ip-address ip_address] [ip-
address ip_address] [ip-pair [ip1] [ip2]] [protocol {tcp | udp | icmp | igmp | num [integer] | all}] [show-broadcast {on |
off}] show-multicast {on | off}]
debug ip level level
debug ip packet default
debug ip packet
debug ip statistics slot/port
```

RDP Commands

```
ip router-discovery {enable | disable}
ip router-discovery interface ip_address [enable | disable]
ip router-discovery interface ip_address advertisement-address {all-systems-multicast | broadcast}
ip router-discovery interface ip_address max-advertisement-interval seconds
ip router-discovery interface ip_address min-advertisement-interval seconds
ip router-discovery interface ip_address advertisement-lifetime seconds
ip router-discovery interface ip_address preference-level level
show ip router-discovery
show ip router-discovery interface [ip_address]
```

DHCP Relay Commands

```
ip helper address ip_address
ip helper no address [ip_address]
ip helper address ip_address vlan vlan_id
ip helper no address ip_address vlan vlan_id
ip helper standard
ip helper avlan only
ip helper per-vlan only
ip helper forward delay seconds
ip helper maximum hops hops
ip helper boot-up {enable | disable}
ip helper boot-up enable {BOOTP | DHCP}
ip udp relay {BOOTP | NBDD | NBNSNBDD | DNS | TACACS | TFTP | NTP | port [name] }
no ip udp relay {BOOTP | NBDD | NBNSNBDD | DNS | TACACS | TFTP | NTP | port }
ip udp relay {BOOTP | NBDD | NBNSNBDD | DNS | TACACS | TFTP | NTP | port } vlan vlan_id
no ip udp relay {BOOTP | NBDD | NBNSNBDD | DNS | TACACS | TFTP | NTP | port } vlan vlan_id
show ip helper
show ip helper stats
ip helper no stats
show ip udp relay service [BOOTP | NBDD | NBNSNBDD | DNS | TACACS | TFTP | NTP | port]
show ip udp relay [BOOTP | NBDD | NBNSNBDD | DNS | TACACS | TFTP | NTP | port]
show ip udp relay destination [BOOTP | NBDD | NBNSNBDD | DNS | TACACS | TFTP | NTP | port]
```

RIP Commands

```
ip load rip
ip rip status {enable | disable}
ip rip interface ip_address
no ip rip interface ip_address
ip rip interface ip_address status {enable | disable}
ip rip interface ip_address metric value
ip rip interface ip_address send-version {none | v1 | v1compatible | v2}
ip rip interface ip_address recv-version {v1 | v2 | both | none}
ip rip force-holddowntimer seconds
ip rip host-route
no ip rip host-route
ip rip route-tag value
ip rip redistrib status {enable | disable}
ip rip redistrib {local | static | ospf | bgp}
no ip rip redistrib {local | static | ospf | bgp}
ip rip redistrib {local | static | ospf | bgp} metric value
ip rip redistrib-filter {local | static | ospf | bgp} ip_address ip_mask
no ip rip redistrib-filter {local | static | ospf | bgp} ip_address ip_mask
ip rip redistrib-filter {local | static | ospf | bgp} ip_address ip_mask effect {permit | deny}
ip rip redistrib-filter {local | static | ospf | bgp} ip_address ip_mask metric value
ip rip redistrib-filter {local | static | ospf | bgp} ip_address ip_mask route-tag value
ip rip redistrib-filter {local | static | ospf | bgp} ip_address ip_mask redistrib-control {all-subnets | aggregate | no-subnets}
```

```

ip rip interface ip_address auth-type { none | simple | md5 }
ip rip interface ip_address auth-key string
ip rip debug-type [error] [warning] [recv] [send] [rdb] [age] [redist] [info] [setup] [time] [tm] [all]
no ip rip debug-type [error] [warning] [recv] [send] [rdb] [age] [redist] [info] [setup] [time] [tm] [all]
ip rip debug-level level
show ip rip
show ip rip routes [ip_address ip_mask]
show ip rip interface [ip_addresses]
show ip rip peer [ip_address]
show ip rip redist [local] [static] [ospf] [bgp]
show ip rip redist-filter [local] [static] [ospf] [bgp]
show ip rip debug

```

IPX Commands

```

ipx routing
no ipx routing
ipx default-route [vlan] network_number [network_node]
no ipx default-route [vlan]
ipx route network_number next_hop_network next_hop_node [hop_count] [delay]
no ipx route network_number
clear ipx route {rip | sap | all}
ping ipx network_number network_node [count packets] [size bytes] [timeout seconds] [type packet_type]
ipx filter [vlan] rip {in | out} {allow | block} [network_number [mask network_mask]]
no ipx filter [vlan] rip {in | out} {allow | block} [network_number [mask network_mask]]
ipx filter [vlan] sap {all | sap_type} {in | out} {allow | block} [network_number [mask network_mask] [network_node [mask
node_mask]]]
no ipx filter [vlan] sap {all | sap_type} {in | out} {allow | block} [network_number [mask network_mask] [network_node
[mask node_mask]]]
ipx filter [vlan] gns {all | gns_type} out {allow | block} [network_number [mask network_mask] [network_node [mask
node_mask]]]
no ipx filter [vlan] gns {all | gns_type} out {allow | block} [network_number [mask network_mask] [network_node [mask
node_mask]]]
ipx type-20-propagation [vlan] {enable | disable}
no ipx type-20-propagation [vlan]
ipx packet-extension [vlan] {enable | disable}
no ipx packet-extension [vlan]
ipx timers [vlan] rip_timer sap_timer
no ipx timers [vlan]
show ipx interface [vlan]
show ipx traffic [vlan]
show ipx default-route
show ipx route {network_number / vlan vlan}
show ipx servers {vlan vlan | server_name / server_type}
show ipx filter {vlan | rip in | rip out | sap in | sap out | gns out | global}
show ipx type-20-propagation
show ipx packet-extension
show ipx timers

```

VRRP Commands

```

vrrp vrid vlan_id [enable | disable | on | off] [priority priority] [preempt | no preempt] [[advertising] interval seconds]
[authenticate password | no authenticate]
no vrrp vrid vlan_id
vrrp vrid vlan_id ip ip_address
vrrp vrid vlan_id no ip ip_address
vrrp trap
no vrrp trap
vrrp delay seconds

```

```

vrrp track track_id [enable | disable] [priority value] {vlan vlan_id | port slot/port | ip ip_address}
no vrrp track track_id
vrrp vrid vlan_id track-association track_id
vrrp vrid vlan_id no track-association track_id
show vrrp [vrid]
show vrrp [vrid] statistics
show vrrp track [track_id]
show vrrp [vrid] track-association [track_id]

```

OSPF Commands

```

ip ospf status {enable | disable}
ip load ospf
ip ospf asbr
no ip ospf asbr
ip ospf exit-overflow-interval seconds
ip ospf extlsdb-limit limit
ip ospf host ip_address tos tos [metric metric]
no ip ospf host ip_address tos tos
ip ospf mtu-checking
no ip ospf mtu-checking
ip ospf redist-filter {local | static | rip | bgp} ip_address subnet_mask [{effect {permit | deny}}] [metric value] [route-tag tag]
    [redist-control {all-subnets | aggregate | no-subnets}]]]
no ip ospf redist-filter {local | static | rip | bgp} ip_address subnet_mask
ip ospf redist status {enable | disable}
ip ospf redist {local | static | rip | bgp} [metric metric] [metric-type {type1 | type2}] [subnets {enable | disable}]
no ip ospf redist {local | static | rip | bgp}
ip ospf route-tag tag
ip ospf spf-timer [delay delay_seconds] [hold hold_seconds]
ip ospf virtual-link area_id router_id [auth-type {none | simple | md5}] [auth-key key_string] [dead-interval seconds] [hello-
interval seconds] [retrans-interval seconds] [transit-delay seconds]
no ip ospf virtual-link area_id router_id
ip ospf neighbor neighbor_id {eligible | non-eligible}
no ip ospf neighbor neighbor_id
ip ospf debug-level level
ip ospf debug-type [error] [warning] [state] [recv] [send] [flood] [spf] [lsdb] [rdb] [age] [vlink] [redist] [summary] [dbexch]
    [hello] [auth] [area] [intf] [mip] [info] [setup] [time] [tm] [restart] [helper] [all]
no ip ospf debug-type [error] [warning] [state] [recv] [send] [flood] [spf] [lsdb] [rdb] [age] [vlink] [redist] [summary] [dbexch]
    [hello] [auth] [area] [intf] [mip] [info] [setup] [time] [tm] [restart] [helper] [all]
ip ospf area area_id [summary {enable | disable}] | [type {normal | stub | nssa}]
no ip ospf area area_id
ip ospf area area_id status {enable | disable}
ip ospf area area_id default-metric tos [[cost cost] | [type {ospf | type 1 | type 2}]]
no ip ospf area area_id default-metric tos
ip ospf area area_id range {summary | nssa} ip_address subnet_mask [effect {admatching | noMatching}]
no ip ospf area area_id range {summary | nssa} ip_address subnet_mask
ip ospf interface ip_address
no ip ospf interface ip_address
ip ospf interface ip_address status {enable | disable}
ip ospf interface ip_address area area_id
ip ospf interface ip_address auth-key key_string
ip ospf interface ip_address auth-type [none | simple | md5]
ip ospf interface ip_address dead-interval seconds
ip ospf interface ip_address hello-interval seconds
ip ospf interface ip_address md5 key_id {enable | disable}
no ip ospf interface ip_address md5 key_id
ip ospf interface ip_address md5 key_id key key_string
ip ospf interface ip_address type {point-to-point | point-to-multipoint | broadcast | non-broadcast}
ip ospf interface ip_address cost cost

```

```

ip ospf interface ip_address poll-interval seconds
ip ospf interface ip_address priority priority
ip ospf interface ip_address retrans-interval seconds
ip ospf interface ip_address transit-delay seconds
ip ospf restart-support {planned-unplanned | planned-only}
no ip ospf restart-support
ip ospf restart-interval [seconds]
ip ospf restart-helper [status {enable | disable}]
ip ospf restart-helper strict-lsa-checking-status {enable | disable}
ip ospf restart initiate
show ip ospf
show ip ospf border-routers [area_id] [router_id] [tos] [gateway]
show ip ospf ext-lsdb [linkstate-id ls_id] [router-id router_id]
show ip ospf host [ip_address]
show ip ospf lsd [area_id] [rtr | net | netsum | asbrsum] [linkstate-id ls_id] [router-id router_id]
show ip ospf neighbor [ip_address]
show ip redistrib [local | static | rip | bgp] [ip_address] [subnet_mask]
show ip ospf redistrib [local | static | rip | bgp]
show ip ospf routes [ip_addr mask tos gateway]
show ip ospf virtual-link [router_id]
show ip ospf virtual-neighbor area_id router_id
show ip ospf area [area_id]
show ip ospf area area_id range [{summary | nssa} ip_address ip_mask]
show ip ospf area area_id stub
show ip ospf interface [ip_address]
show ip ospf restart
show ip ospf debug

```

BGP Commands

```

ip load bgp
ip bgp status {enable | disable}
ip bgp autonomous-system value
ip bgp bestpath as-path ignore
no ip bgp bestpath as-path ignore
ip bgp cluster-id ip_address
ip bgp default local-preference value
ip bgp fast-external-failover
no ip bgp fast-external-failover
ip bgp always-compare-med
no ip bgp always-compare-med
ip bgp bestpath med missing-as-worst
no ip bgp bestpath med missing-as-worst
ip bgp client-to-client reflection
no ip bgp client-to-client reflection
ip bgp as-origin-interval seconds
no ip bgp as-origin-interval
ip bgp synchronization
no ip bgp synchronization
ip bgp confederation identifier value
ip bgp maximum-paths
no ip bgp maximum-paths
ip bgp log-neighbor-changes
no ip bgp log-neighbor-changes
ip bgp dampening [half-life half_life reuse reuse suppress suppress max-suppress-time max_suppress_time]
no ip bgp dampening
ip bgp dampening clear
ip bgp debug-type [warnings | tm | tcp | sync | sendudp | peer | redistrib | recvdud | policy | peer | open | notify | mip | local | keepalive
| info | fsm | errors | damp | aggr | all]

```

ip bgp debug-level *level*
ip bgp aggregate-address *ip_address ip_mask*
no ip bgp aggregate-address *ip_address ip_mask*
ip bgp aggregate-address *ip_address ip_mask* status {enable | disable}
ip bgp aggregate-address *ip_address ip_mask* as-set
no ip bgp aggregate-address *ip_address ip_mask* as-set
ip bgp aggregate-address *ip_address ip_mask* community *string*
ip bgp aggregate-address *ip_address ip_mask* local-preference *value*
no ip bgp aggregate-address *ip_address ip_mask* local-preference *value*
ip bgp aggregate-address *ip_address ip_mask* metric *value*
no ip bgp aggregate-address *ip_address ip_mask* metric *value*
ip bgp aggregate-address *ip_address ip_mask* summary-only
no ip bgp aggregate-address *ip_address ip_mask* summary-only
ip bgp network *network_address ip_mask*
no ip bgp network *network_address ip_mask*
ip bgp network *network_address ip_mask* status {enable | disable}
ip bgp network *network_address ip_mask* community *string*
ip bgp network *network_address ip_mask* local-preference *value*
no ip bgp network *network_address ip_mask* local-preference *value*
ip bgp network *network_address ip_mask* metric *value*
no ip bgp network *network_address ip_mask* metric *value*
ip bgp neighbor *ip_address*
no ip bgp neighbor *ip_address*
ip bgp neighbor *ip_address* status {enable | disable}
ip bgp neighbor *ip_address* advertisement-interval *value*
ip bgp neighbor *ip_address* clear
ip bgp neighbor *ip_address* route-reflector-client
no ip bgp neighbor *ip_address* route-reflector-client
ip bgp neighbor *ip_address* default-originate
no ip bgp neighbor *ip_address* default-originate
ip bgp neighbor *ip_address* timers *keepalive holdtime*
ip bgp neighbor *ip_address* conn-retry-interval *seconds*
ip bgp neighbor *ip_address* auto-restart
ip bgp neighbor *ip_address* maximum-prefix *maximum* [warning-only]
ip bgp neighbor *ip_address* md5 key {*string* | none}
ip bgp neighbor *ip_address* md5 key-encrypt *encrypted_string*
ip bgp neighbor *ip_address* ebgp-multihop [*ttl*]
no ip bgp neighbor *ip_address* ebgp-multihop
ip bgp neighbor *ip_address* description *string*
ip bgp neighbor *ip_address* next-hop-self
no ip bgp neighbor *ip_address* next-hop-self
ip bgp neighbor *ip_address* passive
no ip bgp neighbor *ip_address* passive
ip bgp neighbor *ip_address* remote-as *value*
ip bgp neighbor *ip_address* remove-private-as
no ip bgp neighbor *ip_address* remove-private-as
ip bgp neighbor *ip_address* soft-reconfiguration
no ip bgp neighbor *ip_address* soft-reconfiguration
ip bgp neighbor *ip_address* stats-clear
ip bgp confederation neighbor *ip_address*
no ip bgp confederation neighbor *ip_address*
ip bgp neighbor *ip_address* update-source *interface_address*
ip bgp neighbor *ip_address* in-aspathlist {*string* / none}
ip bgp neighbor *ip_address* in-communitylist {*string* / none}
ip bgp neighbor *ip_address* in-prefixlist {*string* / none}
ip bgp neighbor *ip_address* out-aspathlist {*string* / none}
ip bgp neighbor *ip_address* out-communitylist {*string* / none}
ip bgp neighbor *ip_address* out-prefixlist {*string* / none}
ip bgp neighbor *ip_address* route-map {*string* | none} {in | out}

```

no ip bgp neighbor ip_address route-map {in | out}
ip bgp neighbor ip_address clear soft {in | out}
ip bgp policy aspath-list name "regular_expression"
no ip bgp policy aspath-list name "regular_expression"
ip bgp policy aspath-list name "regular_expression" action {permit | deny}
ip bgp policy aspath-list name "regular_expression" priority value
ip bgp policy community-list name {none | no-export | no-advertise | no-export-subconfed | num:num}
no ip bgp policy community-list name {none | no-export | no-advertise | no-export-subconfed | num:num}
ip bgp policy community-list name {none | no-export | no-advertise | no-export-subconfed | num:num} action {permit | deny}
ip bgp policy community-list name {none | no-export | no-advertise | no-export-subconfed | num:num} match-type {exact | occur}
ip bgp policy community-list name {none | no-export | no-advertise | no-export-subconfed | num:num} priority value
ip bgp policy prefix-list name ip_address ip_mask
no ip bgp policy prefix-list name ip_address ip_mask
ip bgp policy prefix-list name ip_address ip_mask action {permit | deny}
ip bgp policy prefix-list name ip_address ip_mask ge value
ip bgp policy prefix-list name ip_address ip_mask le value
ip bgp policy route-map name sequence_number
ip bgp policy route-map name sequence_number action {permit | deny}
ip bgp policy route-map name sequence_number aspath-list as_name
ip bgp policy route-map name sequence_number asprepend path
ip bgp policy route-map name sequence_number community [none | no-export | no-advertise | no-export-subconfed | num:num]
ip bgp policy route-map name sequence_number community-list name
ip bgp policy route-map name sequence_number community-mode {add | replace}
ip bgp policy route-map name sequence_number lpref value
ip bgp policy route-map name sequence_number lpref-mode {none | inc | dec | rep}
ip bgp policy route-map name sequence_number match-community [none | no-export | no-advertise | no-export-subconfed | num:num]
ip bgp policy route-map name sequence_number match-mask ip_address
ip bgp policy route-map name sequence_number match-prefix ip_address
ip bgp policy route-map name sequence_number match-regexp "regular_expression"
ip bgp policy route-map name sequence_number med value
ip bgp policy route-map name sequence_number med-mode {none | inc | dec | rep}
ip bgp policy route-map name sequence_number origin {igp | egp | incomplete | none}
ip bgp policy route-map name sequence_number prefix-list prefix_name
ip bgp policy route-map name sequence_number weight value
ip bgp policy route-map name sequence_number community-strip community_list
ip bgp redistrib-filter {local | static | rip | ospf} ip_address ip_mask
no ip bgp redistrib-filter {local | static | rip | ospf} ip_address ip_mask
ip bgp redistrib-filter {local | static | rip | ospf} ip_address ip_mask community community_string
ip bgp redistrib-filter {local | static | rip | ospf} ip_address ip_mask effect {permit | deny}
ip bgp redistrib-filter {local | static | rip | ospf} ip_address ip_mask local-preference value
ip bgp redistrib-filter {local | static | rip | ospf} ip_address ip_mask metric value
ip bgp redistrib-filter {local | static | rip | ospf} ip_address ip_mask subnets
no ip bgp redistrib-filter {local | static | rip | ospf} ip_address ip_mask subnets
show ip bgp
show ip bgp statistics
show ip bgp dampening
show ip bgp dampening-stats [ip_address ip_mask] [peer_address]
show ip bgp path
show ip bgp routes [network_address ip_mask]
show ip bgp debug
show ip bgp aggregate-address [ip_address ip mask]
show ip bgp network [network_address ip_mask]
show ip bgp neighbors [ip_address]
show ip bgp neighbors policy [ip_address]
show ip bgp neighbors timer [ip_address]
show ip bgp neighbors statistics [ip_address]
show ip bgp policy aspath-list [name] ["regular_expression"]

```

```
show ip bgp policy community-list [name] [string]
show ip bgp policy prefix-list [name] [ip_address ip_mask]
show ip bgp policy route-map [name] [sequence_number]
show ip bgp redist-filter [local] [static] [rip] [ospf]
```

PIM-SM Commands

```
ip load pimsm
ip pimsm status {enable | disable}
ip pimsm cbsr-masklength bits
ip pimsm static-rp status {enable | disable}
ip pimsm static-rp group_address mask rp_address
no ip pimsm static-rp group_address mask rp_address
ip pimsm rp-candidate group_address mask rp_address
no ip pimsm rp-candidate group_address mask rp_address
ip pimsm rp-threshold bps
ip pimsm crp-address ip_address
no ip pimsm crp-address
ip pimsm crp-expirytime seconds
ip pimsm crp-holdtime seconds
ip pimsm crp-interval seconds
ip pimsm crp-priority priority
ip pimsm data-timeout seconds
ip pimsm joinprune-interval seconds
ip pimsm max-rps number
ip pimsm probe-time seconds
ip pimsm register checksum {header | full}
ip pimsm registersuppress-timeout seconds
ip pimsm spt status {enable | disable}
ip pimsm interface ip_address
no ip pimsm interface ip_address
ip pimsm interface ip_address hello-interval seconds
ip pimsm interface ip_address joinprune-interval seconds
ip pimsm interface ip_address cbsr-preference value
ip pimsm interface ip_address dr-priority priority
ip pimsm interface ip_address prune-delay status {enable | disable}
ip pimsm interface ip_address prune-delay milliseconds
ip pimsm interface ip_address override-interval milliseconds
ip pimsm interface ip_address triggered-hello seconds
ip pimsm interface ip_address hello-holdtime seconds
ip pimsm interface ip_address genid {enable | disable}
ip pimsm interface ip_address joinprune-holdtime seconds
ip pimsm debug-level level
ip pimsm debug-type message_list
no ip pimsm debug-type message_list
show ip pimsm
show ip pimsm neighbor [ip_address]
show ip pimsm rp-candidate
show ip pimsm rp-set
show ip pimsm interface [ip_address]
show ip pimsm nexthop [group_address source_address mask]
show ip pimsm mroute [group_address source_address mask]
show ip pimsm static-rp
show ip pimsm debug
```

DVMRP Commands

```
ip load dvmrp
ip dvmrp status {enable | disable}
```



```

ip dvmrp flash-interval seconds
ip dvmrp graft-timeout seconds
ip dvmrp interface ip_address
no ip dvmrp interface ip_address
ip dvmrp interface ip_address metric value
ip dvmrp neighbor-interval seconds
ip dvmrp neighbor-timeout seconds
ip dvmrp prune-lifetime seconds
ip dvmrp prune-timeout seconds
ip dvmrp report-interval seconds
ip dvmrp route-holddown seconds
ip dvmrp route-timeout seconds
ip dvmrp subord-default {true | false}
ip dvmrp tunnel local_address remote_address
no ip dvmrp tunnel local_address remote_address
ip dvmrp tunnel local_address remote_address ttl value
ip dvmrp debug-level level
ip dvmrp debug-type message_type
no ip dvmrp debug-type message_type
show ip dvmrp
show ip dvmrp interface [ip_address | enabled | disabled]
show ip dvmrp neighbor [ip_address]
show ip dvmrp nexthop [ip_address ip_mask]
show ip dvmrp prune [group_address source_address source_mask]
show ip dvmrp route [ip_address ip_mask]
show ip dvmrp tunnel [local_address remote_address]
show ip dvmrp debug

```

Multicast Routing Commands

```

ip mroute-boundary ip_address scoped_address mask
no ip mroute-boundary ip_address scoped_address mask
ip mroute interface ip_address ttl threshold
show ip mroute-boundary
show ip mroute
show ip mroute interface
show ip mroute-nexthop
ip mroute debug-level level
ip mroute debug-type message_list
no ip mroute debug-type message_list
show ip mroute debug

```

Port Mirroring Commands

```

port mirroring port_mirror_sessionid source slot/port destination slot/port [bidirectional | inport | outport] [unblocked vlan_id]
[enable | disable]
port mirroring port_mirror_sessionid {enable | disable}
no port mirroring port_mirror_sessionid {enable | disable}
show port mirroring status [port_mirror_sessionid]

```

RMON Commands

```

rmon probes {stats | history | alarm} [entry-number] {enable | disable}
show rmon probes [stats | history | alarm] [entry-number]
show rmon events [event-number]

```

Health Monitoring Commands

```

health threshold {rx percent | txrx percent | memory percent | cpu percent | temperature degrees}
health interval seconds

```

health statistics reset
show health threshold [rx | txrx | memory | cpu | temperature]
show health interval
show health [slot/port] [statistics]
show health all {memory | cpu | rx | txrx}
show health slice slot

QoS Commands

qos {enable | disable}
qos trust ports
qos no trust ports
qos default queues {2 | 4}
qos default servicing mode {strict-priority | priority-wrr [w1 w2 w3 w4]}
qos forward log
qos no forward log
qos log console
qos no log console
qos log lines lines
qos log level level
qos no log level
qos classifyl3 bridged
qos no classifyl3 bridged
qos classify fragments
qos no classify fragments
qos flow timeout seconds
qos fragment timeout seconds
qos reflexive timeout seconds
qos no reflexive timeout
qos nat timeout seconds
qos default bridged disposition {accept | deny | drop}
qos default routed disposition {accept | deny | drop}
qos default multicast disposition {accept | deny | drop}
qos stats interval seconds
debug qos [info] [config] [rule] [main] [route] [hre] [port] [msg] [sl] [ioctl] [mem] [cam] [mapper] [flows] [queue] [slot] [l2] [l3] [classifier] [nat] [sem] [pm] [ingress] [egress] [rsvp] [balance] [nimsg]
debug no qos
debug no qos [info] [config] [rule] [main] [route] [hre] [port] [msg] [sl] [ioctl] [mem] [cam] [mapper] [flows] [queue] [slot] [l2] [l3] [classifier] [nat] [sem] [pm] [ingress] [egress] [rsvp] [balance] [nimsg]
debug qos internal [slice slot/slice] [flow] [queue] [port] [l2tree] [l3tree] [vector] [pending] [verbose] [mapper] [pool] [log] [pingonly | nopingingonly]
qos clear log
qos apply
qos revert
qos flush
qos reset
qos stats reset
policy rule rule_name [enable | disable] [precedence precedence] [condition condition] [action action] [reflexive] [save] [log]
no policy rule rule_name
policy rule rule_name [no reflexive] [no save] [no log]
policy network group net_group ip_address [mask net_mask] [ip_address2 [mask net_mask2]...]
no policy network group net_group
policy network group net_group no ip_address [mask netmask] [ip_address2 [mask net_mask2]...]
policy service group service_group service_name1 [service_name2...]
no policy service group service_group
policy service group service_group no service_name1 [service_name2...]
policy mac group mac_group mac_address [mask mac_mask] [mac_address2 [mask mac_mask2]...]
no policy mac group mac_group
policy mac group mac_group no mac_address [mask mac_mask] [mac_address2 [mask mac_mask2]...]

policy port group *group_name* *slot/port[-port]* [*slot/port[-port]...*]
no policy port group *group_name*
policy port group *group_name* no *slot/port[-port]* [*slot/port[-port]...*]
policy service *service_name*
no policy service *service_name*
policy service *service_name* protocol *protocol* {[source ip port *port[-port]*] [destination ip port *port[-port]*]}
no policy service *service_name*
policy service *service_name* [no source ip port] [no destination ip port]
policy service *service_name* source tcp port *port[-port]*
no policy service *service_name*
policy service *service_name* no source tcp port
policy service *service_name* destination tcp port *port[-port]*
no policy service *service_name*
policy service *service_name* no destination tcp port
policy service *service_name* source udp port *port[-port]*
no policy service *service_name*
policy service *service_name* no source udp port
policy service *service_name* destination udp port *port[-port]*
no policy service *service_name*
policy service *service_name* no destination udp port
policy map group *map_group* {*value1:value2...*}
no policy map group *map_group*
policy map group no {*value1:value2...*}
policy condition *condition_name*
no policy condition *condition_name*
policy condition *condition_name* source ip *ip_address* [mask *netmask*]
policy condition *condition_name* no source ip
policy condition *condition_name* destination ip *ip_address* [mask *netmask*]
policy condition *condition_name* no destination ip
policy condition *condition_name* multicast ip *ip_address* [mask *netmask*]
policy condition *condition_name* no multicast ip
policy condition *condition_name* source network group *network_group*
policy condition *condition_name* no source network group
policy condition *condition_name* destination network group *network_group*
policy condition *condition_name* no destination network group
policy condition *condition_name* multicast network group *multicast_group*
policy condition *condition_name* no multicast network group
policy condition *condition_name* source ip port *port[-port]*
policy condition *condition_name* no source ip port
policy condition *condition_name* destination ip port *port[-port]*
policy condition *condition_name* no destination ip port
policy condition *condition_name* source tcp port *port[-port]*
policy condition *condition_name* no source tcp port
policy condition *condition_name* destination tcp port *port[-port]*
policy condition *condition_name* no destination tcp port
policy condition *condition_name* source udp port *port[-port]*
policy condition *condition_name* no source udp port
policy condition *condition_name* destination udp port *port[-port]*
policy condition *condition_name* no destination udp port
policy condition *condition_name* ethertype *etype*
policy condition *condition_name* no ethertype
policy condition *condition_name* service *service_name*
policy condition *condition_name* no service
policy condition *condition_name* service group *service_group*
policy condition *condition_name* no service group
policy condition *condition_name* icmp type *type*
policy condition *condition_name* no icmp type
policy condition *condition_name* icmp code *code*
policy condition *condition_name* no icmp code

policy condition *condition_name* ip protocol *protocol*
policy condition *condition_name* no ip protocol
policy condition *condition_name* tos *tos_value* [mask *tos_mask*]
policy condition *conditioning* no tos
policy condition *condition_name* dscp *dscp_value* [mask *dscp_mask*]
policy condition *condition_name* no dscp
policy condition *condition_name* source mac *mac_address* [mask *mac_mask*]
policy condition *condition_name* no source mac
policy condition *condition_name* destination mac *mac_address* [mask *mac_mask*]
policy condition *condition_name* no destination mac
policy condition *condition_name* source mac group *group_name*
policy condition *condition_name* no source mac group
policy condition *condition_name* destination mac group *mac_group*
policy condition *condition_name* no destination
policy condition *condition_name* source vlan *vlan_id*
policy condition *condition_name* no source vlan
policy condition *condition_name* destination vlan *vlan_id*
policy condition *condition_name* no destination vlan
policy condition *condition_name* 802.1p *802.1p_value*
policy condition *condition_name* no 802.1p
policy condition *condition_name* source port *slot/port*[-*port*]
policy condition *condition_name* no source port
policy condition *condition_name* destination port *slot/port*[-*port*]
policy condition *condition_name* no destination port
policy condition *condition_name* source port group *group_name*
policy condition *condition_name* no source port group
policy condition *condition_name* destination port group *group_name*
policy condition *condition_name* no destination port
policy condition *condition_name* source interface type {ethernet | wan | ethernet-10 | ethernet-100 | ethernet-1G | ethernet-10G}
policy condition *condition_name* no source interface type
policy condition *condition_name* destination interface type {ethernet | wan | ethernet-10 | ethernet-100 | ethernet-1G | ethernet-10G}
policy condition *condition_name* no destination interface type
policy action *action_name*
policy no action *action_name*
policy action *action_name* disposition {accept | drop | deny}
policy action *action_name* no disposition
policy action *action_name* shared
policy action *action_name* no shared
policy action *action_name* priority *priority_value*
policy action *action_name* no priority
policy action *action_name* minimum bandwidth *bps*
policy action *action_name* no minimum bandwidth
policy action *action_name* maximum bandwidth *bps*
policy action *action_name* no maximum bandwidth
policy action *action_name* maximum buffers *max_buffers*
policy action *action_name* no maximum buffers
policy action *action_name* minimum depth *bytes*
policy action *action_name* no minimum depth
policy action *action_name* maximum depth *bytes*
policy action *action_name* no maximum depth
policy action *action_name* tos *tos_value*
policy action *action_name* no tos
policy action *action_name* 802.1p *802.1p_value*
policy action *action_name* no 802.1p
policy action *action_name* dscp *dscp_value*
policy action *action_name* no dscp
policy action map {802.1p | tos | dscp} to {802.1p | tos | dscp} using *map_group*
policy action no map

policy action *action_name* source rewrite ip *ip_address* [mask *netmask*]
 policy action *action_name* no source rewrite ip
 policy action *action_name* source rewrite network group *network_group*
 policy action *action_name* no source rewrite network group
 policy action *action_name* destination rewrite ip *ip_address* [mask *netmask*]
 policy action *action_name* no destination rewrite ip
 policy action *action_name* destination rewrite network group *network_group*
 policy action *action_name* no destination rewrite network group
 policy action *action_name* load balance group *slb_cluster*
 policy action *action_name* no load balance group
 policy action *action_name* alternate gateway ip *ip_address*
 policy action *action_name* no alternate gateway ip
 policy action *action_name* permanent gateway ip *ip_address*
 policy action *action_name* no permanent gateway ip
 qos port *slot/port* reset
 qos port *slot/port*
 qos port *slot/port* default queues [2 | 4]
 qos port *slot/port* servicing mode {strict-priority | priority-wrr | default [*w1 w2 w3 w4*]}
 qos port *slot/port* trusted
 qos port *slot/port* no trusted
 qos port *slot/port* maximum bandwidth *bps*
 qos port *slot/port* no maximum bandwidth
 qos port *slot/port* maximum reserve bandwidth *bps*
 qos port *slot/port* no maximum reserve bandwidth
 qos port *slot/port* maximum signal bandwidth *bps*
 qos port *slot/port* no maximum signal bandwidth
 qos port *slot/port* maximum default depth *bytes*
 qos port *slot/port* no maximum default depth
 qos port *slot/port* maximum default buffers *max_default_buffers*
 qos port *slot/port* no maximum default buffers
 qos port *slot/port* default 802.1p *value*
 qos port *slot/port* default dscp *value*
 qos port *slot/port* default classification {802.1p | tos | dscp}
 qos port *slot/port* enqueueing thresholds *up0-low0 up1-low1 up2-low2 up3-low3*
 qos port *slot/port* no enqueueing thresholds
 qos port *slot/port* protocol *id* [priority {*p0 p1 p2 p3 p4 p5 p6 p7*}] [classification {tos | 802.1p | dscp}]
 qos port *slot/port* no protocol *id*
 qos slice *slot/slice* protocol *id* ethertype *etype* [dsapssap *dsap/ssap*] [802.3 {enable | disable}] [priority | fallback]
 qos slice *slot/slice* no protocol *id*
 qos slice *slot/slice* dscp *index value*
 qos slice *slot/slice* servicing mode {strict-priority | wrr | priority-wrr [*p1 p2 p3*]}
 qos slice *slot/slice* wred thresholds *up0-low0 up1-low1 up2-low2 up3-low3* [weight *weight_value*]
 qos slice *slot/slice* no wred thresholds
 show policy classify {12 | 13 | multicast} [applied]
 show policy classify {12 | 13 | multicast} [applied] source port *slot/port*
 show policy classify {12 | 13 | multicast} [applied] source mac *mac_address*
 show policy classify {12 | 13 | multicast} [applied] destination mac *mac_address*
 show policy classify {12 | 13 | multicast} [applied] source vlan *vlan_id*
 show policy classify {12 | 13 | multicast} [applied] destination vlan *vlan_id*
 show policy classify {12 | 13 | multicast} [applied] source interface type {ethernet | wan | ethernet-10 | ethernet-100 | ethernet-1G | ethernet-10G}
 show policy classify {12 | 13 | multicast} [applied] source ip *ip_address*
 show policy classify {12 | 13 | multicast} [applied] destination ip *ip_address*
 show policy classify {12 | 13 | multicast} [applied] multicast ip *ip_address*
 show policy classify {12 | 13 | multicast} [applied] tos *tos_value*
 show policy classify {12 | 13 | multicast} [applied] dscp *dscp_value*
 show policy classify {12 | 13 | multicast} [applied] ip protocol *protocol*
 show policy classify {12 | 13 | multicast} [applied] source ip port *port*
 show policy classify {12 | 13 | multicast} [applied] destination ip port *port*

```

show [applied] policy network group [network_group]
show [applied] policy service [service_name]
show [applied] policy service group [service_group]
show [applied] policy mac group [mac_group]
show [applied] policy port group [group_name]
show [applied] policy map group [group_name]
show [applied] policy action [action_name]
show [applied] policy condition [condition_name]
show active [bridged | routed | multicast] policy rule [rule_name]
show [applied] [bridged | routed | multicast] policy rule [rule_name]
show qos port [slot/port] [statistics]
show qos port [slot/port] [statistics] high-density-module
show qos port [slot/port] pdis
show qos queue
show qos slice [slot/slice]
show qos slice [slot/slice] high-density-module
show qos slice [slot/slice] pcams
show qos log
show qos config
show qos statistics

```

Policy Server Commands

```

policy server load
policy server flush
policy server ip_address [port port_number] [admin {up | down}] [preference preference] [user user_name password
    password] [searchbase search_string] [ssl | no ssl]
no policy server ip_address [port port_number]
show policy server
show policy server long
show policy server statistics
show policy server rules
show policy server events

```

IP Multicast Switching Commands

```

ip multicast switching
no ip multicast switching
ip multicast igmp-proxy-version {v2 | v3}
ip multicast no igmp-proxy-version
ip multicast leave-timeout seconds
ip multicast no leave-timeout
ip multicast query-interval seconds
ip multicast no query-interval
ip multicast membership-timeout seconds
ip multicast no membership-timeout
ip multicast neighbor-timeout seconds
ip multicast no neighbor-timeout
ip multicast querier-timeout seconds
ip multicast no querier-timeout
ip multicast other-querier-timeout seconds
ip multicast no other-querier-timeout
ip multicast priority {urgent | high | medium | low}
ip multicast no priority
ip multicast max-ingress-bandwidth megabits
ip multicast no max-ingress bandwidth
ip multicast static-neighbor vlan_id {slot/port | linkagg agg_num} [v2 | v3]
ip multicast no static-neighbor vlan_id {slot/port | linkagg agg_num} [v2 | v3]
ip multicast static-querier vlan_id {slot/port | linkagg agg_num} [v2 | v3]

```

```

ip multicast no static-querier vlan_id {slot/port | linkagg agg_num} [v2 | v3]
ip multicast static-member ip_address {slot/port | linkagg agg_num} vlan_id
ip multicast no static-member ip_address {slot/port | linkagg agg_num} vlan_id
ip multicast hardware-routing
ip multicast no hardware-routing
show ip multicast switching
show ip multicast groups [ip_address]
show ip multicast neighbors
show ip multicast queriers
show ip multicast forwarding [ip_address]
show ip multicast policy-cache

```

Server Load Balancing Commands

```

ip slb admin {enable | disable}
ip slb cluster name vip ip_address
no ip slb cluster name
ip slb server ip ip_address cluster cluster_name [admin status {enable | disable}] [weight admin_weight]
no ip slb server ip ip_address cluster cluster_name
ip slb cluster cluster_name admin status {enable | disable}
ip slb cluster cluster_name ping period seconds
ip slb cluster cluster_name ping timeout milliseconds
ip slb cluster cluster_name ping retries count
ip slb cluster cluster_name distribution {round robin | server failover}
ip slb cluster cluster_name sticky time seconds
show ip slb
show ip slb clusters
show ip slb cluster name
show ip slb cluster name server ip_address
show ip slb servers

```

High Availability VLAN Commands

```

vlan vid port-mac ingress-port slot1/port1[-port1a] [slot2/port2[-port2a]...]
vlan vid port-mac no ingress-port slot1/port1[-port1a] [slot2/port2[-port2a]...]
vlan vid port-mac egress-port slot1/port1[-port1a] [slot2/port2[-port2a]...]
vlan vid port-mac no egress-port slot1/port1[-port1a] [slot2/port2[-port2a]...]
mac-address-table port-mac vlan vid mac mac_address1 [mac_address2...]
mac-address-table port-mac vlan vid no mac mac_address1 [mac_address2...]
show mac-address-table port-mac [vlan vid]

```

AAA Commands

```

aaa radius-server server [host {hostname | ip_address} [hostname2 | ip_address2]] [key secret] [retransmit retries] [timeout seconds] [auth-port auth_port] [acct-port acct_port]
no aaa radius server server
aaa ldap-server server_name [host {hostname | ip_address} [{hostname2 | ip_address2}]] [dn dn_name] [password super_password] [base search_base] [retransmit retries] [timeout seconds] [ssl | no ssl] [port port]
no aaa ldap-server server-name
aaa ace-server clear
aaa authentication vlan single-mode server1 [server2] [server3] [server4]
no aaa authentication vlan
aaa authentication vlan multiple-mode vlan_id server1 [server2] [server3] [server4]
no aaa authentication vlan vlan_id
aaa avlan no [mac-address] mac_address
aaa avlan dns [name] dns_name
no aaa avlan dns [name]
aaa avlan default dhcp [gateway] ip_address
no aaa avlan default dhcp [gateway]
aaa authentication {console | telnet | ftp | http | snmp | ssh | default} server1 [server2...] [local]

```

```

no aaa authentication [console | telnet | ftp | http | snmp | ssh | default]
aaa authentication {console | telnet | ftp | http | snmp | ssh } default
aaa authentication 802.1x [open-global | open-unique] server1 [server2] [server3] [server4]
no aaa authentication 802.1x
aaa accounting 802.1x server1 [server2...] [local]
no aaa accounting 802.1x
aaa accounting vlan [vlan_id] server1 [server2...] [local]
no accounting vlan [vlan_id]
aaa accounting session server1 [server2...] [local]
no accounting session
avlan default-traffic {enable | disable}
avlan port-bound {enable | disable}
avlan vlan_id auth-ip ip_address
aaa avlan http language
user username [password password] [expiration {day / date}] [read-only | read-write [families... / domains... / all | none]] [no
    snmp | no auth | sha | md5 | sha+des | md5+des] [end-user profile name]
no user username
password
user password-size min size
user password-expiration {day / disable}
end-user profile name [read-only [area | all]] [read-write [area | all]] [disable [area | all]]
no end-user profile name
end-user profile name vlan-range vlan_range [vlan_range2...]
end-user profile name no vlan-range vlan1 [vlan2..]
show aaa server [server_name]
show aaa authentication vlan
show aaa authentication
show aaa authentication 802.1x
show aaa authentication 802.1x
show aaa accounting vlan
show aaa accounting
show user [username]
show user password-size
show user password-expiration
show avlan user [vlan vlan_id | slot slot]
show aaa avlan config
show aaa avlan auth-ip [vlan vlan_id]
debug command-info {enable | disable}
debug end-user profile name
show end-user profile name
show aaa priv hexa [domain or family]

```

802.1X Commands

```

802.1x slot/port [direction {both | in}] [port-control {force-authorized | force-unauthorized | auto}] [quiet-period seconds] [tx-
    period seconds] [supp-timeout seconds] [server-timeout seconds] [max-req max_req] [re-authperiod seconds]
    [reauthentication | no reauthentication]]
802.1x initialize slot/port
802.1x reauthenticate slot/port
show 802.1x [slot/port]
show 802.1x statistics [slot/port]

```


Memory Monitoring Commands

```
debug ktrace {enable | disable}
debug ktrace appid {appid | integer} level {level | integer}
debug ktrace no appid appid
debug ktrace show
debug ktrace show log [file]
debug systrace {enable | disable}
debug systrace watch {enable | disable}
debug systrace appid {appid | integer} level {level | integer}
debug systrace no appid appid
debug systrace show
debug systrace show log [file]
show log pmd file_name [type type_string | id registrationidentifier_int | subid subidentifier_int | taskname taskname_string |
    taskid tasknumber_int | record recordtype_string | address address_int]
debug memory monitor {enable | disable}
debug memory monitor show log
debug memory monitor show log global
debug memory monitor show log task
debug memory monitor show log size
```

Switch Logging Commands

```
swlog
no swlog
swlog appid {appid | integer} level {level | integer}
no swlog appid appid
swlog output {console | flash | socket [ip_address]}
no swlog output {console | flash | socket [ip_address]}
swlog output flash file-size bytes
swlog clear
show log swlog
show log swlog [session session_id] [timestamp start_time [end_time]] [appid appid] [level level]
show swlog
```