Chapter 20
Show Commands

show appletalk arp

Displays the ARP Table for the AppleTalk routing protocol.

EXAMPLE:

```
Index     Node Address     Mac Address      Port
1         10.30            00e0.5200.0000   1
```

Syntax: show appletalk arp

Possible values: N/A

Default value: N/A

show appletalk cache

Displays the forwarding table for the AppleTalk routing protocol. You can clear this cache by entering the CLI command, **clear appletalk cache**.

EXAMPLE:

```
HP9300> show appletalk cache
Total number of cache entries: 8
D:Dynamic  P:Permanent  F:Forward  U:Us  W:Wait ARP  K:Drop
     Destination       Next Hop      MAC              Type  Fid Vlan
1    6499.193          6300.22       0000.c541.bc71   DF    9    1
2    6401.0            6300.22       0000.c541.bc71   DF    9    1
3    6300.177          0.0           0000.0000.0000   PU    0
4    6300.22           0.0           0000.c541.bc71   DF    9    1
5    450.0             0.0           0000.0000.0000   PU    0
6    400.0             0.0           0000.0000.0000   PU    0
7    6300.0            0.0           0000.0000.0000   PU    0
8    450.177           0.0           0000.0000.0000   PU    0
```

Syntax: show appletalk cache

Possible values: N/A

Default value: N/A

show appletalk globals

Displays the global configuration parameters for the AppleTalk routing protocol.

EXAMPLE:

```
HP9300> show appletalk globals

AppleTalk Routing Global Settings:

enabled: Routing

disabled: Glean Packets

rtmp-update-interval: 10

zip-query-interval:10, arp-retransmit-interval: 1, arp-retransmit-count: 2

QOS Priority 0 Sockets: 1 - 254

QOS Priority 1 Sockets: None
```

Syntax: show appletalk globals

show appletalk interface

Displays the AppleTalk configuration for an individual interface or all interfaces.

EXAMPLE:

To view the configuration for all interfaces, enter **show appletalk interface**, as shown in the example below. To view the configuration of a specific interface, enter **show appletalk interface ethernet** <portnum>. To view the configuration of a virtual interface (VE), enter **show appletalk interface ve** <num>.

```
HP9300> show appletalk interface
Interface Ethernet 15
  port state: UP
  routing: Enabled
  operation mode:Seed Router
  address: 100.50,  cable-range: 100 - 100 arp-age 10
  Zone Filter List:
  Action: Permit  Zone name: sales, no RTMP Filtering
  Additional Zones Action: Permit, No RTMP Filtering
Interface Ethernet 16
  port state: DOWN
routing: Disabled
  operation mode:Routing not enabled.
  address: 200.50,  cable-range: 200 - 400 arp-age 10
  Zone Filter List:  No zone filters are configured.
Interface Ve 3
  members: ethe 1 to 3
  active: ethe 1
  port state: UP
  routing: Enabled
  operation mode: Seed Router
  address: 200.50,  cable-range: 200 - 200 arp-age 10
  Zone List:
  Finance
  Zone Filter List:  No zone filters are configured.
```

Syntax: show appletalk interface [ethernet <portnum> | ve <num>]

The **ethernet** <portnum> parameter lets you specify specific interface.

The **ve** <num> parameter lets you specify a virtual interface (VE).

Possible values: N/A

Default value: N/A

show appletalk route

Displays the AppleTalk routing table.

Up to 512 route entries can be stored in the routing table for a system with at least 32 MB of memory.

You can clear learned routes stored in the routing table by entering the **clear appletalk route** command.

EXAMPLE:

```
HP9300> show appletalk route
Index     Cable Range     Next Hop     Distance     State     Port
1         6300  - 6400    0.0          0            0         2
2         6401  - 6500    6300.22      1            0         2
3         400   - 499     0.0          0            0         1
4         500   - 599     450.10       1            0         1
5         600   - 699     450.10       2            0         1
6         200   - 300     450.10       2            0         1
7         1000  - 1100    450.10       2            0         1
8         1200  - 1299    450.10       2            0         1
9         7000  - 8000    450.10       1            0         1
```

NOTE: Please note the following regarding the information displayed in the AppleTalk routing table:

Index: Identifies the entry.

Cable Range: Shows the network numbers to which the route information applies.

Next Hop: Shows the address of the next hop router to which packets for that destination will be sent.

Distance: Indicates the number of hops away that the destination is from this router

State: Indicates the state of the entry. The possible states that may be displayed in this field are listed below with the numerical value that will appear in the table:

- Good route: 0
- Suspect route: 2
- Bad Route: 4

Port: References the port number upon which the next hop router is found.

Syntax: show appletalk route

Possible values: N/A

Default value: N/A

show appletalk traffic

Displays statistical information for RTMP, ZIP, AEP, DDP and AARP packets.

EXAMPLE:

```
HP9300> show appletalk traffic
RTMP Statistics:
  Received: 16038, Transmitted: 16032, Filtered: 0
ZIP Statistics:
  Query Received:16, Transmitted:6, GZL Received: 2, Transmitted: 1
```

```
NetInfo Statistics:
  Received: 10   , Reply:8
AEP Statistics:
  Request Received: 0, Request Transmitted: 0
  Reply Received: 0,   Reply Transmitted: 0
DDP Statistics:
  Received: 55468,  Transmitted: 55445,  Forwarded: 39372
  In-Delivered: 16092, Dropped-No-Route:0, Dropped-Bad-Hop-Counts: 0
  Dropped-Other-Reasons: 0
AARP Statistics:
Received: 14, Transmitted: 22
```

NOTE: Note the following regarding the information displayed in the AppleTalk traffic table.

RTMP Statistics: Provides a count of all RTMP packets received, transmitted and filtered on the router.

ZIP statistics: Provides a count of requests for zone information (Recv. Query) the system receives as well as a count of those ZIP queries made to other routers (Query, Transmitted). The 'Recv GZL' count lists those Get Zone List requests received from other routers and the 'Transmitted' field lists those GZL requests transmitted to other routers.

NetInfo Statistics: The received and reply values of this field refer to the number of zone and network number requests made and received by the router.

AEP Statistics: Provides a count of those AppleTalk Echo Protocol (pings) requests received or transmitted and a count of the replies received or transmitted.

DDP Statistics: Displays the total count of those DDP packets transmitted, received and forwarded from the router; those packets received and forwarded up the AppleTalk protocol stack (in-delivered) and those packets dropped due to an unknown route (no-route), those packets that exceeded maximum hop count and those that were dropped due to unknown MAC address (other-reasons).

AARP Statistics: Displays the total count of those AARP packets received and transmitted by the router.

Syntax: show appletalk traffic

Possible values: N/A

Default value: N/A

show appletalk zone

Displays the network numbers and zones learned on the network. You can clear all information stored in the zone table by entering the **clear appletalk route** command.

EXAMPLE:

```
HP9300> show appletalk zone
Index       Cable   Range      Zonename
1           6300   - 6400      QA
2           6300   - 6400      QARouter
3           6401   - 6500      QA1
4           6401   - 6500      QALab2
5           400    - 499       account
6           1200   - 1299      sales
```

```
7           1000   - 1100      engineering
8           1000   - 1100      HPnetwork
9           1000   - 1100      HPnetworks1
10          200    - 300       marketing
11          600    - 699       management
12          500    - 599       gigabit
13          7000   - 8000      gatethernet0
```

Syntax: show appletalk zone

Possible values: N/A

Default value: N/A

show arp

Displays the ARP cache of the switch or routing switch. For switches, the **show arp** command will not display the 'type' column, but will display a VLAN ID column.

EXAMPLE:

```
HP9300# show arp
Total number of ARP entries: 5
     IP Address          MAC Address         Type        Age     Port
1     207.95.6.102        0800.5afc.ea21      Dynamic     0         6
2     207.95.6.18         00a0.24d2.04ed      Dynamic     3         6
3     207.95.6.54         00a0.24ab.cd2b      Dynamic     0         6
4     207.95.6.101        0800.207c.a7fa      Dynamic     0         6
5     207.95.6.211        00c0.2638.ac9c      Dynamic     0         6
```

Syntax: show arp [ethernet <portnum> | mac-address <xxxx.xxxx.xxxx> [<mask>] | <ip-addr> [<ip-mask>]] [<num>]

Specify the MAC address mask as "f"s and "0"s, where "f"s are significant bits. Specify IP address masks in standard decimal mask format (for example, 255.255.0.0).

The optional <num> parameter lets you display the table beginning with a specific entry number.

Possible values: N/A

EXAMPLE: Default value: N/A

Here are some examples of how to use these commands.

The following command displays all ARP entries for MAC addresses that begin with "abcd":

```
HP9300# show arp mac-address a.b.c.d ffff.0000.0000
```

The following command displays all IP address entries for IP addresses that begin with "209.157":

```
HP9300# show arp 209.157.0.0 255.255.0.0
```

show chassis

Displays the presence and status of power supplies and fans in the chassis.

EXAMPLE:

```
HP9300# show chassis
power supply 1 ok
power supply 2 not present
```

```
fan 1 ok
fan 2 ok
fan 3 ok
fan 4 ok
power supply 3 ok
power supply 4 not present
```

Syntax: show chassis

Possible values: N/A

Default value: N/A

show clock

Displays the current settings for the on-board time counter and Simple Network Time Protocol (SNTP) clock, if configured.

EXAMPLE:

```
HP9300# show clock
```

Syntax: show clock [detail]

Possible values: N/A

Default value: N/A

show configuration

Lists the operating configuration of an HP switch or routing switch. This command allows you to check configuration changes before saving them to flash.

EXAMPLE:

```
HP9300# show configuration
```

Syntax: show configuration

Possible values: N/A

Default value: N/A

show default

Displays the defaults for system parameters.

If you specify "default" but not the optional "values", the default states for parameters that can either be enabled or disabled are displayed. If you also specify "values", the default values for parameters that take a numeric value are displayed.

You can reconfigure the system parameters displayed by the “values” option using the system-max command. See “system-max” on page 6-61.

EXAMPLE:

Here are some examples of the information displayed by these commands. The first example shows the information displayed by the **show default** command on an HP 9308M routing switch.

NOTE: If the information scrolls off the screen, you can enable page-display mode. See “page-display” on page 5-13.

```
HP9300# show default
spanning tree disabled
auto sense port speed      port untagged              port flow control on
no username assigned       no password assigned       boot sys flash primary
system traps enabled       sntp disabled              radius disabled
rip disabled               ospf disabled              bgp disabled

when ip routing enabled :
ip irdp enabled            ip load-sharing enabled    ip proxy arp enabled
ip rarp enabled            ip bcast forward enabled
dvmrp disabled             pim/dm disabled
vrrp disabled              srp disabled

when rip enabled :
rip type:v2 only           rip poison rev enabled

ipx disabled               appletalk disabled
```

EXAMPLE:

The following example shows the command output when you use the values option on an HP 9304M or HP 9308M routing switch.

```
HP9300# show default values
sys log buffers:50         mac age time:300 sec       telnet sessions:5

ip arp age:20 min          bootp relay max hops:4     ip ttl:64 hops
ip addr per intf:24

when multicast enabled :
igmp group memb.:140 sec   igmp query:60 sec

when ospf enabled :
ospf dead:40 sec           ospf hello:10 sec          ospf retrans:5 sec
ospf transit delay:1 sec

when bgp enabled :
bgp local pref.:100        bgp keep alive:60 sec      bgp hold:180 sec
bgp metric:10              bgp local as:1             bgp cluster id:0
bgp ext. distance:20       bgp int. distance:200      bgp local distance:200
```

```
System Parameters    Default    Maximum
arp                  4000       16000
atalk-route          512        3072
atalk-zone-port      64         255
atalk-zone-sys       255        1024
dvmrp                2048       32000
igmp                 255        1024
ip-cache             16000      64000
ip-filter-port       32         256
ip-filter-sys        64         2048
ipx-forward-filter   32         256
ipx-rip-entry        2048       16384
ipx-rip-filter       32         256
ipx-sap-entry        4096       16384
ipx-sap-filter       32         256
l3-vlan              32         1024
ip-qos-session       128        32000
mac                  8000       64000
ip-route             10000      200000
ip-static-route      64         1024
vlan                 8          4096
mac-filter-port      16         256
mac-filter-sys       32         512
```

Syntax: show default [values]

Possible values: N/A

Default value: N/A

show flash

Displays the version of the software image saved in the primary and secondary flash of an HP switch or routing switch.

EXAMPLE:

```
HP9300# show flash
```

Syntax: show flash

Possible values: N/A

Default value: N/A

show interfaces

Displays information about interfaces on the HP switch or routing switch, including their state, duplex mode, STP state, priority and MAC address.

EXAMPLE:

```
HP9300# show interfaces ethernet 4/11
FastEthernet4/11 is up, line protocol is up
  Hardware is FastEthernet, address is 00e0.52f0.4f6a (bia 00e0.52f0.4f6a)
  Configured speed auto, actual 100Mbit, configured duplex fdx, actual fdx
  Member of L2 VLAN ID 10, port is untagged, port state is FORWARDING
  STP configured to OFF, priority is level0, flow control enabled
  mirror disabled, monitor disabled
  Not member of any active trunks
  Not member of any configured trunks
  No port name
  Internet address is 209.157.22.241/24, MTU 1500 bytes, encapsulation ethernet
  5 minute input rate: 8 bits/sec, 0 packets/sec, 0.00% utilization
  5 minute output rate: 0 bits/sec, 0 packets/sec, 0.00% utilization
  1685 packets input, 180006 bytes, 0 no buffer
  Received 91 broadcasts, 0 runts, 0 giants
  0 input errors, 0 CRC, 0 frame, 0 ignored
  31 multicast
  2018 packets output, 1040885 bytes, 0 underruns
  0 output errors, 0 collisions
```

Syntax: show interfaces [ethernet <portnum>] | [loopback <num>] | [slot <slot-num>] | [ve <num>]

Possible values: N/A

Default value: N/A

show interfaces brief

Shows a summary of Layer 2 information for all interfaces.

EXAMPLE:

```
HP9300# show interfaces brief
Port Link State     Dupl Speed Trunk Tag Priori MAC            Name
1/1  Down None      None None  None  No  level0 00e0.52f0.4f00
1/2  Down None      None None  None  No  level0 00e0.52f0.4f01
1/3  Down None      None None  None  No  level0 00e0.52f0.4f02
1/4  Down None      None None  None  No  level0 00e0.52f0.4f03
1/5  Down None      None None  None  No  level0 00e0.52f0.4f04
1/6  Down None      None None  None  No  level0 00e0.52f0.4f05
1/7  Down None      None None  None  No  level0 00e0.52f0.4f06
1/8  Down None      None None  None  No  level0 00e0.52f0.4f07
```

Syntax: show interfaces [ethernet <portnum>] | [loopback <num>] | [slot <slot-num>] | [ve <num>] | [brief]

Possible values: N/A

Default value: N/A

show ip

For HP switches, this command displays the switch IP address and mask, its default router, the IP address of a TFTP server where configuration or image files are stored, if defined; and the file names of image and configuration files saved on that TFTP server.

For HP routing switches, this command displays the global parameters for IP—specifically, router ID, IP TTL, ARP age values as well as all protocols and IP features enabled on the router. This command also displays all active filters.

EXAMPLE:

```
Global Settings
  ttl: 64, arp-age: 10, bootp-relay-max-hops: 4
  router-id : 10.1.1.1
  enabled : UDP-Broadcast-Forwarding  IRDP  Proxy-ARP  RARP  RIP  VRRP
  disabled: BGP4 Load-Sharing  RIP-Redist  OSPF  DVMRP  SRP
Policies
  Index   Action   Source           Destination      Protocol   Port  Operator
  1       deny     209.157.22.34    209.157.22.26    tcp        http  =
  64      permit   any              any
```

Syntax: show ip

Possible values: N/A

Default value: N/A

show ip access-lists

Displays the configured IP Access Control Lists (ACLs).

show ip as-path-access-lists

Displays the configured IP AS-path ACLs, used for BGP4 filtering.

show ip bgp <ip-addr>

Displays routes that match a specified address and mask.

EXAMPLE:

To display only the routes for network 3.3.0.0/16:

```
HP9300# show ip bgp 3.3.0.0/16 longer
        Number of BGP Routes matching display condition : 2
Status codes: s suppressed, * valid, > best, i internal
Origin codes: i - IGP, e - EGP, ? - incomplete
    Network         Next Hop        Metric     LocPrf     Weight Path
*>  3.3.3.0         207.95.6.101    0          100        0      2 ?
*>  3.3.4.0         207.95.6.101    0          100        0      2 ?
```

This example shows all the routes for networks beginning with 3.3. The mask value and **longer** parameter specify the range of network addresses to be displayed. In this example, all routes within the range 3.3.0.0 – 3.3.255.255 are listed.

Syntax: show ip bgp <ip-addr>/<mask-bits> [longer]

Possible values: see above

Default value: N/A

show ip bgp attribute-entries

Shows information entries in a routing switch's BGP4 route attributes table. The route-attribute entries table lists the sets of BGP4 attributes stored in the routing switch's memory. Each set of attributes is unique and can be associated with one or more routes. In fact, the routing switch typically has fewer route attribute entries than routes.

See the "Configuring BGP4" chapter of the *Advanced Configuration and Management Guide* for information about the fields in this display.

EXAMPLE:

```
HP9300# show ip bgp attribute-entries
        Total number of BGP Attribute Entries: 7753
1       Next Hop  :192.168.11.1       Metric   :0               Origin:IGP
        Originator:0.0.0.0            Cluster List:None
         Aggregator:AS Number :0         Router-ID:0.0.0.0          Atomic:FALSE
        Local Pref:100                Communities:Internet
        AS Path   :(65002) 65001 4355 2548 3561 5400 6669 5548
2       Next Hop  :192.168.11.1       Metric   :0               Origin:IGP
        Originator:0.0.0.0            Cluster List:None
         Aggregator:AS Number :0         Router-ID:0.0.0.0          Atomic:FALSE
        Local Pref:100                Communities:Internet
        AS Path   :(65002) 65001 4355 2548
```

remaining 7751 entries not shown...

Syntax: show ip bgp attribute-entries

Possible values: N/A

Default value: N/A

show ip bgp neighbors

Shows information about a routing switch's BGP4 neighbors (peer BGP4 routers). See the "Configuring BGP4" chapter of the *Advanced Configuration and Management Guide* for information about the fields in this display.

EXAMPLE:

```
HP9300# show ip bgp neighbors 192.168.11.1
Total number of BGP Neighbors: 3
        IP Address           Remote AS            EBGP/IBGP        State
1       192.168.11.1         65001                Confed_EBGP      ESTABLISHED
        Keep Alive Time      Hold Time            Advertisement Interval
        0                    0                    5
                             Message Sent         Message Received
        Keep Alive           3                    3
        Update               19                   28270
        Notifications        0                    0
        Open                 3                    3
        Last Connection Reset Reason:Port State Down
        Notification Message Error Code Received:Unspecified
        Notification Message Error SubCode Received:Not Applicable
        Notification Message Error Code Transmitted:Unspecified
        Notification Message Error SubCode Transmitted:Not Applicable


          TCP Connection state: ESTABLISHED
          Local host:  192.168.11.1, Local  Port: 8180
          Remote host: 192.168.11.2, Remote Port: 179
          ISentSeq:  710279168  SendNext:  710279383  TotUnAck:          0
          SendWnd:       16384  TotSent:         215  ReTrans:         171
          IRcvSeq:           0  RcvNext:         462  RcvWnd:        16384
          TotalRcv:        462  RcvQue:            0  SendQue:           0
```

Syntax: show ip bgp neighbor [<ip-addr> [advertised-routes] [last-packet-with-error] [attribute-entries] [received-routes] [routes-summary]]

The <ip-addr> option lets you narrow the scope of the command to a specific neighbor.

The **advertised-routes** option displays only the routes that the routing switch has advertised to the neighbor during the current BGP4 neighbor session.

The **last-packet-with-error** displays a hexadecimal dump of the first 400 bytes of the last packet received from the neighbor that contained an error.

The **attribute-entries** option shows the attribute-entries associated with routes received from the neighbor.

The **received-routes** option lists the routes received in UPDATE messages from the neighbor.

The **routes-summary** option displays a summary of the following information:

- Number of routes received from the neighbor
- Number of routes accepted by this routing switch from the neighbor
- Number of routes this routing switch filtered out of the UPDATES received from the neighbor and did not accept
- Number of routes advertised to the neighbor
- Number of attribute entries associated with routes received from or advertised to the neighbor.

Possible values: see above

Default value: information for all neighbors is displayed

show ip bgp routes

Shows the BGP4 routes in a routing switch's BGP4 route table. See the "Configuring BGP4" chapter of the *Advanced Configuration and Management Guide* for information about the fields in this display.

EXAMPLE:

```
HP9300# show ip bgp routes
       Total number of BGP Routes: 58788
       Status A: AGGREGATE B:BEST  I:INTERNAL L: LOCAL  S: SUPPRESSED
       Network         ML Next Hop        Metric     LocPrf     Weight Status
1      8.9.253.160     27 192.168.11.1    0          100        0      B
2      12.0.0.0        8  192.168.11.1    0          100        0      B
3      12.2.97.0       24 192.168.11.1    0          100        0      B
4      12.2.169.0      24 192.168.11.1    0          100        0      B
5      12.3.123.0      24 192.168.11.1    0          100        0      B
6      12.3.63.0       24 192.168.11.1    0          100        0      B
7      12.2.109.0      24 192.168.11.1    0          100        0      B
8      12.4.5.0        24 192.168.11.1    0          100        0      B
```

remaining 58780 entries not shown...

Here is an example of the information displayed when you use the detail option. In this example, the information for one route is shown.

```
HP9300# show ip bgp routes detail
       Total number of BGP Routes: 388
       Status A: AGGREGATE B:BEST  I:INTERNAL L: LOCAL  S: SUPPRESSED
       Network          MaskLen Next Hop         Metric     LocPrf     Weight
1      12.2.97.0        24      192.168.11.1     0          100        0
       Originator       Atomic  AGGREGATION-ID   AS     Cluster List
       0.0.0.0          FALSE   0.0.0.0          0      None
       Origin  Status  Route Tag   Communities
       IGP     B       00000000    Internet
       AS Path : (65002) 65001 4355 2548 7018 10656
```

remaining 387 entries not shown...

Syntax: show ip bgp routes <num> [cidr-only] [community <num> | no-export | no-advertise | internet | local-as] [community-list <num>] [detail <option>] [filter-list <num, num,...>] [network <ip-addr>] [regular-expression <value>]

The <num> option specifies the table entry with which you want the display to start. For example, if you want to list entries beginning with table entry 100, specify 100.

The **cidr-only** option lists only the routes that do not have a mask length of 8, 16, or 24bits (the standard Class-A, -B, and -C sub-net mask lengths).

The **community** option lets you display routes for a specific community. You can specify **no-export**, **no-advertise**, **internet**, or a private community number. You can specify the community number as either two five-digit integer values of up to 1– 65535, separated by a colon (for example, 12345:6789) or a single long integer value.

The **local-as** parameter displays BGP4 routes that have the LOCAL_AS community type.

The **community-list** option lets you display routes that match a specific community filter.

The **detail** option lets you display greater detail for one of the other options.

The **filter-list** option displays routes that match a specific address filter list.

The **network** option displays routes for a specific network.

The **regular-expression** option filters the display based on a regular expression. See the “Configuring BGP4” chapter of the *Advanced Configuration and Management Guide*.

Possible values: see above

Default value: all routes are displayed

show ip bgp summary

Shows a summary of BGP4 configuration information for a routing switch. See the “Configuring BGP4” chapter of the *Advanced Configuration and Management Guide* for information about the fields in this display.

EXAMPLE:

```
HP9300# show ip bgp summary

BGP4 Summary
  Local AS number : 64512
  Confederation Identifier : 10
  Confederation Peers : 64512 64513
```

```
Maximum Number of Attribute Entries Supported :10000
Maximum Number of Routes Supported : 60000
Maximum Number of Neighbors Supported : 3
Maximum Number of Paths Supported for Load Sharing : 1
Number of Routes Installed : 58756
Number of Attribute Entries Installed : 7750

Neighbor Address AS#    State  StateChangeTime  RtReceived  RtInstalled  RtSent
192.168.11.1     64512  ESTAB  0  :0  :43 :54   65871       65871        0
192.168.88.28    64512  ESTAB  0  :2  :26 :43   1           1            65875
192.168.199.1    64513  ESTAB  0  :0  :48 :5    0           0            65875
```

Syntax: show ip bgp summary

Possible values: N/A

Default value: N/A

show ip cache

Displays the IP host table showing indices to MAC addresses and the IP address of the next hop for HP routing switches.

This command is not supported on HP switches.

EXAMPLE:

```
HP9300# show ip cache

Total number of cache entries: 243

D:Dynamic  P:Permanent  F:Forward  U:Us  C:Complex Filter

W:Wait ARP  I:ICMP Deny  K:Drop  R:Fragment  S:Snap Encap

      IP Address       Next Hop      MAC             Type  Fid 1     207.95.95.1
0.0.0.0       0000.0000.0000   PU    0

2     111.111.100.111  0.0.0.0       0000.0000.0000   PU    0

3     207.95.45.1      0.0.0.0       0000.0000.0000   PU    0

4     207.195.1.255    0.0.0.0       0000.0000.0000   PU    0

5     207.95.133.255   0.0.0.0       0000.0000.0000   PU    0

. . .  [entries 6-242 not shown]

243   207.95.42.1      0.0.0.0       0000.0000.0000   PU    0
```

Syntax: show ip cache [<ip-addr>] | [<num>]

The optional <num> parameter lets you display the table beginning with a specific entry number.

Possible values: N/A

Default value: N/A

show ip community-access-lists

Displays the configured IP community ACLs, which are used for BGP4 filtering.

show ip dvmrp

Displays the global and interface settings for DVMRP on an HP routing switch.

This command is not supported on HP switches.

EXAMPLE:

```
HP9300# show ip dvmrp
Global Settings
  prune age: 180, neighbor timeout: 40
  probe interval: 10, report interval: 60
  route expire interval: 200, route discard interval: 340
  triggered update interval: 5, graft retransmit interval: 10
Interface Ethernet 1
TTL Threshold: 1 Metric: 1
Local Address: 192.094.005.001
[. . . ]
Interface Ethernet 16
TTL Threshold: 1 Metric: 1
Local Address: 193.095.016.001
```

Syntax: show ip dvmrp

Possible values: N/A

Default value: N/A

show ip dvmrp flowcache

Displays all active IP DVMRP flows for an HP routing switch. A ***flow*** is a cached forwarding entry.

EXAMPLE:

```
HP9300# show ip dvmrp flow-cache
```

Syntax: show ip flow-cache

Possible values: N/A

Default value: N/A

show ip dvmrp graft

Displays active DVMRP grafts. Information shown is port, source network, group address, neighbor router and age for an HP routing switch configured for DVMRP operation.

This command is not supported on an HP switches.

EXAMPLE:

```
HP9300# show ip dvmrp graft
```

Syntax: show ip dvmrp graft

Possible values: N/A

Default value: N/A

show ip dvmrp group

Displays network address, mask and gateway and associated IP multicast group membership and port for an HP routing switch configured for DVMRP operation.

This command is not supported on HP switches.

EXAMPLE:

```
HP9300# show ip dvmrp group
```

Syntax: show ip dvmrp group [<group-address>]

Possible values: <group-address> is a multicast group address.

Default value: N/A

show ip dvmrp interface

Displays the interface DVMRP settings, TTL threshold and metric for all sub-nets (interfaces) for an HP routing switch configured for DVMRP operation.

This command is not supported on HP switches.

EXAMPLE:

```
HP9300# show ip dvmrp interface

Interface Ethernet 1

TTL Threshold: 1 Metric: 1 Enabled: Querier
```

Syntax: show ip dvmrp interface [ethernet <portnum> | ve <num>]

Possible values: The **ethernet** <portnum> parameter lets you specify a routing switch port.

The **ve** <num> parameter lets you specify a virtual interface (VE).

Default value: N/A

show ip dvmrp mcache

Displays the DVMRP multicast cache for an HP routing switch configured for DVMRP operation.

This command is not supported on HP switches.

EXAMPLE:

```
HP9300# show ip dvmrp mcache

F:Fast S:Slow P:Prune L:Leaf

      SourceNet      GroupAddress    Type  PortMask & PruneMask

 1 207.095.002.000   226.000.000.019   P 15   F15.      P12

 2 207.095.002.000   226.000.000.021   P 15   F15.      P12
```

Syntax: show ip dvmrp mcache [<ip-addr>]

Possible values: The <ip-addr> parameter displays information for a specific source IP address.

Default value: N/A

show ip dvmrp nbr

Displays all neighbor DVMRP routers and the HP ports to which they are attached, for HP routing switches configured for DVMRP operation.

This command is not supported on HP switches.

EXAMPLE:

```
HP9300# show ip dvmrp nbr

Port   Neighbor          GenId      Age  UpTime

 11    207.095.018.001  -12198       40      900

Port   Neighbor          GenId      Age  UpTime

 12    207.095.009.040       0       40      900

Port   Neighbor          GenId      Age  UpTime

 14    207.095.008.030       0       40      130
```

Syntax: show ip dvmrp nbr

Possible values: N/A

Default value: N/A

show ip dvmrp prune

Displays active prunes on the network for an HP routing switch configured for DVMRP operation.

This command is not supported on HP switches.

EXAMPLE:

```
HP9300# show ip dvmrp prune
Port  SourceNetwork    GroupAddress      NbrRouter       Age UpTime
 11    207.095.002.000  226.000.000.027   207.095.018.001   180  0
 11    207.095.002.000  226.000.000.026   207.095.018.001   180  0
 11    207.095.002.000  226.000.000.025   207.095.018.001   180  0
```

Syntax: show ip dvmrp prune

Possible values: N/A

Default value: N/A

show ip dvmrp route

Displays network address, mask and gateway and associated IP multicast group membership and ports for an HP routing switch with DVMRP configured.

This command is not supported on HP switches.

EXAMPLE:

```
HP9300# show ip dvmrp route
```

Syntax: show ip dvmrp route [<ip-addr>]

Possible values: The <ip-addr> parameter displays information for a specific source IP address.

Possible values: N/A

Default value: N/A

show ip dvmrp traffic

Displays all active DVMRP traffic on an HP routing switch.

This command is not supported on HP switches.

EXAMPLE:

```
HP9300# show ip dvmrp traffic
Port  Probe                                      Graft          Prune
[Rx  Tx Discard] [Rx Tx Discard] [Rx  Tx Discard]
10     0     95   0     0     0   0     0     0       0
12    95     95   0     0     0   0    21     0       0
13    95     95   0     0     9   0     0     72      0
Tot  195    285   0     0     9   0    21     72      0
```

Syntax: show ip dvmrp traffic

Possible values: N/A

Default value: N/A

show ip flow-cache

Displays all active IP flows for an HP routing switch. A ***flow*** is a cached forwarding entry.

EXAMPLE:

```
HP9300# show ip flow-cache
```

Syntax: show ip flow-cache [<ip-addr>]

Possible values: IP address

Default value: N/A

show ip interface

Displays interface configuration details for all interfaces or a specified interface on an HP routing switch.

EXAMPLE:

To view all IP interfaces and their configuration on a routing switch, enter the following:

```
HP9300# show ip interface
```

EXAMPLE:

To view a specific interface configuration, in this case interface 5, enter the following:

```
HP9300# show ip interface e5
```

Syntax: show ip interface [ethernet <portnum>] | [loopback <num>] | [ve <num>]

Possible values: N/A

Default value: N/A

show ip mroute

Displays information about IP multicast routes.

show ip multicast

Indicates whether IP multicast is active on an HP switch, and notes its operating mode—active or passive.

This command is not supported on HP routing switches.

EXAMPLE:

```
HP6208# show ip multicast
```

Syntax: show ip multicast

Possible values: N/A

Default value: N/A

show ip ospf area

Displays for all active OSPF areas, the following information:

- type of area—stub or normal
- cost (for stub area only)
- number of times the SPF (shortest path first) calculation is performed for the area
- number of area borders within the area
- number of AS boundary routers within the area
- number of link state advertisements (LSA) in the link state database of the area
- sum of LSA checksums in the area

NOTE: This command is not supported on HP switches.

EXAMPLE:

```
HP9300# show ip ospf area
Indx  Area      Type  Cost  SPFR ABR ASBR LSA Chksum(Hex)
1   0.0.0.0     normal  0    1     0     0   1   0000781f
2  192.147.60.0 normal  0    1     0     0   1   0000fee6
3  192.147.80.0 stub    1    1     0     0   2   000181cd
```

Syntax: show ip ospf area [[<area-id> | <num>] database link-state advertise | link-state-id | network | nssa | router | router-id <addr> | sequence-number <num> | status <index> | summary]]

The <area-id> parameter shows information for the specified area.

The <num> parameter displays the entry that corresponds to the entry number you enter. The entry number identifies the entry's position in the area table.

The **database link-state** parameter lets you display information about the link state database:

- **advertise** displays link state by advertisement
- **link-state-id** displays link state by link-state ID
- **network** displays link state by network link
- **nssa** displays link state by NSSA
- **router** displays link state by router link
- **router-id** <addr> displays link state by router ID
- **sequence-numbers** <num> displays link state by sequence number
- **status** <index> displays link state status
- **summary** displays link state by summary link

Possible values: N/A

Default value: N/A

show ip ospf border-routers

Shows entries for ABR and ASBR routers.

EXAMPLE:

```
HP9300# show ip ospf border-routers
```

Syntax: show ip ospf border-routers [<ip-addr>]

The <ip-addr> parameter displays the ABR and ASBR entries for the specified IP address.

Possible values: IP address

Default value: N/A

show ip ospf config

Displays global and interface runtime configuration details for OSPF on an HP routing switch.

This command is not supported on HP switches.

EXAMPLE:

```
HP9300# show ip ospf config
Router OSPF: Enabled
Redistribution: Disabled
default OSPF Metric: 10
```

```
OSPF Area currently defined:
Area-ID          Area-Type Cost
0.0.0.0          normal    0
OSPF Interfaces currently defined:
Ethernet Interface: 1
ip ospf cost 1
ip ospf dead-interval 40
ip ospf hello-interval 10
ip ospf priority 1
ip ospf retransmit-interval 5
ip ospf transmit-delay 1
ip ospf area 0.0.0.0
Ethernet Interface: 2
ip ospf cost 1
ip ospf dead-interval 40
ip ospf hello-interval 10
ip ospf priority 1
ip ospf retransmit-interval 5
ip ospf transmit-delay 1
ip ospf area 0.0.0.0
```

Syntax: show ip ospf config

Possible values: N/A

Default value: N/A

show ip ospf database external-link-state

Displays information about external link state advertisements stored in the database.

This command is not supported on HP switches.

EXAMPLE:

```
HP9300> show ip ospf database external-link-state

Index Aging  LS ID           Router          Seq(hex) Chksum
1     1332   130.132.81.208  130.130.130.241 80000002 000085ae
2     1325   130.132.116.192 130.130.130.241 80000002 0000a37d
3     1330   130.132.88.112  130.130.130.241 80000002 0000fb91
4     1333   130.132.75.48   130.130.130.241 80000002 00000ecc
5     1338   130.132.46.224  130.130.130.241 80000002 000067df
```

Syntax: show ip ospf database external-link-state [advertise <num>] | [link-state-id <ip-addr>] | [router-id <ip-addr>] | [sequence-number <num(Hex)>] | [status <num>]

The **advertise** <num> parameter displays the hexadecimal data in the specified LSA packet. The <num> parameter identifies the LSA packet by its position in the router's External LSA table. To determine an LSA packet's position in the table, enter the **show ip ospf database external-link-state** command to display the table. See the "Configuring OSPF" chapter of the *Advanced Configuration and Management Guide* for an example.

The **link-state-id** <ip-addr> parameter displays the External LSAs for the LSA source specified by <ip-addr>.

The **router-id** <ip-addr> parameter shows the External LSAs for the specified OSPF router.

The **sequence-number** <num(Hex)> parameter displays the External LSA entries for the specified hexadecimal LSA sequence number.

Possible values: see above

Default value: N/A

show ip ospf general

Displays global status information about OSPF for an HP routing switch, specifically:

- count of external Link State Advertisements (LSA)
- sum of external LSA checksums
- number of new LSAs originated by the routing switch
- number of new LSAs received by the routing switch

NOTE: This command is not supported on HP switches.

EXAMPLE:

```
HP9300# show ip ospf gen
External LSA Counter          0
External LSA Checksum Sum     0000
Originate New LSA Counter     4
Rx New LSA Counter            4
```

Syntax: show ip ospf general

Possible values: N/A

Default value: N/A

show ip ospf interface

Displays information about all or a specific OSPF interface.

This command is not supported on HP switches.

The following information is provided:

- OSPF interface parameters
- State of the interface
- IP address of the designated router
- IP address of the backup designated router

EXAMPLE:

```
HP9300# show ip ospf interface
Indx Port   IP Address   Area ID    OSPF Mode   Priority
1    1       2.0.0.1      0.0.0.0   enabled       1
Transit(sec)  Retrans(sec) Hello(sec) Dead(sec)   cost
     1          5            10           40        1
Type        D. Router    Backup D. Router events  state
broadcast    2.0.0.1     2.0.0.2    1            DRouter
Authentication-Key: None
```

Syntax: show ip ospf interface [<ip-addr>]

The <ip-addr> parameter displays the OSPF interface information for the specified IP address.

Possible values: N/A

Default value: N/A

show ip ospf database link-state

Displays the router, network, summary and summary ASBR link state advertisements. The **status** parameter provides a detailed display. The **advertise** parameter provides a summary.

This command is not supported on HP switches.

EXAMPLE:

```
HP9300# show ip ospf database link-state status

Index: 1  Area ID: 0.0.0.0

Age(sec) Type     LS ID    Router     Seq(hex) Chksum(hex)

565     Summary  192.147.200.0   192.147.80.3  80000001   781f
```

Syntax: show ip ospf database link-state [advertise <num>] | [link-state-id <ip-addr>] | [network] | [router] | [router-id <num>] | [sequence-number <num(Hex)>] | [status <num>] [summary]

The **advertise** <num> parameter displays the hexadecimal data in the specified LSA packet. The <num> parameter identifies the LSA packet by its position in the routing switch's LSA table. To determine an LSA packet's position in the table, enter the **show ip ospf database link-state** command to display the table. See the "Configuring OSPF" chapter of the *Advanced Configuration and Management Guide* for an example.

for an example.

The **link-state-id** <ip-addr> parameter displays the External LSAs for the LSA source specified by <ip-addr>.

The **router-id** <ip-addr> parameter shows the External LSAs for the specified OSPF router.

The **sequence-number** <num(Hex)> parameter displays the External LSA entries for the specified hexadecimal LSA sequence number.

Possible values: N/A

Default value: N/A

show ip ospf neighbor

Displays information about all neighbor routers or a specific neighbor router.

This command is not supported on HP switches.

The following information is shown for an HP routing switch:

- neighbor router ID
- neighbor IP address
- neighbor state
- number of times the neighbor state has changed
- count of packets retransmitted to the neighbor router

EXAMPLE:

```
HP9300> show ip ospf neighbor

Port Address         Pri State      Neigh Address   Neigh ID        Ev Opt Cnt
8    212.76.7.251    1   full       212.76.7.200    173.35.1.220    23 2   0
```

Syntax: show ip ospf neighbor [router-id <ip-addr>] | [<num>]

The **router-id** <ip-addr> parameter displays only the neighbor entries for the specified router.

The <num> parameter displays the table beginning at the specified entry number.

Possible values: see above

Default value: N/A

show ip ospf routes

Displays the OSPF route table. See the “Configuring OSPF” chapter of the *Advanced Configuration and Management Guide* for information about the fields in this display.

This command is not supported on HP switches.

EXAMPLE:

To display OSPF route information, enter the following command at any CLI level:

```
HP9300> show ip ospf routes

Index Destination     Mask            Path_Cost Type2_Cost Path_Type
1     212.95.7.0      255.255.255.0   1         0          Intra
      Adv_Router      Link_State      Dest_Type State      Tag       Flags
      173.35.1.220    212.95.7.251    Network   Valid      00000000  7000
      Paths Out_Port  Next_Hop        Type      Arp_Index  State
      1     5/6       209.95.7.250    OSPF      8          84 00

Index Destination     Mask            Path_Cost Type2_Cost Path_Type
2     11.3.63.0       255.255.255.0   11        0          Inter
      Adv_Router      Link_State      Dest_Type State      Tag       Flags
      209.95.7.250    11.3.63.0       Network   Valid      00000000  0000
      Paths Out_Port  Next_Hop        Type      Arp_Index  State
      1     5/6       209.95.7.250    OSPF      8          84 00
```

Syntax: show ip ospf routes [<ip-addr>]

The <ip-addr> parameter specifies a destination IP address. If you use this parameter, only the route entries for that destination are shown.

Possible values: see above

Default value: N/A

show ip ospf trap

Displays the list of all OSPF traps and their current state of enabled or disabled.

This command is not supported on HP switches.

EXAMPLE:

```
HP9300(config)# show ip ospf trap
Interface State Change Trap:                            Enabled
Virtual Interface State Change Trap:                    Enabled
Neighbor State Change Trap:                             Enabled
Virtual Neighbor State Change Trap                      Enabled
Interface Configuration Error Trap:                     Enabled
Virtual Interface Configuration Error Trap:             Enabled
Interface Authentication Failure Trap:                  Enabled
Virtual Interface Authentication Failure Trap:          Enabled
Interface Receive Bad Packet Trap:                      Enabled
Virtual Interface Receive Bad Packet Trap:              Enabled
Interface Retransmit Packet Trap:                       Enabled
Virtual Interface Retransmit Packet Trap:               Enabled
Originate LSA Trap:                                     Enabled
```

```
Originate MaxAge LSA Trap:                                  Enabled
Originate MaxAge LSA Trap:                                  Enabled
Link State Database Overflow Trap                           Enabled
Link State Database Approaching Overflow Trap               Enabled
```

Syntax: show ip ospf trap

Possible values: N/A

Default value: N/A

show ip ospf virtual-link

Displays transit area, router ID and transit specifics for an OSPF virtual link on an HP routing switch.

This command is not supported on HP switches.

EXAMPLE:

```
HP9300# show ip ospf virtual-link 1
Indx Transit Area   Router ID       Transit(sec) Retrans(sec) Hello(sec)
1    192.147.60.0   192.147.180.30   1  5   10
Dead(sec)      events           state        Authentication-Key
40             0                down         None
```

Syntax: show ip ospf virtual-link [<num>]

The <num> parameter displays the table beginning at the specified entry number.

Possible values: see above

Default value: N/A

show ip ospf virtual-neighbor

Displays the OSPF virtual neighbor information.

This command is not supported on HP switches.

EXAMPLE:

```
HP9300# show ip ospf virtual-neighbor 3
```

Syntax: show ip ospf virtual-neighbor [<num>]

The <num> parameter displays the table beginning at the specified entry number.

Possible values: see above

Default value: N/A

show ip pim bsr

Shows Bootstrap router (BSR) information for PIM Sparse.

EXAMPLE:

To display BSR information, enter the following command at any CLI level:

```
HP9300(config-pim-router)# show ip pim bsr
PIMv2 Bootstrap information

This system is the elected Bootstrap Router (BSR)
  BSR address: 207.95.7.1
  Uptime: 00:33:52, BSR priority: 5, Hash mask length: 32
  Next bootstrap message in 00:00:20
```

```
Next Candidate-RP-advertisement in 00:00:10
  RP: 207.95.7.1
    group prefixes:
    224.0.0.0 / 4
Candidate-RP-advertisement period: 60
```

This example show information displayed on a routing switch that has been elected as the BSR. The following example shows information displayed on a routing switch that is not the BSR. Notice that some fields shown in the example above do not appear in the example below.

```
HP9300(config-pim-router)# show ip pim bsr

PIMv2 Bootstrap information
 local BSR address  = 207.95.7.1
 local BSR priority = 5
```

See the "Configuring IP Multicast Protocols" chapter of the *Advanced Configuration and Management Guide* for an explanation of the information shown by this command.

Syntax: show ip pim bsr

Possible values: see above

Default value: N/A

show ip pim flowcache

Displays all active PIM flows for an HP routing switch. A ***flow*** is a cached forwarding entry.

This command is not supported on HP switches.

EXAMPLE:

```
HP9300(config-pim-router)# show ip pim flowcache

     Source          Group           Parent CamFlags CamIndex  Fid     Flags
1    209.157.24.162  239.255.162.1   v2     00000700 2023      00004411 F
2    209.157.24.162  239.255.162.1   v2     00000700 201b      00004411 F
3    209.157.24.162  239.255.162.1   v2     00000700 201d      00004411 F
4    209.157.24.162  239.255.162.1   v2     00000700 201e      00004411 F
```

See the "Configuring IP Multicast Protocols" chapter of the *Advanced Configuration and Management Guide* for an explanation of the information shown by this command.

Syntax: show ip pim flowcache

Possible values: N/A

Default value: N/A

show ip pim group

Displays all active PIM groups by interface—both physical and virtual—for an HP routing switch. Physical ports are displayed as numerals only. Virtual interfaces are preceded with a 'v' as in the example below.

This command is not supported on HP switches.

EXAMPLE:

```
HP9300(config)# show ip pim group

Index   Group           Port

1       224.2.230.64    v01

2       239.255.0.1     v01
```

See the "Configuring IP Multicast Protocols" chapter of the *Advanced Configuration and Management Guide* for an explanation of the information shown by this command.

Syntax: show ip pim group

Possible values: N/A

Default value: N/A

show ip pim interface

Lists all active interfaces configured for an HP routing switch.

This command is not supported on HP switches.

EXAMPLE:

```
HP9300(config)# sh ip pim interface
Interface Ethernet 1
TTL Threshold: 1, Enabled
Local Address: 207.95.18.20
Interface Ethernet 3
TTL Threshold: 1, Enabled
Local Address: 207.95.5.1
```

Syntax: show ip pim interface [ethernet <portnum> | ve <num>]

The **ethernet** <portnum> parameter lets you specify a routing switch port.

The **ve** <num> parameter lets you specify a virtual interface (VE).

Possible values: N/A

Default value: N/A

show ip pim mcache

Displays all forwarding entries for an HP routing switch with PIM enabled.

This command is not supported on HP switches.

In the example below, the source, group pair is defined for ports 2 and 3 as listed in hex in the PortMask column.

EXAMPLE:

```
HP9300(config-pim-router)# show ip pim mcache
1    (*,239.255.162.1) RP207.95.7.1 forward port v1, Count 2
     member ports ethe 3/3
     virtual ports v2
     prune ports
     virtual prune ports
2    (209.157.24.162,239.255.162.4) forward port v2, flags 00004900 Count 130
     member ports
     virtual ports
     prune ports
     virtual prune ports
3    (209.157.24.162,239.255.162.1) forward port v2, flags 00005a01 Count 12
     member ports ethe 3/8
     virtual ports
     prune ports
     virtual prune ports
```

Syntax: show ip pim mcache [<source> <group>]

Possible values: N/A

Default value: N/A

show ip pim nbr

Displays all PIM neighbor routers for physical, virtual and tunnel interfaces.

Port numbers preceded by a ‘T’ are tunnel interfaces, ‘E’ refers to physical interfaces and ‘VE’ refers to routed interfaces within a VLAN.

This command is not supported on HP switches.

EXAMPLE:

```
HP9300(config-pim-router)# show ip pim nbr

Port Neighbor        Holdtime Age   UpTime
                     sec      sec   sec
e3/8   207.95.8.10     180      60    900
Port Neighbor        Holdtime Age   UpTime
                     sec      sec   sec
v1     207.95.6.2      180      60    900
```

Syntax: show ip pim nbr

See the “Configuring IP Multicast Protocols” chapter of the *Advanced Configuration and Management Guide* for an explanation of the information shown by this command.

Possible values: N/A

Default value: N/A

show ip pim prune

Shows those prune states that are active on an HP routing switch with PIM enabled.

Port numbers preceded by a ‘T’ are tunnel interfaces, ‘E’ refers to physical interfaces and ‘VE’ refers to routed interfaces within a VLAN.

This command is not supported on an HP switch.

EXAMPLE:

```
HP9300(config)# show ip pim nbr

Port      SourceNet     Group          Nbr               Age

T16       207.95.5.0    239.255.0.2   207.95.6.10       0
```

Syntax: show ip pim prune

Possible values: N/A

Default value: N/A

show ip pim rp-candidate

Displays candidate Rendezvous Point (RP) information for PIM Sparse.

EXAMPLE:

To display candidate RP information, enter the following command at any CLI level:

```
HP9300(config-pim-router)# show ip pim rp-candidate

Next Candidate-RP-advertisement in 00:00:10
  RP: 207.95.7.1
    group prefixes:
    224.0.0.0 / 4

  Candidate-RP-advertisement period: 60
```

This example show information displayed on a routing switch that is a candidate RP. The following example shows the message displayed on a routing switch that is not a candidate RP.

```
HP9300(config-pim-router)# show ip pim bsr
```

```
This system is not a Candidate-RP.
```

See the “Configuring IP Multicast Protocols” chapter of the *Advanced Configuration and Management Guide* for an explanation of the information shown by this command.

Syntax: show ip pim rp-candidate

Possible values: N/A

Default value: N/A

show ip pim rp-hash

Shows RP information for a specific PIM Sparse group.

EXAMPLE:

To display RP information for a PIM Sparse group, enter the following command at any CLI level:

```
HP9300(config-pim-router)# show ip pim rp-hash 239.255.162.1

  RP: 207.95.7.1, v2
    Info source: 207.95.7.1, via bootstrap
```

See the “Configuring IP Multicast Protocols” chapter of the *Advanced Configuration and Management Guide* for an explanation of the information shown by this command.

Syntax: show ip pim rp-hash <group-addr>

The <group-addr> parameter is the address of a PIM Sparse IP multicast group.

Possible values: N/A

Default value: N/A

show ip pim rp-map

Shows PIM Sparse RP-to-group mappings.

EXAMPLE:

To display RP-to-group-mappings, enter the following command at any CLI level:

```
HP9300(config-pim-router)# show ip pim rp-map

Group address        RP address
------------------------------
239.255.162.1        207.95.7.1
```

See the “Configuring IP Multicast Protocols” chapter of the *Advanced Configuration and Management Guide* for an explanation of the information shown by this command.

Syntax: show ip pim rp-map

Possible values: N/A

Default value: N/A

show ip pim rp-set

Shows the RP set list on a routing switch configured as a PIM Sparse router.

EXAMPLE:

To display the RP set list, enter the following command at any CLI level:

```
HP9300(config-pim-router)# show ip pim rp-set

Number of group prefixes = 1

Group prefix = 224.0.0.0/4      # RPs expected/received: 1
            RP 1: 207.95.7.1    priority=0    age=0
```

See the “Configuring IP Multicast Protocols” chapter of the *Advanced Configuration and Management Guide* for an explanation of the information shown by this command.

Syntax: show ip pim rp-set

Possible values: N/A

Default value: N/A

show ip pim sparse

Shows global PIM Sparse parameters.

EXAMPLE:

To display PIM Sparse configuration information, enter the following command at any CLI level:

```
HP9300(config-pim-router)# show ip pim sparse

Global PIM Sparse Mode Settings
  Hello interval: 60, Neighbor timeout: 180
  Bootstrap Msg interval: 130, Candidate-RP Advertisement interval: 60
  Join/Prune interval: 60, SPT Threshold: 1

Interface Ethernet e3/8
TTL Threshold: 1, Enabled
Local Address: 207.95.8.1

Interface Ve 1
TTL Threshold: 1, Enabled
Local Address: 207.95.6.1
```

See the “Configuring IP Multicast Protocols” chapter of the *Advanced Configuration and Management Guide* for an explanation of the information shown by this command.

Syntax: show ip pim sparse

Possible values: N/A

Default value: N/A

show ip pim traffic

Displays active PIM interfaces and their statistics for an HP routing switch.

Port numbers preceded by a ‘T’ are tunnel interfaces, ‘E’ refers to physical interfaces and ‘VE’ refers to routed interfaces within a VLAN.

This command is not supported on HP switches.

EXAMPLE:

```
HP9300(config)# show ip pim traffic
Port      Hello    Join       Prune        Graft        Assert
          [Rx Tx]      [Rx Tx]      [Rx  Tx]     [Rx  Tx]     [Rx  Tx]
e5        0  2         0  0         0  0         0  0         0  0
t1        538  540     0  0         3 775        0  4         0  0
ve1       0  541       0  0         0  0         0  0         0  0
ve3       0  541       0  0         0  0         0  0         0  0
Total     538  2163    0  0         33 775       0  4         0  0
```

```
Port    Hello           J/P          Register       RegStop          Assert
     [Rx     Tx]    [Rx     Tx]    [Rx     Tx]    [Rx     Tx]    [Rx     Tx]
e3/8   19     19      32     0       0      0       37     0       0      0

Port    Hello           J/P          Register       RegStop          Assert
     [Rx     Tx]    [Rx     Tx]    [Rx     Tx]    [Rx     Tx]    [Rx     Tx]
v1     18     19      0      20      0      0       0      0       0      0

Port    Hello           J/P          Register       RegStop          Assert
     [Rx     Tx]    [Rx     Tx]    [Rx     Tx]    [Rx     Tx]    [Rx     Tx]
v2     0      19      0      0       0      16      0      0       0      0

Total 37      57     32      0       0      0       0      0       0      0
IGMP Statistics:
  Total Recv/Xmit 85/110
  Total Discard/chksum  0/0
```

This example shows output for regular PIM (dense mode) and PIM Sparse. The regular PIM statistics are listed first, followed by the PIM Sparse statistics. Rows are displayed only for the type of PIM configured on the routing switch. See the "Configuring IP Multicast Protocols" chapter of the *Advanced Configuration and Management Guide* for an explanation of the information shown by this command.

Syntax: show ip pim traffic

Possible values: N/A

Default value: N/A

show ip policy

Displays the configured global and local session policies defined using the **ip policy** command.

This command does not apply to routing switches.

EXAMPLE:

```
Index   Priority   Protocol  Socket   Type

1       7          tcp       pop3     global

2       7          udp       dns      global
```

Syntax: show ip policy

Possible values: N/A

Default value: N/A

show ip prefix-lists

Displays the configured IP prefix lists.

show ip rip

Displays the IP/RIP filters defined for an HP routing switch and its neighbor router.

This command is not supported on HP switches.

EXAMPLE:

```
HP9300(config)# show ip rip

RIP Route Filter Table

Index  Action    Route IP Address  Sub-net Mask

1      Permit    192.58.5.3        255.255.255.0

RIP Neighbor Filter Table

Index  Action    Neighbor IP address

1      Permit    195.98.7.2
```

Syntax: show ip rip

Possible values: N/A

Default value: N/A

show ip route

Displays active IP routes on an HP routing switch. See the “Configuring IP and IP/RIP” chapter of the *Advanced Configuration and Management Guide* for information about the fields in this display.

This command is not supported on HP switches.

EXAMPLE:

```
HP9300> show ip route

Total number of IP routes: 514
Starting index: 1  B:BGP D:Directly-Connected  R:RIP  S:Static  O:OSPF
IA:OSPF inter area  E1:OSPF external type 1  E2:OSPF external type 2

Destination       NetMask           Gateway           Port   Cost   Type

1.1.0.0           255.255.0.0       99.1.1.2          1/1    2      R
1.2.0.0           255.255.0.0       99.1.1.2          1/1    2      R
1.3.0.0           255.255.0.0       99.1.1.2          1/1    2      R
1.4.0.0           255.255.0.0       99.1.1.2          1/1    2      R
```

Syntax: show ip route [<ip-addr> | <num> | bgp | direct | ospf | rip | static]

The <ip-addr> parameter displays the route to the specified IP address.

The <num> option display the route table entry whose row number corresponds to the number you specify. For example, if you want to display the tenth row in the table, enter “10”.

NOTE: To simplify the table, the row number is not displayed in software release 05.2.00 and later.

The **bgp** option displays the BGP4 routes.

The **direct** option displays the directly attached routes.

The **ospf** option displays the OSPF routes.

The **rip** option displays the RIP routes.

The **static** option displays the static IP routes.

Possible values: see above

Default value: N/A

show ip srp

Displays the current settings of SRP on an HP routing switch.

This command is not supported on HP switches.

EXAMPLE:

```
HP9300# show ip srp

SRP Interfaces currently defined:

Ethernet Interface: 1

ip srp ip address 192.147.200.165

ip srp virtual router ip address 192.147.200.100

ip srp other router ip address 192.147.200.170
```

```
ip srp state  Active
ip srp preference level 50
ip srp track port 3
ip srp keep alive time 15
ip srp router dead interval 30
```

Syntax: show ip srp

Possible values: N/A

Default value: N/A

show ip traffic

Displays IP (including ICMP, UDP, TCP, and RIP) traffic statistics for an HP switch or routing switch.

EXAMPLE:

```
HP9300# show ip traffic
IP Statistics
  464 received, 2267 sent, 0 forwarded
  0 filtered, 0 fragmented, 0 reassembled, 0 bad header
  0 no route, 0 unknown proto, 0 no buffer, 0 other errors
ICMP Statistics
Received:
  0 total, 0 errors, 0 unreachable, 0 time exceed
0 parameter, 0 source sequence, 0 redirect, 0 echo,
  0 echo reply, 0 timestamp, 0 timestamp rely, 0 addr mask
  0 addr mask reply, 0 irdp advertisement, 0 irdp solicitation
Sent:
  54 total, 0 errors, 0 unreachable, 0 time exceed
  0 parameter, 0 source sequence, 0 redirect, 0 echo,
  0 echo reply, 0 timestamp, 0 timestamp rely, 0 addr mask
  0 addr mask reply, 54 irdp advertisement, 0 irdp solicitation
```

NOTE: This example is an excerpt, not a complete display.

Syntax: show ip traffic

Possible values: N/A

Default value: N/A

show ip vrrp

Displays VRRP statistics.

```
HP9300# show ip vrrp stat
Interface ethernet e 1/6
 rxed vrrp header error count = 0
 rxed vrrp auth error count = 0
 rxed vrrp auth passwd mismatch error count = 0
 rxed vrrp vrid not found error count = 0
```

```
 VRID 1
 rxed arp packet drop count = 0
 rxed ip packet drop count = 0
 rxed vrrp port mismatch count = 0
 rxed vrrp ip address mismatch count = 0
 rxed vrrp hello interval mismatch count = 0
 rxed vrrp priority zero from master count = 0
 rxed vrrp higher priority count = 0
 transitioned to master state count = 1
 transitioned to backup state count = 0
```

Syntax: show ip vrrp [stat]

Possible values: N/A

Default value: N/A

show ipx

Displays IPX global parameters for an HP routing switch.

This command is not supported on HP switches.

EXAMPLE:

```
HP9300# show ipx

Global Settings

IPX Routing Mode: Enabled

IPX NetBIOS (type 20): Disallowed
```

Syntax: show ipx

Possible values: N/A

Default value: N/A

show ipx cache

Displays summary by port, network number, forwarding (Next Hop Router), MAC address, out filter status and frame type for an HP switch or routing switch.

EXAMPLE:

```
HP9300# show ipx cache

Total number of IPX cache entries 3

Forwarding

Index  Network   Router      Out-Filter  Frame-Type    Port

1     11110007  0000.0000.0000  off      ethernet_802.3    7

2     11110005  0000.0000.0000  off      ethernet_802.3    5

3     32D564FA  00a0.24bf.89ca  off      ethernet_802.3    5
```

Syntax: show ipx cache [<num(hex)>]

Possible values: The optional <num(hex)> parameter lets you specify an IPX network number.

Default value: N/A

show ipx interface

Lists network number, MAC address, and port state and frame type for all interfaces or a specific IPX interface on an HP routing switch.

To display data on all interfaces, enter the command **show ipx interface**.

This command is not supported on HP switches.

EXAMPLE:

To display data for interface 5, enter the following:

```
HP9300# show ipx interface ethernet 3/5

Interface Ethernet 3/5
  MAC address: 00e0.5284.0b44  Port state: UP
  IPX network:       0000ABCD  Frame type: ethernet_snap   Allow NetBIOS: NO
  rip-interval: 60  rip-max-packet-size: 432  rip-multiplier: 3
  sap-interval: 60  sap-max-packet-size: 480  sap-multiplier: 3
```

Syntax: show ipx interface [ethernet <portnum> | ve <num>]

The **ethernet** <portnum> parameter lets you specify a router port.

The **ve** <num> parameter lets you specify a virtual interface (VE).

Possible values: see above

Default value: N/A

show ipx route

Displays active IPX routes noting hop, tick and port for an HP routing switch.

EXAMPLE:

```
HP9300# show ipx route

Total number of IPX route entries 3

Forwarding

Index   Network   Router          Hops  Ticks Port

1       11110007  0000.0000.0000     0     1     7

2       32D564FA  00a0.24bf.89ca     1     2     5

3       11110005  0000.0000.0000     0     1     5
```

Syntax: show ipx route [<num(hex)>]

Possible values: The optional <num(hex)> parameter lets you specify an IPX network number.

Default value: N/A

show ipx servers

Displays IPX servers defined for an HP routing switch.

This command is not supported on HP switches.

EXAMPLE:

```
HP9300# show ipx servers

Total number of IPX server entries 3

Index  Network   Node            Socket    Type      Hops

1      32D564FA  0000.0000.0001   0005     026B        1

         Server-name: HPD

2      32D564FA  0000.0000.0001   4006     0278        1

         Server-name: HPM

3      32D564FA  0000.0000.0001   0451     0004        1

         Server-name: HP-MPR2
```

Syntax: show ipx servers [<name>]

Possible values: The optional <name> parameter lets you specify a server name.

Default value: N/A

show ipx traffic

Displays a port summary of total IPX packets forwarded. It also breaks down the packets by transmit and receive. Totals for dropped and filtered packets are also shown.

This command is supported on both HP switches and routing switches.

EXAMPLE:

```
HP9300# show ipx traffic

Dropped              Filtered

Port  Forward  Receive  Transmit  Receive  Transmit   Receive  Transmit

  5    46         36        8          2       0         0         0

  7     0          0        6          0       0         0         0

Tot    46         36       14          2       0         0         0
```

Syntax: show ipx traffic

Possible values: N/A

Default value: N/A

show logging

Displays the SNMP event log.

Syntax: show logging

Static and Dynamic Buffers

The software provides two separate buffers:

- Static – logs power supply failures, fan failures, and temperature warning or shutdown messages
- Dynamic – logs all other message types

In the static log, new messages replace older ones, so only the most recent message is displayed. For example, only the most recent temperature warning message will be present in the log. If multiple temperature warning messages are sent to the log, the latest one replaces the previous one. The static buffer is not configurable.

The message types that appear in the static buffer do not appear in the dynamic buffer. The dynamic buffer contains up to the maximum number of messages configured for the buffer (50 by default), then begins removing the oldest messages (at the bottom of the log) to make room for new ones.

The static and dynamic buffers are both displayed when you display the log.

```
HP9300(config)# show logging

Syslog logging: enabled (0 messages dropped, 0 flushes, 0 overruns)
    Buffer logging: level ACDMEINW, 3 messages logged
    level code: A=alert C=critical D=debugging M=emergency E=error
                I=informational N=notification W=warning

Static Log Buffer:
Dec 15 19:04:14:A:Fan 1, fan on right connector, failed

Dynamic Log Buffer (50 entries):
Dec 15 18:46:17:I:Interface ethernet4, state up
```

```
Dec 15 18:45:21:I:Bridge topology change, vlan 4095, interface 4, changed
state to forwarding
Dec 15 18:45:15:I:Warm start
```

Notice that the static buffer contains two separate messages for fan failures. Each message of each type has its own buffer. Thus, if you replace fan 1 but for some reason that fan also fails, the software replaces the first message about the failure of fan 1 with the newer message. The software does not overwrite the message for fan 2, unless the software sends a newer message for fan 2.

When you clear log entries, you can selectively clear the static or dynamic buffer, or you can clear both. For example, to clear only the dynamic buffer, enter the following command at the Privileged EXEC level:

```
HP9300# clear logging dynamic-buffer
```

Syntax: clear logging [dynamic-buffer | static-buffer]

You can specify **dynamic-buffer** to clear the dynamic buffer or **static-buffer** to clear the static buffer. If you do not specify a buffer, both buffers are cleared.

Time Stamps

The contents of the time stamp differ depending on whether you have set the time and date on the onboard system clock.

- If you have set the time and date on the onboard system clock, the date and time are shown in the following format:

  mm dd hh:*mm*:*ss*

  where:

  - *mm* – abbreviation for the name of the month
  - *dd* – day
  - *hh* – hours
  - *mm* – minutes
  - *ss* – seconds

  For example, “Oct 15 17:38:03” means October 15 at 5:38 PM and 3 seconds.

- If you have not set the time and date on the onboard system clock, the time stamp shows the amount of time that has passed since the device was booted, in the following format:

  <*num*>d<*num*>h<*num*>m<*num*>s

  where:

  - <*num*>d – day
  - <*num*>h – hours
  - <*num*>m – minutes
  - <*num*>s – seconds

  For example, “188d1h01m00s” means the device had been running for 188 days, 11 hours, one minute, and zero seconds when the Syslog entry with this time stamp was generated.

Example of Syslog Messages on a Device Whose Onboard Clock Is Set

The example shows the format of messages on a device whose onboard system clock has been set. Each time stamp shows the month, the day, and the time of the system clock when the message was generated. For example, the system time when the most recent message (the one at the top) was generated was October 15 at 5:38 PM and 3 seconds.

```
HP9300(config)# show log

Syslog logging: enabled (0 messages dropped, 0 flushes, 0 overruns)
    Buffer logging: level ACDMEINW, 38 messages logged
    level code: A=alert C=critical D=debugging M=emergency E=error
                I=informational N=notification W=warning

Static Log Buffer:
Dec 15 19:04:14:A:Fan 1, fan on right connector, failed
Dec 15 19:00:14:A:Fan 2, fan on left connector, failed

Dynamic Log Buffer (50 entries):
Oct 15 17:38:03:warning:list 101 denied tcp 209.157.22.191(0)(Ethernet 4/18
0010.5a1f.77ed) -> 198.99.4.69(http), 2 packets

Oct 15 07:03:30:warning:list 101 denied tcp 209.157.22.26(0)(Ethernet 4/18
0010.5a1f.77ed) -> 198.99.4.69(http), 2 packets

Oct 15 06:58:30:warning:list 101 denied tcp 209.157.22.198(0)(Ethernet 4/18
0010.5a1f.77ed) -> 198.99.4.69(http), 1 packets
```

Example of Syslog Messages on a Device Whose Onboard Clock Is Not Set

The example shows the format of messages on a device whose onboard system clock is not set. Each time stamp shows the amount of time the device had been running when the message was generated. For example, the most recent message, at the top of the list of messages, was generated when the device had been running for 21 days, seven hours, two minutes, and 40 seconds.

```
HP9300(config)# show log

Syslog logging: enabled (0 messages dropped, 0 flushes, 0 overruns)
    Buffer logging: level ACDMEINW, 38 messages logged
    level code: A=alert C=critical D=debugging M=emergency E=error
                I=informational N=notification W=warning

Static Log Buffer:

Dynamic Log Buffer (50 entries):
21d07h02m40s:warning:list 101 denied tcp 209.157.22.191(0)(Ethernet 4/18
0010.5a1f.77ed) -> 198.99.4.69(http), 2 packets

19d07h03m30s:warning:list 101 denied tcp 209.157.22.26(0)(Ethernet 4/18
0010.5a1f.77ed) -> 198.99.4.69(http), 2 packets

17d06h58m30s:warning:list 101 denied tcp 209.157.22.198(0)(Ethernet 4/18
0010.5a1f.77ed) -> 198.99.4.69(http), 1 packets
```

List of Messages

The following table lists all of the Syslog messages. Note that some of the messages apply only to routing switches. The messages are listed by message level, in the following order:

- Emergencies (none)
- Alerts
- Critical (none)
- Errors (none)
- Warnings
- Notifications
- Informational
- Debugging

Table 20.1: HP Syslog Messages

Message Level	Message	Explanation

Alert	Power supply <num>, <location>, failed	A power supply has failed.
		The <num> is the power supply number.
		The <location> describes where the failed power supply is in the chassis. The location can be one of the following:
		• In 4-slot Chassis devices:
		  • left side power supply
		  • right side power supply
		• In 8-slot Chassis devices:
		  • bottom power supply
		  • middle bottom power supply
		  • middle top power supply
		  • top power supply
		• In Fixed-port devices:
		  • power supply on right connector
		  • power supply on left connector

Alert	Fan <num>, <location>, failed	A fan has failed.
		The <num> is the power supply number.
		The <location> describes where the failed power supply is in the chassis. The location can be one of the following:
		• In 4-slot Chassis devices:
		  • left side panel, back fan
		  • left side panel, front fan
		  • rear/back panel, left fan
		  • rear/back panel, right fan
		• In 8-slot Chassis devices:
		  • rear/back panel, top fan
		  • rear/back panel, bottom fan
		  • top panel, fan
		  • top panel, fan
		• In Fixed-port devices:
		  • fan on right connector
		  • fan on left connector

Table 20.1: HP Syslog Messages (Continued)

Message Level	Message	Explanation
Alert	Management module at slot <slot-num> state changed from <module-state> to <module-state>.	Indicates a state change in a management module. The <slot-num> indicates the chassis slot containing the module. The <module-state> can be one of the following: • active • standby • crashed • coming-up • unknown
Alert	Temperature <degrees> C degrees, warning level <warn-degrees> C degrees, shutdown level <shutdown-degrees> C degrees	Indicates an overtemperature condition on the active module. The <degrees> value indicates the temperature of the module. The <warn-degrees> value is the warning threshold temperature configured for the module. The <shutdown-degrees> value is the shutdown temperature configured for the module.
Alert	<num-modules> modules and 1 power supply, need more power supply!!	Indicates that the Chassis device needs more power supplies to run the modules in the chassis. The <num-modules> parameter indicates the number of modules in the chassis.
Alert	OSPF LSA Overflow, LSA Type = <lsa-type>	Indicates an LSA database overflow. The <lsa-type> parameter indicates the type of LSA that experienced the overflow condition. The LSA type is one of the following: • 1 – Router • 2 – Network • 3 – Summary • 4 – Summary • 5 – External

Table 20.1: HP Syslog Messages (Continued)

Message Level	Message	Explanation
Warning	Locked address violation at interface e<portnum>, address <mac-address>	Indicates that a port on which you have configured a lock-address filter received a packet that was dropped because the packet's source MAC address did not match an address learned by the port before the lock took effect. The e<portnum> is the port number. The <mac-address> is the MAC address that was denied by the address lock. Assuming that you configured the port to learn only the addresses that have valid access to the port, this message indicates a security violation.
Warning	NTP server <ip-addr> failed to respond	Indicates that a Simple Network Time Protocol (SNTP) server did not respond to the device's query for the current time. The <ip-addr> indicates the IP address of the SNTP server.
Warning	Dup IP <ip-addr> detected, sent from MAC <mac-addr> interface <portnum>	Indicates that the HP device received a packet from another device on the network with an IP address that is also configured on the HP device. The <ip-addr> is the duplicate IP address. The <mac-addr> is the MAC address of the device with the duplicate IP address. The <portnum> is the HP port that received the packet with the duplicate IP address. The address is the packet's source IP address.

Table 20.1: HP Syslog Messages (Continued)

Message Level	Message	Explanation
Warning	list <acl-num> denied <ip-proto> <src-ip-addr> (<src-tcp/udp-port>) (Ethernet <portnum> <mac-addr>) -> <dst-ip-addr>(<dst-tcp/udp-port>), <num> packets	Indicates that an Access Control List (ACL) denied (dropped) packets. The <acl-num> indicates the ACL number. Numbers 1 – 99 indicate standard ACLs. Numbers 100 – 199 indicate extended ACLs. The <ip-proto> indicates the IP protocol of the denied packets. The <src-ip-addr> is the source IP address of the denied packets. The <src-tcp/udp-port> is the source TCP or UDP port, if applicable, of the denied packets. The <portnum> indicates the port number on which the packet was denied. The <mac-addr> indicates the source MAC address of the denied packets. The <dst-ip-addr> indicates the destination IP address of the denied packets. The <dst-tcp/udp-port> indicates the destination TCP or UDP port number, if applicable, of the denied packets. The <num> indicates how many packets matching the values above were dropped during the five-minute interval represented by the log entry.
Warning	rip filter list <list-num> <direction> V1 | V2 denied <ip-addr>, <num> packets	Indicates that a RIP route filter denied (dropped) packets. The <list-num> is the ID of the filter list. The <direction> indicates whether the filter was applied to incoming packets or outgoing packets. The value can be one of the following: • in • out The V1 or V2 value specifies the RIP version (RIPv1 or RIPv2). The <ip-addr> indicates the network number in the denied updates. The <num> indicates how many packets matching the values above were dropped during the five-minute interval represented by the log entry.

Table 20.1: HP Syslog Messages (Continued)

Message Level	Message	Explanation
Warning	mac filter group denied packets on port <portnum> src macaddr <mac-addr>, <num> packets	Indicates that a Layer 2 MAC filter group configured on a port has denied packets. The <portnum> is the port on which the packets were denied. The <mac-addr> is eth source AMC address of the denied packets. The <num> indicates how many packets matching the values above were dropped during the five-minute interval represented by the log entry.
Notification	Module was inserted to slot <slot-num>	Indicates that a module was inserted into a chassis slot. The <slot-num> is the number of the chassis slot into which the module was inserted.
Notification	Module was removed from slot <slot-num>	Indicates that a module was removed from a chassis slot. The <slot-num> is the number of the chassis slot from which the module was removed.
Notification	OSPF interface state changed, rid <router-id>, intf addr <ip-addr>, state <ospf-state>	Indicates that the state of an OSPF interface has changed. The <router-id> is the router ID of the HP device. The <ip-addr> is the interface's IP address. The <ospf-state> indicates the state to which the interface has changed and can be one of the following: • down • loopback • waiting • point-to-point • designated router • backup designated router • other designated router • unknown

Table 20.1: HP Syslog Messages (Continued)

Message Level	Message	Explanation
Notification	OSPF virtual intf state changed, rid <router-id>, area <area-id>, nbr <ip-addr>, state <ospf-state>	Indicates that the state of an OSPF virtual interface has changed. The <router-id> is the router ID of the router the interface is on. The <area-id> is the area the interface is in. The <ip-addr> is the IP address of the OSPF neighbor. The <ospf-state> indicates the state to which the interface has changed and can be one of the following: • down • loopback • waiting • point-to-point • designated router • backup designated router • other designated router • unknown
Notification	OSPF nbr state changed, rid <router-id>, nbr addr <ip-addr>, nbr rid <nbr-router-id>, state <ospf-state>	Indicates that the state of an OSPF neighbor has changed. The <router-id> is the router ID of the HP device. The <ip-addr> is the IP address of the neighbor. The <nbr-router-id> is the router ID of the neighbor. The <ospf-state> indicates the state to which the interface has changed and can be one of the following: • down • attempt • initializing • 2-way • exchange start • exchange • loading • full • unknown

Table 20.1: HP Syslog Messages (Continued)

Message Level	Message	Explanation
Notification	OSPF virtual nbr state changed, rid <router-id>, nbr addr <ip-addr>, nbr rid <nbr-router-id>, state <ospf-state>	Indicates that the state of an OSPF virtual neighbor has changed. The <router-id> is the router ID of the HP device. The <ip-addr> is the IP address of the neighbor. The <nbr-router-id> is the router ID of the neighbor. The <ospf-state> indicates the state to which the interface has changed and can be one of the following: • down • attempt • initializing • 2-way • exchange start • exchange • loading • full • unknown

Table 20.1: HP Syslog Messages (Continued)

Message Level	Message	Explanation
Notification	OSPF intf config error, rid <router-id>, intf addr <ip-addr>, pkt src addr <src-ip-addr>, error type <error-type>, pkt type <pkt-type>	Indicates that an OSPF interface configuration error has occurred. The <router-id> is the router ID of the HP device. The <ip-addr> is the IP address of the interface on the HP device. The <src-ip-addr> is the IP address of the interface from which the HP device received the error packet. The <error-type> can be one of the following: • bad version • area mismatch • unknown NBMA neighbor • unknown virtual neighbor • authentication type mismatch • authentication failure • network mask mismatch • hello interval mismatch • dead interval mismatch • option mismatch • unknown The <packet-type> can be one of the following: • hello • database description • link state request • link state update • link state ack • unknown

Table 20.1: HP Syslog Messages (Continued)

Message Level	Message	Explanation
Notification	OSPF virtual intf config error, rid <router-id>, intf addr <ip-addr>, pkt src addr <src-ip-addr>, error type <error-type>, pkt type <pkt-type>	Indicates that an OSPF virtual interface configuration error has occurred. The <router-id> is the router ID of the HP device. The <ip-addr> is the IP address of the interface on the HP device. The <src-ip-addr> is the IP address of the interface from which the HP device received the error packet. The <error-type> can be one of the following: • bad version • area mismatch • unknown NBMA neighbor • unknown virtual neighbor • authentication type mismatch • authentication failure • network mask mismatch • hello interval mismatch • dead interval mismatch • option mismatch • unknown The <packet-type> can be one of the following: • hello • database description • link state request • link state update • link state ack • unknown

Table 20.1: HP Syslog Messages (Continued)

Message Level	Message	Explanation
Notification	OSPF intf authen failure, rid <router-id>, intf addr <ip-addr>, pkt src addr <src-ip-addr>, error type <error-type>, pkt type <pkt-type>	Indicates that an OSPF interface authentication failure has occurred. The <router-id> is the router ID of the HP device. The <ip-addr> is the IP address of the interface on the HP device. The <src-ip-addr> is the IP address of the interface from which the HP device received the authentication failure. The <error-type> can be one of the following: • bad version • area mismatch • unknown NBMA neighbor • unknown virtual neighbor • authentication type mismatch • authentication failure • network mask mismatch • hello interval mismatch • dead interval mismatch • option mismatch • unknown The <packet-type> can be one of the following: • hello • database description • link state request • link state update • link state ack • unknown

Table 20.1: HP Syslog Messages (Continued)

Message Level	Message	Explanation
Notification	OSPF virtual intf authen failure, rid <router-id>, intf addr <ip-addr>, pkt src addr <src-ip-addr>, error type <error-type>, pkt type <pkt-type>	Indicates that an OSPF virtual interface authentication failure has occurred. The <router-id> is the router ID of the HP device. The <ip-addr> is the IP address of the interface on the HP device. The <src-ip-addr> is the IP address of the interface from which the HP device received the authentication failure. The <error-type> can be one of the following: • bad version • area mismatch • unknown NBMA neighbor • unknown virtual neighbor • authentication type mismatch • authentication failure • network mask mismatch • hello interval mismatch • dead interval mismatch • option mismatch • unknown The <packet-type> can be one of the following: • hello • database description • link state request • link state update • link state ack • unknown

Table 20.1: HP Syslog Messages (Continued)

Message Level	Message	Explanation
Notification	OSPF intf rcvd bad pkt, rid <router-id>, intf addr <ip-addr>, pkt src addr <src-ip-addr>, pkt type <pkt-type>	Indicates that an OSPF interface received a bad packet. The <router-id> is the router ID of the HP device. The <ip-addr> is the IP address of the interface on the HP device. The <src-ip-addr> is the IP address of the interface from which the HP device received the authentication failure. The <packet-type> can be one of the following: • hello • database description • link state request • link state update • link state ack • unknown
Notification	OSPF virtual intf rcvd bad pkt, rid <router-id>, intf addr <ip-addr>, pkt src addr <src-ip-addr>, pkt type <pkt-type>	Indicates that an OSPF interface received a bad packet. The <router-id> is the router ID of the HP device. The <ip-addr> is the IP address of the interface on the HP device. The <src-ip-addr> is the IP address of the interface from which the HP device received the authentication failure. The <packet-type> can be one of the following: • hello • database description • link state request • link state update • link state ack • unknown

Table 20.1: HP Syslog Messages (Continued)

Message Level	Message	Explanation
Notification	OSPF intf retransmit, rid <router-id>, intf addr <ip-addr>, nbr rid <nbr-router-id>, pkt type is <pkt-type>, LSA type <lsa-type>, LSA id <lsa-id>, LSA rid <lsa-router-id>	An OSPF interface on the HP device has retransmitted a Link State Advertisement (LSA). The <router-id> is the router ID of the HP device. The <ip-addr> is the IP address of the interface on the HP device. The <nbr-router-ID> is the router ID of the neighbor router. The <packet-type> can be one of the following: • hello • database description • link state request • link state update • link state ack • unknown The <lsa-type> is the type of LSA. The <lsa-id> is the LSA ID. The <lsa-router-id> is the LSA router ID.

Table 20.1: HP Syslog Messages (Continued)

Message Level	Message	Explanation
Notification	OSPF virtual intf retransmit, rid <router-id>, intf addr <ip-addr>, nbr rid <nbr-router-id>, pkt type is <pkt-type>, LSA type <lsa-type>, LSA id <lsa-id>, LSA rid <lsa-router-id>	An OSPF interface on the HP device has retransmitted a Link State Advertisement (LSA). The <router-id> is the router ID of the HP device. The <ip-addr> is the IP address of the interface on the HP device. The <nbr-router-id> is the router ID of the neighbor router. The <packet-type> can be one of the following: • hello • database description • link state request • link state update • link state ack • unknown The <lsa-type> is the type of LSA. The <lsa-id> is the LSA ID. The <lsa-router-id> is the LSA router ID.
Notification	OSPF originate LSA, rid <router-id>, area <area-id>, LSA type <lsa-type>, LSA id <lsa-id>, LSA router id <lsa-router-id>	An OSPF interface has originated an LSA. The <router-id> is the router ID of the HP device. The <area-id> is the OSPF area. The <lsa-type> is the type of LSA. The <lsa-id> is the LSA ID. The <lsa-router-id> is the LSA router ID.
Notification	OSPF max age LSA, rid <router-id>, area <area-id>, LSA type <lsa-type>, LSA id <lsa-id>, LSA rid <lsa-router-id>	An LSA has reached its maximum age. The <router-id> is the router ID of the HP device. The <area-id> is the OSPF area. The <lsa-type> is the type of LSA. The <lsa-id> is the LSA ID. The <lsa-router-id> is the LSA router ID.

Table 20.1: HP Syslog Messages (Continued)

Message Level	Message	Explanation
Notification	OSPF LSDB overflow, rid <router-id>, limit <num>	A Link State Database Overflow (LSDB) condition has occurred. The <router-id> is the router ID of the HP device. The <num> is the number of LSAs.
Notification	OSPF LSDB approaching overflow, rid <router-id>, limit <num>	The software is close to an LSDB overflow condition. The <router-id> is the router ID of the HP device. The <num> is the number of LSAs.
Notification	SRP intf state changed, intf <portnum>, addr <ip-addr>, state <srp-state>	A state change has occurred in an HP Standby Router Protocol (SRP) interface. The <portnum> is the port. The <ip-addr> is the IP address of the SRP interface. The <srp-state> can be one of the following: • init • negotiating • standby • active • unknown
Notification	VRRP intf state changed, intf <portnum>, vrid <virtual-router-id>, state <vrrp-state>	A state change has occurred in a Virtual Router Redundancy Protocol (VRRP) interface. The <portnum> is the port. The <virtual-router-id> is the virtual router ID (VRID) configured on the interface. The <vrrp-state> can be one of the following: • init • master • backup • unknown
Notification	BGP Peer <ip-addr> UP (ESTABLISHED)	Indicates that a BGP4 neighbor has come up. The <ip-addr> is the IP address of the neighbor's BGP4 interface with the HP device.

Table 20.1: HP Syslog Messages (Continued)

Message Level	Message	Explanation
Notification	BGP Peer <ip-addr> DOWN (IDLE)	Indicates that a BGP4 neighbor has gone down. The <ip-addr> is the IP address of the neighbor's BGP4 interface with the HP device.
Informational	Cold start	The device has been powered on.
Informational	Warm start	The system software (flash code) has been reloaded.
Informational	<user-name> login to USER EXEC mode	A user has logged into the USER EXEC mode of the CLI. The <user-name> is the user name.
Informational	<user-name> logout from USER EXEC mode	A user has logged out of the USER EXEC mode of the CLI. The <user-name> is the user name.
Informational	<user-name> login to PRIVILEGE mode	A user has logged into the Privileged EXEC mode of the CLI. The <user-name> is the user name.
Informational	<user-name> logout from PRIVILEGE mode	A user has logged out of Privileged EXEC mode of the CLI. The <user-name> is the user name.
Informational	SNMP Auth. failure, intruder IP: <ip-addr>	A user has tried to open a management session with the device using an invalid SNMP community string. The <ip-addr> is the IP address of the host that sent the invalid community string.
Informational	Interface <portnum>, state up	A port has come up. The <portnum> is the port number.
Informational	Interface <portnum>, state down	A port has gone down. The <portnum> is the port number.
Informational	Bridge root changed, vlan <vlan-id>, new root ID <string>, root interface <portnum>	A Spanning Tree Protocol (STP) topology change has occurred. The <vlan-id> is the ID of the VLAN in which the STP topology change occurred. The <root-id> is the STP bridge root ID. The <portnum> is the number of the port connected to the new root bridge.

Table 20.1: HP Syslog Messages (Continued)

Message Level	Message	Explanation
Informational	Bridge is new root, vlan <vlan-id>, root ID <root-id>	A Spanning Tree Protocol (STP) topology change has occurred, resulting in the HP device becoming the root bridge. The <vlan-id> is the ID of the VLAN in which the STP topology change occurred. The <root-id> is the STP bridge root ID.
Informational	Bridge topology change, vlan <vlan-id>, interface <portnum>, changed state to <stp-state>	A Spanning Tree Protocol (STP) topology change has occurred on a port. The <vlan-id> is the ID of the VLAN in which the STP topology change occurred. The <portnum> is the port number. The <stp-state> is the new STP state and can be one of the following: • disabled • blocking • listening • learning • forwarding • unknown
Informational	startup-config was changed or startup-config was changed by <user-name>	A configuration change was saved to the startup-config file. The <user-name> is the user's ID, if they entered a user ID to log in.
Debug	BGP4: Not enough memory available to run BGP4	The device could not start the BGP4 routing protocol because there is not enough memory available.

EXAMPLE:

This example show some common Syslog messages.

```
HP9300# show logging
Syslog logging: enabled (0 messages dropped, 0 flushes, 0 overruns)
    Buffer logging: level ACDMEINW, 7 messages logged
    level code: A=alert C=critical D=debugging M=emergency E=error
                I=informational N=notification W=warning


Static Log Buffer:

Dynamic Log Buffer (50 entries):
00d05h44m28s:info:Interface e3/11, state up
00d05h44m28s:info:Bridge topology change, vlan 1, interface 3/11, changed state
to forwarding
00d04h45m49s:info:Interface e3/11, state down
00d04h45m20s:info:Interface e3/11, state up
00d04h45m20s:info:Bridge topology change, vlan 1, interface 3/11, changed state
to forwarding
```

```
00d01h45m13s:info:Interface e3/11, state down
00d00h01m00s:info:Interface e3/11, state up
00d00h00m05s:info:Bridge topology change, vlan 1, interface 3/11, changed state
to forwarding
00d00h00m00s:info:Warm start
```

EXAMPLE:

This example shows log entries for authentication failures. If someone enters an invalid community string when attempting to access the SNMP server on the HP device, the device generates a trap in the device's syslog buffer. (If you have configured the device to use a third-party SyslogD server, the device also sends a log entry to the server.)

Here is an example of a log that contains SNMP authentication traps. In this example, someone attempted to access the HP device three times using invalid SNMP community strings. The unsuccessful attempts indicate either an authorized user who is also a poor typist, or an unauthorized user who is attempting to access the device.

```
HP9300(config)# show log
Syslog logging: enabled (0 messages dropped, 0 flushes, 1 overruns)
Buffer logging: level ACDMEINW, 50 messages logged
level code: A=alert C=critical D=debugging M=emergency E=error
I=informational N=notification W=warning

Static Log Buffer:

Dynamic Log Buffer (50 entries):
00d01h45m13s:info:SNMP Authentication failure, intruder IP: 207.95.6.55
00d00h01m00s:info:SNMP Authentication failure, intruder IP: 207.95.6.55
00d00h00m05s:info:SNMP Authentication failure, intruder IP: 207.95.6.55
```

EXAMPLE:

This example shows a log entry for an IP address conflict between the HP device and another device on the network.

In addition to placing an entry in the log, the software sends a log message to the SyslogD server, if you have configured one, and sends a message to each open CLI session.

```
HP9300(config)# show log
Syslog logging: enabled (0 messages dropped, 0 flushes, 1 overruns)
Buffer logging: level ACDMEINW, 50 messages logged
level code: A=alert C=critical D=debugging M=emergency E=error
I=informational N=notification W=warning


Static Log Buffer:

Dynamic Log Buffer (50 entries):
00d01h45m13s:warning:Duplicate IP address 209.157.23.188 detected,sent from MAC
address 00e0.5201.3bc9 coming from port 7/7
```

EXAMPLE:

Here are some examples of log entries for packets denied by Access Control Lists (ACLs).

NOTE: On devices that also use Layer 2 MAC filters, both types of log entries can appear in the same log. Only ACL log entries are shown in this example.

```
HP9300(config)# show log

Syslog logging: enabled (0 messages dropped, 0 flushes, 0 overruns)
    Buffer logging: level ACDMEINW, 38 messages logged
    level code: A=alert C=critical D=debugging M=emergency E=error
                I=informational N=notification W=warning

Static Log Buffer:

Dynamic Log Buffer (50 entries):
21d07h02m40s:warning:list 101 denied tcp 209.157.22.191(0)(Ethernet 4/18
0010.5a1f.77ed) -> 198.99.4.69(http), 2 packets

00d07h03m30s:warning:list 101 denied tcp 209.157.22.26(0)(Ethernet 4/18
0010.5a1f.77ed) -> 198.99.4.69(http), 2 packets

00d06h58m30s:warning:list 101 denied tcp 209.157.22.198(0)(Ethernet 4/18
0010.5a1f.77ed) -> 198.99.4.69(http), 1 packets
```

The first time an entry in an ACL denies a packet and logging is enabled for that entry, the software generates a Syslog message and an SNMP trap. Messages for packets denied by ACLs are at the warning level of the Syslog.

When the first Syslog entry for a packet denied by an ACL is generated, the software starts a five-minute ACL timer. After this, the software sends Syslog messages every five minutes. The messages list the number of packets denied by each ACL during the previous five-minute interval. If an ACL entry does not deny any packets during the five-minute interval, the software does not generate a Syslog entry for that ACL entry.

NOTE: For an ACL entry to be eligible to generate a Syslog entry for denied packets, logging must be enabled for the entry. The Syslog contains entries only for the ACL entries that deny packets and have logging enabled.

In this example, the two-line message at the bottom is the first entry, which the software immediately generates the first time an ACL entry permits or denies a packet. In this case, an entry in ACL 101denied a packet. The packet was a TCP packet from host 209.157.22.198 and was destined for TCP port 80 (HTTP) on host 198.99.4.69.

When the software places the first entry in the log, the software also starts the five-minute timer for subsequent log entries. Thus, five minutes after the first log entry, the software generates another log entry and SNMP trap for denied packets.

In this example, the software generates the second log entry five minutes later. The second entry indicates that the same ACL denied two packets.

The time stamp for the third entry is much later than the time stamps for the first two entries. In this case, no ACLs denied packets for a very long time. In fact, since no ACLs denied packets during the five-minute interval following the second entry, the software stopped the ACL log timer. The software generated the third entry as soon as the ACL denied a packet. The software restarted the five-minute ACL log timer at the same time. As long as at least one ACL entry permits or denies a packet, the timer continues to generate new log entries and SNMP traps every five minutes.

Syntax: show logging

Possible values: N/A

Default value: N/A

EXAMPLE:

Here are some examples of log entries for BGP4. The first log entry written to the log (the entry at the bottom) occurs when you try to enable BGP4 on a device that does not have enough free memory to run the protocol. The other messages occur when a BGP4 neighbor's state changes. In this case, the state changes occur when the neighbor session starts and when it ends.

The messages in this example show state changes that indicate the neighbor session is coming up (ESTABLISHED) and going down (IDLE).

For an explanation of the BGP4 neighbor states, see the “Configuring BGP4” chapter of the *Advanced Configuration and Management Guide*.

```
00d01h31m49s:info:BGP Peer 192.168.12.3 UP (ESTABLISHED)
00d01h31m38s:info:BGP Peer 192.168.12.3 DOWN (IDLE)
00d00h06m01s:info:BGP Peer 192.168.11.2 UP (ESTABLISHED)
00d00h00m00s:info:Warm start
00d00h00m00s:debug:BGP4: Not enough memory available to run BGP4
```

EXAMPLE:

Here are some examples of log messages for CLI access.

```
HP9300(config)# show logging

Syslog logging: enabled (0 messages dropped, 0 flushes, 0 overruns)
Buffer logging: level ACDMEINW, 12 messages logged
level code: A=alert C=critical D=debugging M=emergency E=error
I=informational N=notification W=warning


Static Log Buffer:

Dynamic Log Buffer (50 entries):
Oct 15 18:01:11:info:dg logout from USER EXEC mode
Oct 15 17:59:22:info:dg logout from PRIVILEDGE EXEC mode
Oct 15 17:38:07:info:dg login to PRIVILEDGE EXEC mode
Oct 15 17:38:03:info:dg login to USER EXEC mode
```

The first message (the one on the bottom) indicates that user “dg” logged in to the CLI’s User EXEC level on October 15 at 5:38 PM and 3 seconds (Oct 15 17:38:03). The same user logged in to the Privileged EXEC level four seconds later.

The user remained in the Privileged EXEC mode until 5:59 PM and 22 seconds. (The user could have used the CONFIG modes as well. Once you access the Privileged EXEC level, no further authentication is required to access the CONFIG levels.) At 6:01 PM and 11 seconds, the user ended the CLI session.

show mac-address

Displays all MAC addresses on an HP switch or routing switch.

EXAMPLE:

To display all MAC addresses on a switch or routing switch, enter the following:

```
HP6208(config)# show mac-address

Total entries from all ports = 75

       MAC     Port   Age CamF CIDX0 CIDX1 CIDX2 CIDX3 CIDX4 CIDX5

0000.0300.0000  10  17293 00H     0     0     0     0     0     0

0060.089f.8086   1     12 0bH    23    15     0     6     0     0

0060.9709.914b  16   2130 00H     0     0     0     0     0     0

00a0.249a.0163  16    130 00H     0     0     0     0     0     0

0060.979d.41a5  11    475 00H     0     0     0     0     0     0

00a0.24c5.01d1  11      0 0cH     0     0    20    14     0     0

0060.979d.41df  11    570 00H     0     0     0     0     0     0

0060.9759.4226  16    240 00H     0     0     0     0     0     0

0060.9759.4235  16    130 00H     0     0     0     0     0     0

0800.208f.725b   2    135 00H     0     0     0     0     0     0
```

```
0060.9759.4264  16      0 0aH     0    14     0    21     0     0
00a0.24c5.02a1  16     15 09H     5     0     0    33     0     0
0000.c02c.a2bf   7     11 03H    27     5     0     0     0     0
00a0.24c5.02f8   4    135 00H     0     0     0     0     0     0
00a0.24c5.02fc   6      0 06H     0     8    31     0     0     0
0800.207e.c312   2      2 0dH    25     0    24    13     0     0
0800.208f.5331   2    135 00H     0     0     0     0     0     0
00e0.5200.0385  10   5160 00H     0     0     0     0     0     0
00e0.5200.0388  10  35420 00H     0     0     0     0     0     0
0000.f820.a3ad   3  11239 00H     0     0     0     0     0     0
0000.c06f.d3be   3    135 00H     0     0     0     0     0     0
--More--, next page: Space/Return key, quit: Control-c
```

NOTE: The information displayed in columns with headings, **CamF**, and **CIDX0** through **CIDX5**, is not relevant for day-to-day management of the switch or routing switch. The information is used by engineering and technical support staff for debug purposes.

Syntax: show mac-address [ethernet <portnum> | session | statistics | <mac-addr>]

The **ethernet** <portnum> option displays the MAC address(es) on the specified port.

The **session** parameter displays the MAC session table.

The **statistics** option displays statistics. See “show mac-address statistics” on page 20-58.

The <mac-addr> option displays information about the specified MAC address. Specify the MAC address in the following format: abcd.egh.1234. (Separate each four bytes with a period.)

Possible values: see above

Default value: N/A

show mac-address statistics

Displays the total number of MAC addresses currently active on an HP switch or routing switch. This command serves as a numerical summary of the detailed summary provided by the command **show mac-address**.

For each port, the number of learned MAC addresses is displayed.

EXAMPLE:

```
HP9300(config)# show mac-address statistics
Total entries  = 41
Port     1     2     3     4     5     6     7     8     9
         0     6    11     1     1     1     2     1     1
Port     10     11      12    13    14    15    16
          0      3       1     3     1     1     8
```

Syntax: show mac-address statistics

Possible values: N/A

Default value: N/A

show media

Shows the type of ports active on a Chassis device.

EXAMPLE:

```
HP9300(config)# show media
1/1:SX 1/2:SX 1/3:SX 1/4:SX
2/1:SX 2/2:SX 2/3:SX 2/4:SX 2/5:SX 2/6:SX 2/7:SX 2/8:SX
3/1:SX 3/2:SX 3/3:SX 3/4:SX 3/5:SX 3/6:SX 3/7:SX 3/8:SX
4/1:SX 4/2:SX 4/3:SX 4/4:SX 4/5:SX 4/6:SX 4/7:SX 4/8:SX

6/1:SX 6/2:SX 6/3:SX 6/4:SX 6/5:SX 6/6:SX 6/7:SX 6/8:SX
7/1:SX 7/2:SX 7/3:SX 7/4:SX 7/5:SX 7/6:SX 7/7:SX 7/8:SX
8/1:SX 8/2:SX 8/3:SX 8/4:SX 8/5:SX 8/6:SX 8/7:SX 8/8:SX
```

Syntax: show media

Possible values: N/A

Default value: N/A

show module

Shows the types of modules installed on a Chassis device.

EXAMPLE:

Here is an example of the command's display output on an HP 9308M routing switch.

```
HP9300# show module
    Module                            Status    Ports Starting MAC
S1: B8GM Fiber Management Module      OK          8   00e0.52f0.5a00
S2: B24E Copper Switch Module         OK         24   00e0.52f0.5a20
S3: B24E Copper Switch Module         OK         24   00e0.52f0.5a40
S4: B24E Copper Switch Module         OK         24   00e0.52f0.5a60
S5: B8G Fiber Switch Module           OK          8   00e0.52f0.5a00
S6: B24E Copper Switch Module         OK         24   00e0.52f0.5aa0
S7: B8G Fiber Switch Module           OK          8   00e0.52f0.5a00
S8: B8G Fiber Switch Module           OK          8   00e0.52f0.5a00
```

Possible values: N/A

Default value: N/A

show priority-mapping

Displays the queues to which the 802.1p priorities are assigned.

EXAMPLE:

To display the queue assignments for all the priorities, enter the following command at any level of the CLI:

```
HP9300(config)# show priority-mapping all
802.1p priority 0 mapped to qos profile qosp0
802.1p priority 1 mapped to qos profile qosp0
802.1p priority 2 mapped to qos profile qosp1
802.1p priority 3 mapped to qos profile qosp1
```

```
802.1p priority 4 mapped to qos profile qosp2
802.1p priority 5 mapped to qos profile qosp2
802.1p priority 6 mapped to qos profile qosp3
802.1p priority 7 mapped to qos profile qosp3
```

In this example, the priorities still have their default queue assignments.

Syntax: show priority-mapping all | <num>

Possible values: N/A

Default value: N/A

show qos-profiles

Displays the QoS settings.

EXAMPLE:

To display the QoS settings for all the queues, enter the following command from any level of the CLI:

```
HP9300(config)# show qos-profiles all
bandwidth scheduling mechanism: weighted priority
Profile qosp3     : PREMIUM     bandwidth requested  75% calculated  75%
Profile qosp2     : HIGH        bandwidth requested  10% calculated  13%
Profile qosp1     : NORMAL      bandwidth requested  10% calculated   8%
Profile qosp0     : BEST-EFFORT bandwidth requested   5% calculated   4%
```

Syntax: show qos-profiles all | <name>

Possible values: N/A

Default value: N/A

show relative-utilization

Displays an uplink utilization list, which allows you to observe the percentage of the uplink's bandwidth that each of the downlink ports used during the most recent 30-second port statistics interval. The number of packets sent and received between the two ports is listed, as well as the ratio of each individual downlink port's packets relative to the total number of packets on the uplink.

EXAMPLE:

To display an uplink utilization list:

```
HP9300(config)# show relative-utilization 1
uplink: ethe 1
30-sec total uplink packet count = 3011
packet count ratio (%)
  1/ 2:60   1/ 3:40
```

In this example, ports 1/2 and 1/3 are sending traffic to port 1/1. Port 1/2 and port 1/3 are isolated (not shared by multiple clients) and typically do not exchange traffic with other ports except for the uplink port, 1/1.

Syntax: show relative-utilization <num>

Possible values: The <num> parameter specifies the list number.

Default value: N/A

show reload

Displays the time and date for scheduled system reloads.

EXAMPLE:

```
HP9300# show reload
```

Syntax: show reload

Possible values: N/A

Default value: N/A

show rmon alarm

Displays any reported RMON alarms for the system.

EXAMPLE:

```
HP9300# show rmon alarm

Alarm table is empty
```

Syntax: show rmon alarm [<alarm-table-entry>]

Possible values: N/A

Default value: N/A

show rmon event

Displays any reported RMON events for the system.

EXAMPLE:

```
HP9300# show rmon event

Event table is empty
```

Syntax: show rmon event [<event-table-entry>]

Possible values: N/A

Default value: N/A

show rmon history

Displays the RMON history for the system.

EXAMPLE:

```
HP9300# show rmon history
History 1 is active, owned by monitor
 Monitors interface 1/1 (ifIndex 1) every 30 seconds
 25 buckets were granted to store statistics

History 2 is active, owned by monitor
 Monitors interface 1/1 (ifIndex 1) every 1800 seconds
 25 buckets were granted to store statistics

History 3 is active, owned by monitor
 Monitors interface 5/20 (ifIndex 148) every 30 seconds
 25 buckets were granted to store statistics

History 4 is active, owned by monitor
 Monitors interface 5/20 (ifIndex 148) every 1800 seconds
 25 buckets were granted to store statistics
```

Syntax: show rmon history [<control-table-entry>]

Possible values: N/A

Default value: N/A

show rmon statistics

Displays detailed statistics for each port.

EXAMPLE:

```
HP9300# sh rmon st
```

Syntax: show rmon statistics [ethernet <portnum>] | [<num>]

The **ethernet** <portnum> parameter displays the RMON port statistics for the specified port.

The <num> parameter displays the specified entry. Entries are numbered beginning with 1.

Possible values: see above

Default value: N/A

show running-config

Displays the running configuration of the HP switch or routing switch on the terminal screen.

NOTE: This command is equivalent to the **write terminal** command.

EXAMPLE:

```
HP9300# sh run
```

Syntax: show running-config

NOTE: If you have enabled the display of passwords with the **enable password-display** CONFIG command, SNMP community strings and passwords are displayed when you enter the **show running-config** command in Privileged EXEC mode, but not in User EXEC mode.

Possible values: N/A

Default value: N/A

show server

Displays configuration information and statistics for a web server address you added using the server real-name command.

This command applies only to routing switches you have configured to assist third-party Server Load Balancers or directly connected web servers with globally-distributed Server Load Balancing (SLB). See the “Route Health Injection” chapter of the *Advanced Configuration and Management Guide*.

EXAMPLE:

```
HP9300# show server real tinman

Real Servers Info

Server State - 1:enabled, 2:failed, 3:test, 4:suspect, 5:grace_dn, 6:active
Name:tinman             IP:  209.157.23.60:4    State:1
```

Syntax: show server real <name> | keepalive-port

See the “Route Health Injection” chapter of the *Advanced Configuration and Management Guide* for an explanation of the fields in this display.

Possible values: N/A

Default value: N/A

show snmp server

Lists system administrative information—contact name, system location, community strings, and traps enabled for an HP switch or routing switch.

EXAMPLE:

```
HP9300# show snmp server

Contact: Marshall

     Location: Copy Center
```

```
Community(ro): public
Community(rw): private
Traps
                    Cold start: Enable
                       Link up: Enable
                     Link down: Enable
                Authentication: Enable
                        [ ..........]
 Total Trap-Receiver Entries: 4
Trap-Receiver IP Address       Community
     1        207.95.6.211
     2        207.95.5.21
```

Syntax: show snmp server

Possible values: N/A

Default value: N/A

show span

Displays spanning tree statistics such as root cost, root port, and priority.

EXAMPLE:

```
HP9300# show span
Global STP Parameters:
VLAN Root             Root Root Prio Max He- Ho- Fwd Last     Chg  Bridge
 ID   ID              Cost Port rity Age llo ld  dly Chang    cnt  Address
                           Hex  sec sec sec sec sec
   1 800000e052801400 0    Root 8000 20  2   2   15  0        1    00e052801400

Port STP Parameters:

VLAN Port Prio Path State      Fwd    Design Design           Design
 ID  Num  rity Cost            Trans  Cost   Root             Bridge
          Hex
   1 1/1  80   1    FORWARDING 1      0      800000e052801400 800000e052801400
   1 1/2  80   0    DISABLED   0      0      0000000000000000 0000000000000000
   1 2/1  80   0    DISABLED   0      0      0000000000000000 0000000000000000
   1 2/3  80   0    DISABLED   0      0      0000000000000000 0000000000000000
   1 2/5  80   0    DISABLED   0      0      0000000000000000 0000000000000000
```

Syntax: show span

Possible values: N/A

Default value: N/A

show span vlan

Displays global and port STP information for a given VLAN on an HP switch or routing switch.

EXAMPLE:

```
HP9300# show span vlan 2
Global Bridge Parameters:
VLAN Root   Root   Root    Prio    Max  He-  Ho-  Fwd   Last   Chg  Bridge
 ID  ID     Cost   Port    rity    Age  llo  ld   dly   Chang  cnt  Address
                              Hex    sec    sec   sec
2   800000e0520002f5  0     Root  8000   20      2     2     15     0   0
00e0520002f5
Port STP Parameters:
VLAN  Port  Prio  Path State     Fwd         Design   Design    Design
 ID   Num   rity   Cost          Trans        Cost    Root     Bridge
           Hex
    2        1      0080    0                DISABLED         0
0000000000000000    0000000000000000
   2         2      0080    0                DISABLED         0
0000000000000000    0000000000000000
   2         3      0080    0                DISABLED         0
0000000000000000    0000000000000000
   2         4      0080    0                DISABLED         0
0000000000000000    0000000000000000
   2         5      0080    0                DISABLED         0
0000000000000000    0000000000000000
```

Syntax: show span vlan <vlan-id>

Possible values: N/A

Default value: N/A

show statistics

Displays port statistics for an HP switch or routing switch (transmit, receive, collisions, errors).

EXAMPLE:

```
HP9300# show statistics
       Buffer Manager           Queue
  [Pkt Receive Pkt Transmit]
          0             0
   Port Counters:  Packets         Collisions              Errors
Port    [Receive  Transmit] [Receive Transmit]  [Align     FCS   Giant  Short]
1/1        15935       5443        0         0       0       0       0       0
1/2            0          0        0         0       0       0       0       0
1/3            0          0        0         0       0       0       0       0
1/4            0          0        0         0       0       0       0       0
2/1            0          0        0         0       0       0       0       0
```

```
2/2             0          0          0          0          0          0          0          0
2/3             0          0          0          0          0          0          0          0
2/4             0          0          0          0          0          0          0          0
2/5             0          0          0          0          0          0          0          0
2/6             0          0          0          0          0          0          0          0
2/7             0          0          0          0          0          0          0          0
2/8             0          0          0          0          0          0          0          0
```

Syntax: show statistics [ethernet <portnum>] | [slot <slot-num>]

The **ethernet** <portnum> parameter displays statistics for a specific port.

The **slot** <slot-num> parameter displays statistics for a specific chassis slot.

NOTE: The **slot** <slot-num> parameter applies only to the HP 9304M or HP 9308M.

Possible values: N/A

Default value: N/A

show tech

Shows technical details to you for assistance in troubleshooting issues when working with technical support. The information shown is a sub-set of all the available information.

EXAMPLE:

```
HP9300# show tech
show tech
  SW: Version 6.1.00T41 Copyright (c) 1996-1998 Hewlett-Packard
      Compiled on Oct 13 1999 at 22:54:22 labeled as S0420012
  HW: Chassis HP 9308M
==========================================================================
SL 1: 4 Port Gig Management Module
 2048 KB BRAM, SMC version 1, ICBM version 20
  384 KB PRAM(256K+128K) and 2048*8 CAM entries for DMA  0, version 0209
  384 KB PRAM(256K+128K) and shared CAM entries for DMA  1, version 0209
==========================================================================
SL 2: 8 Port Gig Module
 2048 KB BRAM, SMC version 1, ICBM version 20
  384 KB PRAM(256K+128K) and 2048*8 CAM entries for DMA  4, version 0206
  384 KB PRAM(256K+128K) and shared CAM entries for DMA  5, version 0206
  384 KB PRAM(256K+128K) and 2048*8 CAM entries for DMA  6, version 0206
  384 KB PRAM(256K+128K) and shared CAM entries for DMA  7, version 0206
==========================================================================
  240 MHz Power PC processor 603 (revision 7) 66 MHz bus
  128 KB boot flash memory
 4096 KB code flash memory
```

```
  256 KB SRAM
32756 KB DRAM
The system uptime is 1 hours 18 minutes 20 seconds
HP9300#Port Link State     Dupl Speed Trunk Tag Priori MAC
1/1  Up   Forward   Full 1G    None  No  level0 00e0.5280.1400 1/1
1/2  Down None      None None  None  No  level0 00e0.5280.1401 1/2
[. . . . . .]
 The system had been up for 422 minutes
General Registers:
04208278 0425f358 0421c200 00009030 00000000 00000000 000000ff 044b94e8
[. . . . . .]
```

Syntax: show tech

Possible values: N/A

Default value: N/A

show telnet

Shows the IP address of the station with the active Telnet session. Up to five read-only access Telnet sessions are supported on the HP switch or routing switch at one time. Write access through Telnet is limited to one session.

EXAMPLE:

```
HP9300# show telnet
Telnet connection: Yes
client IP address: 207.95.6.18
Telnet connection:  No
Telnet connection:  No
Telnet connection:  No
Telnet connection:  No
```

Syntax: show telnet

Possible values: N/A

Default value: N/A

show trunk

Displays trunk groups and their port membership for HP switches and routing switches.

EXAMPLE:

```
HP9300(config-if)# show trunk
Configured trunks:
Trunk Group     Ports
1               1     2     3
Operational trunks:
Trunk Group     Ports              Duplex       Speed        Tag       Priority
1               1     2     3      Full         100M         No        High
```

Syntax: show trunk

Possible values: N/A

Default value: N/A

show users

Lists the local access user accounts configured on the device.

EXAMPLE:

```
HP9300# sh u

Username            Password                        Encrypt   Privilege
=============================================================================
MattBerto           $1$$arc/3B93fBJdrtj/DmGWt1    enabled   0
DanGreenwell        $2$$arc/3B93fBJdrtj/DmGWt2    enabled   0
AlexMaynes          $3$$arc/3B93fBJdrtj/DmGWt3    enabled   0
```

Syntax: show users

Possible values: N/A

Default value: N/A

show version

Lists software, hardware and firmware details for an HP switch or routing switch. Much of the information displayed by this command can be used by HP technical support to help identify your system if you need help to resolve an issue. The following information might be particularly useful and is highlighted in bold type in the example:

- Software version – The version number of the software. This is the number referred to in release notes and other product documentation.
- Software label – The name of the software image file. This is the name of the file you install into the device's flash memory. Note that the same software version usually has different software labels depending on the product and in come cases on the contents of the software.
- DRAM – the amount of memory on the device. This memory amount can be important if you want to use memory-intensive features such as Border Gateway Protocol version 4 (BGP4).

EXAMPLE:

This example shows the command output on an HP 9308M running software version 05.0.00.

```
HP9300# sh ver

  SW: Version 05.2.16T43 Hewlett-Packard Company
      Compiled on Oct  1 1999 at 19:28:56 labeled as HPR05216
      J4138A HP ProCurve Routing Switch 9308M
  HW: ProCurve HP9308 Routing Switch, SYSIF version 10
==========================================================================
SL 1: 8 Port Gig Management Module
 2048 KB BRAM, SMC version 1, ICBM version 21
  256 KB PRAM(256K+0K) and 2048*8 CAM entries for DMA  0, version 0209
  256 KB PRAM(256K+0K) and shared CAM entries for DMA  1, version 0209
  256 KB PRAM(256K+0K) and 2048*8 CAM entries for DMA  2, version 0209
  256 KB PRAM(256K+0K) and shared CAM entries for DMA  3, version 0209
==========================================================================
```

```
SL 3: 24 Port Copper Module
 2048 KB BRAM, SMC version 2, ICBM version 21
  256 KB PRAM(256K+0K) and 2048*8 CAM entries for DMA  8, version 0808
  256 KB PRAM(256K+0K) and shared CAM entries for DMA  9, version 0808
  256 KB PRAM(256K+0K) and shared CAM entries for DMA 10, version 0808
==========================================================================
SL 4: 8 Port Gig Module
 2048 KB BRAM, SMC version 1, ICBM version 21
  256 KB PRAM(256K+0K) and 2048*8 CAM entries for DMA 12, version 0209
  256 KB PRAM(256K+0K) and shared CAM entries for DMA 13, version 0209
  256 KB PRAM(256K+0K) and 2048*8 CAM entries for DMA 14, version 0209
  256 KB PRAM(256K+0K) and shared CAM entries for DMA 15, version 0209
==========================================================================
SL 7: 24 Port Copper Module
 2048 KB BRAM, SMC version 2, ICBM version 21
  256 KB PRAM(256K+0K) and 2048*8 CAM entries for DMA 24, version 0808
  256 KB PRAM(256K+0K) and shared CAM entries for DMA 25, version 0808
  256 KB PRAM(256K+0K) and shared CAM entries for DMA 26, version 0808
==========================================================================
  240 MHz Power PC processor 603 (revision 7) 63 MHz bus
  128 KB boot flash memory
 4096 KB code flash memory
  256 KB SRAM
   32 MB DRAM
The system uptime is 1 hours 14 minutes 37 seconds
The system started at 05:15:56 Pacific Tue Feb 01 2000
```

Syntax: show version

Possible values: N/A

Default value: N/A

show vlans

Displays the VLANs configured on the system, their member ports, assigned priority, and STP status.

EXAMPLE:

```
HP9300(config)# show vlans

Total PORT-VLAN entries: 2
Maximum PORT-VLAN entries: 8
legend: [S=Slot]

PORT-VLAN 1, Name DEFAULT-VLAN, Priority level0, Spanning tree Off
 Untagged Ports: (S2)  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16
 Untagged Ports: (S2) 17 18 19 20 21 22 23 24
 Untagged Ports: (S4)  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16
```

```
 Untagged Ports: (S4) 17 18 19 20 21 22 23 24
   Tagged Ports: None

PORT-VLAN 10, Name IP_VLAN, Priority level0, Spanning tree Off
 Untagged Ports: (S1)  1  2  3  4  5  6
   Tagged Ports: None

 IP-subnet VLAN 1.1.1.0 255.255.255.0, Dynamic port enabled
          Name: Mktg-LAN
  Static ports: None
 Exclude ports: None
 Dynamic ports: (S1)  1  2  3  4  5  6
 PORT-VLAN 20, Name IPX_VLAN, Priority level0, Spanning tree Off
 Untagged Ports: (S2)  1  2  3  4  5  6
   Tagged Ports: None

 IPX-network VLAN 0000ABCD, frame type ethernet_ii, Dynamic port enabled
          Name: Eng-LAN
  Static ports: None
 Exclude ports: None
 Dynamic ports: (S2)  1  2  3  4  5  6
```

Syntax: show vlans [<vlan-id> | ethernet <portnum>]

The <vlan-id> parameter specifies a VLAN for which you want to display the configuration information.

The **ethernet** <portnum> parameter specifies a port. If you use this parameter, the command lists all the VLAN memberships for the port.

Possible values: N/A

Default value: N/A

show web-connection

Displays the access levels and IP addresses of the devices that currently have Web management interface sessions with the device.

To clear all sessions displayed by this command, see “clear web-connection” on page 5-7.

EXAMPLE:

```
HP9300(config)# show web-connection
User                            IP address
set                             10.10.11.150
```

Syntax: show web-connection

Possible values: N/A

Default value: N/A

show who

Lists the active console and Telnet CLI sessions.

EXAMPLE:

```
HP9300# show who
Console connections:
 established
Telnet connections:
 1 established, client ip address 209.157.22.63
 2 closed
 3 closed
```

```
 4 closed
 5 closed
```

Syntax: show who

Possible values: N/A

Default value: N/A