Chapter 12
PIM Commands

bsr-candidate

Configures the routing switch as a candidate PIM Sparse Bootstrap Router (BSR).

EXAMPLE:

To configure the routing switch as a candidate BSR, enter a command such as the following:

```
HP9300(config-pim-router)# bsr-candidate ethernet 2/2 30 255
BSR address: 207.95.7.1, hash mask length: 30, priority: 255
```

This command configures the PIM Sparse interface on port 2/2 as a BSR candidate, with a hash mask length of 30 and a priority of 255. The information shown in italics above is displayed by the CLI after you enter the candidate BSR configuration command.

Syntax: [no] bsr-candidate ethernet | ve <portnum> | <ve-num> <hash-mask-length> [<priority>]

The **ethernet | ve** <portnum> | <ve-num> parameter specifies the interface. Enter **ethernet** <portnum> for a physical interface (port). Enter **ve** <ve-num> for a virtual interface. The routing switch will advertise the specified interface's IP address as a candidate BSR.

The <hash-mask-length> parameter specifies the number of bits in a group address that are significant when calculating the group-to-RP mapping. You can specify a value from 1 – 32.

NOTE: HP recommends you specify 30 for IP version 4 (IPv4) networks.

The <priority> specifies the BSR priority. You can specify a value from 0 – 255. When the election process for BSR takes place, the candidate BSR with the highest priority becomes the BSR. The default is 0.

Possible values: N/A

Default value: N/A

end

Moves activity to the privileged EXEC level from any level of the CLI except the user EXEC level.

EXAMPLE:

To move to the privileged level, enter the following from any level of the CLI.

```
HP9300(config-pim-router)# end
HP9300#
```

Syntax: end

Possible values: N/A

Default value: N/A

exit

Moves activity up one level from the current level. In this case, activity will be moved to the global level.

EXAMPLE:

```
HP9300(config-pim-router)# exit
HP9300(config)#
```

Syntax: exit

Possible values: N/A

Default value: N/A

message-interval

Changes the PIM Sparse Join/Prune message interval.

By default, the routing switch sends PIM Sparse Join/Prune messages every 60 seconds. These messages inform other PIM Sparse routers about clients who want to become receivers (Join) or stop being receivers (Prune) for PIM Sparse groups.

You can change the Join/Prune message interval using the following CLI method.

NOTE: Use the same Join/Prune message interval on all the PIM Sparse routers in the PIM Sparse domain. If the routers do not all use the same timer interval, the performance of PIM Sparse can be adversely affected.

EXAMPLE:

To change the Join/Prune interval, enter commands such as the following:

```
HP9300(config)# router pim
HP9300(config-pim-router)# message-interval 30
```

Syntax: [no] message-interval <num>

The <num> parameter specifies the number of seconds and can from 1 – 65535. The default is 60.

Possible values: 1 – 65535 seconds

Default value: 60 seconds

no

Disables other commands. To disable a command, place the word **no** before the command.

pim-graft-retransmit-timer

Defines the interval between the transmission of graft messages.

A graft message is sent by a router to cancel a prune state. When a router receives a graft message it will respond with a Graft Ack message. If this Graft Ack message is lost, the router that sent the graft message, resends it. The interval between the transmission of the first and subsequent graft message is what is configurable with the PIM graft retransmit timer.

EXAMPLE:

To change the graft retransmit timer from the default of 180 to 90 seconds, enter the following:

```
HP9300(config-pim-router)# pim-graft-retransmit-timer 90
```

Syntax: pim-graft-retransmit-timer <value>

Possible values: 10 – 3600 seconds

Default value: 180 seconds

pim-hello-timer

Defines the time interval at which periodic hellos are sent out on all interfaces of a PIM-capable router. Routers use hello messages to inform neighboring routers of their presence.

EXAMPLE:

To apply a PIM hello timer of 120 seconds to all ports on the router operating with PIM, enter the following:

```
HP9300(config-pim-router)# pim-hello-timer 120
```

Syntax: pim-hello-timer <value>

Possible values: 10 – 3600 seconds

Default value: 60 seconds

pim-inactivity-timer

A forwarding entry is deleted if it is not used to send multicast packets. The PIM inactivity timer defines the time interval after which an inactive forwarding entry is deleted.

EXAMPLE:

To apply a PIM inactivity timer of 90 seconds to all ports on the router operating with PIM, enter the following:

```
HP9300(config-pim-router)# pim-inactivity-timer 90
```

Syntax: pim-inactivity-timer <value>

Possible values: 10 – 3600 seconds

Default value: 180 seconds

pim-nbr-timeout

If a neighboring PIM router stops sending out PIM Hello messages, the routing switch will eventually discover that the neighbor is not present. Neighbor timeout is the interval after which a PIM-capable router will consider a neighbor to not be present.

EXAMPLE:

To apply a PIM neighbor timeout value of 360 seconds to all ports on the routing switch operating with PIM, enter the following:

```
HP9300(config-pim-router)# pim-nbr-timeout 360
```

Syntax: pim-nbr-timeout <value>

Possible values: 60 – 8000 seconds.

Default value: 180 seconds

pim-prune-timer

This parameter is used to define how long an HP routing switch will maintain a prune state for a forwarding entry.

The first received multicast interface is forwarded to all other PIM interfaces on the routing switch. If there is no presence of groups on that interface, the leaf node will send a prune message upstream and store a prune state. This prune state will travel up the tree and install a prune state.

A prune state is maintained until the prune timer expires or a graft message is received for the forwarding entry.

EXAMPLE:

To apply a PIM prune timer of 90 seconds to all ports on the routing switch operating with PIM, enter the following:

```
HP9300(config-pim-router)# pim-prune-timer 90
```

Syntax: pim-prune-timer <value>

Possible values: 10 – 3600 seconds.

Default value: 180 seconds

quit

Returns you from any level of the CLI to the User EXEC mode.

EXAMPLE:

```
HP9300(config-pim-router)# quit

HP9300>
```

Syntax: quit

Possible values: N/A

Default value: N/A

rp-address

Statically configures the address of the PIM Sparse Rendezvous Point (RP).

HP recommends that you use the PIM Sparse protocol's RP election process so that a backup RP can automatically take over if the active RP router becomes unavailable. However, if you do not want the RP to be selected by the RP election process but instead you want to explicitly identify the RP by its IP address, you can do using the following CLI method.

If you explicitly specify the RP, the routing switch uses the specified RP for all group-to-RP mappings and overrides the set of candidate RPs supplied by the BSR.

NOTE: Specify the same IP address as the RP on all PIM Sparse routers within the PIM Sparse domain. Make sure the routing switch is on the backbone or is otherwise well connected to the rest of the network.

EXAMPLE:

To specify the IP address of the RP, enter commands such as the following:

```
HP9300(config)# router pim
HP9300(config-pim-router)# rp-address 207.95.7.1
```

Syntax: [no] rp-address <ip-addr>

The <ip-addr> parameter specifies the IP address of the RP.

The command in the example above identifies the router interface at IP address 207.95.7.1 as the RP for the PIM Sparse domain. The routing switch will use the specified RP and ignore group-to-RP mappings received from the BSR.

Possible values: a valid IP address

Default value: see above

rp-candidate

Configures the routing switch as a candidate PIM Sparse Rendezvous Point (RP).

EXAMPLE:

Enter a command such as the following to configure the routing switch as a candidate RP:

```
HP9300(config-pim-router)# rp-candidate ethernet 2/2
```

Syntax: [no] rp-candidate ethernet | ve <portnum> | <ve-num>

The **ethernet | ve** <portnum> | <ve-num> parameter specifies the interface. Enter **ethernet** <portnum> for a physical interface (port). enter **ve** <ve-num> for a virtual interface. The routing switch will advertise the specified interface's IP address as a candidate RP.

By default, this command configures the routing switch as a candidate RP for all group numbers beginning with 224. As a result, the routing switch is a candidate RP for all valid PIM Sparse group numbers. You can change this by adding or deleting specific address ranges. The following example narrows the group number range for which the routing switch is a candidate RP by explicitly adding a range.

```
HP9300(config-pim-router)# rp-candidate add 224.126.0.0 16
```

Syntax: [no] rp-candidate add <group-addr> <mask-bits>

The <group-addr> <mask-bits> specifies the group address and the number of significant bits in the sub-net mask. In this example, the routing switch is a candidate RP for all groups that begin with 224.126. When you add a range, you override the default. The routing switch then becomes a candidate RP only for the group address range(s) you add.

You also can change the group numbers for which the routing switch is a candidate RP by deleting address ranges. For example, to delete all addresses from 224.126.22.0 – 224.126.22.255, enter the following command:

```
HP9300(config-pim-router)# rp-candidate delete 224.126.22.0 32
```

Syntax: [no] rp-candidate delete <group-addr> <mask-bits>

The usage of the <group-addr> <mask-bits> parameter is the same as for the **rp-candidate add** command.

If you enter both commands shown in the example above, the net effect is that the routing switch becomes a candidate RP for groups 224.126.0.0 – 224.126.21.255 and groups 224.126.23.0 – 224.126.255.255.

Possible values: see above

Default value: see above

show

Displays a variety of configuration and statistical information about the switch or routing switch. See “Show Commands” on page 20-1.

spt-threshold

Changes the PIM Sparse Shortest Path Tree (SPT) threshold, which specifies the number of packets the routing switch sends using the RP before switching to the SPT.

EXAMPLE:

To change the number of packets the routing switch sends using the RP before switching to the SPT, enter commands such as the following:

```
HP9300(config)# router pim
HP9300(config-pim-router)# spt-threshold 1000
```

Syntax: [no] spt-threshold infinity | <num>

The **infinity** | <num> parameter specifies the number of packets. If you specify **infinity**, the routing switch sends packets using the RP indefinitely and does not switch over to the SPT. If you enter a specific number of packets, the routing switch does not switch over to using the SPT until the routing switch has sent the number of packets you specify using the RP. The default is 1 packet.

Possible values: see above

Default value: 1 packet

write memory

Saves the running configuration into the startup-config file.

EXAMPLE:

```
HP9300(config-pim-router)# wr mem
```

Syntax: write memory

Possible values: N/A

Default value: N/A

write terminal

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

NOTE: This command is equivalent to the **show running-config** command.

EXAMPLE:

```
HP9300(config-pim-router)# wr term
```

Syntax: write terminal

Possible values: N/A

Default value: N/A