C H A P T E R 5

Configuring HSRP

This chapter describes how to configure the Hot Standby Router Protocol (*HSRP*) on the Cisco NX-OS device.

This chapter includes the following sections:

Information About HSRP

HSRP is a first-hop redundancy protocol (*FHRP*) that allows a transparent failover of the first-hop IP router. HSRP provides first-hop routing redundancy for IP hosts on Ethernet networks configured with a default router IP address. You use HSRP in a group of routers for selecting an active router and a standby router. In a group of routers, the active router is the router that routes packets; the standby router is the router that takes over when the active router fails or when preset conditions are met.

Many host implementations do not support any dynamic router discovery mechanisms but can be configured with a default router. Running a dynamic router discovery mechanism on every host is not feasible for a number of reasons, including administrative overhead, processing overhead, and security issues. HSRP provides failover services to these hosts.

This section includes the following topics:

HSRP Overview

When you use HSRP, you configure the HSRP *virtual IP address* as the host's default router (instead of the IP address of the actual router). The virtual IP address is an IP address that is shared among a group of routers that run HSRP.

When you configure HSRP on a network segment, you provide a *virtual MAC address* and a virtual IP address for the HSRP group. You configure the same virtual address on each HSRP-enabled interface in the group. You also configure a unique IP address and MAC address on each interface that acts as the real address. HSRP selects one of these interfaces to be the *active router*. The active router receives and routes packets destined for the virtual MAC address of the group.

HSRP detects when the designated active router fails. At that point, a selected *standby router* assumes control of the virtual MAC and IP addresses of the HSRP group. HSRP also selects a new standby router at that time.

HSRP uses a priority mechanism to determine which HSRP-configured interface becomes the default active router. To configure an interface as the active router, you assign it with a priority that is higher than the priority of all the other HSRP-configured interfaces in the group. The default priority is 100, so if you configure just one interface with a higher priority, that interface becomes the default active router.

Interfaces that run HSRP send and receive multicast User Datagram Protocol (UDP)-based hello messages to detect a failure and to designate active and standby routers. When the active router fails to send a hello message within a configurable period of time, the standby router with the highest priority becomes the active router. The transition of packet forwarding functions between the active and standby router is completely transparent to all hosts on the network.

You can configure multiple HSRP groups on an interface.

Figure 5-1 shows a network configured for HSRP. By sharing a virtual MAC address and a virtual IP address, two or more interfaces can act as a single *virtual router*.

Figure 5-1   HSRP Topology With Two Enabled Routers
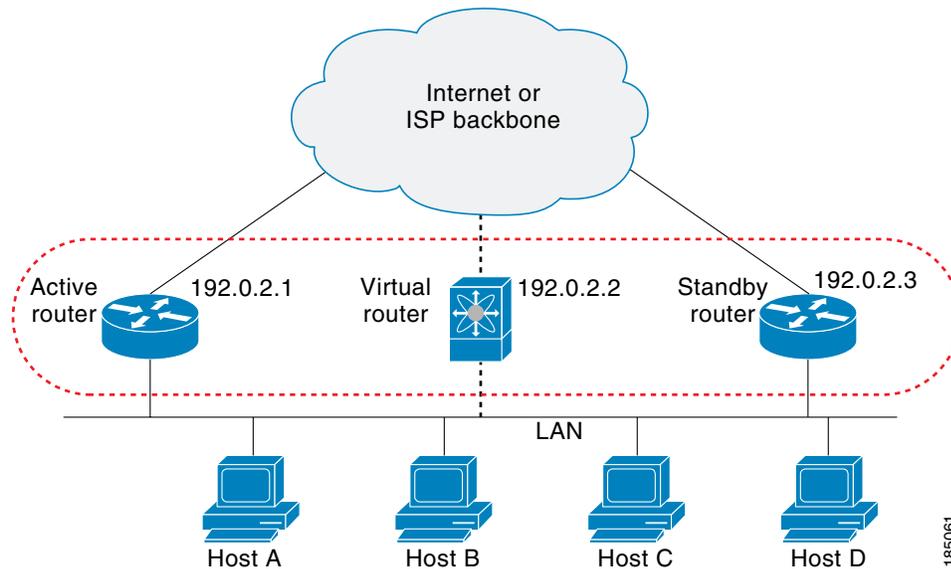
The virtual router does not physically exist but represents the common default router for interfaces that are configured to provide backup to each other. You do not need to configure the hosts on the LAN with the IP address of the active router. Instead, you configure them with the IP address (virtual IP address) of the virtual router as their default router. If the active router fails to send a hello message within the configurable period of time, the standby router takes over, responds to the virtual addresses, and becomes the active router, assuming the active router duties. From the host perspective, the virtual router remains the same.

Note   In Cisco NX-OS Release 4.1(2) and later, packets received on a routed port destined for the HSRP virtual IP address will terminate on the local router, regardless of whether that router is the active HSRP router or the standby HSRP router. This includes ping and telnet traffic. Packets received on a Layer 2 (VLAN) interface destined for the HSRP virtual IP address will terminate on the active router.

HSRP Versions

Cisco NX-OS supports HSRP version 1 by default. You can configure an interface to use HSRP version 2.

HSRP version 2 has the following enhancements to to HSRP version 1:

- Expands the group number range. HSRP version 1 supports group numbers from 0 to 255. HSRP version 2 supports group numbers from 0 to 4095.

- Uses the new IP multicast address 224.0.0.102 to send hello packets instead of the multicast address of 224.0.0.2, which is used by HSRP version 1.

- Uses the MAC address range from 0000.0C9F.F000 to 0000.0C9F.FFFF. HSRP version 1 uses the MAC address range 0000.0C07.AC00 to 0000.0C07.ACFF.

- Adds support for MD5 authentication.

When you change the HSRP version, Cisco NX-OS reinitializes the group because it now has a new virtual MAC address.

HSRP version 2 has a different packet format than HSRP version 1. The packet format uses a type-length-value (TLV) format. HSRP version 2 packets received by an HSRP version 1 router are ignored.

HSRP Authentication

HSRP message digest 5 (MD5) algorithm authentication protects against HSRP-spoofing software and uses the industry-standard MD5 algorithm for improved reliability and security.

HSRP Addressing

HSRP routers communicate with each other by exchanging HSRP hello packets. These packets are sent to the destination IP multicast address 224.0.0.2 (reserved multicast address used to communicate to all routers) on UDP port 1985. The active router sources hello packets from its configured IP address and the HSRP virtual MAC address while the standby router sources hellos from its configured IP address and the interface MAC address, which may or may not be the burned-in address (BIA). The BIA is the last six bytes of the MAC address that is assigned by the manufacturer of the network interface card (NIC).

Because hosts are configured with their default router as the HSRP virtual IP address, hosts must communicate with the MAC address associated with the HSRP virtual IP address. This MAC address is a virtual MAC address, 0000.0C07.ACxy, where xy is the HSRP group number in hexadecimal based on the respective interface. For example, HSRP group 1 will use the HSRP virtual MAC address of 0000.0C07.AC01. Hosts on the adjoining LAN segment use the normal Address Resolution Protocol (ARP) process to resolve the associated MAC addresses.

HSRP version 2 uses the new IP multicast address 224.0.0.102 to send hello packets instead of the multicast address of 224.0.0.2, which is used by version 1. HSRP version 2 permits an expanded group number range of 0 to 4095 and uses a new MAC address range of 0000.0C9F.F000 to 0000.0C9F.FFFF.

HSRP Messages

Routers that are configured with HSRP exchange the following three types of multicast messages:

- Hello—The hello message conveys the HSRP priority and state information of the router to other HSRP routers.
- Coup—When a standby router wants to assume the function of the active router, it sends a coup message.
- Resign—A router that is the active router sends this message when it is about to shut down or when a router that has a higher priority sends a hello or coup message.

HSRP Load Sharing

HSRP allows you to configure multiple groups on an interface in. You can configure two overlapping HSRP groups to load share traffic from the connected hosts while providing the default router redundancy expected from HSRP. Figure 5-2 shows an example of a load-sharing HSRP configuration.
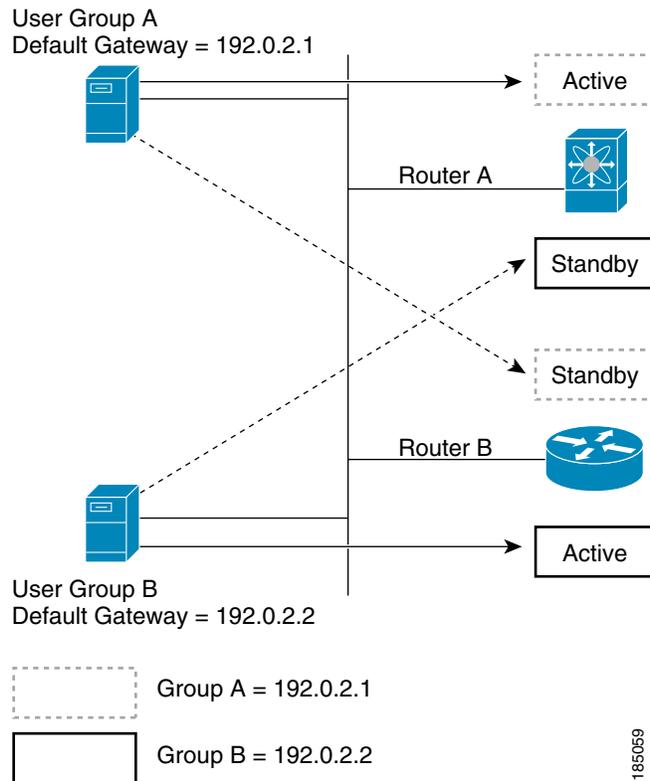
Figure 5-2   HSRP Load Sharing

Figure 5-2 shows two routers A and B and two HSRP groups. Router A is the active router for group A, but the standby router for group B. Similarly, router B is the active router for group B and the standby router for group A. If both routers remain active, HSRP load balances the traffic from the hosts across both routers. If either router fails, the remaining router continues to process traffic for both hosts.

Object Tracking and HSRP

You can use object tracking to modify the priority of an HSRP interface based on the operational state of another interface. Object tracking allows you to route to a standby router if the interface to the main network fails.

Two objects that you can track are the line protocol state of an interface or the reachability of an IP route. If the specified object goes down, Cisco DC-OS reduces the HSRP priority by the configured amount. For more information, see the "Configuring Preemption" section on page 5-11.

High Availability

HSRP supports stateful restarts and stateful switchover. A stateful restart occurs when the HSRP process fails and is restarted. Stateful switchover occurs when the active supervisor switches to the standby supervisor. Cisco NX-OS applies the run-time configuration after the switchover.

Virtualization Support

HSRP supports Virtual Routing and Forwarding instances (VRFs). VRFs exist within virtual device contexts (VDCs). By default, Cisco NX-OS places you in the default VDC and default VRF unless you specifically configure another VDC and VRF.

If you change the VRF membership of an interface, Cisco NX-OS removes all Layer 3 configuration, including HSRP.

For more information, see the *Cisco DCNM Virtual Device Context Configuration Guide, Release 4.2* .

Licensing Requirements for HSRP

The following table shows the licensing requirements for this feature:

Product	License Requirement
DCNM	HSRP requires the Enterprise LAN license. Any feature not included in a license package is bundled with the Cisco DCNM and is provided at no charge to you. For a complete explanation of the DCNM licensing scheme, see the *Cisco DCNM Fundamentals Configuration Guide, Release 4.2*.
NX-OS	HSRP requires no license. Any feature not included in a license package is bundled with the Cisco NX-OS system images and is provided at no extra charge to you. For a complete explanation of the NX-OS licensing scheme, see the *Cisco Nexus 7000 Series NX-OS Licensing Guide, Release 4.2*.

Prerequisites for HSRP

HSRP has the following prerequisites:

- You must enable the HSRP feature in a device before you can configure and enable any HSRP groups.

- For each device that you use DCNM to configure HSRP, you must configure the logging level for HSRP to 6 (Informational) or a higher level. To configure the device with the minimal required logging level, log into the command-line interface of the device and use the following command:

```
logging event link-status default
logging level hsrp 6
logging logfile messages 6
```

- If you configure VDCs, install the Advanced Services license (see the *Cisco DCNM Virtual Device Context Configuration Guide, Release 4.2*).

Guidelines and Limitations

HSRP has the following guidelines and limitations:

- You must configure an IP address for the interface that you configure HSRP on and enable that interface before HSRP becomes active.

- The virtual IP address must be in the same subnet as the interface IP address.

- We recommend that you do not configure more than one first-hop redundancy protocol on the same interface.

- HSRP version 2 does not interoperate with HSRP version 1. An interface cannot operate both version 1 and version 2 because both versions are mutually exclusive. However, the different versions can be run on different physical interfaces of the same router.

- You cannot change from version 2 to version 1 if you have configured groups above the group number range allowed for version 1 (0 to 255).

- Cisco NX-OS removes all Layer 3 configuration on an interface when you change the interface VRF membership, port channel membership, or when you change the port mode to Layer 2.

Configuring HSRP

You can access HSRP from the Routing feature selection. Figure 5-3 shows how to configure HSRP.

Figure 5-3   Configuring HSRP
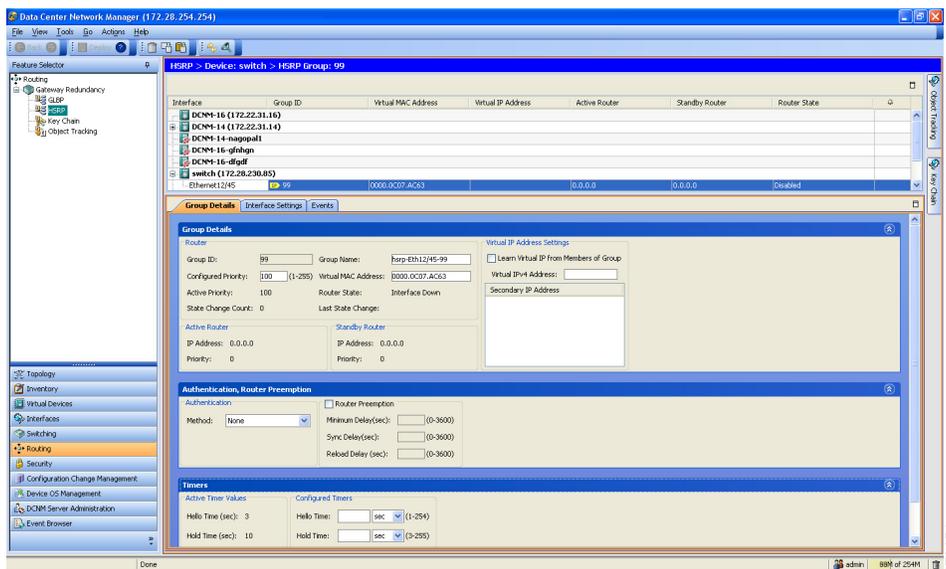
For more information about the Data Center Network Manager features, see the *Cisco DCNM Fundamentals Configuration Guide, Release 4.2*

This section includes the following topics:

- Customizing HSRP, page 5-14

Enabling the HSRP Feature

You must globally enable the HSRP feature before you can configure and enable any HSRP groups.

BEFORE YOU BEGIN

Ensure that you configure the logging level for HSRP to 6 (Informational) or a higher level. To configure the device with the minimal required logging level, log into the command-line interface of the device and use the following commands:

```
logging event link-status default
logging level hsrp 6
logging logfile messages 6
```

DETAILED STEPS

To enable the HSRP feature, follow these steps:

Step 1	From the Feature Selector pane, choose **Routing > Gateway Redundancy > HSRP**.
	The available devices appear in the Summary pane.
Step 2	From the Summary pane, click the device that you want to configure HSRP on.
Step 3	From the Details pane, click **Enable HSRP Service**.

Configuring an HSRP Group

You can configure an HSRP group on an interface and configure the virtual IP address and virtual MAC address for the HSRP group.

BEFORE YOU BEGIN

Ensure that you have enabled the HSRP feature (see the "Enabling the HSRP Feature" section on page 5-8).

Cisco NX-OS enables an HSRP group once you configure the virtual IP address on any member interface in the group. You should configure HSRP attributes such as authentication, timers, and priority before you enable the HSRP group.

DETAILED STEPS

To create an HSRP group on an interface, follow these steps:

Step 1	From the Feature Selector pane, choose **Routing > Gateway Redundancy > HSRP**.
	The available devices appear in the Summary pane.
Step 2	From the Summary pane, click the device that you want to configure HSRP on.

Step 3   Right-click and choose **New GroupSetting**.

Step 4   From the Interface drop-down menu, select the interface or group of interfaces that you want to configure an HSRP group on.

Step 5   From the Group ID field, enter the group number for this group.

The range is from 0 to 255.

The system creates the new group on the device and highlights the new HSRP group in the Summary pane, and tabs update in the Details pane.

Step 6   From the Details pane, click the **Group Details** tab.

The Group Details tab appears.

Step 7   From the Group Details tab, expand the **Group Details** section.

The basic group information appears in the Details pane.

Step 8   (Optional) From the Group Name field, enter a name for this HSRP group member.

Step 9   (Optional) From the Virtual IP Address Settings Area, check **Learn Virtual IP from Members of Group** to learn the virtual IP address from another HSRP group member.

Step 10   (Optional) From the Virtual IP Address Settings Area, in the Virtual IP Address field, enter an IPv4 address.

Step 11   (Optional) From the Virtual IP Address Settings Area, in the Secondary IP Address field, enter an IPv4 address for the secondary IP address.

Step 12   From the menu bar, choose **File > Deploy** to apply your changes to the device.

Configuring the HSRP Version

You can configure the HSRP version. If you change the version for existing groups, Cisco NX-OS reinitializes HSRP for those groups because the virtual MAC address changes. The HSRP version applies to all groups on the interface.

To configure the HSRP version, follow these steps:

Step 1   From the Feature Selector pane, choose **Routing > Gateway Redundancy > HSRP**.

The available devices appear in the Summary pane.

Step 2   From the Summary pane, click the device that you want to configure HSRP on.

The system highlights the HSRP row in the Summary pane, and tabs update in the Details pane.

Step 3   From the highlighted Interface field, select the interface that you want to configure an HSRP group on from the drop-down list.

Step 4   From the Details pane, click the **Interface Settings** tab.

The Interface Settings tab appears.

Step 5   From the Interface Settings tab, in the HSRP Version field, enter **1** for HSRP version 1 or enter **2** for HSRP version 2.

Step 6   From the menu bar, choose **File > Deploy** to apply your changes to the device.

Configuring the HSRP Virtual MAC Address

You can override the default virtual MAC address that HSRP derives from the configured group number.

To manually configure the HSRP virtual MAC address on an interface, follow these steps:

Step 1   From the Feature Selector pane, choose **Routing > Gateway Redundancy > HSRP**.

The available devices appear in the Summary pane.

Step 2   From the Summary pane, click the device that you want to configure HSRP on.

The system highlights the HSRP row in the Summary pane, and tabs update in the Details pane.

Step 3   From the highlighted Interface field, select the interface that you want to configure an HSRP group on from the drop-down list.

Step 4   From the Details pane, click the **Group Details** tab.

The Group Details tab appears.

Step 5   From the Group Details tab, expand the **Group Details** section.

The basic group information appears in the Details pane.

Step 6   From the Virtual MAC Address field, enter the virtual MAC address.

The string uses the standard MAC address format (xxxx.xxxx.xxxx).

Step 7   From the menu bar, choose **File > Deploy** to apply your changes to the device.

To configure HSRP to use the burned-in MAC address as the virtual MAC address on an interface, follow these steps:

Step 1   From the Feature Selector pane, choose **Routing > Gateway Redundancy > HSRP**.

The available devices appear in the Summary pane.

Step 2   From the Summary pane, click the device that you want to configure HSRP on.

The system highlights the HSRP row in the Summary pane, and tabs update in the Details pane.

Step 3   From the highlighted Interface field, select the interface that you want to configure an HSRP group on from the drop-down list.

Step 4   From the Details pane, click the **Interface Settings** tab.

The Interface Settings tab appears.

Step 5   From the Interface Settings tab, check **Use Burned In Address (use-bia)**.

Step 6   From the menu bar, choose **File > Deploy** to apply your changes to the device.

Authenticating HSRP

You can configure HSRP to authenticate the protocol using cleartext or MD5 digest authentication. MD5 authentication uses a key chain (see the *Cisco Nexus 7000 Series NX-OS Security Configuration Guide, Release 4.2*).

BEFORE YOU BEGIN

Ensure that you have enabled the HSRP feature (see the "Enabling the HSRP Feature" section on page 5-8).

You must configure the same authentication and keys on all members of the HSRP group.

Ensure that you have created the key chain if you are using MD5 authentication.

DETAILED STEPS

To configure HSRP authentication, follow these steps:

Step 1	From the Feature Selector pane, choose **Routing > Gateway Redundancy > HSRP**.
	The available devices appear in the Summary pane.
Step 2	From the Summary pane, click the device that you want to configure HSRP on.
	The system highlights the HSRP row in the Summary pane, and tabs update in the Details pane.
Step 3	From the highlighted Interface field, select the interface that you want to configure an HSRP group on from the drop-down list.
Step 4	From the Details pane, click the **Group Details** tab.
	The Group Details tab appears.
Step 5	From the Group Details tab, expand the **Authentication, Router Preemption** section.
	The authentication information appears in the Details pane.
Step 6	From the Authentication area, from the Method drop-down list, choose the authentication method.
Step 7	(Optional) For text authentication, in the password field, enter the password string.
Step 8	(Optional) For MD5 authentication, choose either **Key** or **Key Chain**.
Step 9	(Optional) For the Key option, in the key field, enter the key string, time-out value, and check **Encrypted** for an encrypted key string.
Step 10	(Optional) For the Key Chain option, from the key chain drop-down list, choose the key chain that you want to use.
Step 11	From the menu bar, choose **File > Deploy** to apply your changes to the device.

Configuring Preemption

You can configure HSRP to preempt another active router based on the configured priority.

To configure preemption, follow these steps:

Step 1	From the Feature Selector pane, choose **Routing > Gateway Redundancy > HSRP**.

The available devices appear in the Summary pane.

Step 2 From the Summary pane, click the device that you want to configure HSRP on.

The system highlights the HSRP row in the Summary pane, and tabs update in the Details pane.

Step 3 From the highlighted Interface field, select the interface that you want to configure an HSRP group on from the drop-down list.

Step 4 From the Details pane, click the **Group Details** tab.

The Group Details tab appears.

Step 5 From the Group Details tab, expand the **Authentication, Router Preemption** section.

The authentication information appears in the Details pane.

Step 6 Check **Router Preemption**.

Step 7 From the Minimum Delay(sec) field, enter the minimum delay time.

Step 8 From the Sync Delay(sec) field, enter the sync delay time.

Step 9 From the Reload Delay(sec) field, enter the reload delay time.

Step 10 From the menu bar, choose **File > Deploy** to apply your changes to the device.

Configuring HSRP Object Tracking

You can configure an HSRP group to adjust its priority based on the availability of other interfaces or routes. The priority of a device can change dynamically if it has been configured for object tracking and the object that is being tracked goes down. The tracking process periodically polls the tracked objects and notes any value change. The value change triggers HSRP to recalculate the priority. The HSRP interface with the higher priority becomes the active router if you configure the HSRP interface for preemption. For more information on object tracking, see the "Configuring Preemption" section on page 5-11.

BEFORE YOU BEGIN

Ensure that you have enabled the HSRP feature (see the "Enabling the HSRP Feature" section on page 5-8).

DETAILED STEPS

To configure HSRP object tracking, follow these steps:

Step 1 From the Feature Selector pane, choose **Routing > Gateway Redundancy > HSRP**.

The available devices appear in the Summary pane.

Step 2 From the Summary pane, click the device that you want to configure HSRP on.

The system highlights the HSRP row in the Summary pane, and tabs update in the Details pane.

Step 3 From the highlighted Interface field, select the interface that you want to configure an HSRP group on from the drop-down list.

Step 4 From the Details pane, click the **Group Details** tab.

The Group Details tab appears.

Step 5 From the Group Details tab, expand the **Object Tracking** section.

The object tracking information appears in the Details pane.

Step 6 Right-click and choose **Add Track Object**.

Step 7 From the object ID drop-down list, choose the object ID that you want to use to modify the HSRP priority value with.

Step 8 In the Decrement field, enter the value that you want to decrement the HSRP priority with if the tracked object state goes down.

Step 9 From the menu bar, choose **File > Deploy** to apply your changes to the device.

Configuring the HSRP Priority

You can configure the HSRP priority on an interface. HSRP uses the priority to determine which HSRP group member acts as the active router. If you configure HSRP on a vPC-enabled interface, you can optionally configure the upper and lower threshold values to control when to fail over to the vPC trunk If the standby router priority falls below the lower threshold, HSRP sends all standby router traffic across the vPC trunk to forward through the active HSRP router. HSRP maintains this scenario until the standby HSRP router priority increases above the upper threshold.

BEFORE YOU BEGIN

Ensure that you have enabled the HSRP feature (see the "Enabling the HSRP Feature" section on page 5-8).

DETAILED STEPS

To configurethe HSRP priority, follow these steps:

Step 1 From the Feature Selector pane, choose **Routing > Gateway Redundancy > HSRP**.

The available devices appear in the Summary pane.

Step 2 From the Summary pane, click the device that you want to configure the HSRP priority on.

The system highlights the HSRP row in the Summary pane, and tabs update in the Details pane.

Step 3 From the highlighted Interface field, select the interface that you want to configure the HSRP priority on from the drop-down list.

Step 4 From the Details pane, click the **Group Details** tab.

The Group Details tab appears.

Step 5 From the Group Details tab, expand the **Group Details** section.

The basic group information appears in the Details pane.

Step 6 (Optional) From the Configured Priority field, enter the priority for this HSRP group member.

The range is from 1 to 255. The default is 100.

Step 7 (Optional) Check **Forwarding Threshold** and set the upper and lower threshold values used by vPC to determine when to fail over to the vPC trunk.

The range is from 1 to 255. The default is 255.

Step 8   From the menu bar, choose **File > Deploy** to apply your changes to the device.

Customizing HSRP

You can optionally customize the behavior of HSRP. Be aware that as soon as you enable an HSRP group by configuring a virtual IP address, that group is now operational. If you first enable an HSRP group before customizing HSRP, the router could take control over the group and become the active router before you finish customizing the feature. If you plan to customize HSRP, you should do so before you enable the HSRP group.

To customize HSRP timers, follow these steps:

Step 1   From the Feature Selector pane, choose **Routing > Gateway Redundancy > HSRP**.

The available devices appear in the Summary pane.

Step 2   From the Summary pane, click the device that you want to configure HSRP on.

The system highlights the HSRP row in the Summary pane, and tabs update in the Details pane.

Step 3   From the highlighted Interface field, select the interface that you want to configure an HSRP group on from the drop-down list.

Step 4   From the Details pane, click the **Group Details** tab.

The Group Details tab appears.

Step 5   From the Group Details tab, expand the **Timers** section.

The HSRP timers information appears in the Details pane.

Step 6   From the Configured Timers area, in the Hello Time field, enter the hello time.

Step 7   Choose **sec** or **msec** from the drop-down list.

Step 8   From the Configured Timers area, in the Hold Time field, enter the hold time.

Step 9   Choose **sec** or **msec** from the drop-down list.

Step 10   From the menu bar, choose **File > Deploy** to apply your changes to the device.

Field Descriptions for HSRP

This section includes the following field descriptions for HSRP:

HSRP: Group Details Tab: Group Details Section

Table 5-1   HSRP: Group Details: Group Details

Field	Description
Router	
Group ID	*Display only.* Group number for the HSRP group.
Group Name	Name of the HSRP group.
Configured Priority	Configured priority for the group.
Virtual MAC Address	MAC address of the virtual router.
Active Priority	*Display only.* Priority for the group.
Router State	*Display only.* State of the group.
State Change Count	*Display only.* Number of state changes for the group.
Last State Change	*Display only.* Time of the last state change for the group.
IP Address Settings	
Learn Virtual IP from Members of Group	Learns the virtual IP address from other members of the HSRP group.
Virtual IP Address	IPv4 address of the virtual router.
Secondary IP Address	Secondary IPv4 address of the virtual router.
Forwarding Threshold	
Forwarding Threshold	Enables threshold values for vPC.
Lower Threshold	Lower forwarding threshold value.
Upper Threshold	Upper forwarding threshold value.
Active Router	
IP Address	*Display only.* IPv4 address of the active router.
Priority	*Display only.* Priority of the active router.
Standby Router	
IP Address	*Display only.* IPv4 address of the standby router.
Priority	*Display only.* Priority of the standby router.

HSRP: Group Details Tab: Authentication, Router Preemption Section

Table 5-2   HSRP: Group Details: Authentication, Router Preemption

Field	Description
Authentication	
Method	Authentication method for this HSRP group.
Password	Password if text authentication is selected.
Key Chain	Key chain name if key-chain authentication is selected.
Key	Password if key-chain authentication is not selected.

Table 5-2   HSRP: Group Details: Authentication, Router Preemption (continued)

Field	Description
Encrypted	Encrypts the password for this HSRP group.
Router Preemption	
Router Preemption	Enables router preemption.
Minimum Delay	Minimum time that router preemption can be delayed.
Sync Delay	Maximum time to allow IP redundancy clients to prevent router preemption.
Reload Delay	Time after a router reload occurs before HSRP detects an interface up event.

HSRP: Group Details Tab: Timers Section

Table 5-3   HSRP: Group Details:Timers

Field	Description
Active Timer Values	
Hello Time	*Display only.* Hello time for this HSRP group.
Hold Time	*Display only.* Hold time for this HSRP group.
Configured Timer s	
Hello Time	Hello time for this HSRP group.
Hold Time	Hold time for this HSRP group.
sec/msec	Unit of time for the configured timer.

HSRP: Group Details Tab: Object Tracking Section

Table 5-4   HSRP: Group Details: Object Tracking

Field	Description
Track ID	Object tracking identifier.
Tracked Object	*Display only.* Name of the tracked object.
Decrement	Value to decrement the HSRP group priority if tracked object status is down.

HSRP: Interface Settings Tab

Table 5-5   HSRP:Interface Settings Tab

Field	Description
HSRP Version	Version of HSRP for all groups on this interface.

Table 5-5   HSRP:Interface Settings Tab (continued)

Field	Description
Minimum Delay	Minimum time to delay HSRP group initialization after this interface comes up.
Reload Delay	Time to delay after a router reload occurs before HSRP detects this interface is up.
Use Burned In Address	Use the burned-in MAC address of this interface instead of the HSRP virtual MAC address.

Additional References

For additional information related to implementing HSRP, see the following sections:

- Related Documents, page 5-17
- Standards, page 5-17

Related Documents

Related Topic	Document Title
Configuring the Gateway Load Balancing protocol	Chapter 4, "Configuring GLBP"
HSRP CLI commands	*Cisco Nexus 7000 Series NX-OS Unicast Routing Command Reference, Release 4.2*
Configuring high availability	*Cisco Nexus 7000 Series NX-OS High Availability and Redundancy Guide, Release 4.2*

Standards

Standards	Title
No new or modified standards are supported by this feature, and support for existing standards has not been modified by this feature.	—

Feature History for HSRP

Table 5-6 lists the release history for this feature.

Table 5-6   Feature History for HSRP

Feature Name	Releases	Feature Information
DCNM support	4.1(2)	Added support for HSRP to DCNM.