



CHAPTER 6

Supporting Redundant Routing Protocols

This section describes how to configure a vEthernet interface and port profile to support redundant routing protocols, and includes the following topics:

- [Information About Redundant Routing Protocols, page 6-1](#)
- [Guidelines and Limitations, page 6-1](#)
- [Supporting Redundant Routing Protocols, page 6-1](#)
- [Feature History for Supporting Redundant Routing Protocol, page 6-7](#)

Information About Redundant Routing Protocols

Cisco Nexus 1000V implements a loop detection mechanism based on source and destination MAC address and will drop packets coming in on uplink ports if the source MAC is already present on a local vEthernet interface. As a result, the protocols such as Virtual Router Redundancy Protocol (VRRP), Common Address Redundancy Protocol (CARP), Hot Standby Router Protocol (HSRP), and other similar protocols would fail on virtual machines associated to Cisco Nexus 1000V.

Disabling loop detection provides a flexible way of supporting these protocols on virtual machines associated to Cisco Nexus 1000V. By disabling the loop detection mechanism, you can configure any combination of the above mentioned protocols on a port profile or a vEthernet interface. As a result you can run multiple protocols on the same virtual machine.

Guidelines and Limitations

Supporting the redundant routing protocols feature has the following guidelines and limitations:

- Disable IGMP Snooping on both Cisco Nexus 1000V and upstream switches between the servers to support most redundant routing protocols. See [Enabling or Disabling IGMP Snooping Globally for the VSM, page 5-4](#).
- Disable loop detection configuration is not supported on PVLAN ports.
- Disable loop detection configuration is not supported on the port security ports.

Supporting Redundant Routing Protocols

This section includes the following topics:

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- [Configuring a vEthernet Interface to Support Redundant Routing Protocols, page 6-2](#)
- [Configuring a Port Profile to Support Redundant Routing Protocols, page 6-4](#)

Configuring a vEthernet Interface to Support Redundant Routing Protocols

You can use this procedure to configure a vEthernet interface to support redundant routing protocols.

BEFORE YOU BEGIN

Before beginning this procedure, you must know or do the following:

- You are logged into the CLI in EXEC mode.

SUMMARY STEPS

1. **configure t**
2. **interface vethernet *interface-number***
3. **disable-loop-detection { carpl hsrp | vrrp | custom-rp [src-mac-range *s_mac end_mac*] [dest-ip *ip_address*] [ip-prot no] [port *port*]}**
4. **show running-config interface vethernet *interface-number***
5. **copy running-config startup-config**

DETAILED STEPS

	Command	Purpose
Step 1	configure t Example: n1000v# config t n1000v(config)#	Enters the global configuration mode.
Step 2	interface vethernet <i>interface-number</i> Example: n1000v(config)# interface vethernet 100 n1000v(config-if)#	Enters the interface configuration mode for the specified vEthernet interface (from 1 to 1048575).

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	Command	Purpose
Step 3	<pre>disable-loop-detection {carp hsrp vrrp custom-rp [src-mac-range s_mac end_mac] [dest-ip ip_address] [ip-proto no] [port port]}</pre> <p>Example: n1000v(config-if)# disable-loop-detection vrrp n1000v(config-if)#</p>	<p>Enables or disables the loop detection mechanism to support a redundant routing protocol on vEthernet interface.</p> <ul style="list-style-type: none"> • disable-loop-detection - Disables the loop detection mechanism. • no disable-loop-detection - Enables the loop detection mechanism. This is the default configuration. <p>The protocols supported on a vEthernet interface include:</p> <ul style="list-style-type: none"> • carp - Common Address Redundancy Protocol • custom-rp - User defined protocol • hsrp - Hot Standby Router Protocol • vrrp - Virtual Router Redundancy Protocol <p>The parameters for custom defined protocols include:</p> <ul style="list-style-type: none"> • src-mac-range - Source MAC address range for the user defined protocol. • dest-ip - Destination IP address for the user defined protocol. • ip-proto - IP protocol number for the user defined protocol. • port - UDP or TCP destination port number for the user defined protocol.
Step 4	<pre>show running-config interface vethernet interface-number</pre> <p>Example: n1000v# show running-config interface vethernet 100</p>	(Optional) Displays the interface status and information.
Step 5	<pre>copy running-config startup-config</pre> <p>Example: n1000v(config)# copy running-config startup-config</p>	(Optional) Saves the running configuration persistently through reboots and restarts by copying it to the startup configuration.

EXAMPLES

The following example shows how to configure a vEthernet interface to support VRRP, CERP, HSRP, and user defined protocols on a virtual machine:

```
n1000v(config)# int veth5
n1000v(config-if)# disable-loop-detection carp
n1000v(config-if)# disable-loop-detection vrrp
n1000v(config-if)# disable-loop-detection hsrp
n1000v(config-if)# disable-loop-detection custom-rp dest-ip 224.0.0.12 port 2234
n1000v(config-if)# end
n1000v# show running-config interface vethernet 5

!Command: show running-config interface Vethernet5
```

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```
!Time: Fri Nov 4 02:21:24 2011

version 4.2(1)SV1(5.1)

interface Vethernet5
inherit port-profile vm59
description Fedora117, Network Adapter 2
disable-loop-detection carp
disable-loop-detection custom-rp dest-ip 224.0.0.12 port 2234
disable-loop-detection hsrp
disable-loop-detection vrrp
vmware dvport 32 dvswitch uuid "ea 5c 3b 50 cd 00 9f 55-41 a3 2d 61 84 9e 0e c4"
vmware vm mac 0050.56B3.00B2

n1000v#
```

Configuring a Port Profile to Support Redundant Routing Protocols

You can use this procedure to configure a port profile to support redundant routing protocols.

Use this procedure when the master in a master/slave relationship has lost connectivity, the slave has taken over the master role, and the original master is attempting to overtake the master role.



Note

If you configure a vEthernet Interface and a port profile to run multiple protocols on the same virtual machine, then the configuration on the vEthernet Interface overrides the configuration on the port profile.

BEFORE YOU BEGIN

Before beginning the procedure, you must know or do the following:

- You are logged in to the CLI in EXEC mode.
- You know which redundant routing protocol you want to disable.

SUMMARY STEPS

1. **configure terminal**
2. **port-profile** *name*
3. **switchport mode** {access | trunk }
4. **no shutdown**
5. **disable-loop-detection** {carp| hsrp | vrrp |custom-rp [src-mac-range *s_mac end_mac*] [dest-ip *ip_address*] [ip-proto *no*] [port *port*]}
6. **show port-profile** [brief | expand-interface | usage] [name *profile-name*]
7. **copy running-config startup-config**

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DETAILED STEPS

	Command	Description
Step 1	<pre>config t</pre> <p>Example: <pre>n1000v# config t n1000v(config)#</pre></p>	Enters global configuration mode.
Step 2	<pre>port-profile name</pre> <p>Example: <pre>n1000v(config)# port-profile TrunkProf n1000v(config-port-prof)#</pre></p>	Enters port profile configuration mode for the named port profile.
Step 3	<pre>switchport mode {access trunk}</pre> <p>Example: <pre>n1000v(config-port-prof)# switchport mode trunk n1000v(config-port-prof)#</pre></p>	<p>Designates that the interface is to be used as a trunking port.</p> <p>A trunk port transmits untagged packets for the native VLAN and transmits encapsulated, tagged packets for all other VLANs.</p>
Step 4	<pre>no shutdown</pre> <p>Example: <pre>n1000v(config-port-prof)# no shutdown n1000v(config-port-prof)#</pre></p>	Administratively enables all ports in the profile.
Step 5	<pre>disable-loop-detection {carp hsrp vrrp custom-rp [src-mac-range s_mac end_mac] [dest-ip ip_address] [ip-proto no] [port port]}</pre> <p>Example: <pre>n1000v(config-port-prof)# disable-loop-detection carp</pre></p>	<p>Enables or disables the loop detection mechanism to support a redundant routing protocol on port profile.</p> <ul style="list-style-type: none"> • disable-loop-detection - Disables the loop detection mechanism. • no disable-loop-detection - Enables the loop detection mechanism. This is the default configuration. <p>The protocols supported on a port profile include:</p> <ul style="list-style-type: none"> • carp - Common Address Redundancy Protocol • custom-rp - User defined protocol • hsrp - Hot Standby Router Protocol • vrrp - Virtual Router Redundancy Protocol <p>The parameters for user defined protocols include:</p> <ul style="list-style-type: none"> • src-mac-range - Source MAC address range for the user defined protocol. • dest-ip - Destination IP address for the user defined protocol. • ip-proto - IP protocol number for the user defined protocol. • port - UDP or TCP destination port number for the user defined protocol.

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	Command	Description
Step 6	show port-profile [brief expand-interface usage] [name <i>profile-name</i>] Example: n1000v(config-port-prof)# show port-profile name TrunkProf	(Optional) Displays the configuration for verification.
Step 7	copy running-config startup-config Example: n1000v(config-port-prof)# copy running-config startup-config	(Optional) Saves the running configuration persistently through reboots and restarts by copying it to the startup configuration.

EXAMPLES

This example shows how to disable loop detection for the Hot Standby Router Protocol.

```

Example:
n1000v# config t
n1000v(config)# port-profile hsrp-1
n1000v(config-port-prof)# switchport mode trunk
n1000v(config-port-prof)# no shutdown
n1000v(config-port-prof)# disable-loop-detection hsrp
n1000v(config-port-prof)# state enabled
n1000v(config-port-prof)# vmware port-group
n1000v(config-port-prof)# show port-profile name hsrp-1
port-profile hsrp-1
  type: Vethernet
  description:
  status: enabled
  max-ports: 32
  min-ports: 1
  inherit:
  config attributes:
    switchport mode trunk
    disable-loop-detection hsrp
    no shutdown
  evaluated config attributes:
    switchport mode trunk
    disable-loop-detection hsrp
    no shutdown
  assigned interfaces:
  port-group: hsrp-1
  system vlans: none
  capability l3control: no
  capability iscsi-multipath: no
  capability vxlan: no
  capability l3-vservice: no
  port-profile role: none
  port-binding: static

```

This example shows how to disable loop detection for the Virtual Router Redundancy Protocol.

```

Example:
n1000v# config t
n1000v(config)# port-profile vrrp-1
n1000v(config-port-prof)# switchport mode trunk
n1000v(config-port-prof)# no shutdown
n1000v(config-port-prof)# disable-loop-detection vrrp
n1000v(config-port-prof)# state enabled

```

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```
n1000v(config-port-prof)# vmware port-group
n1000v(config-port-prof)# show port-profile name vrrp-1
port-profile vrrp-1
  type: Vethernet
  description:
  status: enabled
  max-ports: 32
  min-ports: 1
  inherit:
  config attributes:
    switchport mode trunk
    disable-loop-detection vrrp
    no shutdown
  evaluated config attributes:
    switchport mode trunk
    disable-loop-detection vrrp
    no shutdown
  assigned interfaces:
  port-group: vrrp-1
  system vlans: none
  capability l3control: no
  capability iscsi-multipath: no
  capability vxlan: no
  capability l3-vservice: no
  port-profile role: none
  port-binding: static
```

Feature History for Supporting Redundant Routing Protocol

This section provides the release history for the Redundant Routing Protocol support.

Table 6-1

Feature Name	Releases	Feature Information
Supporting Redundant Routing Protocol	4.2(1)SV1(5.1)	This feature was introduced.

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