Configuring UDP Forwarding Support for IP Redundancy Virtual Router Groups

User Datagram Protocol (UDP) forwarding is a feature used in Cisco IOS software to forward broadcast and multicast packets received for a specific IP address. Virtual Router Group (VRG) support, implemented with the Hot Standby Routing Protocol (HSRP), allows a set of routers to be grouped as a logical router that answers to a well-known IP address. The UDP Forwarding Support for IP Redundancy Virtual Router Groups feature enables UDP forwarding to be VRG aware; this results in packets getting forwarde only to the active router in the VRG.

This module explains the concepts related UDP forwarding and VRG support and describes how to configure UDP forwarding support for IP Redundancy Virtual Router Groups in a network.

Finding Feature Information

Your software release may not support all the features documented in this module. For the latest caveats and feature information, see Bug Search Tool and the release notes for your platform and software release. To find information about the features documented in this module, and to see a list of the releases in which each feature is supported, see the feature information table at the end of this module.

Use Cisco Feature Navigator to find information about platform support and Cisco software image support. To access Cisco Feature Navigator, go to www.cisco.com/go/cfn. An account on Cisco.com is not required.

Prerequisites for UDP Forwarding Support for IP Redundancy Virtual Router Groups

- The UDP Forwarding Support for Virtual Router Groups feature is available only on platforms that support VRGs.

Information About UDP Forwarding Support for IP Redundancy Virtual Router Groups

Benefits of the UDP Forwarding Support for Virtual Router Groups Feature

Forwarding is limited to the active router in the VRG instead of all routers within the VRG. Prior to the implementation of this feature, the only VRG support was HSRP. Within a VRG that is formed by HSRP, the forwarding of UDP-based broadcast and multicast packets is done by all the routers within the VRG. This process can cause some DHCP servers to operate incorrectly. The UDP Forwarding Support for VRGs feature limits forwarding to the active router in the VRG.

VRG awareness is achieved with IP Redundancy Service (IRS). The IRS application programming interface (API) provides notification updates of a specific VRG, addition and deletion of a VRG, and querying of the current state of a VRG. A state change notification is provided to avoid the performance impact of querying the state of the VRG each time it is needed. The UDP forwarding code caches the VRG state for each required helper address that is defined. Each time the UDP forwarding code needs to execute, it checks the current state of the VRG associated with the helper address and forwards packets only to VRGs that are active.

How to Configure UDP Forwarding Support for IP Redundancy Virtual Router Groups

Configuring UDP Forwarding Support for IP Redundancy Virtual Router Groups

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **interface** *type number*
4. **no shutdown**
5. **ip address** *ip-address mask*
6. **ip helper-address** *address* **redundancy** *vrg-name*
7. **standby** *group-number* **ip** *ip-address*
8. **standby** *group-number* **name** *group-name*
9. **end**

DETAILED STEPS

	Command or Action	Purpose
Step 1	**enable** **Example:** `Router> enable`	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	**configure terminal** **Example:** `Router# configure terminal`	Enters global configuration mode.
Step 3	**interface** *type number* **Example:** `Router(config)# interface fastethernet 0/0`	Specifies an interface and enters interface configuration mode.
Step 4	**no shutdown** **Example:** `Router(config-if)# no shutdown`	Restarts a disabled interface.

	Command or Action	**Purpose**
Step 5	**ip address** *ip-address mask* **Example:** `Router(config-if)# ip address 172.16.10.1 255.255.255.0`	Sets a primary address for the interface.
Step 6	**ip helper-address** *address* **redundancy** *vrg-name* **Example:** `Router(config-if)# ip helper-address 10.1.1.1 redundancy vrg1`	Enables UDP forwarding support for the VRG.
Step 7	**standby** *group-number* **ip** *ip-address* **Example:** `Router(config-if)# standby 1 ip 172.16.10.254`	Activates HSRP.
Step 8	**standby** *group-number* **name** *group-name* **Example:** `Router(config-if)# standby 1 name vrg1`	Configures the name of the standby group.
Step 9	**end** **Example:** `Router(config-if)# end`	Exits the current configuration mode and returns to privileged EXEC mode.

Configuration Examples for UDP Forwarding Support for IP Redundancy Virtual Router Groups

Example: Configuring UDP Forwarding Support for IP Redundancy Virtual Router Groups

The following example shows how to configure UDP Forwarding Support for IP Redundancy Virtual Router Groups:

```
Router(config)# interface fastethernet 0/0
Router(config-if)# no shutdown
Router(config-if)# ip address 172.16.10.1 255.255.255.0
Router(config-if)# ip helper-address 10.1.1.1 redundancy vrg1
Router(config-if)# standby 1 ip 172.16.10.254
Router(config-if)# standby 1 name vrg1
Router(config-if)# end
```

Additional References

Related Documents

Related Topic	Document Title
Cisco IOS commands	Cisco IOS Master Commands List, All Releases
IP application services commands: complete command syntax, command mode, command history, defaults, usage guidelines, and examples	*Cisco IOS IP Application Services Command Reference*

Standards

Standard	Title
No new or modified standards are supported, and support for existing standards has not been modified	—

MIBs

MIB	MIBs Link
No new or modified MIBs are supported, and support for existing MIBs has not been modified	To locate and download MIBs for selected platforms, Cisco software releases, and feature sets, use Cisco MIB Locator found at the following URL: http://www.cisco.com/go/mibs

RFCs

RFC	Title
No new or modified RFCs are supported, and support for existing RFCs has not been modified	—

Technical Assistance

Description	Link
The Cisco Support and Documentation website provides online resources to download documentation, software, and tools. Use these resources to install and configure the software and to troubleshoot and resolve technical issues with Cisco products and technologies. Access to most tools on the Cisco Support and Documentation website requires a Cisco.com user ID and password.	http://www.cisco.com/cisco/web/support/index.html

Feature Information for UDP Forwarding Support for IP Redundancy Virtual Router Groups

The following table provides release information about the feature or features described in this module. This table lists only the software release that introduced support for a given feature in a given software release train. Unless noted otherwise, subsequent releases of that software release train also support that feature.

Use Cisco Feature Navigator to find information about platform support and Cisco software image support. To access Cisco Feature Navigator, go to www.cisco.com/go/cfn. An account on Cisco.com is not required.

Table 1: Feature Information for UDP Forwarding Support for IP Redundancy Virtual Router Groups

Feature Name	Releases	Feature Information
UDP Forwarding Support for IP Redundancy Virtual Router Group	Cisco IOS XE 3.1.0SG 12.2(50)SY 12.2(15)T 15.0(1)SY 15.2(1)S	UDP forwarding is a feature used in Cisco IOS software to forward broadcast and multicast packets received for a specific IP address. Virtual Router Group (VRG) support is implemented with the Hot Standby Routing Protocol (HSRP) and it allows a set of routers to be grouped as a logical router that answers to a well-known IP address. The UDP Forwarding Support for IP Redundancy Virtual Router Groups feature enables UDP forwarding to be VRG aware, resulting in forwarding only to the active router in the VRG. The following command was introduced or modified: **ip helper-address**.