Chapter 22: **DHCP-Relay**

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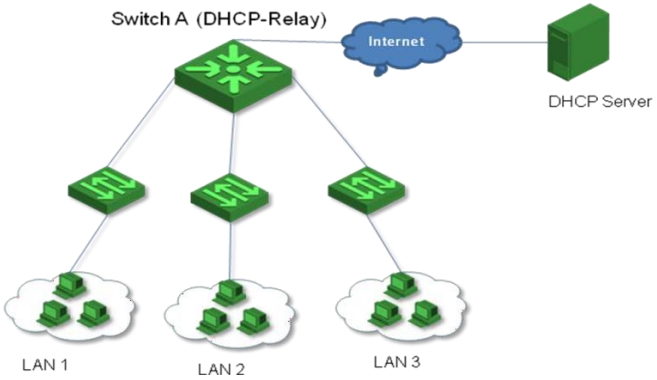
Chapter 22 DHCP-Relay

22.1 DHCP-Relay Overview

Since the packets are broadcasted in the process of obtaining IP addresses, DHCP is only applicable to the situation that DHCP clients and DHCP servers are in the same network segment, that is, you need to deploy at least one DHCP server for each network segment, which is far from economical. DHCP Relay is designed to address this problem. It enables DHCP clients in a subnet to communicate with the DHCP server in another subnet so that the DHCP clients can obtain IP addresses. In this case, the DHCP clients in multiple networks can use the same DHCP server, which can decrease your cost and provide a centralized administration.



- Typical DHCP relay application

DHCP relays can transparently transmit broadcast packets on DHCP clients or servers to the DHCP servers or clients in other network segments. In the process of dynamic IP address assignment through the DHCP relay, the DHCP client and DHCP server interoperate with each other in a similar way as they do without the DHCPrelay. The following sections only describe the forwarding process of the DHCP relay. The DHCP client broadcasts the DHCP-DISCOVER packet. After receiving the packets, the network device providing the DHCP relay function unicasts thepacket to the designated DHCP server based on the configuration. The DHCP server assigns IP addresses, and then broadcasts the configuration information tothe client through the DHCP relay. The sending mode is determined by the flag in the DHCP-DISCOVER packets from the client.

22.2 Configure DHCP-Relay

22.2.1 DHCP-Relay Configuration List

Configuration Task	Description	Detailed Configuration
Configure DHCP Server Group	Required	22.2.2
Configure DHCP Relay to Support Option60	Optional	22.2.3
Enable the DHCP Relay Function	Required	22.2.4
Configure DHCP Option82	Optional	22.2.5

22.2.2 Configure DHCP Server Group

To improve reliability, you can set up multiple DHCP servers in a network. Each DHCP server corresponds to a DHCP server group. After a VLAN or super-VLAN interface references a DHCP server group, it forwards the DHCP packets from the client to all the servers in the server group.

Operation	Comm and	Remarks
Enter global configuration mode	**system-view**	
Configure the DHCP server group	**dhcp-server** *group-id* **ip** *server-ip*	
Enter VLAN interface configurationmode	**dhcp-server** *group-id* **ip** *server-ip*	
Configure the DHCP server groupreferenced by the interface	**interface vlan-interface** *vid* or **interfacesupervlan-interface** *super-vid*	
Configure the DHCP server group	**dhcp-server** *group-id*	

22.2.3 Configure DHCP Relay to Support Option60

DHCP relay supports the processing of DHCP packets with option 60 option fields. On the VLAN interfaces or super VLAN configuration option 60 options, when the interface receives a DHCP packet from the client, if the option60 option field is included in the packet, it will bematched with the value configured on this interface. If a match is found, the gateway uses the gateway

address in the match to relay the packetand forwards the DHCP packet to the server address in the match. If no match is found, relay processing is performed according to the requested IP address orthe client's IP address.

Operation	Command	Remarks
Enter global configuration mode	**system-view**	
Enter VLAN interface configuration mode	**interface vlan-interface** *vid* or **interface supervlan-interface** *super-vid*	
Configure option 60 of the interface	**dhcp option60** { **equals** | **starts-with** } { **ascii** *string* | **hexadecimal** *hexdata* } **gateway** *A.B.C.D* [**dhcp-server** *group-id*] [**server-reply** { **ascii** *string* | **hexadecimal** *hexdata* }]	

22.2.4 Enable the DHCP Relay Function

If the DHCP server and the DHCP client are not on the same subnet or the device isconfigured as a DHCP server, you need to enable the DHCP relay function. Sometimes, for network security considerations, network administrators do not want the DHCPclient to know the address of the DHCP server. In order to meet such requirements, a device that enables a DHCP relay can be configured to hide the address of a real DHCP server. In this way, the DHCP client regards the device which enables the DHCP relay as a DHCP serverto hide the real DHCP server. Of course, if the device that enables the DHCP relay is also a DHCP server, this function is no longer applicable.

Operation	Command	Remarks
Enter global configuration mode	**system-view**	
Enable global DHCP relay	**dhcp-relay**	
Hide the IP of the real DHCP Server	**dhcp-relay hide server-ip**	
Configure the maximum number of hops for DHCP messages	**dhcp max-hops** *hops*	

22.2.5 Configure DHCP Option82

The DHCP Option 82 function must be used together with DHCP relay or DHCP snooping.After the DHCP message received by the Switch already has the Option 82 field, the followingthree policies are supported:

drop: Drop all DHCP packets that carry the Option 82 field.

keep: Keep Option 82 and forward it.

replace: Replace the existing Option 82 in the packet with the new option82 and forward itaccording to the actual situation in the local area.

Operation	Command	Remarks
Enter global configuration mode	**system-view**	
Enable DHCP Option82	**dhcp option82**	
Configure the DHCP option82 format	**dhcp option82 format** { **normal | verbose | henan** }	

Configure the node-identifier when the DHCP option82 format is verbose	**dhcp option82 format verbose node-identifier** { **mac** | **hostname** | **user-defined** *node-id* }	
Enter port configuration mode	**interface ethernet** *port-id*	
Configure the Switch to process DHCP packets that carry the Option 82 field	**dhcp option82 strategy** { **drop** | **keep** | **replace** | **append** { **hostname** | **hostname-ip** } }	
Configure the circuit-id of DHCP option82	**dhcp option82 circuit-id string** *id*	
Configure Remote Option for DHCP Option82	**dhcp option82 remote-id string { string | hostname }**	
Display DHCP option82 configuration	**display dhcp option82**	