5.4.2 DHCP Relay Facts

Because a DHCP client doesn't have an IP address assigned when it initially boots, it must use broadcast frames to communicate with a DHCP server. If the server is on a different subnet than the client, then the DHCP requests sent by the client will not reach the server because broadcast frames are dropped by network routers. If your network is configured in this manner, you can implement one of the following mechanisms to forward DHCP broadcasts through network routers to a remote DHCP server on a different subnet:

Option	Description
RFC 1542 Compliant Router	An RFC 1542 compliant router listens for DHCP traffic and routes any received DHCP frames to the appropriate subnet. For example, on a Cisco router, you can enable this functionality by using the **ip helper-address** command. The syntax is: ip helper-address *[server_address]* Replace ***[server_address]*** with the IP address of the remote DHCP server.
DHCP Relay Agent	If you use a Windows server in your network, then you can install the Routing and Remote Access service (RRAS) role on the server and enable the DHCP Relay Agent Role service. The DHCP Relay Agent service sends the DHCP packets it receives to a remote DHCP server on a different subnet. To configure the DHCP Relay service, you must: ▪ Specify which server network interface the agent listens on for DHCP messages. ▪ Specify the IP address of the remote DHCP server the agent should forward DHCP messages to.