**7.2.10 Configure DHCPv4**

**Part 1: Configure a Router as a DHCP Server**

**Step 1: Configure the excluded IPv4 addresses.**

R2>enable

R2#configure terminal

R2(config)#ip dhcp excluded-address 192.168.10.1 192.168.10.10

R2(config)#ip dhcp excluded-address 192.168.30.1 192.168.30.10

**Step 2: Create a DHCP pool on R2 for the R1 LAN**

R2(config)#ip dhcp pool R1-LAN

R2(dhcp-config)#network 192.168.10.0 255.255.255.0

R2(dhcp-config)#default-router 192.168.10.1

R2(dhcp-config)#dns-server 192.168.20.254

**Step 3: Create a DHCP pool on R2 for the R3 LAN**

R2(config)#ip dhcp pool R3-LAN

R2(dhcp-config)#network 192.168.30.0 255.255.255.0

R2(dhcp-config)#default-router 192.168.30.1

R2(dhcp-config)#dns-server 192.168.20.254

**Part 2: Configure DHCP Relay**

**Step 1: Configure R1 and R3 as a DHCP relay agent**

R1>enable

R1#configure terminal

R1(config)#interface g0/0

R1(config-if)# ip helper-address 10.1.1.2

R3>enable

R3#configure terminal

R3(config)#interface g0/0

R3(config-if)#ip helper-address 10.2.2.2

**Part 3: Configure a Router as a DHCP Client**

R2>enable

R2#configure terminal

R2(config)#interface g0/1

R2(config-if)#ip address dhcp

R2(config-if)#no shutdown

R2#show ip interface brief

**Part 4: Verify DHCP and Connectivity**

R2#show ip dhcp binding

**7.4.1. Implement DHCPv4**

**Part 1: Configure a Router as a DHCP Server**

**Step 1: Configure the excluded IPv4 addresses.**

R2>enable

R2#configure terminal

R2(config)#ip dhcp excluded-address 192.168.10.1 192.168.10.10

R2(config)#ip dhcp excluded-address 192.168.30.1 192.168.30.10

**Step 2: Create a DHCP pool on R2 for the R1 LAN**

R2(config)#ip dhcp pool R1-LAN

R2(dhcp-config)#network 192.168.10.0 255.255.255.0

R2(dhcp-config)#default-router 192.168.10.1

R2(dhcp-config)#dns-server 192.168.20.254

**Step 3: Create a DHCP pool on R2 for the R3 LAN.**

R2(config)#ip dhcp pool R3-LAN

R2(dhcp-config)#default-router 192.168.30.1

R2(dhcp-config)#network 192.168.30.0 255.255.255.0

R2(dhcp-config)#default-router 192.168.30.1

R2(dhcp-config)#dns-server 192.168.20.254

**Part 2: Configure DHCP Relay**

**Step 1: Configure R1 and R3 as a DHCP relay agent.**

R1>enable

R1#configure terminal

R1(config)#interface g0/0

R1(config-if)#ip helper-address 10.1.1.2

R3>enable

R3#configure terminal

R3(config)#interface g0/0

R3(config-if)#ip helper-address 10.2.2.2

**Step 2: Set PC1 and PC2 to receive IP addressing information from DHCP.**

**Part 3: Configure R2 as a DHCP Client**

**Step 1: Configure the Gigabit Ethernet 0/1 interface on R2 to receive IP addressing from DHCP.**

R2#show ip interface brief

R2#configure terminal

R2(config)#interface g0/1

R2(config-if)#ip address dhcp

R2(config-if)#no shutdown

**Step 2: Activate the interface**