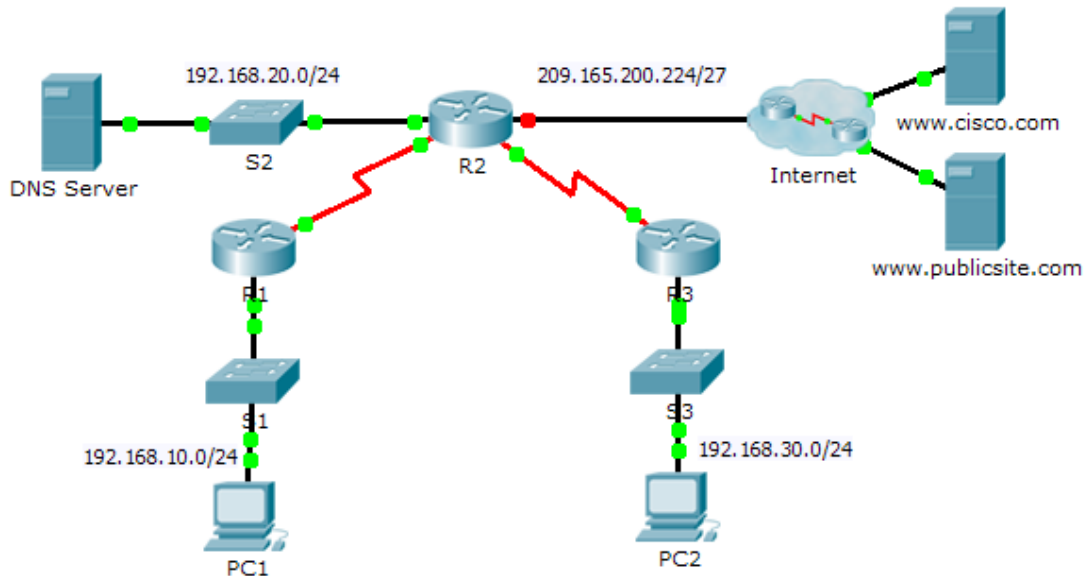


Packet Tracer - Configuring DHCP Using Cisco IOS

Topology



Addressing Table

Device	Interface	IPv4 Address	Subnet Mask	Default Gateway
R1	G0/0	192.168.10.1	255.255.255.0	N/A
	S0/0/0	10.1.1.1	255.255.255.252	N/A
R2	G0/0	192.168.20.1	255.255.255.0	N/A
	G0/1	DHCP Assigned	DHCP Assigned	N/A
	S0/0/0	10.1.1.2	255.255.255.252	N/A
R3	S0/0/1	10.2.2.2	255.255.255.252	N/A
	G0/0	192.168.30.1	255.255.255.0	N/A
PC1	NIC	DHCP Assigned	DHCP Assigned	DHCP Assigned
PC2	NIC	DHCP Assigned	DHCP Assigned	DHCP Assigned
DNS Server	NIC	192.168.20.254	255.255.255.0	192.168.20.1

Objectives

Part 1: Configure a Router as a DHCP Server

Part 2: Configure DHCP Relay

Part 3: Configure a Router as a DHCP Client

Part 4: Verify DHCP and Connectivity

Scenario

A dedicated DHCP server is scalable and relatively easy to manage, but can be costly to have one at every location in a network. However, a Cisco router can be configured to provide DHCP services without the need for a dedicated server. Cisco routers use the Cisco IOS feature set, Easy IP, as an optional, full-featured DHCP server. Easy IP leases configurations for 24 hours by default. As the network technician for your company, you are tasked with configuring a Cisco router as a DHCP server to provide dynamic allocation of addresses to clients on the network. You are also required to configure the edge router as a DHCP client so that it receives an IP address from the ISP network.

Part 1: Configure a Router as a DHCP Server

Step 1: Configure the excluded IPv4 addresses.

Configure R2 to exclude the first 10 addresses from the R1 and R3 LANs. All other addresses should be available in the DHCP address pool.

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

- a. Create a DHCP pool named **R1-LAN** (case-sensitive).
- b. Configure the DHCP pool to include the network address, the default gateway, and the IP address of the DNS server.

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

- a. Create a DHCP pool named **R3-LAN** (case-sensitive).
- b. Configure the DHCP pool to include the network address, the default gateway, and the IP address of the DNS server.

Part 2: Configure DHCP Relay

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

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

Part 3: Configure R2 as a DHCP Client

- a. Configure the Gigabit Ethernet 0/1 interface on R2 to receive IP addressing from DHCP and activate the interface.

Note: Use Packet Tracer's **Fast Forward Time** feature to speed up the process or wait until R2 forms an EIGRP adjacency with the ISP router.

- b. Use the **show ip interface brief** command to verify that R2 received an IP address from DHCP.

Part 4: Verify DHCP and Connectivity

Step 1: Verify DHCP bindings.

```
R2# show ip dhcp binding
IP address      Client-ID/
                Hardware address
192.168.10.11   0002.4AA5.1470   --
192.168.30.11   0004.9A97.2535   --
                Type
                Automatic
                Automatic
```

Step 2: Verify configurations.

Verify that **PC1** and **PC2** can now ping each other and all other devices.