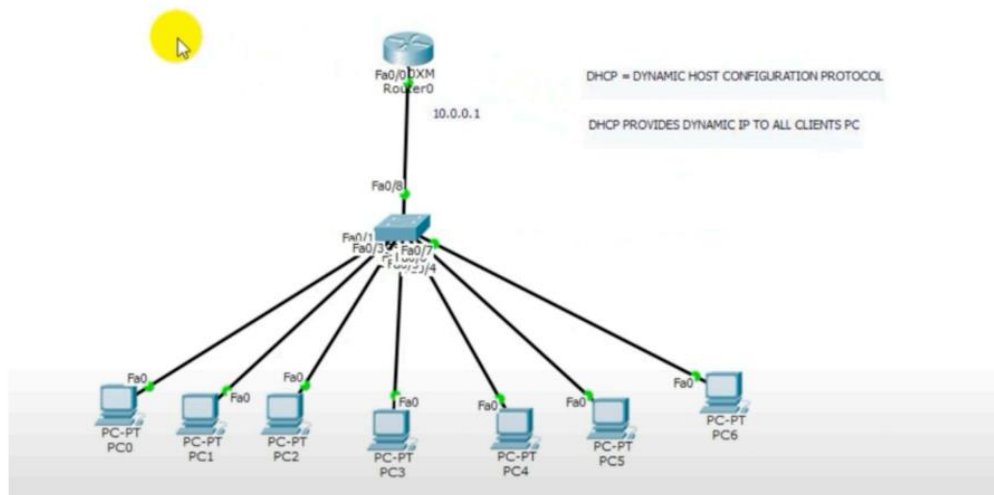


17-Aug-2024

Internship Day - 42 Report:

LAB 7: DHCP (Dynamic Host Configuration Protocol):



```
CISCO(config-if)#ip dhcp pool info
CISCO(dhcp-config)#network 10.0.0.0 255.0.0.0
CISCO(dhcp-config)#default-router 10.0.0.1
```

DHCP Configuration on a Cisco Router:

Step 1: Access the Router's CLI

- Connect to the router via console or remotely using Telnet/SSH.
- Enter global configuration mode.

Router> enable

Router# configure terminal

Step 2: Exclude IP Addresses (Optional)

- You can exclude a range of IP addresses that you don't want to assign dynamically. This is useful for devices with static IPs (like servers or switches).

Router(config)# ip dhcp excluded-address 10.0.0.1 10.0.0.10

In this case, IP addresses from **10.0.0.1 to 10.0.0.10** won't be assigned by DHCP.

Step 3: Create a DHCP Pool

- You need to define a DHCP pool. This is the range of IP addresses that will be assigned to clients.

Router(config)# ip dhcp pool info

In this example, info is the name of the DHCP pool (you can name it anything).

Step 4: Configure the Network and Subnet

- Specify the network and subnet mask for the pool.

Router(dhcp-config)# network 10.0.0.0 255.0.0.0

This configures DHCP to assign IPs from the **10.0.0.0/8** network.

Step 5: Specify the Default Gateway (Router)

- Define the default gateway that will be assigned to clients. This is typically the IP address of the router's interface connected to the network.

Router(dhcp-config)# default-router 10.0.0.1

Here, **10.0.0.1** is the default gateway for clients.

Step 6: Specify the DNS Server (Optional)

- If needed, configure the DNS server for clients. You can use a public DNS server (e.g., Google's **8.8.8.8**) or a local DNS server.

Router(dhcp-config)# dns-server 8.8.8.8

Step 7: (Optional) Configure Lease Time

- By default, the DHCP lease is infinite, but you can configure a lease time if needed (e.g., 1 day).

Router(dhcp-config)# lease 1

This sets the lease time to **1 day**.

Step 8: Exit and Save Configuration

- Exit DHCP configuration mode and save the changes.

Router(dhcp-config)# exit

Router(config)# exit

Router# write memory

Step 9: Verify the DHCP Configuration

- Use the following command to verify the DHCP configuration:

Router# show ip dhcp pool

Router# show ip dhcp binding

18-Sep-2024

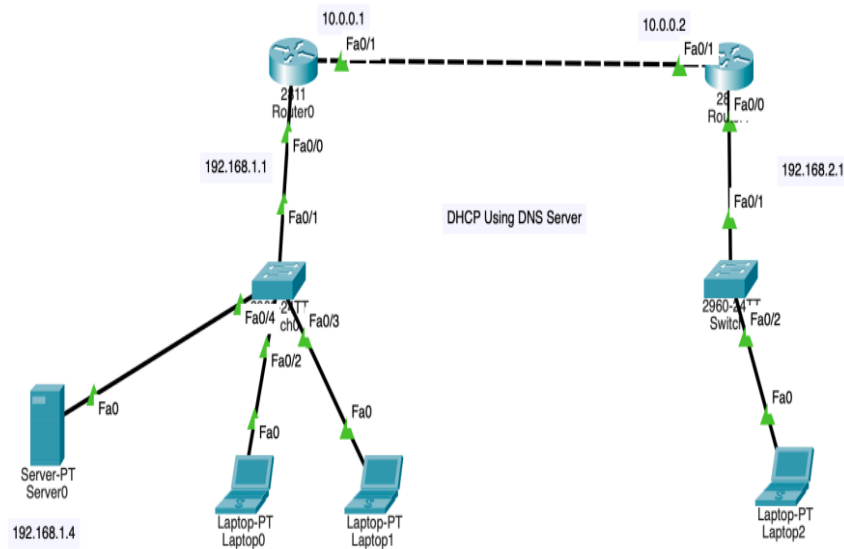
Internship Day - 43 Report:

Physically perform in Lab.

19-Sep-2024

Internship Day - 44 Report:

LAB 8: DHCP (Dynamic Host Configuration Protocol) & DNS Configuration



```
CISCO(config-if)#ip dhcp pool info
CISCO(dhcp-config)#network 10.0.0.0 255.0.0.0
CISCO(dhcp-config)#default-router 10.0.0.1
```

DHCP Configuration Steps:

Enter global configuration mode:

Router> enable

Router# configure terminal

Create a DHCP pool:

Router(config)# ip dhcp pool NETWORK-POOL

Configure the network and subnet mask (as shown in your CLI):

Router(dhcp-config)# network 10.0.0.0 255.0.0.0

Configure the default gateway (as shown in your CLI):

Router(dhcp-config)# default-router 10.0.0.1

Configure DNS server (assuming Server0 will be the DNS server):

Router(dhcp-config)# dns-server 192.168.1.4

Configure excluded addresses (to prevent DHCP from assigning router interfaces and static IPs):

Router(config)# ip dhcp excluded-address 10.0.0.1 10.0.0.10

DNS Configuration Steps:

On Server0 (192.168.1.4): Copy- Install DNS server role/service

1) Create a new forward lookup zone for your domain

2) Configure reverse lookup zone for 10.0.0.0 network

3) Add A records for:

- Router0 (10.0.0.1)
- Router1 (10.0.0.2)
- Other network devices as needed

On the DHCP router, verify the DNS configuration is properly pointing to Server0:

Router# show ip dhcp pool

Additional Configuration Tips:

On the interfaces that will be serving DHCP:

Router(config)# interface fa0/1

Router(config-if)# ip helper-address 192.168.1.4

Verify DHCP operation:

Router# show ip dhcp binding

Router# show ip dhcp server statistics

Test DNS resolution:

Router# ping dns-server-name

20-Sep-2024

Internship Day - 45 Report:

Physically perform in Lab.