

## **LAB#08**

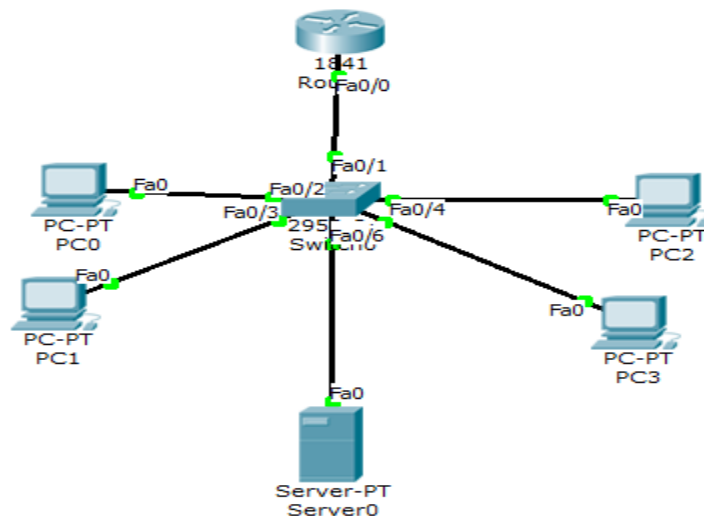
### **Dynamic Host Configuration Protocol**

Enabling DHCP server in Multi Vlan & Enabling DHCP server in same network.

#### **Theory:**

#### **Dynamic Host Configuration Protocol (DHCP)**

Dynamic Host Configuration Protocol (DHCP) is a client/server protocol that automatically provides an Internet Protocol (IP) host with its IP address and other related configuration information such as the subnet mask and default gateway.



#### **Static IP Addressing:**

With static IP addressing, addresses are assigned manually, and have to be provisioned carefully so that each device has its own address—with no overlap. When you connect a new device, you would have to select the "manual" configuration option and enter in the IP address, the subnet mask, the default gateway.

#### **IP helper-address:**

`_ip helper-address` command can take a broadcast and turn it into a unicast.

As we know, while routers accept and generate broadcasts, they do not forward them. This can be quite a problem when a broadcast needs to get to a device. If the PC attempts to locate a DNS server with a broadcast, the broadcast will be stopped by the router and will never get to the DNS server. By configuring the `ip helper-address` command on the router, UDP broadcasts such as this

will be translated into a unicast by the router, making the communication possible. The command should be configured on the interface that will be receiving the broadcasts.

## **Procedures:**

### Step#1.(Coding on Switch)

Create three vlans and also configure router and switch.

### Step#2(Server)

Assign static ip to server.

### Step#3(Server)

Assign ip to dhcp server

### Step#4(configure Router)

Configure router.(its for one vlan)

```
Router>en
Router>enable
Router#conf t
Router#conf terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#int fa 0/0
Router(config-if)#no ip add
Router(config-if)#no ip address
Router(config-if)#no shutd
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

Router(config-if)#int fa 0/0.172
Router(config-subif)#
%LINK-5-CHANGED: Interface FastEthernet0/0.172, changed state to up
en
Router(config-subif)#encapsulation d
Router(config-subif)#encapsulation dot1Q 2
Router(config-subif)#ip add
Router(config-subif)#ip address 172.16.0.1 255.255.0.0
Router(config-subif)#ip help
Router(config-subif)#ip helper-address 10.0.0.10
Router(config-subif)#exit
```

**Exercises:**

**Q1.** Which one is better among static & dynamic ip addressing?

---

---

---

**Q2.** Define benefits of DHCP.

---

---

---

---

**Q3.** What is an IP Helper address feature and why is it required in a DHCP environment.

---

---

**Q.4** What information a DHCP server provide to a host?.

---

---

---

**Q.5** Difference between static & dynamic addressing.

---

---

---

---

**Q.6** What is purpose of DHCP server?

---

---

**Q.7** Which two tasks does the Dynamic Host Configuration Protocol perform? (Choose two)

- A. Set the IP gateway to be used by the network.
  - B. Perform host discovery used DHCP DISCOVER message.
  - C. Configure IP address parameters from DHCP server to a host.
  - D. Provide an easy management of layer 3 devices.
  - E. Monitor IP performance using the DHCP server.
  - F. Assign and renew IP address from the default pool?
- 

**Q.8** \_\_\_\_\_netsh dhcp server scope 192.168.1.0 add exclude range 192.168.1.1 192.168.1.25

- A. Server core, create DHCP reservations
  - B. Server core, create DHCP exclusions
  - C. Server core start the DHCP service.
  - D. Server core, create DHCP scope.
- 

**Q.9** 10.0.0.0 255.0.0.0 (Assignable IP range - 10.0.0.1-10.255.255.254) is:

- A. Class C
  - B. Class D
  - C. Class A
  - D. Class B
- 

**Q.10** A ProCurve 3500yl switch is connected to port 1 of a ProCurve NAC 800 and a DHCP server is connected to port 2. The DHCP server IP address is 10.1.10.10/24. The NAC 800 IP address is 10.1.10.20/24. The IP address 10.1.24.1/24 is assigned to VLAN 24 on the switch.

Which additional configuration settings would be appropriate for supporting a 10.1.24.0/24 non-quarantine subnet and a 10.1.25.0/24 quarantine subnet? (Select two.)

- A. on the switch, a multinetted IP address of 10.1.25.1/24 assigned to VLAN 24
  - B. on the NAC 800, the IP address of the DHCP server specified as 10.1.10.10/24
  - C. on the NAC 800, IP addresses 10.1.24.51 through 10.1.24.100 defined as exceptions
  - D. on the switch, the IP helper addresses 10.1.10.10 and 10.1.10.20 defined for VLAN 24
  - E. on the DHCP server, one scope for 10.1.24.0/24 and a second scope for 10.1.25.0/24?
-

**Q.11** Configure the following network (Assigning DHCP server in same network).

