

## Packet Tracer Lab

### Working with the Application Layer: DHCP, DNS, and HTTP

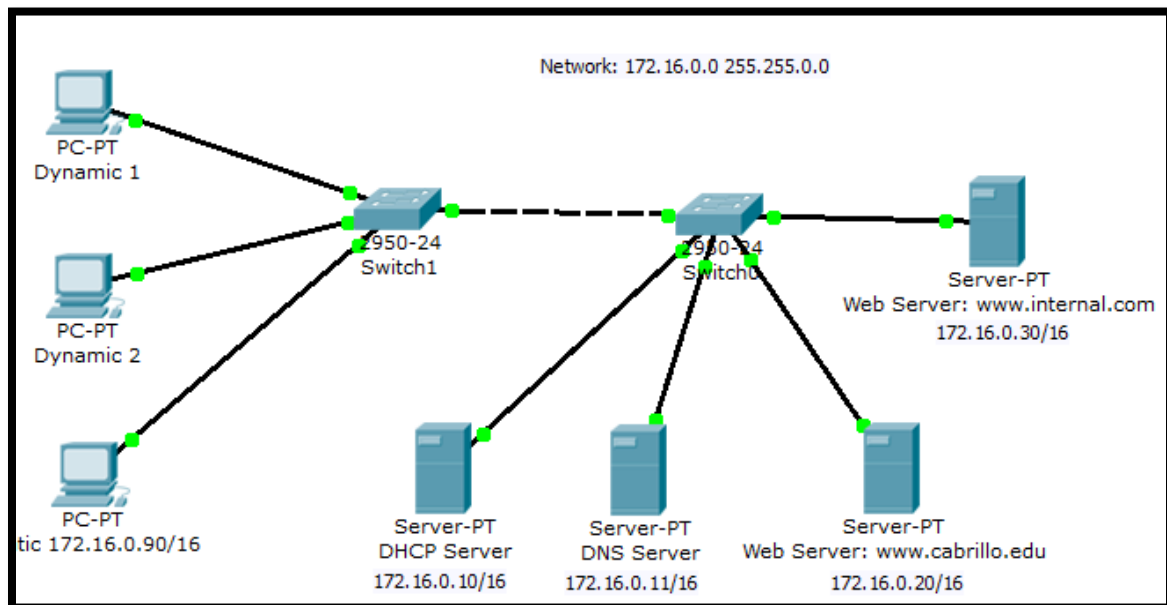


Figure 1: This is an example of what your final topology should look like.

### **Experiment Procedure:**

1. Start Packet Tracer using **Realtime** mode.

### **2. Configuring the DHCP Server**

Add a server.

#### **Global Settings of DHCP server:**

- Change the Display Name to **“DHCP Server”**
- Set the Gateway to **172.16.0.1**

FastEthernet:

- Set the IP address to **172.16.0.10**
- Set the Subnet Mask to **255.255.0.0**

HTTP:

- Set HTTP Service and HTTPS Service to **Off**

DHCP:

- Set the Default Gateway to **172.16.0.1**
- Set the DNS Server to **172.16.0.11**
- Set the Start IP Address to **172.16.0.100**

DNS:

- Set the Service to **Off**

## 2. Configuring the DNS Server

Add a server.

Global Settings:

- Change the Display Name to “**DNS Server**”
- Set the Gateway to **172.16.0.1**

FastEthernet:

- Set the IP address to **172.16.0.11**
- Set the Subnet Mask to **255.255.0.0**

HTTP:

- Set HTTP Service and HTTPS Service to **Off**

DHCP:

- Set the Service to **Off**

DNS:

- Entering the www.tsrb.edu Domain Name
  - Enter for the Domain Name **www.tsrb.edu**
  - Enter for IP Address **172.16.0.20**
  - Click **Add**
- Entering the www.internal.com Domain Name
  - Enter for the Domain Name **www.internal.com**
  - Enter for IP Address **172.16.0.30**
  - Click **Add**

## 3. Configuring the www.tsrb.edu Web Server

Add a server.

Global Settings:

- Change the Display Name to “**Web Server: www.tsrb.edu**”
- Set the Gateway to **172.16.0.1**

FastEthernet:

- Set the IP address to **172.16.0.20**
- Set the Subnet Mask to **255.255.0.0**

DHCP:

- Set the Service to **Off**

DNS:

- Set the Service to **Off**

HTTP

- Change the sentence, “<hr>Welcome to Packet Tracer 5.0, the best thing since..... Packet Tracer 4.0.” to “<hr> Welcome to Tsrb's public web page!” You may add other information as well.

## 4. Configuring the www.internal.com Web Server

Add a server.

Global Settings:

- Change the Display Name to “**Web Server: www.internal.com**”
- Set the Gateway to **172.16.0.1**

FastEthernet:

- Set the IP address to **172.16.0.30**
- Set the Subnet Mask to **255.255.0.0**

DHCP:

- Set the Service to **Off**

DNS:

- Set the Service to **Off**

HTTP

- Change the sentence, “<hr>Welcome to Cisco Packet Tracer. Opening doors to new opportunities. Mind Wide Open to “<hr> This is the corporate internal network!” You may add other information as well.

#### 5. Configure Two Client Computers using DHCP

Add two client computers.

Global Settings:

- Change the Display Names to “**Dynamic 1**” and to “**Dynamic 2**” respectively
- Set the Gateway/DNS to **DHCP**

FastEthernet:

- Set the IP Configuration to **DHCP**

#### 6. Configure One Client Computers using Static

IP Addressing Add two client computers.

Global Settings:

- Change the Display Name to “**Static**”
- Set the Gateway/DNS to **Static**
  - Set Gateway to **172.16.0.1**
  - Set the DNS Server to **172.16.0.11**

FastEthernet:

- Be sure the configuration is set to **Static**
- Set the IP address to **172.16.0.90**
- Set the Subnet Mask to **255.255.0.0**

#### 7. Adding switches

Add two switches.

- Connect the servers to one switch using a straight-through cable.
- Connect the client computers to the other switch using a straight-through cable.
- Interconnect the two switches using a crossover cable.

#### 8. Verify connectivity.

- Ping (ICMP)

- From a client computer use the Desktop Command prompt to ping the other client computers and the servers.
  - Example: From the Dynamic 1 client, C> **ping 172.16.0.20**
  - The first one or two pings may fail, but you should receive a reply on the later pings. This is due to the ping timing out while the ARP process takes place (later).
- Web Browser (HTTP)
  - On the client computers use the Desktop Web Browser, enter the URLs of the Web Servers [www.tsrb.edu](http://www.tsrb.edu) and [www.internal.com](http://www.internal.com).
  - You should see the web pages that you created on these servers.