Vital Lab

Dynamic Host Configuration Protocol

Instructions

Set up a DHCP server on R4 (eth2 interface) such that it leases IP addresses from the **10.10.11.X/28** subnet to the Ubuntu VM. Calculate the network, broadcast, and useable range of IP addresses for your address range. Select the first address as the static address of the R4 interface. The rest will go into the pool that the DHCP server will lease and manage.

Note: Please make any necessary changes to the */etc/network/interfaces* file of Ubuntu before you proceed. The file should have an existing entry for DHCP which includes:

```
iface eth0 inet dhcp
```

Part 1: Configuring DHCP

The first step is to configure the **dhcpd.conf** (DHCP daemon configuration) file in router R4. This file is present in the */etc/dhcp* directory. You can make edits to this file using any text editor. We have used nano here:

```
sudo nano /etc/dhcp/dhcpd.conf
```

Add the following snippet of code, substituting for respective X, Y values:

```
subnet 10.10.11.X netmask 255.255.255.Y {
      range 10.10.11.(X+1) 10.10.11.(broadcast -1);
      option subnet-mask 255.255.255.Y;
      option routers 10.10.11.X;
      option broadcast-address 10.10.11.(broadcast);
      default-lease-time 600;
      max-lease-time 7200;
}
```

Part 2: Server Interface

Check the */etc/default/isc-dhcp-server* file on R4. This file has to be changed so the DHCP server knows which interface it should listen on for serving IP addresses.

Include eth2 in INTERFACES as such:

```
INTERFACES= “eth2”
```

Part 3: Verifying DHCP

Reboot R4 and Ubuntu and verify Ubuntu has obtained an IP address.

Note: Verify the DHCP server is running properly on R4 by using the following command:

```
sudo systemctl status isc-dhcp-server.service
```

Submissions

1. The leases files to verify that Ubuntu has obtained an IP address.
2. Your configuration for the DHCP server.
3. Screenshots of ifconfig on Ubuntu
4. Screenshots showing Ubuntu pinging R4

Please remember to submit your lab results as a single PDF document. While you may work in groups, you MUST submit your own work!