english

CSCI4113
LAB5 Notes

Milan Formanek

May 7, 2019

1. Configuring machine A

Machine A funtions as the router for the DunderMifflin network. IP forwarding and NAT is already set up, the only thing left to do is set up DHCP. For this the DHCPd deamon has to be installed and correctly configured to start on boot and give all the other machines on the network the correct IPs and Host names.

First off, the router will used fixed addressing and the Host name is set statically in /etc/hostname. It does not make sense to use dynamic addressing for the router. It's much safer to have it fixed and as far as I know the HDCPd deamon needs to bind to an IP at boot or will fail to start.

The DHCPd deamon is installed using the yum install dhcp command.

```
[root@machinea ~]# systemctl enable dhcpd.service
Created symlink from /etc/systemd/system/multi-user.target.wants/dhcpd.service to /usr/lib/systemd/system/
    dhcpd.service.
```

Above is the command used to set DHCPd to run on boot.

After that the /etc/dhcp/dhcpd.conf file has to be built. Special care has to be taken when setting the subnet addressing, static IP tables, and other specifics or it will not work! The dhcpd.conf file is attached in the appendix.

2. Configuring machines B,C,D,E,F

Machines B,C,D,E and F need to be configured co take the new IP and Host name from the Router. To do this the network sysconfig file for ens192 at /etc/sysconfig/network-scripts/ifcfg-ens192 has to be modified by changing the line BOOTPROTO=none to BOOTPROTO=dhcp. The lines IPADDR=, NETMASK= and GATEWAY= are removed from the file. The MAC addresses of the individual machines are also noted for configuring the router. The Host name is also hard coded into the machines and so in the file /etc/hostname the single line with the host name has to be removed. After that the machines are rebooted in order to check if the new configuration sticks.

Machine F came configured running the NetworkManager service, this had to be disabled and the ifcfg-ens192 config file had to be created to keep the setting between all the machines consistent.

```
1  [root@carriage ~]# hostname
2  carriage.dundermifflin.com
```

The new configuration can be checked using the hostname command.

3.   Appendix - /etc/dhcp/dhcpd.conf

```
1   # dhcpd.conf
2   #
3   #DUNDER MIFFLIN DHCP Config file
4
5   option domain-name "dundermifflin.com";
6
7   #option domain-name-servers ns1.example.org, ns2.example.org;
8
9   default-lease-time 600;
10  max-lease-time 7200;
11
12  authoritative;
13
14  log-facility local7;
15
16  # No service will be given on this subnet, but declaring it helps the
17  # DHCP server to understand the network topology.
18  # This is a very basic subnet declaration.
19
20  subnet 100.64.21.0 netmask 255.255.255.0 {
21    option routers          100.64.21.1;
22    option subnet-mask    255.255.255.0;
23    option domain-search  "dundermifflin.com";
24    range 100.64.21.10 100.64.21.50;
25  }
26
27
28  subnet 10.21.32.0 netmask 255.255.255.0 {
29    option routers          10.21.32.1;
30    option subnet-mask    255.255.255.0;
31    option domain-search  "dundermifflin.com";
32    range 10.21.32.10 10.21.32.5;
33  }
34
35  host carriage {
36    option host-name      "carriage.dundermifflin.com";
37    hardware ethernet    00:50:56:b4:b5:26;
38    fixed-address         100.64.21.2;
39  }
40
41  host platen {
42    option host-name      "platen.dundermifflin.com";
43    hardware ethernet    00:50:56:b4:68:7a;
44    fixed-address         100.64.21.3;
45  }
46
47  host chase {
48    option host-name      "chase.dundermifflin.com";
49    hardware ethernet    00:50:56:b4:34:35;
50    fixed-address         100.64.21.4;
51  }
52
53  host roller {
54    option host-name      "roller.dundermifflin.com";
55    hardware ethernet    00:50:56:b4:49:b3;
56    fixed-address         10.21.32.2;
57  }
58
59  host saddle {
60    option host-name      "saddle.dundermifflin.com";
61    hardware ethernet    00:50:56:b4:b4:8b;
62    fixed-address         100.64.21.5;
63  }
```