How I did it:

First, I installed the ISC-DHCP server onto Machine A.

Then I configured the DHCP server in the text file: /etc/dhcp/dhcpd.conf

```
# DHCP Server Configuration file.
#   see /usr/share/doc/dhcp-server/dhcpd.conf.example
#   see dhcpd.conf(5) man page
#

max-lease-time 600;
default-lease-time 600;
option domain-name "dundermifflin.com";
option domain-name-servers 128.138.240.1, 128.138.130.30;
option ntp-servers time-a-wwv.nist.gov, time-a-b.nist.gov;
ping-check true;
ping-timeout-ms 100;
abandon-lease-time 600;


subnet 10.21.32.0 netmask 255.255.255.0 {
        range 10.21.32.100 10.21.32.199;
        option routers 10.21.32.1;
}
subnet 100.64.12.0 netmask 255.255.255.0 {
        range 100.64.12.100 100.64.12.199;
        option routers 100.64.12.1;
}
host machineB {
        hardware ethernet 00:50:56:89:b1:f6;
        fixed-address 100.64.12.2;
        option host-name "dns0.dundermifflin.com";
}
host machineC {
        hardware ethernet 00:50:56:89:a7:ad;
        fixed-address 100.64.12.3;
        option host-name "web0.dundermifflin.com";
}
host machineD {
        hardware ethernet 00:50:56:89:ca:4c;
        fixed-address 100.64.12.4;
        option host-name "web1.dundermifflin.com";
}
host machineE {
        hardware ethernet 00:50:56:89:bb:d6;
        fixed-address 10.21.32.2;
```

```
        option host-name "nfs.dundermifflin.com";
}
host machineF {
        hardware ethernet 00:50:56:89:1a:33;
        fixed-address 100.64.12.6;
        option host-name "dns1.dundermifflin.com";
}
```

The configuration is above.

To go over what it means, there is documentation that I followed that goes over basic commands that will set things like NTP servers, DNS, and ping timeout for machines that already have an IP. At the top the first few commands are global, meaning that all devices apply these commands. Things set were lease times, NTP servers, DNS servers, and the ping check. My settings show that ping check is enabled with a response wait time of 100 ms and a time out of 600 seconds or 10 minutes.

In the next section with the subnets, these are applied to the network specified. What I did was create a pool of Ips that will be given out to any other devices other than the current DM network.

And then, I configured host specific things like the hostname. A MAC-address and IP was needed to locate what machine it was so the DHCP server could set the hostname.

To configure Machine A manually:

- Typed: hostname router.dundermifflin.com to change the hostname
- Went into /etc/resolv.conf and added the domain and DNS Ips to the file
- Went into /etc/chrony.conf to add the NTP servers for ex: server time-awwv.nist.gov
    - I then commented out the public pool of NTP servers so the specified NTP servers were only set

To configure **Debian** based machines (web0 & dns1):

- Went into /etc/network/interfaces and added iface ens192 inet dhcp
- I installed ntpstats and ntp to declare ntp servers
- I went into /etc/ntpsec/ntp.conf and commented out all of the public pool ntp servers

To configure **RedHat** based machines (dns0, web1, & dns1):

- Went into nmtui and configured IPv4 config to automatic on that ethernet interface
- Removed the contents of /etc/hostname so that the DHCP server could update the hostnames accordingly
- Went into /etc/chrony.conf and commented out the public pool so that only the specified NTP servers from the DHCP server would be allowed

Time spent on assignment:
12 hours