This assignment took approximately 6 hours.

- Machine A setup
  - Manual
    - NTP
      - Edited /etc/chrony.conf to comment out the default NTP Pool (I did this step for all Rocky machines) and place the NIST servers in
        ```
        server time-a-b.nist.gov iburst
        server time-a-wwv.nist.gov iburst
        ```
    - Set domain and nameservers
      - Edit /etc/resolv.conf
        ```
        search dundermifflin.com
        nameserver 128.138.240.1
        nameserver 128.138.130.30
        ```
  - dhcpd
    - Installed dhcpd and began editing /etc/dhcp/dhcpd.conf
    - I extracted hardware address by running “ip a” on B-F and reading the MAC address next to the ens192 network interface.
    - Next, I used that information to create hosts with fixed IP addresses, to which I could also attach hostnames.
    - I set some global options such as NTP servers, the router (A’s IP), DNS, domain name, and default/max lease time (I set both to the same value just in case).
    - All this yielded the following dhcpd.conf:

      ```
      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;
      option routers 100.64.18.1;

      default-lease-time 600;
      max-lease-time 600;

      host MACHINEB {
              hardware ethernet 00:50:56:89:e3:b3;
              option host-name "dns0.dundermifflin.com";
              fixed-address 100.64.18.2;
      }

      host MACHINEC {
          hardware ethernet 00:50:56:89:38:5f;
          option host-name "web0.dundermifflin.com";
          fixed-address 100.64.18.3;
      }
      ```

```
host MACHINED {
      hardware ethernet 00:50:56:89:82:e9;
      option host-name "web1.dundermifflin.com";
      fixed-address 100.64.18.4;
}

host MACHINEF {
         hardware ethernet 00:50:56:89:fa:f7;
      option host-name "dns1.dundermifflin.com";
      fixed-address 100.64.18.6;
}

host MACHINEE {
      hardware ethernet 00:50:56:89:8c:29;
      option host-name "nfs.dundermifflin.com";
      fixed-address 10.21.32.2;
}

# WAN
subnet 100.64.0.0 netmask 255.255.255.0 {}

# LAN
subnet 10.21.32.0 netmask 255.255.255.0 {
         pool {
                  range 10.21.32.100 10.21.32.199;
         }
}

# DMZ
subnet 100.64.18.0 netmask 255.255.255.0 {
      pool {
           range 100.64.18.100 100.64.18.199;
      }
}
```

- Rocky machines (non-A) setup
    - I ran the following script:

```
echo 'hostname-mode=dhcp' >> /etc/NetworkManager/NetworkManager.conf
        rm -f /etc/hostname

echo -e 'DEVICE=ens192\nONBOOT=yes\nBOOTPROTO=dhcp' >>
/etc/sysconfig/network-scripts/ifcfg-ens192
```

    - This makes Rocky use DHCP as its source for IP and hostname. Deleting the hostname file is required (for Debian as well) because it will overwrite the received DHCP settings. This was confirmed by using hostnamectl.

- Debian machines setup
    - I ran `rm –f /etc/hostname` to get rid of the static hostname and then went into /etc/network/interfaces and changed the iface ens192 line to have “dhcp” instead of a static configuration.
- Finally, I rebooted all machines and it worked!