

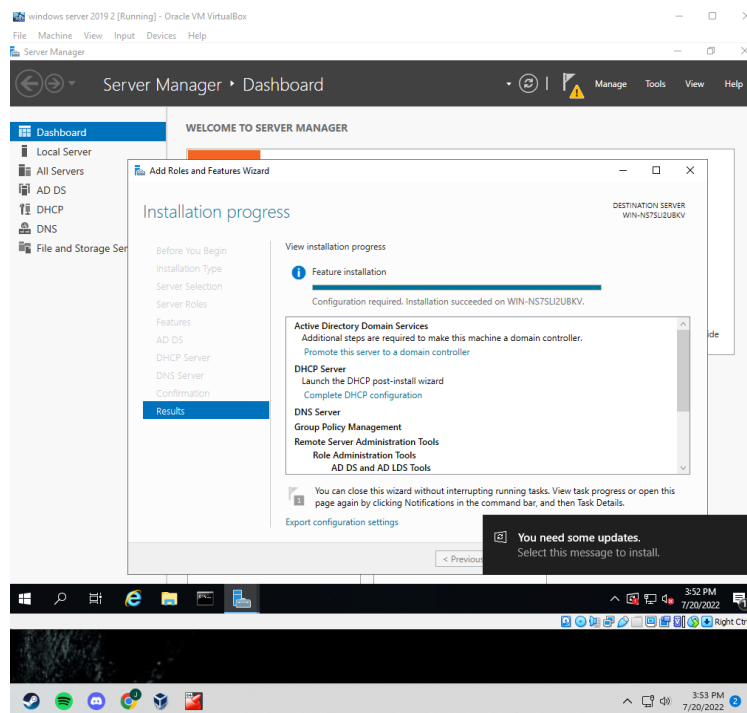
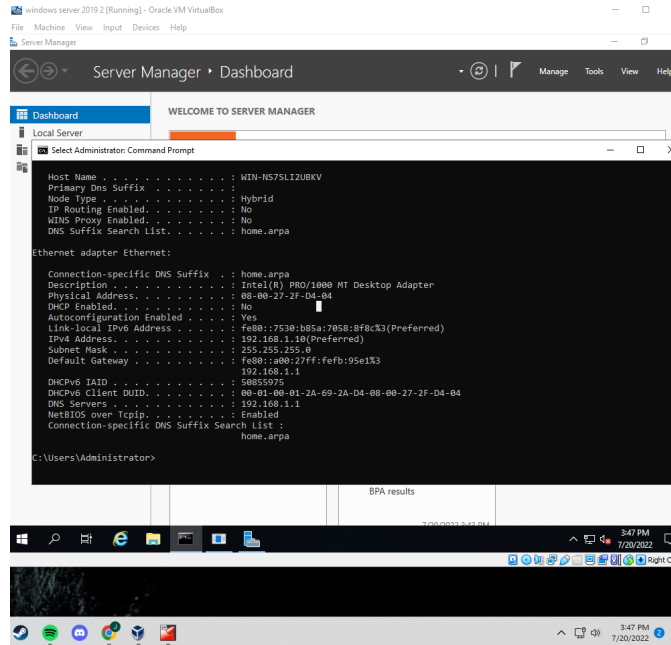
## Access Control via Active Directory Lab

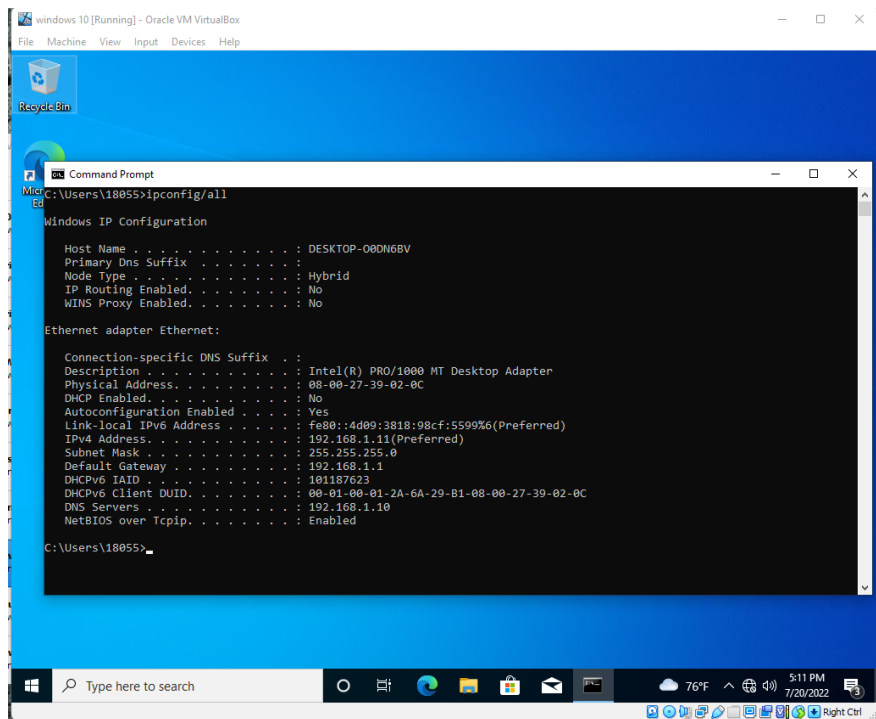
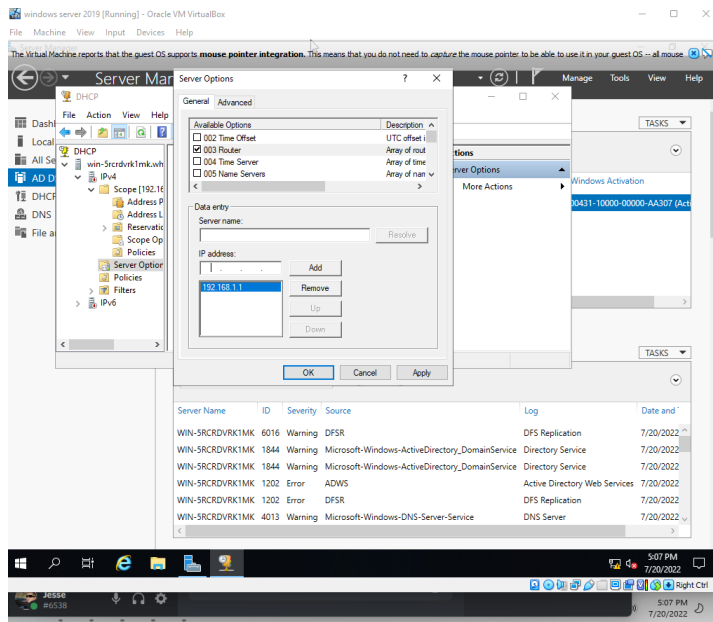
**Benefits to a hybrid network:** Building a hybrid network has multiple benefits, one of my favorite reasons is the overall fluidity of the network. When a network is set up in a hybrid style, it allows you to be able to access and control everything from a single PC, you don't have to necessarily move around from PC to PC to fix a network issue. This is because they are all connected under one network. The second reason I like is the security, although not the most secure, I feel through informing the team that they are under a company network and informing the users of some important rules, could be a very secure network. A huge reason this is helpful is that we are using an active directory, which enables us to manage and create permissions from one set location. This is helpful because once again, the power is all in one place. Having access to the security logs is a role that is extremely important that is accessible within this kind of network as well. This is because if a security breach happens, there must be an area where the information of what exactly is going wrong is logged. These logs will tell us exactly how to fix or re-secure our network.

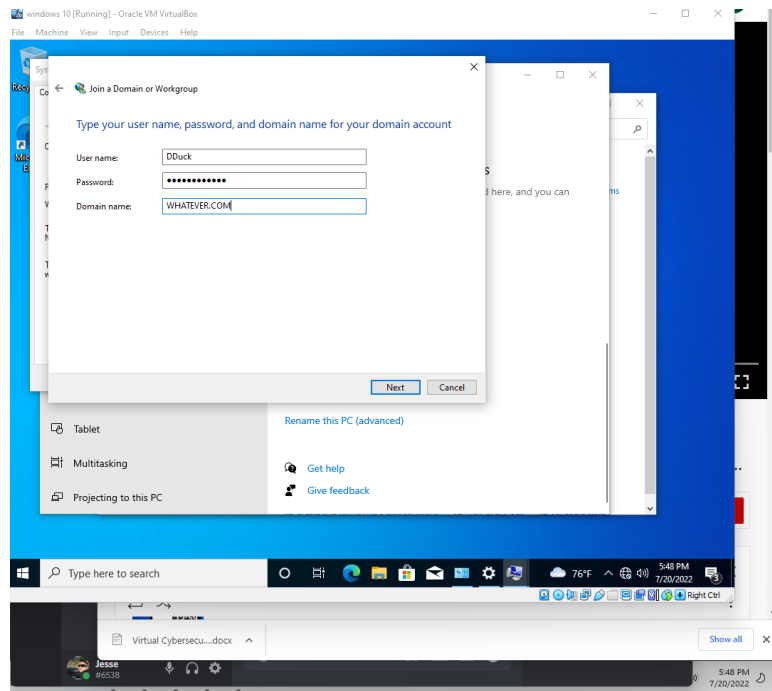
Screenshots:

1. Windows server 2019, screenshot showing all correct and new ip's and also pfsense being active.
2. Windows Server 2019 right before we promote the server and complete DHCP. shortly after the system was restarted and the server was fully operational.
3. Setting the 003 router ip address in server options under the DHCP server.
4. All correct and operating IP's in windows 10 machine
5. My attempt where I had issues combining the D Duck account to the WHATEVER.COM domain.  
I was unable to go through with this step.
6. Post sudo ifconfig enp0s3 up and down to conform I can do that with my IP/ I also made sure or leave it up when i was done.
7. This is after I changed the hostname successfully to Station2.whatever.com

8. After a successful realm name and domain name change, they are now both whatever.com
9. This is the final code we had to type in, [dduck@whatever.com](mailto:dduck@whatever.com) was successfully connected to Ubuntu and the lab was complete.







ubuntu [Running] - Oracle VM VirtualBox

File Machine View Input Devices Help

Activities Terminal Jul 20 18:04

Jesse@Jesse-VirtualBox: ~/Desktop

```
inet 127.0.0.1 netmask 255.0.0.0
inet6 ::1 prefixlen 128 scopeid 0x10<host>
loop txqueuelen 1000 (Local Loopback)
RX packets 331 bytes 31328 (31.3 KB)
RX errors 0 dropped 0 overruns 0 frame 0
TX packets 331 bytes 31328 (31.3 KB)
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

jesse@jesse-VirtualBox:~/Desktop$ sudo ifconfig enp0s3 up
jesse@jesse-VirtualBox:~/Desktop$ ifconfig -a
enp0s3: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 192.168.1.12 netmask 255.255.255.0 broadcast 192.168.1.255
    inet6 fe80::e74f:a08c:2c26:1fbc prefixlen 64 scopeid 0x20<link>
    ether 08:00:27:dc:0f:1b txqueuelen 1000 (Ethernet)
    RX packets 358280 bytes 541549729 (541.5 MB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 28176 bytes 1780519 (1.7 MB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
    inet 127.0.0.1 netmask 255.0.0.0
    inet6 ::1 prefixlen 128 scopeid 0x10<host>
    loop txqueuelen 1000 (Local Loopback)
    RX packets 343 bytes 32687 (32.6 KB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 343 bytes 32687 (32.6 KB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

jesse@jesse-VirtualBox:~/Desktop$
```

6:04 PM 7/20/2022

```
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

jesse@jesse-VirtualBox:~/Desktop$ hostname -f
jesse-VirtualBox
jesse@jesse-VirtualBox:~/Desktop$ sudo hostnamectl set-hostname STATION2.whatever.com
jesse@jesse-VirtualBox:~/Desktop$ hostname -f
STATION2.whatever.com
jesse@jesse-VirtualBox:~/Desktop$
```

Right Ctrl

```
Activities Terminal Jul 20 18:11
Jesse@Jesse-VirtualBox: ~/Desktop

TX packets 343 bytes 32687 (32.6 KB)
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

Jesse@Jesse-VirtualBox:~/Desktop$ hostname -f
Jesse-VirtualBox
Jesse@Jesse-VirtualBox:~/Desktop$ sudo hostnamectl set-hostname STATION2.whatever.com
Jesse@Jesse-VirtualBox:~/Desktop$ hostname -f
STATION2.whatever.com
Jesse@Jesse-VirtualBox:~/Desktop$ sudo realm discover whatever.com
WHATEVER.COM
type: kerberos
realm-name: WHATEVER.COM
domain-name: WHATEVER.COM
configured: no
server-software: active-directory
client-software: sssd
required-package: sssd-tools
required-package: sssd
required-package: libnss-sss
required-package: libpam-sss
required-package: adcli
required-package: samba-common-bin
whatever.com
type: kerberos
realm-name: WHATEVER.COM
domain-name: whatever.com
configured: no
Jesse@Jesse-VirtualBox:~/Desktop$
```

```
ubuntu [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help

Activities Terminal Jul 20 18:13
Jesse@Jesse-VirtualBox: ~/Desktop

Jesse@Jesse-VirtualBox:~/Desktop$ sudo realm discover whatever.com
WHATEVER.COM
type: kerberos
realm-name: WHATEVER.COM
domain-name: WHATEVER.COM
configured: no
server-software: active-directory
client-software: sssd
required-package: sssd-tools
required-package: sssd
required-package: libnss-sss
required-package: libpam-sss
required-package: adcli
required-package: samba-common-bin
whatever.com
type: kerberos
realm-name: WHATEVER.COM
domain-name: whatever.com
configured: no
Jesse@Jesse-VirtualBox:~/Desktop$ sudo realm join -u dduck whatever.com
realm: Unknown option -u
Jesse@Jesse-VirtualBox:~/Desktop$ sudo realm join -U dduck whatever.com
Password for dduck:
Jesse@Jesse-VirtualBox:~/Desktop$ id dduck
id: 'dduck': no such user
Jesse@Jesse-VirtualBox:~/Desktop$ id dduck@whatever.com
uid=1320601105(dduck@WHATEVER.COM) gid=1320600513(domain users@WHATEVER.COM) groups=1320600513(domain users@WHATEVER.COM)
Jesse@Jesse-VirtualBox:~/Desktop$
```