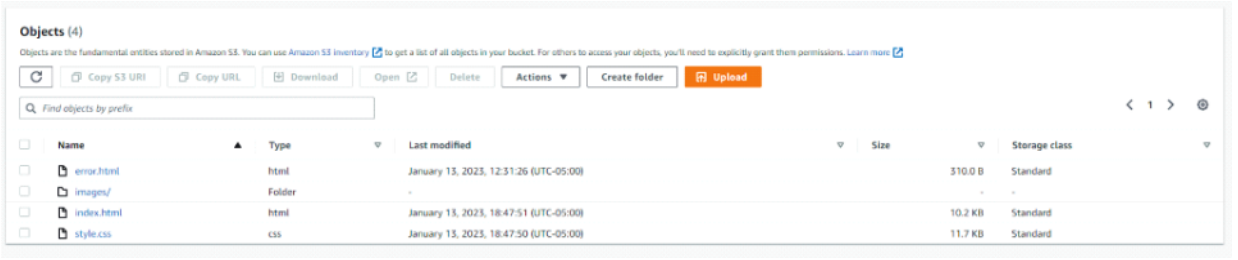
KEY

Monday, February 20, 2023 8:39 PM

Important Headings are Underlined and Bold:

- A bullet point indicates a note and NOT a step

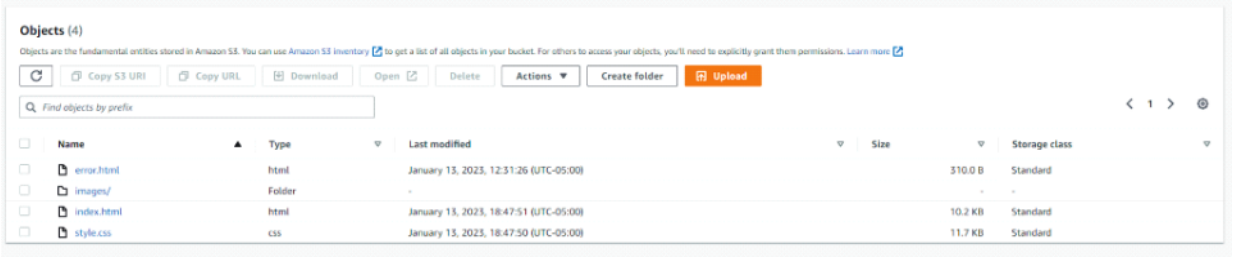


- Bullet points may have images along with them to help visually
  - Bullet points may also have sub-bullet points for a more in-depth explanation

Headings in Bold Also Indicate Important Steps:

1. Steps are numbered, every new page starts with Step 1 and so on
   a. Steps may have sub-steps to add more information

2. Steps may also have images to help visually



3. **Bold** word in steps indicate a button

4. *Italicized* words in steps indicate input fields or options

5. `Keyboard Input` in Courier New Font

6. Underlined words indicate files

7. Menu navigation is indicated by the pipe symbol and italic words: *Start* | *Programs* | *MS Word*

8. Numbers referencing other steps will be in red(1...2...3)

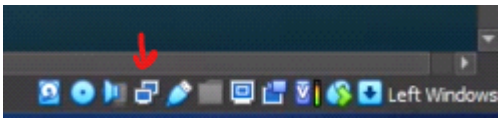
9. Code will be in a textbox in `COURIER NEW` font

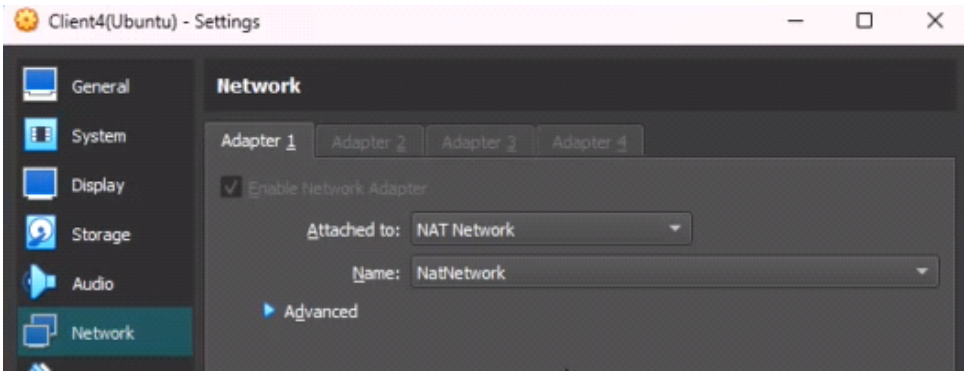
```
#include <stdio.h>

int main(void)
{
printf("Hello World in C:)");
return 0;
}
```

Verify Connectivity

Wednesday, February 22, 2023 11:11 PM

- These steps are likely to work for most Debian-based distros
- Logged in with a local admin account for now
- Verified that the Ubuntu client can reach the Windows Server
  - Used VirtualBox's Network Settings in the lower right-hand corner to verify that the client was attached to the *NAT Network* adapter(internet from home network)
  - This is needed for the initial installation of the required packages





- By pinging the domain's name or address, connectivity was able to be verified
  - The domain's name or address may not be reachable while connected to the NAT adapter
  - In this case, only the name(domain) was reachable, the address could not be reached until the network adapter was switched to the internal one

```
root@ubuntu:~# ping maindomain.com
PING maindomain.com (3.33.152.147) 56(84) bytes of data.
64 bytes from a4ec4c6ea1c92e2e6.awsglobalaccelerator.com (3.33.152.147): icmp_se
q=1 ttl=117 time=36.2 ms
64 bytes from a4ec4c6ea1c92e2e6.awsglobalaccelerator.com (3.33.152.147): icmp_se
q=2 ttl=117 time=86.5 ms
64 bytes from a4ec4c6ea1c92e2e6.awsglobalaccelerator.com (3.33.152.147): icmp_se
q=3 ttl=117 time=35.8 ms
64 bytes from a4ec4c6ea1c92e2e6.awsglobalaccelerator.com (3.33.152.147): icmp_se
q=4 ttl=117 time=36.0 ms
^C
--- maindomain.com ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3024ms
rtt min/avg/max/mdev = 35.781/48.610/86.495/21.873 ms
root@ubuntu:~#
```

```
PING 172.16.0.1 (172.16.0.1) 56(84) bytes of data.
64 bytes from 172.16.0.1: icmp_seq=1 ttl=128 time=0.156 ms
64 bytes from 172.16.0.1: icmp_seq=2 ttl=128 time=0.207 ms
64 bytes from 172.16.0.1: icmp_seq=3 ttl=128 time=0.172 ms
64 bytes from 172.16.0.1: icmp_seq=4 ttl=128 time=0.207 ms
^C
--- 172.16.0.1 ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3067ms
```

Installing Required Packages

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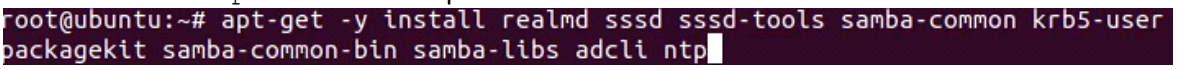
1. Opened a terminal, used `sudo -I` to switch to root user

2. Entered `sudo apt update` to update packages

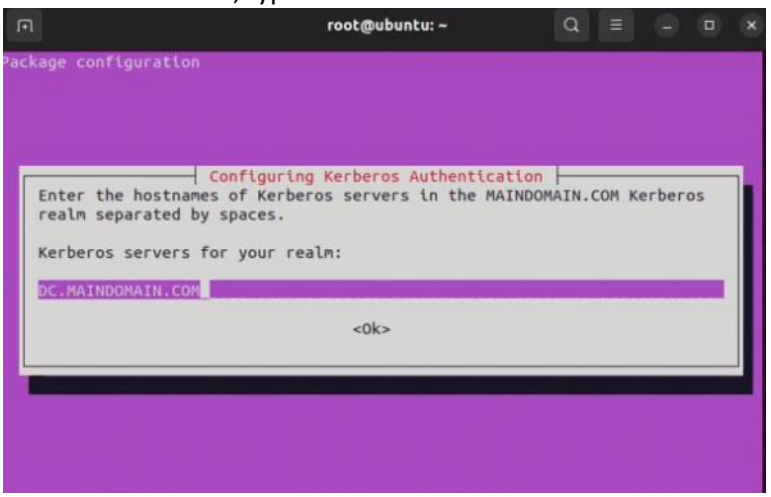
3. If packages weren't up to date, used `sudo apt upgrade` to install the updates

4. Once all packages were up to date, typed in `apt-get -y install realmd sssd sssd-tools samba-common krb5-user packagekit samba-common-bin samba-libs adcli ntp` to install the required tools

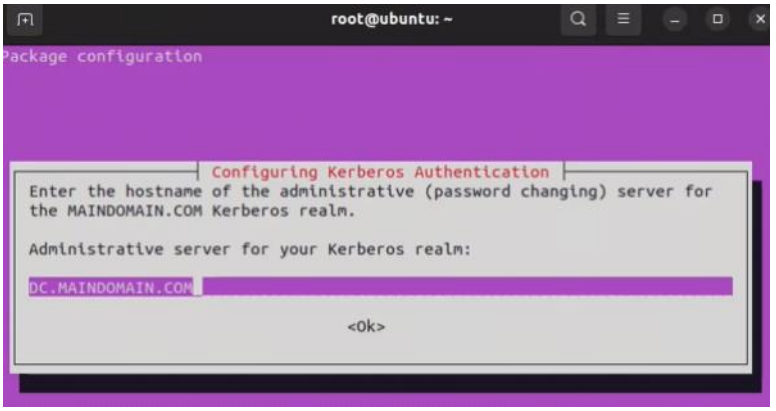


5. When the Configuring Kerberos Authentication pop-up appeared typed in `MAINDOMAIN.COM` and selected **OK**

6. In the next window, typed in `DC.MAINDOMAIN.COM` and clicked **OK**



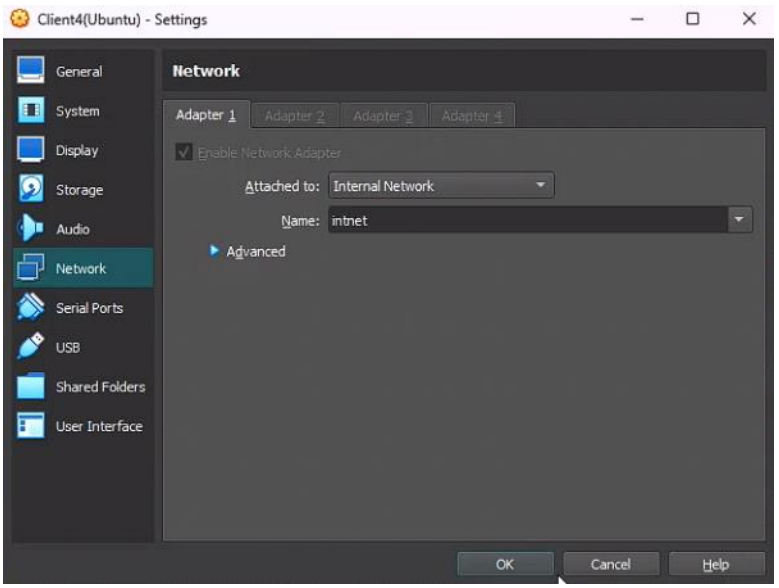
7. In the final window, typed in `DC.MAINDOMAIN.COM` and clicked **OK**


root@ubuntu: ~
Package configuration
Configuring Kerberos Authentication
Enter the hostname of the administrative (password changing) server for the MAINDOMAIN.COM Kerberos realm.
Administrative server for your Kerberos realm:
DC.MAINDOMAIN.COM
<Ok>

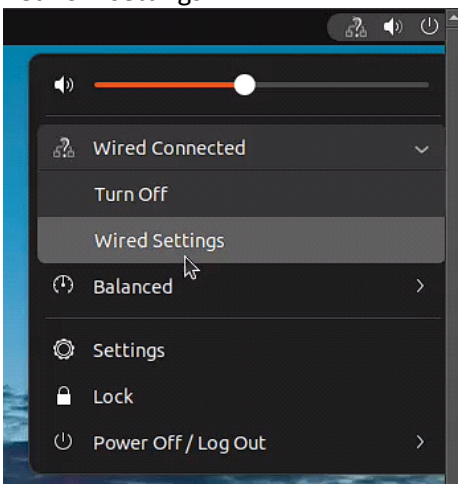
Discovering and Joining the Domain

Thursday, February 23, 2023 6:28 PM

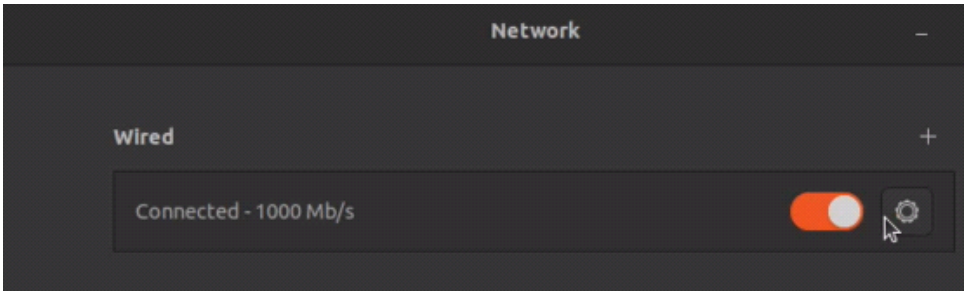
1. Used VirtualBox's Network Settings in the lower right-hand corner to switch the network adapter from *NAT Network* to *intnet*(internal network) and clicked **OK**

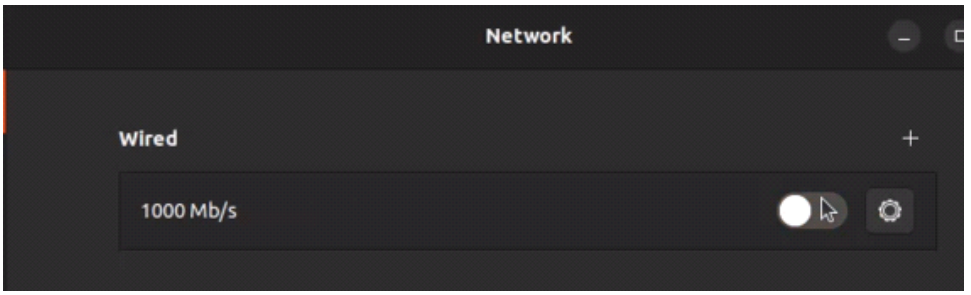


1. In the upper right-hand corner, navigated too *Wired Connected | Wired Settings* to access the network settings



2. Disabled the *wired* network adapter by clicking the switch
   a. This reset the network adapters
   b. Turn on the adapter again to obtain network connectivity again





3. Opened a terminal and typed in `sudo realm join maindomain.com -U 'admin@MAINDOMAIN.COM' -v` to discover the domain
   a. When prompted, entered the admin account's password

```
root@ubuntu:~# realm join maindomain.com -U 'admin@MAINDOMAIN.COM' -v
 * Resolving: _ldap._tcp.maindomain.com
 * Performing LDAP DSE lookup on: 172.16.0.1
 * Successfully discovered: maindomain.com
Password for admin@MAINDOMAIN.COM:
```

4. Verified machine was successfully enrolled in the realm by waiting for final output

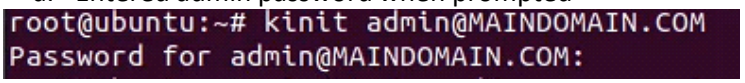
```
 * Successfully enrolled machine in realm
root@ubuntu:~#
```

5. Edited the realmd.conf file by entering `sudo vi /etc/realmd.conf`
   a. This is needed to be able to join the domain
   b. Used ESC key and `wq!` to overwrite the file
   c. The following are the contents of the file:

```
[users]
default-home = /home/%D/%U
default-shell = /bin/bash

[active-directory]
default-client = sssd
os-name = ubuntu
os-version = 22.04

[service]
automatic-install = no

[maindomain.com]
fully-qualified-names = no
```

```
automatic-id-mapping = yes
user-principal = yes
manage-system = no
```

6. Joined the Ubuntu machine to the domain by entering `sudo kinit admin@MAINDOMAIN.COM`
   a. Entered admin password when prompted



Setting Up Home Directory Auto-Creation for Users

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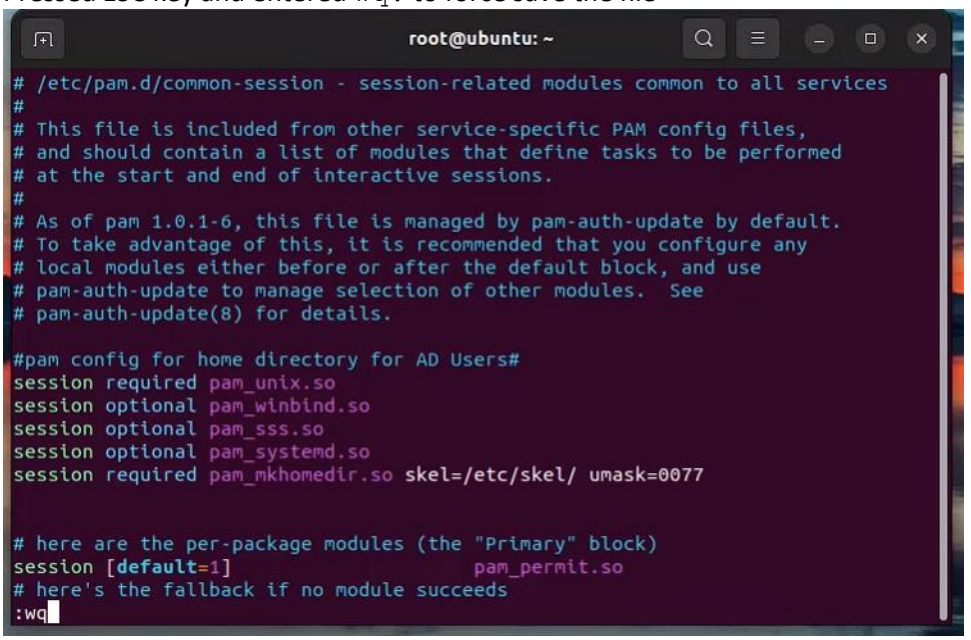
1. In a terminal, edited the pam.d file
   a. Entered `sudo vi /etc/pam.d/`common-session to edit the file
   b. Added the following contents to the file:

```
session required pam_unix.so
session optional pam_winbind.so
session optional pam_sss.so
session optional pam_systemd.so
session required pam_mkhomedir.so skel=/etc/skel/ umask=0077
```

2. Pressed ESC key and entered `wq!` to force save the file



Logging in as a Domain User

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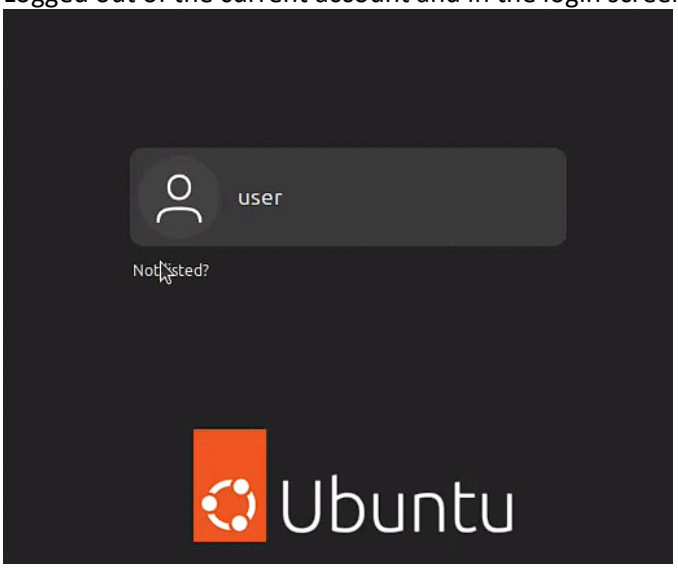
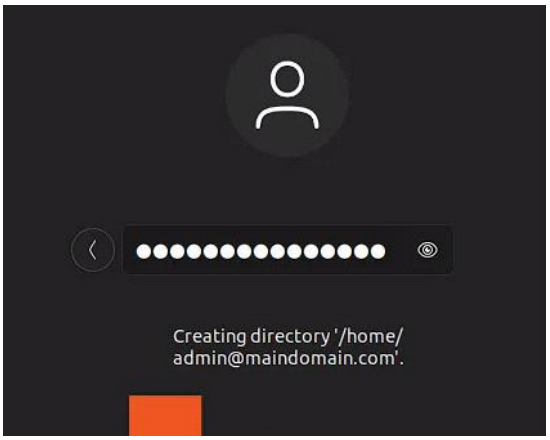
1. Logged out of the current account and in the login screen, selected the *Not Listed?* option



2. To login initially, entered `MAINDOMAIN.COM\admin` in the username field
   a. Entered password when prompted
   b. This only needs to be done once, account should be saved in subsequent logins




Creating directory '/home/
admin@maindomain.com'.
Ubuntu