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CIS-106-ME1: Linux Fundamentals

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Building a File Server: SAMBA File Server

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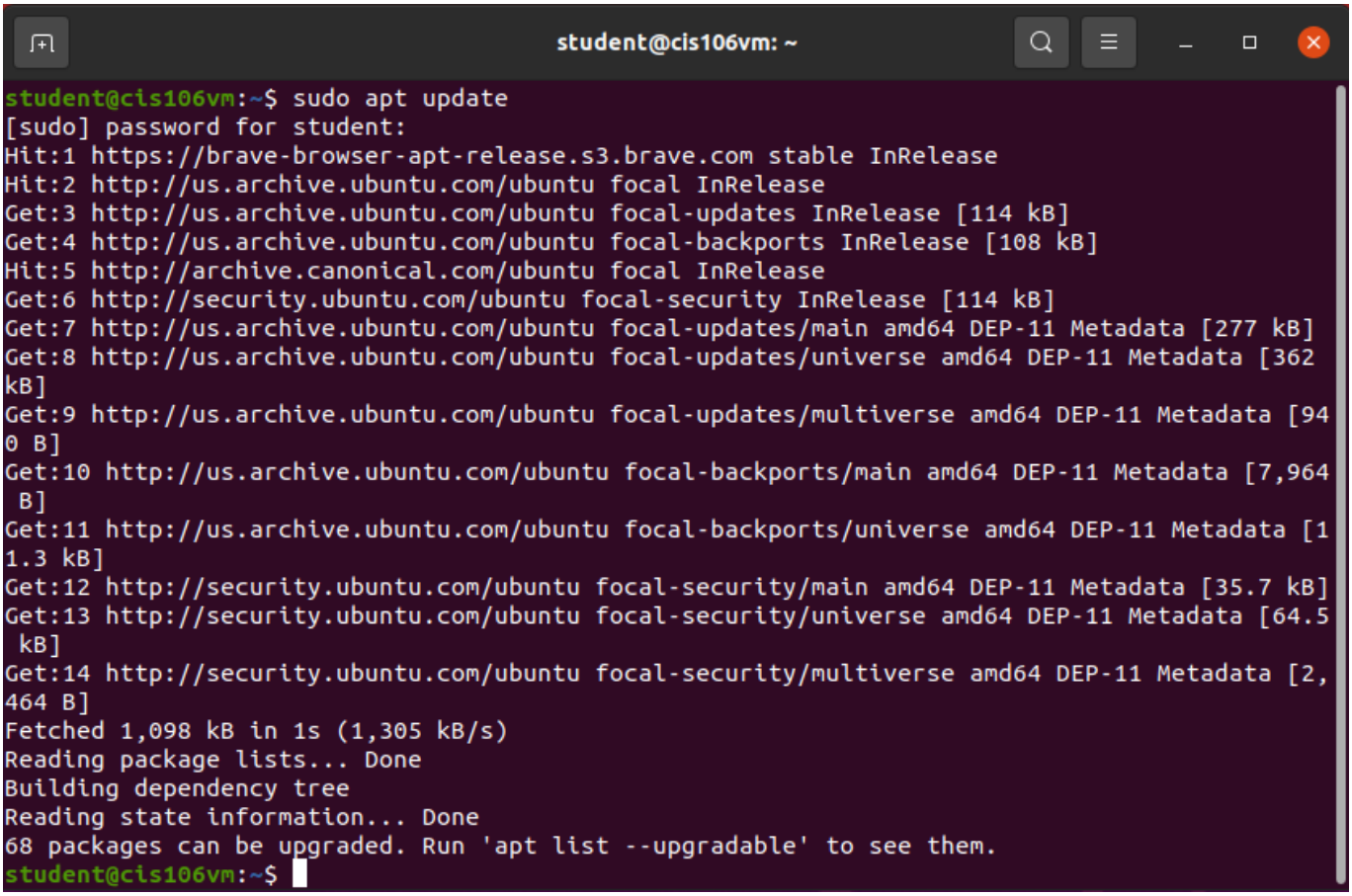
1. Installing SAMBA

1. Open your Linux terminal.
2. Enter

   > sudo apt update

   This will update your repository to check for any changes.

   sudo - super user do **apt** - task to install,remove,update software **update** - command for apt to update software

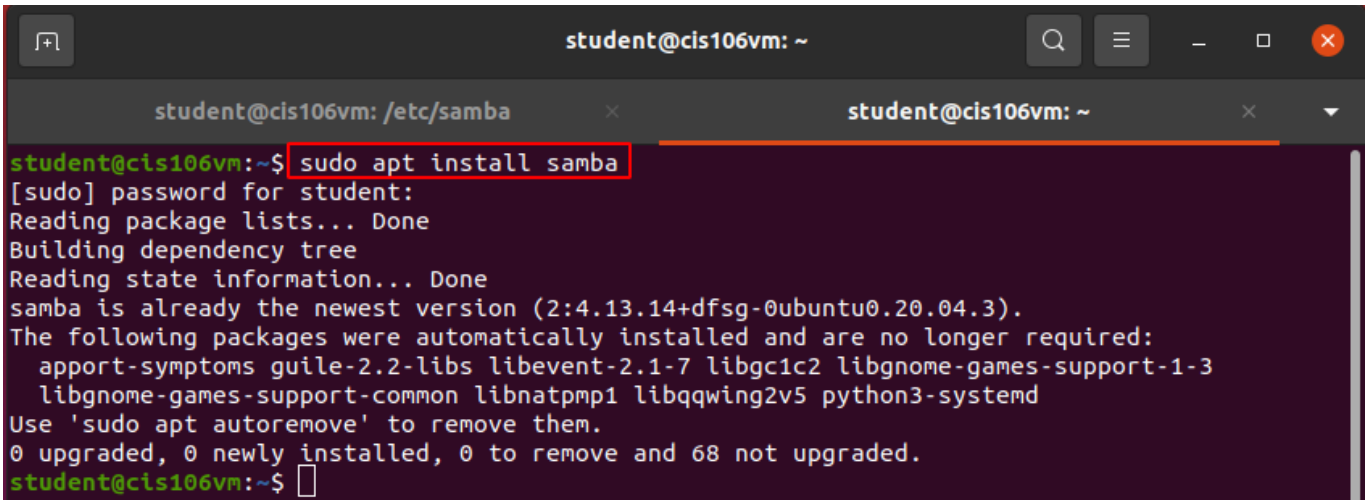


3. Enter

   > sudo apt install samba

   This will install the application samba.

   install - command for apt to install software **samba** - installing SAMBA software from the repository



SAMBA was preinstalled for me already.

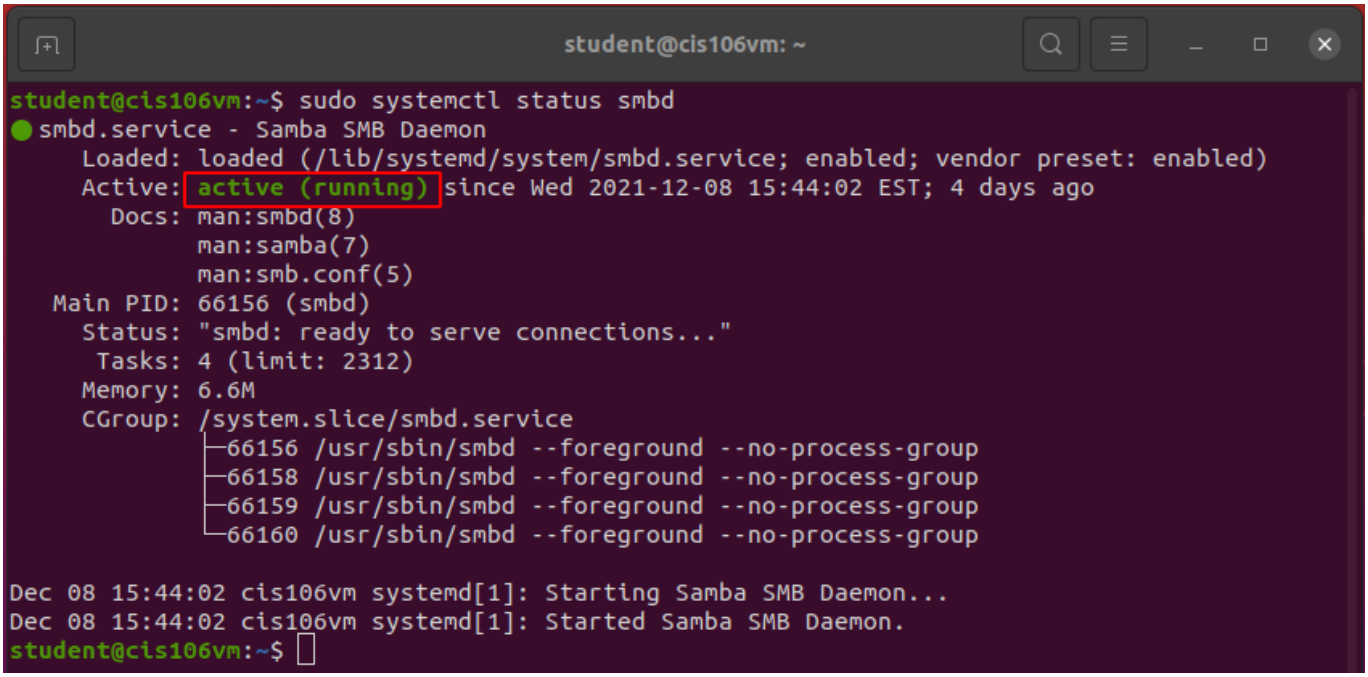
2. Checking the status of SAMBA

1. Enter

   ```
   sudo systemctl status smbd
   ```

   This will check if your Samba server is active or running.

   systemctl - command to control the system manager. **status** - show the runtime status of a unit **smbd** - the software unit being selected.

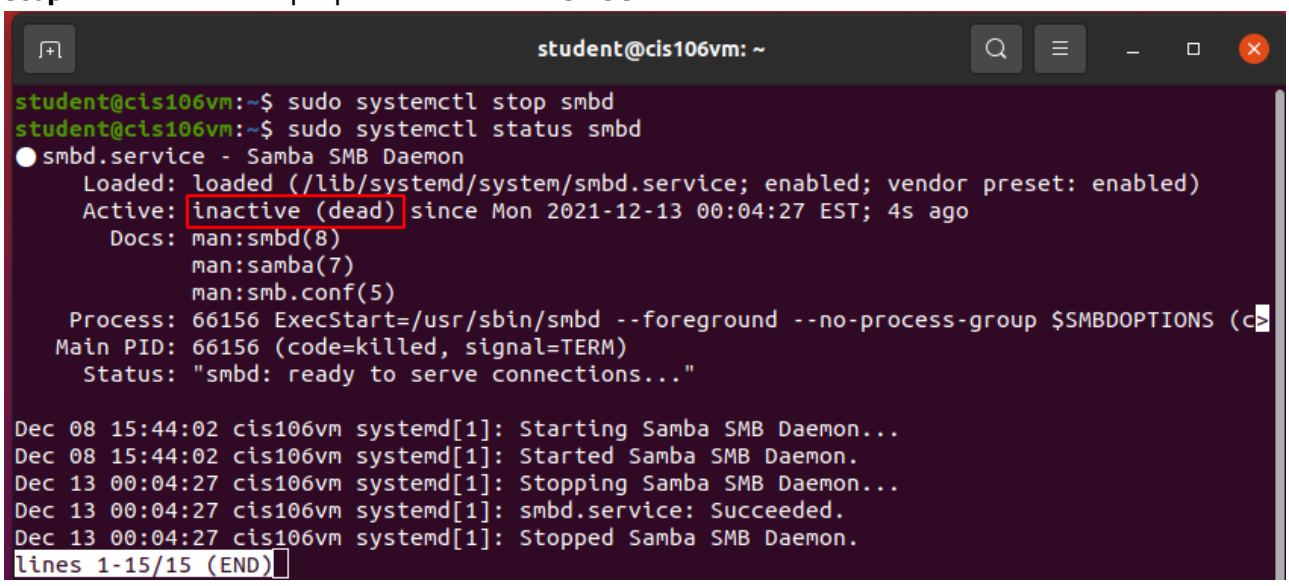


2. Enter

   ```
   sudo systemctl stop smbd
   ```

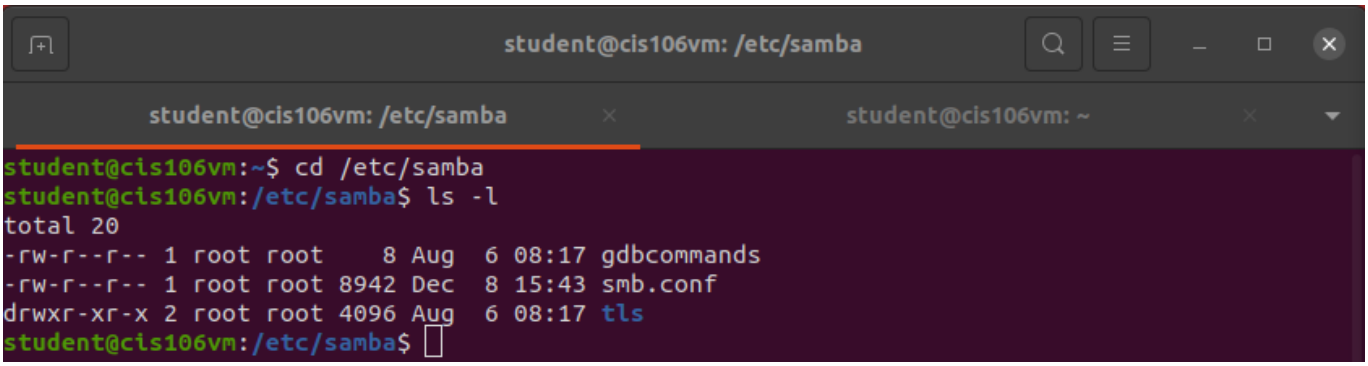
   This will stop the Samba server. We will configure the Samba server while it is down then restart it once we are done.

   stop - command to stop a piece of software **smbd** - the Samba SMB Daemon software



3. Configuring the SAMBA config file

SAMBA has made a new directory in the etc directory. Your SAMBA server should also be inactive or dead.



1. Back Up the conf. file by entering this command while in the **etc/samba directory**.

   > sudo mv smb.conf smb.conf.bak

   This will rename the extension of the smb.conf file to a smb.conf.bak file. **mv** - command to move files or directories. This can also rename files.

2. Create a new smb.conf file with this command

   > sudo nano smb.conf

   This will make a new smb.conf file and it will be opened with the program nano. **nano** - text editor

3. Set up the smb.conf file in this way.

   > [global] server string = Samba Server workgroup = WORKGROUP security = user map to guest = Bad User name resolve order = bcast host include = /etc/samba/shares.conf

   [global] is the header section of config options. **server string** is the name of the server **workgroup** is the workgroup that can access it. WORKGROUP is default. **security** is who can access it. **map to guest** will let it not allow a user account to access the server. **name resolve order** will check the host

in a specific order. **include** will access other configuration files to implement. Useful for organization.

4. Create the directories that will be shared Enter

```
mkdir -p /home/student/Documents/SAMBA/{public,private}
```

mkdir will make a directory **p** argument will allow the creation the parent directories **{public,private}** will create two folders respectively in the SAMBA folder.

5. Create the shares.conf file This file will deal with what directories are accessible and what permission will be allowed. Enter

```
sudo nano shares.conf
```

In the file, the structure will be

```
[Public Files] path = /home/student/Documents/SAMBA/public force user = smbuser force group = smbgroup create mask = 0664 force create mode = 0664 directory mask = 0775
```

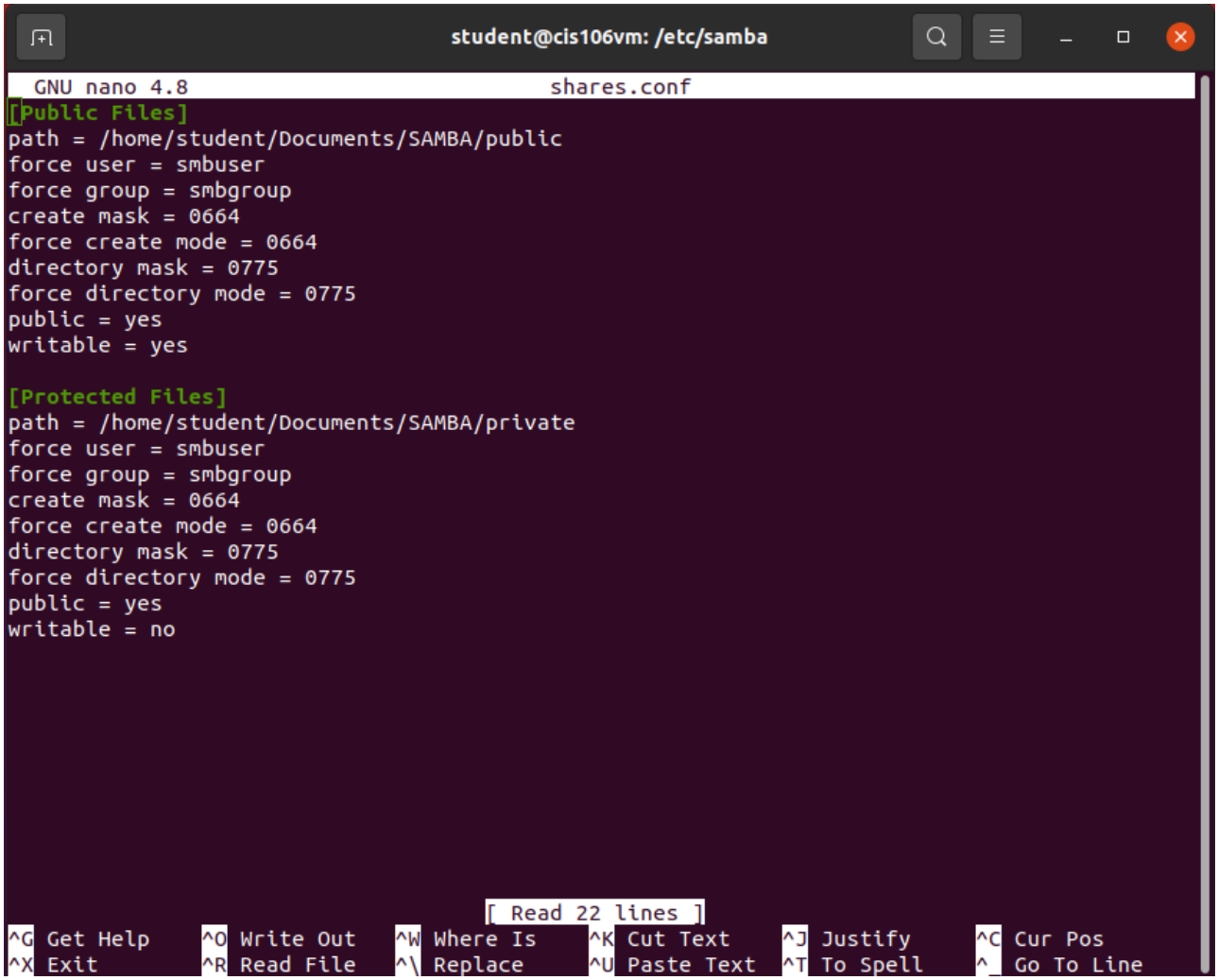
[Public Files] is the header section of the config optinos for publicly accessible files. **path** is the directory that will be accessed. **force user** is the user being used to access the server. **force group** is the group being used to access the server. **create mask** is the permissions of a file when it is created. -6-- user has rw- permissions --6- group has rw- permissions ---4 other has r-- permissions **force create mode** is the permissions required when creating a file. **directory mask** is the permissions of the directory when it is created. -7-- user has rwx permissions --7- group has rwx permissions ---5 other has r-x permissions. *Execute permission is to allow the user to go inside the directory* **force directory mode** forces the permissions of created directory **public** makes the directory public **writable** allows changes to be made

6. Optional: Make another directory but for files that can be download files but not be able to change the files.

   To this this, you can create a new section and type with the following changes.

   > [Protected Files] path = /home/student/Documents/SAMBA/private writable = no

   path will be a different path for protected files **writable** will not allow users to change files and only download them



4. Create the SAMBA user and group

1. Create the group by entering

```
sudo groupadd --system smbgroup
```

groupadd - create a new group. **--system** - within the system **smbgroup** - name of the group

You can check if the group was recently made with

```
tail -1 /etc/group
```

tail will list the last 5 lines of a file **-1** argument for tail that will list the last line of the file

2. Create the user by entering

```
sudo useradd --system --no-create-home --group smbgroup -s /bin/false smbuser
```

useradd - create a new user. **--no-create-home** - will not create a home directory for user **--group smbgroup** sets the group to smbgroup **-s /bin/false** prevent user as a log in user. **smbuser** is the name of the user

You can check if the user was recently made with

```
tail -1 /etc/passwd
```

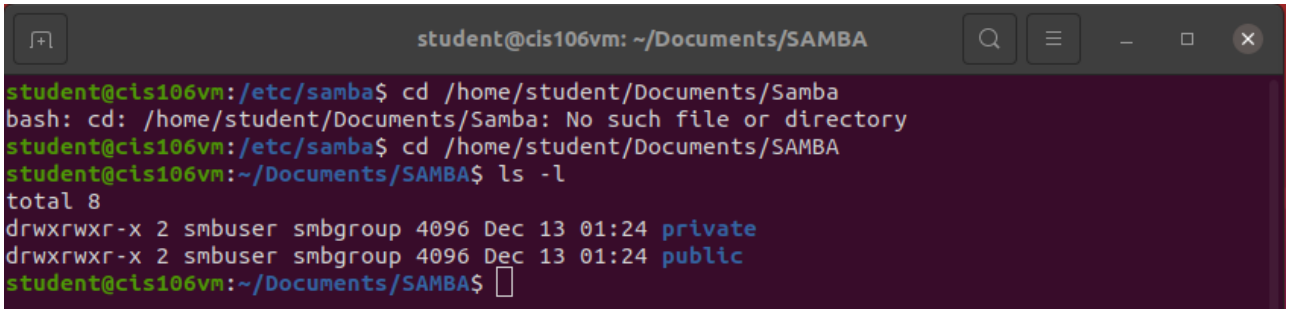
5. Set up the folder permissions

1. Change the ownership of the directory with the command:

```
sudo chown -R smbuser:smbgroup /home/student/Documents/SAMBA
```

```
sudo chmod -R g+w /home/student/Documents/SAMBA
```

chown will change the user/group ownership **-R** recursively give the change in file ownership **smbuser:smbgroup** the user and group **chmod** will change who can access files,directories.



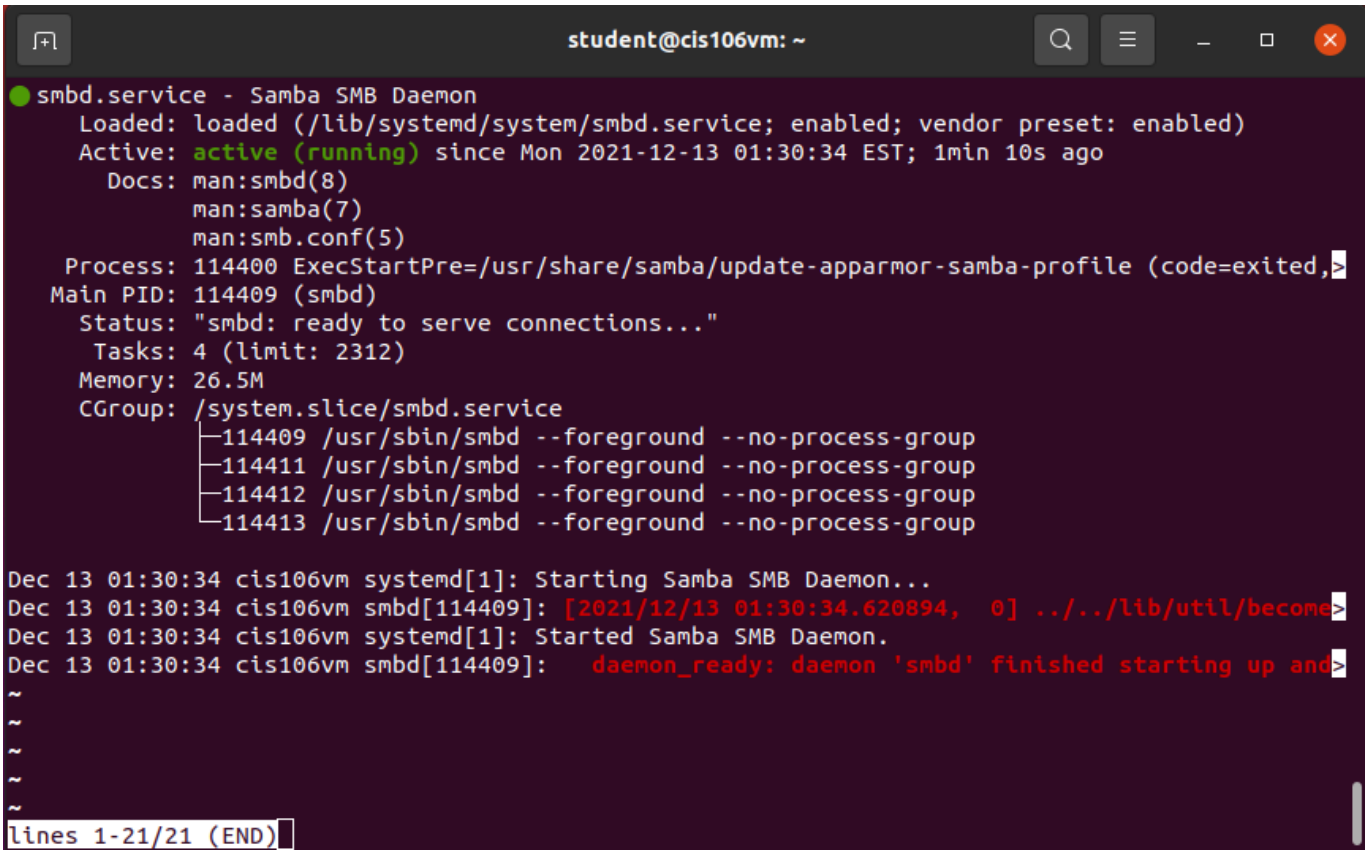
6. Starting/Restarting SAMBA

1. Now you can start/restart SAMBA with this command

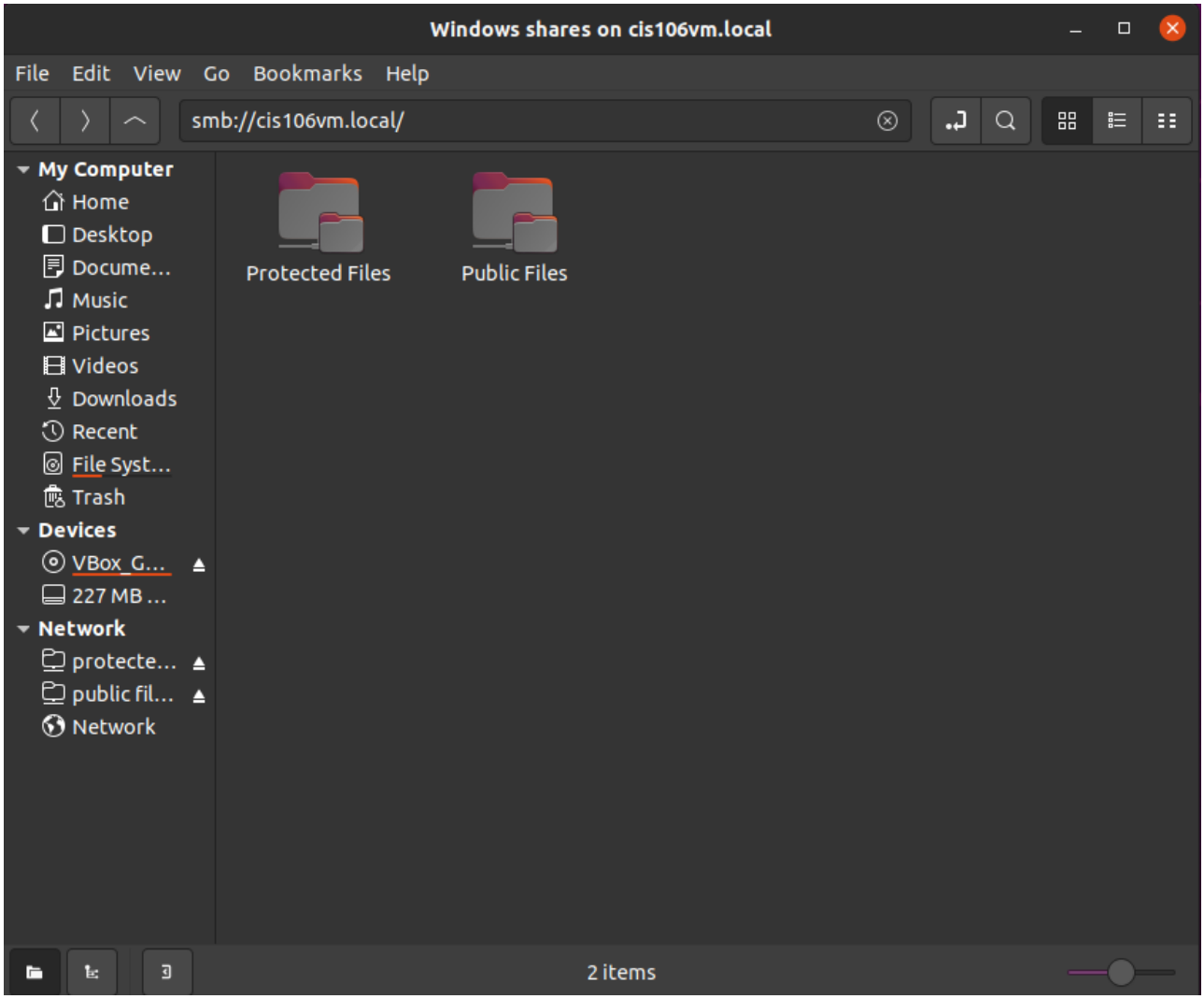
   > sudo systemctl start smbd

   > sudo systemctl restart smbd

   restart will restart smbd.



2. You can now access your file server in your Network of Linux.



Work Cited

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