----- Written Code------

Installing Samba

To install it on your Ubuntu system follow the steps below:

1) Start by updating the apt packages index:

```
sudo apt update
```

2) Install the Samba package with the following command:

```
sudo apt install samba
```

3) Once the installation is completed, the Samba service will start automatically. To check whether the Samba server is running, type:

```
sudo systemctl status smbd
```

4) The output should look something like below indicating that Samba service is active and running:

```
`● smbd.service - Samba SMB Daemon
```

Loaded: loaded (/lib/systemd/system/smbd.service; enabled; vendor preset: enabled) Active: active (running) since Wed 2022-04-16 09:25:38 UTC; 2min 12s ago Docs: man:smbd(8) man:samba(7) man:smb.conf(5) Main PID: 15142 (smbd) Status: "smbd: ready to serve connections..." Tasks: 4 (limit: 1152) CGroup: /system.slice/smbd.service ...`

Configuring firewall

Assuming you are using [UFW] to manage your firewall, you can open the ports by enabling the ‘Samba’ profile:

1) install UFW

> *sudo apt install ufw sudo ufw allow 'Samba'*

Configuring Global Samba Options

The default configuration file that ships with the Samba package is configured for standalone Samba server.

1) Open the file and make sure `server role` is set to `standalone server`

```
`sudo nano /etc/samba/smb.conf`
```

2) Enable and Restart the Samba services with:

```
systemctl enable smbd.service
sudo systemctl restart smbd
systemctl enable nmbd.service
sudo systemctl restart nmbd
```

Creating Samba Users and DS

1) To create the `/samba` directory type:

```
`sudo mkdir /samba`
```

2) Set the group ownership to `sambashare`. This group is created during the Samba installation, later we will add all Samba users to this group

```
`sudo chgrp sambashare /samba`
```

Creating Samba Users

1) To create a new user named `josh` use the following command: sudo useradd -M -d /samba/josh -s /usr/sbin/nologin -G sambashare josh 2) Create the user’s home directory and set the directory ownership to user `josh` and group `sambashare`:

```
sudo mkdir /samba/josh
sudo chown josh:sambashare /samba/josh
```

3) The following command will add the setgid bit to the `/samba/josh` directory so the newly created files in this directory will inherit the group of the parent directory.

```
  `sudo chmod 2770 /samba/josh`
```

4) Add the `josh` user account to the Samba database by setting the user password:

```
sudo smbpasswd -a josh
```

5) You will be prompted to enter and confirm the user password.Once the password is set to enable the Samba account run:

```
sudo smbpasswd -e josh
```

Configuring Samba Shares

1) Open the Samba configuration file and append the sections:

```
sudo nano /etc/samba/smb.conf
```

```
[josh]
    path = /samba/josh
    browseable = yes
    read only = no
    force create mode = 0660
```

```
    force directory mode = 2770
    valid users = josh @sadmin
```

2) Once done run the `testparm` utility to check the Samba configuration file for errors. If there are no syntax errors you will see Loaded services file ok

```
`            testparm                                    `
```

3) Once done, restart the Samba services with:

```
sudo systemctl restart smbd
sudo systemctl restart nmbd
```

Using the smbclient client

1) To install `smbclient` on Ubuntu and Debian run:

```
sudo apt install smbclient
```

2) For example to connect to a share named `josh` on a Samba server with IP address `192.168.121.118` as user `josh` you would run:

```
smbclient //192.168.121.118/josh -U josh
```

3) You will be prompted to enter the user password so enter it.