Ganpat University | Institute of Computer Technology
॥ विद्यया समाजोत्कर्षः ॥

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----------PRACTICAL 16----------

» Question 1 : Configure Samba server and define /samba directory as samba share:

a) Share should show up with name sambashare on client side.

b) Share should be browsable.

c) Share should be writable

d) Mount the share on directory /samba_mount with smb1 user.

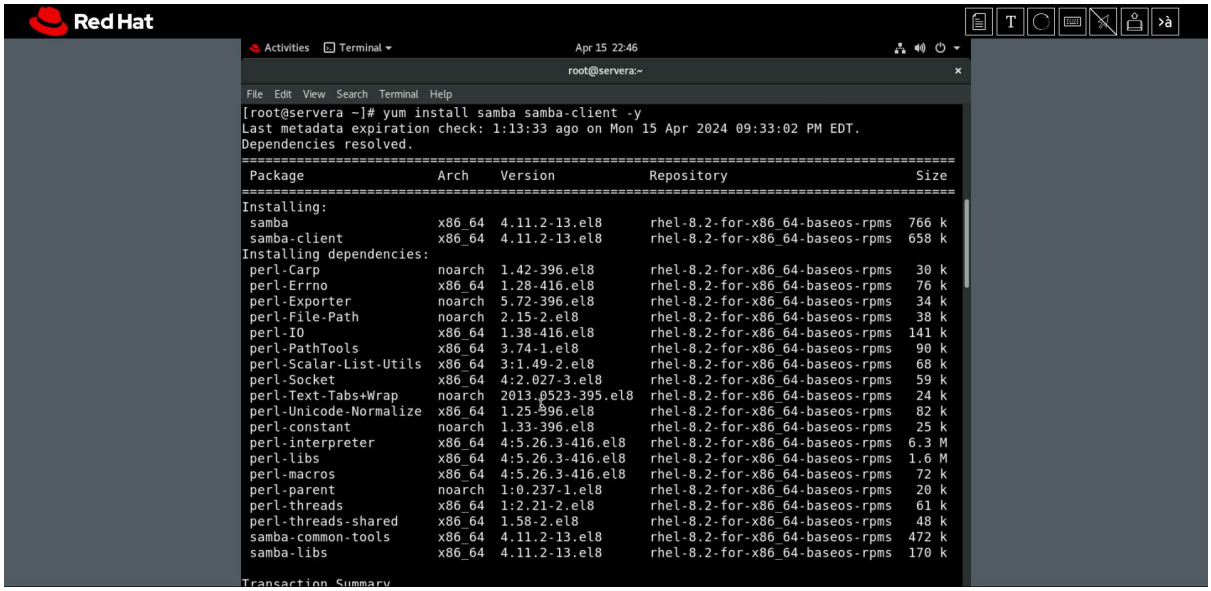
➡ From workstation, open an SSH session to servera as student & Switch to the root user:

```
[student@workstation ~]$ ssh student@servera
Activate the web console with: systemctl enable --now cockpit.socket

This system is not registered to Red Hat Insights. See https://cloud.redhat.com/
To register this system, run: insights-client --register

Last login: Mon Apr 15 21:43:55 2024 from 172.25.250.9
[student@servera ~]$ sudo -i
[sudo] password for student:
[root@servera ~]#
```

Commands :

```
ssh student@servera
sudo -i
```

➡️ Install Samba server & samba client packages and start it:




```
[root@servera ~]# systemctl start smb.service
[root@servera ~]# systemctl status smb.service
● smb.service - Samba SMB Daemon
   Loaded: loaded (/usr/lib/systemd/system/smb.service; disabled; vendor preset: disabled)
   Active: active (running) since Mon 2024-04-15 22:47:03 EDT; 17s ago
     Docs: man:smbd(8)
           man:samba(7)
           man:smb.conf(5)
 Main PID: 26847 (smbd)
   Status: "smbd: ready to serve connections..."
    Tasks: 4 (limit: 11345)
   Memory: 30.6M
   CGroup: /system.slice/smb.service
           ├─26847 /usr/sbin/smbd --foreground --no-process-group
           ├─26849 /usr/sbin/smbd --foreground --no-process-group
           ├─26850 /usr/sbin/smbd --foreground --no-process-group
           └─26851 /usr/sbin/smbd --foreground --no-process-group

Apr 15 22:47:03 servera.lab.example.com systemd[1]: Starting Samba SMB Daemon...
Apr 15 22:47:03 servera.lab.example.com smbd[26847]: [2024/04/15 22:47:03.448895,  0] ../.>
Apr 15 22:47:03 servera.lab.example.com systemd[1]: Started Samba SMB Daemon.
Apr 15 22:47:03 servera.lab.example.com smbd[26847]:   daemon_ready: daemon 'smbd' finishe>
lines 1-20/20 (END)
```

Commands :

```
yum install samba samba-client -y
systemctl start smb.service
systemctl status smb.service
```

➡ **Now make directory named /samba_mount and go into it:**

```
[root@servera ~]# mkdir samba_mount
[root@servera ~]# cd samba_mount/
[root@servera samba_mount]#
```

Commands :

```
mkdir samba_mount
cd samba_mount
```

➡ **In that folder make some files so client can see that files:**

```
[root@servera samba_mount]# touch file{1..5}.txt
[root@servera samba_mount]# ls
file1.txt  file2.txt  file3.txt  file4.txt  file5.txt
[root@servera samba_mount]#
```

Commands :

```
touch file{1..5}.txt
ls
```

➡ **Now for client access let's configure samba file:**

```
[root@servera samba_mount]#  vim /etc/samba/smb.conf
[root@servera samba_mount]#
```

Commands :

```
vim /etc/samba/smb.conf
```

Add this configuration in smb.conf file:

```
[sambashare]
        path = /samba_mount
        browseable = Yes
        writable = Yes
        valid users = smb14
        write list = smb14
:wq
```

➡️ **Now we make user named smb14 set password for it:**

```
[root@servera samba_mount]# useradd smb14
[root@servera samba_mount]#
[root@servera samba_mount]# smbpasswd -a smb14
New SMB password:
Retype new SMB password:
Added user smb14.
[root@servera samba_mount]#
```

Commands :

`useradd smb14`

`smbpasswd -a smb14`

➡️ **After that we configure firewall to allow samba service into firewall first check firewall configuration of firewall:**

```
[root@servera samba_mount]# firewall-cmd --list-all
public (active)
  target: default
  icmp-block-inversion: no
  interfaces: eth0
  sources:
  services: cockpit dhcpv6-client ssh
  ports:
  protocols:
  masquerade: no
  forward-ports:
  source-ports:
  icmp-blocks:
  rich rules:
```

Commands :

`firewall-cmd --list-all`

➡️ **configure the firewall settings to allow Samba services through the firewall:**

```
[root@servera samba_mount]# firewall-cmd --permanent --add-service=samba
success
[root@servera samba_mount]# firewall-cmd --reload
success
[root@servera samba_mount]#
```

Commands :

`firewall-cmd --permanent --add-service=samba`

`firewall-cmd --reload`

these commands ensure that the firewall allows Samba-related network traffic, allowing Samba to function properly without being blocked by the firewall.

➡️ **Check permission of that directory that we created before:**

```
[root@servera samba_mount]# cd
[root@servera ~]#
[root@servera ~]# ll samba_mount/
total 0
-rw-r--r--. 1 root root 0 Apr 15 22:51 file1.txt
-rw-r--r--. 1 root root 0 Apr 15 22:51 file2.txt
-rw-r--r--. 1 root root 0 Apr 15 22:51 file3.txt
-rw-r--r--. 1 root root 0 Apr 15 22:51 file4.txt
-rw-r--r--. 1 root root 0 Apr 15 22:51°file5.txt
[root@servera ~]#
```

Commands :

`ll samba_mount`

these commands will display the detailed listing of files and directories within the samba_mount directory, showing permissions, ownership, size, and other information about each entry.

➡️ Now we have to give read write and execute permissions to that samba directory :

```
[root@servera ~]# chmod -R 777 /root/samba_mount
[root@servera ~]# ll samba_mount/
total 0
-rwxrwxrwx. 1 root root 0 Apr 15 22:51 file1.txt
-rwxrwxrwx. 1 root root 0 Apr 15 22:51 file2.txt
-rwxrwxrwx. 1 root root 0 Apr 15 22:51 file3.txt
-rwxrwxrwx. 1 root root 0 Apr 15 22:51 file4.txt
-rwxrwxrwx. 1 root root 0 Apr 15 22:51 file5.txt
[root@servera ~]#
```

Commands :

```
chmod -R 777 /root/samba_mount
ll samba_mount
```

Here's what each part of the command does:

- **chmod**: This command is used to change the permissions of files or directories.
- **-R**: This option stands for "recursive", meaning that the command will be applied to the specified directory and all of its contents, including subdirectories and files.
- **777**: This is the permission mode being set. In octal notation, each digit represents the permissions for different categories of users: owner, group, and others. In this case, **777** means:
    - The owner (user) has read, write, and execute permissions.
    - Members of the group associated with the file (if any) also have read, write, and execute permissions.
    - All other users on the system have read, write, and execute permissions.
- **/root/samba_mount**: This is the path to the directory whose permissions are being modified. In this case, it's the directory **samba_mount** located within the **/root** directory.

➡️ Now we have to set SElinux security context:

```
[root@servera ~]# chcon -Rt samba_share_t /root/samba_mount
[root@servera ~]#
```

Commands :

```
chcon -Rt samba_share_t /root/samba_mount
```

Here's what each part of the command does:

- **chcon**: This command is used to change the SELinux security context of files and directories.
- **-R**: This option stands for "recursive", meaning that the command will be applied to the specified directory and all of its contents, including subdirectories and files.
- **-t**: This option specifies the type of the new SELinux context to be assigned.
- **samba_share_t**: This is the target security context being set. It indicates that the directory and its contents should have the SELinux type **samba_share_t**, which is typically used for files and directories shared via Samba.
- **/root/samba_mount**: This is the path to the directory whose SELinux context is being modified. In this case, it's the directory **samba_mount** located within the **/root** directory.

➡️ Then restart the samba service :

```
[root@servera ~]# systemctl restart smb.service
[root@servera ~]#
```

Commands :

```
systemctl restart smb.service
```

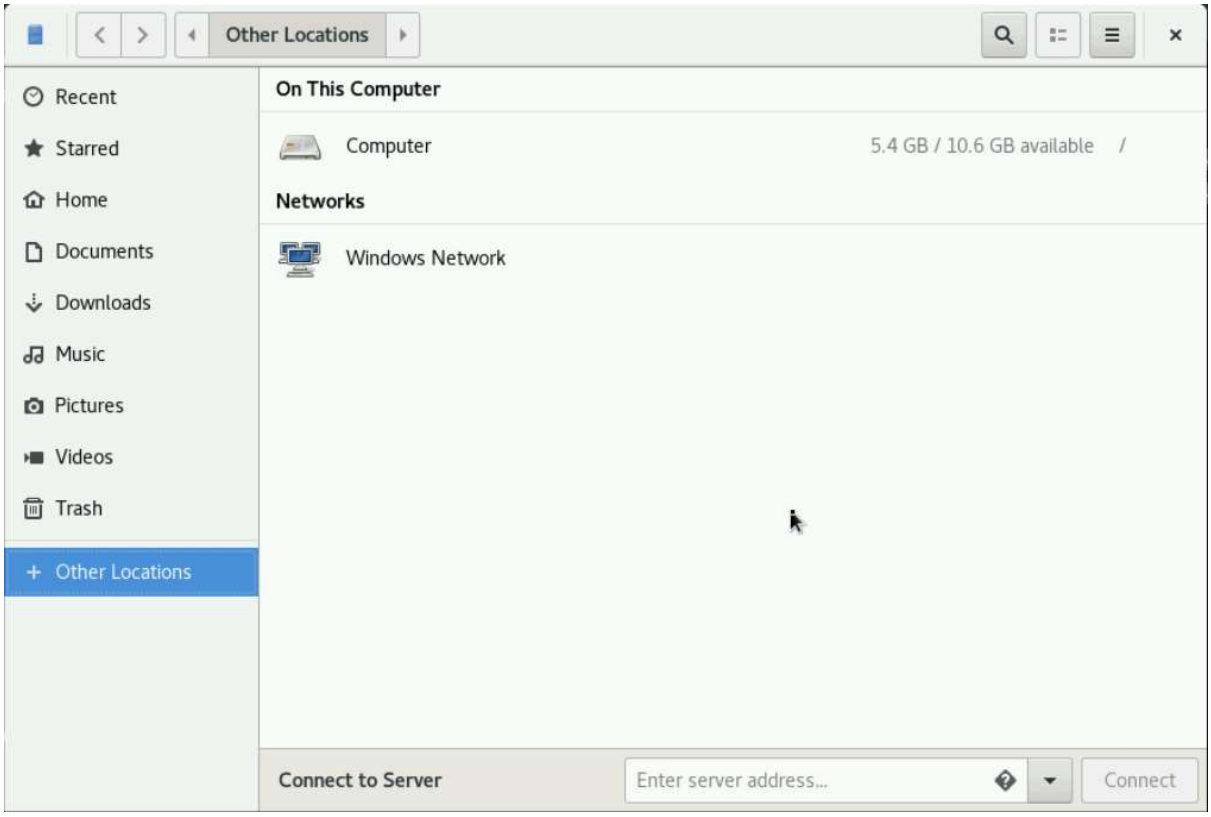
➡️ Now check ip address of system and use it to access :

```
[root@servera ~]# ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 8942
        inet 172.25.250.10  netmask 255.255.255.0  broadcast 172.25.250.255
        inet6 fe80::5b0b:316b:561e:86ab  prefixlen 64  scopeid 0x20<link>
        inet6 fe80::7664:264b:8b32:d700  prefixlen 64  scopeid 0x20<link>
        ether 52:54:00:00:fa:0a  txqueuelen 1000  (Ethernet)
        RX packets 6304  bytes 15146017 (14.4 MiB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 4279  bytes 588722 (574.9 KiB)
        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 26  bytes 1616 (1.5 KiB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 26  bytes 1616 (1.5 KiB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

[root@servera ~]#
```

Commands :

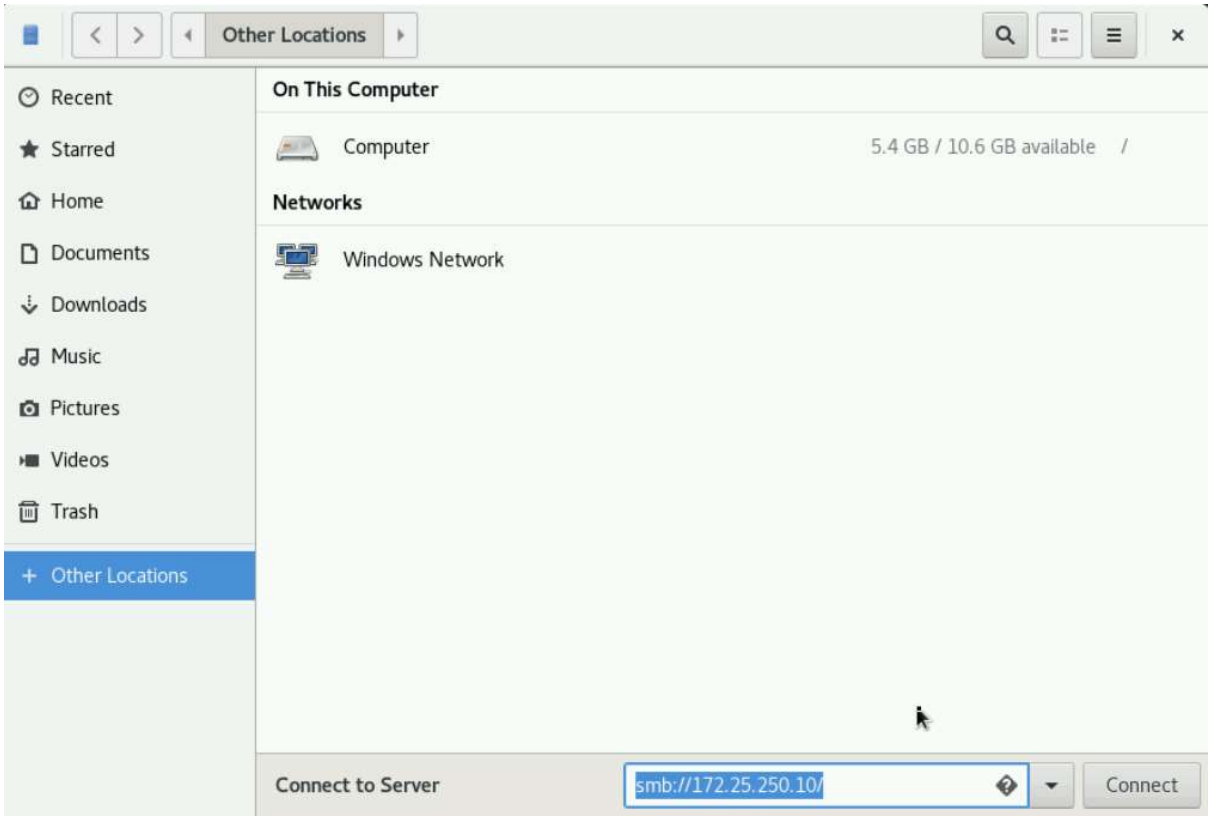
```
systemctl restart smb.service
```

➡️ Open files application in system and then go to other locations option :

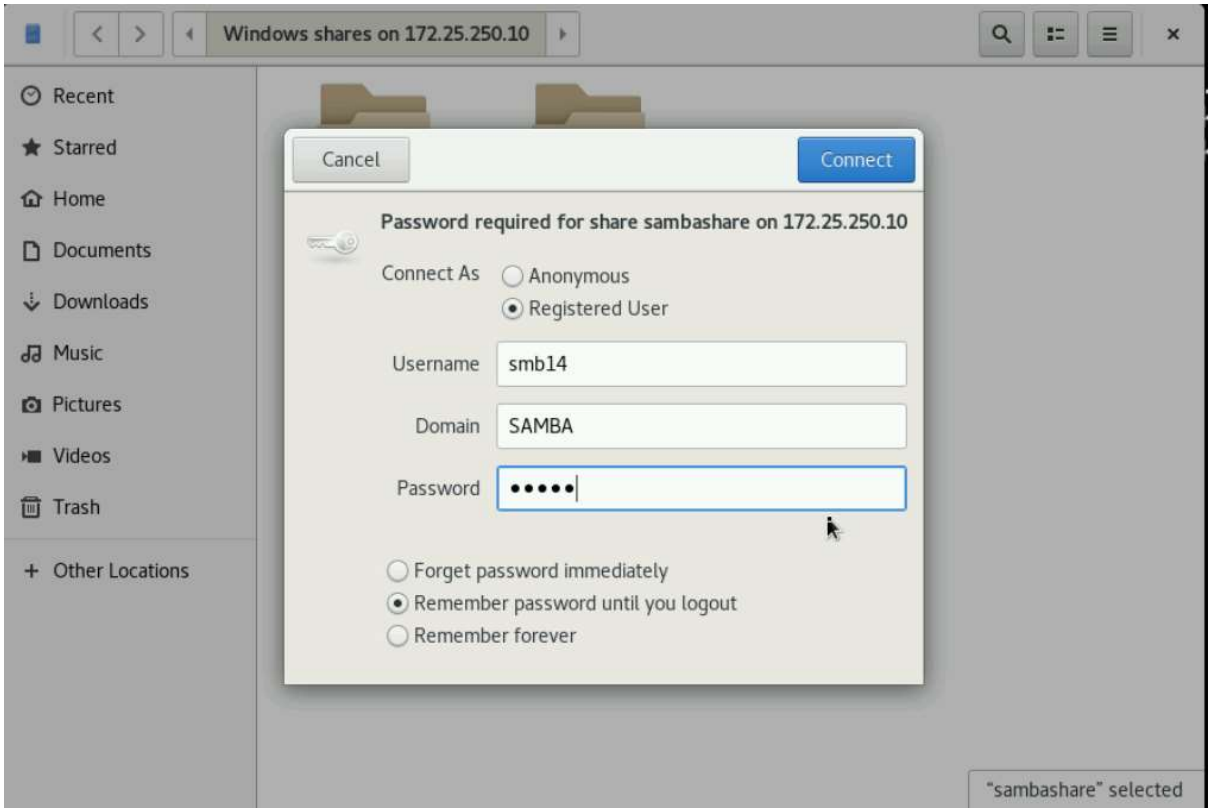


➡ **In bottom connect to server enter this endpoint with your system's ip address :**

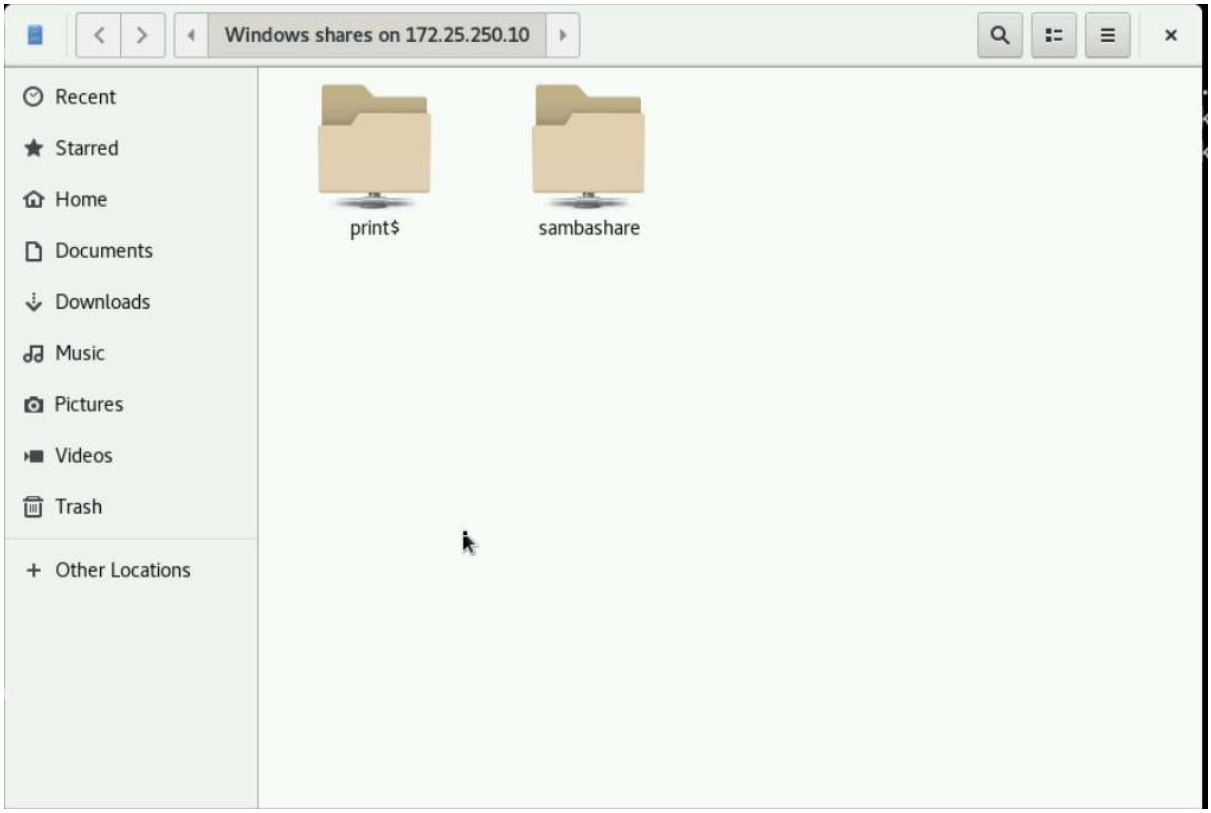
```
smb://172.25.250.10
```



➡ **Then try to access sambashare folder you will be prompt to add user and password so add that user we made before :**



After entering username and password you will be able to access folders:



» Question 2 : Configure samba share /sambaclient :

a) Share should be accessible only to host.
b) Share should be read only.
c) Set the WORKGROUP to mydomain.
d) Mount this persistently on /smbclient with smb2 user.

➡ **For workgroup simply add workgrouop = WORKGROUP And instead of writable use read list = smb2:**

➡ **let's configure samba file:**

```
[root@serverb ~]# vim /etc/samba/smb.conf
[root@serverb ~]#
```

Commands :

```
vim /etc/samba/smb.conf
```

Add this configuration in smb.conf file:

```
[sambashare]
        workgroup = "WORKGROUP"
        path = /samba_mount
        browseable = Yes
        valid users = smb2
        read list = smb2
~
:wq
```

➡ **Now we make user named smb2 set password for it:**

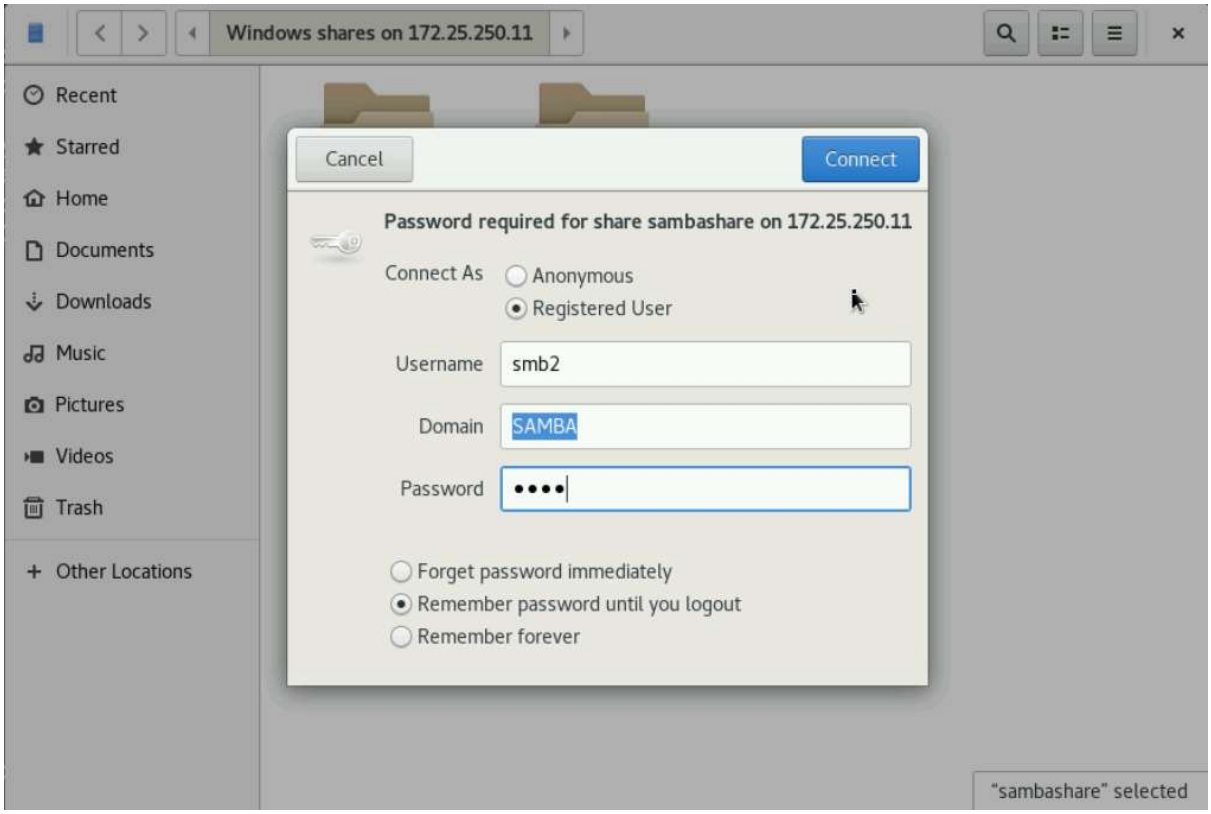
```
[root@serverb ~]# useradd smb2
[root@serverb ~]# smbpasswd -a smb2
New SMB password:
Retype new SMB password:
Added user smb2.
[root@serverb ~]#
```

Commands :

```
useradd smb2
```

```
smbpasswd -a smb2
```

➡️ **Now we can be able to access sambashare folder after configuration:**



» Question 3 : Share the folder to a group of users. To share folder to group of people add one line in samba configuration file.

➡ **let's configure samba file:**

```
[root@serverb ~]# vim /etc/samba/smb.conf
[root@serverb ~]#
```

Commands :

```
vim /etc/samba/smb.conf
```

➡ **Add this configuration in smb.conf file:**

```
[sambashare]
        workgroup = "WORKGROUP"
        path = /samba_mount
        browseable = Yes
        valid users = smb2
        writable = Yes
        read list = @smbgrp
:wq
```

➡ **let's Make a group and add group to new user:**

```
[root@serverb ~]# groupadd smbgrp
[root@serverb ~]#
[root@serverb ~]# usermod -aG smbgrp smb2
[root@serverb ~]#
```

Commands :

```
groupadd smbgrp
usermod -aG smbgrp smb2
```

Samba_mount folder is now only accessible to users who are part of the smbgrp group.