

Share Folders and Files Using Samba

This guide will explain how to setup Samba, an application for Linux platforms, that is used to share folders/files between users within a network. I couldn't find a single source online with all of the steps so I decided to create this documentation purposes.

First, confirm local packages are up to date, then install Samba on the server hosting the application. You can do this by running the "apt update" command. You'll need to run this as root or from a user with sufficient privileges. Going forward, it will be assumed that you are executing commands from root that require escalated privileges. My device has already been updated so my output may look different from yours.

```
root@DEBIAN-DT:/# apt update
Get:1 http://security.debian.org/debian-security bookworm-security InRelease [48.0 kB]
Hit:2 http://deb.debian.org/debian bookworm InRelease
Hit:3 http://deb.debian.org/debian bookworm-updates InRelease
Fetched 48.0 kB in 0s (164 kB/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
All packages are up to date.
root@DEBIAN-DT:/# apt update
Hit:1 http://security.debian.org/debian-security bookworm-security InRelease
Hit:2 http://deb.debian.org/debian bookworm InRelease
Hit:3 http://deb.debian.org/debian bookworm-updates InRelease
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
All packages are up to date.
```

Afterwards, install the Samba application. Again, I already have it installed so my output may look different.

```
root@DEBIAN-DT:/# apt install samba
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
samba is already the newest version (2:4.17.12+dfsg-0+deb12u1).
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
```

Next, navigate to where you would like the folder to be hosted. I'm choosing my home directory. The name of the folder will be "test". Run the `pwd` command to confirm the file path. We'll need that when we work on the Samba configuration file.

```
kadeem@DEBIAN-DT:/etc$ cd ~
kadeem@DEBIAN-DT:~$ mkdir test
kadeem@DEBIAN-DT:~$ cd test
kadeem@DEBIAN-DT:~/test$ pwd
/home/kadeem/test
```

Now that our folder is created, we need to make sure that it has the appropriate permissions so that we can access it once it's shared. To view the permissions, run "`ls -ld <folderName>`".

To explain the syntax:

- `ls` – Lists folders/files under the working directory
- `-l` – Long listing format. Basically shows extra information related to the folder/file
- `-d` – Specifies the file type as a directory.

We combined "`-l`" and "`-d`" into a single option to form "`-ld`". Your output should be similar to what is depicted below after running the command.

```
kadeem@DEBIAN-DT:~$ ls -ld test
drwxr-xr-x 2 kadeem kadeem 4096 May 25 22:38 test
```

To explain the above:

- `d` – Specifies that the data in question is a directory.
- `r` – Read permissions
- `w` – Write permissions
- `x` – Execute permissions
- Dash(-) – A (-) symbolizes the lack of some permission.
- (name) (name) – Symbolizes ownership of the file by some user, and group access

Make sure that at least the first "name" value is the profile you intend to use to access the folder. I won't go into group access since I didn't have a need for it. If you're lazy and want the file to be accessible to everyone, I don't blame you. The command for that is:

```
kadeem@DEBIAN-DT:~$ chmod 777 test
kadeem@DEBIAN-DT:~$ ls -ld test
drwxrwxrwx 2 kadeem kadeem 4096 May 25 22:38 test
```

Now, we move on to the Samba configuration. By default, the Samba config file is located at `/etc/samba/smb.conf`. If you can't find it there, execute a search to ascertain the file path.

```
find / -type f -name smb.conf
```

When you open the `smb.conf` file in your text editor, you're going to see a wall of text that you can pretty much ignore for this small project. Scroll all the way down and type in these variables to make your folder shareable. Adjust based on your folder's location.

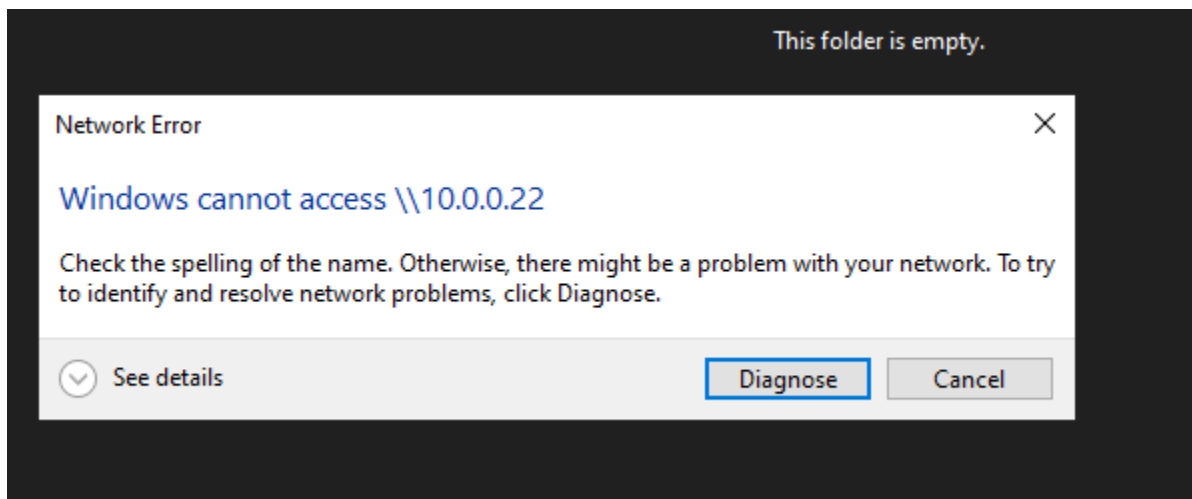
```
[nameOfFolder]
comment = Describe use of folder
path = <filePath found from pwd>
browseable = yes
read only = no
```

Mine looks like this:

```
[test]
comment = Used for demonstration
path = /home/kadeem/test
browseable = yes
read only = no
```

Now, in the device used to access the share, attempt to connect to the Samba server and see if the folders are visible. I'll be using Windows OS.

When I attempt to access the Linux device, I'm presented with this error.



The reason for this is because the Samba daemon is not active. We can confirm and activate it using the following commands:

service smbd status – Confirms the state of the Samba daemon. I've highlighted in red, the line that shows the Samba service is inactive.

```
root@DEBIAN-DT:~# service smbd status
o smbd.service - Samba SMB Daemon
   Loaded: loaded (/lib/systemd/system/smbd.service; enabled; preset: enabled)
   Active: inactive (dead) since Sun 2024-05-26 08:23:18 EDT; 5min ago
     Duration: 8h 43min 40.613s
       Docs: man:smbd(8)
             man:samba(7)
             man:smb.conf(5)
    Process: 613 ExecCondition=/usr/share/samba/is-configured smb (code=exited,
status=0/SUCCESS)
    Process: 618 ExecStartPre=/usr/share/samba/update-apparmor-samba-profile
(code=exited, status=0/SUCCESS)
    Process: 627 ExecStart=/usr/sbin/smbd --foreground --no-process-group
$SMBDOPTIONS (code=killed, signal=TERM)
   Main PID: 627 (code=killed, signal=TERM)
      Status: "smbd: ready to serve connections..."
         CPU: 1.561s

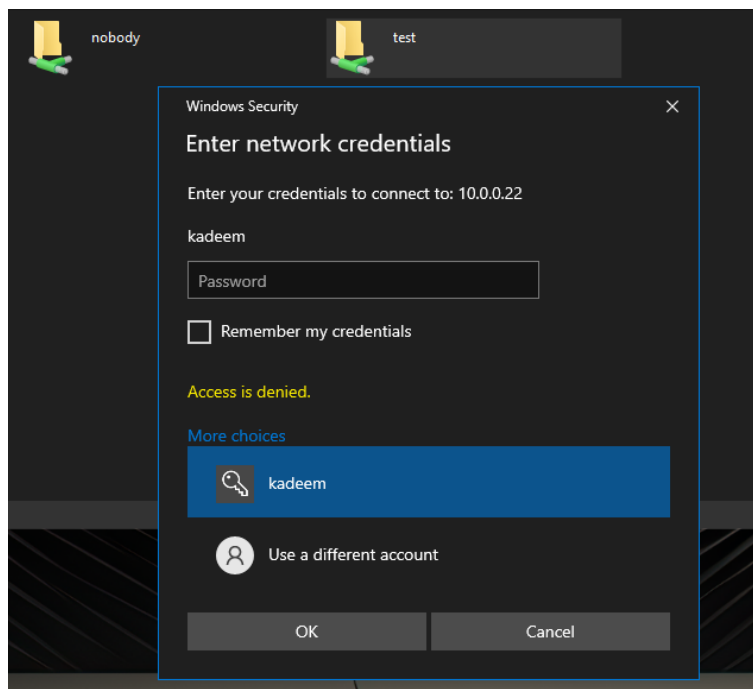
May 25 23:39:38 DEBIAN-DT systemd[1]: smbd.service: Deactivated successfully.
May 25 23:39:38 DEBIAN-DT systemd[1]: Stopped smbd.service - Samba SMB Daemon.
May 25 23:39:38 DEBIAN-DT systemd[1]: Starting smbd.service - Samba SMB Daemon...
May 25 23:39:38 DEBIAN-DT systemd[1]: Started smbd.service - Samba SMB Daemon.
May 25 23:39:47 DEBIAN-DT smbd[631]: pam_unix(samba:session): session opened for
user kadeem(uid=1000) by (uid=0)
May 26 08:23:18 DEBIAN-DT systemd[1]: Stopping smbd.service - Samba SMB Daemon...
May 26 08:23:18 DEBIAN-DT smbd[631]: pam_unix(samba:session): session closed for
user kadeem
May 26 08:23:18 DEBIAN-DT systemd[1]: smbd.service: Deactivated successfully.
May 26 08:23:18 DEBIAN-DT systemd[1]: Stopped smbd.service - Samba SMB Daemon.
May 26 08:23:18 DEBIAN-DT systemd[1]: smbd.service: Consumed 1.561s CPU time.
```

`service smb start` – Starts the Samba. Below is the result.

```
root@DEBIAN-DT:~# service smb start
root@DEBIAN-DT:~# service smb status
● smbd.service - Samba SMB Daemon
   Loaded: loaded (/lib/systemd/system/smbd.service; enabled; preset: enabled)
   Active: active (running) since Sun 2024-05-26 08:31:22 EDT; 12s ago
     Docs: man:smbd(8)
           man:samba(7)
           man:smb.conf(5)
  Process: 1346 ExecCondition=/usr/share/samba/is-configured smb (code=exited,
status=0/SUCCESS)
  Process: 1348 ExecStartPre=/usr/share/samba/update-apparmor-samba-profile
(code=exited, status=0/SUCCESS)
 Main PID: 1357 (smbd)
   Status: "smbd: ready to serve connections..."
    Tasks: 3 (limit: 2274)
  Memory: 5.3M
    CPU: 89ms
   CGroup: /system.slice/smbd.service
           └─1357 /usr/sbin/smbd --foreground --no-process-group
             └─1359 /usr/sbin/smbd --foreground --no-process-group
               └─1360 /usr/sbin/smbd --foreground --no-process-group

May 26 08:31:22 DEBIAN-DT systemd[1]: Starting smbd.service - Samba SMB Daemon...
May 26 08:31:22 DEBIAN-DT systemd[1]: Started smbd.service - Samba SMB Daemon.
```

When I try and access the Linux server now, I'm prompted for the credentials of the user that is the file owner. If that's not the case for you, manually specify the account and enter it's credentials.



Surprise! You still won't be able to access it. You'll have to create a user account within the Samba service. Commands for that are as follows:

- `smbpasswd -L -a <username>` -- Creates a local user and adds it to the Samba database
- `smbpasswd -L -e <username>` -- Enables the user account
- `pdbedit -L -v` -- Lists the user accounts stored in the Samba database in verbose format

Created user:

```
root@DEBIAN-DT:~# smbpasswd -L -a kadeem
New SMB password:
Retype new SMB password:
Added user kadeem.
```

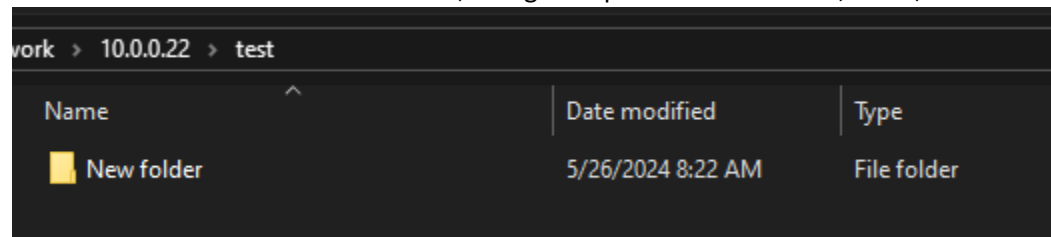
Enabled user:

```
root@DEBIAN-DT:~# smbpasswd -L -e kadeem
Enabled user kadeem.
```


Confirm user creation:

```
root@DEBIAN-DT:~# pdbedit -L -v
-----
Unix username:      kadeem
NT username:
Account Flags:      [U          ]
User SID:           S-1-5-21-2410967619-4221523125-2823517161-1004
Primary Group SID:  S-1-5-21-2410967619-4221523125-2823517161-513
Full Name:          KADEEM
Home Directory:     \\DEBIAN-DT\kadeem
HomeDir Drive:
Logon Script:
Profile Path:        \\DEBIAN-DT\kadeem\profile
Domain:             DEBIAN-DT
Account desc:
Workstations:
Munged dial:
Logon time:          0
Logoff time:         Wed, 06 Feb 2036 10:06:39 EST
Kickoff time:        Wed, 06 Feb 2036 10:06:39 EST
Password last set:   Sun, 26 May 2024 08:38:45 EDT
Password can change: Sun, 26 May 2024 08:38:45 EDT
Password must change: never
Last bad password    : 0
Bad password count   : 0
Logon hours          : FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF
```

I now have access to the “test” folder, along with permissions to read, write, and execute.



The screenshot shows a file explorer window with a dark theme. The breadcrumb path at the top is 'work > 10.0.0.22 > test'. Below the path is a table with three columns: 'Name', 'Date modified', and 'Type'. There is an upward arrow icon between the 'Name' and 'Date modified' columns. The table contains one entry: a yellow folder icon followed by the text 'New folder', the date '5/26/2024 8:22 AM', and the text 'File folder'.

Name	Date modified	Type
 New folder	5/26/2024 8:22 AM	File folder

Thanks for reading, hope this helped!