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# SAMBA: SET UP A RASPBERRY PI AS A FILE SERVER FOR YOUR LOCAL NETWORK

Turn your Raspberry Pi into a Samba file server to back up and share content from anywhere on your local network



(<https://www.raspberrypi.org/magpi/wp-content/uploads/2017/03/Pi-Zero-W-official-case-secure-lid.jpg>)

It's easy to use a Raspberry Pi (<https://www.raspberrypi.org/magpi/raspberry-pi-3bplus-specs-benchmarks/>) as a Samba file server where you can store backups and share files from all the other computers on your network.

Samba is the Linux implementation of the SMB/CIFS file sharing standard used by Windows PCs and Apple computers, and widely supported by media streamers, games consoles and mobile apps. With Samba activated you can quickly copy files from a computer on your network to a Raspberry using wireless LAN (or a direct Ethernet connection).

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## Set up Samba on a Raspberry Pi

This tutorial assumes that you'll use a keyboard, mouse, and monitor to set up your file server, but you can alternatively **enable SSH** (<http://magpi.cc/1GULmTr>) and connect to it remotely from another computer on your local network.

We also assume you're using a 32GB (or smaller) micro SD card, which provides a reasonable amount of storage space without requiring any extra steps to make it accessible. However, if you need extra storage, it's easy to mount a large external USB drive and create a Samba entry for it.

Alternatively, if you want to keep things compact, you can install Raspbian on micro SD cards of up to 256GB, although we suggest checking online (**non-working SD cards** (<http://magpi.cc/2q97aGO>)) before you buy to make sure you get one that's fully compatible with the Raspberry Pi.

Once set up, you can mount your home file server on all the other computers on your network, and use it as a convenient place to store everything from music files you want to share with your housemates, to backups of important documents and save-game files you'd like to share between computers.

We recommend using a wired Ethernet connection for stability and fast transfer speeds. The project will still work if you connect your Pi via WiFi, although performance will be affected, particularly when it comes to copying over large files.

## File Server: Set up Samba

Download the latest version of NOOBS (<http://magpi.cc/2bnf5XF>) and copy it to a blank micro SD card that's been formatted as fat32. Plug the micro SD card into your Pi, boot it up and opt to install Raspbian with a PIXEL desktop.

[Install Samba](#)

Samba is available in Raspbian's standard software repositories. We're going to update our repository index, make sure our operating system is fully updated, and install Samba using apt-get. Open a Terminal and type:

```
sudo apt-get update

sudo apt-get upgrade

sudo apt-get install samba samba-common-bin
```

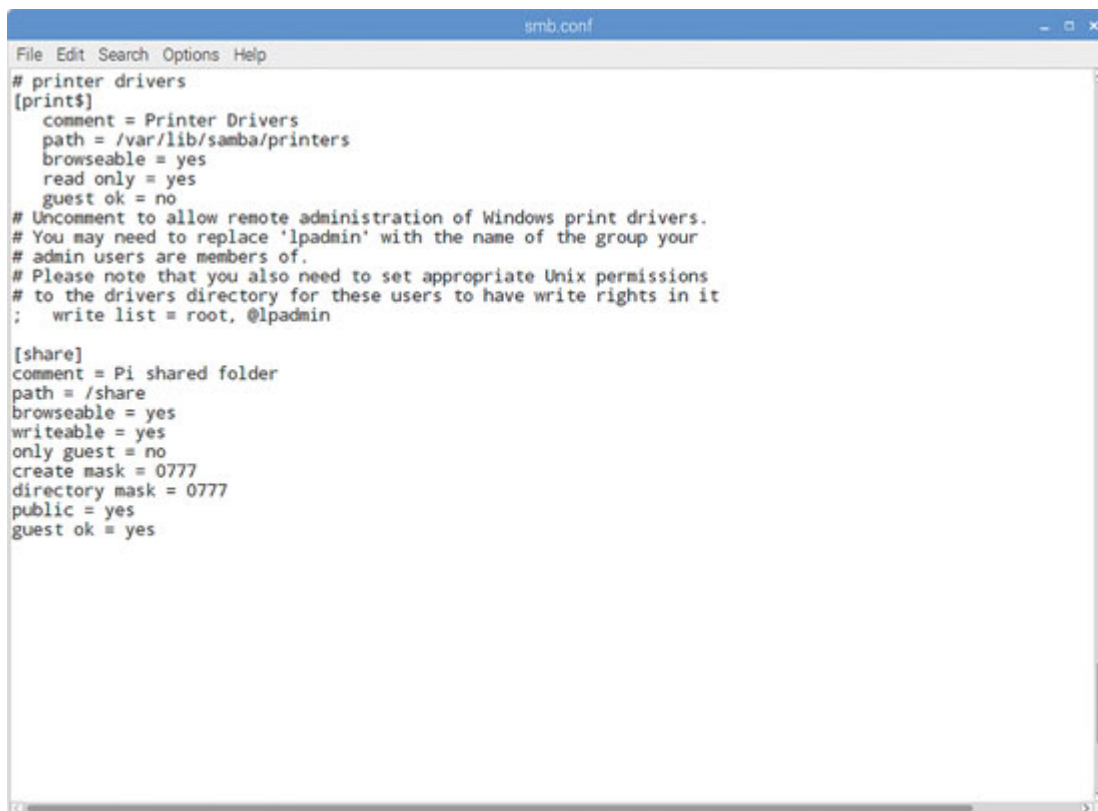
## Create your shared directory

We're going to create a dedicated shared directory on our Pi's micro SD hard disk. You can put it anywhere, but ours will be at the top level of the root file system.

```
sudo mkdir -m 1777 /share
```

This command sets the sticky bit (1) to help prevent the directory from being accidentally deleted and gives everyone read/write/execute (777) permissions on it.

## Configure Samba to share your new directory



```
smb.conf
File Edit Search Options Help
# printer drivers
[printers]
  comment = Printer Drivers
  path = /var/lib/samba/printers
  browseable = yes
  read only = yes
  guest ok = no
# Uncomment to allow remote administration of Windows print drivers.
# You may need to replace 'lpadmin' with the name of the group your
# admin users are members of.
# Please note that you also need to set appropriate Unix permissions
# to the drivers directory for these users to have write rights in it
; write list = root, @lpadmin

[share]
comment = Pi shared folder
path = /share
browseable = yes
writeable = yes
only guest = no
create mask = 0777
directory mask = 0777
public = yes
guest ok = yes
```

Edit Samba's config files to make the file share visible to the Windows PCs on the network.

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

In our example, you'll need to add the following entry:

---

```
[share]
Comment = Pi shared folder
Path = /share
Browseable = yes
Writeable = Yes
only guest = no
create mask = 0777
directory mask = 0777
Public = yes
Guest ok = yes
```

This means that anyone will be able to read, write, and execute files in the share, either by logging in as a Samba user (which we'll set up below) or as a guest. If you don't want to allow guest users, omit the `guest ok = yes` line.

You could also use Samba to share a user's home directory so they can access it from elsewhere on the network, or to share a larger external hard disk that lives at a fixed mount point. Just create a `smb.conf` entry for any path you want to share, and it'll be made available across your network when you restart Samba.

### Create a user and start Samba

Before we start the server, you'll want to set a Samba password – this is not the same as your standard default password (`raspberrypi`), but there's no harm in reusing this if you want to, as this is a low-security, local network project.

```
sudo smbpasswd -a pi
```

Then set a password as prompted. Finally, let's restart Samba:

```
sudo /etc/init.d/samba restart
```

From now on, Samba will start automatically whenever you power on your Pi. Once you've made sure that you can locate your shared folder on the network, you can safely disconnect the mouse, monitor, and keyboard from your Pi and just leave it running as a headless file server.

### Find your Pi on the network

You'll now be able to find your Raspberry Pi file server (named `RASPBERRYPI` by default) from any device on your local network. If you've left `smb.conf`'s default settings as they are, it will appear in a Windows network workgroup called `WORKGROUP`.



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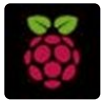
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**Moacir Silveira Junior** • 6 months ago

can i put more than 1 path shared ?

1 ^ | v • Reply • Share ›



**itzman** → Moacir Silveira Junior • a month ago

yes

^ | v • Reply • Share ›



**Ethan** • 6 months ago

Didn't work. Doesn't show up on my computer. Why would this happen?

1 ^ | v • Reply • Share ›



**Erik Thiant** → Ethan • 6 months ago

You need to enable samba on windows 10 through add a feature - windows disabled samba by default since the fall update.

3 ^ | v • Reply • Share ›



**nathan windmuller** → Ethan • 6 months ago

I have the same problem what you can do is go This PC then you can add a network location.

just type \\192.168.001.001(RPI ip address)\share(shared folder) and click add

1 ^ | v • Reply • Share ›



**Shadow Task** • 9 months ago

"public" and "guest ok" are synonyms - so you should only need to use one of them in smb.conf ?

1 ^ | v • Reply • Share ›



**dylan fournier** • a year ago

"sudo smbpasswd -a pi" doesn't work for me  
every thing else did

1 ^ | v • Reply • Share ›



**Arnold Villeneuve** → dylan fournier • a year ago

this worked on my machine

^ | v • Reply • Share ›



**Jonas Bergman** → dylan fournier • a year ago • edited

This will make it work just fine. I hope. ;)  
sudo apt-get -y install samba-common-bin  
then try to add password.

Edit:

Then I had to reinstall samba to get it runing as a service.

sudo apt-get -y install samba

^ | v • Reply • Share ›



**Josh Blagden** • 2 years ago

Why is it that when you plug an external drive into a computer running a desktop Linux distribution, mounting is done automatically, but when you plug an external drive into a computer running a server Linux distribution, mounting has to be done manually?

1 ^ | v • Reply • Share ›



**Anselm Stordeur** → Josh Blagden • a year ago

That is because you can configure auto-mounting and some desktop distributions do so. Basic Linux distribution don't auto-mount any device.

^ | v • Reply • Share ›



**Maddie** • 2 years ago

I did this (found the guide somewhere else) and plugged two external HDD drives into my Rpi 3 one, an old laptop external drive I've had for years, 500 GB, got it up and running, I thought well this is nice, but not awesome, not yet, what would make it awesome is upgrade it with an insane amount of storage so I went to an online retailer and found an 8 TB self powered external HDD and set that up (after imaging all my computers HDD) now I have all my movies, videos, and music on network drives ( I partitioned the drive into many logical drive)

1 ^ | v • Reply • Share ›



**Philippe Loctaux** → Maddie • 2 years ago

does the hard drive spin all the time though ?

^ | v • Reply • Share ›



**Paul** • 2 years ago

I built one of these using a USB drive enclosure containing a 2.5" drive. I noticed that the drive spins continuously. Is there a way to have the drive sit idle while not in use?

1 ^ | v • Reply • Share ›



**Miguel Rodriguez Lopez Sanchez** → Paul • a year ago

I take it back lol, its working, I missed something

^ | v • Reply • Share ›



**Killjoy Matic** → Paul • 2 years ago

That probably has to do with how you mounted the drive to your pi.

Not an expert on this subject but I think if you use the "sync" option the hard drive spins more often because it is making changes more often.

^ | v • Reply • Share ›



**jws\_** → Killjoy Matic • a year ago

I have an Odroid HC2 with a drive installed, and the default is spin down, so do it. It's a 10tb WD drive, FWIW. I didn't find the end of the discussion on e or disabling the feature.

Note that on the odroid, there is a USB to SATA bridge chip involved which may be different than the one in your device, and may contribute to whether the spin up and down feature can be controlled or done with your device.

^ | v · Reply · Share ›



**Rich C.** · 2 years ago

"PI AS A FILE SERVER" vs "PI AS A FILE SEVER"

1 ^ | v · Reply · Share ›



**John Lockard** → Rich C. · 2 years ago

Maybe it's wireless and they're using "sever" to emphasize the cutting of the cord...

2 ^ | v · Reply · Share ›



**Rich C.** → John Lockard · 2 years ago

Lol! Indeed! :-)

^ | v · Reply · Share ›



**Hans Smeets** · 2 months ago

command is actually "sudo apt-get install samba"

^ | v · Reply · Share ›



**disqus\_8QsaRM5yu1** · 4 months ago

Does anyone know why the 'mangled names = no' option in [global] allows you to see the original names of the files, but block the access / download of those files? Without the 'mangled names = no' option I can normally access the files, but with names in 8.3 format.

^ | v · Reply · Share ›



**Steven Johnson** · 10 months ago

anyone know why when i try to add to the share from a ubuntu system it gives me access denied?

it asks me to sign in on connection and it disallows access if it is wrong

dont understand why my system would disallow me read write. my work smb shares work fine

^ | v · Reply · Share ›



**PiGuy** · a year ago

I can't find it in the work group can you help??

^ | v · Reply · Share ›

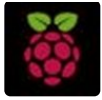


**Miguel Rodriguez Lopez Sanchez** · a year ago

Hello, I have followed the instructions, I can see the share, I can almost connect but get errors on Mac OS X 10.12.6 connecting. Ive had something similar to this with other Linux versions and it was the SMB version. Is there a way to upgrade to SMB2 or 3?

^ | v · Reply · Share ›





**nickfs000** • 2 years ago

Great article, was able to make this work with Stretch and connect 2 external 4tb drives and shared with a pair of Mac computers and a windows 10 tablet. Using Carbon Copy for my backup solution.

^ | v • Reply • Share ›



**Pieter Degrande** • 2 years ago • edited

edit : removed comment

^ | v • Reply • Share ›



**disqus\_yd8waYAXGs** • 2 years ago

So my Windows laptop can see the share, but tells me it can't access (network path was not found). My Linux Mint laptop cannot even see the share for no apparent reason. I've got a share folder and 2 external drives being shared, and the WIndows machine can see all three folders, but that's it. Can anyone help?

^ | v • Reply • Share ›



**knudmand** → disqus\_yd8waYAXGs • 2 years ago

Is your share on a NTFS disk? If so you need to install: `sudo apt-get install ntfs-3g`

^ | v • Reply • Share ›



**Lan Shenghai** → disqus\_yd8waYAXGs • 2 years ago

Excute "net use" in windows termial box  
It will display all the links.

And run following command to remove your PI's link:  
`net use /D \\192.168.0.165\share`

^ | v • Reply • Share ›



**Maxim Schaff** • 2 years ago

it says smaba: command not found

^ | v • Reply • Share ›



**hurpmcdurp** → Maxim Schaff • 2 years ago

"smaba"

5 ^ | v • Reply • Share ›



**Michael Bleck** → hurpmcdurp • 2 years ago

Samba Not Smaba

1 ^ | v • Reply • Share ›



**jason luong** • 2 years ago

Newbie question here.

I have been looking a solution where one RPi3 acts as both a NAS and a media player. Sc Privacy - Terms  
NAS part is handled by OMV and the media player part is OSMC which results in 2 Pi computers.

Based on what I have read in this article, can I install SAMBA inside OSMC? This way, I still have OSMC with the added ability to put in media files over the network without having to physically remove the external USB drive and put the media files in it and then reattach it back to the Pi?

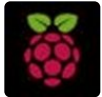
^ | v • Reply • Share ›



**knudmand** → jason luong • 2 years ago

Yes, right.

^ | v • Reply • Share ›



**umang malik** • 2 years ago

How do I add external storage drives?

^ | v • Reply • Share ›



**obieq** → umang malik • 2 years ago

you should check letter and mount then fdisk - l


```
mkdir \mnt\usb
sudo mount \dev\sda1 \mnt\usb
(nano \etc\fstab - for automount)
```

^ | v • Reply • Share ›

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 **Mike Dancy** — I have that exact same tape deck in my basement. The Sony TC-110b I think


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 **mrmichaelhallett** — Should be able to if the first HAT you attach has a pass thru gpio header (some do. See sense hat above for example) .

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 **Lucy Hattersley** — Drop your message on our Troubleshooting forum for help <https://www.raspberrypi.org...>

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