

How to Mount an External Hard Drive on the Raspberry Pi – Raspian

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This is a short guide on how to connect an External Hard Drive to the Raspberry Pi! Most external Hard Drives are quite juicy and will require a [USB Hub](#) to run in a stable manner, so please do check this before trying to install your drive!

First step is to plug it in, and then switch on your Pi! It should boot up as normal, so go ahead and log in to Raspian as usual.

Step 1. Is it there?!

If you want to check for the current storage devices attached to your Pi, simply run the command:

sudo blkid

```
pi@raspberrypi ~ $ sudo blkid
/dev/mmcblk0p1: LABEL="RECOVERY" UUID="4397-60E6" TYPE="vfat"
/dev/mmcblk0p3: LABEL="SETTINGS" UUID="06cc0f27-b00f-4e49-bdc4-b6c457185794" TYPE="ext4"
/dev/mmcblk0p5: LABEL="BOOT" UUID="034C-A470" TYPE="vfat"
/dev/mmcblk0p6: LABEL="root" UUID="1c035d38-8e33-46f4-b9aa-78994b96e3a3" TYPE="ext4"
/dev/sda1: LABEL="Seagate Expansion Drive" UUID="CAB8E8DCB8E8C851" TYPE="ntfs"
pi@raspberrypi ~ $
```

This reveals that we currently have our "Seagate Expansion Drive" attached.

Step 2. Check the Partitions

We now need to check the boot name of our Seagate's partition.

sudo fdisk -l

```
pi@raspberrypi ~ $ sudo fdisk -l

Disk /dev/mmcblk0: 15.7 GB, 15720251392 bytes
4 heads, 16 sectors/track, 479744 cylinders, total 30703616 sectors
Units = sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disk identifier: 0x000c3ed4

   Device Boot      Start         End      Blocks    Id  System
/dev/mmcblk0p1            8192      2511718       1251763+   e   W95 FAT16 (LBA)
/dev/mmcblk0p2       2514944      30638079       14061568   85   Linux extended
/dev/mmcblk0p3       30638080      30703615         32768   83    Linux
/dev/mmcblk0p5       2523136       2646015         61440    c   W95 FAT32 (LBA)
/dev/mmcblk0p6       2654208      30638079       13991936   83    Linux

Disk /dev/sda: 320.1 GB, 320072932864 bytes
255 heads, 63 sectors/track, 38913 cylinders, total 625142447 sectors
Units = sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disk identifier: 0x34284ac5

   Device Boot      Start         End      Blocks    Id  System
/dev/sda1           2048      625137663      312567808    7  HPFS/NTFS/exFAT
pi@raspberrypi ~ $
```

Reveals that our drive is located at /dev/sda1

Step 3. Mounting it.

Now we know where our drive is, we need to mount it:

```
sudo mount /dev/sda1 /mnt
```

The folder “/mnt” is the standard location for mounting permanent media, but you can always create your own folder if required using the “mkdir” command. That’s it! Our drive is mounted.

Step 4. Permissions.

As our drive is formatted in NTFS, we might need to change the /mnt drive permissions in order to enable proper access. Simply run the following command:

```
sudo chmod 775 /mnt
```

This will change your permissions and allow you to access the drive.

To test this, let’s try to create a folder:

```
cd /mnt
```

```
sudo mkdir /IMAFOLDER
```

```
cd /IMAFOLDER
```

```
pi@raspberrypi:~$ cd /mnt
pi@raspberrypi:~$ sudo mkdir /IMAFOLDER
pi@raspberrypi:~$ cd /IMAFOLDER
```

Great! So we can read and write to our harddrive!

Step 5. Automounting our drive.

If you want your Hard Drive to mount from boot, we need to set this up! First step is to edit our “fstab” file

```
sudo nano /etc/fstab
```

```
pi@raspberrypi:~$ sudo nano /etc/fstab
```

This will open up the file in nano text editor:

```
pi@raspberrypi: ~
GNU nano 2.2.6 File: /etc/fstab Modified
proc /proc proc defaults 0 0
/dev/mmcblk0p5 /boot vfat defaults 0 2
/dev/mmcblk0p6 / ext4 defaults,noatime 0 1
# a swapfile is not a swap partition, so no using swapon|off from here on, use dphys-swap$
```

We need to add the following line to have our hard drive mount at boot!

```
/dev/sda1 /mnt /ntfs defaults 0 0
```

```
pi@raspberrypi: ~
GNU nano 2.2.6 File: /etc/fstab Modified
proc /proc proc defaults 0 0
/dev/mmcblk0p5 /boot vfat defaults 0 2
/dev/mmcblk0p6 / ext4 defaults,noatime 0 1
/dev/sda1 /mnt ntfs defaults 0 0
# a swapfile is not a swap partition, so no using swapon|off from here on, use dphys-swap$
```

You can now reboot your Raspbery Pi, and your Hard Drive will automatically mount!

Step 5. How to unmount.

To unmount the drive, simply run the command:

```
sudo umount /mnt
```

As long as you’re not currently accessing the drive, it should unmount successfully.