

BACKUP YOUR RASPBERRY PI



Learn how to backup your Raspberry Pi SD card with optional compression plus splitting files to burn to DVD.

In this 2 part article I shall explain how you can easily backup your Raspberry Pi SD card to a different computer, to a USB device, to CDs or DVDs and also how to restore from these. All of this is simple on a Linux computer. Windows users requiring a backup to CDs or DVDs would be better off using a live Linux distribution such as the excellent Linux Mint.

Why Backup?

You should always have one or more backup copies of your SD card. Get into the habit of making a daily backup before it is too late... especially if you frequently edit files or add software.

SD cards are much more robust than hard drives, but they can still easily fail with total loss of data. I have had two SD cards become corrupted and completely lock up my Pi. The only recourse was to pull the power lead out and unfortunately in both cases I was left with an SD card where the "/" partition could not be read, so I had no operating system.

Luckily I had a backup. It was a backup of a 4Gb SD card but I had corrupted my new 8Gb one. Fortunately you can restore a 4Gb image to a bigger SD card and I will explain how to perform this task later in this article.

Windows Users

These instructions are intended for Linux only. For Windows users you can make a complete backup image of your SD card using the same Win32DiskImager program that you used to create your Raspbian SD card. Insert your SD card into an SD card reader in your Windows machine and start Win32DiskImager. Enter a name for your backup image and click on Read. When the

backup is complete, the file size of the backup image file should be very similar to the size of the SD card.

A Few Caveats

Because Windows is the most common operating system, many vendors supply USB thumb drives and USB hard drives formatted with the FAT32 file system. Note that FAT32 cannot cope with any files that are bigger than 4Gb. If your SD card image is larger than this, you will need to split the file into 4Gb chunks.

You could reformat the USB device with NTFS, but if you never intend to use the device with any Windows computers, then you can easily format it with a Linux file system such as EXT4.

Equally, whether on Linux or Windows, if you are using the 32-bit version then once again a file size limitation will be encountered. The maximum size for a single file on a 32-bit operating system is 4Gb. If your backup file is larger than this you will have to split it into 4Gb chunks. Compressing and splitting backups is covered in detail below.

Getting root Access

The remainder of this article assumes that you have root access to the computer where you will be saving the backup. To get root access you can either prefix every command with `sudo`, or you can run the following command to start a root shell:

```
$ sudo sh
```

Find Your SD Card

Plug your SD card into your Linux computer, not your Raspberry Pi. If your computer has a built-in card slot, you most likely have the card on `/dev/mmcblk0`. If you have it in a