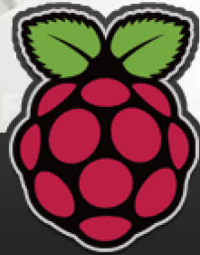


Raspberry Pi

An ARM GNU/Linux box for \$25. Take a byte!

The Raspberry Pi Foundation produces an ultra-low-cost credit-card sized GNU/Linux computer for teaching computer programming to children.



Datasheet 701 EN
Downloading OS Images

Raspberry Pi
Utilities and Code Examples

Operating Systems

In order to use your Raspberry Pi you will need to install an Operating System.

Most users will want to download an operating system from the main Raspberrypi.org website before extracting it or installing it on an SD memory card.

Downloads

There are two options available for downloading a Linux distribution for the Raspberry Pi. These are Bittorrent and Direct HTTP Downloads respectively.

SHA checksums

SHA Checksums are usually shown as a long series of numbers that represent the value that was calculated when a mathematical calculation was performed on the contents of a file that has been made available for download.

The checksum is used to verify that the content is authentic and has neither been altered by an unauthorized third party, nor been damaged during the transfer process across the Internet.

The checksums used on the Raspberry Pi download site use SHA-1.

The SHA-1 algorithm is a 160-bit hash function which resembles the earlier MD5 algorithm. This was designed by the National Security Agency (NSA) to be part of the Digital Signature Algorithm.

HTTP Downloads

A HTTP download is where you download via a web browser and would be exactly the same as you saving any other file from the website.

We have to deal with a large amount of traffic so anybody wanting to download via HTTP will be taken to a page that will automatically direct them to one of the many web servers generously provided by the Raspberry Pi community.

Bittorrent

Bittorrent is a peer to peer protocol file sharing protocol. This means that data is shared between users.

When downloading via bittorrent, you get parts of the file from many users all over the world who have already downloaded the file and want to share it with someone else.

A person who keeps sharing a file after they have finished downloading it is called a seeder, and someone downloading a file is called a leecher.

The Bittorrent protocol is sometimes throttled by Internet Service Providers so this could be a possible issue.

To use Bittorrent, you will need a Bittorrent client such as μ Torrent for Windows and Mac users, or Transmission for Linux users.

Linux Instructions:

1. Download the image file from the Raspberry Pi website
2. Go to a Linux terminal (Shell prompt)
3. Type the command 'sha1sum' followed by the path to the image file you just downloaded. Your command should look something like 'sha1sum /home/liam/downloads/image.zip' Note that the command can take a few minutes to complete.
4. If the command sha1sum is not found then install it using your distributions package manager and go back to step 3
5. Compare the hash you have with the one specified on the page where you downloaded the file from
6. If they are the same then the file has been downloaded successfully. If the hash does not match you will have to download the file again.

Windows Instructions:

1. Download the image file from the Raspberry Pi website
2. Download sha1sum.exe from <http://downloads.raspberrypi.org/tools/sha1sum.exe>
3. Open command prompt (DOS prompt) and drag and drop the sha1sum.exe in to the command prompt (and it will display the path to the file sha1sum.exe file), then you put a space, drag the image file into the command prompt and press enter. Note that the command can take a few minutes to complete
4. Compare the hash you have with the one specified on the page where you downloaded the file from
5. If they are the same then the file has been downloaded successfully. If the hash does not match you will have to download the file again.

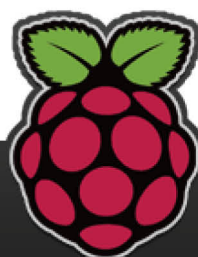
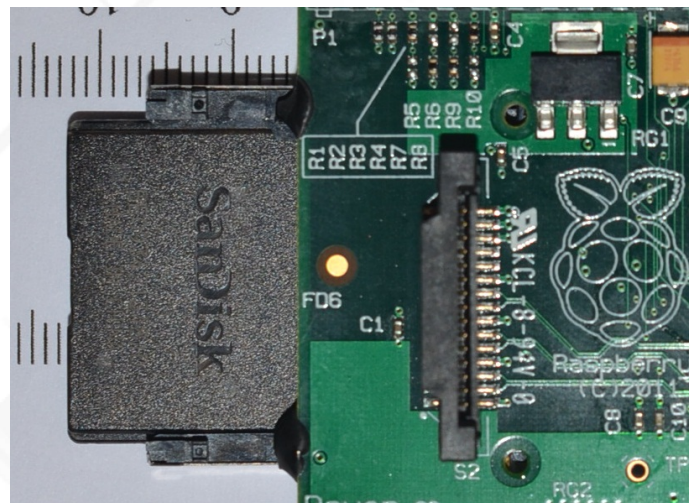
MAC Instructions:

1. Download the image file from the Raspberry Pi website and make sure you have the icon of the downloaded file displayed somewhere in the Finder.
2. Open the Terminal application.
3. Run "/usr/bin/openssl sha1" (without the quotes), then put a space, drag the image file into the command prompt and press enter. Note that the command can take a few minutes to complete.
4. Compare the hash you have with the one specified on the page where you downloaded the file from
5. If they are the same then the file has been downloaded successfully. If the hash does not match you will have to download the file again.

Extract OS to SD Card

Once you have an OS image it needs to be extracted or installed to an SD memory card.

The instructions differ for each Operating System so you need to see the README files or documentation supplied with each OS image, or follow the instructions in the FAQ or Raspberry Pi Datasheets.



Official Website: www.raspberrypi.org
Official Forums: www.raspberrypi.org/forum
Official Store: www.raspberrypi.com

Community Website: www.frambozenbier.org
Community Forums: www.edugeek.net/raspi
Community Wiki: www.elinux.org/R-Pi_Hub

Could you write an article, datasheet or mini-guide? Please send your ideas or content to [articles @ Frambozenbier.org](mailto:articles@Frambozenbier.org)

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