



# Upgrading Raspbian

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Description: Introduces the various updating and upgrading methods to keep your Raspbian computer up to date

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# Upgrading Raspbian

The operating system of the Raspberry Pi is Raspbian. This operating system is also available for PCs Macs and Laptops.

Unlike windows upgrading the Raspbian operating system is easy and does not cost dollars.

**Note:** You must be connected to the internet to do this stuff

Why Upgrade / Update? simple to get new features and to keep your system secure.

How to Update / Upgrade

apt and apt-get are the two usual commands used to do upgrades. For most users they provide the same functionality. That said more details can be found in Appendix 1

I usually use apt-get but for what we are doing here I could use apt instead.

**Note:** A good explanation of apt-get can be found at <https://itsfoss.com/apt-get-linux-guide/>

Because we are going to need special permissions to do updating and upgrading we must start the command with sudo (SuperUserDO)

```
sudo apt-get update
```

This updates the list of available packages and their versions, but it does not install or upgrade any packages.

```
sudo apt-get upgrade
```

actually installs newer versions of the packages you have. After updating the lists, the package manager knows about available updates for the software you have installed. This is why you first want to update.

I always update my computer before I install any new software using these two commands

```
sudo apt-get update  
sudo apt-get upgrade
```

Finally, if you no longer want a package it can be removed with

```
sudo apt-get remove <package_name>
```

Where <package\_name> is the name of the item you want to remove.

That's all there is for most users. If you are interested then please read on but it does get a bit technical from here.

There is also another upgrade option

```
sudo apt-get dist-upgrade
```

The command `apt-get upgrade` is very obedient. It never tries to remove any packages or tries to install a new package on its own.

The command `apt-get dist-upgrade`, on the other hand, is proactive. It looks for dependencies with the newer version of the package being installed and it tries to install a new package or remove an existing one on its own.

So `dist-upgrade` is more powerful and intelligent but it carries a risk with it.

It has a 'smart' conflict resolution system. With that in place, it will attempt to upgrade the most important packages on the expense of the less important ones. This could lead to the removal of some packages which you might not want. This is the main reason why `dist-upgrade` should be avoided unless you understand and can deal with the risks.

## Updating the kernel and firmware

The kernel and firmware are installed as a Debian package, and so will also get updates when using the procedure above. These packages are updated infrequently and after extensive testing.  
Running out of space

When running `sudo apt-get dist-upgrade`, it will show how much data will be downloaded and how much space it will take up on the SD card. It's worth checking with `df -h` that you have enough free disk space, as unfortunately `apt` will not do this for you. Also be aware that downloaded package files (.deb files) are kept in `/var/cache/apt/archives`. You can remove these in order to free up space with `sudo apt-get clean`.

Upgrading from Jessie to Stretch (The two latest versions of Debian Linux)

Upgrading an existing Jessie image is possible, but is not guaranteed to work in every circumstance. If you wish to try upgrading a Jessie image to Stretch, it is strongly recommend making a backup first.

To upgrade, first modify the files `/etc/apt/sources.list` and `/etc/apt/sources.list.d/raspi.list`. In both files, change every occurrence of the word `jessie` to `stretch`. (Both files will require `sudo` to edit.)

Then open a terminal window and execute:

```
sudo apt-get update  
sudo apt-get -y dist-upgrade
```

<p><b>Note:</b> An update must be performed first so that <code>apt-get</code> knows that new versions of packages are available.</p>
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Answer 'yes' to any prompts. There may also be a point at which the install pauses while a page of information is shown on the screen – hold the space key to scroll through all of this and then press q to continue.

# Appendix 1 apt and apt-get

<b>apt command</b>	<b>the command it replaces</b>	<b>function of the command</b>
apt install	apt-get install	Installs a package
apt remove	apt-get remove	Removes a package
apt purge	apt-get purge	Removes package with configuration
apt update	apt-get update	Refreshes repository index
apt upgrade	apt-get upgrade	Upgrades all upgradable packages
apt autoremove	apt-get autoremove	Removes unwanted packages
apt full-upgrade	apt-get dist-upgrade	Upgrades packages with auto-handling of dependencies
apt search	apt-cache search	Searches for the program
apt show	apt-cache show	Shows package details

apt is a subset of apt-get and apt-cache commands providing necessary commands for package management

while apt-get won't be deprecated, as a regular user, you should start using apt more often

## APT (Advanced Packaging Tool)

Advanced Package Tool, or APT, is a free software user interface that works with core libraries to handle the installation and removal of software on Debian, Ubuntu and other Linux distributions.

APT is not the same as APT!