

Quick start with Raspbian

Configuration & software overview



<http://www.fnc.co.uk>

Edinburgh Raspberry Pi Jam
CodeBase
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Outline

- Installation
- Configuration
- Basic Linux commands
- Package manager
- Command line documentation
- Conclusions

Talk assumes that Raspbian Linux has been installed.

Installation

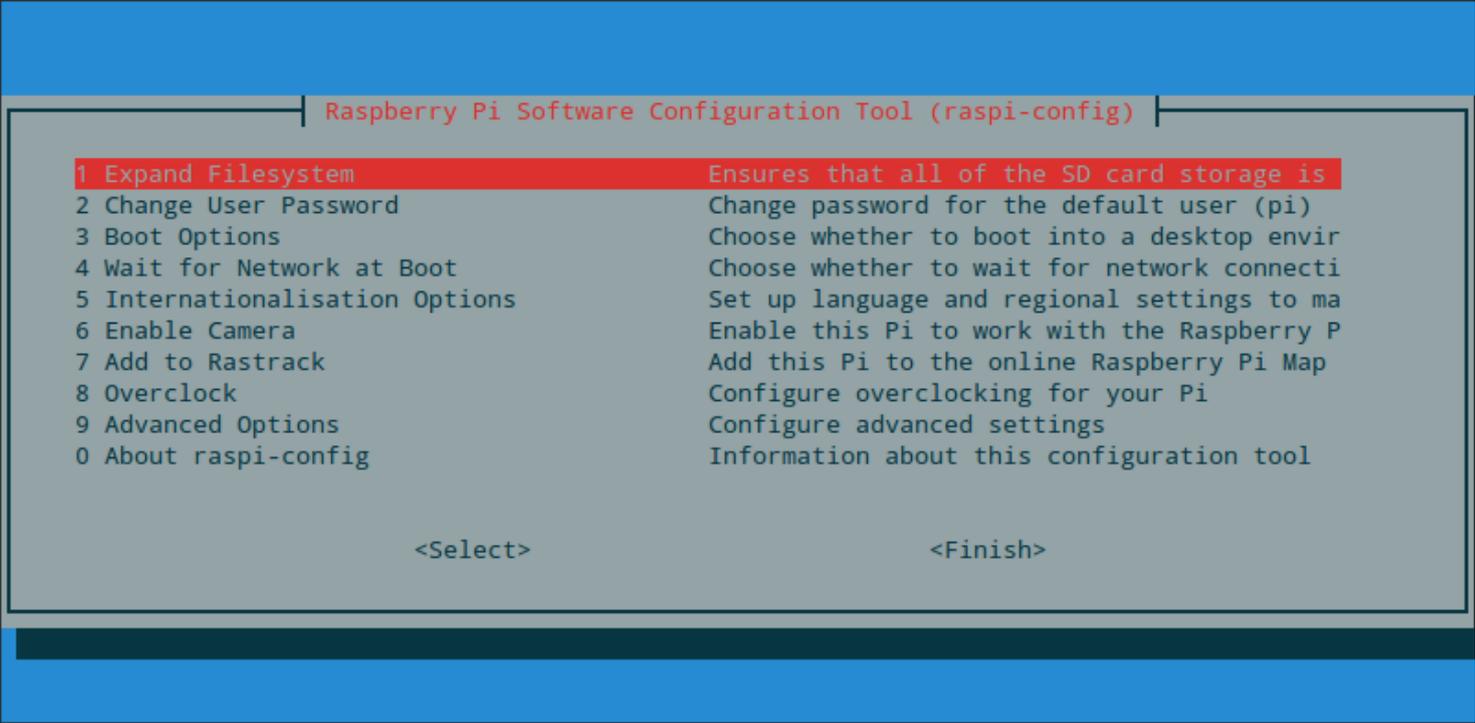
- Can purchase SD cards that are preloaded with Raspbian (NOOBS) image.
 - However, need to update this image from time to time.
- Basic image contains a list of Linux packages.
 - Can update the packages using apt-get.
 - Newer images may have additional packages.
- Downloaded images can be copied on to SD cards.
 - <https://www.raspberrypi.org/downloads/>

Configuration

- Can configure with command line (or GUI in latest Raspbian).

```
pi@raspberrypi ~ $ sudo raspi-config
```

then use cursors, tab and return.



```
Raspberry Pi Software Configuration Tool (raspi-config)
1 Expand Filesystem          Ensures that all of the SD card storage is
2 Change User Password       Change password for the default user (pi)
3 Boot Options               Choose whether to boot into a desktop envir
4 Wait for Network at Boot   Choose whether to wait for network connecti
5 Internationalisation Options Set up language and regional settings to ma
6 Enable Camera              Enable this Pi to work with the Raspberry P
7 Add to Rastrack            Add this Pi to the online Raspberry Pi Map
8 Overclock                  Configure overclocking for your Pi
9 Advanced Options           Configure advanced settings
0 About raspi-config         Information about this configuration tool

<Select>                    <Finish>
```

Basic commands

- `man` – manual pages
- `ls` – list files
- `cd` – change directory
- `mkdir` – make directory
- `cp` – copy files
- `rm` – remove files
- `dd` – image copy
- `find` – find files
- `grep` – search for text in files
- `df` – disc space usage
- `less` – view a file
- `nano` – basic editor
- `rsync` – synchronise files

There are many more basic Linux commands. These are just the beginning.

Advanced Package Tool (apt)

- Packages can be updated,

```
pi@raspberrypi ~ $ sudo -s  
root@raspberrypi:~/home/pi# apt-get update; apt-get upgrade -y
```

- installed

```
pi@raspberrypi ~ $ sudo apt-get install xfig
```

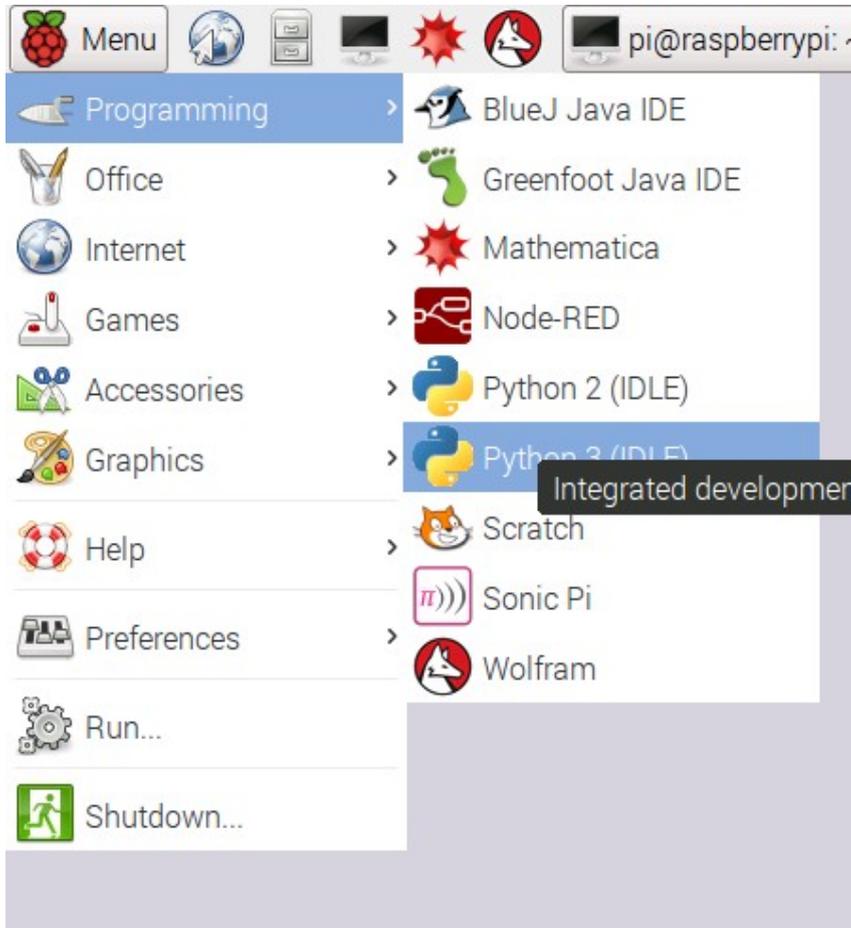
- and removed

```
pi@raspberrypi ~ $ sudo apt-get remove xfig  
pi@raspberrypi ~ $ sudo apt-get autoremove # remove dependencies
```

Command line documentation

- There are lots of useful Linux commands and features that improve productivity.
- Further examples and documentation can be found in The MagPi:
 - <http://www.raspberrypi.org/magpi>
 - where a longer introduction to Bash is given in Issues 10, 12 and 16.
 - There is also a short book:
<https://www.raspberrypi.org/magpi/issues/essentials-bash-vol1/>

Programming Languages



- Several programming tools available by default via the main menu.
 - Java IDEs
 - Mathematica
 - Node RED
 - IDLE for Python 2 & 3
 - Scratch
 - Sonic Pi
- Other standard Linux tools can be installed
 - Emacs
 - Vim
- Many other compilers and interpreters
 - Bash, C, C++, C#, FORTRAN, PHP, Perl, Ruby

Resources

- From the foundation & community
 - <https://www.raspberrypi.org/resources/>
 - <https://www.raspberrypi.org/picademy/>
 - <https://www.raspberrypi.org/magpi/>
 - <https://www.raspberrypi.org/forums/>
- Tutorials
 - <http://raspi.tv/>
 - <https://learn.adafruit.com/category/learn-raspberry-pi>
- Reference resources
 - http://elinux.org/RPi_Hub