

## Advice for Windows/Linux users who've migrated to Mac

From a recent migrant to OS X 10.9 *Mavericks*

I recently purchased a MacBook Air and am very happy with it. In the past, my laptops have dual-booted Windows and Linux. This article is an extension of a set of working notes made while I was getting used to my new system.

Comments, suggestions and corrections would be welcomed. My contact details can be found at [http://www.walkingrandomly.com/?page\\_id=2055](http://www.walkingrandomly.com/?page_id=2055)

Version 1.4 – WalkingRandomly version  
23rd April 2014

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## General Mac stuff

### Where's the # key?

On older Mac's, there is no # key. On my MacBook Air it's next to the £ sign on the 3 key. Either way, you get a # by pressing Alt and 3.

### Force quit an application

If an application stops responding and you need to force quit it, CMD+ALT+Escape simultaneously brings up the 'force quit' menu.

### Encrypt your Mac

Full disk encryption is not enabled by default but it is very easy to switch it on. The software is called File Vault 2 and is built in. It took about an hour to encrypt my 256Gb SSD drive. For full details see

[http://support.apple.com/kb/HT4790?viewlocale=en\\_US&locale=en\\_US](http://support.apple.com/kb/HT4790?viewlocale=en_US&locale=en_US)

### System Preferences

Various articles (including this one) refer to *System Preferences* and, as a Mac newbie, I had no idea where this was. You can find it in the menu produced by clicking on the apple icon in the top left hand corner of the screen. This Apple support doc helped me find it: <http://support.apple.com/kb/ht2490>.

### Copy and paste keyboard shortcuts

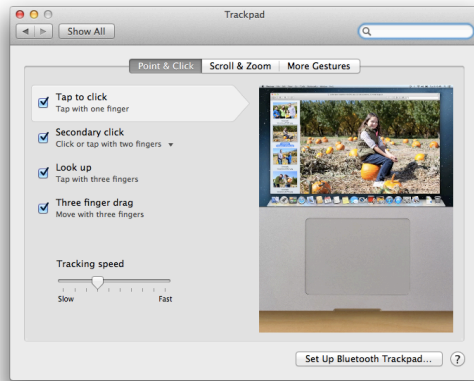
Don't use CTRL-C to copy and CTRL-V to paste. In the Mac world you use CMD-C and CMD-V instead. On my MacBook Air, the CMD key is to the left and right of the spacebar.

As a rule of thumb, you'll find that switching CTRL to CMD will work for a lot of other common keyboard shortcuts you're used to from Windows.

### Right clicking

There is only one mouse button on a Mac. However, the concept of right clicking (or, more accurately, getting a context menu) does exist. There are two ways to 'right click'

- Hold down CTRL and click
- Set up secondary click behaviour. Go to **System Preferences->Trackpad**. Choose the **Point & Click** tab and tick '**Secondary Click**'. By default this allows you to click with two fingers to get a secondary click but you can change this to 'click in bottom right/left hand corners'



## The Dock

The bar of icons at the bottom is called the dock and you can use it to launch applications.

- Remove an application from the dock: Right click on the icon. Choose **options ->Remove from Dock**. This only removes from the dock, it does not uninstall it.
- Add an application to the dock: Just drag it to where you want it

## Taking screenshots

- Command-Shift-3: Take a screenshot of the screen, and save it as a file on the desktop
- Command-Shift-4, then select an area: Take a screenshot of an area and save it as a file on the desktop
- Command-Shift-4, then space, then click a window: Take a screenshot of a window and save it as a file on the desktop
- Command-Control-Shift-3: Take a screenshot of the screen, and save it to the clipboard
- Command-Control-Shift-4, then select an area: Take a screenshot of an area and save it to the clipboard
- Command-Control-Shift-4, then space, then click a window: Take a screenshot of a window and save it to the clipboard

The above is a subset of the information at

[http://guides.macrumors.com/Taking\\_Screenshots\\_in\\_Mac\\_OS\\_X](http://guides.macrumors.com/Taking_Screenshots_in_Mac_OS_X).

## Connecting a MacBook Air to a projector

You need this for commonplace VGA projectors:

<http://store.apple.com/uk/product/MB572Z/B/mini-displayport-to-vga-adapter?fnode=51>

This is correct for a late 2013 MacBook Air—might be different for other models.

It can be important to connect the VGA end of the adaptor to the LCD projector before connecting the other end to the computer.

## Linux-centric tips

Things I am used to on Linux, and how to do them on OS X.

### Virtual Desktops

In OS X, Virtual Desktops are called 'spaces' and are controlled by 'Mission Control'. More details at <http://support.apple.com/kb/PH14155>

### Terminal

OS X has a bash terminal. Launch it from Finder:

**Go->Utilities->Terminal.app**

You'll probably want to put this on the dock (see 'general mac stuff')

### Installing extra Linux software

OS X comes with a useful subset of Linux-like utilities, but you'll quickly want a lot more. There are three main repositories of Linux packages on OS X.

- Macports - <http://www.macports.org>
- Fink - <http://www.finkproject.org>
- Homebrew - <http://brew.sh>

These systems operate with different philosophies and some recommend that you choose only one of them. I haven't tried mixing them.

I chose Macports and once I'd installed it, installing a package such as gnuplot was as easy as running the command

```
sudo port install gnuplot
```

Every week or so, I check for updates with the command

```
sudo port -v selfupdate
```

You may wonder what the differences are between these package managers. A bit of Googling came up with the following points

#### Macports

- Has the most packages
- Easy to use
- Usually quite up to date
- Has a 'variants system' that lets you customize the build
- Is orthogonal to OS X. That is, it installs its own python, perl etc rather than using the system ones. This uses up disk space but is arguably safer.

#### Fink

- Based on apt so will be familiar to Ubuntu/Debian users
- Delivers binary packages so no long compile times
- Lots of packages but less than Macports.
- Is orthogonal to OS X.

## Homebrew

- Fewer packages
- Integrates with OS X
- Simpler than other packaging tools
- Arguably best if you only want one or two extra packages rather than lots.

Source links:

- <http://tedwise.com/2010/08/28/homebrew-vs-macports/>
- <http://apple.stackexchange.com/questions/32724/what-are-pros-and-cons-for-macports-fink-and-homebrew>

## LaTeX

I used Macports to install LaTeX. The following installs the basics

```
sudo port install texlive
```

I soon found that I needed more packages. The following command got all the ones I need.

```
sudo port install texlive-latex-extra
```

## Windows-centric tips

Things I am used to on Windows, and how to do them on OS X

### Connecting to a Windows machine using Remote Desktop

There is a free remote desktop client in the Mac App Store -

<https://itunes.apple.com/gb/app/microsoft-remote-desktop/id715768417?mt=12>

### Mac equivalent to the Task Manager

The closest approximation is the Activity Monitor which is built into OS X. It's in the Utilities folder.

### Microsoft Office

The Microsoft Office suite is available for Mac. Bizarrely, it is currently at Office 2011 – a version that never appeared on Windows. Works fine with Office 2010 documents though. <https://www.microsoft.com/uk/mac>

### Searching for and launching software

In Windows 7, I got into the habit of clicking on the start menu and starting to type the name of the application I wanted to launch. The equivalent of this on a Mac is 'spotlight' which is the magnifying glass in the top right hand corner of the screen.

The keyboard shortcut for this is CMD-Spacebar.

## Snap to sides

I use Windows' snap to sides feature extensively. For a video of it in use see <http://www.youtube.com/watch?v=szpZ7QMxTf8>. I couldn't find this in OS X and so bought the superb cinch from the app store - <https://itunes.apple.com/gb/app/cinch/id412529613>

## Software – How Tos

### How to get to installed applications

When you boot into the desktop, the menu bar at the top of the screen will be displaying the menu for 'Finder.' Click on **Go->Applications**

### Uninstalling applications

In finder, go to the Applications folder. Right click on the app you want to uninstall and select **Delete**.

### Problems Installing software - GateKeeper

On attempting to install an application via a download, I received the error message *“Appname’ cannot be opened because it is from an unidentified developer”*

where ‘Appname’ was the name of the installer I was trying to run.

This feature is called GateKeeper and various ways to proceed can be found at <http://support.apple.com/kb/ht5290>.

### Creating cross-platform .iso images

If you have a folder called foo, full of things you want to put on the root directory of your .iso image, issue the command

```
sudo hdiutil makehybrid -o ./MyDvd.iso ./foo/ -iso -joliet
```

The resulting .iso image will work on Mac, Windows and Linux.

## Software – Listed by task

This is not an exhaustive list and is not meant to be. It reflects all of the software I've considered myself.

### Diagramming software

- [Omnigraffle](#) (costs money) – Flow charts, diagrams, mind maps – that style of thing. Free trial version is available.

### File archiving software

Many archive types are supported out of the box. The first one I found that wasn't was 7zip archives. I use Keka (free) to handle these

<http://www.kekaosx.com/en/>

## File transfer via FTP/SFTP etc

On Windows, I use WinSCP. On Linux, I use the sftp command line, or gftp for when I want a graphical interface. Options for Mac include

- sftp command line tool – built in.
- Transmit - <http://panic.com/transmit/> (costs money, is the one I chose)
- Fetch - <http://fetchsoftworks.com> (costs money)
- Forklift - <http://binarynights.com/forklift/> (costs money)
- Cyberduck - <https://itunes.apple.com/us/app/cyberduck/id409222199> (Costs money. There is a free, old version. Beware of adware riddled versions of the free version.)

All of the above were recommended to me by various people on Twitter, so they all have at least some devotees.

## Markdown Editors

The [Markdown language](#) provides a simple way of generating formatted documents using plain text source files. I still haven't found a Mac markdown editor I am 100% happy with.

- [Markdown Pro](#) (Costs money) – This is almost perfect but doesn't render images in the preview pane which is a huge problem for me. Includes export to PDF and HTML. A workaround for the image problem is to export the .md file to .html since images are rendered in the result.

## Mathematical and simulation software - commercial

This section was originally for University of Manchester staff and students since it focused on software that is site licensed there. I've pulled out the Manchester-specific stuff (which was most of it!) and left the rest of the section in, in case it is of use to anyone else.

- [Abaqus](#) (Finite element analysis) – No Mac version.
- [GraphPad Prism](#) (Plotting, data analysis) – Has a Mac version.
- [Labview](#) (Visual Programming) – Has a Mac version but it's **much** weaker than the Windows version.
- [Maple](#) (Mathematics, Technical computing)– Has a Mac version.
- [MapleSim](#) (Simulation) - Has a Mac version.
- [Mathcad](#) (Mathematics) – No Mac version.
- [Mathematica](#) (Mathematics, Technical Computing) – Has a Mac version..
- [MATLAB](#) (Mathematics, Technical Computing) – Has a Mac version. Consider the free clone, Octave, which is available from MacPorts.
- [NAG Library](#) (Development) – High quality numerical computing libraries callable from C, C++, Fortran, Python, Java and more. Mac versions of all of their products.
- [Origin](#) (Plotting, data analysis)– No Mac version

## Mathematical and Simulation Software – free

- [Octave](#) – Free MATLAB clone
- [R](#) – The de-facto standard for statistics and simulation.

- Available for Mac - <http://cran.rstudio.com/bin/macosx/>
- Get RStudio. Also free. Great IDE for R.  
<http://www.rstudio.com/ide/download/desktop>
- [Scilab/Xcos](#) – Scilab is a technical computing environment that’s similar to MATLAB. Xcos is a Simulink-like product that integrates with Scilab.

## OS X Improvements

- [Cinch](#) (Costs money) – Provides ‘snap to sides’ feature that comes as default on Windows machines.
- [Keka](#) (free) – File archiver. Adds support for many more filetypes.

## Software Development

- C/C++
  - Apple’s Xcode - is the standard software development suite on Mac and includes compilers for C, C++ and Objective-C. It is freely available from the Mac App Store. Xcode is a dependency for many development packages so you may as well install it if you are going to do software development of any kind.

To install the command line tools (recommended), after installing xcode from the App Store, open a terminal and type

```
xcode-select --install
```

- [Intel C/C++ Compiler](#) – Commercial. Produces fast executables.
- [PGI C/C++ Workstation](#) – This compiler’s main unique selling point is its support for the OpenACC standard which is used to program GPU accelerators. There is a [free version for Macs](#) which has limitations including no OpenACC support and the fact that you can only run your executables on the machine they are compiled on.
- Fortran
  - [gfortran](#) – free, open source. Available from several locations. I got it from <http://gcc.gnu.org/wiki/GFortranBinaries-MacOS>
  - [NAG Fortran Compiler](#) - Commercial. Good for checking code correctness.
  - [Intel Fortran Compiler](#) – Commercial. Produces fast executables.
  - [PGI Fortran Workstation](#) – This compiler’s main unique selling point is its support for the OpenACC standard which is used to program GPU accelerators. There is a [free version for Macs](#) which has limitations including no OpenACC support and the fact that you can only run your executables on the machine they are compiled on.
- Python
  - Anaconda Python - <http://continuum.io/downloads> Free. Includes Python and many modules useful for technical computing. This is the one I use on all operating systems.
  - Available via Macports – if you’d rather not use Anaconda for some reason.
- Version Control



- Git – Mac version is at <http://git-scm.com/download/mac>

### Text Editors

Of the editors listed below, I use vi in the terminal for quick edits and Sublime Text the rest of the time.

- Terminal editors. Several terminal based editors are built in to OS X
  - emacs
  - nano
  - vi
- TextEdit - The standard, built-in text editor - <http://support.apple.com/kb/ht2523>. If you use for programming, ensure that you click on **Format->Make Plain Text** before starting.
- [SublimeText](#) – Beautiful. Expensive. Worth every penny. Free trial available.

### Virtual Machines

- [VMWare Fusion Pro](#) (costs money) - This is the one I use and it works very well. There is a cheaper VMWare Fusion product.
- [Virtualbox](#) (Free) – I use this on other operating systems but haven't used it on a Mac.
- [Parallels](#) (costs money) – This exists but I haven't used it.

## Mac OS X Environmental changes

This is probably the most personal section of this article. Here are some of the settings I changed to make OS X behave more like I wanted it to.

### Change trackpad options

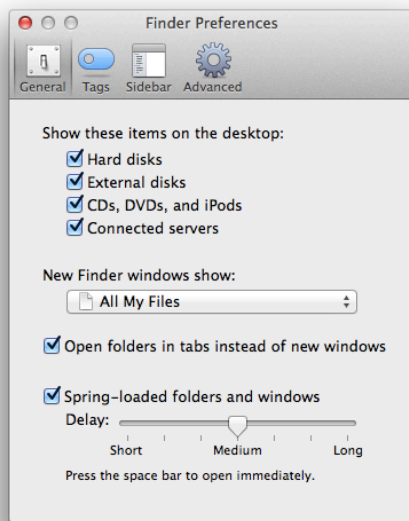
**System Preferences->Trackpad** and turn on '**Tap to click**'

This does what you might expect and gives behaviour I am used to on other systems.

### Changing finder preferences

**Finder->Preferences**

Under 'Show items on the desktop', tick as below



On the **advanced tab**, I ticked as below. Most important feature for me was 'Show all filename extensions'

