

1. Opening and Minimising Effects of the Dock

The genie effect that takes place when you start or minimise an application in OS X is controlled (on/off) via the "Dock Preferences" or via "control and left mouse button" on the dock separator bar.

The default animation effect called "genie" can be quite processor intensive on smaller systems, so it maybe worth choosing one of the alternatives below. You can of course just change it for the hell of it too :) The following instructions outline how to change the animation effect:

- 1.) Open Up a Terminal Window
- 2.) Type in one of the following to change the effect:
defaults write com.apple.dock mineffect suck
defaults write com.apple.dock mineffect genie
defaults write com.apple.dock mineffect scale
- 3.) You then need to either logout and logback in, or just restart the dock application. To force a restart you can just kill the Dock.app process with the following command:

```
[localhost:~] sjrowe% ps aux | grep -i dock.app | grep -v grep
sjrowe 321 0.0 1.8 36040 4804 ?? S 0:01.66 /System/Library/CoreServices/Dock.app/Content
[localhost:~] sjrowe% kill 321
```

2. Dock Bar Menus

The dock in Mac OS X has menus for each of the icons shown. To access the menus associated with an icon n the dock, hold down the **control** key and click the **left mouse button** on the icon.

3. Switching Between Applications

The dock is split into two areas. The left hand side shows the **trash** and also minimised applications. If you run you mouse over the icon, some text will appear discribing what that icon represents.

On the left hand side of the dock is the icons for programs that are curently running, or have been added there to enable them to be started from the dock. You can tell if one of the applications shown is already running, as an upturned arrow head appears under the icon. If more than one instance of the appli-cation is running, it will be shown in the menu for that icon, whne you hold down the **control** key and click on it with the left mouse button.

4. Useful Mac OS X Web Sites

The following is a list of useful web sites, specific to Mac OS X. There are probably many other two, and as Mac OS X grows in popularity, I expect more general coverage will appear too!

<http://www.macsecurity.org/> - security related news and information

<http://www.stepwise.com/> - site providing information and help for Mac OS X developers

<http://www.macunix.com/> - site covering all things UNIX on Macs

<http://www.darwininfo.org/faq.shtml> - Darwin OS FAQ, Darwin is the UNIX OS part of Mac OS X

5. Starting in Single User Mode

It is possible to start you Mac OS X system into single user mode. This mode is commonly used in a UNIX environemt to perform repairs to hard disk, and other admin tasks that cannot be safely done while in mul-tiuser mode - the default.

To start your Mac OS X system in single user mode, perform the following:

- 1.) Reboot your Mac, and when you here the startup chime/tone hold down both the **Command**¹ and the **s** key.

¹ The COMMAND key is the same as the APPLE key - next to the space bar!

- 2.) You should see some messages appear on the screen as the system boots up.
- 3.) The single user mode restart is complete when the # prompt appears on your screen

What usefull tasks can you perform while in single user mode ?? Well for a start you can run **fsck -y** to check and repair any problems with you hard disk format and partitions. Apple have an article explaining how to do this properly here:

<http://til.info.apple.com/techinfo.nsf/artnum/n106214/>

6. Basic NetInfo Commands

To show a list of the databases used by Netinfo, run the command:

```
niutil -list . /
```

The output will probably look like this:

```
1    users
7    groups
27   machines
31   networks
33   protocols
48   rpcs
77   services
141  aliases
150  mounts
151  printers
152  localconfig
156  config
```

To then go further and look into one of the above databases, you just specify it as follows:

```
niutil -list . /users
```

This shows a list of all the users on your system, as follows:

```
2    nobody
3    root
4    daemon
5    unknown
6    www
154  sjrowe
```

To obtain the actual details held for an entry, you need to use the -read instead of -list command with niuti. Using the above output, if we wished to see the user details for the user nobody, the command would be:

```
niutil -read . /users/nobody
```

Creating the output as follows:

```
name: nobody passwd: * uid: -2 gid: -2 change: 0 expire: 0 realname: Unprivileged User home:
/dev/null shell: /dev/null
```

To save the above output to a file called user-nobody.txt the nidump cammand can be used as follows:

```
nidump resolv.conf . /location/resolver
```

You can also take standard UNIX config files and load them into the Netinfo database. This is done using the command niload. For example to load the /etc/passwd file into netinfo, the command would be:

```
niload passwd . < /etc/passwd
```

The command niload is restricted to loading the following files:

aliases, bootparams, bootptab, exports, fstab, group, hosts, networks, passwd, printcap, protocols rpc, and services

7. Setting the Hostname

If you need to configure or alter the hostname of your Mac, you can do this via the file: **/etc/hostconfig**.
Near the top of the file there is a statement: as follows:

```
# Network configuration
HOSTNAME=-AUTOMATIC-
ROUTER=-AUTOMATIC-
```

The *HOSTNAME* sets the hostname for your Mac as follows:

```
HOSTNAME=-AUTOMATIC-
    This sets your Mac to find it's hostname via DHCP or BOOTP when it boots up
HOSTNAME=my-imac
    This sets the hostname of your Mac to 'my-imac'
```

The *ROUTER* setting works the same way, as follows:

```
ROUTER=-AUTOMATIC-
    This sets your Mac to find it's default router address via DHCP or BOOTP when it boots up
HOSTNAME=192.168.1.1
    This sets the default router of your Mac to '192.168.1.1'
```

8. Shell Settings

```
setenv VARIABLE value
```

Startup files:

```
/etc/csh.cshrc - this file reads /usr/share/init/tcsh/rc
/etc/csh.login - this file reads /usr/share/init/tcsh/login
$HOME/.cshrc
$HOME/.tcshrc - tcsh will only be used if .cshrc doesn't exist.
$HOME/.login
```

Logout files:

```
/etc/csh.logout - this file reads /usr/share/init/tcsh/logout
$HOME/.logout
```

9. Configuring DNS from the shell

The following allows the resolution for DNS to be configured from the shell in Mac OS X

```
niutil -create . /locations/resolver
niutil -createprop . /locations/resolver nameserver < nameserver ip >
niutil -createprop . /locations/resolver domain < domain to search >
```

For the changes to take effect, you then need to *kill -HUP* netinfod and lookupd

If you use the standard UNIX file **/etc/hosts** to maintain a list of local host address, and you want to add it into the NetInfo database, the following command² can be used:

```
sudo niload hosts / < /etc/hosts
```

This loads the entries from the file into the NetInfo database, and the results can be viewed as follows:

```
niutil -list . /machines
```

The output of the above command should show the entries contained in your **/etc/hosts** file now also! The same process can also be used for other standard UNIX configuration file, a few examples of this are below.

```
niload passwd / < /etc/passwd
niload groups / < /etc/groups
```

² The command *niutil* requires root privileges, so prefix the command with 'sudo' or use 'su -' first before running them.

10. Setting up Network Interface Addresses from the Shell

You can configure the ethernet interfaces for your Mac by putting the settings in the following file `/etc/iftab`. This file is used with the `ifconfig` command at startup, and should contain the following information if you are setting your IP address yourself:

```
en0 inet {ip-address} netmask {netmask} up
```

or if you are using DHCP or BOOTP the file should contain:

```
en0 inet -DHCP-
```

There correct setting should also be present for manual or DHCP configuration in the `/etc/hostconfig` file (see above for more information)

11. Verbose Bootup on Mac OS X

When a Mac OS X system boots up it normally shows a graphical display. On most UNIX systems, the display would be non graphical, and provides feedback from the kernel as it boots. You can turn this verbose booting on in the OpenFirmware of you Mac using the following commands. They vary depending on the age of the OpenFirmware on your Mac. If when you run the command³:

```
sudo nvram boot-command
```

you see the output as:

```
boot-command mac-boot
```

then you need to set the verbose bootup via the command:

```
sudo nvram boot-args="-v"
```

If you see a different output to the above, something like:

```
boot-command 0 bootr
```

you can set verbose booting on via this command, making sure the '0 bootr' is the same as it shows on your own Mac

```
sudo nvram boot-command="0 bootr -v"
```

12. Compiling Software with `./configure`

Many open source code comes with a script called `configure` to help generate a make file to compile the software with. In order to get `configure` to work with Mac OS X you need to help `configure` know what system you are using. For example, when I tried to compile Samba⁴ the following error was shown:

```
some deleted ....
checking for awk... awk
checking whether cc understands -c and -o together... yes
checking that the C compiler understands volatile... yes
checking host system type... configure: error: can not guess host type; you must specify one
```

The reason for this error is the files in the source code directory called `config.guess` and `config.sub` do not know about Mac OS X. Replacement files can be found on your Mac in the directory `/usr/libexec/`. In order to get past this error when running `./configure` just backup the original files that came with the source, and copy the Mac OS X files over as replacements.

NB

The commands below assume you are in the programs source directory:

```
cp config.guess config.guess-orig
cp config.sub config.sub-orig
cp /usr/libexec/config.guess .
cp /usr/libexec/config.sub .
```

³ The use of 'sudo' is not required if you are login in as root already (via su -)

⁴ See <http://www.samba.org/>