

# Mac OS X for Unix Geeks

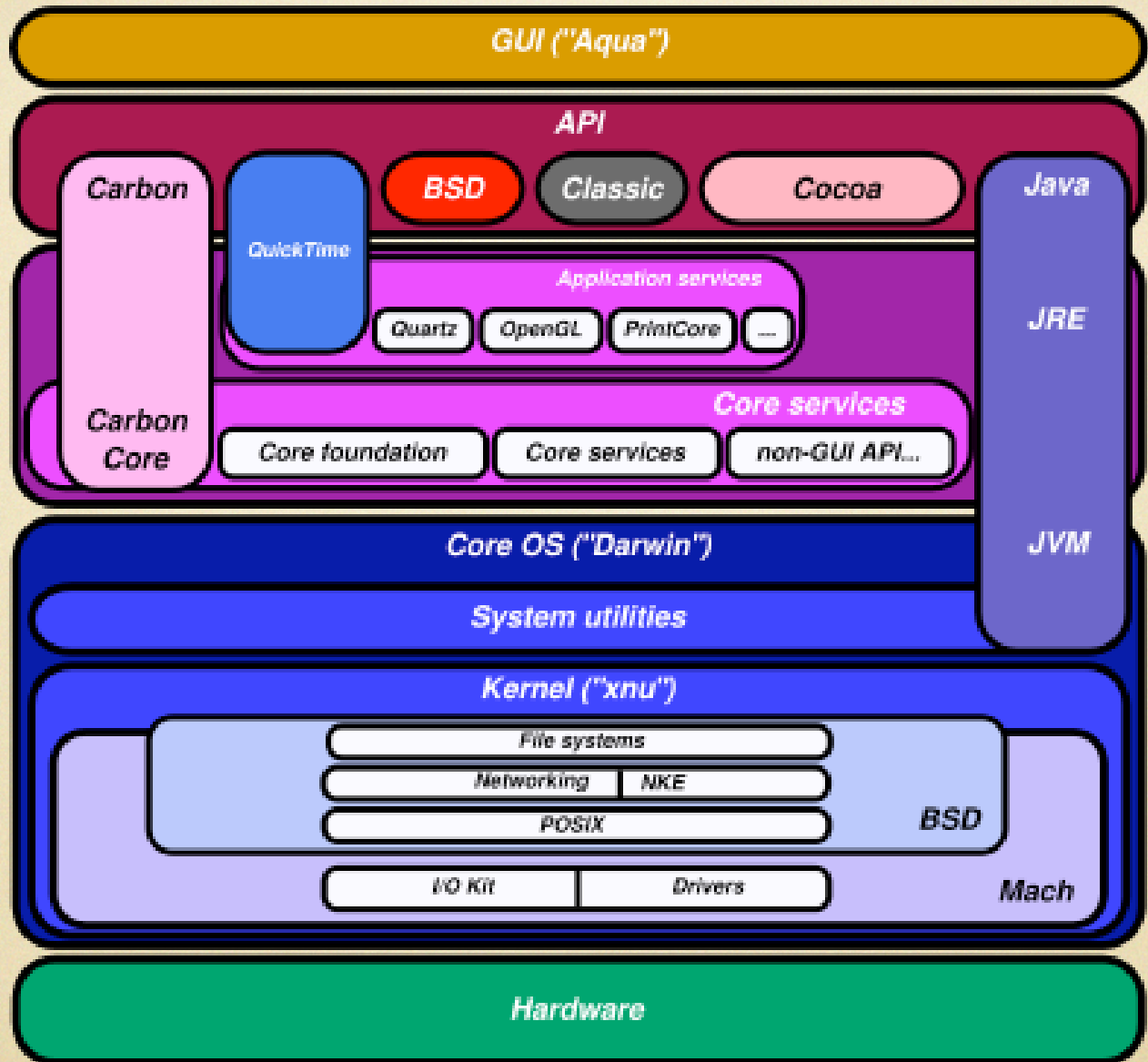
Hit The Ground Running

# Overview

1. System Architecture
2. System Administration
3. GUI Tricks
4. Command line tricks
5. Docs & Resources

# Architecture

- 1 -



# Directory Layout

- /
- /Applications and /Applications/Utilities
- /Library
- /System and /System/Library
- /Users, /Users/**tlim**, /Users/**Shared**, etc.

# Applications are Directories

```
$ cd /Applications
```

```
$ ls -lad iCal*
```

```
drwxrwxr-x ... 102 Sep 29 14:57 iCal.app
```

```
$ cd iCal.app
```

```
$ ls
```

```
Contents
```

```
$ ls Contents/
```

```
Info.plist      MacOS          PkgInfo        Resources  
version.plist
```

```
$ file Contents/MacOS/iCal
```

```
MacOS/iCal: Mach-O universal binary with 2 architectures
```

```
MacOS/iCal (for architecture i386):      Mach-O executable i386
```

```
MacOS/iCal (for architecture ppc):       Mach-O executable ppc
```

# App docs are too

```
$ ls -lad H*  
drwxr-xr-x  54 tal  tal  1836 Dec  3 12:38 HTGR-MacOSX.key  
  
$ cd HTGR-MacOSX.key  
  
$ ls  
  
Contents  
  
Hard_Cover_bullet.tiff  
  
Hard_Cover_photo-h.tiff  
  
Hard_Cover_photo-v.tiff  
  
...  
  
index.apxl.gz  
  
...
```



# Resource Forks

- Still exist!
- Why? To piss me off, that's why.

# Copying all that metadata

- “ditto”
  - “ditto -rsrc” -- Copies “resource forks”
  - --nocache (Doesn't thrash disk cache)
- rsync -E
  - Copies “extended” file attributes
- SuperDuper -- [www.shirt-pocket.com](http://www.shirt-pocket.com)
  - ONLY utility that really copies all meta data: ACLs, timestamps, ownership, “resources”

SysAdmin

- 2 -

# Startup Scripts

- Apple's startup items:
  - `/System/Library/StartupItems/`
- Apps and Homegrown items:
  - `/Library/StartupItems/`
  - `.../StartupItems/Foo/Foo start`
  - `.../StartupItems/Foo/Foo stop`

# Dynamic DNS

- `ssh tommac.local`
- The “.local” domain is maintained by a peer-to-peer DNS system called “Bonjour” (was Rendezvous)
- Free download for Windows

# Examples

- `ssh hostname.local`
- `rsync -avP ~/Music/iTunes/`  
`hostname.local:/Users/Shared/Music/iTunes/.`
- Bonjour Browser
  - [www.tildesoft.com/Programs.html](http://www.tildesoft.com/Programs.html)

# Mounting Disks

- CMD-K -- Mount from a file server:
  - `nfs://servername.com/path/`
  - `smb://servername/sharename`
  - `smb://workgroup;username@netbiosname/share`
  - `smb://[[[domain;]user[:passd@]]server[/share[/path[/file]]]]`
- You can create bookmarks/shortcuts to these.

# Command Line Tricks

- 3 -



# The Terminal app

- Like xterm:
  - Not an X11 app
  - Cut and Paste works really well
- Day-1 Activities:
  - Add it to your app bar
  - Set reasonable prefs:
    - Terminal -> Window Settings (not Preferences) -- Shell -- Close The Window

# Terminal Tricks

- Demo: Drag icon into Terminal

# The “open” command

- like clicking on a file or directory
  - `open file.ext`
    - Opens with the default app
  - `open dirname`
    - Opens that directory in the Finder
  - `alias here="open ."`
- `open -a /Application/suchandsuch file.ext`
- `open -f`

“open” is magic

```
cat file.txt | open -f -a /  
Applications/Microsoft\ Office\  
2004/Microsoft\ Word
```

# Unix Software

- `fink` -- [fink.sourceforge.net](http://fink.sourceforge.net)
  - Installer for all the usual GNU and F/OSS packages you may be missing.
  - I avoid this. I try to “go native”

# wget

- wget? use "curl -O"

# Screw up nvram from the command line

nvram [-p] [-f filename] [-d name] name[=value] ...

-p        print all firmware variables

-f        set firmware variables from a text file

-d        delete the named variable

name=value set named variable

name     print variable

# Watch the pretty boot messages

```
$ nvram boot-args
```

```
boot-args
```

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



# Mess with Airport

- `/System/Library/PrivateFrameworks/  
Apple80211.framework/Versions/A/  
Resources/airport -h`

# PB access from command

- `pbpaste >output.txt`
- `pbcopy <input.txt`

# PB Examples (1)

- `cat foo | sort | pbcopy` (now paste it somewhere)
- `pbpaste`
- `pbpaste | more`

# Double Header PB

- `pbpaste | sort | pbcopy`
- `pbpaste | sed -e 's/foo/bar/g' | pbcopy`

# Spotlight

- `mdimport` (force reindex, etc)
- `mfind Rails`
- `mdfind -onlyin ~/Desktop Rails`
- `mdfind "kMDItemContentType == 'com.microsoft.word.doc' "`
- `mdfind "kind:pdf date:this week"`

<http://0xfe.blogspot.com/2006/03/using-spotlight-from-os-x-commandline.html>

# GUI Tricks

- 4 -

# Everything is clickable

- Document windows have icon in them
  - Drag to move the file to a directory
  - OPTION-CLICK to view PATH
- iChat image
  - Drag a photo there, it just works.
- Error messages and IP addresses (often) be selected and copied.

# The File Browser

- Access Unix directories by typing “/”
- Drag file into File Browser to change dir.



# Safari Debug Mode

defaults write com.apple.safari  
IncludeDebugMenu 1

- Adds the "Debug" menu to Safari.
- If you select "Debug > User Agent", you can have Safari masquerade as Internet Explorer to fool web sites that refuse to serve other browsers.

# Scroll Bars

```
defaults write "Apple Global  
Domain" AppleScrollBarVariant  
DoubleBoth
```

- puts double-scroll arrows on both sides of the scroll bar

# Show hidden files

```
defaults write com.apple.finder  
AppleShowAllFiles True
```

- Finder shows hidden files

# Screen Capture Format

defaults write

com.apple.screencapture type pdf

- Change file format for screen captures using command-shift-3 or command-shift-4.
- Valid formats: pdf, png, jpg, gif (others?).

# Docs/Resources

- 5 -

# Summary

- Good web sites:
  - [www.MacOSXHints.com](http://www.MacOSXHints.com)
  - [developers.apple.com](http://developers.apple.com)
  - File bugs: [radar.apple.com](http://radar.apple.com)
- man pages:
  - open, mdfind, mdls, ditto, rsync