

# Items to be Covered

## Intro to the OS X Command Line

### Commands

- man
- pwd
- ls
- cd
- mkdir
- touch
- open
- cp
- rm

### Topics

- Unix -> OS X
- Command History
- Home Directory
- Relative paths
- Spaces
- Pipes

Advanced Scripting

# Intro to the OS X Command Line

Console

Command Line ( CL )

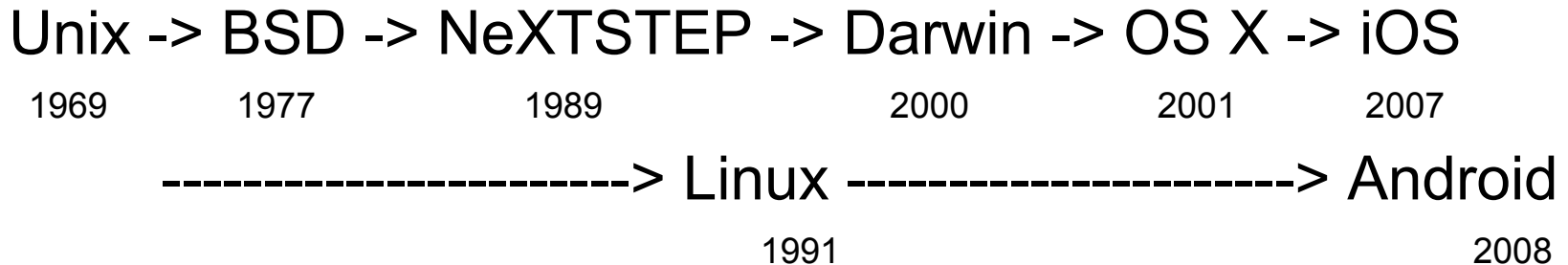
Command Line Interface ( CLI )

the Terminal, Terminal.app

"The Shell" - Bash

James Stewart

# Mac OS X is Unix, mostly



Nearly all operating systems are descendants from Unix, which means they are functionally similar and compatible on a basic level. ( <http://en.wikipedia.org/wiki/POSIX> )

This means basic commands are typically the same, while some advanced commands are specific to a particular operating system.

## ¿ Why does the Command Line matter ?

Some operations require the Command line

Command line operations are repeatable

Batch operations are easier

Automation usually starts with the Command line

When all else fails, Single User Mode (CL only)

# /Applications/Utilities/**Terminal.app**

Terminal.app emulates a terminal.

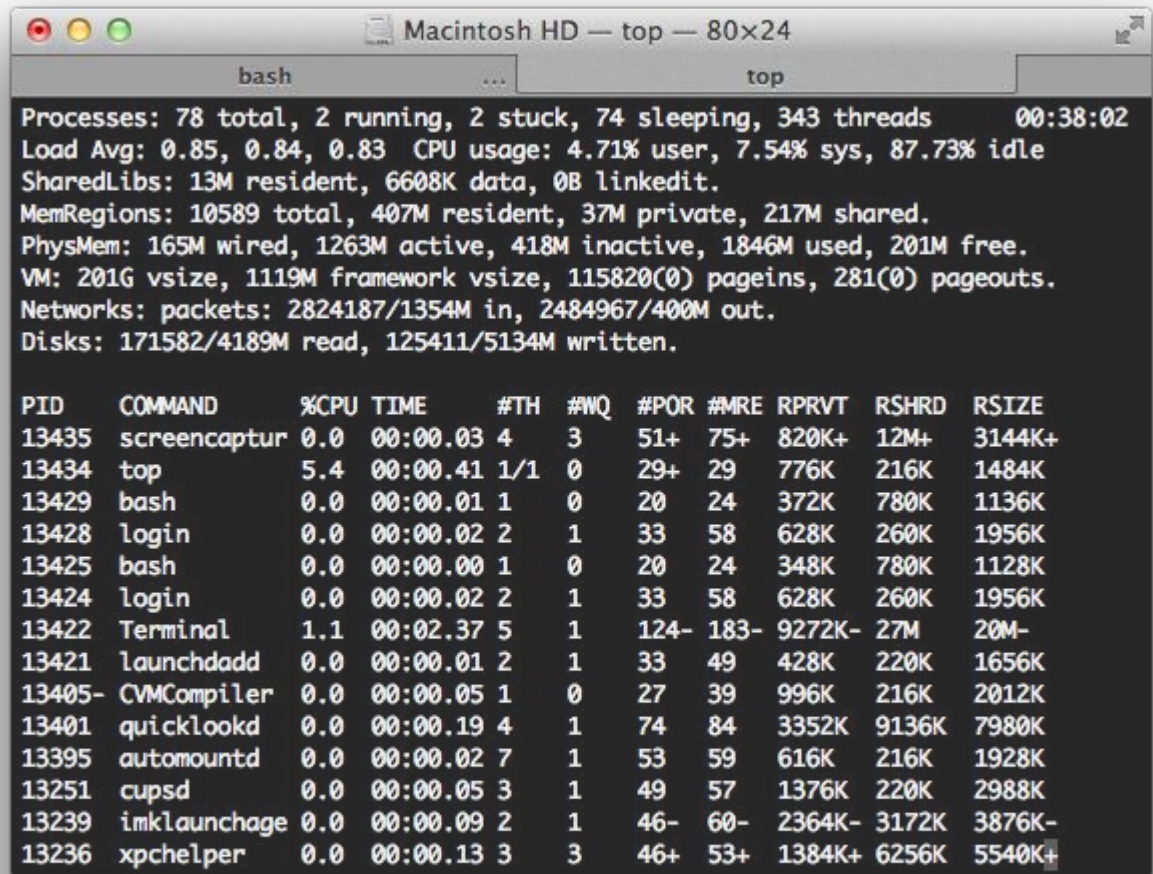
long ago, this  
used to be all  
there was ---->



# /Applications/Utilities/**Terminal.app**

Terminal.app emulates a terminal.

Now we have  
this ---->



```
Macintosh HD — top — 80x24
bash ... top
Processes: 78 total, 2 running, 2 stuck, 74 sleeping, 343 threads    00:38:02
Load Avg: 0.85, 0.84, 0.83  CPU usage: 4.71% user, 7.54% sys, 87.73% idle
SharedLibs: 13M resident, 6608K data, 0B linkedit.
MemRegions: 10589 total, 407M resident, 37M private, 217M shared.
PhysMem: 165M wired, 1263M active, 418M inactive, 1846M used, 201M free.
VM: 201G vsize, 1119M framework vsize, 115820(0) pageins, 281(0) pageouts.
Networks: packets: 2824187/1354M in, 2484967/400M out.
Disks: 171582/4189M read, 125411/5134M written.

PID    COMMAND      %CPU  TIME    #TH   #WQ   #POR  #MRE  RPRVT  RSHRD  RSIZE
13435  screencaptur 0.0   00:00.03 4     3     51+   75+   820K+  12M+  3144K+
13434  top           5.4   00:00.41 1/1   0     29+   29    776K   216K   1484K
13429  bash          0.0   00:00.01 1     0     20    24    372K   780K   1136K
13428  login         0.0   00:00.02 2     1     33    58    628K   260K   1956K
13425  bash          0.0   00:00.00 1     0     20    24    348K   780K   1128K
13424  login         0.0   00:00.02 2     1     33    58    628K   260K   1956K
13422  Terminal     1.1   00:02.37 5     1     124-  183-  9272K- 27M    20M-
13421  launchdadd   0.0   00:00.01 2     1     33    49    428K   220K   1656K
13405- CVMCompiler  0.0   00:00.05 1     0     27    39    996K   216K   2012K
13401  quicklookd   0.0   00:00.19 4     1     74    84    3352K  9136K  7980K
13395  automountd   0.0   00:00.02 7     1     53    59    616K   216K   1928K
13251  cupsd        0.0   00:00.05 3     1     49    57    1376K  220K   2988K
13239  imklaunchage 0.0   00:00.09 2     1     46-   60-   2364K- 3172K  3876K-
13236  xpchelper    0.0   00:00.13 3     3     46+   53+   1384K+ 6256K  5540K+
```

# Generic Syntax

command -options parameter1 parameter2 ...

spaces have special significance

- mark the end of one item
- and the beginning of another

command<space>-options<space>parameter1

# man

Use this command to access the "manual page" or "man page", which will explain how that command works.

**Usage:** man [command]

Example: man man  
man -k .

Use "man man" to read the "man page" for the "man" command to learn how to use the "man" command to read "man pages" for other commands.

[http://en.wikipedia.org/wiki/Man\\_page](http://en.wikipedia.org/wiki/Man_page)



# pwd

Print Working Directory command

- will tell you the path of the current folder (working directory)
- All actions taken are relative to this location.

**Usage/Example:** pwd

Answers the question: where am I?

<http://ss64.com/osx/pwd.html>

# Command line history

Press up ( ↑ ) to retrieve previous commands

Press down ( ↓ ) to go back

# ls

List Directory Contents

(of current working directory)

**Usage/Example:** ls

**Advanced Usage:** ls [-Option(s)] [file ...]

Answers the question: what is here?

<http://ss64.com/osx/ls.html>

# open

open a file, folder, or URL

- equivalent to double clicking on the icon

**Usage:** open [file, folder, URL]

**Examples:** open demo.txt

open .

open <http://ss64.com/osx/open.html>

<http://ss64.com/osx/open.html>

# mkdir

make directory command

- creates the specified directory

**Usage:** mkdir [directory to create]

**Example:** mkdir newDir

<http://ss64.com/osx/mkdir.html>

# cd

## Change Directory

- switch to the new directory specified

**Usage:** cd [new directory]

**Example:** cd ~/Desktop

<http://ss64.com/osx/cd.html>

# touch

updates file access & modification timestamps

creates an empty file if one does not exist

**Usage:** touch [path/filename]

**Example:** touch demo.txt

<http://ss64.com/osx/touch.html>

# cp

copy command

- copy specified source file to the destination

**Usage:** cp [source] [destination]

**Example:** cp demo.txt demo2.txt

<http://ss64.com/osx/cp.html>



# rm

remove command

- think "delete"
- used to remove a file

**Usage:** rm [file]

**Example:** rm demo.txt

<http://ss64.com/osx/rm.html>

# The problem of Spaces

Required spaces must be "escaped"

escaping signifies treating the space differently

The Mac command line escape character is \

**Example:** touch ~/Desktop/file\ name.txt

**Example:** touch "Desktop/file\ name.txt"

[http://en.wikipedia.org/wiki/Escape\\_character](http://en.wikipedia.org/wiki/Escape_character)

# Absolute vs Relative paths

Root folder is "/"

Default folder is "/Users/<name>/" or Home Directory, which is abbreviated "~"

Desktop/pwd1.txt

~/Desktop/pwd1.txt

/Users/<username>/Desktop/pwd1.txt

# | Pipes |

Take the output of the first command and sends it to the next

**Example:** `ls | grep test`

# Advanced Scripting

<http://support.bigfix.com/bes/install/besclients-nonwindows.html>

[https://github.com/jgstew/tools/blob/master/bash/install\\_bigfix.sh](https://github.com/jgstew/tools/blob/master/bash/install_bigfix.sh)

**Questions?**

# Resources

<http://ss64.com/osx/>

<http://developer.apple.com/library/mac/#documentation/Darwin/Reference/ManPages/index.html>

<http://www.lynda.com/Mac-OS-X-10-6-tutorials/Unix-for-Mac-OS-X-Users/78546-2.html>

<http://cli.learncodethehardway.org/book/>

<http://lifehacker.com/5633909/who-needs-a-mouse-learn-to-use-the-command-line-for-almost-anything>

# Intro to the OS X Command Line 2013

## This Presentation

<http://macadmins.psu.edu/2013/03/02/intro-to-the-os-x-command-line/>

## The slides:

<https://docs.google.com/presentation/d/1uUqRTLNIozM5hLJpsW907L9NOxDB-Qy0P-e7PWz3vXk/edit?usp=sharing>

## The recording:

<http://www.youtube.com/watch?v=-ACo3MZV2Ss>

## Notes by participants:

[https://docs.google.com/document/d/1dm69O\\_AhihXUSTblacUNYXiaGQOqP-X4jIJdzdyUak/edit?usp=sharing](https://docs.google.com/document/d/1dm69O_AhihXUSTblacUNYXiaGQOqP-X4jIJdzdyUak/edit?usp=sharing)



# Intro to the OS X Command Line 2017

**This Presentation**

<https://psumac2017.sched.com/event/AhD9/intro-to-the-os-x-command-line>

**The slides:**

[https://docs.google.com/presentation/d/1gaDL7HleziY0Ano9TP0DcZ7FOnYNGq6FTA9LuUOjM\\_M/edit?usp=sharing](https://docs.google.com/presentation/d/1gaDL7HleziY0Ano9TP0DcZ7FOnYNGq6FTA9LuUOjM_M/edit?usp=sharing)

**The recording:**

TBD