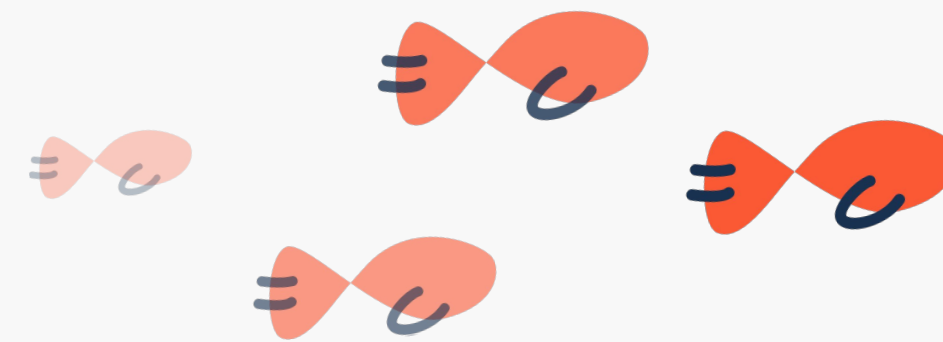


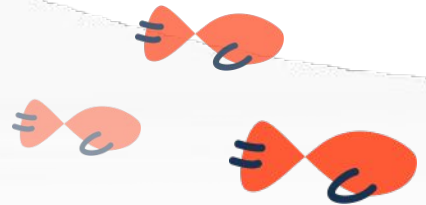
Shell and unix commands



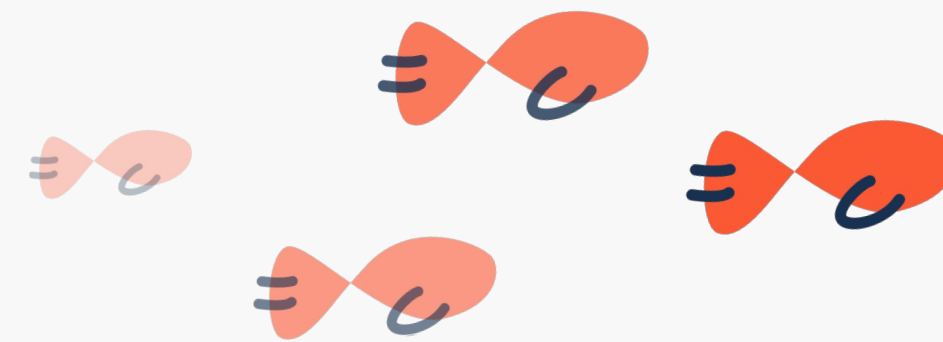
Shell and unix commands

Learning Objectives

- Differences between shell, terminal and command line interface
- Basic unix commands and operators
- Unix command documentation and options
- Create, read, update, move and delete files and folders



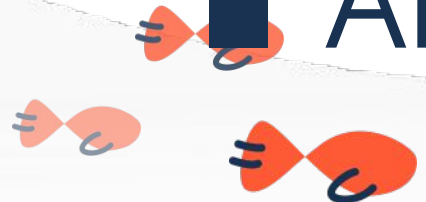
Concepts



Concepts

What's a shell?

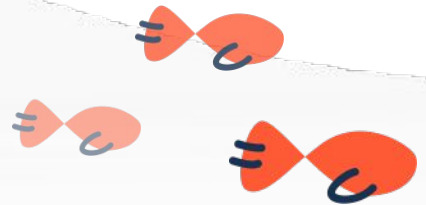
- A way to interact with the operating system's services
- We mean “command line interface” (CLI) most of the time
- A way to control remote computers
- On most servers (96.3% of the world's top 1 million servers run on Linux.)
- A collection of commands
- And what's a terminal? A program that shows the shell.



Concepts

What's our shell "Zsh"?

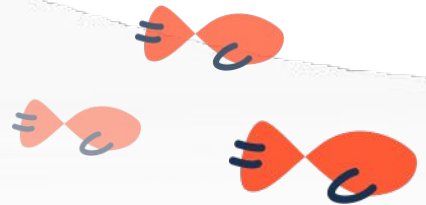
- Zsh is pronounced "zee-shell"
- Preinstalled on a Mac (a while ago it was the shell named "bash")
- It uses Antigen, a tool to install extensions e.g. from "Oh-my-zsh"
- It has a solid scripting language



Concepts

What are unix commands?

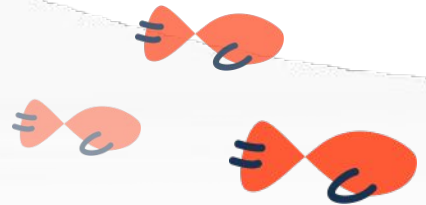
- Small programs
- Let us control the operating system
- Single purpose
- Composable
- Repeatable



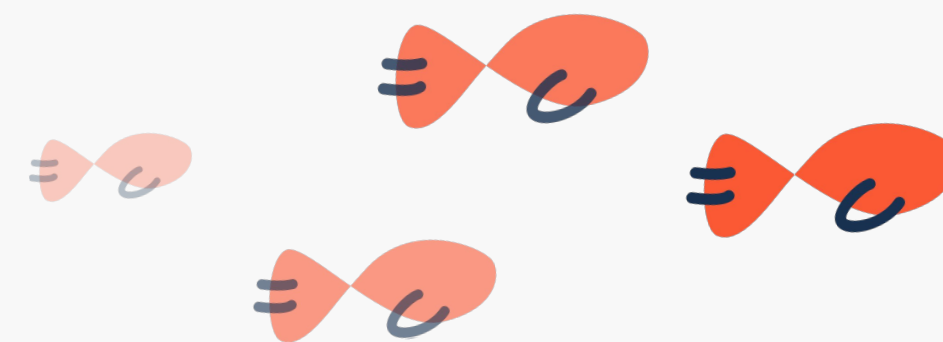
Concepts

Why should I know and use unix commands?

- Available
- Repeatable
- Fast
- Tested and solid
- Sometimes no choice



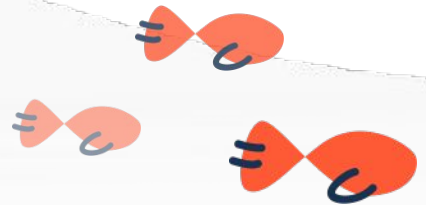
Basic commands



Basic commands

Orientation

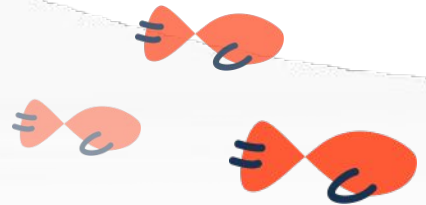
Command	Description
\$ pwd	Current path
\$ ls	List contents (i.e. files and directories) of current path
\$ ls -la	List a ll contents (also hidden ones) as a l ist
\$ open <path>	Open file with default app
\$ man <command>	Show a command's manual page
\$ history	Show last commands



Basic commands

Create and read

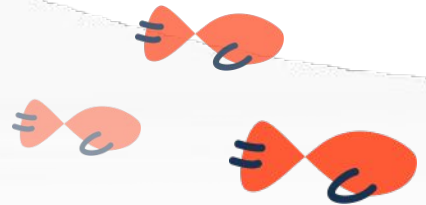
Command	Description
\$ touch <path>	Create new text file or update its change-timestamp
\$ mkdir <name>	Create directory with name
\$ cat <path>	Print out content of text file
\$ less <path>	Open a pager program for a text file
\$ open <path>	Open file with default app



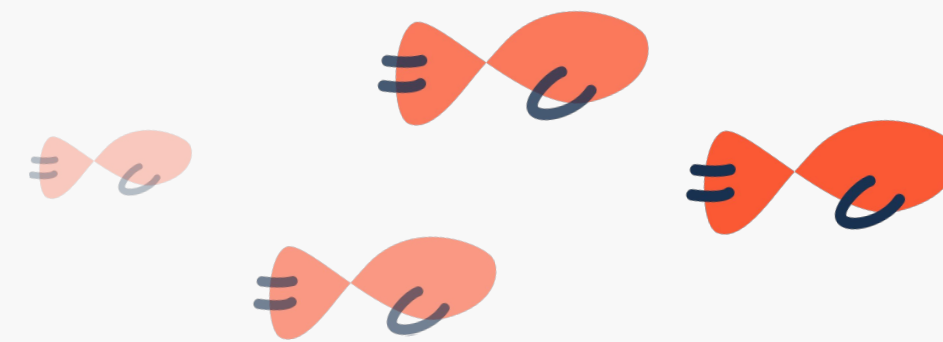
Basic commands

Update and delete

Command	Description
\$ mv <source> ... <path>	Move or rename file or directory
\$ cp <source> <path>	Copy or rename file
\$ echo "hi" > <path>	Create (or replace) file with text content "hi"
\$ echo "ho" >> <path>	Add text content to end of file
\$ rm <path>	Remove file (not trash)
\$ rm -rf <path>	Remove recursively and forced to suppress warnings



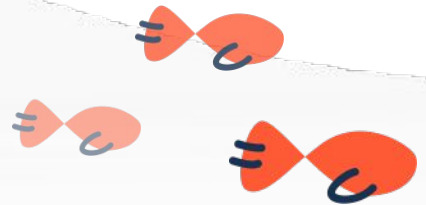
Glob patterns



Glob patterns

Basics

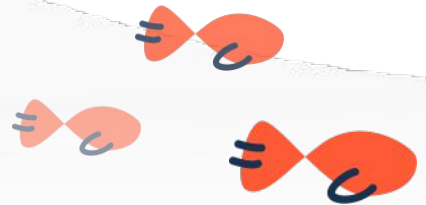
Pattern	Description
.	Current directory
..	Parent directory
name?.txt	Any single character
*.html	Any html file
./**/index.html	Any (deep) nested directory



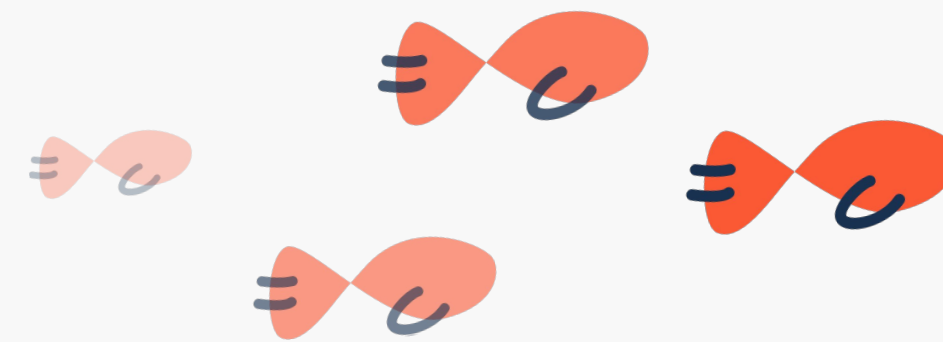
Glob patterns

Advanced

Pattern	Description
<code>client_[abc].txt</code>	One of the characters
<code>./{index,home}.html</code>	Any of the strings (here: index.html or home.html)



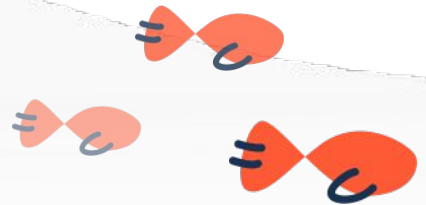
Operators



Operators

Control operators

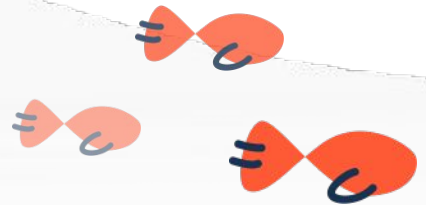
Command	Description
<code><command> ; <command></code>	Separate commands
<code><command> && <command></code>	Logical AND: only run second command if first succeeds
<code><command> <command></code>	Pipeline: send result of first command to second command
<code><command> & <command></code>	Run first command in background and second one in foreground



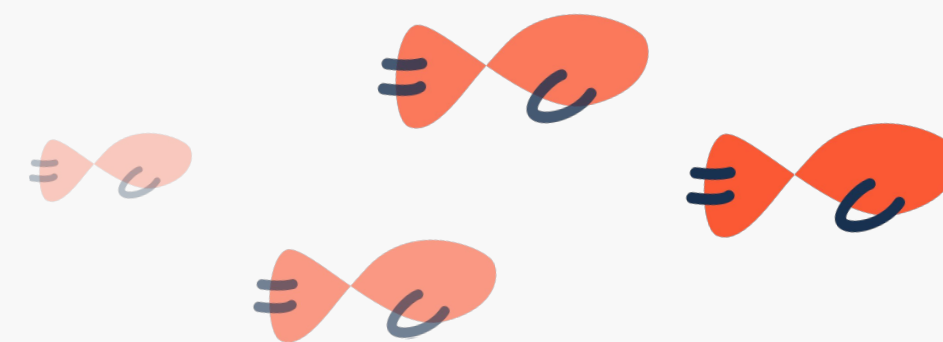
Operators

Redirection operators

Command	Description
<code><command> > <filepath></code>	Send command's output (stdout) to file
<code><command> >> <filepath></code>	Append a command's output to file's text
<code><command> < <filepath></code>	Send command to file
<code><command> 2> <filepath></code>	Send a command's error (stderr) to file



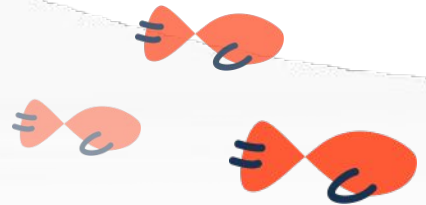
Keyboard shortcuts



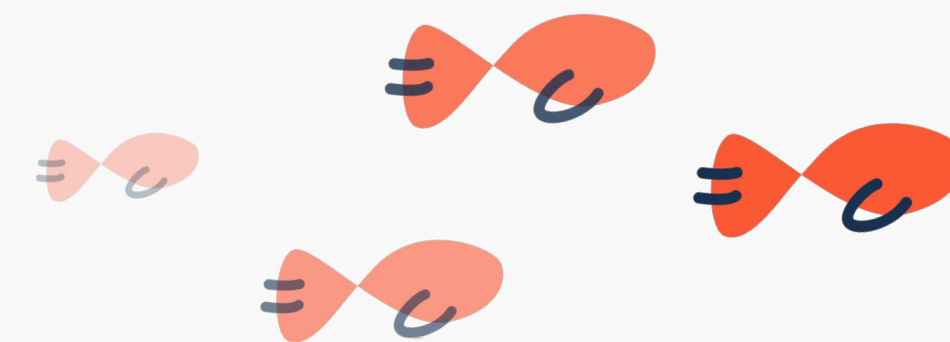
Keyboard shortcuts

Working in the shell

Command	Description
cmd + k	Clear
ctrl + c	End running command
ctrl + r	Reverse search history
tab	Autocompletion
arrow up/down	Move up/down in history
ctrl + arrow left/right	Move left/right by word separator



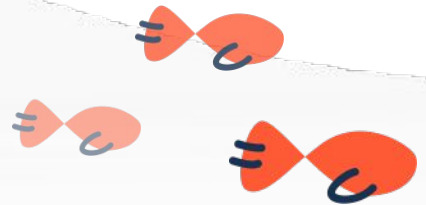
Advanced commands



Advanced commands

Find and destroy

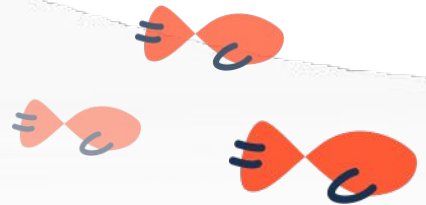
Command	Description
\$ find <path> <options>	Find files and directories by name
\$ grep	Search for pattern in text file
\$ grep -iRl <text> <path>	Search for text in content of path, show resulting path
\$ pgrep	Get process by name
\$ pkill	Kill process by name



Advanced commands

Others

Command	Description
\$ curl <uri>	Download and print online resource
\$ alias	Create and show aliases
\$ reboot	Reboot
\$ tree <path>	Print file tree
\$ ssh	Connect to online endpoint via secure shell



Shell and unix commands

Exercise 1

Create this file structure:

notes

├─ released

│ └─ public

│ └─ announcement1.txt

│ └─ announcement2.txt

└─ unreleased

└─ announcement3.txt

└─ private

└─ notes1.txt

└─ notes2.txt

Shell and unix commands

Exercise 2

Update the last file structure to this:

notes

├─ private

| ├─ notes1.txt

| └─ notes2.txt

└─ public

├─ released

| ├─ announcement1.txt

| └─ announcement2.txt

└─ unreleased

└─ announcement3.txt

Shell and unix commands

@ Home

Play [The Command Line Heroes: BASH](#)
[online](#)

