Modern CLI tools

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Today's goal

> Learn CLI tools you have not heard about. Increase your productivity

Don't spew on UIs

- 🍎 UIs solve different issues 🍊
- ⏯️ UIs help to reduce complexity
- ❓ UIs will help newcomers
- 🏆 UIs look nicer
- 🐐 GOAT: The web!

Why CLI tools then?

- 📄 Scripting
- 🚤 Speed
- 💪 Flexibility
- 🔁 Automation

Why CLI tools then?

- 🛠️ Process safety
- 🎯 **Expert mode**
- 🧨 Issue: Outdated distribution packages
- 🔧 Do one thing and do it well!

Modern CLI tools?

- 📠 Many tools still stem from the early UNIX times
- 💻 Rise of the developer
- ✅ UTF8
- 🎨 Colors
- 🏎️ Faster terminals
- 👀 Debugging (ephemeral containers, no local logs, remote)

New languages

- Rust
- Go
- Crystal
- JVM: GraalVM, Kotlin Native, Scala Native
- Zig
- V

New languages

- Binary as a result, best startup time
- No C/memory management learning required
- Faster development

Shell - zsh

- in combination with oh-my-zsh
- scripting syntax similar to bash
- lots of plugins for easier development

Shell - alternatives

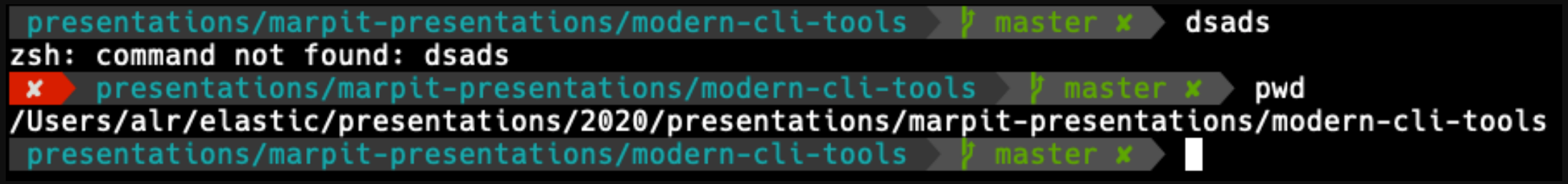
- bash
- fish
- nushell

/home/jonathan/Source/nushell(main)>

Shell Prompt - GBT

```
# GBT status prompt configuration
export GBT_CARS='Status, Dir, Git, Sign'
export GBT_CAR_DIR_DEPTH='3'
export GBT_CAR_SIGN_FORMAT=' '
export GBT_CAR_DIR_BG='55;55;55'
export GBT_CAR_DIR_FG='cyan'
export GBT_CAR_GIT_BG='80;80;80'
export GBT_CAR_GIT_FG='green'
export GBT_CAR_GIT_DIRTY_FG='light_red'
PROMPT='$(gbt $?)'
```

Shell Prompt - GBT



Shell Prompt - Starship

Shell aliases

Make sure you alias what you type often!

```
..
-
ll
```

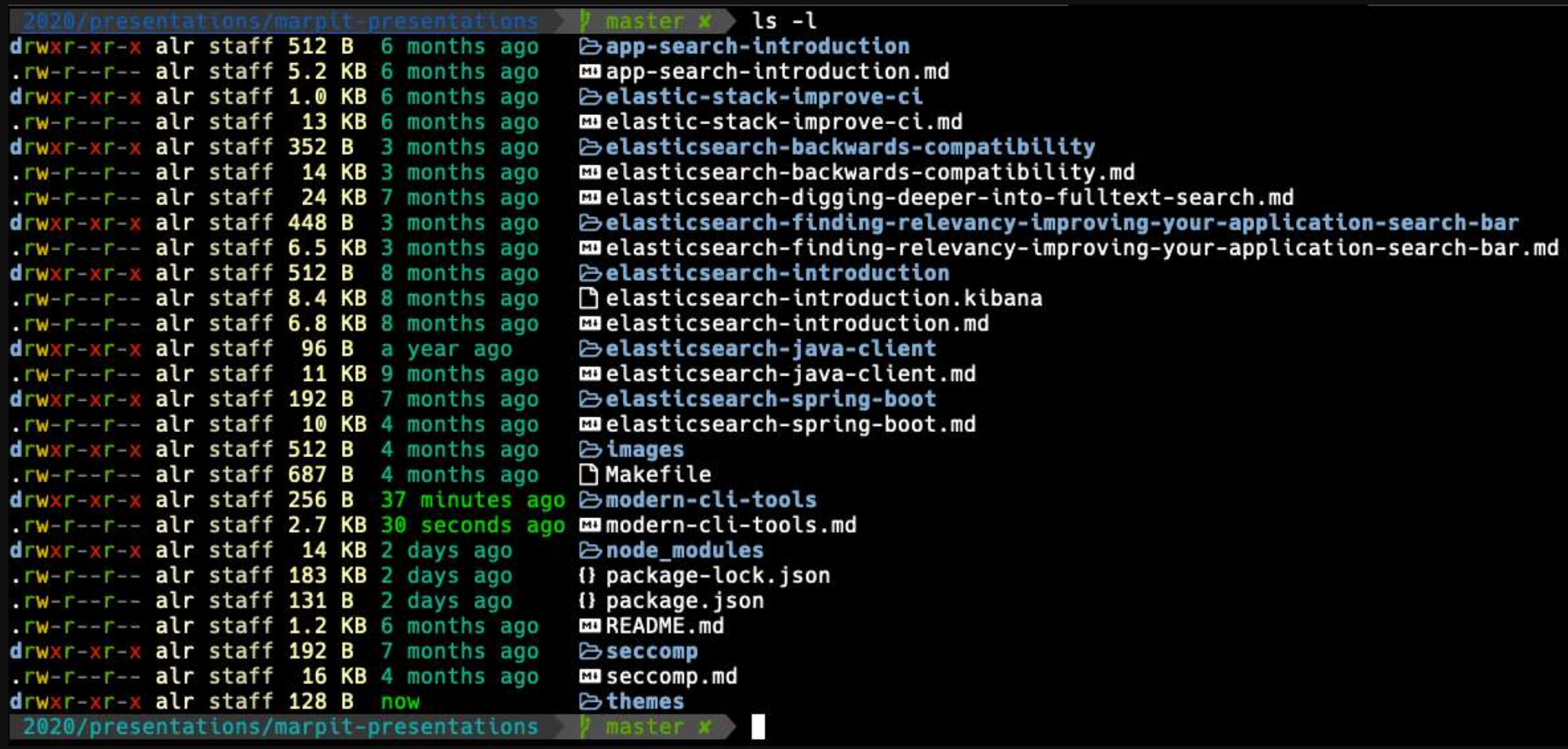
wd

Shell history search

- Ctrl+R triggers history search
- **Extremely powerful**
- Ensure your history gets written after command execution instead of logout

```
~  kubectl --namespace community logs --selector app=cloud-challenge -f
bck-i-search: kube_
```

lsd


2020/presentations/marpit-presentations master ✗ ls -l
drwxr-xr-x alr staff 512 B 6 months ago app-search-introduction
.rw-r--r-- alr staff 5.2 KB 6 months ago app-search-introduction.md
drwxr-xr-x alr staff 1.0 KB 6 months ago elastic-stack-improve-ci
.rw-r--r-- alr staff 13 KB 6 months ago elastic-stack-improve-ci.md
drwxr-xr-x alr staff 352 B 3 months ago elasticsearch-backwards-compatibility
.rw-r--r-- alr staff 14 KB 3 months ago elasticsearch-backwards-compatibility.md
.rw-r--r-- alr staff 24 KB 7 months ago elasticsearch-digging-deeper-into-fulltext-search.md
drwxr-xr-x alr staff 448 B 3 months ago elasticsearch-finding-relevancy-improving-your-application-search-bar
.rw-r--r-- alr staff 6.5 KB 3 months ago elasticsearch-finding-relevancy-improving-your-application-search-bar.md
drwxr-xr-x alr staff 512 B 8 months ago elasticsearch-introduction
.rw-r--r-- alr staff 8.4 KB 8 months ago elasticsearch-introduction.kibana
.rw-r--r-- alr staff 6.8 KB 8 months ago elasticsearch-introduction.md
drwxr-xr-x alr staff 96 B a year ago elasticsearch-java-client
.rw-r--r-- alr staff 11 KB 9 months ago elasticsearch-java-client.md
drwxr-xr-x alr staff 192 B 7 months ago elasticsearch-spring-boot
.rw-r--r-- alr staff 10 KB 4 months ago elasticsearch-spring-boot.md
drwxr-xr-x alr staff 512 B 4 months ago images
.rw-r--r-- alr staff 687 B 4 months ago Makefile
drwxr-xr-x alr staff 256 B 37 minutes ago modern-cli-tools
.rw-r--r-- alr staff 2.7 KB 30 seconds ago modern-cli-tools.md
drwxr-xr-x alr staff 14 KB 2 days ago node_modules
.rw-r--r-- alr staff 183 KB 2 days ago package-lock.json
.rw-r--r-- alr staff 131 B 2 days ago package.json
.rw-r--r-- alr staff 1.2 KB 6 months ago README.md
drwxr-xr-x alr staff 192 B 7 months ago seccomp
.rw-r--r-- alr staff 16 KB 4 months ago seccomp.md
drwxr-xr-x alr staff 128 B now themes
2020/presentations/marpit-presentations master ✗

lsd

- a better `ls`
- colored output
- relative/absolute timestamps
- file type icons (nerdfonts)
- tree view
- total directory size view

bat

```
33  ```
34  marp -s . -I . -w --allow-local-files
35  ```
36
37  Then open http://localhost:8080/ and click on the presentation. Live reloading
38  should work as usual.
39
40  # TODO
41
42  * Do more CSS styling to make this nicer
43  * Add comments for better explanations
44
```

```
2020/presentations/marpit-presentations  master ✘  cat package.json
```

```
File: package.json
1  {
2    "name": "marp-demos",
3    "devDependencies": {
4      "@marp-team/marp-cli": "0.23.0",
5      "@mermaid-js/mermaid-cli": "8.8.1"
6    }
7  }
```

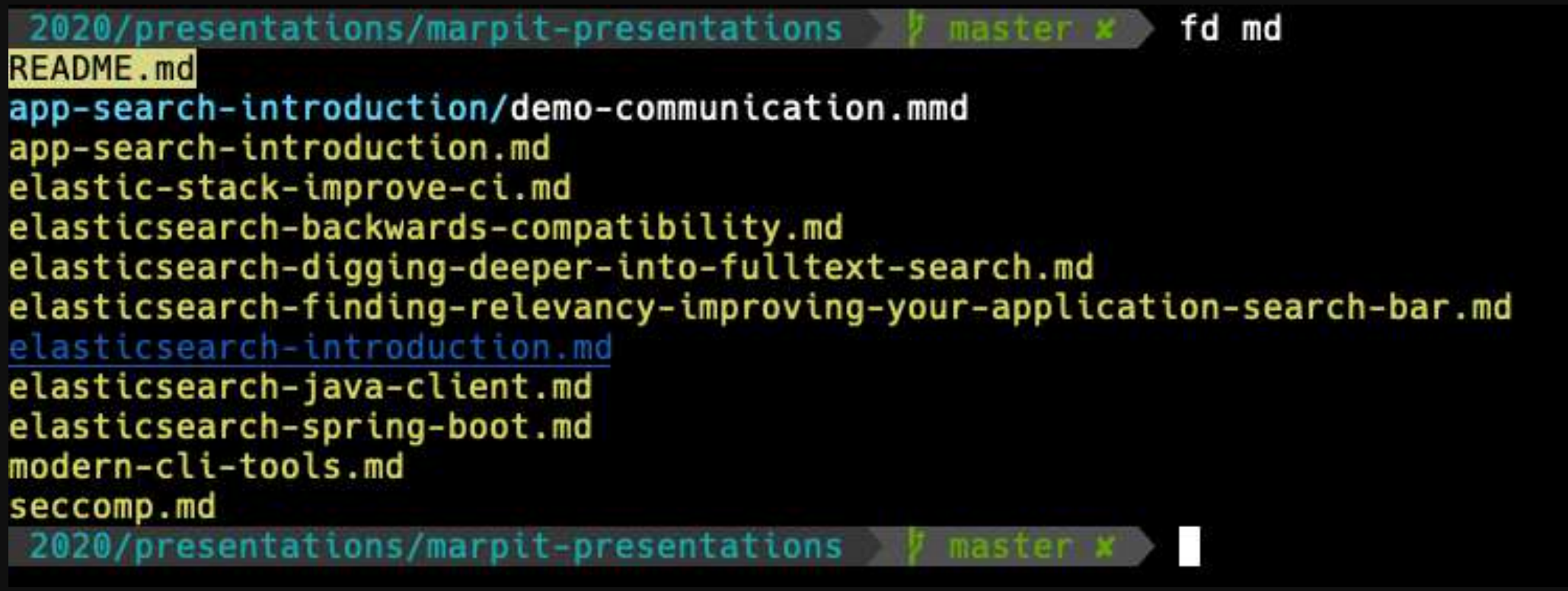
```
2020/presentations/marpit-presentations  master ✘  cat Makefile
```

```
File: Makefile
1  all: pdf html
2
3  pdf:
4      ./node_modules/.bin/marp --theme-set . --pdf elasticsearch-digging-deeper-into-fulltext-search.md -o elasticsear
   ch-digging-deeper-into-fulltext-search.pdf --allow-local-files
5      ./node_modules/.bin/marp --theme-set . --pdf elasticsearch-java-client.md -o elasticsearch-java-client.pdf --all
   ow-local-files
6
7  html:
8      ./node_modules/.bin/marp --theme-set . --html elasticsearch-digging-deeper-into-fulltext-search.md -o elasticsea
   rch-digging-deeper-into-fulltext-search.html --allow-local-files
9      ./node_modules/.bin/marp --theme-set . --html elasticsearch-java-client.md -o elasticsearch-java-client.html --a
   llow-local-files
10
11 server:
12     marp -s . -I . -w --allow-local-files
```

bat

- cat with wings
- Syntax highlighting & themes
- Line highlighting
- Range snippets (no more `cat | head | tail` parties)
- git integration
- builtin pagination

fd


2020/presentations/marpit-presentations
master
fd md
README.md
app-search-introduction/demo-communication.mmd
app-search-introduction.md
elastic-stack-improve-ci.md
elasticsearch-backwards-compatibility.md
elasticsearch-digging-deeper-into-fulltext-search.md
elasticsearch-finding-relevancy-improving-your-application-search-bar.md
elasticsearch-introduction.md
elasticsearch-java-client.md
elasticsearch-spring-boot.md
modern-cli-tools.md
seccomp.md
2020/presentations/marpit-presentations
master

fd

- a better find, very similar syntax
- colors!
- takes `.gitignore` into account
- case-insensitive by default
- regexes
- parallel command execution (when used with `-x`)

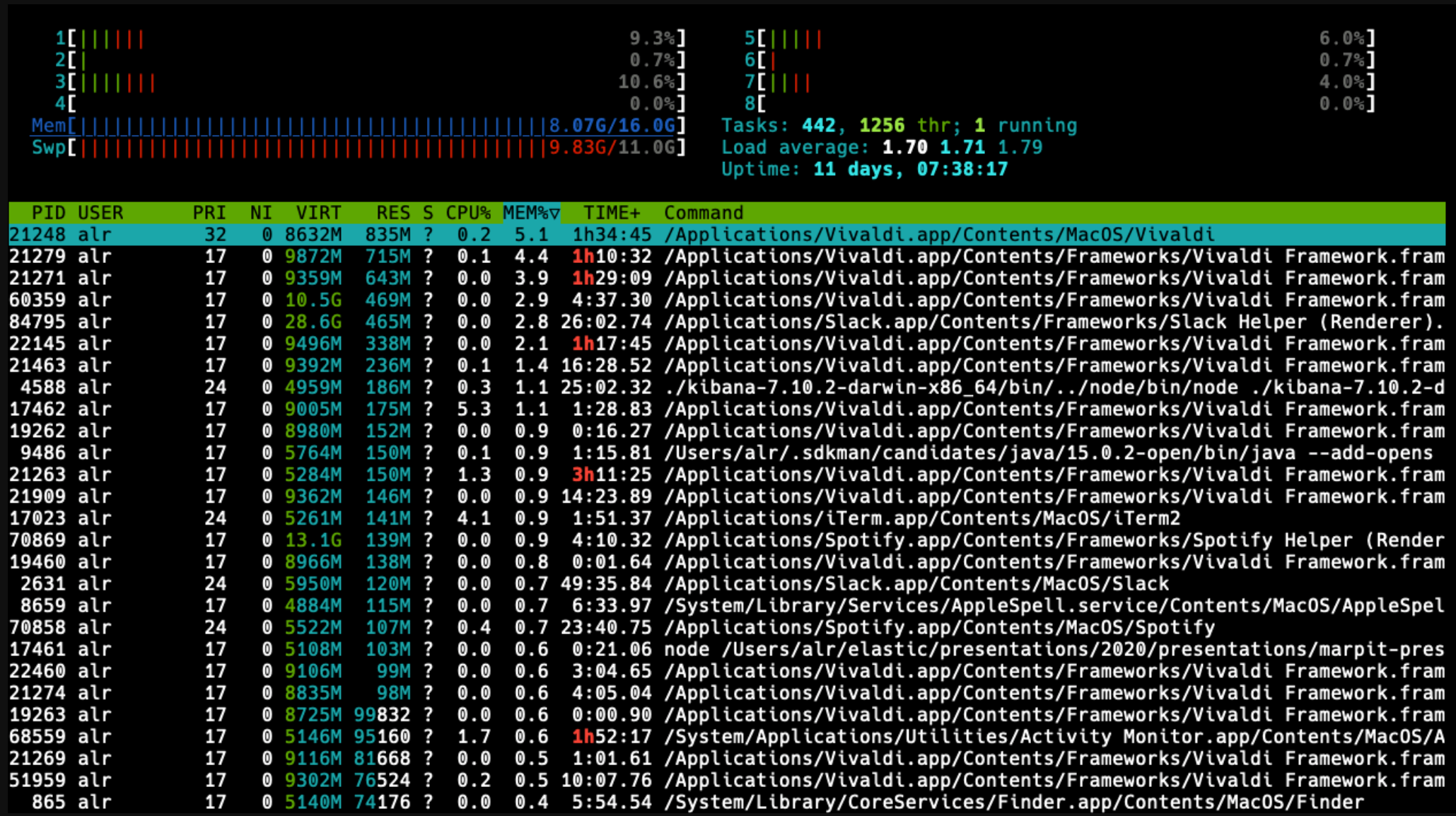
ripgrep

```
2020/presentations/marpit-presentations  master ✘  rg Crystal
modern-cli-tools.md
57:* Crystal

seccomp.md
20:- Using Seccomp in high level languages (Java, Crystal, Python)
454:# Using seccomp in Crystal
459:# Using seccomp in Crystal
628:- Libraries: [libseccomp](https://github.com/seccomp/libseccomp) including python integration, [go-seccomp-bpf](https://g
ithub.com/elastic/go-seccomp-bpf), [seccomp.cr](https://github.com/S-YOU/seccomp.cr) for [Crystal](https://crystal-lang.org/)

elastic-stack-improve-ci.md
409:# Crystal Output (single XML file)
2020/presentations/marpit-presentations  master ✘
```

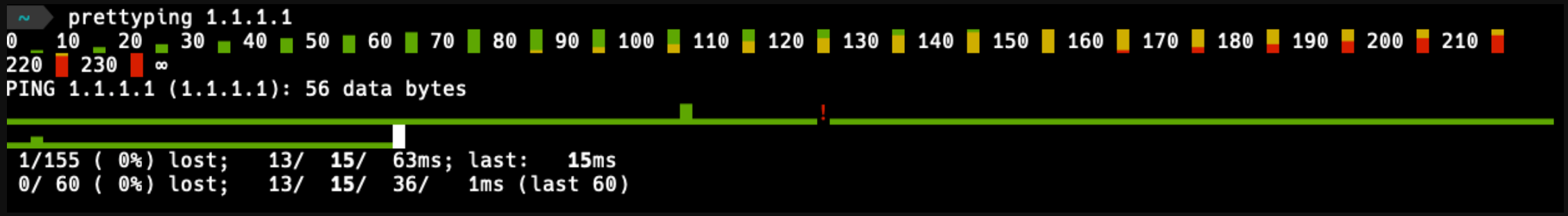
ripgrep

- It's **fast**!
- match patterns across newlines
- takes `.gitignore` into account
- skips dot files and binary files
- recursive && regexing by default
- replacement of matched text
- `ripgrep-all` to search in binary files

htop


1[|||||| 9.3%]
2[| 0.7%]
3[||||||| 10.6%]
4[0.0%]
5[||||| 6.0%]
6[| 0.7%]
7[|||| 4.0%]
8[0.0%]
Mem[||||||||||||||||||||||||||||||||||||8.07G/16.0G]
Swp[||||||||||||||||||||||||||||||||||||9.83G/11.0G]
Tasks: 442, 1256 thr; 1 running
Load average: 1.70 1.71 1.79
Uptime: 11 days, 07:38:17
PID USER PRI NI VIRT RES S CPU% MEM%▽ TIME+ Command
21248 alr 32 0 8632M 835M ? 0.2 5.1 1h34:45 /Applications/Vivaldi.app/Contents/MacOS/Vivaldi
21279 alr 17 0 9872M 715M ? 0.1 4.4 1h10:32 /Applications/Vivaldi.app/Contents/Frameworks/Vivaldi Framework.fram
21271 alr 17 0 9359M 643M ? 0.0 3.9 1h29:09 /Applications/Vivaldi.app/Contents/Frameworks/Vivaldi Framework.fram
60359 alr 17 0 10.5G 469M ? 0.0 2.9 4:37.30 /Applications/Vivaldi.app/Contents/Frameworks/Vivaldi Framework.fram
84795 alr 17 0 28.6G 465M ? 0.0 2.8 26:02.74 /Applications/Slack.app/Contents/Frameworks/Slack Helper (Renderer).
22145 alr 17 0 9496M 338M ? 0.0 2.1 1h17:45 /Applications/Vivaldi.app/Contents/Frameworks/Vivaldi Framework.fram
21463 alr 17 0 9392M 236M ? 0.1 1.4 16:28.52 /Applications/Vivaldi.app/Contents/Frameworks/Vivaldi Framework.fram
4588 alr 24 0 4959M 186M ? 0.3 1.1 25:02.32 ./kibana-7.10.2-darwin-x86_64/bin/../node/bin/node ./kibana-7.10.2-d
17462 alr 17 0 9005M 175M ? 5.3 1.1 1:28.83 /Applications/Vivaldi.app/Contents/Frameworks/Vivaldi Framework.fram
19262 alr 17 0 8980M 152M ? 0.0 0.9 0:16.27 /Applications/Vivaldi.app/Contents/Frameworks/Vivaldi Framework.fram
9486 alr 17 0 5764M 150M ? 0.1 0.9 1:15.81 /Users/alr/.sdkman/candidates/java/15.0.2-open/bin/java --add-opens
21263 alr 17 0 5284M 150M ? 1.3 0.9 3h11:25 /Applications/Vivaldi.app/Contents/Frameworks/Vivaldi Framework.fram
21909 alr 17 0 9362M 146M ? 0.0 0.9 14:23.89 /Applications/Vivaldi.app/Contents/Frameworks/Vivaldi Framework.fram
17023 alr 24 0 5261M 141M ? 4.1 0.9 1:51.37 /Applications/iTerm.app/Contents/MacOS/iTerm2
70869 alr 17 0 13.1G 139M ? 0.0 0.9 4:10.32 /Applications/Spotify.app/Contents/Frameworks/Spotify Helper (Render
19460 alr 17 0 8966M 138M ? 0.0 0.8 0:01.64 /Applications/Vivaldi.app/Contents/Frameworks/Vivaldi Framework.fram
2631 alr 24 0 5950M 120M ? 0.0 0.7 49:35.84 /Applications/Slack.app/Contents/MacOS/Slack
8659 alr 17 0 4884M 115M ? 0.0 0.7 6:33.97 /System/Library/Services/AppleSpell.service/Contents/MacOS/AppleSpel
70858 alr 24 0 5522M 107M ? 0.4 0.7 23:40.75 /Applications/Spotify.app/Contents/MacOS/Spotify
17461 alr 17 0 5108M 103M ? 0.0 0.6 0:21.06 node /Users/alr/elastic/presentations/2020/presentations/marpit-pres
22460 alr 17 0 9106M 99M ? 0.0 0.6 3:04.65 /Applications/Vivaldi.app/Contents/Frameworks/Vivaldi Framework.fram
21274 alr 17 0 8835M 98M ? 0.0 0.6 4:05.04 /Applications/Vivaldi.app/Contents/Frameworks/Vivaldi Framework.fram
19263 alr 17 0 8725M 99832 ? 0.0 0.6 0:00.90 /Applications/Vivaldi.app/Contents/Frameworks/Vivaldi Framework.fram
68559 alr 17 0 5146M 95160 ? 1.7 0.6 1h52:17 /System/Applications/Utilities/Activity Monitor.app/Contents/MacOS/A
21269 alr 17 0 9116M 81668 ? 0.0 0.5 1:01.61 /Applications/Vivaldi.app/Contents/Frameworks/Vivaldi Framework.fram
51959 alr 17 0 9302M 76524 ? 0.2 0.5 10:07.76 /Applications/Vivaldi.app/Contents/Frameworks/Vivaldi Framework.fram
865 alr 17 0 5140M 74176 ? 0.0 0.4 5:54.54 /System/Library/CoreServices/Finder.app/Contents/MacOS/Finder

prettyping


~ prettyping 1.1.1.1
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210
220 230 ∞
PING 1.1.1.1 (1.1.1.1): 56 data bytes
!
1/155 (0%) lost; 13/ 15/ 63ms; last: 15ms
0/ 60 (0%) lost; 13/ 15/ 36/ 1ms (last 60)

hyperfine

```
/tmp  hyperfine --warmup 5 'cat test1 > /dev/null' --prepare 'sudo purge'

Benchmark #1: cat test1 > /dev/null
  Time (mean ± σ):      36.5 ms ±   3.1 ms    [User: 1.2 ms, System: 17.8 ms]
  Range (min … max):    33.5 ms …  43.3 ms    10 runs

/tmp  hyperfine --warmup 5 'cat test1 > /dev/null'
Benchmark #1: cat test1 > /dev/null
  Time (mean ± σ):       3.8 ms ±   0.6 ms    [User: 0.8 ms, System: 2.9 ms]
  Range (min … max):     2.8 ms …   7.0 ms    363 runs

  Warning: Command took less than 5 ms to complete. Results might be inaccurate.

/tmp
```

JSON coloring

```
~ curl -s localhost:9200 | jq -C .
{
  "name": "rhincodon",
  "cluster_name": "elasticsearch",
  "cluster_uuid": "qp5uSkQWTPCkdieecxYM3A",
  "version": {
    "number": "7.11.1",
    "build_flavor": "default",
    "build_type": "tar",
    "build_hash": "ff17057114c2199c9c1bbecc727003a907c0db7a",
    "build_date": "2021-02-15T13:44:09.394032Z",
    "build_snapshot": false,
    "lucene_version": "8.7.0",
    "minimum_wire_compatibility_version": "6.8.0",
    "minimum_index_compatibility_version": "6.0.0-beta1"
  },
  "tagline": "You Know, for Search"
}
~
```

JSON selection

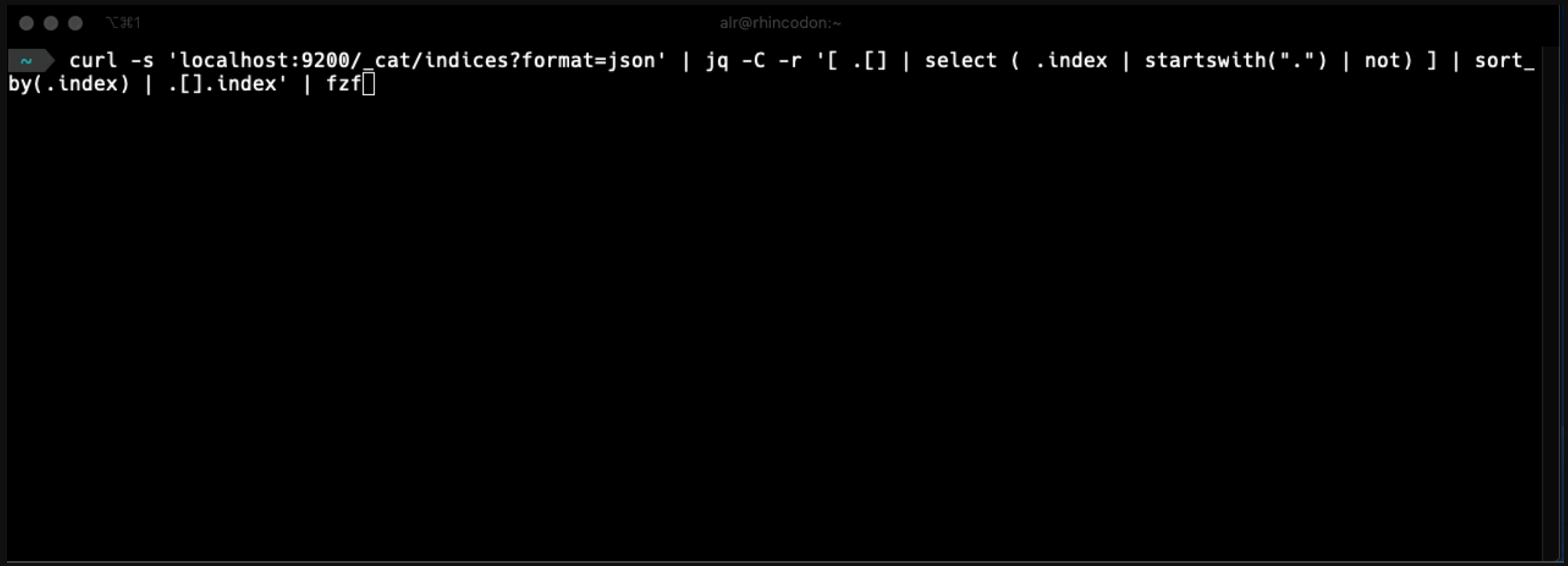
JSON selection

```
~ echo '{ "array" : [ {"name" : "Alex", "age" : 37} , {"name":"Paul", "age":43}] }' | jq -C
{
  "array": [
    {
      "name": "Alex",
      "age": 37
    },
    {
      "name": "Paul",
      "age": 43
    }
  ]
}
~ echo '{ "array" : [ {"name" : "Alex", "age" : 37} , {"name":"Paul", "age":43}] }' | jq -C '.array | min_by(.name)'
{
  "name": "Alex",
  "age": 37
}
~ echo '{ "array" : [ {"name" : "Alex", "age" : 37} , {"name":"Paul", "age":43}] }' | jq -C '[.array[].age] | add'
80
~
```

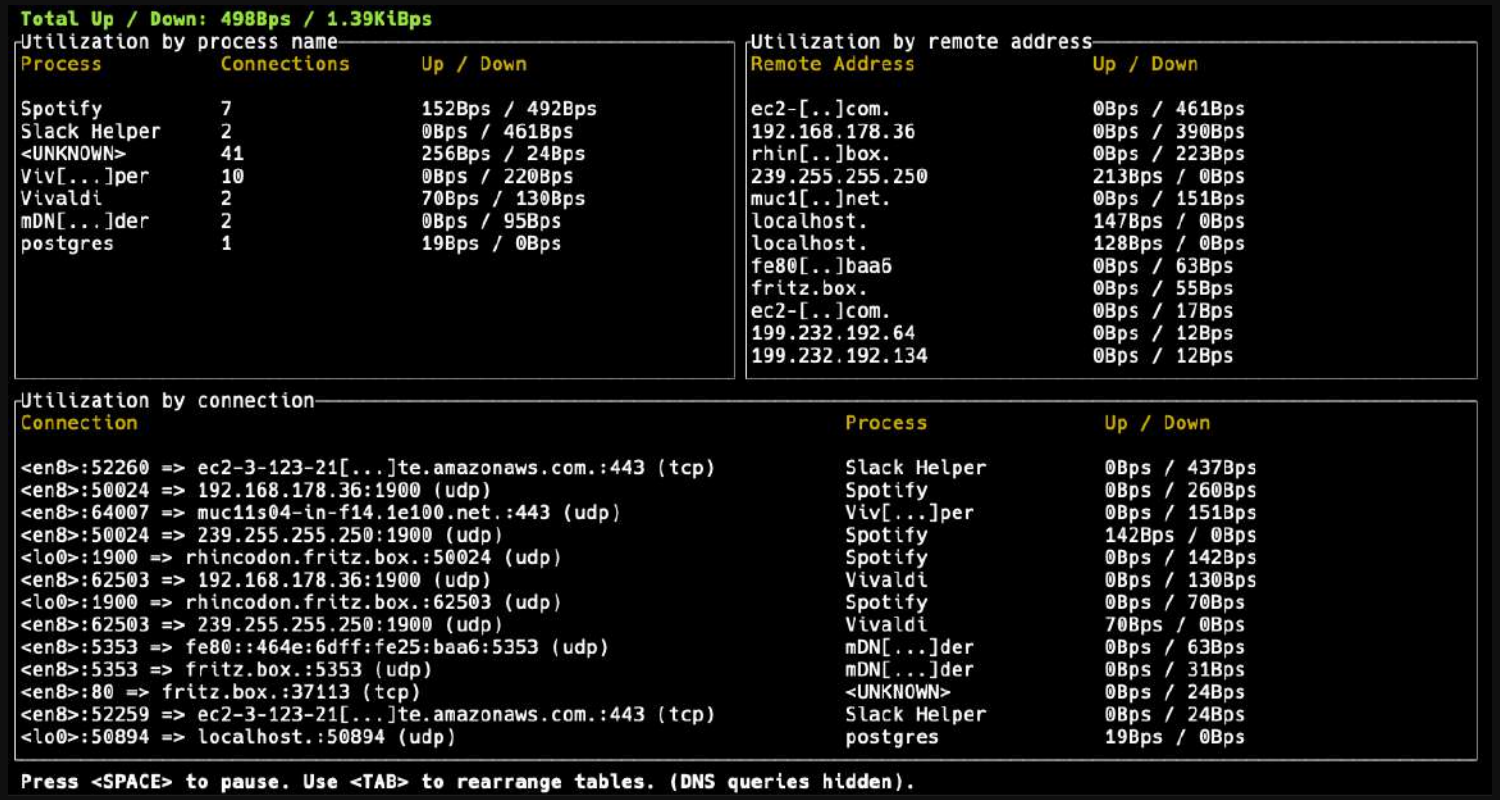
fzf

```
curl -s 'localhost:9200/_cat/indices?format=json' \
  | jq -C -r \ '[ .[] | select ( .index | startswith(".") | not) ] | sort_by(.index) | .[].index' \
  | fzf
```

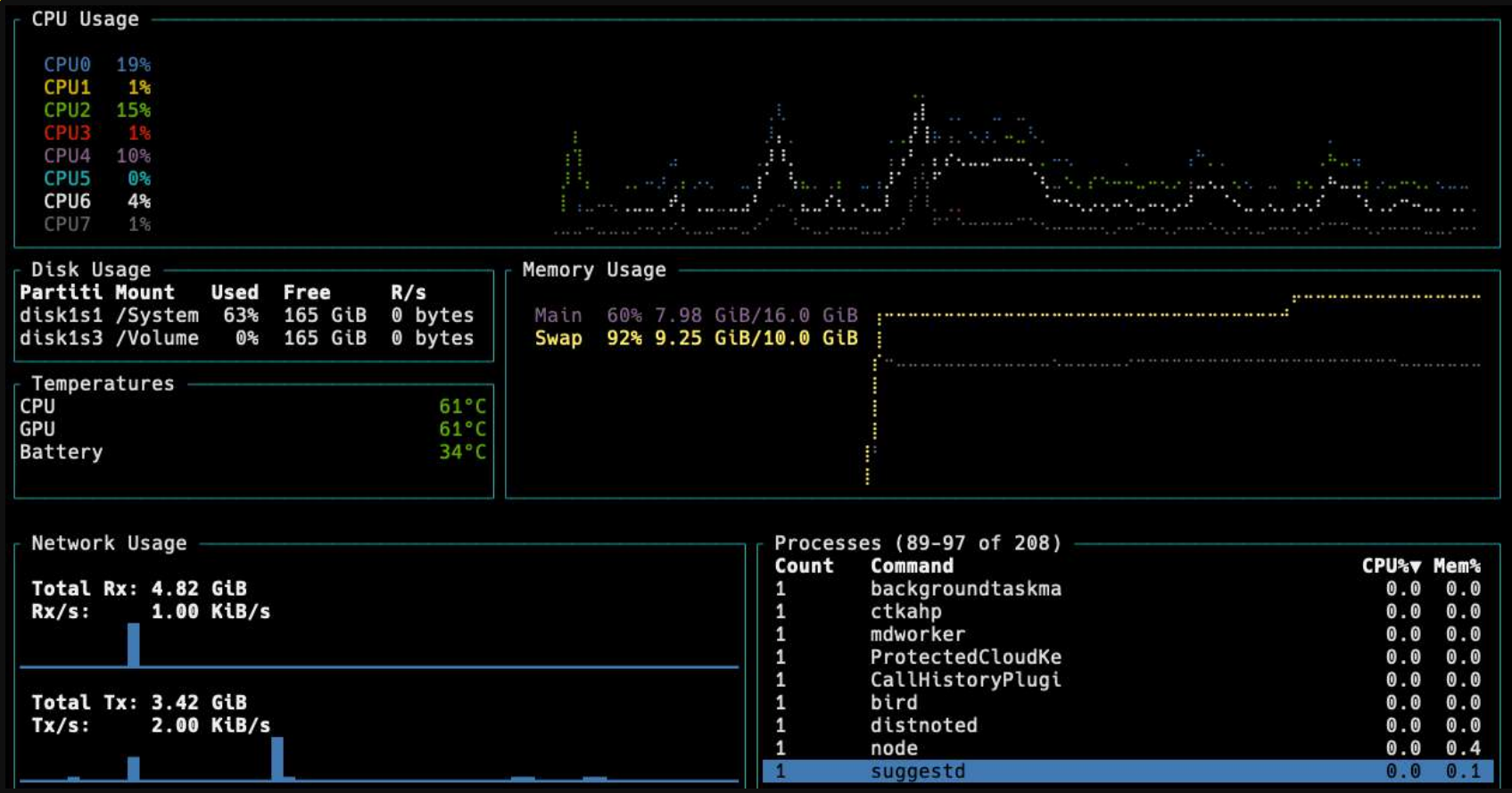
```
curl -s 'localhost:9200/_cat/indices?format=json' \
  | jq -C -r \ '[ .[] | select ( .index | startswith(".") | not) ] | sort_by(.index) | .[].index' \
  | fzf
```



bandwhich


Total Up / Down: 498Bps / 1.39KiBps
Utilization by process name
Process Connections Up / Down
Spotify 7 152Bps / 492Bps
Slack Helper 2 0Bps / 461Bps
<UNKNOWN> 41 256Bps / 24Bps
Viv[...]per 10 0Bps / 220Bps
Vivaldi 2 70Bps / 130Bps
mDN[...]der 2 0Bps / 95Bps
postgres 1 19Bps / 0Bps
Utilization by remote address
Remote Address Up / Down
ec2-[..]com. 0Bps / 461Bps
192.168.178.36 0Bps / 390Bps
rhin[..]box. 0Bps / 223Bps
239.255.255.250 213Bps / 0Bps
muc1[..]net. 0Bps / 151Bps
localhost. 147Bps / 0Bps
localhost. 128Bps / 0Bps
fe80[..]baa6 0Bps / 63Bps
fritz.box. 0Bps / 55Bps
ec2-[..]com. 0Bps / 17Bps
199.232.192.64 0Bps / 12Bps
199.232.192.134 0Bps / 12Bps
Utilization by connection
Connection Process Up / Down
<en8>:52260 => ec2-3-123-21[...]te.amazonaws.com.:443 (tcp) Slack Helper 0Bps / 437Bps
<en8>:50024 => 192.168.178.36:1900 (udp) Spotify 0Bps / 260Bps
<en8>:64007 => muc11s04-in-f14.1e100.net.:443 (udp) Viv[...]per 0Bps / 151Bps
<en8>:50024 => 239.255.255.250:1900 (udp) Spotify 142Bps / 0Bps
<lo0>:1900 => rhincodon.fritz.box.:50024 (udp) Spotify 0Bps / 142Bps
<en8>:62503 => 192.168.178.36:1900 (udp) Vivaldi 0Bps / 130Bps
<lo0>:1900 => rhincodon.fritz.box.:62503 (udp) Spotify 0Bps / 70Bps
<en8>:62503 => 239.255.255.250:1900 (udp) Vivaldi 70Bps / 0Bps
<en8>:5353 => fe80::464e:6dff:fe25:baa6:5353 (udp) mDN[...]der 0Bps / 63Bps
<en8>:5353 => fritz.box.:5353 (udp) mDN[...]der 0Bps / 31Bps
<en8>:80 => fritz.box.:37113 (tcp) <UNKNOWN> 0Bps / 24Bps
<en8>:52259 => ec2-3-123-21[...]te.amazonaws.com.:443 (tcp) Slack Helper 0Bps / 24Bps
<lo0>:50894 => localhost.:50894 (udp) postgres 19Bps / 0Bps
Press <SPACE> to pause. Use <TAB> to rearrange tables. (DNS queries hidden).

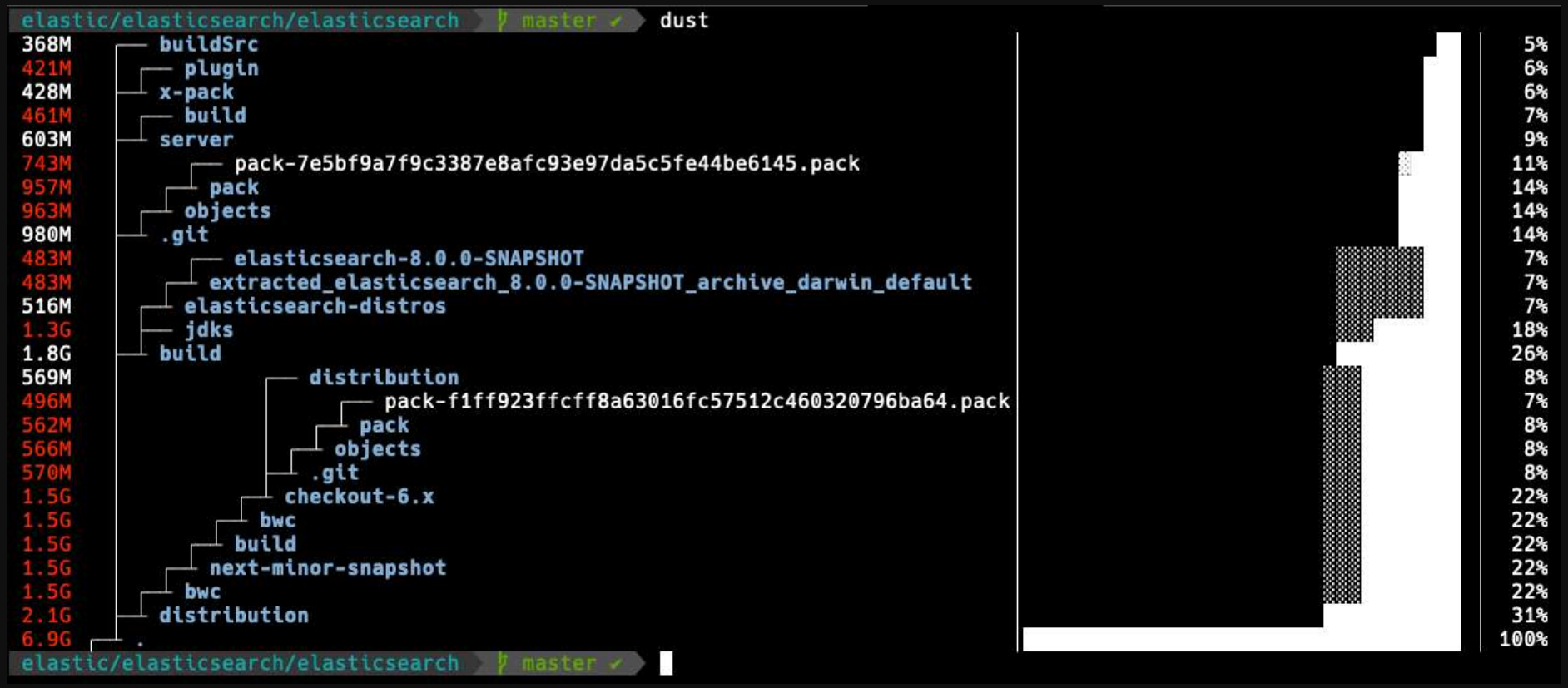
ytop


CPU Usage
CPU0 19%
CPU1 1%
CPU2 15%
CPU3 1%
CPU4 10%
CPU5 0%
CPU6 4%
CPU7 1%
Disk Usage
Partiti Mount Used Free R/s
disk1s1 /System 63% 165 GiB 0 bytes
disk1s3 /Volume 0% 165 GiB 0 bytes
Temperatures
CPU 61°C
GPU 61°C
Battery 34°C
Memory Usage
Main 60% 7.98 GiB/16.0 GiB
Swap 92% 9.25 GiB/10.0 GiB
Network Usage
Total Rx: 4.82 GiB
Rx/s: 1.00 KiB/s
Total Tx: 3.42 GiB
Tx/s: 2.00 KiB/s
Processes (89-97 of 208)
Count Command CPU%▼ Mem%
1 backgroundtaskma 0.0 0.0
1 ctkahp 0.0 0.0
1 mdworker 0.0 0.0
1 ProtectedCloudKe 0.0 0.0
1 CallHistoryPlugi 0.0 0.0
1 bird 0.0 0.0
1 distnoted 0.0 0.0
1 node 0.0 0.4
1 suggestd 0.0 0.1

procs

```
~ procs -p disable java -t
    PID   User  | TTY   CPU  MEM CPU Time | Command
                |       [%]  [%]
└──── 67348 alr |         0.0  4.5 01:33:44 | /Applications/IntelliJ IDEA CE.app/Contents/MacOS/idea
└──── 98102 alr |         0.0  0.1 00:01:01 | /Users/alr/.sdkman/candidates/java/15.0.1-open/bin/java --enable-preview -Dfile
└──── 28709 alr | s000    0.0  0.0 00:00:00 | -zsh
└──── 28804 alr | s000    0.0 25.2 00:00:37 | /Users/alr/.sdkman/candidates/java/current/bin/java -Xshare:auto -Des.networkad
~
```

dust


elastic/elasticsearch/elasticsearch master ✓ dust
368M buildSrc
421M plugin
428M x-pack
461M build
603M server
743M pack-7e5bf9a7f9c3387e8afc93e97da5c5fe44be6145.pack
957M pack
963M objects
980M .git
483M elasticsearch-8.0.0-SNAPSHOT
483M extracted_elasticsearch_8.0.0-SNAPSHOT_archive_darwin_default
516M elasticsearch-distros
1.3G jdks
1.8G build
569M distribution
496M pack-f1ff923ffcff8a63016fc57512c460320796ba64.pack
562M pack
566M objects
570M .git
1.5G checkout-6.x
1.5G bwc
1.5G build
1.5G next-minor-snapshot
1.5G bwc
2.1G distribution
6.9G .
elastic/elasticsearch/elasticsearch master ✓
5%
6%
6%
7%
9%
11%
14%
14%
14%
7%
7%
7%
18%
26%
8%
7%
8%
8%
8%
22%
22%
22%
22%
22%
31%
100%

version managers

- JVM: sdkman
- nodejs: nvm
- ruby: rvm
- Problem: per project requirements

`direnv` - unclutter your profile

.envrc

```
layout node
export NODE_VERSIONS=~/.nvm/versions/node
export NODE_VERSION_PREFIX='v'
use node 15.11.0
dotenv
```

`direnv` - unclutter your profile

.env

```
DB_USERNAME="sa"
DB_PASSWORD=""
DB_URL="jdbc:h2:mem:foo_in_memory;MODE=PostgreSQL;DB_CLOSE_DELAY=-1;DATABASE_TO_UPPER=false"
```

Run `direnv allow` after a change

`envchain` - store secrets securely

```
envchain --set my_app DB_PASSWORD

envchain ./gradlew run
```

Better diffs

```
/tmp /usr/bin/diff elasticsearch-old.yml elasticsearch.yml
23c23
< #node.name: node-1
---
> node.name: my-node-1
55c55
< #network.host: 192.168.0.1
---
> network.host: 192.168.0.1
✘ /tmp /usr/bin/diff -u elasticsearch-old.yml elasticsearch.yml
--- elasticsearch-old.yml       2021-03-08 16:39:06.000000000 +0100
+++ elasticsearch.yml   2021-03-08 16:42:43.000000000 +0100
@@ -20,7 +20,7 @@
 #
 # Use a descriptive name for the node:
 #
-#node.name: node-1
+node.name: my-node-1
 #
 # Add custom attributes to the node:
 #
@@ -52,7 +52,7 @@
 #
 # Set the bind address to a specific IP (IPv4 or IPv6):
 #
-#network.host: 192.168.0.1
+network.host: 192.168.0.1
 #
 # Set a custom port for HTTP:
 #
✘ /tmp
```

colordiff

```
✘ /tmp colordiff -u elasticsearch-old.yml elasticsearch.yml
--- elasticsearch-old.yml       2021-03-08 16:39:06.000000000 +0100
+++ elasticsearch.yml   2021-03-08 16:42:43.000000000 +0100
@@ -20,7 +20,7 @@
 #
 # Use a descriptive name for the node:
 #
-#node.name: node-1
+node.name: my-node-1
 #
 # Add custom attributes to the node:
 #
@@ -52,7 +52,7 @@
 #
 # Set the bind address to a specific IP (IPv4 or IPv6):
 #
-#network.host: 192.168.0.1
+network.host: 192.168.0.1
 #
 # Set a custom port for HTTP:
 #
```

icdiff

```
✘ /tmp icdiff elasticsearch-old.yml elasticsearch.yml
elasticsearch-old.yml                                 elasticsearch.yml
#                                                     #
# ------------------------------------ Node ---------- # ------------------------------------ Node ----------
--------------------                                  --------------------
#                                                     #
# Use a descriptive name for the node:                # Use a descriptive name for the node:
#                                                     #
#node.name: node-1                                    node.name: my-node-1
#                                                     #
# Add custom attributes to the node:                  # Add custom attributes to the node:
#                                                     #
#node.attr.rack: r1                                   #node.attr.rack: r1
#                                                     #
---                                                   ---
#                                                     #
# ---------------------------------- Network ---------- # ---------------------------------- Network ----------
--------------------                                  --------------------
#                                                     #
# Set the bind address to a specific IP (IPv4 or IPv6): # Set the bind address to a specific IP (IPv4 or IPv6):
#                                                     #
#network.host: 192.168.0.1                            network.host: 192.168.0.1
#                                                     #
# Set a custom port for HTTP:                         # Set a custom port for HTTP:
#                                                     #
#http.port: 9200                                      #http.port: 9200
#                                                     #
/tmp
```

scc - source code analyzer

```
elastic/elasticsearch/elasticsearch  master ✓  time scc --avg-wage 100000
```

Language	Files	Lines	Blanks	Comments	Code	Complexity
Java	15002	2544041	328818	292218	1923005	174961
YAML	1007	134857	14667	3163	117027	0
JSON	619	43138	18	0	43120	0
Plain Text	512	55353	9539	0	45814	0
Gradle	392	21555	2368	827	18360	0
Properties File	84	9803	228	637	8938	0
XML	60	4072	472	1133	2467	0
Groovy	31	4788	465	561	3762	334
BASH	25	814	143	214	457	74
SVG	23	1137	0	18	1119	0
Batch	21	849	154	2	693	169
Markdown	17	1675	397	0	1278	0
Shell	17	1070	129	164	777	72
SQL	12	859	4	561	294	0
XML Schema	12	3302	224	0	3078	0
TOML	10	5333	269	60	5004	137
Dockerfile	9	501	27	5	469	2
CSV	8	803	0	0	803	0
gitignore	6	72	16	17	39	0
HTML	5	81	0	16	65	0
CSS	3	327	30	3	294	0
Freemarker Template	3	7	0	0	7	0
License	3	285	44	0	241	0
Python	3	579	30	60	489	28
Emacs Lisp	1	88	10	0	78	4
JavaScript	1	40	8	2	30	9
Mustache	1	5	0	0	5	0
Powershell	1	32	3	1	28	0
Systemd	1	66	17	0	49	0
Total	17889	2835532	358080	299662	2177790	175790

```
Estimated Cost to Develop (organic) $153,511,411
Estimated Schedule Effort (organic) 74.866695 months
Estimated People Required (organic) 102.527266
```

```
Processed 129081316 bytes, 129.081 megabytes (SI)
```

```
scc --avg-wage 100000  1.97s user 2.19s system 463% cpu 0.898 total
elastic/elasticsearch/elasticsearch  master ✓
```

Honorable mentions

- GPU based terminal emulators: alacritty & kitty
- exiftool, remove exif data `exiftool -all= my.png`
- tmux - next session will be all about tmux!
- sd, a faster sed alternative
- zoxide, a new `cd` that remembers your most common paths

Honorable mentions

- rlwrap, a `readline` wrapper
- cli, the github cli tool
- taskwarrior, **the** CLI todo management tool

Missing

- Note taking tool, that automatically syncs in the cloud/via git
- Time tracking?
- What are your favourite tools? Feel free to ping (twitter, email, linkedin, whatever)

Write CLI tools

Command Line Interface Guidelines

Foreword

Introduction

Philosophy

- Human-first design
- Simple parts that work together
- Consistency across programs
- Saying (just) enough
- Ease of discovery
- Conversation as the norm
- Robustness
- Empathy
- Chaos

Guidelines

- The Basics
- Help
- Output
- Errors
- Arguments and flags
- Interactivity
- Subcommands
- Robustness
- Future-proofing
- Signals and control characters
- Configuration
- Environment variables
- Naming
- Distribution
- Analytics

Further reading

Resources

- direnv
- envchain
- fish shell
- Starship
- fd
- bat
- hyperfine

Resources

- ripgrep
- ripgrep-all
- Grep tools feature comparison
- Rewritten in Rust: Modern Alternatives of Command-Line Tools
- Command Line Interface Guidelines
- A better zsh history

Thanks for listening

Q & A

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