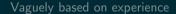
# Getting your performance up

Where did my cycles go?

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#### Preface

- ► The debugging: I'm stupid, but it's been a fun experience debugging this, kudos to noc0lour
- ► The Shell: This is zsh, enhanced by oh-my-zsh, with the Hokietux-maintained Powerlevel9k theme, running in gnome-terminal, with a solarized-dark color theme (which is the same used for this presentation)
- ▶ Shout if you spot mistakes. I'll repeat your heckle, so it's on record.
- ▶ funky animation: https://github.com/marcusmueller/curses\_animation



## Outline



https://github.com/marcusmueller/perfpres



## Outline

1. adhoc stuff



https://github.com/marcusmueller/perfpres



### Outline

- 1. adhoc stuff
- 2. barely prepared stuff



https://github.com/marcusmueller/perfpres



### Stuff is too slow

Typical reflex: blame the software / SDR Vendor / CPU Yeah. This is FOSS. Go and fix things yourself, right?



# In GNU Radio, things are especially hard

- ► GNU Radio is inherently multithreaded
- ► there's the whole Python/C++/SWIG fun thing
- ► oh, and by the way, we do things at a couple  $\frac{MS}{s}$

## perf is your friend

- ► Install deps first

  Fedora, CentOS sudo dnf install perf

  Debian sudo apt-get install linux-tools
- ▶ sudo sysctl -w kernel/perf\_event\_paranoid=-1

## perf commands

record samples performance and writes a perf.data file report reads perf.data and displays stats top super handy instant inspection



## perf typical usage

perf record -ag executable --program\_arguments

- ► record write data
- ► -a all CPUs (super important if you're running stuff with multiple threads)
- ► -g record call graphs who called whom?



#### Demo

