Singularity

Singularity

A container technology with two goals in mind

Image Generator: image can be generated starting from other containers **Runtime**: Does not trust users so it has been design to be secure

Singularity

- Software stack reproducible and verifiable
- Mobile, the container is a file that can be moved
- Runs eveywhere, fits really good in an HPC environment
- Does not trust users :)

Singulrarity: install

```
$ apt update &&\
  apt install autoconf \
              automake \
              autotools-dev \
              build-essential \
              git \
              libarchive-dev \
              libtool \
              squashfs-tools \
              python

/opt/
rm -rf singularity && rm /usr/local/bin/singularity
git clone https://github.com/singularityware/singularity.git
cd singularity
git checkout tags/2.6.0 -b 2.6.0
./autogen.sh
./configure --prefix=/usr/local
make
sudo make install
```

Singulrarity: install

in a Dockerfile

```
FROM ubuntu:18.04

RUN apt update &&\
    apt install autoconf \
            automake \
            autotools-dev \
            build-essential \
            git \
            libarchive-dev \
            libtool \
            squashfs-tools \
            python

WORKDIR /opt/

RUN git clone \
    https://github.com/singularityware/singularity.git

WORKDIR singularity

RUN git checkout tags/2.6.0 -b 2.6.0 &&\
    ./autogen.sh &&\
    ./configure --prefix=/usr/local &&\
    make &&\
    make install
```

Singularity: running w/ Docker

Run singularity inside Docker, this is tricky

```
$ docker run --rm -it singularity:2.6.0
```

Errors are behind the corner :)

Singularity: running w/ Docker

Docker can run a container with special privileges to access hosts' devices

```
$ docker run \
    --priviledged
    --rm \
    -it \
     singularity:2.6.0
```

Singularity: build

Example of simple Singularity file

Singularity: build w/ Docker Registry

Example of my Singularity file getting data from Docker Registry