Singularity

- Docker for scientists -

Why use Singularity?

- Docker
  - Used intensively for a variety of puposes BUT
  - Its usage on distributed/shared platforms is limited/impossible because of security issues
- Singularity
  - http://singularity.lbl.gov
  - Targets mobility of compute and reproducible science
  - Does not support user escalation or context changes
  - Is « Docker compatible », i.e. allows for Docker import/export

How to use Singularity?

- Installation
  - git clone https://github.com/singularityware/singularity.git
  - cd singularity; ./autogen.sh; ./configure --prefix=/usr/local
  - make; sudo make install

- Import Docker to Singularity
  - sudo singularity create --size 4000 tensorflow.img
  - sudo singularity import tensorflow.img docker://tensorflow/tensorflow:latest

- Shell into the container (or exec it)
  - singularity shell tensorflow.img

Open questions

- Can we test it with Dirac?
  - Clone and install it on the VM used for VMDirac
- What's the best way to handle images?
  - Equivalent of DockerHub? Store them on CVMFS?
  - Note that importing Docker images needs sudo
- Are there other limitations?