Common Containers for ESC

Two major use cases for containers:

1. Distribute complete working system to end user ✓
2. Distribute specific code w/ prerequisites for batch processing ✗

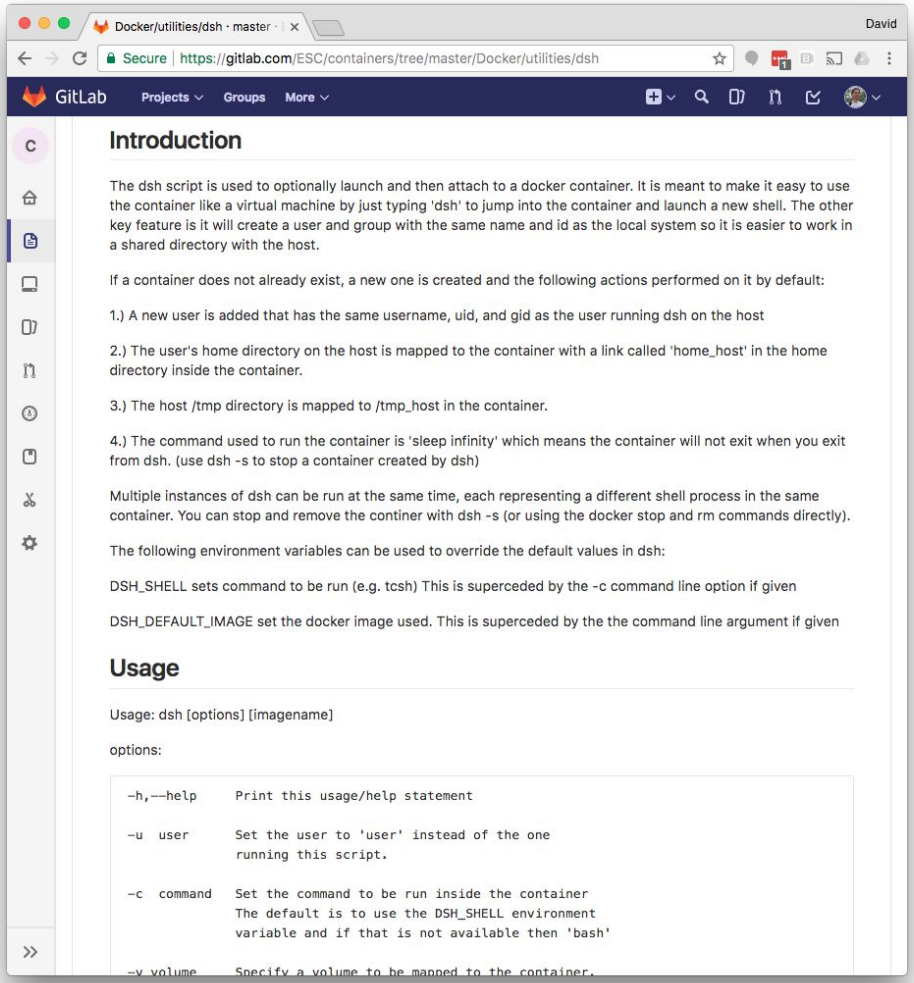
A. Container type/ image host ?
   - Docker ✓ Docker hub, Docker cloud ✓
   - Singularity Singularity hub
   - Shifter NERSC?

Goals

1. Produce image(s) that provide common ESC software
   - Data schemas
   - I/O libraries for phase I file format
   - Base set of pre-requisite 3rd party packages (e.g. Geant 4)
2. Common working environment for running specialized software
   - User account(s)*
   - Directory structure
   - Standard location and name of README

dsh

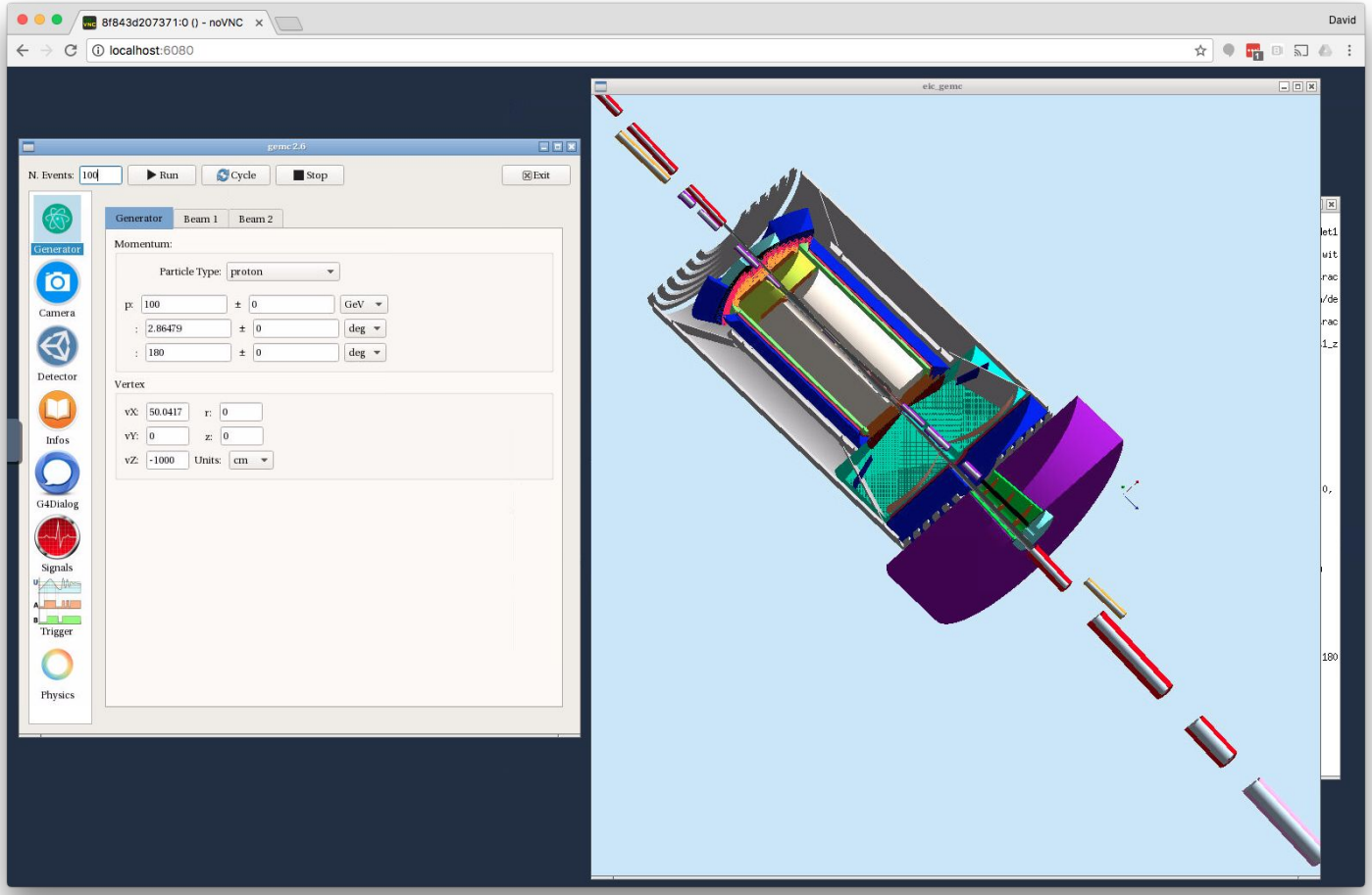
- Users will want persistency on local machine outside of container
- Convenient if output files have same uid/gid as user on host
- Exec multiple shells in same container

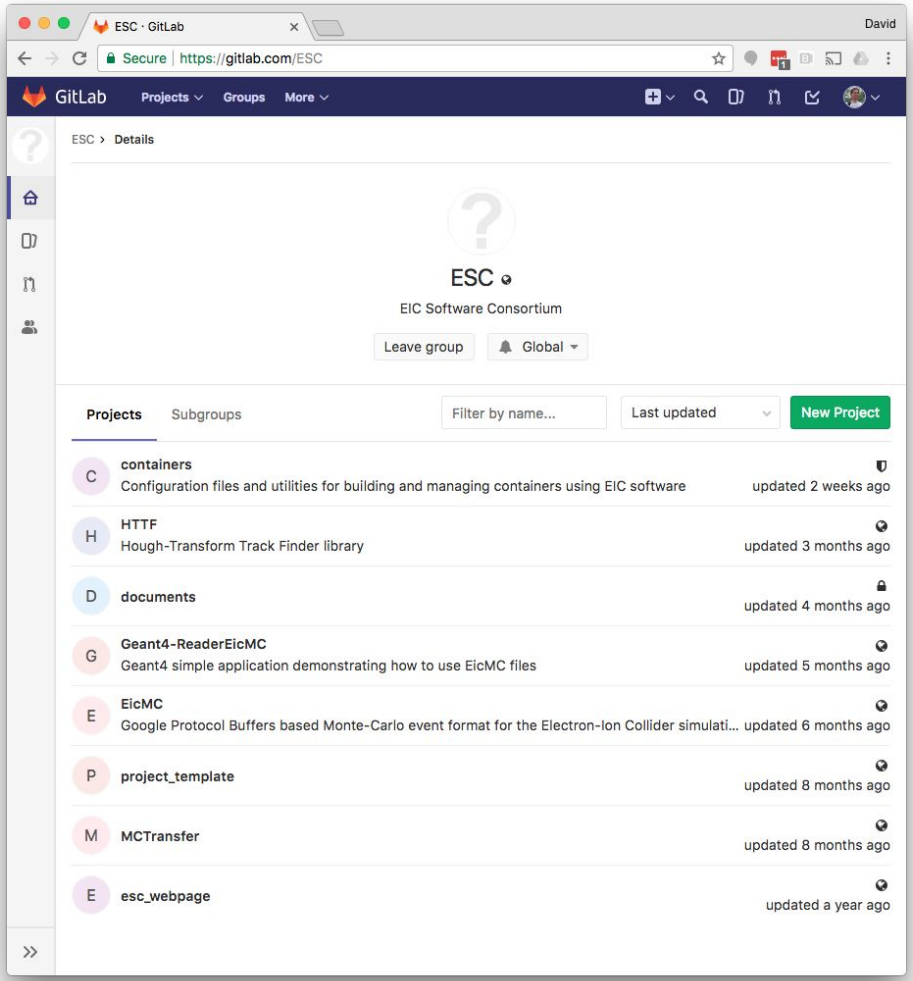


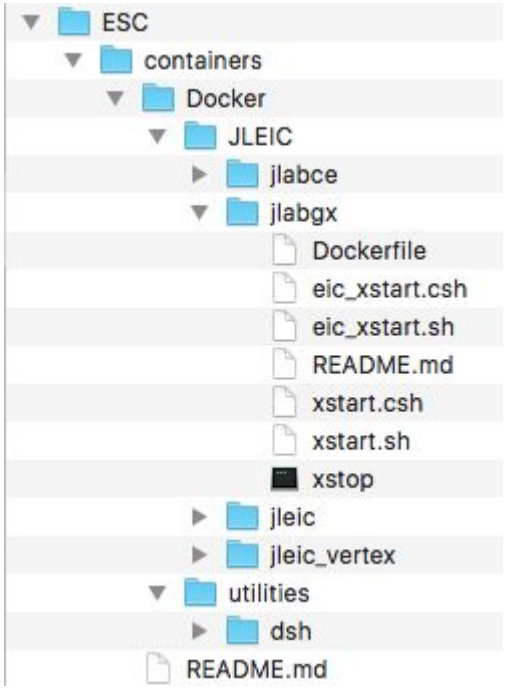
Some Questions ...

1. What OS should be used for base layer?
   - CentOS, Ubuntu, Debian, Scientific Linux, ...
2. Should graphics support be included? Both *batch* and *graphics* versions?
   - example: 192MB -> 577MB for centos:7
3. Guidelines for how to structure contents of specialized container?
   - Make it easy for unbiased person to run a simulation using different site-specific containers

OpenGL based graphics via VNC + HTML5 leverages host browser




ESC · GitLab
David
Secure | https://gitlab.com/ESC
GitLab
Projects
Groups
More
ESC › Details
ESC
EIC Software Consortium
Leave group
Global
Projects
Subgroups
Filter by name...
Last updated
New Project
C containers
Configuration files and utilities for building and managing containers using EIC software
updated 2 weeks ago
H HTTF
Hough-Transform Track Finder library
updated 3 months ago
D documents
updated 4 months ago
G Geant4-ReaderEicMC
Geant4 simple application demonstrating how to use EicMC files
updated 5 months ago
E EicMC
Google Protocol Buffers based Monte-Carlo event format for the Electron-Ion Collider simulati...
updated 6 months ago
P project_template
updated 8 months ago
M MCTransfer
updated 8 months ago
E esc_webpage
updated a year ago


ESC
containers
Docker
JLEIC
jlabce
jlabgx
Dockerfile
eic_xstart.csh
eic_xstart.sh
README.md
xstart.csh
xstart.sh
xstop
jleic
jleic_vertex
utilities
dsh
README.md

Suggested Action Items

1. Create ESC organization on Docker Cloud and create “Team” with any interested ESC members

2. Create Dockerfile for base layer(s) and commit to GitLab.com
   - Publish image

3. Write draft of data model

4. Write brief documentation on how to use the base layer to create specialized image
   - Guidelines for internal structure