

Precompiled GlueX Offline Software

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CUA

GlueX Offline Meeting

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Motivation

1. Provide precompiled dependencies to build development code against in size amenable to transport
 - **Not** needed when developing on JLab CUE, since halld group builds are already provided there
 - Useful instead for users working offsite or at home
2. Provide prebuilt code that is ready to be deployed into production/Farm or utilized offsite for high-level analysis
3. Facilitate comparing behavior/results of programs across Git commits (keep something like the latest 10 commits)

Packaging sim-recon

1. Compile packages in an isolated/standard environment
2. Pack sim-recon's dependencies
 - xerces-c, cernlib, root, evio, ccdb, jana
3. Pack hdds and sim-recon
4. Move files to <https://halldweb.jlab.org/dist>

sim-recon-704051b-5b3e4-u14.tar.gz 175 MB

sim-recon-deps-5b3e4-u14.tar.gz 399 MB

Supported Platforms

- Binaries compatible with native/default GCC compiler
 - Default Clang and GCC use same C/C++ ABI on these platforms

1. CentOS/RHEL 6 : c6
2. CentOS/RHEL 7 : c7
3. Ubuntu 14 : u14
4. Fedora 22 : f22

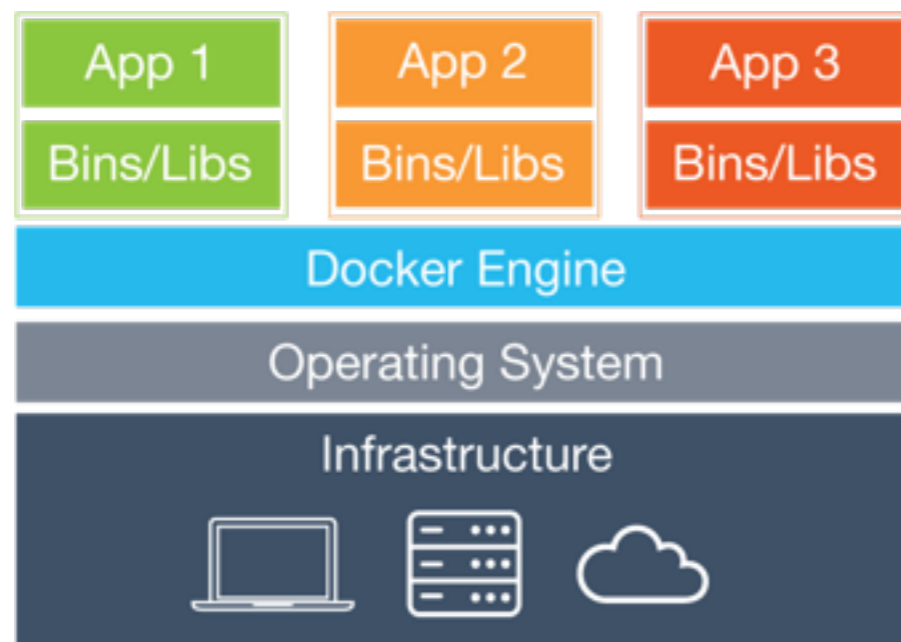
Note

Prerequisites required,
as specified in
gluex_install or hdpmp

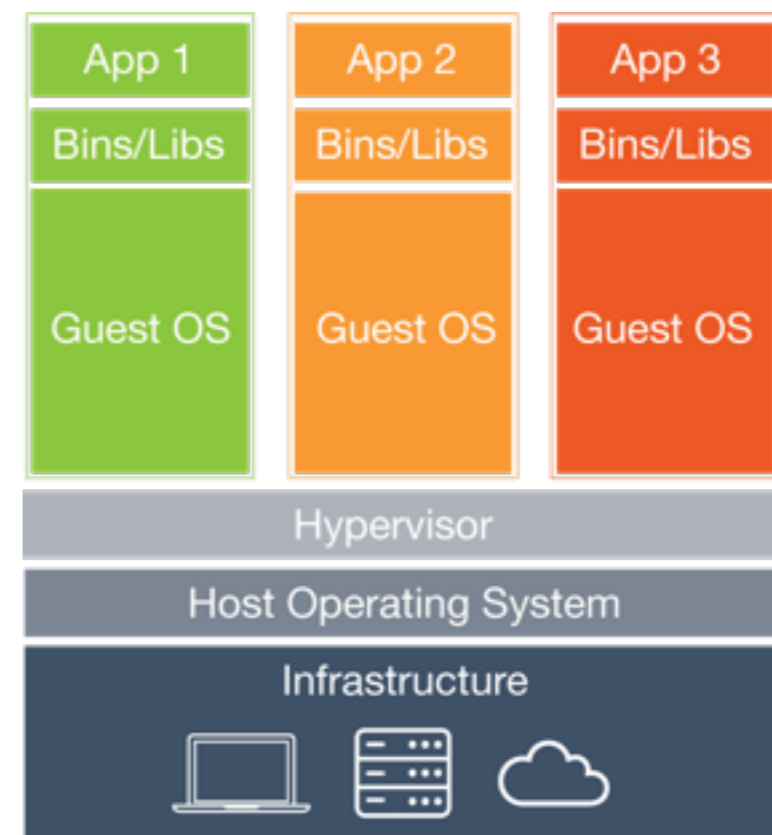
Docker Containers

- Contain a complete filesystem and everything else needed to run software
- Share host operating system kernel (no guest OS)
- More portable and efficient than virtual machines

Software Containers



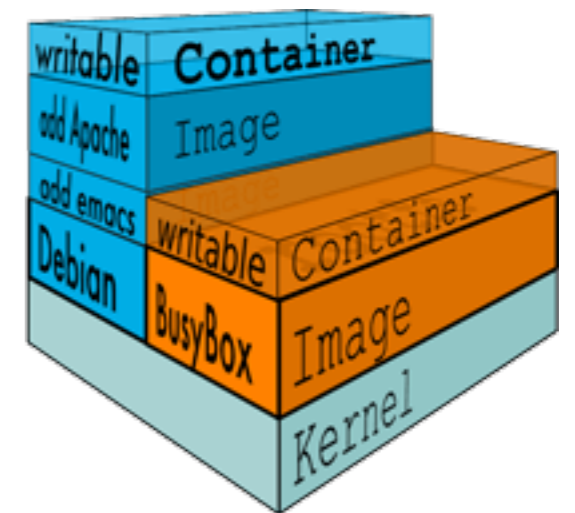
Virtual Machines



<https://www.docker.com>

Containing sim-recon

- Build inside of Docker-Linux containers
- Provides isolated/standard environment
- Allows packaging/testing on any Linux platform that supports Docker (Linux kernel 3.10 or higher)
- Start with standard/official base image for each distribution, publicly available at Docker Hub see <https://hub.docker.com/explore>



- Build and ship to public repos on Docker Hub
 - <https://hub.docker.com/r/nathansparks/sim-recon-deps>
 - <https://hub.docker.com/r/nathansparks/sim-recon>
- Packaging tools and Dockerfiles are part of hdpmp but are not required by typical user
- `docker pull nathansparks/sim-recon:centos6`
- `docker run -it --rm nathansparks/sim-recon:centos6`

Installing Binary Distribution

- `hdpm` command-line-interface
 1. `hdpm fetch-dist`
 - install latest available binaries for your platform
 2. `hdpm fetch-dist [commit hash]`
 - install binaries for particular sim-recon commit
 3. `hdpm fetch-dist [url or path]`
- Source the environment setup script

Outlook

- Package sim-recon for OS X
 - Requires some additional dependencies
- Other potential Docker applications
 - Deploying sim-recon to cloud for simulation workloads