High Performance Container Workshop
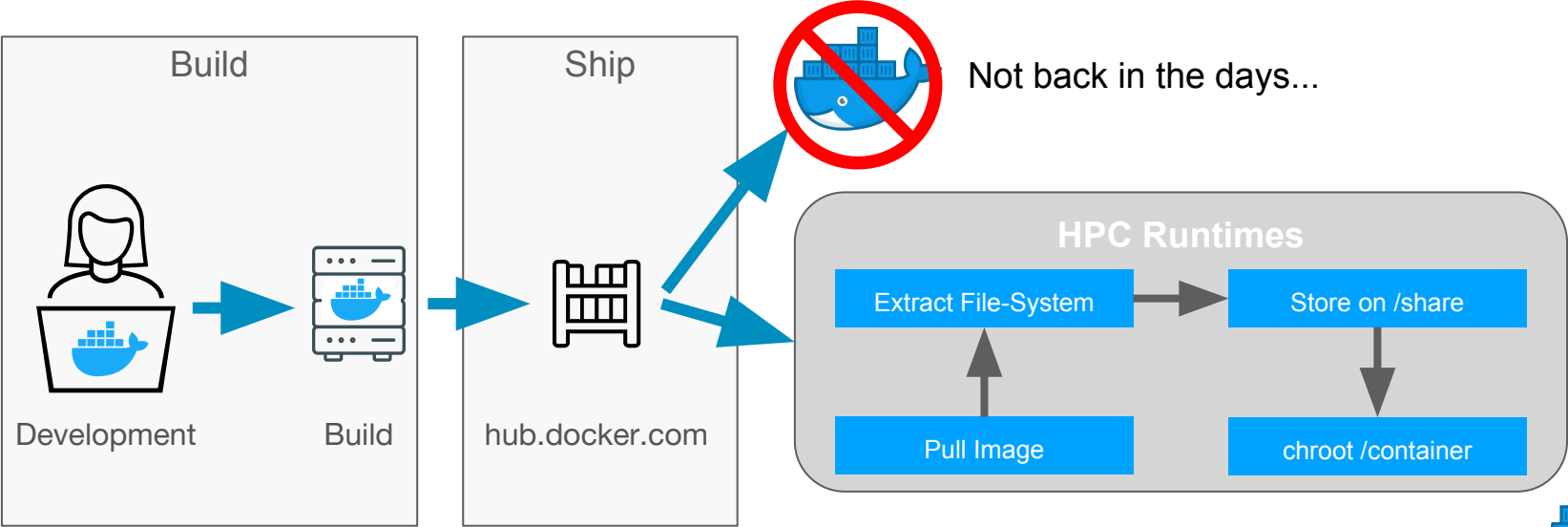
HPC Use-Cases, Challenges and current Solutions

docker

Current Solutions
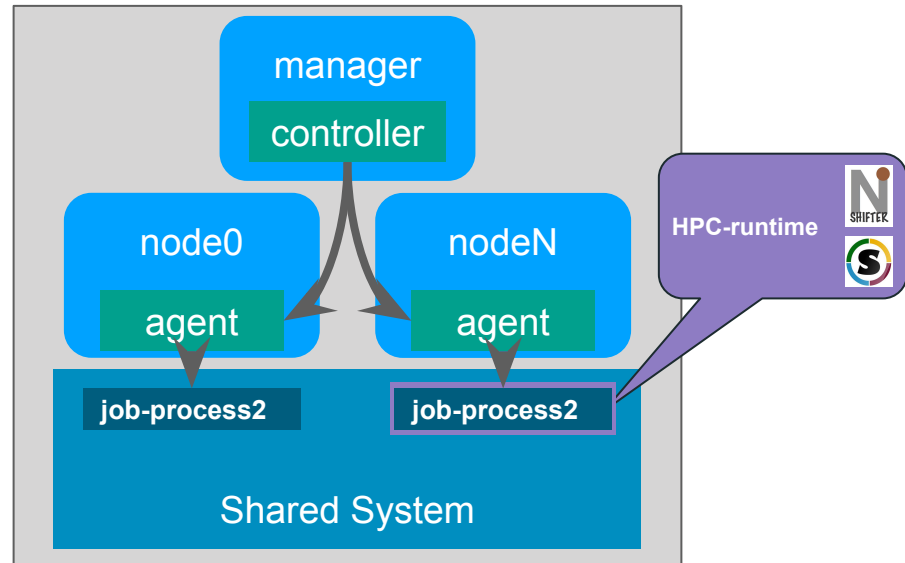
Lack of HPC focus gave birth to HPC workarounds.

Current Solutions [cont]

HPC-specific workaround

+ Drop-in replacement as it wraps the job

- Not OCI compliance

- No integration with upstream container ecosystem
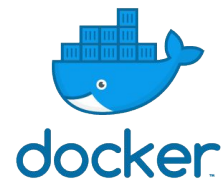
- hard to combine with new workloads

Service vs Batch Scheduling

Traditionally container workloads are scheduled in a descriptive manner, as tasks (pods) on worker nodes.

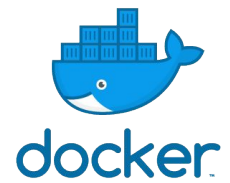HPC schedules a workloads as a batch job on multiple nodes.
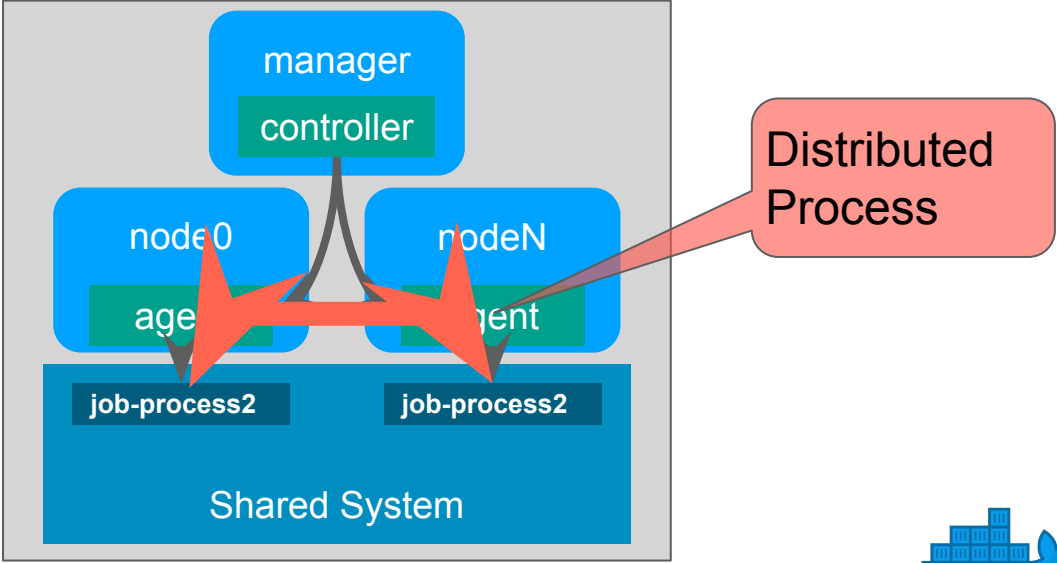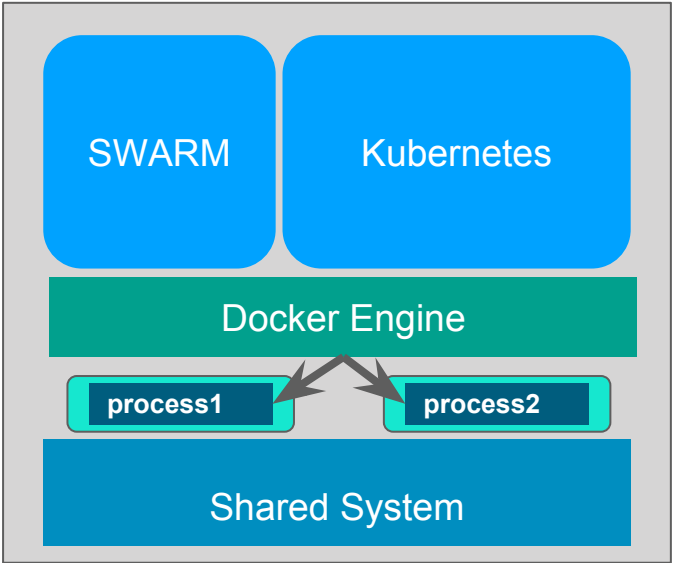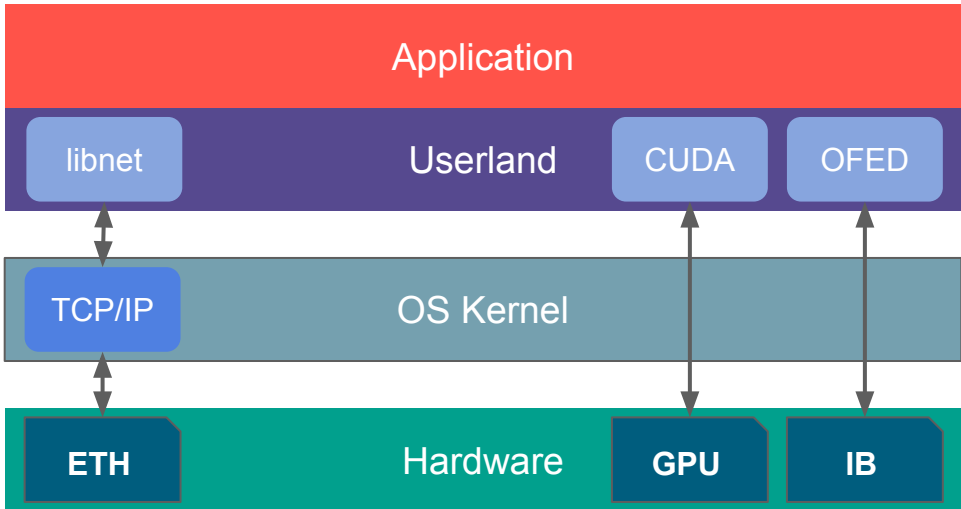
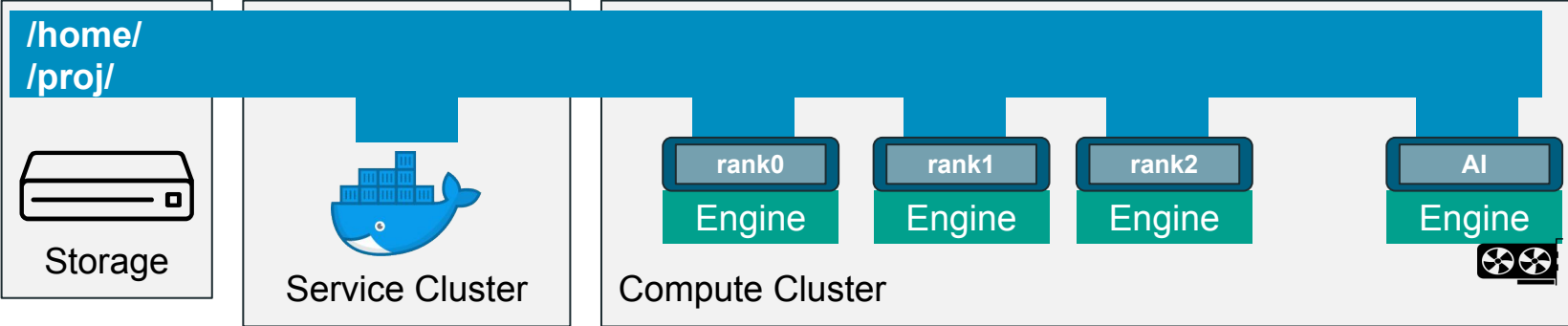# HPC Workload Scheduler

DEMO!

HPC Challenges

Kernel-bypassing Devices

To achieve the highest performance possible the kernel got squeezed out of the equation for performance-critical parts.
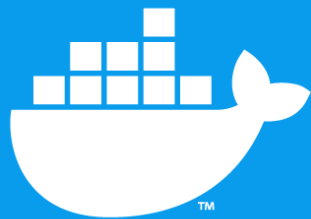
Scientific Environments

Scientific end-users expect the environment to be set up for them, without prior knowledge about the specifics of the cluster.

THANK YOU :)

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