

# EuroHPC Containers forum

## Dejan Lesjak

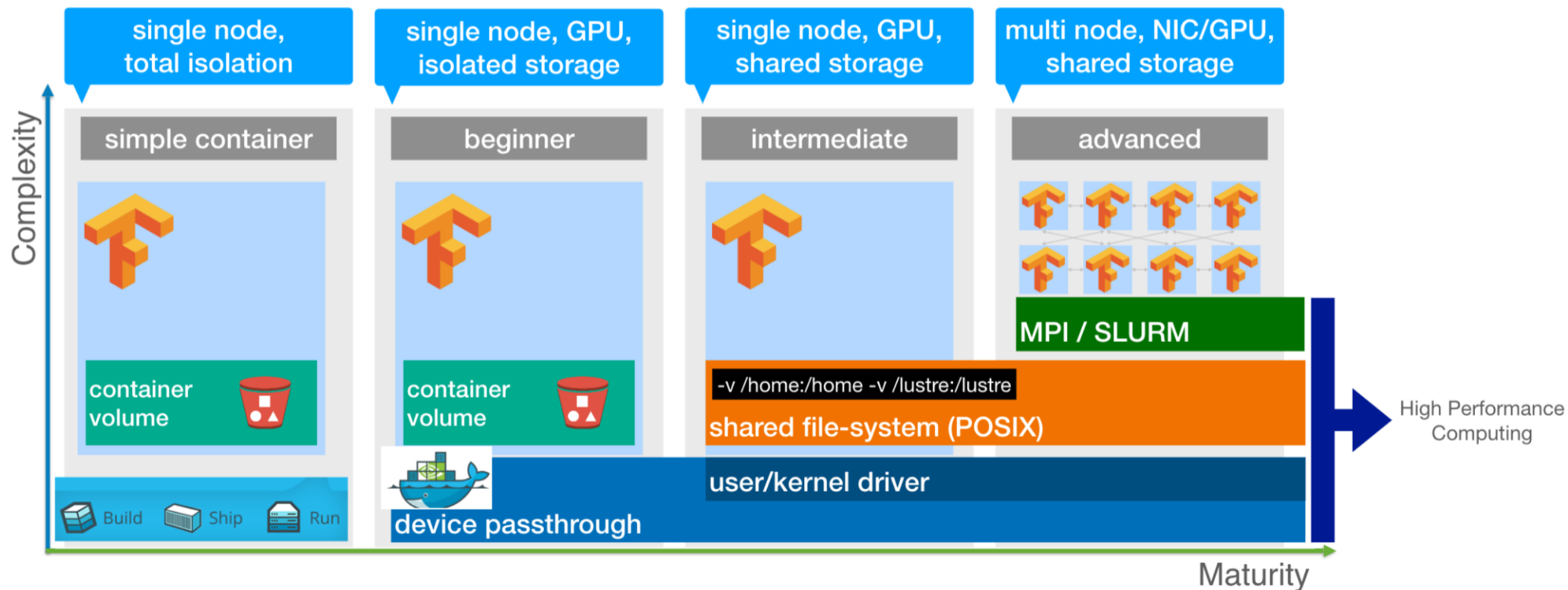
Thanks to Abdulrahman Azab



**EuroHPC**  
Joint Undertaking

# Challenges for High Performance Containers

... through the lens of (distributed) AI/ML



# Sites

## LUMI

**LUMI** [↗](#) is a pre-exascale EuroHPC supercomputer located in Kajaani, Finland. It is a Cray EX supercomputer supplied by Hewlett Packard Enterprise (HPE) and hosted by **CSC – IT Center for Science** [↗](#).



LUMI supercomputer  
CSC (Image credits: Fade Creative)

**375 petaflops**

**Sustained performance**

**550 petaflops**

**Peak performance**

# Sites

## LEONARDO

[Leonardo](#) is a pre-exascale EuroHPC supercomputer currently built in the Bologna Technopole, Italy. It is supplied by ATOS, based on a BullSequana XH2000 supercomputer and hosted by [CINECA](#) [EN](#).



LEONARDO Supercomputer  
Cineca

**249,47**  
**petaflops**

**Sustained performance**

**323,40**  
**petaflops**

**Peak performance**

# Sites

## VEGA

Vega [\[EN\]](#) is a petascale EuroHPC supercomputer located in Maribor, Slovenia. It is supplied by Atos, based on the BullSequana XH2000 supercomputer and hosted by IZUM [\[EN\]](#).



VEGA supercomputer  
IZUM

**6,92 petaflops**




Sustained performance

**10,05 petaflops**

Peak performance

# Sites

## KAROLINA

[Karolina](#)  is a petascale EuroHPC supercomputer located in Ostrava, Czech Republic. It is supplied by Hewlett Packard Enterprise (HPE), based on an HPE Apollo 2000Gen10 Plus and HPE Apollo 6500 supercomputers. Karolina is hosted by [IT4Innovations National Supercomputing Center](#)  .



Karolina supercomputer  
IT4Innovations

**9,59 petaflops**

**Sustained performance**

**12,91 petaflops**

**Peak performance**

# Slack channel - discussions

### hpc-containers ▾

Threads

Direct messages

Mentions & reactions

Drafts & sent 3

Saved items

Slack Connect

More

Channels

# eurohpc-containers 1

# general

# aws-sync

# canopie-hpc

# canopie-hpc-unikernels-pa...

# container-training-2021

# container-training-2021-te...

# containers-in-hpc

# hpcw-at-isc

# hpcw21-private

# mpi

# random

# special-configs

+ Add channels

Direct messages

# eurohpc-containers ▾

place during Day 2 of #EuroHPCSummit2023

Monday, March 13th ▾

17 Tuesday March 21 2023, 13:00 → 14:30... (120 KB) ▾

## EuroHPC Containers Forum Meeting

Tuesday Mar 21, 2023, 1:00 PM

Clarion Hotel Post, Gothenburg, Sweden

Register Now

Tuesday, March 14th ▾

**Barbara Krasovec** 8:00 AM

<https://www.egi.eu/article/egi2023-call-for-contributions-now-open/>

**EGI**

**EGI2023: Call for Contributions NOW open!**

EGI2023 Call for Contributions now open - Deadline March 20th 2023 (114 KB) ▾

Topics/projects of interest



# Target

- Efficient container runtimes: Apptainer/Singularity, Sarus, Podman, Charliecloud, ...
- Portable HPC containers: Software stack that can be used efficiently on multiple EuroHPC systems for HPC applications running on CPUs and GPUs
  - Share the binaries or recipes
  - Handling the heterogeneity in GPUs, MPI, etc.
- Efficient sharing platform
  - Which sharing platform/registry to use
- Provide a portable Container cloud solution (K8S etc).
  - How to control the cloud application: K8s in control or Slurm in control
  - VMs? How to preserve the performance: Virtualization to be Lightweight

# Activities

- Monthly community meetings: first Thursday of every month
- Training activity: One workshop/school per year
- Hackathons
- Projects
- Sharing the know-how and best practices
- Joint communication with the vendors

# Join the community?

- Mailing list: <https://neic.no/mailman/listinfo/hpc-containers>
- Slack channel: <https://hpc-containers.slack.com/archives/C03MR904FU5>