Welcome to CANOPIE-HPC!

The 6th *International Workshop on Containers and New Orchestration Paradigms for Isolated Environments in HPC*

Steering Committee:
Andrew J. Younge (Sandia), R. Shane Canon (LBNL/NERSC)

Program Chairs:
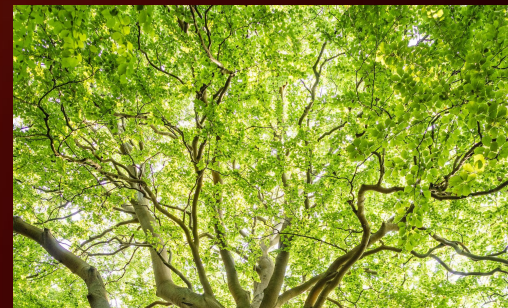Alberto Madonna (CSCS), Claudia Misale (IBM Research)

https://canopie-hpc.org

SC24
Atlanta, GA | hpc creates.

Welcome to CANOPIE-HPC

6th International Workshop on **C**ontainers **a**nd **N**ew **O**rchestration **P**aradigms for **I**solated **E**nvironments in **HPC**

- Principal venue for research in cutting-edge container technologies, virtualization, and OS system software as it relates to supporting High Performance Computing (HPC)

- This is our sixth iteration of the workshop
  - Premier full-day SC24 workshop
  - All proceedings to be published by IEEE

- Thank you for participating!

This workshop is possible only with a great Technical Program Committee!

The committee received **8** paper and **7** lightning talk submissions and
accepted **3** papers for final publications in the proceedings and **5** lightning talks for presentation

- Subil Abraham, Oak Ridge National Laboratory
- Carlos Eduardo Arango Gutierrez, NVIDIA Corporation
- Abdulrahman Azab, University of Oslo; PRACE
- Carlos Jaime Barrios Hernandez, SCALAC, Industrial University of Santander (Colombia)
- David Brayford, Hewlett Packard Enterprise
- Patrick Bridges, University of New Mexico
- Taylor Childers, Argonne National Laboratory
- Marco De La Pierre, Seqera
- Francois Diakhate, CEA-DAM
- Holger Gantikow, Atos, Plymouth University
- Christian Kniep, QNIB Solutions
- Barbara Krasovec, Jožef Stefan Institute

- Nina Mujkanovic, Swiss National Supercomputing Centre
- Anastasios Nanos, Nubificus Ltd
- CJ Newburn, NVIDIA Corporation
- Henrik Nortamo, CSC
- Megan Phinney, Los Alamos National Laboratory
- Reid Priedhorsky, Los Alamos National Laboratory
- Shweta Salaria, IBM TJ Watson Research Center
- Sameer Shende, University of Oregon
- Cory Snavely, Lawrence Berkeley National Laboratory
- Vanessa Sochat, Lawrence Livermore National Laboratory
- Joe Stubbs, Texas Advanced Computing Center
- John Quincy Wofford, Los Alamos National Laboratory
- Mengmei Ye, IBM TJ Watson Research Center
- Qidong Zhao, North Carolina State University

CANOPIE-HPC Morning

Start	Duration	Title	Speaker	Type
09:00		Start		
09:00	15 min	CANOPIE-HPC - Introduction and welcome	Madonna, Misale, Canon, Younge	
09:15	45 min	Slinky: The Missing Link Between Slurm and Kubernetes	Wickberg, Malinowski. SchedMD	Invited Talk
10:00	30 min	Morning Break		
10:30	10 min	Containerized Checkpoint-Restart Mechanisms for HPC	Timalsina, Tyler. NERSC at Lawrence Berkeley National Laboratory	Lightning
10:40	30 min	PULSE: Using Mixed-Quality Models for Reducing Serverless Keep-Alive Cost	Sankaranarayanan, Basu Roy, Tiwari, Northeastern University	Paper
11:10	30 min	Enabling HPC Scientific Workflows for Serverless	Da Silva, Hong, et al. Hewlett Packard Labs and Oak Ridge National	Paper
11:40	50 min	XaaS: Acceleration as a Service to Enable Productive High-Performance Cloud Computing		Panel
12:30	90 min	Lunch Break		

CANOPIE-HPC Afternoon

2:00PM	10 min	Afternoon Introduction		
2:10	10 min	Containerization in HPC Environments: Challenges in Optimizing performance and security in Scientific Computing	Saravanan, University of Texas at Tyler; Z Ibrahim, Lawrence Berkeley National Laboratory	Lightning
2:20	10 min	Comparative Analysis of a Containerized Compilation Process Versus Bare-metal Compilation Runs	Singh, Science Applications International Corporation; Robinson, Geophysical Fluid Dynamics Laboratory	Lightning
2:30	30 min	Zero-Consistency Root Emulation for Unprivileged Container Build	Priedhorsky, Jennings, Phinney, Los Alamos National Laboratory	Paper
3:00	30 min	Afternoon Break		
3:30	30 min	K-Foundry: Using Kubernetes-Like Control Planes with Custom Resource Definitions to Deploy Containerized HPC Applications Across Multiple Computing Platforms	Beltre, et al. Sandia National Laboratories, NVIDIA	Invited
4:00	10 min	Applying Container Technology to the NOAA-GFDL MSD FRE Workflow, Part 1	Brown, Singh, Robinson. Geophysical Fluid Dynamics Laboratory (NOAA)	Lightning
4:10	30 min	Deploying Containers on Secure HPC Systems	Brayford, Hewlett Packard Labs	Invited
4:40	45 min	Community Discussion and Open Q&A		Panel
5:25	5 min	Conclusions and Farewell		
5:30		End		

SC24 Workshops proceedings are online now!

https://conferences.computer.org/sc-wpub

Join the HPC-Containers Slack channel!