MNHACK22: 4th MareNostrum Hackathon

Objectives

Topics: We can help on optimizing applications using a variety of programming models. We also have mentors from many disciplines, including computer scientists and domain scientists. We will make sure we have the right mentors for you in case your application is selected. Note that this is not a GPU-only hackathon.

- Participants will have access to the resources of the general-purpose cluster of the MareNostrum 4 supercomputer and the GPU enable MN4 CTE-Power cluster and will use, among others, the technologies of the BSC Extrae, Paraver, Dimemas, OmpSs, OmpSs-2, OmpSs-2 @ OpenACC and OmpSs-2 @ Cluster.

Furthermore, in the event we will count with experts who can help teams to work on their codes. In general terms, experts can give advice on:

· Programming models: CUDA, MPI, OpenMP, OpenACC, OmpSs-2, and HIP.

· Tools: Extrae/Paraver (performance analysis), Dynamic Load Balance, Parallelware (analyzer, trainer).

· Systems dev-ops.

Technical talks:

HPCNow!: Services and Tools for GPGPU development and maintenance

We present a concise description of some tools and services related to General Purpose Graphical Processing Units development. Architecture, development, and management are included in the roll of services and training HPCNow offers. For a science-related environment, we discuss distributed parallel libraries like MPI and NCCL, features like Multi-Instance GPU (MIG), and tools for monitoring and reporting like NVIDIA Data Center GPU Manager (DCGM).

Date: 17/Oct/2022 Time: 10:00 - 19/Oct/2022 Time: 20:00

Place: BSC Building Auditorium (Floor -1)

Teams: Teams are expected to be composed of 2 to 4 developers.

Platform: The MareNostrum4 Supercomputer at BSC

Mentors: Mentors will be provided by BSC and third-party institutions free of charge for participants.

Cost: Free of charge.

For any further information, please send an email to mnhack[at]bsc.es.

*Contact the organization for accomodation and travel arrangements.

**COVID19: in the unfortunate case of some team member cannot travel because of covid, organization may let them to participate remotely.

Important dates:

- Registration deadline: 3 October 2022
- Notification of acceptance: 7 October 2022
- Kick-off virtual meeting: 10 Oct 2022 (during that week teams will be given access to the clusters to let them set up their applications)
- Face-to-face hackathon: 17-19 Oct 2022

BSC's Organizing Committee:

Steering Committee: Antonio J. Peña (chair), Xavier Teruel, and David Vicente.

General Chairs: Sergio Iserte and Julián Morillo.

Review Committee: Oriol Lehmkuhl, Marta García, Sandra Macia, and Mozhgan Chimeh (NVIDIA).

Sponsors

Barcelona Supercomputing Center - Centro Nacional de Supercomputación

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