152_OP_US_E

Job Reference

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Position

HPC Support Technician - Earth Sciences

Data de tancament

Diumenge, 31 Març, 2019

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About BSC

The Barcelona Supercomputing Center - Centro Nacional de Supercomputación (BSC-CNS) is the leading supercomputing center in Spain. It houses MareNostrum, one of the most powerful supercomputers in Europe, and is a hosting member of the PRACE European distributed supercomputing infrastructure. The mission of BSC is to research, develop and manage information technologies in order to facilitate scientific progress. BSC combines HPC service provision and R&D into both computer and computational science (life, earth and engineering sciences) under one roof, and currently has over 500 staff from 44 countries.

Look at the BSC experience:

BSC-CNS YouTube Channel

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Context And Mission

Supercomputers are indispensable tools for solving the most challenging and complex scientific and technological problems through simulations. The Partnership for Advanced Computing in Europe, PRACE, is a unique persistent pan-European Research Infrastructure for High Performance Computing (HPC) and forms the top level of the European HPC ecosystem. BSC is one of the core partners of PRACE providing a tier-0 system like MareNostrum4 to the PRACE computing resources.

This position will be integrated within Operations department within the High level support team (HLST) and working closely with Earth Sciences department. The candidate will work on Earth Sciences applications support for the most relevant projects asking resources at PRACE infrastructure (MONARCH atmospheric model, NEMO ocean model, ...), including the improvement of the scalability and performance of selected European Earth System Models and tools towards Exascale, Data Analytics and efficient I/O as
well as code refactoring. The candidate will work on porting earth codes to GPUs, including the current project to compute chemistry reactions in the GPUs.

**Key Duties**

- Optimize and adapt scientific application codes to new pre-exascale architectures.
- Improve the performance of existing parallel codes, improving the serial efficiency and the scalability, changing if necessary the code or helping the developers with their required modifications.
- Choose and adapt algorithms and/or mathematical library routines to improve applications to specific computer architectures (accelerators, new programming models, etc).
- Provide consultancy to scientists on new computer architectures and programming models.
- Generate performance analysis and benchmarks for selected applications and report the results to the applications developers.
- Collaborate with other functional groups at European and International level on technical matters related to supporting scientific application work.
- Travel for on-site visits with developers and to conferences will be required.

**Requirements**

- **Education**
  - Bachelor in Computer Science, Mathematics or Physics.

- **Essential Knowledge and Professional Experience**
  - Experience porting and optimizing applications on UNIX-based systems experience in Fortran, C, MPI, OpenMP, and parallel methods.
  - Experience using performance analysis tools, and parallel debuggers.
  - Experience supporting and collaborating with external partners.
  - Good understanding of Linux environment and Shell scripting.

- **Additional Knowledge and Professional Experience**
  - Experience in managing big and collaborative projects and experience with git and SVN.
  - Experience with CUDA or OpenACC is a plus.

- **Competences**
  - Excellent communication and interpersonal skills to be able to work within a team to complete tasks on schedule.
  - Capacity to interact and build strong relations with both climate and computer scientists.
  - Fluency in English.
Conditions

- The position will be located at BSC within the Earth Sciences Department
- We offer a full-time contract, a good working environment, a highly stimulating environment with state-of-the-art infrastructure, flexible hours, extensive training plan, tickets restaurant, private health insurance, fully support to the relocation procedures
- Duration: Temporary - 2 years renewable
- Salary: we offer a competitive salary commensurate with the qualifications and experience of the candidate and according to the cost of living in Barcelona
- Starting date: ASAP

Applications Procedure

All applications must include:

- A motivation letter with a statement of interest, including two contacts for further references - Applications without this document will not be considered
- A full CV including contact details

Deadline

The vacancy will remain open until suitable candidate has been hired. Applications will be regularly reviewed and potential candidates will be contacted.

Diversity and Equal Opportunity Employment

BSC-CNS is an equal opportunity employer committed to diversity and inclusion. We are pleased to consider all qualified applicants for employment without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, age, disability or any other basis protected by applicable state or local law.

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