

[107_24_OP_US](#)

Job Reference

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Position

High Level Support Team (HLST) - Technical support engineer for MareNostrum 5 supercomputer

Fecha de cierre

Lunes, 16 Septiembre, 2024

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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, was a founding and hosting member of the former European HPC infrastructure PRACE (Partnership for Advanced Computing in Europe), and is now hosting entity for EuroHPC JU, the Joint Undertaking that leads large-scale investments and HPC provision in Europe. 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 1000 staff from 60 countries.

Look at the BSC experience:

[BSC-CNS YouTube Channel](#)

[Let's stay connected with BSC Folks!](#)

We are particularly interested for this role in the strengths and lived experiences of women and underrepresented groups to help us avoid perpetuating biases and oversights in science and IT research. In instances of equal merit, the incorporation of the under-represented sex will be favoured.

Context And Mission

The Laboratory of Open Computer Architecture (LOCA) at Barcelona Supercomputing Center aims at carrying out research programs in topics from Computer Architecture to System Software to Applications in both traditional HPC and emerging High-Performance Data Analytics (HPDA). Our work is mainly done in

the context of a Spanish project to foster interdepartmental and international collaboration for the next generation of codesigned HPC systems.

Supercomputers are indispensable tools for solving the most challenging and complex scientific and technological problems through simulations. BSC will host one of the Pre-exascale machines from EuroHPC JU, named MareNostrum5. This supercomputer will have more than 200PFlops sustained, and it will be one of the most powerful Supercomputer machines in the world, joining at the same time accelerated nodes with GPUS, general purpose nodes with the most modern architecture to maximize the code's performance, and the possibility of exploiting an additional cluster with FPGAs.

The open job position will be integrated into the Operations department within the High-level support team. The team will work on applications support for the most relevant projects in Europe, including the improvement of the scalability and performance of selected European scientific applications and tools towards Exascale, Data Analytic and Machine learning as well as code refactoring.

Key Duties

- Optimize and adapt scientific application codes to new pre-exascale architectures and systems.
- 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.?

Requirements

- Education
 - PhD in computer science or in any other scientific field but directly related to HPC,
 - Bachelor in Computer Science or related discipline and at least 3 years of experience in a similar position working with HPC codes.
- 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.
 - Experience working with Parallel programming codes (MPI and OpenMP).
- Additional Knowledge and Professional Experience
 - Experience in managing big and collaborative projects and experience with git and SVN.
 - Experience porting codes to accelerators (GPGPU, FPGA).
 - A thorough understanding of high-performance computing architectures.
- Competences

- Excellent communication and interpersonal skills to be able to work within a team to complete tasks on schedule.
- Analytical problem-solving ability.

Conditions

- The position will be located at BSC within the Operations Department
- We offer a full-time contract (37.5h/week), a good working environment, a highly stimulating environment with state-of-the-art infrastructure, flexible working hours, extensive training plan, restaurant tickets, private health insurance, support to the relocation procedures
- Duration: Open-ended contract due to technical and scientific activities linked to the project and budget duration
- Holidays: 23 paid vacation days plus 24th and 31st of December per our collective agreement
- 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: immediate

Applications procedure and process

All applications must be made through BSC website and contain:

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

In accordance with the OTM-R principles, a gender-balanced recruitment panel is formed for every vacancy at the beginning of the process. After reviewing the content of the applications, the panel will start the interviews, with at least one technical and one administrative interview. A profile questionnaire as well as a technical exercise may be required during the process.

The panel will make a final decision and all candidates who had contacts with them will receive a feedback with details on the acceptance or rejection of their profile.

At BSC we are seeking continuous improvement in our recruitment processes, for any suggestions or feedback/complaints about our Recruitment Processes, please contact recruitment [at] bsc [dot] es.

For more information follow [this link](#)

Deadline

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

OTM-R principles for selection processes

BSC-CNS is committed to the principles of the Code of Conduct for the Recruitment of Researchers of the European Commission and the Open, Transparent and Merit-based Recruitment principles (OTM-R). This is applied for any potential candidate in all our processes, for example by creating gender-balanced recruitment panels and recognizing career breaks etc.

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.

For more information follow [this link](#)

Barcelona Supercomputing Center - Centro Nacional de Supercomputación

Source URL (retrieved on 9 Ago 2024 - 08:21): <https://www.bsc.es/es/join-us/job-opportunities/10724opus>