293_19_CS_GCS_RE12

Job Reference

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Position

Exascale Supercomputer Software Profiling and Performance Engineer (RE12)

Data de tancament

Divendres, 31 Gener, 2020
Reference: 293_19_CS_GCS_RE12
Job title: Exascale Supercomputer Software Profiling and Performance Engineer (RE12)

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 600 staff from 49 countries.

Look at the BSC experience:
BSC-CNS YouTube Channel
Let's stay connected with BSC Folks!

Context And Mission

BSC is looking for talented and motivated professionals with expertise in software profiling and performance engineering targeting CPUs and GPUs or other DLP accelerators. The BSC accelerator design is based on RISC-V architecture. This is a NEW project to build the software infrastructure and toolchain for an FPGA-based emulator for an energy-efficient Exascale system.

Key Duties
- Develop software to automate the testing of DL & HPC-focused applications.
- Plan and execute performance tests using an automated testing environment and analyzing the results.
- Generate written and visual reports using the data captured from testing.
- Assist with the development of tools and processes that improve our ability to perform automated testing.
- Learn to use the latest applications in the fields of Deep Learning and HPC.
- Produce effective and thorough technical documentation.
- Provide outstanding direct and indirect user support.

Requirements

- **Education**
  - Ph.D. in Computer Science or related Engineering degree or equivalent level of professional experience.

- **Essential Knowledge and Professional Experience**
  - Advanced knowledge using Linux based systems (CentOS and Ubuntu strongly preferred).
  - Proficient in compiling software from source code, including debugging errors encountered.
  - Must demonstrate strong critical thinking and analytical reasoning.
  - Understanding of massive high performance parallel storage and methodologies.
  - Understand, implement, troubleshoot, and support batch and workload management systems, including diagnosis of failed jobs, implementation of policies, and investigations of new features and services.
  - Install and configure infrastructure applications by following industry best practices to deliver effective solutions. Experience using a GPU-enabled or other accelerator-based platforms for deep learning framework such as TensorFlow, PyTorch, Spark, or MXNet.
  - Experience using GPU-enabled HPC applications such as LAMMPS or GROMACS.
  - GPU programming experience in CUDA, OpenACC, or OpenCL.
  - Familiarity with software compilers such as GNU, Intel Composer, or PGI.
  - Proficiency reading and debugging C, C++, or Fortran code.
  - Experience building and debugging large-scale engineering software.
  - Previous experience with a computer cluster.
  - Experience with working on a variety of embedded processors, SOC’s and micro-controllers, RISC-V a plus.
  - Experience in implementing and debugging known processes for unit and feature testing of software.
  - Strong scripting experience using scripting languages like Python, Perl, and bash.
  - Agile development and open source development, deployment, and support, including GitHub or equivalent.
  - Proficient in Microsoft Office applications or equivalent.
  - Fluency in English is essential, Spanish is welcome.

- **Competences**
  - The candidate must be an effective communicator, multitask, and work well on collaborative designs.
  - Keeps abreast of technology trends.
  - Ability to think creatively.
  - Ability to work independently and make decisions.
  - Ability to take initiative, prioritize and work under set deadlines and pressure.
Conditions

- The position will be located at BSC within the Computer Sciences Department
- We offer a full-time contract, a good working environment, a highly stimulating environment with state-of-the-art infrastructure, flexible working hours, extensive training plan, tickets restaurant, private health insurance, fully support to the relocation procedures
- Duration: Temporary - 2 - 3 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 Cover Letter with a statement of interest in English, including two contacts for further references - Applications without this document will not be considered
- A full CV in English 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.

This position is reserved for candidates who meet the requirements and have the legal status of disabled persons with a degree of disability equal to or greater than 33%. In case there are no applicants with disabilities that meet the requirements, the rest of the candidates without declared disability will be evaluated.

Barcelona Supercomputing Center - Centro Nacional de Supercomputación

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