



## HPC Software Engineer

### Job Summary

The HPC Software Engineer will be part of a team that develops and supports Hierarchical Data Format (HDF) technologies. This position focuses on the development of HPC data service libraries. High-performance storage and networking will be the primary focus of this position. The applicant for this position should have interest in API design and implementation, performance optimization, problem solving, and must be comfortable working with other team members. Location for this position is The HDF Group's office in Champaign, IL.

### About The HDF Group

The HDF Group offers a unique suite of technologies and supporting services for managing large and complex data. Its mission is to develop, advance, and support HDF (Hierarchical Data Format) technologies, and ensure long-term access to HDF data.

The HDF Group provides consulting, software development, and advanced support services to organizations with challenging data-management requirements. A spinoff from the University of Illinois in 2006, The HDF Group owns and continues to enhance data technologies that originated at the National Center for Supercomputing Applications (1988-2006). HDF technologies are used in virtually every industry and scientific domain to meet important data management needs. Our customers come from the public and private sector including government and scientific and engineering organizations with mission-critical HDF applications. Beyond that, HDF uses include special effects in film production, flight testing, weather prediction, medical image visualization, DNA analysis, vehicle design, and volcanology to name a few.

The HDF Group currently has 35 employees. Our corporate office is located in Champaign, Illinois, home of the University of Illinois at Urbana-Champaign, one of the top 10 high tech communities in the world. Champaign-Urbana is a vibrant center of cultural and business activities, a great place for a family, and a great place to live.

### Essential job functions and key responsibilities

- Design/implement new features (incl. supporting tests).
- Write technical documentation.
- Experiment with new technologies relevant to the area of development; recommend improvements to techniques, procedures or other aspects of technical development.
- Provide input for preventing future problems as well as incorporating solutions to current concerns.
- Publish work and attend technical conferences as requested.

### **Minimum requirements**

- A Master's degree is required, preferably in computer science or software engineering (PhD's degree is preferred); experience and/or training may be considered depending on the nature and depth of the experience as it relates to current technologies.
- Excellent knowledge of C, including debugging tools (gdb, valgrind).
- Experience with POSIX I/O and network programming.
- Experience with multi-threaded programming.
- Strong theoretical background in data structures, computer architectures, compilers and algorithms.
- Ability to communicate clearly to all types of audiences – from the inexperienced to highly technical users.
- Strong oral and written communication skills.

### **Knowledge, Skills, and Abilities preferred**

- Experience with production software development and maintenance, including Git/GitHub workflows and continuous integration systems.
- Knowledge/experience with distributed file systems (e.g., Ceph, Lustre, GPFS).
- Experience with InfiniBand verbs, OFI libfabric or UCX.
- Experience with MPI.
- Experience with software performance evaluation and enhancement.
- Experience with HDF5 and parallel I/O.
- Experience with using CMake as a build system.

The HDF Group offers a comprehensive collection of benefits including paid time off and health/dental/vision insurance, as well as company matching 401k to name a few. The HDF Group is an Equal Opportunity Employer and has a strong commitment to diversity. In keeping with that commitment, individuals with disabilities, minorities, females, and veterans are encouraged to apply.

To ensure full consideration, please submit a resume, cover letter, and references to [JOBS2020@hdfgroup.org](mailto:JOBS2020@hdfgroup.org).

To learn more about the work being done at The HDF Group, visit our website at [www.hdfgroup.org](http://www.hdfgroup.org).