

TOPIC 1 - SUPPORT TOOLS AND ENVIRONMENTS

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DESCRIPTION

Despite an impressive body of research, parallel and distributed programming remains a complex task prone to subtle software issues that can affect both the correctness and the performance of the application. This topic focuses on tools and techniques to help tackling that complexity. We solicit contributions on tools and environments that address any of the many challenges of parallel and distributed programming related to programmability, portability, correctness, reliability, scalability, efficiency, performance and energy consumption.

This topic aims to bring together tool designers, developers, and users to share their concerns, ideas, solutions, and products for a wide range of parallel platforms. We particularly value contributions with solid theoretical foundations and with strong experimental validations on production-level parallel and distributed systems. We encourage submissions that detail novel program development tools and environments that address the expected complexity of exascale systems.

Focus

- Debugging and correctness tools
- Hybrid shared memory and message passing tools
- Instrumentation and monitoring tools and techniques
- Program development tools
- Programming environments, interoperable tool environments
- Integration of tools, compilers and operating systems
- Performance and reliability analysis (manual and automatic)
- Energy efficiency and savings tools
- Performance and code structure visualization
- Testing and analysis tools
- Computational steering
- Tool infrastructure and scalability
- Tool evaluations and comparisons in production environments
- Tools for extreme-scale systems
- Tools for code modernization
- Tools for homogeneous and heterogeneous multi/many-core processors
- Tools and environments for clusters, clouds, and grids
- Autotuning techniques and tools

