High-Performance Computing Systems Operations

The effective management of a large-scale, high-performance computer center requires a disciplined approach to system management, configuration management, and reliability and performance monitoring to enable hundreds of users to successfully use thousands of processors for their long-running parallel applications. In addition, a close collaboration with the user community is required to optimize the total effectiveness of the combined software and hardware systems. In this section we describe novel metrics to measure and optimize the overall application throughput. Approaches for monitoring both the health and configuration of overall system software components are described. Finally, this section includes a description of the New Mexico Supercomputing Challenge and its contributions to stimulating interest in high-performance computing in New Mexico's youth.