Research Enhancement Seminar

Friday, December 2, 2016
10:00am - 11:30am
JPL Assembly Room (JPL 4.04.22)

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Optimizing the Performance of High Performance Computing Systems

This presentation will discuss the development of an open source tool (Open XDMoD) for the comprehensive management of high performance computing (HPC) systems. Today’s HPC systems are a complex combination of computer hardware and software, and it is important that support personnel have at their disposal tools to ensure that this complex infrastructure is running with optimal efficiency as well as the ability to proactively identify underperforming hardware and software. In addition, most HPC systems are oversubscribed and support personnel desire the capability to monitor and analyze all end-user jobs to determine how efficiently they are running and what resources they are consuming (computer memory, processing, storage, networking, etc.) in order to optimize job throughput as well as plan for future upgrades. Open XDMoD is the first fully comprehensive tool for supporting the information needs of all stakeholders using and running HPC systems. Case studies of the application of the Open XDMoD to HPC systems at the University of Texas, and UB’s Center for Computational Research are included. The case studies indicate the level of detailed system metrics that are available as well as the proactive identification of underperforming hardware and software.

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