High Performance Computing with Microsoft Windows: Meeting the Computational Requirements of Engineering Applications

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ABSTRACT

The Cornell Theory Center (CTC) ran proprietary UNIX-based systems from IBM, SGI and others for over ten years as a national supercomputing center. Today, CTC is operating the world's largest Windows® scale-out systems with improved reliability, manageability, and total cost of ownership.

This presentation focuses on the experience, benefits, and issues and key components for success CTC had moving from proprietary big-iron to industry-standard Windows clusters, to serve the midrange to high-end computing needs of their business, government and education clients. Of these clients, engineering applications are often the most computationally intensive and thus serve as good acid tests for the performance, reliability, and usability of HPC systems. The presentation will also include some representative performance results of LS-DYNA and other engineering codes running on Windows based computational clusters.