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OpenAFS Performance Improvements: Linux Cache Manager and Rx RPC Library

Tuesday, 20 April 2010 14:00 (45 minutes)

This talk will focus on two areas of performance improvement that will be shipping with the OpenAFS 1.6 series this coming Summer.

Significant work on improving performance has been completed on the OpenAFS 1.5 branch. Linux memory management has been heavily overhauled, removing a number of deadlock conditions, and significantly speeding access to data which is already held in the local cache. We now make correct use of the Linux page cache, and use data cached in memory in preference to pulling it from local disk. Performance in real world applications (a web server with its working set in the local cache) has been more than doubled by these changes.

The Rx RPC library has also been a focus of considerable attention with funding from the U.S. Dept of Energy. A wide variety of implementation errors that resulted in lock contention, lost packets, and extended timeouts were identified and corrected.

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