**EGEE'07** 



Contribution ID: 4

Type: not specified

## A Grand Challenge for the Information Age

Tuesday 2 October 2007 09:45 (45 minutes)

The information Age has created a paradigm shift for research, education, commerce, and modern life. Current estimates are that in 2006, 161 exabytes (10^18 bytes) of digital data were created, and by 2010, the torrent of digital data generated will reach a zettabyte (10^21 bytes). Critical to the success of efforts in the Information Age is the ability to use, access, manage, and preserve digital data, and a reliance on the assumption that our most valuable digital data will be there when we need it. Data is the foundation of the Information Age, and preserving digital data for the foreseeable future is an emerging Grand Challenge.

Best practices in digital data reliability involve the replication of valuable data collections. From the first, grid technologies have been a natural fit for the challenge of preserving multiple copies of digital data collections, and today, data grids provide a rich platform for data stewardship, management, and preservation services. <br/>

The San Diego Supercomputer Center is a pioneering U.S. Center leading the development and provision of data grid technologies and cyberinfrastructure for managing, storing, preserving, and using digital data. Leveraging collaborations in the U.S. with the National Science Foundation, the Library of Congress, and the National Archives and Records Administration, SDSC is providing innovative leadership in the area of data Cyberinfrastructure and data preservation. In this talk, SDSC Director Fran Berman describes SDSC's approach to digital preservation, and discusses the next generation of opportunities and challenges for the data that drives the Information Age.

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Session Classification: Technical Plenary