MAGIC Meeting Minutes
July 6, 2016

Attendees

Rudi Eigenman	NSF
Shantenu Jha	Rutgers
Paul Love	NCO
Peter Lyster	NCO
Grant Miller	NCO
Padma Krishnan	FCC
Derek Simmel	PSC
Rangan Sukmar	ORNL

Action Items

Proceedings

This MAGIC meeting was coordinated by Grant Miller of the NCO. Rudi Eigenman of the NSF gave a presentation on the XSEDE platform.

XSEDE: Rudi Eigenman

XSEDE is a platform to support Xtreme Science and Engineering Discovery Environment (XSEDE). XSEDE supports scientists across all science missions and disciplines. XSEDE supports 16 supercomputers and high-end visualization and data analysis resources across the country. XSEDE integrates these resources and services, makes them easier to use, and helps more people use them. In 2016 it funded approximately 11,000 proposals. In a recent application, supported by the NSF, a 3D simulation of a supernova on Blue Waters revealed asymmetries that were not apparent in 2D simulations.

For the National Supercomputing Initiative, the NSF is focused on increased coherence, post Moore's Law technology, and increased capacity and endurance of a national computational infrastructure.

A recent National Academy of Sciences study identified future directions for a national supercomputing infrastructure. They identified that:
- Strategic decisions should be based on user-driven requirements
- Investments should be Integrated across hardware, computing, and data resources
- Support should be provided for : Expertise, software, and tools

A primary resource of XSEDE is people.

The NSF provides 2.3 billion CPU hours to high-end researchers on Blue Waters. In addition, the NSF provides to high-end users 1.2 billion CPU hours on the XSEDE platform. In addition the Open Systems Grid (OSG) provides 0.9 billion CPU hours

XSEDE resources include:
- Stampede at the University of Texas, Austin
- Comet at SDSC (servicing the long tail of science)
- Jet Stream (a new machine at Indiana University)
- Bridges (a new machine at the Pittsburg Supercomputer Center)

A major XSEDE resource is advanced user support by computational experts. XSEDE integrates the software needs and the software resources available in a scientific community to provide a common

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software interface uniform across machines and resources to create a uniform user experience. XSEDE also provides tools and capabilities for performance monitoring and metrics.

XSEDE 1 just ended July 2016 and XSEDE is operating under an authorization extension. XSEDE 2 will provide $120Million over the next 5 years in support of computational science Proposal evaluations are carried out by an XSEDE staff of scientific experts. XSEDE serves users at over 200 institutions.

Trends, opportunities, and challenges include:
- Supporting an evolving user community:
    -- Classical users continue to grow in their needs
    -- Gateway users (new uses and disciplines) are growing at a faster rate than the classical users
- How do we compose the national cyber infrastructure across XSEDE, OSG, XDMod and in collaboration with other agencies supporting supercomputing capabilities?
- Recommended research is greater than awarded research (meritorious research needs more resources than are available) and the difference between recommended research and resources is growing.

For more on XSEDE, please see: https://www.xsede.org/

Next MAGIC Meeting
August 3, 2016, 2:00-4:00 Eastern, NSF Room TBD