Minutes
MAGIC Meeting
June 3, 2009, 2:00-4:00
NSF, Room 1150

Attendance:

Jeanie Crawford	HP	
Mark Green		
Dan Gunter	CEDPS	
Paul Love	NCO	epl@sover.net
Brian Lowe	HP	
David Martin	Northwestern Un.	martinde@northwestern.edu
Grant Miller	NCO	miller@nitrd.gov
Mike Nelson	GU	mnelson@pobox.com
Ruth Pordes	FNAL	ruth@fnal.gov
Don Riley	Un of Md	drriley@umd.edu
Jennifer Schopf	NSF	jschopf@nsf.gov
Elizabeth Sexton-Kennedy	FNAL	Sexton@fnal.gov
Susan Turnbull	DOE/SC	susan.turnbull@ascr.doe.gov

Action Items

Proceedings

This meeting of MAGIC was chaired by Susan Turnbull of DOE and Jennifer Schopf of the NSF.

HEP Processing Frameworks

Elizabeth Sexton-Kennedy of Fermi National Accelerator Laboratory (FNAL) gave a talk on frameworks for processing High Energy Physics (HEP) events. HEP event reconstruction applications are large scale projects requiring millions of lines of code. Managing this code is a major challenge. HEP event reconstructions integrate contributions from 10s to 100s of physicists. A framework provides design goals, rules, and APIs for integrating the requirements of these collections of physicists and developers. The framework has to be easy to use and functional to be adopted and used by the community.

Frameworks manage the needed technologically complex software systems by providing:

- Event data persistence
- Relational data base interfaces
- Provenance or history tracking
- Configuration
- Workflow scheduling

The framework must scale to applications with millions of lines of code and remain functional and debuggable. Previous HEP experiments used frameworks but only CLEO

was reported to be widely adopted and used. For the LHC, second-generation frameworks have been developed that include:

- LHCb
- Atlas
- CMS
- Alice

These frameworks have been widely adopted since the increasing complexity and scale of the analysis dictates use of some framework. Scaling of these frameworks has been tested using exercises that exceed the scale of the LHC Run 2 experiments but without real data, scaling issues remain uncertain. CMS has a focus on provenance, which is increasingly importance for tracking reproducibility so it will be interesting to see if this gives CMS an advantage for real data.

For further information, see CMS papers by Chris Jones and the CHEP09 conference, Event Processing: Monday.

Frameworks should be judged on how they meet the challenges of complexity and scalability. They also have to be easy to use sets of tools that organize large groups of developer physicists.

Potential Future Speakers at MAGIC

Discussion among the MAGIC members identified several potential speakers for MAGIC meetings including:

- Steve Crocker
- Kundra on authentication
- Jay Unger on Web services or his new start-up company
- Chopra
- HP briefer on HP applications
- Stu Feldman
- Kevin Thompson on DHS programs
- Chip Elliot on GENIE
- Karel Vietsch of TERENA on European programs
- Verner Vogel or a person he identifies on Google systems

The current issue of the Economist has an article on Cloud Computing

AI: Mike Nelson will forward to MAGIC the URL for the Economist article on Cloud Computing.

AI: Grant Miller will ask Bill Semancik of NSA if the NSA has programs for implementing collaboration frameworks.

Grid Roundtable

OSG

Ruth Podres reported that OSG is focusing on Tier 3 sites and capabilities now. Universities participate in the LHC experiments primarily as Tier 3 sites and are consumers of data, sites of data analysis and providers of data products for the data repositories. Reprocessing of data products constitutes a large part of the processing and data transmission demands on the overall system. The Tier 3 investigators who have been participating in implementing the LHC detectors are expected to be the early contributors to the LHC processed data. The LHC is currently projected to be coming on-line in October, 2009.

There is a new software release for OSG including contributions from LIGO, Berkeley's Best Man, FermiLab, and SLAC.

Dan Gunter identified that data corruption is a real issue. Data is stored on tape, 100s of Petabytes per year and usually with data compression. This method of storing data is subject to corruption. A check-sum approach is used but often data that is corrupted is lost.

OSG uses DOE Grid Certifications throughout a collaboration. Someone has to vouch for an application for a CERT. CERN also maintains a single sign-on system for sensitive services

CEDPS

Dan Gunter discussed the status of CEDPS. CEDPS held a recent review. They are planning for the challenge of transferring 100 million files per day. They are currently transferring 1% of this goal and will then step –up to 10% of the goal, finally stepping-up to 100% of their goal.

DOE

DOE completed a SciDAC interim review recently.

OGF

The OGF held a meeting mid-May in North Carolina. The meeting was poorly attended and most attendants were from Europe. The Digital Repositories and Cloud Computing groups met. The next OGF meeting will be held in Banff, Canada.

A new requirements group is beginning to discuss requirements from TERRA Grid and the NSF and DOE programs.

European Grid organizations are urging participation in OGF. Grid Interoperability Now (GIN) is a forum for discussing what we can make work now. A cloud interface standard is being managed under OGF. Working group activity outside of OGF meetings is working well.

AI: Mike Nelson will send MAGIC the NIST description of cloud computing.

NCO Topics

The JET is organizing a Networking Workshop for August 2010 at NASA Ames Research Center. Potential themes for the workshop have ben identified as:

- Cross-domain optical networking

- Integration of secure broadband wireless technology
- New architecture
- Middleware
- Security
- International cooperation

JET is producing a white paper on performance measurement based on PerfSONAR infrastructure. This concept will be presented at the Joint Techs Conference in Indianapolis in July to solicit participation by a larger purview of science networks.

The LSN Annual Planning Meeting is being held October 13, 2009 all day. MAGIC will be asked to give a presentation on MAGIC status and priorities for the upcoming year.

Meetings of Interest
Week of July 13 SciDAC conference, San Diego
July 19-23 Joint Techs Meeting: Internet2, DOE, JET: Indianapolis

Next MAGIC Meetings
July 1, 2:00-3:30, NSF, Room 1150
August 5, 2:00-3:30, NSF, Room 1150