IT Steering Committee

23 September 2013

IT Steering Committee Agenda

23 September 2013; 11 am ET; CEBAF Center F224-225

- Current Status - Roy Whitney
- MIS Major Updates – Kari Heffner
  - FY13 major accomplishments and FY14 direction
  - SQA review and future direction
- IT Operations - Andy Kowalski
  - FY13 major accomplishments and FY14 direction
  - Facilities controls review
  - Annual cyber security risk assessment
  - Emergency communications update
- SciComp - Chip Watson & Graham Heyes
  - Planning for Review of IT in the 12 GeV Era
  - Physics Computing & LQCD
  - Data Management

Current Status

Roy Whitney

Management Information Systems

Kari Heffner

MIS Major Updates

- FY13 Accomplishments and notes
  - ARPT & ARR Software
  - Radcon support software
  - Other changes in support of Lab requirements
    - LDRD, EPEAT Reporting, JR/IS registration process, etc.
  - MIS Software Audit
  - Partially implemented change control process

- FY14 Direction
  - Upgrade Deltek Costpoint/Time Collection and IBM Maximo
  - Enhance support for Facilities Operations – mobile development, bench stock inventory management
  - Complete change control process

Software Quality Assurance

- FY13 Initiative
  - Developed in alignment with DOE O 414.1D
    - Software QA must be implemented using a graded approach
  - Several major milestones
    - Developed QA procedure
    - Performed software inventory and software controls analysis
    - Completed Management Self-Assessment
  - Next steps
    - Modify procedure to incorporate feedback from assessment
    - Create a process to engage line management in SQA
    - Consider documenting, tracking software skills in JTA process

Computing & Networking Infrastructure

Andy Kowalski

Recent Outages

- We have had 3 network outages in Q4
  - These is a lot of resiliency in our network
  - Concerns for Emergency Communications

- Software bug in core router
  - Impacts on central file server
  - Telephones, some Sprint repeaters
- Partial hardware failure, spanning tree
  - Impacts on VM cluster
  - Telephones, some Sprint repeaters
- Internet firewall failure
  - Backup failed to take over
  - Some Sprint repeaters

Emergency Communications

- Met with staff on Emergency Communications
  - Suggestion was to NOT spend the $335K for additional network redundancy
  - Focus on expanding the VARC repeater system
    - Estimate $330K
    - Works with the 4 major carriers
  - Replace telephone wiring in tunnels $40K - $70K
  - Emergency communication training
    - Frequent reminders of how to communicate
    - Cards are attached to phones
- Additional items
  - 2-way Radios for Security
  - VoIP upgrade for more unified communication options
  - Reconfiguration of VM cluster and central file server

Facilities Controls Review

- Took inventory and assigned risk based on impact to customer
  - 200+ devices
  - 14 different systems (vendors)

- Planned actions
  - Start sending out notices ahead of and after changes/work
    - Was doing this for Accelerator related work (AtLis)
  - Logging of activities (configuration, problem resolution, etc.)
  - Network segmentation between vendors plus CHL
  - Upgrade systems and
  - Move servers to IT's Virtual Machine (VM) environment
  - Better manage remote access (gateway, 2-factor authentication)

- External review of our plans
  - They felt our approach was appropriate

Cyber Security

- Certification and Accreditation (C&A)
  - Target is October 1, 2013
  - ATO expires January 2014

- Risk Assessment
  - Presenting as part of C&A
  - Major threats
    - Third party software
    - Phishing
    - Visiting external web sites

FY13 Accomplishments

- Network/Telecom
  - Setup redundant 10Gbps connection to Esnet (Internet)
  - More redundant backbone
  - Firewall upgrade
  - VoIP deployment
  - Cell repeater pilot in VARC
- Systems
  - VDI pilot
  - File Server upgrades (redundancy, disk space)
  - Video Conferencing
    - SeeVogh (replaced EVO) and Esnet H.323
  - SWIS upgrades

FY14 Plans

- Keep things afloat
- Internet
  - MARIA moving to Atlanta
  - ELITE contract ends next year
  - Setup redundant 10Gbps connection to Esnet
- UIM Project On Hold
  - Running out of fiber in the ground - Impacting growth/services
- Cell phone repeater systems
- VDI rollout
- Printing Initiative
  - Publish usage by division, group, user
- Windows XP End Of Support - April 2014
- Emergency Communications and Facilities Controls

Scientific Computing

Chip Watson & Graham Heyes

12 GeV "Annual" Software Review

Update on the review process:

The next 12 GeV software review is planned to take place at Jefferson Lab Nov 25-26, Monday & Tuesday the week of Thanksgiving.

The formal charge to the committee is now being refined, with the primary focus being software maturity, plus a more in depth look at computing plans.

Scientific Computing – Highlights

✧ Physics Computing

- New farm nodes ordered (35% capacity increase)
  - 24 nodes, dual Intel Ivy Bridge 8 core (16 cores 32 active threads)
  - 32 GB/node, dual disk, re-cycled DDR Infiniband (20 Gbps)
- Continuing migration to CentOS 6.2
  - decomissioning 2008 CentOS 5.3 32-bit nodes (leaving only 2009 on 5.3)
  - all new nodes to run CentOS 6.2

✧ Physics Disk

- Added one additional server => 50+ TB usable (25% increase)

✧ Tape Library

- purchased one more frame: should suffice for FY 2014
- purchased 2 LTO-6 drives, with intent to be in production when LTO-6 price per terabyte drops below LTO-5 when slot cost included, likely in about six months; (20% bandwidth increase for tape library)

Scientific Computing – Highlights (2)

✧ Resource Sharing / Load Balancing

We are now starting on capability to move compute capacity between LQCD and Experimental Physics

- The 24 new nodes will be used as the prototype
- Supports 12 GeV Data Challenges
- Enables high peak:average experimental physics capacity, and allows periods of low use by LQCD or Physics to not waste cycles

✧ WAN File Transfers

Globus Online, a service that facilitates 3rd party file transfers, is now a production service for both LQCD and Experimental Physics

✧ Workflow Working Group

A collaboration between Physics and Scientific Computing is looking at ways to improve batch system workflow. A working group report will be done within a few weeks, containing recommendations for improvements.

Data Management

✧ Data Management Plans

DOE is soon to require Data Management Plans for all proposals for funding from DOE (as NSF has been doing for a few years). For Jefferson Lab research, a plan will be described by three documents, constructed to simplify the work of the principle investigator:

Jlab DMP, Lowest Level

http://scicomp.jlab.org/DataManagementPlan.pdf

"Summary: Jefferson Lab requires that valuable data generated in connection with the lab's research program be managed in a way that allows future and outside researchers to be able to work with the data, either to validate a result or to conduct additional studies on the same data. The scope of this mandate includes the preservation of the data, documentation of the data format, the preservation of associated data such as run conditions and calibration databases, and the preservation of software used to read and process the data."

This document details resources that can be used by the next layer up (tape library, staging and cache disks, auto-duplication of raw data, etc.)

The Physics Hall documentation is responsible for listing all the relevant items to be preserved, and how they will be preserved (using these capabilities).

Hall Specific DMPs

The four halls have been given a DMP template and instructions. They were asked to follow the template format while ensuring that the resulting document accurately reflects the existing policy and procedure for their hall.

The template layout is:

- **Summary**: Identify the hall, scope of document and refer to IT DMP.
- **Responsibilities**: Identify who is responsible for what in this hall.
- Experimental Nuclear Physics **Data Management processes**: For each type of data describe how it is managed.
  - **Raw Data**: Output from data acquisition systems.
  - **Processed Data**: Output from offline software.
  - **Run Conditions**: Machine energy, polarization and intensity, target, etc.
  - **Databases**:
    - Log Books.
    - Calibration and Geometry databases.
    - Other databases.

Hall Specific DMPs ctd.

Template continued...

- **Related information**: Things that are not explicitly data but are required to understand the data.
  - **Analysis software:** source code and build systems.
  - **Documentation**.
- **Quality Assurance**: How do we ensure that this is a good plan and that it is being followed?

The DMP is Hall specific. The collaborations, CLAS and GLUEX, are free to simplify the work of the principle investigator even further by adding a collaboration specific DMP that builds on the hall plan.

The halls were given the template two weeks ago and three out of the four halls have returned the first draft of their DMP.

The DMPs are being compared for consistency and will be passed to ENP management, Rolf and hall leaders, for approval later this week.