CISL Operations and Yellowstone Update

CISL HPC Advisory Panel Meeting
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Much happening since we last met...

- Staffing Updates
- Yellowstone Re-cabling
- HPSS B media migration
- Enterprise Services Section reorganized
- Google Apps for Government
- Other Updates
OSD Staff Comings and Goings…

• **New Staff at ML**
  - Shawn Strande, High-end Services Section manager, 7/15/13
  - Nate Wilhelmi, Software/Web Engineering Group head, 9/2/13
  - Scott Pearse, SE II, VAPOR team, June 2013
  - Ashley Anderson, DSS student, Sep. 2013
  - Rohan Rodriguez, SSG student, Sep. 2013

• **Moves**
  - ESS reorganization (covered later)
  - Tom Engel moved to HSS; Gene Harano new role in HSS
  - Bryan Anderson (NETS) from Network Infrastructure to Network Engineering

• **Departures**
  - David Mitchell (NETS NE IV), 9/6/13
  - Jason Brake (NETS NE I), 7/26/13
  - Si Liu (CSG SE II), 8/2/13

• **Open Positions**
  - NETS Network Engineer IV position open
Yellowstone Recabling

- Manufacturing issue in intelligent connectors caused cable failures and “flapping” (performance changes) at a much higher than expected rate
  - Result: Much higher job failure rate for users
  - Several hundred cable replacements during first months of Yellowstone production, averaging ~10 failures a week

- Mellanox identified and fixed their manufacturing process

- CISL faced a choice:
  - Continue replacing cables as they failed
  - Replace all the cables at once

- CISL weighed the pros and cons of the recabling option
  - Pros: A “final solution,” reduction in staff effort long-term, improved user satisfaction, more science accomplished with less job babysitting
  - Cons: Significant interruption to users’ access, logistical challenge
Yellowstone Recabling (2)

- Planning began in June, involving CISL staff from ML and NWSC, IBM and Mellanox
  - Weekly discussions through September
  - Two in-person visits to NWSC from Mellanox and IBM
- Conservative schedule had 3-week outage
- Used timing to overlap some necessary preventive maintenance on NWSC utilities
Yellowstone Recabling (3)

- Physical cabling staff involved included 10 from Mellanox, 6 from NETS, and 4 from IBM
  - Plus additional staff assisting with logistics of debris removal, etc.
- More than 48 miles (77 km) of cables run
- Removal of old cables completed in four hours (instead of 3 days)
- Installation of new cables took 4.5 days (instead of 10)
Yellowstone Recabling (4)

- CISL and IBM spent several days exercising the system hardware and InfiniBand fabric.
- By every measure, the fabric remains healthy.
  - Performance as good or better.
  - Far fewer job failures.
- Several pre-existing software-related conditions are being worked this week at Mesa Lab with IBM expert on site.
HPSS B-media migration

- B generation of tapes at Mesa Lab are at end of life
  - NWSC tape libraries use C generation tapes/drives
- CISL beginning migration of data to NWSC
- Estimating ~1 year to complete the migration
  - End result: Use Mesa Lab as disaster recovery site for critical metadata and data collections with newer media and drives.
- CISL communicating with NCAR labs and other users to evaluate their holdings on B media and delete files that aren’t needed.
Infrastructure and Services

• **Enterprise Services Section reorganized**
  – Enterprise Infrastructure Operations (EIO) group manages existing services
  – Enterprise Infrastructure Engineering (EIE) group develops new services – staff will change per current project

• **Google Apps for Government**
  – Initial EIE project
  – OSD members Andersen, Bradford part of procurement team
  – 7 proposals from integrators under evaluation
  – Anticipate deployment late 2013/early 2014
Other Updates

• RDA now receiving the Japanese Re-Analysis for 55 years (JRA-55), 1958-2012
  – Use of HPC to create data products from TB-size datasets going well.
  – Lately, 475 unique users and 35 TB delivered per month.

• Colorado School of Mines Blue Gene/Q + iDataPlex system installed

• CISL and NCAR strategic plans in the works
  – Staff input being sought for NCAR-wide strategic plan
  – CISL plan components drafted, being integrated
Questions??