

CISL Operations and Yellowstone Update

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

- **Staffing Updates**
- **Yellowstone Hardening**
- **CISL Strategic Planning**
- **Reviewing HPC Procurement Process**
- **Google Apps for Government**
- **Other Updates**

OSD Staff Comings and Goings...

- **New Staff at ML**
 - Dan Rosen started as student assistant for WSST 10/22/12.
 - Alex Sartan started with WEG on 2/25/13.
 - Miles Rafat-Latre (Vapor – CU Student) started 3/18/13.
 - Bruce Sun returns 50%-time in WEG
- **New Staff at NWSC**
 - Kenny Raff (Mechanic/Electrician – proposed start 7/1/13)
- **Departures**
 - David Flaherty and Roland Reed (Computer Operators) on 10/19/12.
 - Yannick Polius left DASG on 1/18/13
- **Open Positions**
 - SSG – 2 Student Positions open
 - VAPOR SEII term position open
 - WEG SE II Java position open
 - HSS Section Head (Gene Harano going into phased retirement)



Yellowstone Hardening

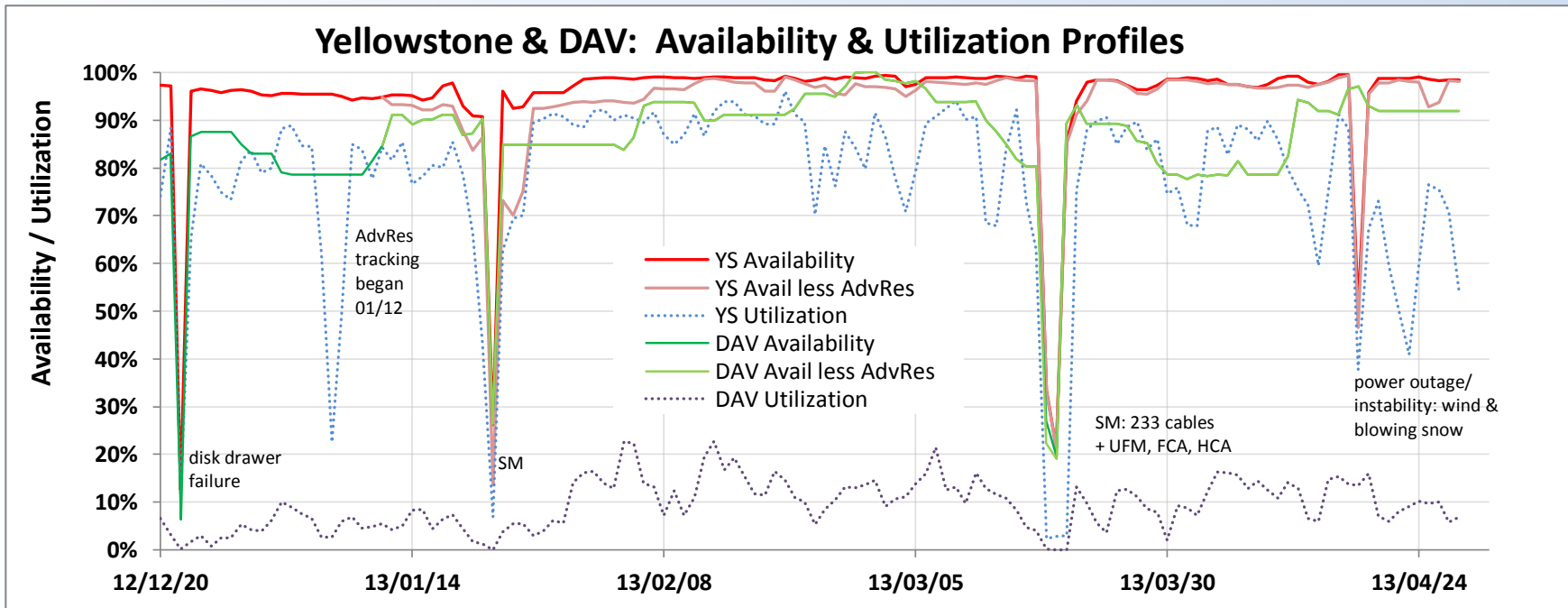
- **Yellowstone and GLADE Accepted on 9/30**
- **Yellowstone “Production Ready” 12/21**
- **IBM/CISL Executive Board oversight (Oct 12– present)**
- **Software/Firmware Upgrades**
 - Jan 22-23: numerous updates, configuration fixes, etc.
 - Mar 18-21: 233 IB cables replaced, cable shelves, software/firmware updates, etc.
 - Another in the planning stages
- **Power Outages**
 - Jan 19-20: raccoon in substation
 - Apr 18: utility power unstable due to high winds, blowing snow
- **HSS/CASG are continuously evolving and refining node failure triage and administrative processes**

Yellowstone Availability & Utilization

| Resource | Availability (%) | | | | MTBSF (days) | | Maintenance mode (critical: 24x7-4hr; non-critical: 9x5-nbd) |
|------------------------|------------------|-----------|---------|--------|--------------|--------|---|
| | Last Day | Last Week | Average | Target | Actual | Target | |
| HPC (Yellowstone) | 98.4% | 98.6% | 97.5% | 98% | 125.81 | 16 | all critical except for batch nodes and TOR Mellanox switches |
| CFDS (GLADE) | 100.0% | 100.0% | 99.4% | 99% | 62.91 | 24 | all critical |
| DAV (Geysler, Caldera) | 92.0% | 92.0% | 88.0% | 98% | 125.81 | 16 | all critical |

The above figures are adjusted to compensate for non-operational use time.

Total Operational Use Time to date 125.81 days 96.5% since 20 Dec 2012 Production Ready Date
 Total Non-Operational Use Time to date 4.56 days 3.5%



Working Yellowstone Issues

- **Bluefire decommissioned Feb 1; Yellowstone in full production**
 - ASD period ended ~April 1
- **Big Items**
 - InfiniBand Routing (Bisection Bandwidth) suboptimal, but being worked with IBM & Mellanox
 - Continued InfiniBand cable fallout (original fiber cable set were part of bad manufacturing lot)
 - Weekly IBM/CISL telecon working outstanding and operational issues
 - Subcontract Mod M08 in the works to clarify CRU maintenance

CISL Strategic Planning

- **Kick-off Meeting November 28-29, 2012**
- **Six Core Areas being worked**
 - Big Data
 - EOT
 - Research
 - Software Applications and Tools
 - Infrastructure and Services
 - HPC Strategy



Reviewing HPC Procurement Processes

- **More frequent procurements**
 - Every 3 years (rather than 4)
 - Next system delivery in Late 2015-Early 2016?
 - 1-2 year overlap with existing system
- **How do procurements need to change?**
 - Streamline process (lighter weight)
 - More heterogeneous systems expected (co-processors, memory)
 - Disk procurements separate and/or consolidated?
- **Getting input from others**
 - Hosting HPC Procurement Workshop May 24, 2013
 - Participants from NCAR with NASA, SDSC, UIUC, LLNL, ANL

Infrastructure and Services

- **Enterprise Architecture**
 - briefed last time
- **UCAR-wide IT Strategic Planning Underway**
- **Google Apps for Government**
 - Integrator Procurement Underway



UCAR-wide IT Strategic Planning

- **Anke co-chair with Shawn Winkelman (UCAR F&A)**
- **Kick-off Meeting Held February 21st**
- **Nine Subgroups Formed (active CISL participation)**
 - Identity Management/Security
 - Central Services/Virtualization/Cloud Computing
 - Collaboration Technologies
 - End User Computing (Desktop/Mobile Devices)
 - Data Services
 - Support Services
 - Software Development
 - Facilities and Co-location
 - Networking/Telecommunications
- **Goal to have draft Strategic Plan by Fall**

Google Apps for Government UCAR-Wide Deployment During 2013

- Suite of applications, services, and application programming interfaces based on the Google cloud infrastructure
- Physically segregated and hardened environment for government and federally-funded institutions
- Federal Information Security Management Act (FISMA) certified
- 99.9% Availability
- Google Apps engine allows for rapid application development
- Google Apps Marketplace provides rich offering of third-party add-ons

- **Google Calendar**
- **Gmail (25GB per user)**
- **Integrated contacts/directory**
- **Google Docs (unlimited authoring, sharing, versioning)**
- **Drive (Cloud storage, 5GB per user)**
- **Task lists**
- **Text, Voice, Video Chat**
- **Sites (Web/Wikis)**
- **Vault (Archiving and eDiscovery)**
- **Google+ (Social networking)**
- **Integrated forums, blogs, video repository, image repository**

Google Apps: Integrated Collaboration Environment

Calendaring (Meeting Maker, NotifyLink, other)

Mail (spam/phishing mgmt, zimbra, communiGate, 12+ mail stores across UCAR, mail backups)

Cloud Storage and Filesharing (e.g., DropBox, U Drive)

Video/Teleconferencing (ReadyTalk, GoToMeeting)

Wikis/Forums/Blogs

Digital Asset Management (outstanding need)



Other Updates

- **RDA**
 - User data access was transitioned to the NWSC without interruption
 - Disaster recovery is now geographically separated at NWSC and ML
- **ML29 future as general colo**
 - Bluefire decommissioned Jan 31st
 - Work and progress to date by NETS, Colocation Group, DSG, etc.
- **Colorado School of Mines to locate computer at ML**
 - ML 29 work/support; BiSON expansion
 - Offers 7% access for mixed BGQ/idadaplex system to NCAR

Questions??