OSG Operations

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Mission

The mission of OSG Operations is to **maintain** and **improve** distributed high throughput computing services to support research communities.

This is accomplished by:

- Operating and maintaining infrastructure services in a user-oriented, robust, and reliable manner.

- Managing resources responsibly, efficiently, and with accountability.

- Developing a professional and skilled staff dedicated to a service philosophy.

- Evaluating and continually improving the actions, methods and processes that allow a production quality fabric of services.

Scope of OSG Operations

All the operational services necessary to make the OSG function:

- 124 Individual Sites
- ~2100 Currently Registered Users
    - Includes only OSG Registered Users not all VO Users
- ~600,000 Jobs and ~2M CPU Hours Daily
- ~1.8M Data Transfers and ~800 TB Transferred Daily
- ~6000 Tickets (Aug 2013 – July 2014) Received Annually
- Interoperations with Worldwide LHC Computing Grid (WLCG), eXtreme Science and Engineering Discovery Environment (XSEDE) and European Grid Infrastructure (EGI)
- Distributed Operations
    - IU, BNL, FNAL, UC, UCSD, UNL

OSG Operations Area – Rob Quick

- Support – Kyle Gross
  - Support Desk
  - Issue Resolution
  - Community Notification and Communication
- Infrastructure – Scott Teige
  - Compute Services – Monitoring, Accounting, Discovery, Ticket Tracking, etc.
- PI – Bill Barnett
  - Leadership and Connections to New Communities
- Operations Group has absorbed Production Area responsibilities

Maintain: Service Level Agreements

- We maintain All Services at SLA Levels
  - This includes compute and support services from June 1, 2012 to June 1, 2014.
  - Compute services are at 99.42% Availability
  - Critical services are at 99.93% Availability (12.25 hours downtime in past 2 years)
    - Critical Service = unavailability could lead to mass job failure
  - Service Desk – No exceptions to SLA

Improve: Personnel Development and Communication

- Staff Development
  - Ongoing Staff Mentoring resulting in 2 promotions
  - Staff Training Events – 6 over past 2 years
    - PerfSONAR, GlideInWMS, Software Packaging
  - 1 Attendee/year at summer OSG Grid School
  - Training IU Network Operations Center staff in Grid Operations
- Inter-Area Communication and Coordination
  - Weekly production meetings for all area coordinators and LCH stakeholders

Improve: Public Key Infrastructure

- OSG PKI
  - Moved from DOE to OSG management of credentials
  - OSG PKI infrastructure now independent of a Certificate Authority (CA), currently using DigiCert
  - Began issuing certificates March 2013
  - Updated to SHA2 Certificates February 2014
  - Completed Usability Survey
    - Documentation Location Updated
    - Minor Web Interface Updates
    - Support Contact Points Clarified

Improve: System Environment

- Standardizing Operational Environment
  - VM Infrastructure allows quick recovery of services leading to better stability
    - Most are a one touch operation
  - Allows efficient addition of new services
  - Maintenance causes little to no service downtime
- Easy to keep OS software up to date and secure
  - Reduces training time (and possibility of human error) as most services have the same installation, rebuild, and disaster recovery procedures

Maintain and Improve: Service Life Cycle

- Preproduction
  - Service recommended to OSG by stakeholders
  - Service reviewed and decision for acceptance/rejection to operations infrastructure
  - Service adoption planned by OSG Technology and Operations Areas
  - Service Reviewed for Operational Security by OSG Security Area
  - Hardware and Software specifications gathered and procured
  - Testbed service instantiated and operational monitoring added

- Production
  - SLA authored and agreed to by operations and service stakeholders
  - Production service instantiated
  - Availability and reliability statistics gathered and compared to SLA commitments
  - Bugs and Features gathered from stakeholders for service evolution

- Deprecation
  - Community notified of deprecation planning and timeline for input
  - Work with users to be sure all production needs are met
  - Retirement

The Operations Team (10.5 OSG Total)

Name	Institution	FTE
Indiana University Operations	IU	8.5
Fermigrid Ops Team	FNAL	0.25
Glide In Ops Team	UCSD	1.5
OSG Connect Ops	UC	0.25

Impact to Stakeholders

- Stable Operations Infrastructure
- Timely Support for Issues
- Adoption of New Technologies
- Community Notification of Operational Events
- Resource Monitoring
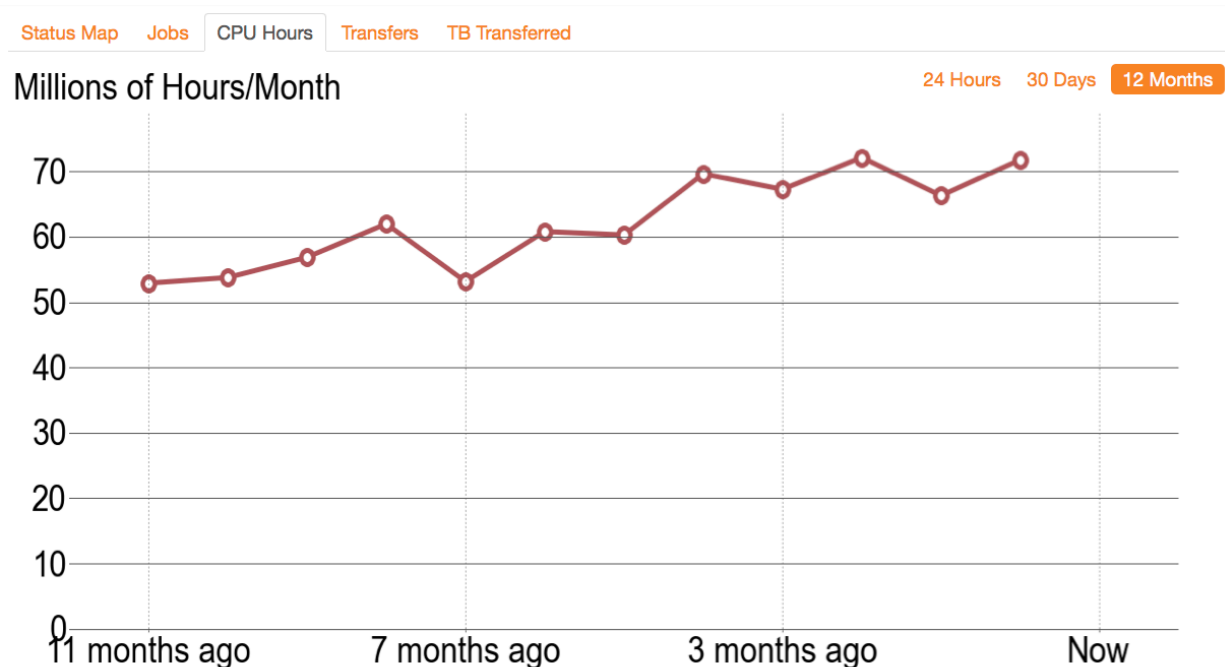
Challenges

- Reducing barriers for OSG users (with Campus Grids, User Support, Security and Technology)
  - Integrate operations with existing user interfaces and applications
  - Broaden VO adoption
- Increasing diversity and number of operational services without impacting stability
- Providing better interoperability for peering infrastructures
  - WLCG, XSEDE, EGI-Inspire

Building the OSG Community

- Build a stronger sense of community for users, resource suppliers, and OSG staff
  - Built in continued quasi-daily one-on-one interactions
  - Done in dialogues not monologues
  - Caring and Trust are necessary for community building
  - Building partnerships with peers
    - WLCG, XSEDE, EGI-Inspire

"What should young people do with their lives today? Many things, but the most daring thing is to create stable communities…" Kurt Vonnegut

Extra Slides

OSG Infrastructure Evolution

- New Operations Services
  - Additional Customer Facing
    - OASIS – Application Distribution
    - OSG PKI – Authentication
    - GlideIn Factories – Workload Management
    - PerfSONAR – Network Performance
    - OSG-Flock – Job Submission
    - Web Pages – Public Communication
  - Additional Internally Facing
    - Linux Virtual Server – High Availability
    - KVM – Local/Remote System Maintenance
    - RHEL6 – Updates from RHEL5 operating system
    - Real Time Operations Notification Environment – dashboard
  - Deprecating Obsolete Systems
    - Pacman Repos –> RPM Software Repos
    - Resource Selection Service (ReSS) –> Supplied by BDII and MyOSG