



OSG ED Report

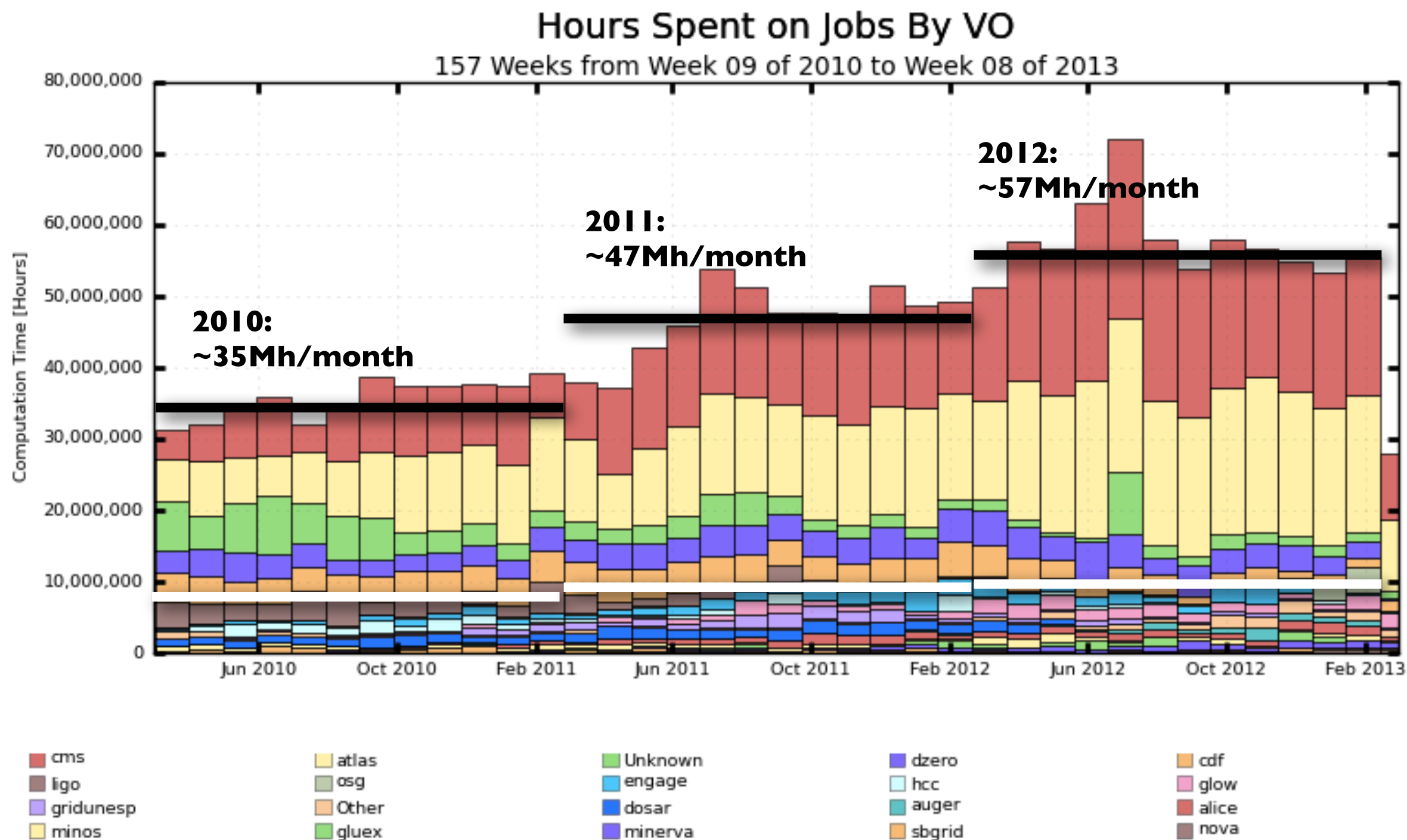
OSG Council Meeting
March 14, 2013

Lothar Bauerdick/Fermilab



Computational Resources Provisioned to Science

★ >2.2B CPU hours over the last 6 years, 734M during last year



Maximum: 71,923,645 Hours, Minimum: 1,014,700 Hours, Average: 44,965,964 Hours, Current: 27,954,235 Hours



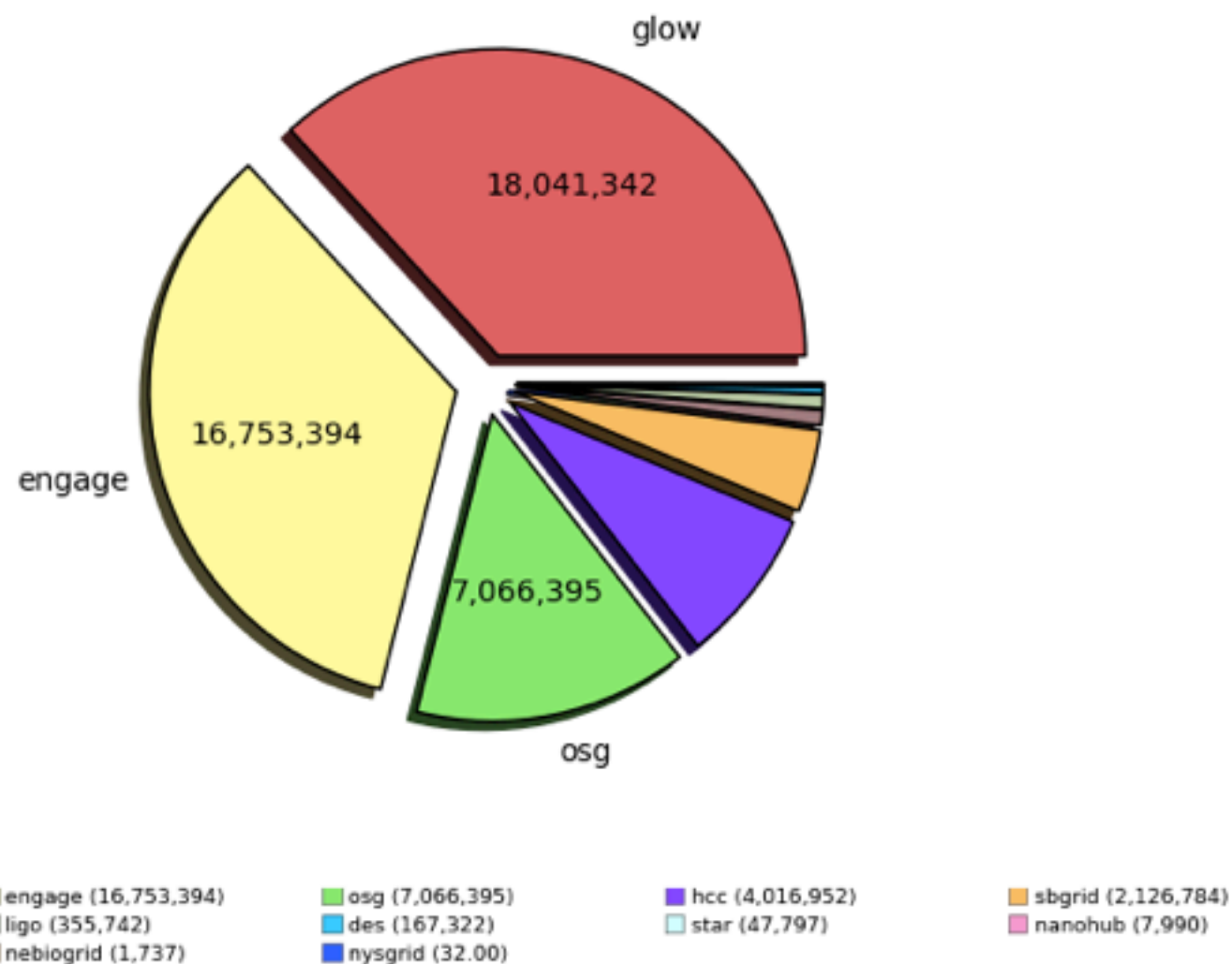
Non-HEP Usage

◆ almost 50M hours in one year

★ <10% of total

Wall Hours by VO (Sum: 48,980,951 Hours)

52 Weeks from Week 06 of 2012 to Week 05 of 2013





Science Publications Made Possible by use of OSG

- ◆ Total: 474
- ◆ 111 outside HEP
- ◆ 363 in HEP
- ◆ 254 in LHC

Science Community	Number of Publications	Comments
ATLAS	131	
CMS	123	
CDF	66	57 accepted; 9 submitted
D0	40	
Minos	3	
<u>SBGrid</u>	4	
<u>GridUNESP</u>	17	
GLOW	63	56 accepted; 7 submitted
HCC	5	
RENCI/Engage	3	
UC3	9	
UCSD Grid	7	
Other via User Support	3	
TOTAL	474	

Impact beyond HEP

(117 citations according to Google Scholar)

Main OSG paper has been cited in the following non-HEP Journals:

BMC Research Notes

Journal of Parallel Computing

Journal of Grid Computing Acta. Cryst. Biological Crystallography

Journal of Synchrotron Radiation Monthly Weather Review

Instrumentation and Methods for Astrophysics PNAS

Future Generation Computer Systems Journal of Climate

Journal of Supercomputing Journal of Internet Services

International Journal of Psychophysiology Frontiers in Bioscience

Proteins: Structure, Function, Bioinformatics



OSG Management Team

Open Science Grid

◆ “Fine Tuning” in management team

★ Executive Team

- ◆ Lothar Bauerdick as Executive Director
- ◆ Miron Livny (PI) as Technical Director
- ◆ Ruth Pordes as Council Chair
- ◆ Dan Fraser as Production Coordinator
- ◆ Brian Bockelman as Technology Coordinator
- ◆ Chander Sehgal as Project Manager (also User Support)
- ◆ Frank Würthwein as Resources Manager/Applications Coordinators
- ◆ Michael Ernst as Applications Coordinators

★ Area Coordinators

- ◆ Technologies: Brian Bockelman --> Software: Tim Cartwright, Blueprint: John Hover
- ◆ Production: Dan Fraser ---> Operations: Rob Quick, Campus/BOSCO: Dan Fraser
Campus Infrastructure Communities (Rob Gardner)
 - ◆ adding Production Manager (Rob Quick) and Software Releases (TBN)
- ◆ User Support: Chander Sehgal
- ◆ Security: Mine Altunay



Strategic Goals: Extending OSG Across the Campuses

- ◆ Enable access to and sharing of campus-local computing resources
 - ★ BOSCO technology starting to get good use —> see Tue sessions!
 - ★ more sites joining to make resources available for all OSG users (ND!)
- ◆ Basic technologies in place today to support use of cloud resources
 - ★ cloud and HPC centers etc —can now be added to the OSG job execution environment — real-world examples: Atlas/EC2, CMS/SDSC
- ◆ Individual researcher can register for support through the “Campus Researcher Club” at UWMadison, Nebraska, UC San Diego
 - ★ another “way in” for PIs and projects is coming in through XSEDE
- ◆ Campus Infrastructure Communities (Rob Gardner)
 - ★ great series of meetings, discussions, seminars, building the community
- ◆ OSG as certificate services to the broader U.S. science community
 - ★ picking up from the ESnet service which is running out now —> Von’s talk
 - ★ Future: make campus identities an integral part of OSG identities
 - ◆ streamline the process for obtaining, renewing, and using identities in OSG



More Strategic Initiatives

Open Science Grid

- ◆ OSG added a “Networking” area to “Production” (Shawn McKee)
 - ★ networks are the lifelines for many of the OSG applications
 - ★ perfSonar-based network monitoring system between sites, across OSG
 - ◆ provides unprecedented insights into connectivity and needs of science community
 - ◆ wealth of information to be harvested/correlated —> research; improve operations
 - ★ satellite Dvdt research on software defined networks, ANSE, Dynes etc
- ◆ OSG continues to be part of an International System
 - ★ interact and work with Europeans, WLCG, EGI, (EMI)
strengthening the interaction with WLCG Ops team (Maria Girone)
 - ★ should think about how to cultivate connections to Latin America, Asia
- ◆ Partnership between OSG and XSEDE
 - ★ be partner in the XD space
 - ★ get new science communities to use OSG users through XRAC
 - ★ starting to enable access to XSEDE resources to OSG
 - ◆ in the middle of a (slow) process of defining the steps required
 - ◆ in the mean time, concrete projects succeed, like CMS—>SDSC



OSG and XSEDE

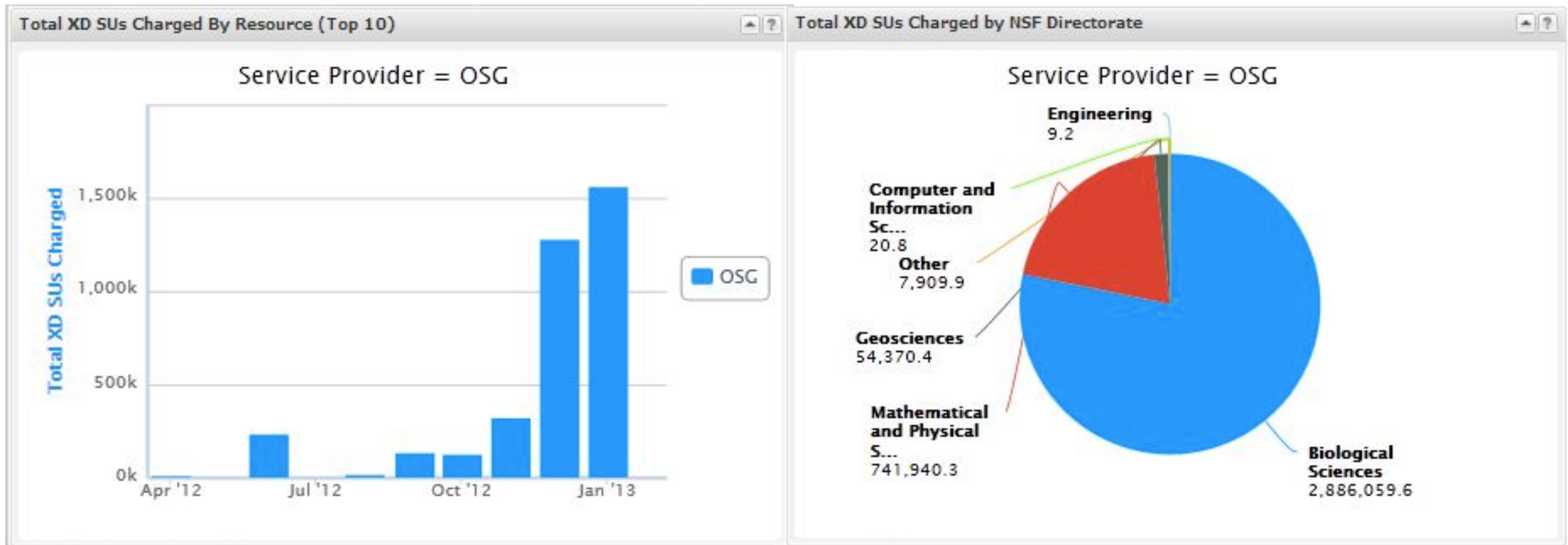
- ◆ OSG is a XD Service Provider, part of XD consortium
 - ★ allows XD users access to opportunistic OSG HTC cycles
 - ★ OSG makes 2M hours available per quarter to the XRAC - the XD Resource Allocation Committee
 - ★ Since April 2012 provides HTC resources through an XSEDE interface
 - ◆ 51 users have allocations on OSG-XSEDE for 8.9M hours
 - ◆ usage is steadily increasing
 - ★ at recent XRAC, additional 9M hours of extra work for Q2 were allocated
- ◆ Bridging the CIs, and collaborating between OSG and XSEDE teams
 - ★ now discussing how to do best do CI bridging, both ways
 - ★ provisioning XSEDE resources as part of OSG eco-system?
 - ★ these work-areas are equally relevant for enabling access to DOE production/leadership class facilities from OSG, as discussed at recent DOE Summit on “HPC for HEP Energy Frontier”



OSG as Service Provider for XSEDE

Open Science Grid

- ◆ OSG as it shows up in XSEDE usage accounting:



- ◆ example: functional brain mapping at U Pittsburg
- ◆ after initial success with 1.1M hours allocation, PI wants to extend by x10:



Role of the JOT?

- ◆ A first meeting in (hopefully) a new round was on January 24
 - ★ participation from DOE and NSF + Ruth, Miron, LatB
 - ★ mostly communicating status and strategic plans at high level
 - ★ future meetings to be focussed on specific issues, not necessarily just on OSG but about the Eco system
- ◆ Unique opportunity to plan and discuss across agencies and projects
- ◆ Identify and discuss number of challenges and opportunities
- ◆ Give guidance and help with prioritization
- ◆ Allows us to continue making the case for the important role of OSG in the research and CI fabric



OSG Project Funding

◆ OSG will enter 2nd year of our 5 year extension!

★ (have no indications (yet) about funding impact for this year)

Program Office	Funds/Year
NSF OCI	\$1,000k
NSF MPS	\$2,750k
DOE OHEP	\$1,600k
DOE NP	\$50k
Total	\$5,400k

◆ Satellite Projects are essential

★ example: Dvdt (~\$2.4M ASCR), AAA (~\$2.2M NSF), XSIM (DOE ASCR), network projects etc: essential investment into research and technology to sustain OSG eco system for this decade



Multi-Year Budget Plan

		Actual	Nominal	Nominal	Nominal	Nominal	
Institution	FTE	Year1	Year2	Year3	Year4	Year5	5-year Budget Total
Wisconsin	4.60	\$881,000	\$961,000	\$961,000	\$961,000	\$961,000	\$4,725,000
Morgridge	0.50	\$105,000	\$105,000	\$105,000	\$105,000	\$105,000	\$525,000
Michigan	0.25	\$65,000	\$65,000	\$65,000	\$65,000	\$65,000	\$325,000
UCSD	2.20	\$445,000	\$445,000	\$445,000	\$445,000	\$445,000	\$2,225,000
Chicago	3.25	\$726,000	\$726,000	\$726,000	\$726,000	\$726,000	\$3,630,000
Indiana	6.00	\$764,000	\$764,000	\$764,000	\$764,000	\$764,000	\$3,820,000
USC-ISI	0.55	\$168,000	\$168,000	\$168,000	\$168,000	\$168,000	\$840,000
Nebraska	2.00	\$283,000	\$283,000	\$283,000	\$283,000	\$283,000	\$1,415,000
UIUC/NCSA	1.00	\$171,000	\$171,000	\$171,000	\$171,000	\$171,000	\$855,000
Subcontract Costs		\$101,000					\$101,000
Mgmt Reserve		\$41,000	\$62,000	\$62,000	\$62,000	\$62,000	\$289,000
OSG NSF Total	20.35	\$3,750,000	\$3,750,000	\$3,750,000	\$3,750,000	\$3,750,000	\$18,750,000
BNL	1.44	\$360,000	\$360,000	\$360,000	\$360,000	\$360,000	\$1,800,000
FNAL	4.77	\$1,290,000	\$1,290,000	\$1,290,000	\$1,290,000	\$1,290,000	\$6,450,000
OSG DOE Total	6.21	\$1,650,000	\$1,650,000	\$1,650,000	\$1,650,000	\$1,650,000	\$8,250,000
OSG Project Total	26.56	\$5,400,000	\$5,400,000	\$5,400,000	\$5,400,000	\$5,400,000	\$27,000,000

Year1 Budget Summary

Budget and Usage – Dec 31, 2012

Source	Year1 Budget	Actual Cost
OSG NSF Total	\$3,750,000	\$917,896
OSG DOE Total	\$1,650,000	\$1,016,971
OSG Project Total	\$5,400,000	\$1,934,867

* Still working thru staffing issues at some institutions



Year1 Budget Status

Dec 31, 2012

Institution	Year1 Budget	Actual Cost
Wisconsin	\$881,000	\$0
Morgridge	\$105,000	\$6,531
Michigan	\$65,000	\$36,800
UCSD	\$445,000	\$120,000
Chicago	\$726,000	\$341,459
Indiana	\$764,000	\$306,000
USC-ISI	\$168,000	\$63,795
Nebraska	\$283,000	\$27,700
UIUC/NCSA	\$171,000	\$15,611
Subcontract Costs	\$101,000	\$101,000
Mgmt Reserve	\$41,000	\$0
OSG NSF Total	\$3,750,000	\$917,896
BNL	\$360,000	\$175,276
FNAL	\$1,290,000	\$841,695
OSG DOE Total	\$1,650,000	\$1,016,971
Project Total	\$5,400,000	\$1,934,867

* Still working thru staffing issues at some institutions



Year1 Work Recap

Open Science Grid

- ◆ Quarterly OSG Work Plan Progress – Nov 2012 (OSG DocDB #1142)
- ◆ Quarterly OSG Work Plan Progress – Feb 2013 (OSG DocDB #1147)
- ◆ Annual Report will be finalized by 31-March-2013 (OSG DocDB #1146)



Plan for Year2 Planning

Open Science Grid

◆ Planning will be engaged in 2Q2013

★ April

- ◆ Create/Validate staffing plan (at each institution)
- ◆ Draft Budget Plan
- ◆ Budget/Staffing approval by ET

★ May

- ◆ Finalize Budget & Staffing with institutions
- ◆ Draft work plans from each Area Coordinator
- ◆ SOWs drafted for Institutional PI approval

★ June

- ◆ OSG planning retreat in Madison
- ◆ Finalize WBS