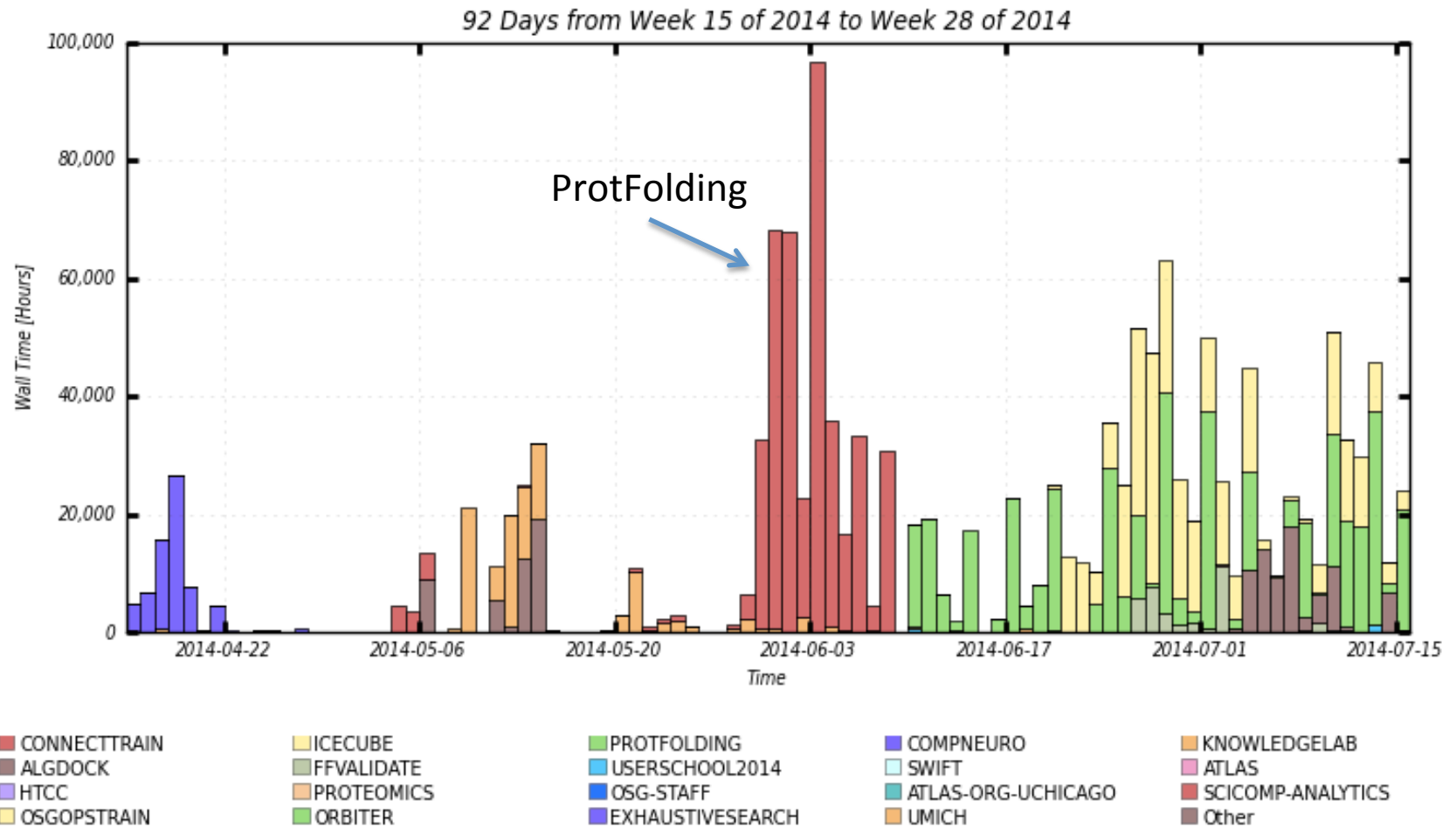


OSG Connect and Campus Infrastructures

Rob Gardner

OSG Council Meeting
July 15, 2014

OSG Connect (3 months)



Last month

OSG-Connect Projects 2014/06/01 - 2014/07/01

Project Name	PI	Institution	Field of Science	Wall Hours
AlGDock	David Minh	Illinois Institute of Technology	Chemistry	90
atlas-org-uchicago	Robert Gardner	University of Chicago	High Energy Physics	2
ConnectTrain	Robert Gardner	University of Chicago	HTC Training	304,831
FFVValidate	Vijay Pande	Stanford University	Chemistry	19,156
IceCube	Francis Halzen	University of Wisconsin	Astro-particle Physics	186,075
KnowledgeLab	James Evans	University of Chicago	Other	5,791
Orbiter	Anton Betten	Colorado State University	Mathematics	35
OSG-Staff	Chander Sehgal	Fermilab	Computer Science	18
OSGOpsTrain	Robert Quick	Open Science Grid	Community Grid	42
Proteomics	Sam Volchenbourn	University of Chicago	Bioinformatics	141
ProtFolding	Jinbo Xu	Toyota Technological Institute at Chicago	Bioinformatics	220,221
scicomp-analytics	Robert Gardner	University of Chicago	Mutli-Science Community	126
Swift	Michael Wilde	University of Chicago	Computer Science	28
UserSchool2014	Tim Cartwright	OSG	Mutli-Science Community	532
Total				737,089

OSG Connect (3 months)

- New Projects
 - ProtFolding (Toyota Institute): machine learning for protein structure prediction
 - IceCube (Wisconsin): Astrophysics
 - AIGDock (Illinois Chicago): Computational drug design
 - FFValidate (Stanford): Molecular dynamics
- Others
 - CompNeuro (Duke): Neurobiology
 - KnowledgeLab (UC): Knowledge creation

New meeting series

- Joint Campus Grids and User Support
- Bi-weekly
- Led by Emelie Harstad (Nebraska)
- Early topics
 - Supporting user applications via OASIS
 - Mechanics of software installation
 - Distributed Environment Modules
 - Unit testing

Distributed Environment Modules

- Towards virtual cluster “look & feel”
- Install popular utilities and applications, manage with **module** utility
- E.g. *NAMD* (**N**Anoscale **M**olecular **D**ynamics)

```
[rwg@login01 ~]$ module spider namd
```

```
-----  
namd: namd/2.9  
-----
```

```
This module can be loaded directly: module load namd/2.9
```

```
Help:
```

```
This module loads namd 2.9 from the Linux-x86_64-multicore binary distribution.
```

- Available on all OSG-OASIS sites

Modules...

- Usual commands work (**module avail**)

```
[rwg@login01 ~]$ source /cvmfs/oasis.opensciencegrid.org/osg/modules/lmod/5.6.2/init/bash
[rwg@login01 ~]$ module avail

----- /cvmfs/oasis.opensciencegrid.org/osg/modules/modulefiles/Core -----
-
 atlas          gcc/4.6.2      lmod/SiteHook  namd/2.9
 blast          gromacs/4.6.5 lmod/SitePackage python/2.7 (D)
 blender        jpeg           lmod/5.6.2     (D)  python/3.4
 fftw/fftw-3.3.4-gromacs lapack         matlab         settarg/5.6.2

Where:
(D):  Default Module

Use "module spider" to find all possible modules.
Use "module keyword key1 key2 ..." to search for all possible modules matching any of the "keys".

[rwg@login01 ~]$ █
```

- Working on usage tracking database

Module @ Site validation (will do this for all modules & sites)

Python module functionality (Continued)

- Also tested python libraries (checkmarks indicate successfully being able to use module):

Site	NumPy	SciPy	NLTK	Matplotlib	Pandas
AGLT2	✓	✓	✓	✓	✓
BNL	✓	✓	✓	✓	✓
Crane	✓	✓	✓	✓	✓
Cinvestav	✓	✓	✓	✓	✓
MWT2	✓	✓	✓	✓	✓
Nebraska	✓	✓	✓	✓	✓
UConn	✓	✓	✓	✓	✓
UCSD	✓	✓	✓	✓	✓
UTA_SWT2	✓	✓	✓	✓	✓

Site	Gromacs 4.6.5
SPRACE	✓
MIT_CMS	✓
cinvestav	✓
UCD	✓
MWT2	✓
UConn-OSG	✓
BNL-ATLAS	✓
AGLT2	✓
Purdue-Hadoop	✓
Nebraska	✓
GLOW	✓
UTA_SWT2	✓
BU_ATLAS_Tier2	✓
CIT_CMS_T2	✓
SWT2_CPB	✓
Tusker	✓
UCSDT2	✓

OSG Connect in Github

- Revision management for the ConnectBook
- Hub for contributed applications & workflows

The screenshot shows the GitHub repository page for OSG Connect. The browser address bar displays "GitHub, Inc. [US] https://github.com/OSGConnect". The repository name "OSG Connect" is prominently displayed, along with the description "Compute on the OSG Virtual Cluster" and contact information for "The Open Science Grid".

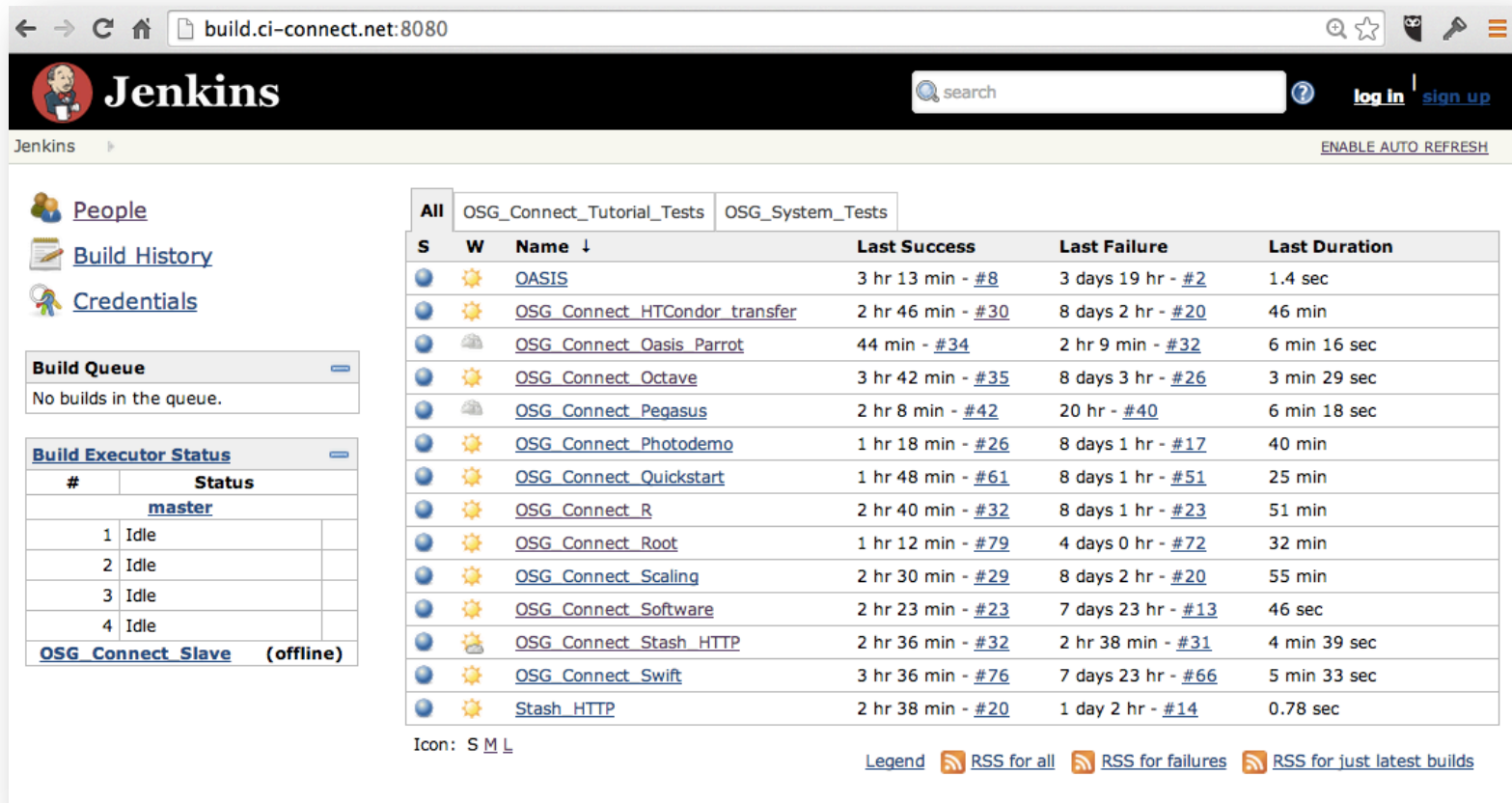
Below the repository header, there is a search bar with the text "Find a repository..." and a "+ New repository" button. The main content area lists three repositories:

- unit-tests**: Tutorial unit tests for OSG Connect (temporary repo). Updated an hour ago. Language: Perl. Stars: 0. Forks: 0.
- tutorial-htcondor_transfer**: HTCondor transfer tutorial for OSG Connect. Updated 12 days ago. Language: Perl. Stars: 0. Forks: 0.
- tutorial-photodemo**: Photo analysis demo for OSG Connect. Updated 12 days ago. Language: Python. Stars: 0. Forks: 0.

On the right side of the page, there are sections for "Members" (7 members) and "Teams" (1 team). The "Members" section includes a grid of profile pictures and an "Invite a member by username" input field. The "Teams" section includes a "Jump to a team" search bar and an "Owners" section with 7 members and 14 repositories, along with a "Create a team" button.

Continuous Validation

- Jenkins server (Continuous Integration platform)
- Unit tests on all OSG Connect tutorial modules and core services (Stash, OASIS)



The screenshot shows the Jenkins web interface. The top navigation bar includes the Jenkins logo, a search bar, and links for 'log in' and 'sign up'. Below the navigation bar, there are links for 'People', 'Build History', and 'Credentials'. On the left side, there is a 'Build Queue' section showing 'No builds in the queue.' and a 'Build Executor Status' table. The main content area displays a table of build jobs with columns for 'S', 'W', 'Name', 'Last Success', 'Last Failure', and 'Last Duration'. The table lists various jobs such as 'OASIS', 'OSG Connect HTCondor transfer', 'OSG Connect Oasis Parrot', etc. At the bottom, there are links for 'Legend', 'RSS for all', 'RSS for failures', and 'RSS for just latest builds'.

S	W	Name ↓	Last Success	Last Failure	Last Duration
●	☀	OASIS	3 hr 13 min - #8	3 days 19 hr - #2	1.4 sec
●	☀	OSG Connect HTCondor transfer	2 hr 46 min - #30	8 days 2 hr - #20	46 min
●	☁	OSG Connect Oasis Parrot	44 min - #34	2 hr 9 min - #32	6 min 16 sec
●	☀	OSG Connect Octave	3 hr 42 min - #35	8 days 3 hr - #26	3 min 29 sec
●	☁	OSG Connect Pegasus	2 hr 8 min - #42	20 hr - #40	6 min 18 sec
●	☀	OSG Connect Photodemo	1 hr 18 min - #26	8 days 1 hr - #17	40 min
●	☀	OSG Connect Quickstart	1 hr 48 min - #61	8 days 1 hr - #51	25 min
●	☀	OSG Connect R	2 hr 40 min - #32	8 days 1 hr - #23	51 min
●	☀	OSG Connect Root	1 hr 12 min - #79	4 days 0 hr - #72	32 min
●	☀	OSG Connect Scaling	2 hr 30 min - #29	8 days 2 hr - #20	55 min
●	☀	OSG Connect Software	2 hr 23 min - #23	7 days 23 hr - #13	46 sec
●	☁	OSG Connect Stash HTTP	2 hr 36 min - #32	2 hr 38 min - #31	4 min 39 sec
●	☀	OSG Connect Swift	3 hr 36 min - #76	7 days 23 hr - #66	5 min 33 sec
●	☀	Stash HTTP	2 hr 38 min - #20	1 day 2 hr - #14	0.78 sec

Icon: S M L

Legend [RSS for all](#) [RSS for failures](#) [RSS for just latest builds](#)

Fall Bootcamp

- We are discussing with Software Carpentry holding a joint workshop to:
 - Provide baseline of necessary skills for scientific computation (SC)
 - Introduce users to distributed scientific computation (OSG)
- Early phase
 - SC instructor training in September
 - Venue, day-time, TBD