



osg connect



Update

OSG Council Meeting
Norman, Oklahoma
October 23, 2014

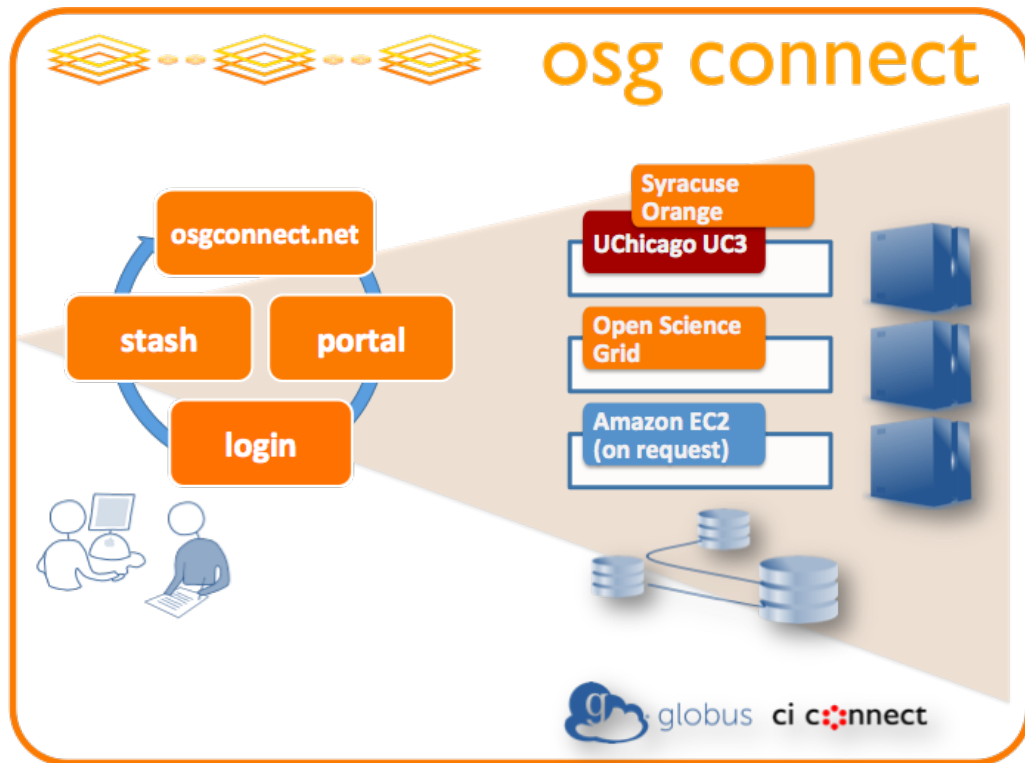
Rob Gardner • Campus Grids Coordinator

OPENSOURCEGRID.ORG • CAMPUSGRIDS.ORG • OSGCONNECT.NET



Open Science Grid

OSG Connect for users



Make OSG seem like a virtual campus cluster:

- login
- software
- job scheduling
- job data

Sign up for OSG Connect

You can sign up for OSG Connect in a few basic steps:

1. Visit the [OSG Connect sign-in portal](#) (this will open in a new tab or window).
2. Click **Proceed** to authenticate with your campus NetID. Your browser will redirect you to a [cilogon.org](#) site.
 - In the **Select an Identity Provider** area, find OSG Connect and select it.
 - Check the **remember this selection** box, then click **Log On**. Your browser will redirect you to the OSG Connect authentication page. It should look familiar to you. *If you have recently signed in, you may not need to re-authenticate.*
 - Sign in as you normally would, using your campus NetID and password. Your browser will take you briefly past [cilogon.org](#) again, before returning you to the sign-in portal. *These steps allow you to sign in to the web portal any time using your OSG Connect credentials.*
3. Now you will see a page entitled **Need to Make a Connection**. This links your campus NetID to a OSG Connect account. If you already own a Globus account, that will also be your OSG Connect account: sign in with your Globus credentials here, then move ahead to step 5.
4. Otherwise, click **Create a new Globus account**.
 - Enter your full name and your OSG Connect email address. It's important to use your OSG Connect address so that OSG Connect administrators can approve your access.
 - Enter a username and password to use for your OSG Connect account. The site will interactively let you know if your chosen name is unavailable.
 - You must indicate your acceptance of the Globus terms of service by checking the appropriate box. (Other boxes are optional.)
 - Click **Register** to create your account. You will need to validate your email address before proceeding:
 - Wait for an email from support@globus.org containing your validation URL.
 - Click the link, or paste it into your browser where you are.
 - Your account will be confirmed.
5. To complete sign-up, you will join the **osg** group. This is automated, but requires some additional information:
 - your **first name**
 - your **last name**
 - your **field of science**
 - your **organization** (university, institution, agency, etc)
 - your **department** within that organization

This information is used for resource utilization reports, to build longitudinal analyses of how grid resources are used.
6. After a moment, you will have joined the **osg** group, and your browser will bounce over to the **Manage Identities** screen. It is advisable that you **add an SSH public key** now, but it is not required — you may do this at any time. The SSH key will grant you passwordless access to the OSG Connect login server, [login.osgconnect.net](#). If you do not know how to generate an SSH key, you may find our [SSH Key Generator](#) helpful.

My Groups

Search

INVITATIONS (MEW & RESPOND)
 MEMBERSHIP APPROVAL PENDING
 University of Chicago Research Computing Center
 MANAGER OF
 MEMBER OF
 atlas.org.uchicago
 atlas.wg.Exotics
 atlas.wg.Higgs
 atlas.wg.SUSY
 connect
 duke
 duke.4fermion
 duke.campus
osg
 osg.ConnectTrain
 osg.OSG-Staff
 umich

Create New Group >
 ● admin action required

osg

Home

Members

Subgroups

Managers are listed in **bold**.

| | | |
|-------------------------------|-------------------------------|-------------------------------|
| CI Connect | Garhan Attebury | OSG Training 1 |
| OSG Connect Operations | Gerard Bernabeu Altayo | OSG Training 2 |
| Aaron Gerow | Giovanni G. Baez Flores | OSG Training 3 |
| Alain Deximo | Glen Hocky | OSG Training 4 |
| Alan Sili | Gonzalo Merino | OSG Training 5 |
| Alden Strading | Harinder Singh Bawa | OSG test |
| Amanda Lund | Ian Foster | Ole Weidner |
| Amanda Whitlock | Igor Stigoi | Patrick A Reeves |
| Amin Nikakhtar | Igor Stigoi | Patrick Maisom |
| Amit Kumar | Ilija Vukotic | Paul Alexander |
| Andre Luckow | JUAN DIEGO HERNANDEZ J... | Peter F Couvares |
| Andre Merzky | Jacob Roberts | Peter Hadlaw |
| Andrea Manzi | James Christopher Westland | Philip W. Smith |
| Anna Elizabeth Woodard | James Zhang | Philippe Grassia |
| Anna Olson | Jan Balewski | Po-He Tseng |
| Annika Eriksson | Janina Krumbek | Rachana Ananthakrishnan |
| Anoop Mayampurath | Jay Fowler | Rachel Killackey |
| Anton Betten | Jeff Dandoy | Rafael Francisco Pagan Vargas |
| Anton Yu | Jerry Perez | Raffaele Montella |
| Balamunagan Desinghu | Jimmy Dorff | Rick Irving |
| Ben Eisenbraun | Joakim Olsson | Rob Gardner |
| Benjamin Brachi | John Blischak | Rob Quick |
| Bing Xie | John Wang | Robert Cowles |
| Bo Rodda | Jonah Bernhard | Robert Hipple |
| Boockjo Kim | Jonathan Schroeder | Rohan Jaipal |
| Brendan Albano | Jordan Goveau | Rupa Sravani Kommineni |
| Brennan Goveau | Jose Ramon Alvarez de los ... | Ruth Marinshaw |
| Brian Mitchell | Joseph Haley | Saad Nasser |
| Brj Kishor Jashai | Joseph Kleinhenz | Samuel Meehan |
| Brooklin Gore | Julian Velev | Samuel van Loon |
| Bryan Howell | Karan Vahi | Scott Shi |
| Cesar Pollack | Karl Jablonowski | Scott Teige |
| Chaoren Liu | Karthikeyan Saravanan | Shantenu Jha |
| Chaowen GUO | Kenichi Hatakeyama | Shi-Jian Ding |
| Chen Li | Kenneth Aird | Shijie Li |
| Chetan Raj Rupaikhet | Kenneth Bloom | Simon Jacobs |
| Choi-In Chou | Ketan Maheshwari | Soichi Hayashi |
| Christian Ross | Kevin Hill | Soon Kiat Lau |

Users
(239)

connect

osg

osg.AMFORA
 osg.AIGDock
 osg.BioMolMach
 osg.BioStat
 osg.CompChem
 osg.CompNeuro
 osg.ConnectTrain
 osg.ConnectTrain
 osg.ContinuousIntegration
 osg.DBConcepts
 osg.Duke-QGP
 osg.Errorstudy
 osg.EvoTheory
 osg.ExhaustiveSearch
 osg.FFValidate
 osg.GRASP
 osg.GlassySystems
 osg.HTCC
 osg.HealthInformatics
 osg.IceCube
 osg.KnowledgeLab
 osg.KnowledgeSys
 osg.NESCent
 osg.NRELMatDB
 osg.OSG-Staff
 osg.OSGopsTrain
 osg.Orbiter
 osg.PathSpaceHMC
 osg.PhysStat
 osg.PlantBio
 osg.ProtFolding
 osg.Proteomics
 osg.RADICAL
 osg.RDCEP
 osg.SBGrid
 osg.SNOplus
 osg.SouthPoleTelescope
 osg.StanfordRCC
 osg.Swift
 osg.UChicago-ROC
 osg.UserSchool2014
 osg.aprime

Sign up process

OSG projects (39)

Applications & tools on a virtual cluster



● OASIS+Modules =

Distributed
Environment
Modules

<https://confluence.grid.iu.edu/display/CON/Distributed+Environment+Modules>

```
$ switchmodules oasis
$ module avail
$ module load R
$ module load namd
$ module purge
$ switchmodules local
```

```
[rwg@login01 ~]$ module avail
```

```
----- /cvmfs/oasis.opensciencegrid.org/osg/modules/modulefiles/-----
R/3.1.1                ectools                hdf5/1.8.13          (D)
SitePackage            espresso/5.1          hmmer/3.1            (D)
SparseSuite/4.2.1      fftw/3.3.4-gromacs    jpeg                 (D)
ant/1.9.4               fftw/3.3.4            (D)
apr/1.5.1               fpc/2.6.4             lamm                 (D)
apr-util/1.5.3          gamess/2013           python/2.7            (D)
aprun/1.5.3             gcc/4.6.2             python/3.4            (D)
aprun/1.5.3             gcc/4.6.2             python/3.4            (D)
atlas                   geos/3.4              root/5.34-21
autodock/4.2.6          glib/2.24.6           samtools/0.1.17
bedtools/2.21           glib/2.24.6           serf/1.37
blasr/1.3.1             glib/2.24.6           settarg/5.6.2
blast                   graphviz/2.38.0        siesta/3.2
blast                   gromacs/4.6.5          subversion/1.8.10
blast                   gromacs/5.0.0          uclust/2.22
blast                   gromacs/5.0.0          valgrind/3.10
blast                   gsl/1.16               vmd/1.9.1
curl/7.37.1             hdf5/1.8.12            wget/1.15
```

common application environment across OSG & XSEDE clusters

- Common tools & libs
- Curate apps on demand
- DHTC-suited apps in XSEDE campus yum repo
- Usage tracked by user, project & site

Resource targets



- OSG GlideinWMS is the workhorse
- UChicago campus grid (UC3)
- **NEW!** Syracuse University HTCondor pool (OrangeGrid)
 - First Phase:
 - OrangeGrid as an OSG Connect resource target
 - OASIS/CVMFS to be added to base virtual box image
 - Second phase:
 - CI Connect instance, virtually extending OrangeGrid to the OSG for Syracuse researchers

OSG Connect usage last year



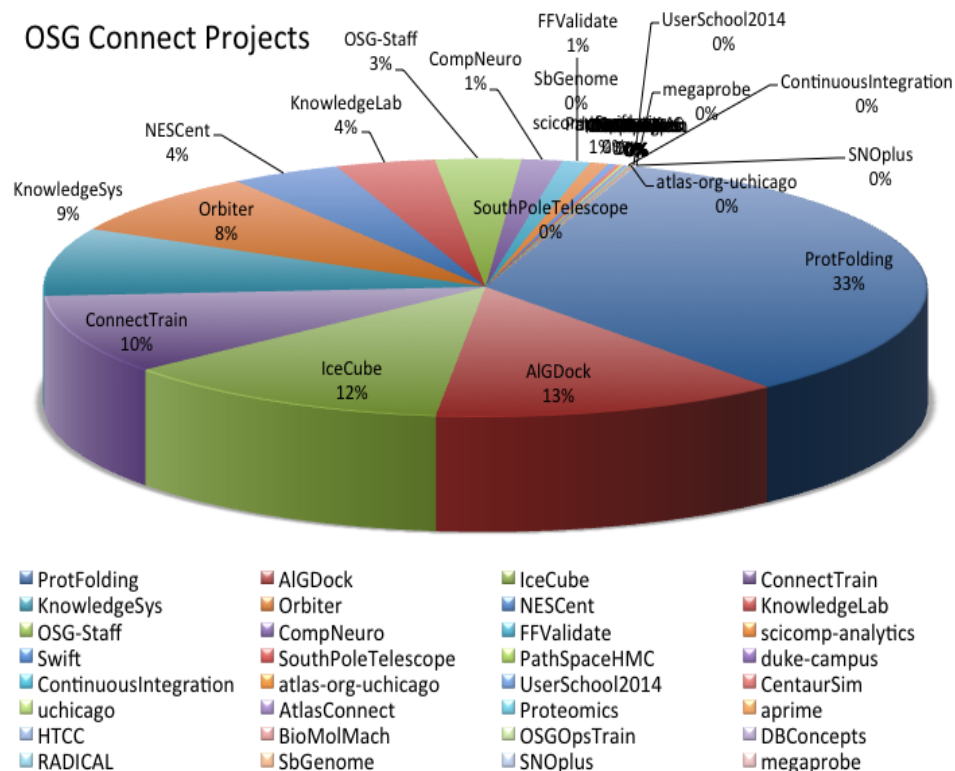
Sum of Wall Hours

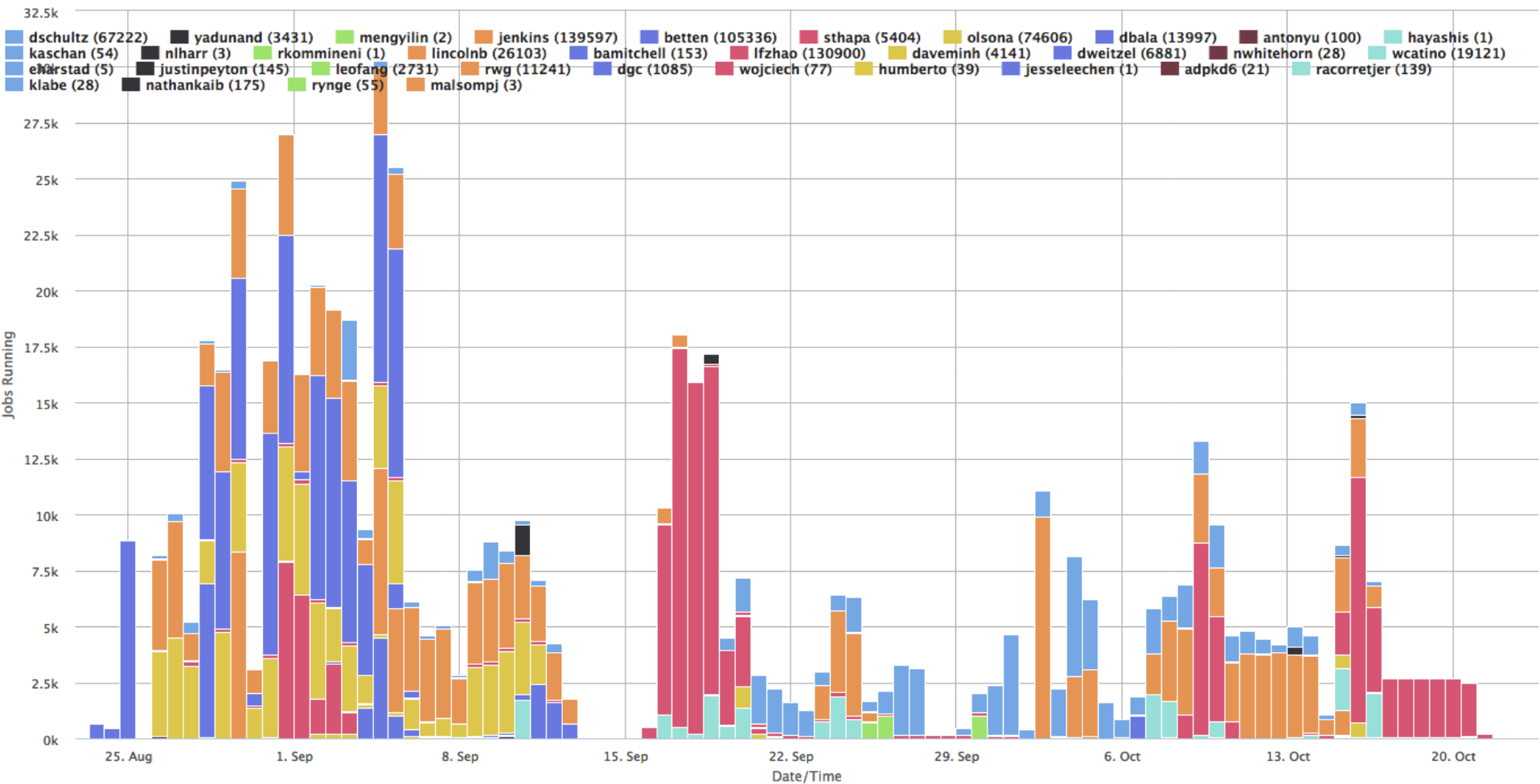
Field of Science

▼ Total

| | |
|--------------------------------------------------|------------------|
| Bioinformatics | 1,499,139 |
| Chemistry | 616,079 |
| Astrophysics | 553,250 |
| Training | 445,252 |
| Educational Psychology | 383,180 |
| Mathematical Sciences | 357,187 |
| Evolutionary Sciences | 181,610 |
| Other | 163,868 |
| Computer and Information Science and Engineering | 154,985 |
| Neuroscience | 67,048 |
| Multi-Science Community | 33,819 |
| Computational Condensed Matter Physics | 5,339 |
| Community Grid | 5,260 |
| High Energy Physics | 4,961 |
| Technology | 4,387 |
| Nuclear Physics | 348 |
| Molecular and Structural Biosciences | 88 |
| Grand Total | 4,475,800 |

OSG Connect Projects





Quotable



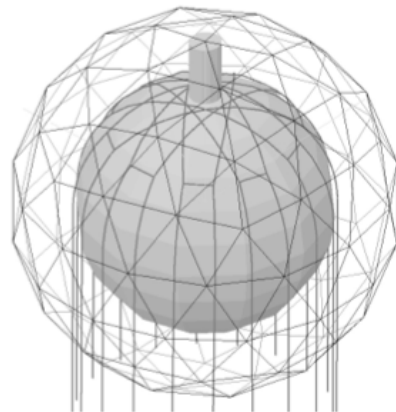
From: Kevin Labe <klabe@uchicago.edu>
Date: October 15, 2014 at 2:40:09 PM CDT
To: snoplusdata@snolab.ca
Subject: US Grid computing now operational
Reply-To: Kevin Labe <klabe@uchicago.edu>

I am writing to announce that I have succeeded in configuring the Open Science Grid computing resources for use by US SNO+ collaborators. The highlights:

- * rat v5.0.0 is now available for use over US CVMFS
- * jobs can be submitted to the grid through OSG Connect
- * storage at Fermilab now available for reading and writing

From: Ed Blucher <blucher@hep.uchicago.edu>
Subject: SNO + Fyi
Date: October 15, 2014 at 3:08:23 PM CDT
To: Rob Gardner <rwg@hep.uchicago.edu>

Hi Rob,
Thanks for all of your help with this.
Ed
Sent from my iPhone



Quotable: Searching for Symmetry Orbits & Rainbow Cliques in Group Theory



From: Anton Betten <betten@math.colostate.edu>

Date: Wed, Sep 3, 2014 at 10:47 AM

Subject: OSG runs

Hi Suchandra,

just a quick note that everything is going extremely well with my computations on the OSG. I start 10K jobs one day and the next day they are done. Fantastic!

I am probably more than 50% done by now, and I am trying hard to complete before my next conference in Germany (in less than two weeks). If I can report that the classification is finished and confirm the published result, that would be great.

Thanks, Anton

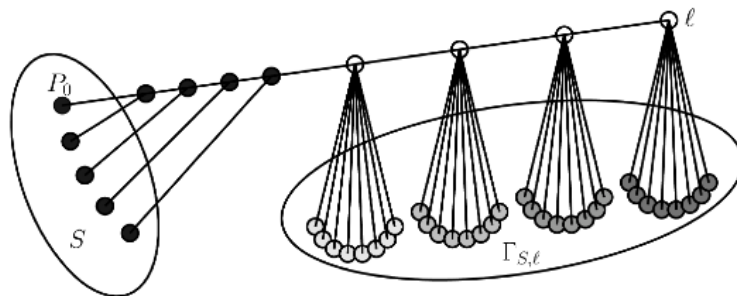
Anton Betten, Ph.D.

Associate Professor

Department of Mathematics

Colorado State University

Fort Collins, CO 80523-1874, U.S.A.



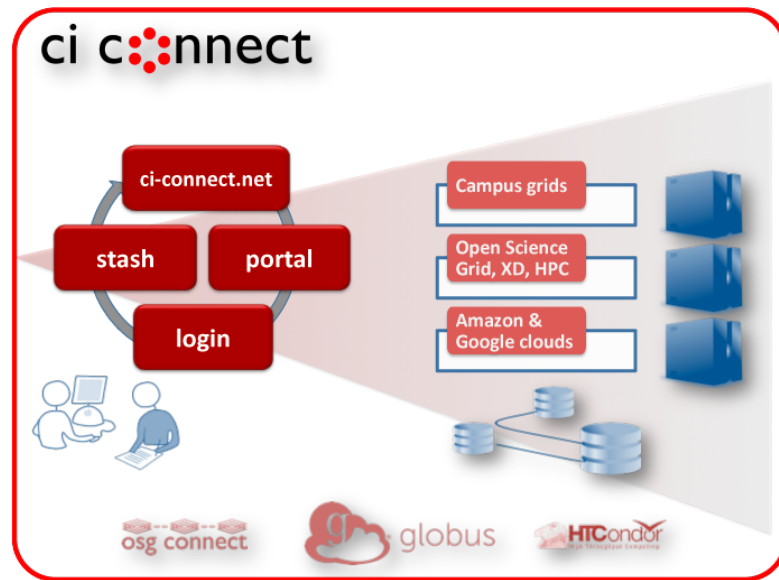
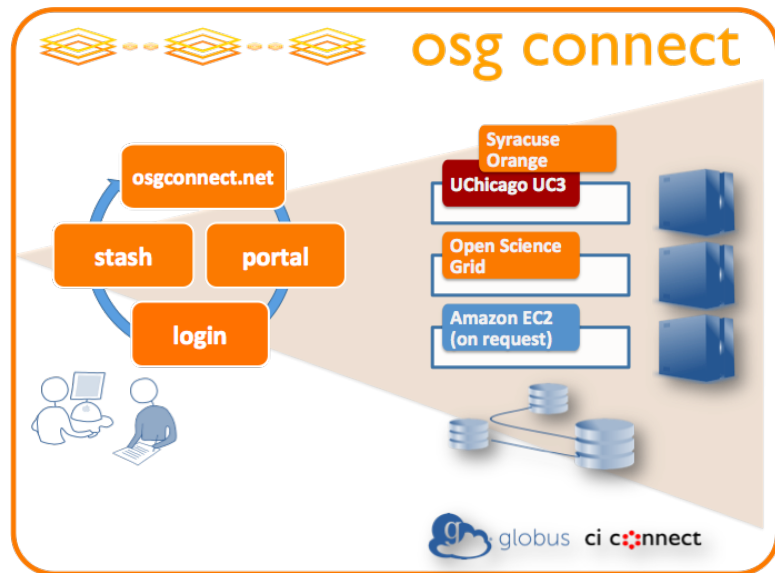
Reaching new users & providers



- Joint Software Carpentry & OSG Workshop
- January 14-16, 2015
- Hosted by CHTC @ University of Wisconsin
- Organized by OSG User Support and Campus Grids
- Developing curriculum in github for forking to...
 - SWC+OSG workshops, ACI-REF webinars, CIC workshops, OSG User School, etc.



Campus grids as service



A generic pattern for connecting campuses to national cyber infrastructure

Campus grids in progress



- Each presents specific challenges that provide lessons for new campuses.
- Flocking services provided and maintained centrally
 - No local campus IT effort needed
- Also working on the **connect client**
 - Submit to campus flocking service
 - Add the local cluster (use local account/allocation)
 - Add an XSEDE account/allocation

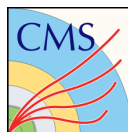


THE UNIVERSITY OF
CHICAGO

Research
Computing
Center



CONNECT
UNIVERSITY OF MICHIGAN



connect

An excellent campus bridging module (git package installed by local admin) for home cluster login → connect service → OSG + CI targets via `{ $module load connect }`



Efficiently connect your science to cycles and data.



Learn more at
<https://www.osgconnect.net/>