



Open Science Grid

Ways to Connect to OSG

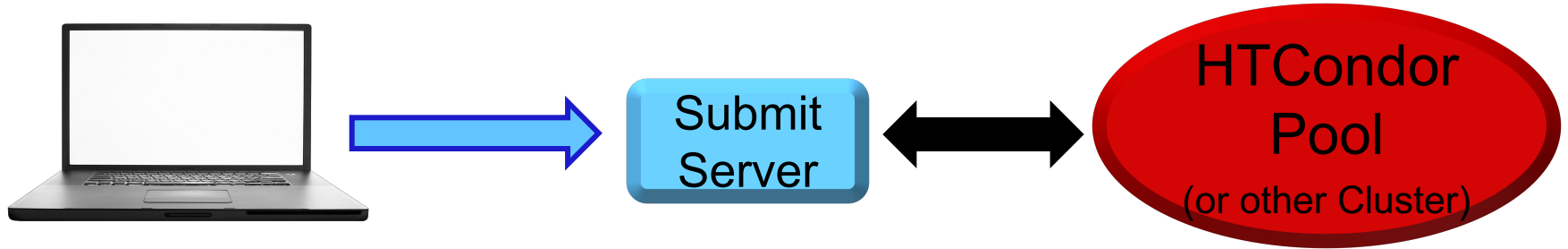
Tuesday, Wrap-Up
Lauren Michael, CHTC

Overview

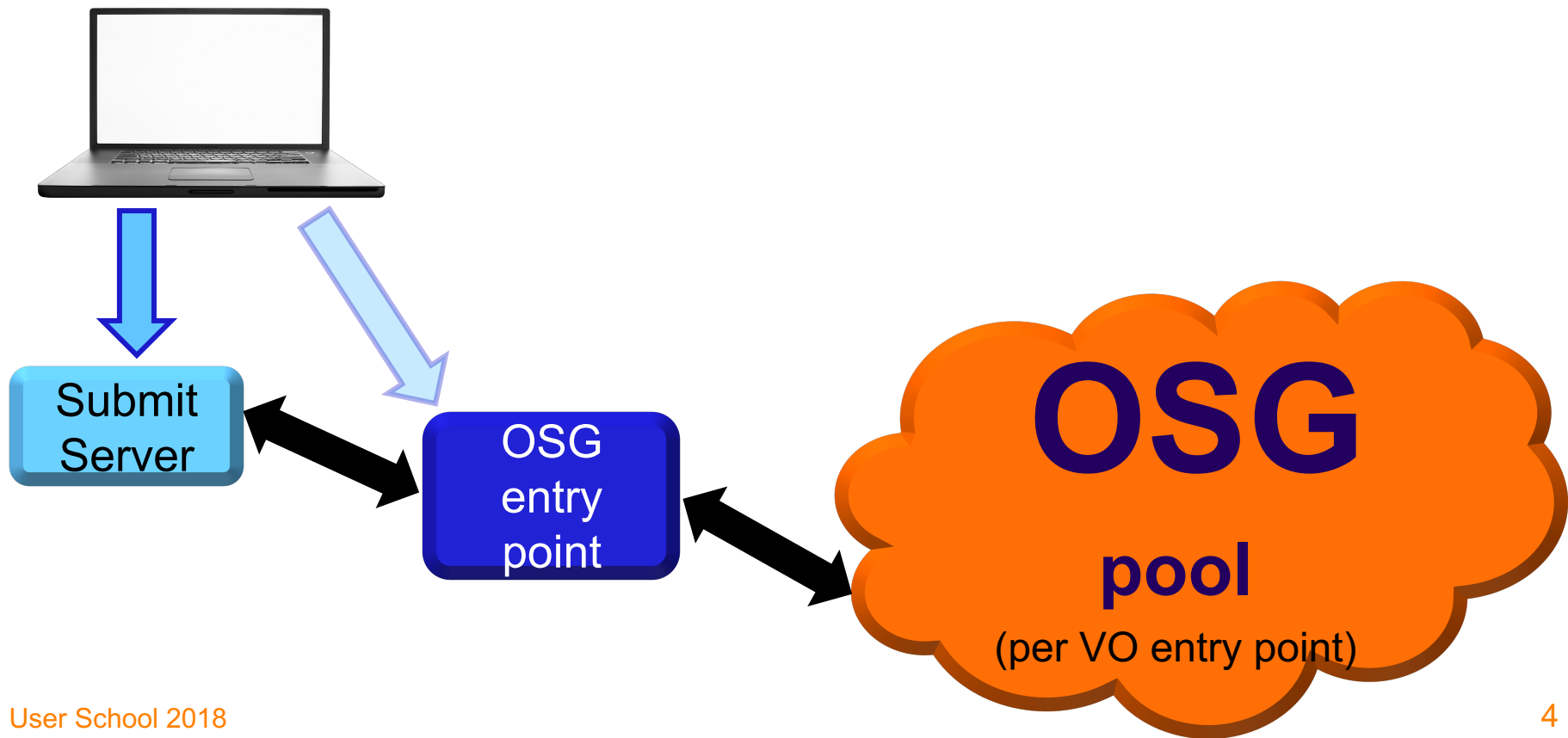
- Types of HTC/OSG submit points
- OSG Virtual Organizations
(members of OSG consortium)
- Available to Anyone*!
 - OSG Connect
 - OSG via XSEDE

*affiliated with a U.S. institution/non-profit/etc.

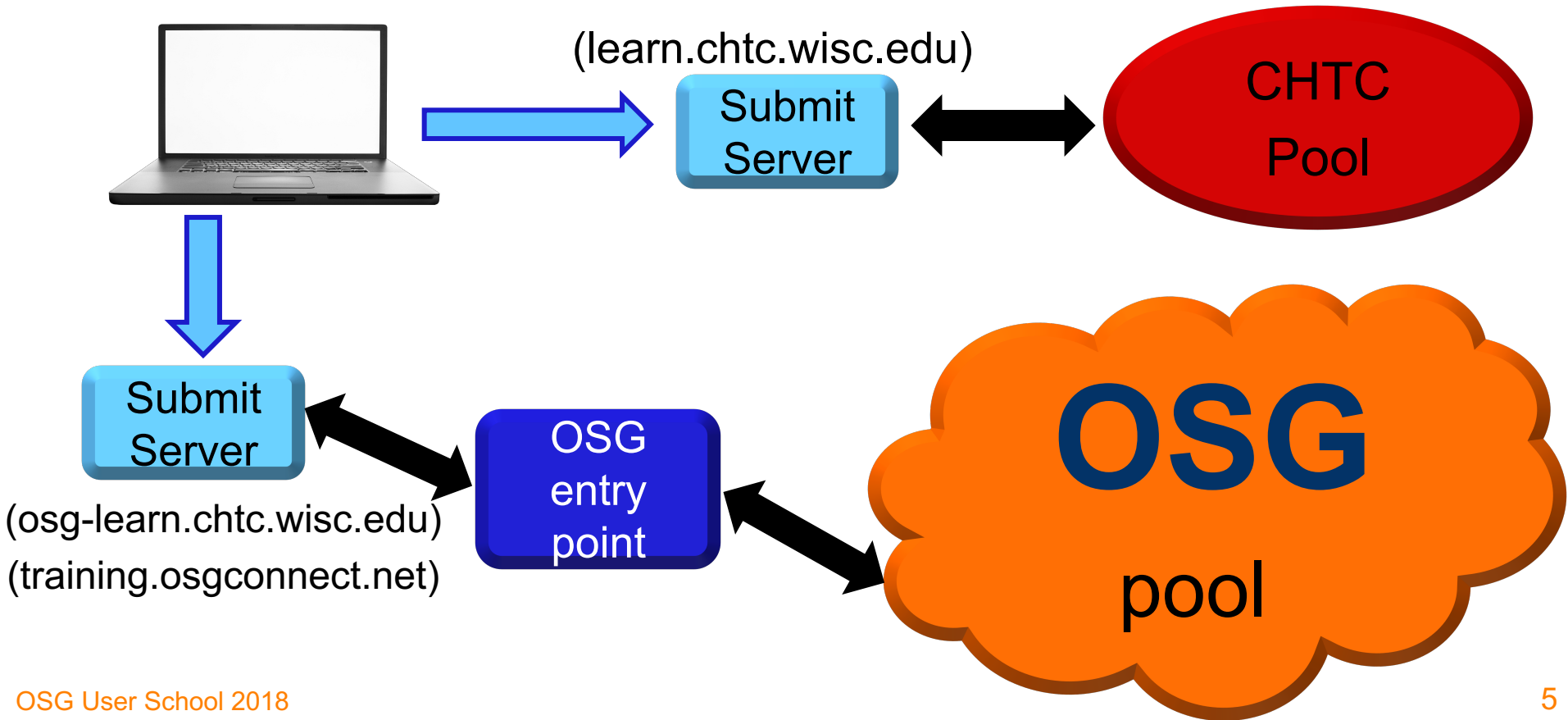
Local HTC Submit Point



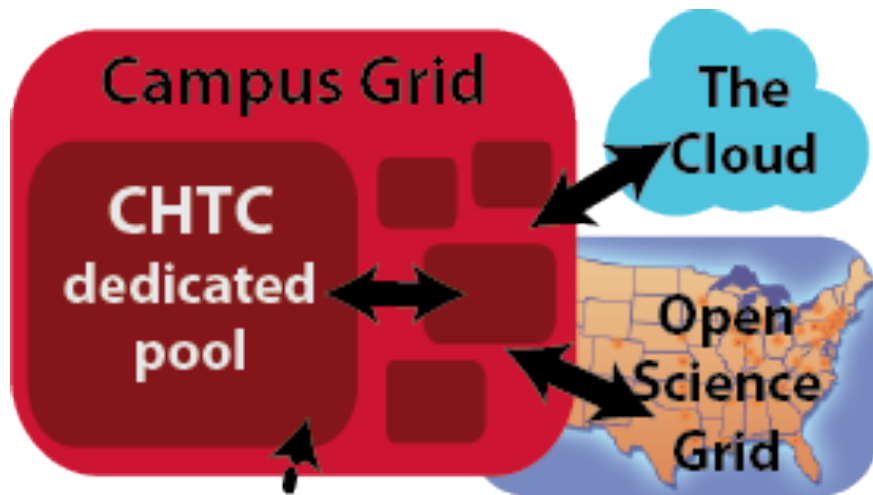
OSG Access Points



OSG School Submit (1yr access)



At UW-Madison's CHTC



HTCcondor
High Throughput Computing

Overview

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Accessing an OSG Submit Point – 3 Ways

	Local VO	OSG Connect	XSEDE
Available to	users with a campus/org VO	affiliates of U.S. research orgs	users with XSEDE allocation
Cost	very unlikely	FREE	FREE (but need allocation)
Limit on CPU hrs	unlikely	NO	YES (per allocation)
Local Help	very likely (local staff)	unlikely	possibly* (Campus Champion)
Online Guides	likely	YES	limited
Submit Point	submit server (or direct OSG entry server)	direct OSG entry server	submit node to OSG entry server

*not all XSEDE Campus Champions will have experience with HTC or OSG

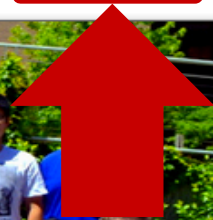
Virtual Organization (VO)

- institution or research project that is part of the OSG consortium
- accounts and access determined by local VO administrators
- most offer user support or specialized interfaces for their specific setup and population of users

How do I determine whether my institution is/has a VO?



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User/Host Certificate

OSG provides services to issue user and host certificates for your resources. [Link](#)

OSG Operations

OSG Operations / Grid Operations Center at Indiana University provides operations service to the OSG. [Link](#)



OVERVIEW

Introduction

Organization

Research Highlights

CONTRIBUTION

Open Science Grid

What we do

The OSG provides common service and support for resource providers and scientific institutions using a distributed fabric of high throughput computational services. The OSG does not own resources but provides software and services to users and resource providers alike to enable the opportunistic usage and sharing of resources. The OSG is jointly funded by the Department of Energy and the National Science Foundation.

The Open Science Grid (OSG) supports science such as..

- High Energy Physics: CMS and ATLAS
- Nanoscience: NANO HUB
- Structural Biology: SBGrid
- Community VO (multiple sciences): Engage

What OSG is for

The OSG is primarily used as a high-throughput grid where scientific problems are solved by breaking them down into a very large number of individual jobs that can run independently. The most successful opportunistic applications run on the OSG share the following characteristics:

- The application is a Linux application for the x86 or x86_64 architecture.
- The application is single- or multi-threaded but does not require message passing.
- The application has a small runtime between 1 and 24 hours.
- The application can handle being unexpectedly killed and restarted.
- The application is built from software that does not require contact to licensing servers.
- The scientific problem can be described as a workflow consisting of jobs of such kind.
- The scientific problem requires running a very large number of small jobs rather than a few large jobs.

More about OSG

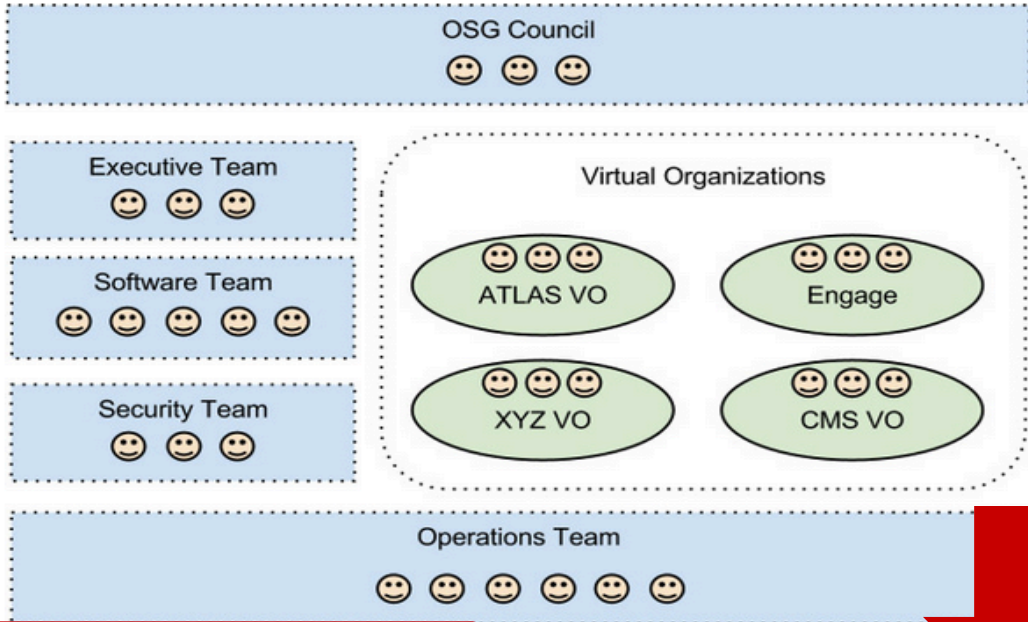
Please see <https://twiki.opensciencegrid.org/> for more information regarding the OSG.

Please see [Documentation](#) for more details regarding available documentation.



- OVERVIEW
- Introduction
- Organization**
- Research Highlights
- DOCUMENTATION
- Links
- Join Open Science Grid

The OSG Consortium builds and operates the OSG. Consortium members contribute effort and resources to the common infrastructure, with the goal of giving scientists from many fields access to shared resources worldwide.



Please see [List of Virtual Organizations](#).

The Council governs the consortium ensuring that the OSG benefits the scientific mission of its stakeholders.

Using OSG through a VO

1. Determine whether there is a local VO for your institution/organization.

2. Get an account

Contact the administrators to get an account on their glidein server (or submit node tied to a glidein server).

3. Submit jobs

Follow site-specific guides and/or submit jobs as you have been at the OSG School.

OSG Connect

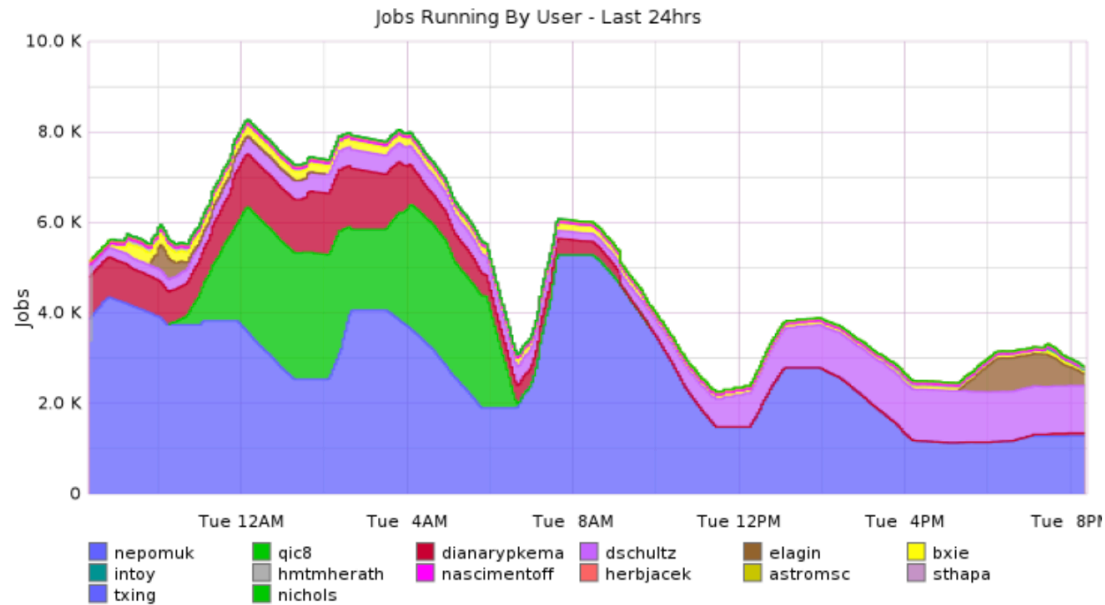


osg connect

- Essentially, a VO available to those without a *Local VO*
- Free for affiliates/partners of U.S. research institutions
- Submit from OSG Connect server or use Connect Client on another cluster (e.g. Clemson)
- Online guides, software support, and contact info



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OSG CPU Utilization By User

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Details and hands-on exercises on Thursday morning!

(training.osgconnect.net)

- **XSEDE:**
 - a consortium of HPC clusters and other computational services available to academics in the U.S.
- free accounts, but you must request an XSEDE allocation of compute hours
- limited online guides specific to OSG-XSEDE, but similar to submission via osg-learn.chtc.wisc.edu

Using OSG via XSEDE

1. Sign up for an XSEDE account.
2. Request an OSG allocation
via the XSEDE User Portal to request a startup (or long-term)
allocation of compute hours for OSG.
3. Follow XSEDE's guides for connecting to and using
the XSEDE submit server.
4. Submit jobs as you have been at the school, making
sure to indicate your XSEDE project name
(allocation code).

Enter the Portal

USER NAME

PASSWORD

SIGN IN

REMEMBER ME

[CREATE ACCOUNT](#) [VERIFY ACCOUNT](#) [FORGOT PASSWORD](#)

[FORGOT USERNAME](#)

Welcome to The XSEDE User Portal (XUP), the home on the web for XSEDE users! The XUP provides XSEDE users access to view and manage their accounts and allocations, as well as find information about and access the XSEDE services and resources.

Here's a few of the things you can do here without even logging in



[See XSEDE resource and service status](#)



[View user news and upcoming events](#)



[Find and register for training classes](#)

Log in or create an account to get started!

Overview

Allocation Types

Startup Allocations

Startup Allocation Limits per Resource

Education Allocations

Research Allocations

Research Allocation Deadlines

Writing and Submitting Allocation Proposals

Overview

An XSEDE allocation provides access to computing, visualization, and/or storage resources as well as extended support services at XSEDE service provider (SP) sites. An allocation is allotted to a researcher who serves as the principal investigator (PI) of an approved project. An account is the specific method through which an individual (or community, in the case of science gateways) logs in to a resource to utilize the allocation.

- **Computational Resources:** XSEDE SPs offer a variety of high-performance computing (HPC) and high-throughput computing systems for allocation. Computing platforms include clusters, scalable-parallel systems, and shared-memory systems with various CPU, memory, communication, and storage configurations. It is important that the platform you choose is a good match for your computational plans.
- **Visualization Resources:** SPs provide a variety of visualization resources and software services to the XSEDE user community. These systems provide a powerful way to interact with and analyze data at any scale. For complete information on available visualization resources, visit [XSEDE Visualization](#).
- **Storage Resources:** Several XSEDE SPs host storage platforms providing services such as data management, data collections hosting, and large-scale persistent storage. XSEDE will provide storage allocations both in support of compute/visualization usage and storage independent of those

Below are links to each resource's user guide. Each guide provides information and instructions on system access, computing environment and running jobs specific to that resource. Resources are listed alphabetically within each resource type: [High Performance Computing](#), [High Throughput Computing](#), [Visualization](#), [Storage systems](#), [Special Purpose systems](#), [Testbeds](#) and [Software](#)

XSEDE is committed to providing quality, useful documentation to its users. Please feel free to leave your suggestions and comments at the bottom of each user guide.

High Performance Computing

[Blacklight](#) (PSC)

[Darter](#) (NICS) **New!!**

[Gordon](#) (SDSC)

[Gordon ION](#) (SDSC)

[Keeneland](#) (Georgia Tech) **offline Dec., 2014**

[Mason](#) (IU)

[Lonestar](#) (TACC) **offline Dec., 2014**

[Stampede](#) (TACC)

[SuperMIC](#) (LSU) **coming June, 2014**

[Trestle](#) (PSC)

High Throughput Computing

[Open Science Grid](#)

Software Guides

[Job Management with GRAM5](#)

Scientific Visualization

[Maverick](#) (TACC) **New!!**

[Nautilus](#) (NICS)

Storage Systems

[Data Supercell](#) (PSC)

[HPSS](#) (NICS)

[Data Oasis](#) (SDSC)

[Ranch](#) (TACC)

[XSEDE Wide File System](#) (XSEDE)

Special Purpose Systems

[Quarry](#) (IU Gateway Web Services Hosting System)

Testbeds

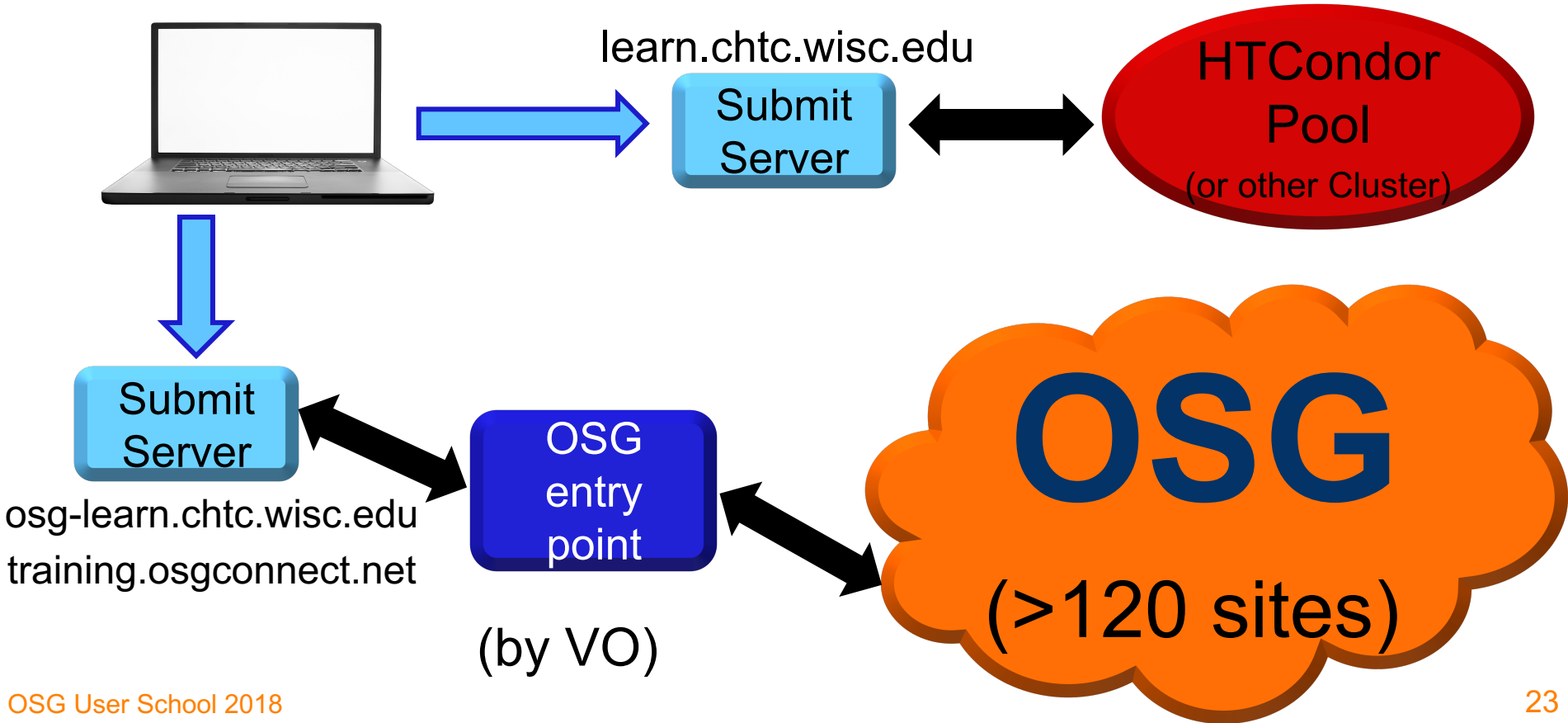
[FutureGrid](#) (distributed)

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Questions?

- Feel free to contact me:
 - lmichael@wisc.edu
- Next: Evaluate today!
- More on Thursday:
 - Learn more about OSG Connect and supported software