Ohio Supercomputer Center

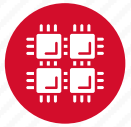
An OH·TECH Consortium Member

Workshop Set up

- Workshop project – set up account at my.osc.edu
  - **If you already have an OSC account, sign in to my.osc.edu**
    - **Go to Project**
      - **Project Access Request**

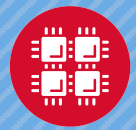
PROJECT CODE = PZS1114

- Slides are on event page: osc.edu/events
- Workshop website:
  - https://khill42.github.io/OSC_IntroHPC/



Computing Services to Accelerate Research and Innovation

An introduction to OSC services, hardware, and environment



Kate Cahill

Education & Training Specialist

“OSC is here to empower your research.”

About OSC

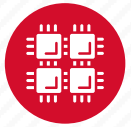
- Founded in 1987
- Statewide resource for all universities in Ohio
  - high performance computing services
  - computational science expertise
  - “ … propel Ohio's research universities and private industry to the forefront of computational based research.”
- Funded through the Ohio Department of Higher Education
- Reports to the Chancellor
- Located on OSU’s west campus
- Fiscal agent is OSU

The OH-TECH Consortium

Ohio Supercomputer Center provides high performance computing, software, storage and support services for Ohio's scientists, faculty, students, businesses and their research partners.

OARnet connects Ohio’s universities, colleges, K-12, health care and state and local governments to its high-speed fiber optic network backbone. OARnet services include co-location, support desk, federated identity and virtualization.

OhioLINK serves nearly 600,000 higher education students and faculty by providing a statewide system for sharing 50 million books and library materials, while aggregating costs among its 90 member institutions.



Service Catalog

Cluster Computing

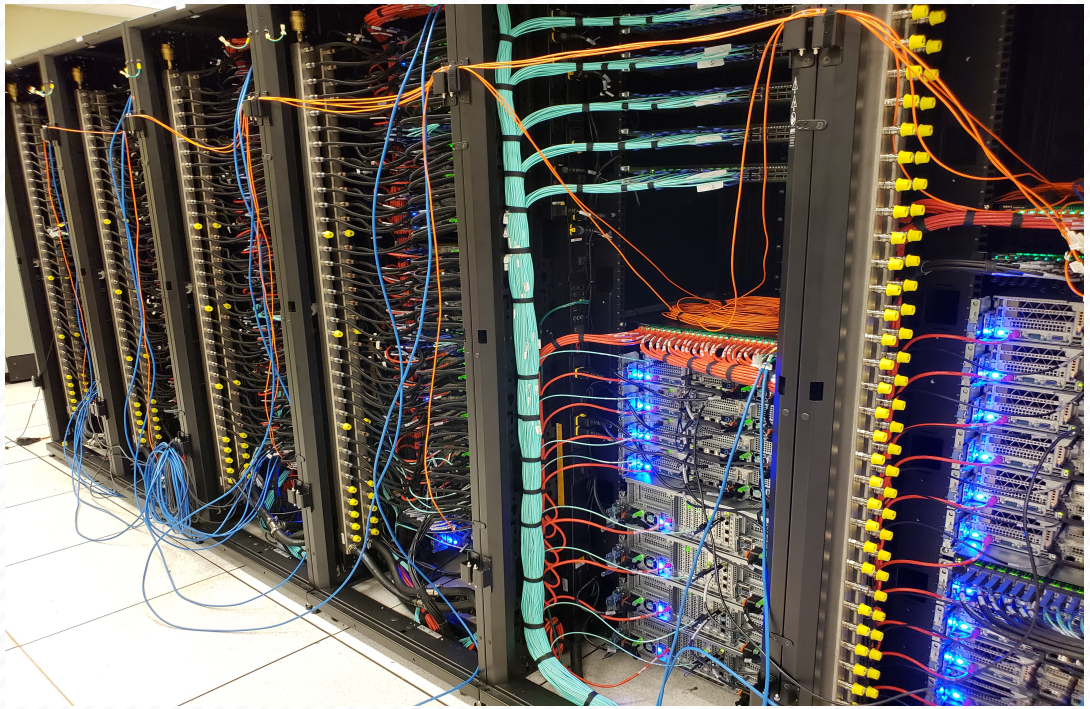
A fully scalable center with mid-range machines to match those found at National Science Foundation centers and other national labs.

Research Data Storage

High-performance, large capacity data storage spaces along with others that are perfect for a wide variety of research data.

Education

High performance computing and networking resources come together to create an exciting and innovative teaching and research environment.

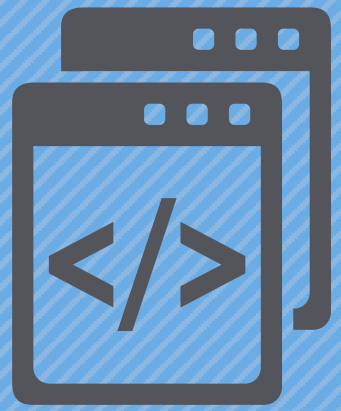


Web Software Development

Our expert web development team helps you create custom web interfaces to simplify the use of powerful HPC resources.

Scientific Software Development

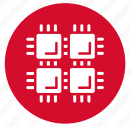
Deep expertise in developing and deploying software that runs efficiently and correctly on large scale cluster computing platforms.



Getting Started at OSC

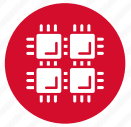
Who can get an OSC project?

- Academic project
  - Principal investigator (PI) must be a full-time faculty member or research scientist at an Ohio academic institution
  - PI may authorize accounts for students, post-docs, collaborators, etc.
  - Classroom projects are also available
- Commercial projects
  - Commercial organizations may purchase time on OSC systems



Accounts and Projects at OSC

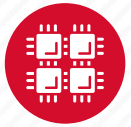
- Project
  - Headed by a PI
  - May include other users
  - Oversees computing resources for a project
- Account
  - Username and password to access HPC systems
  - Each account used by one person
  - If you work on multiple projects, you will have one account that can access all of them



Usage Charges

- Charges are in terms of core hours, GPU hours, TB months
- Project has a dollar balance
- Services, e.g. compute and storage, are charged to a project
- General Compute, GPU, Huge Memory, Storage costs are still partially subsidized and highly competitive

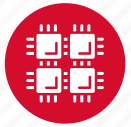
https://www.osc.edu/content/academic_fee_model_faq



Ohio Academic Projects

- Standard Projects
  - Each PI can receive $1,000 grant annually to cover OSC services
  - PI can set a budget so no unexpected charges
  - No more proposal submissions
- Classroom projects are fully subsidized
- Request at my.osc.edu

https://www.osc.edu/supercomputing/support/account



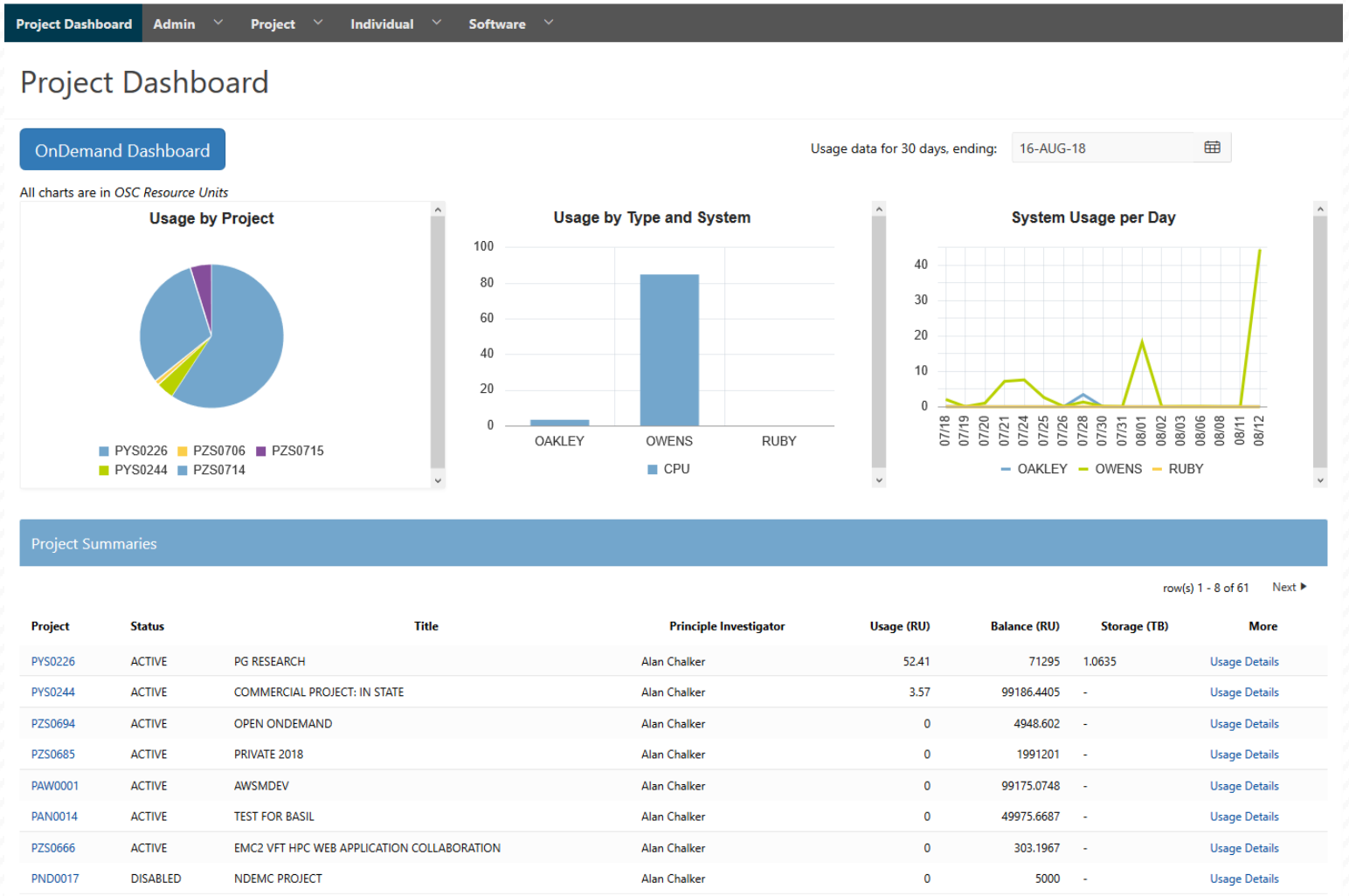
Client Portal– my.osc.edu

Features

- Create your account
- Update your email
- Change your password
- Recover access to your account
- Change your shell

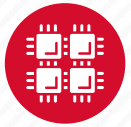
PI resources

- Project reporting
- Authorized user management
- Requesting services (e.g. software access)



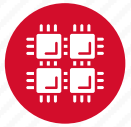
Statewide Users Group (SUG)

- The Statewide Users Group (SUG) is made up of OSC users
  - Provides program and policy advice to OSC
  - Meets twice a year
  - Headed by a chairperson elected yearly
- Standing committees
  - Allocations
  - Software and Activities
  - Hardware and Operations
- Get involved!
  - Postponed for now



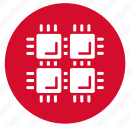
Citing OSC

- Please cite OSC in your publications:
  - Details at www.osc.edu/citation
- These publications should be reported to OSC

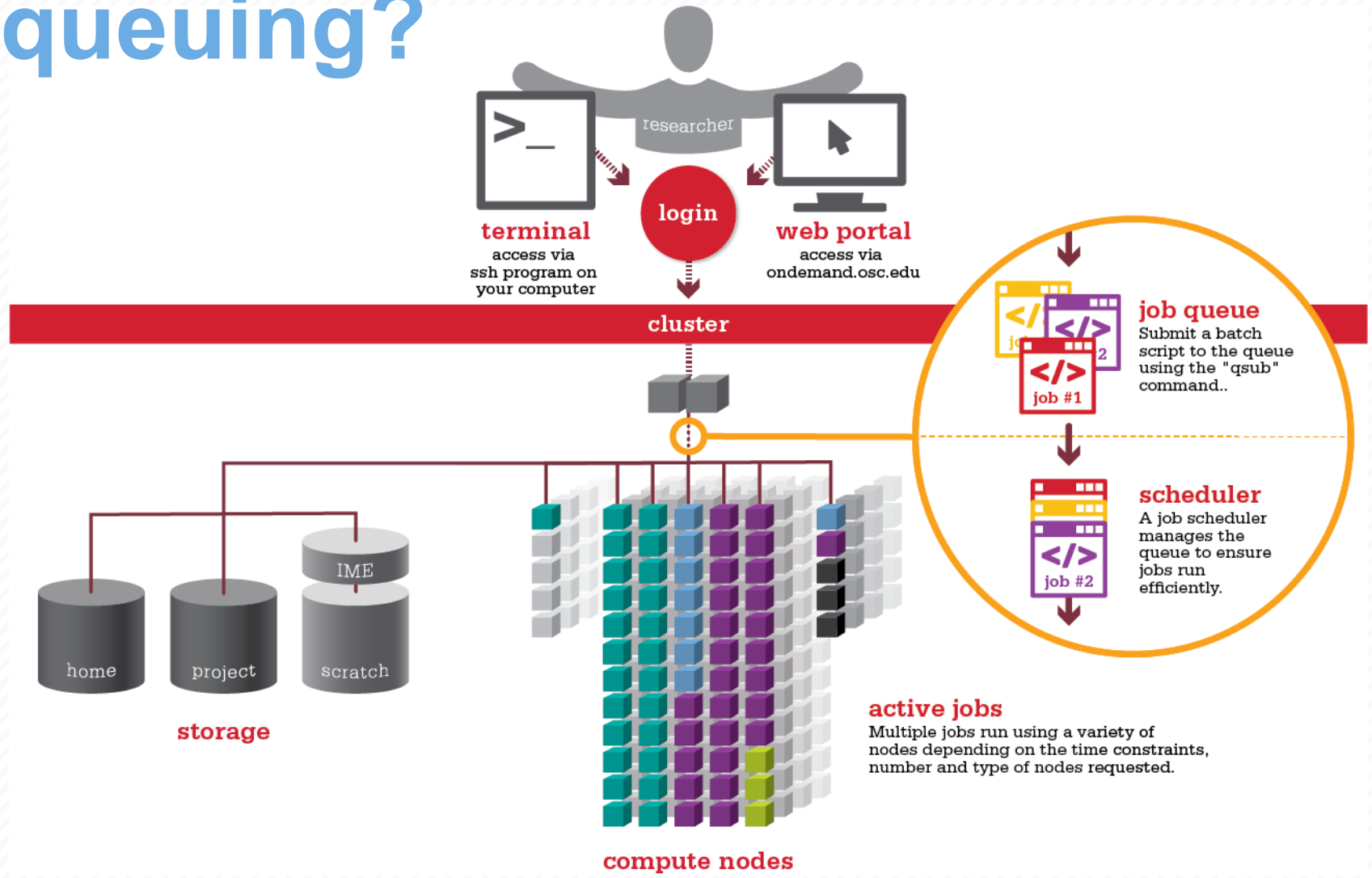


Batch Processing

“There’s an old story about the person who wished his computer were as easy to use as his telephone. That wish has come true, since I no longer know how to use my telephone.” – Bjarne Stroustrup

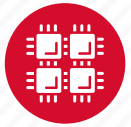


Why do supercomputers use queuing?



Idea Behind Batch Processing

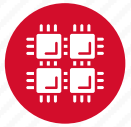
- Whatever you would normally type at the command prompt goes into your batch script
- Output that would normally go to the screen goes into a log file (or files)
- The system runs your job when resources become available
- Very efficient in terms of resource utilization



Batch System at OSC

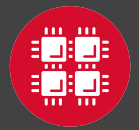
- Compute nodes are allocated through the batch system
  - PBS – Portable Batch System
  - Torque – resource manager
  - Moab – scheduler
- **Changing to SLURM – 10/2020**
- Documentation at

  www.osc.edu/supercomputing/batch-processing-at-osc



Key Takeaways from Workshop

- Where to look for information, how to ask for help
- How to transfer, access, and edit files
- How to work with job scripts
- OSC has 3 main websites:
  - OSC.edu – Documentation and Events
  - My.OSC.edu – Account and Project Management
  - OnDemand.OSC.edu – Cluster Access



OH·TECH

Ohio Technology Consortium

A Division of the **Ohio Department of Higher Education**

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osc.edu

oh-tech.org/blog

linkedin.com/company/ohio-supercomputer-center