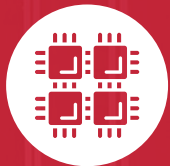


OWENS



JESSE OWENS
OLYMPIC CHAMPION, BEACON FOR EQUALITY, YOUTH ADVOCATE

 Ohio Supercomputer Center
An OH·TECH Consortium Member



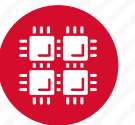
Ohio Supercomputer Center

An OH·TECH Consortium Member



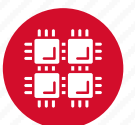
Kate Cahill
Education & Training Specialist

“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



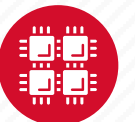
Ohio Supercomputer Center provides high performance computing, software, storage and support services for Ohio's scientists, faculty, students, businesses and their research partners.



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.



Production Capacity

CY2017



221,400,000+
core-hours
consumed



78% average
HPC system
utilization



4,400,000+
computational
jobs



98% up-time



44% average
storage system
utilization



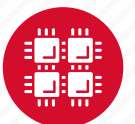
1.5 PB
data stored



2 PB data
transferred



79% jobs started
within one hour



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.



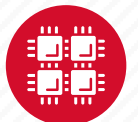
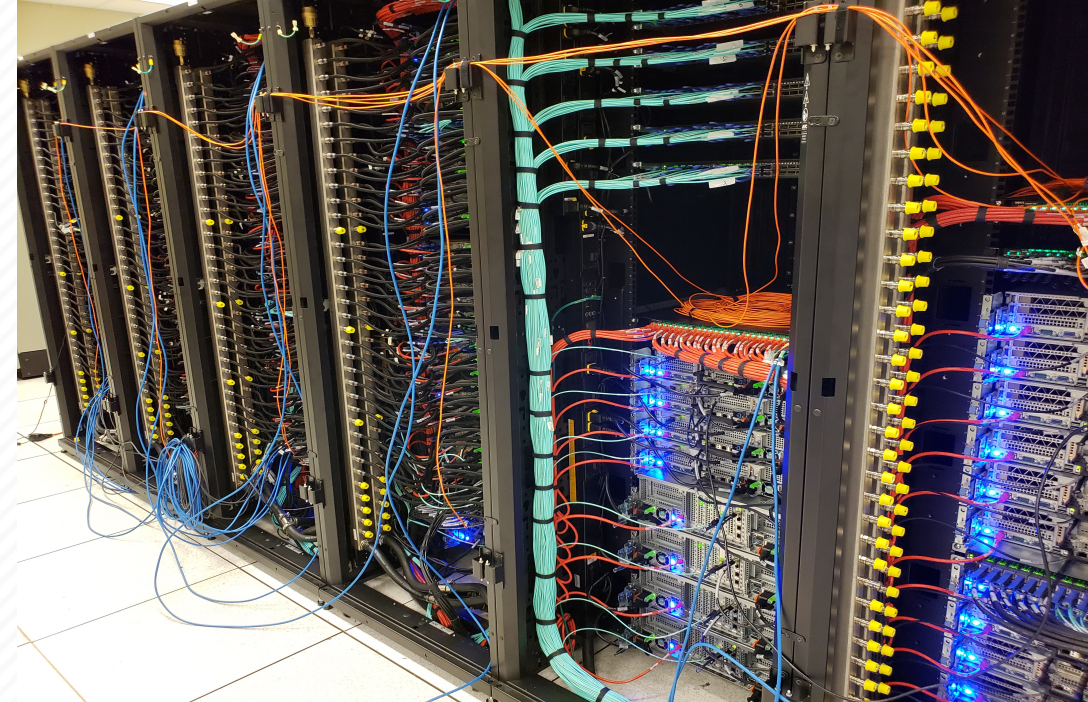
Web Software Development

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



Scientific Software Development

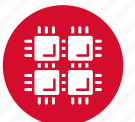
Deep expertise in developing and deploying software that runs efficiently and correctly on large scale cluster computing platforms.

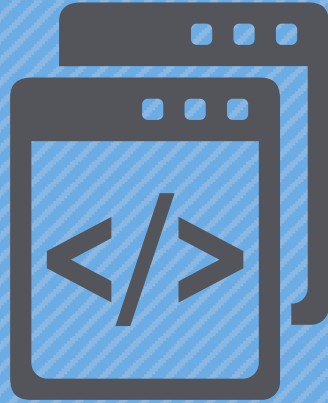


System Status (2019)

SYSTEMS	Ruby	Owens	Pitzer
Date	2014	2016	2018
Cost	\$1.5 million	\$7 million	\$3.35 million
Theoretical Perf.	~144 TF	~1600 TF	~1300 TF
Nodes	240	824	260
CPU Cores	4800	23392	10560
RAM	~15.3 TB	~120 TB	~ 70.6 TB
GPUs	20 NVIDIA Tesla K40	160 NVIDIA Pascal P100	64 NVIDIA Volta V100
Total compute: ~3,044 TF			

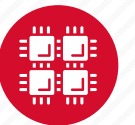
STORAGE	Home	Project	Scratch	Tape Library
Capacity	0.8 PB	3.4 PB	1.1 PB	7+ PB
Current utilization Feb, 18	47%	48%	59%	47%





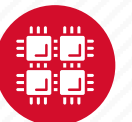
Getting Started at OSC

“If you were plowing a field, which would you rather use? Two strong oxen or 1024 chickens?” - Seymour Cray



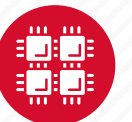
Who can get an OSC project?

- 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
 - No cost to Ohio academic users
- Commercial projects
 - Commercial organizations may purchase time on OSC systems



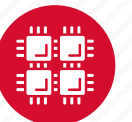
Accounts and Projects at OSC

- Project
 - Headed by a PI
 - May include other users
 - Basis for accounting at OSC
 - Submit proposal for computing resources for a project
- Account
 - Username and password to access HPC systems
 - Each account used by one person (please!)
 - If you work on multiple projects, you will have one account that can access all of them



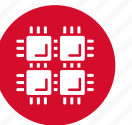
Allocations and Charges

- Charges are in terms of resource units
- Resource units
 - **OWENS** 1 resource unit (RU) = **10** CPU hours
 - **RUBY** 1 resource unit (RU) = **20** CPU hours
 - **Pitzer** 1 resource unit (RU) = **TBD**
 - CPU hour = walltime x (total # of cores requested)
- Project receives an allocation of RUs
- Jobs are charged to a project



Charges for Academic Clients

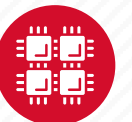
- The first 10,000 RUs on all projects are subsidized
- Usage above 10,000 RUs will be billed to the PI's institution at \$0.075/RU
- PIs should contact their Office of Research for details on local billing



Requesting a New Project-

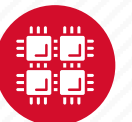
my.osc.edu

- Startup grant
 - One per PI per lifetime
 - Provide contact info, institution, department
 - 5000 RUs
- Additional allocations for a project
 - Submit a proposal for more RUs
 - Standard: 10,000
 - Major: 30,000
 - Discovery: >30,000
 - Peer-reviewed
 - Grants awarded by Statewide Users Group (SUG)
- Classroom accounts



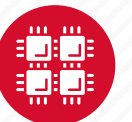
My.osc.edu

- Site for managing your identity at OSC
- Update your email
- Change your password
- Recover access to your account
- Change your shell
- Recent updates
 - Project reporting
 - Authorized user management
 - Requesting services (e.g. software access)



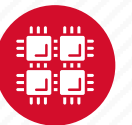
Your Contact Info

- Keep your contact information current
 - Use my.osc.edu to manage your account details.
- If your student continues to use OSC after graduation, make sure email address is updated
 - Acceptable if still collaborating with you
- May need to contact you about problems
- Will need to contact you about regular password changes
- You can opt out of routine notifications



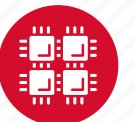
System Status

- Check system status on:
 - Message of the day (/etc/motd) – displayed at login
 - Twitter: @HPCnotices
 - Email for major outages or problems
- Scheduled downtimes
 - Quarterly maintenance – usually one day outage
 - Jobs held for up to two weeks prior
 - Most recent downtime was October 23



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!
 - Next meeting will be in October





OH·TECH

Ohio Technology Consortium
A Division of the Ohio Department of Higher Education

 info@osc.edu

 twitter.com/osc

 facebook.com/ohiosupercomputercenter

 osc.edu

 oh-tech.org/blog

 linkedin.com/company/ohio-supercomputer-center

Workshop Set up

- Workshop website:
 - https://khill42.github.io/OSC_IntroHPC/
- Workshop project – set up account at my.osc.edu
 - PZS0724
 - **XxMqOqEh3yXoTg5v**
- **If you already have an OSC account, sign in to my.osc.edu**
 - **Go to Project**
 - **Project Access Request**

