



nDemand

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Supercomputing. Seamlessly.

Open OnDemand: Open, Interactive HPC Via the Web

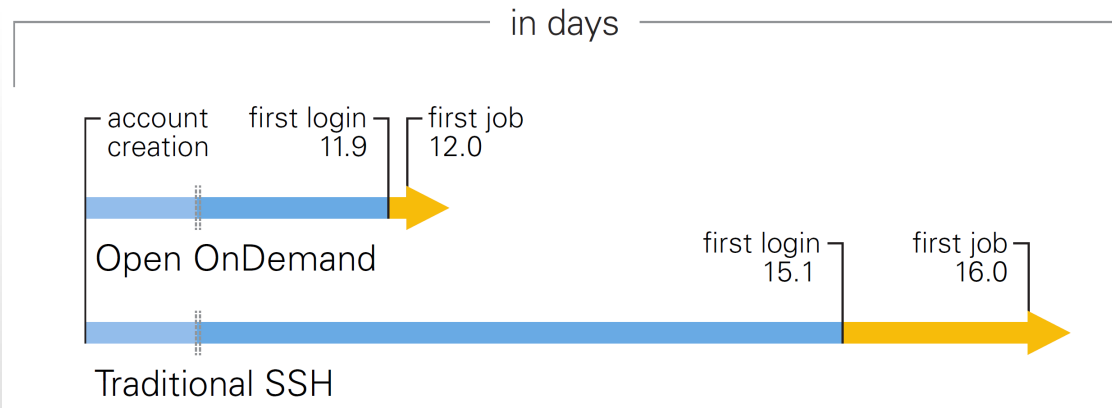
Provides an easy to install and use, web-based access to supercomputers, resulting in intuitive, innovative support for interactive supercomputing.

Features include:

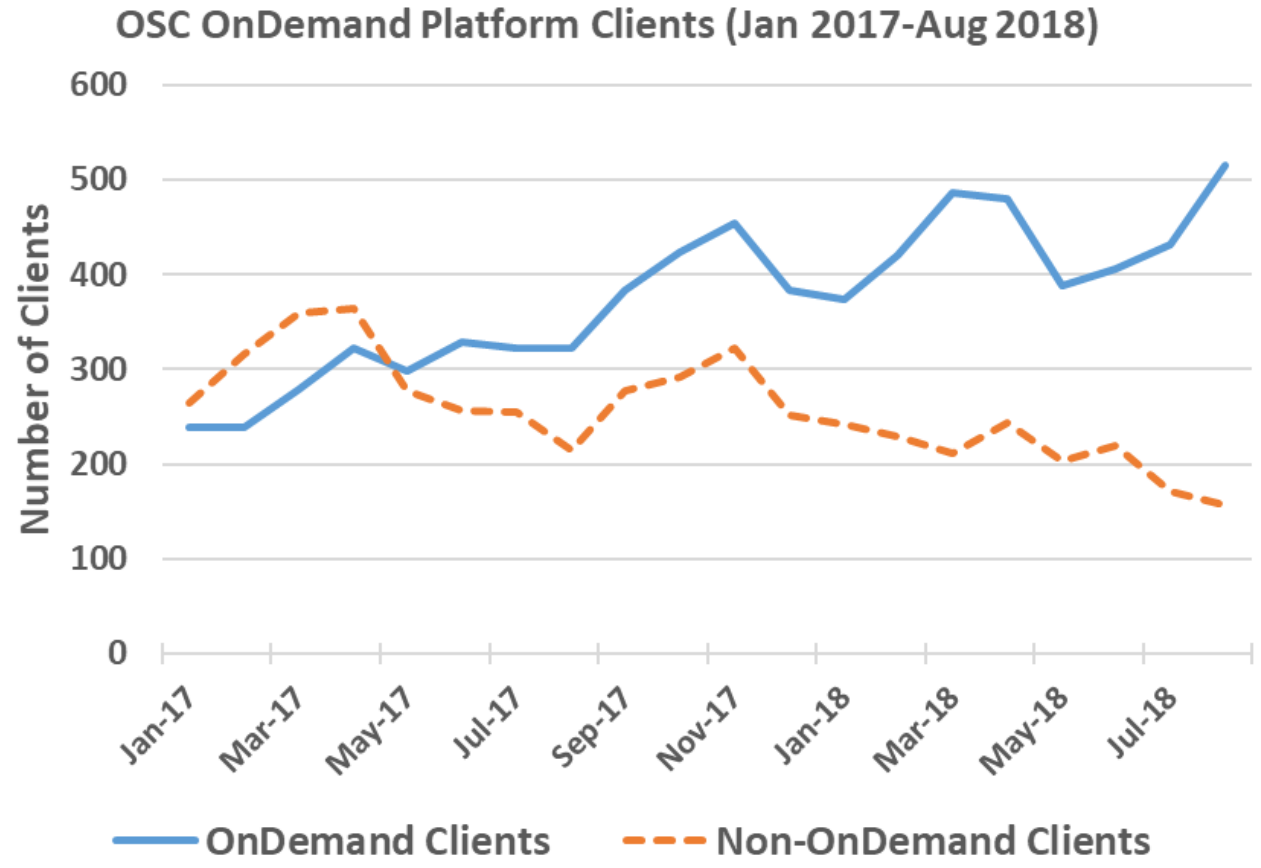
- Plugin-free web experience
- Easy file management
- Command-line shell access
- Job management and monitoring
- Graphical desktop environments and applications



Impact at OSC

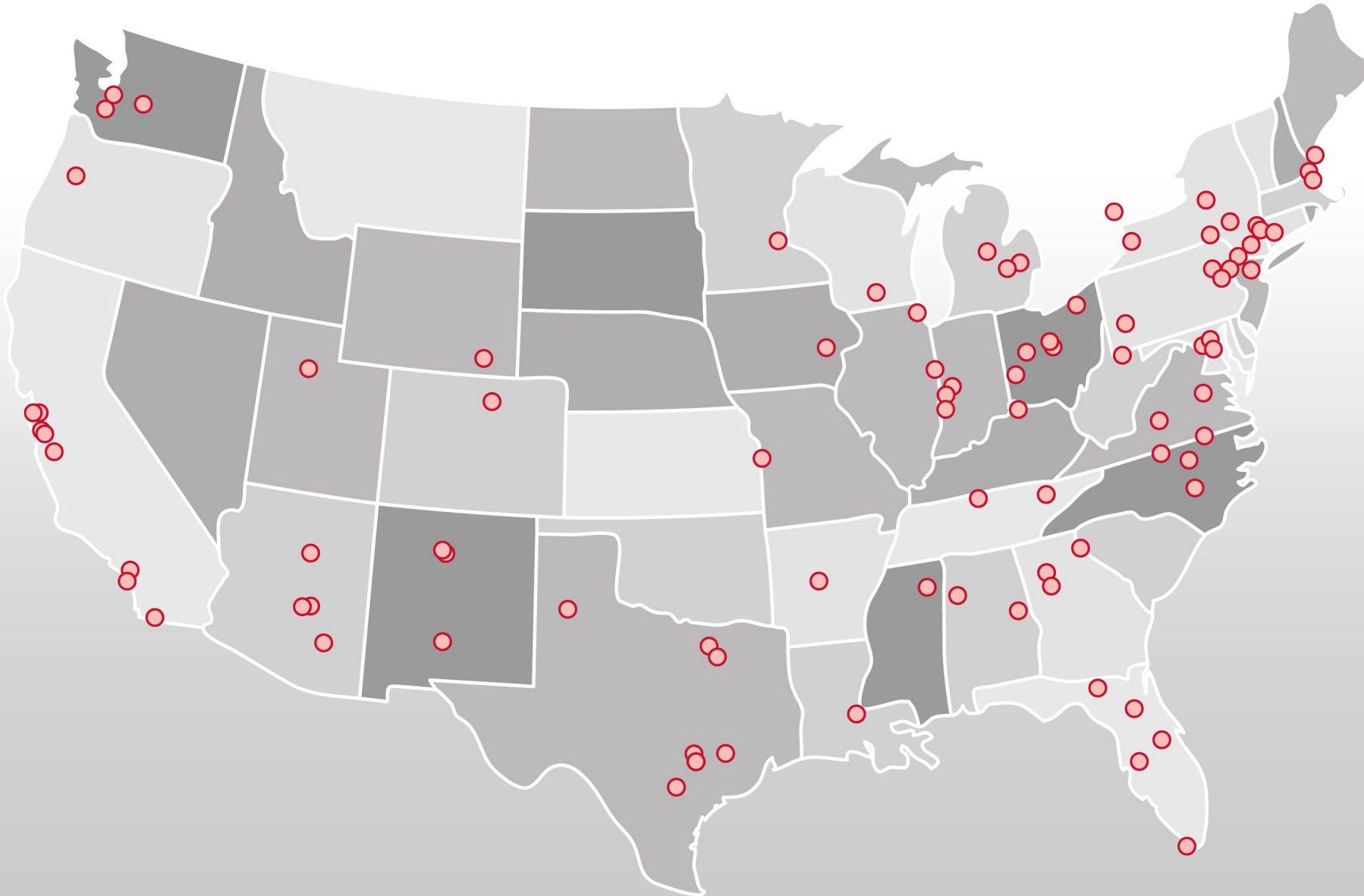


OnDemand users start work faster than traditional users, both in terms of first login and job submission



Launched Sep. 2016, % users has steadily increased since launch

Approx Number of Institutions based on RPM logs



- 136 unique US locations
- 70 unique international locations

Example Current Engagements and Deployments

Production Deployments



In Process of Installing



Find Out More!

openondemand.org

- Use our Discourse instance for help
- Join our mailing list for updates
- Our webinars are roughly quarterly

OPEN OnDemand

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View On [GitHub](#) | Read The [Docs](#) | Discuss on [Discourse](#)

Download our [Figshares](#) | Visit OSC's [Website](#) | Join the [News List](#)

Don't hesitate to reach out to the developers via our [Discourse instance](#) if you would like more information or need help installing or configuring Open OnDemand.

Please cite us Hudak et al., (2018). Open OnDemand: A web-based client portal for HPC centers. *Journal of Open Source Software*, 3(25), 622. <https://doi.org/10.21105/joss.00622>

This material is based upon work supported by the National Science Foundation under grant numbers 1534949 and 1835725.

Overview

Open OnDemand is an NSF-funded open-source HPC portal based on OSC's original OnDemand portal. The goal of Open OnDemand is to provide an easy way for system administrators to provide web access to their HPC resources, including, but not limited to:

- Plugin-free web experience
- Easy file management
- Command-line shell access
- Job management and monitoring across different batch servers and resource managers
- Graphical desktop environments and desktop applications

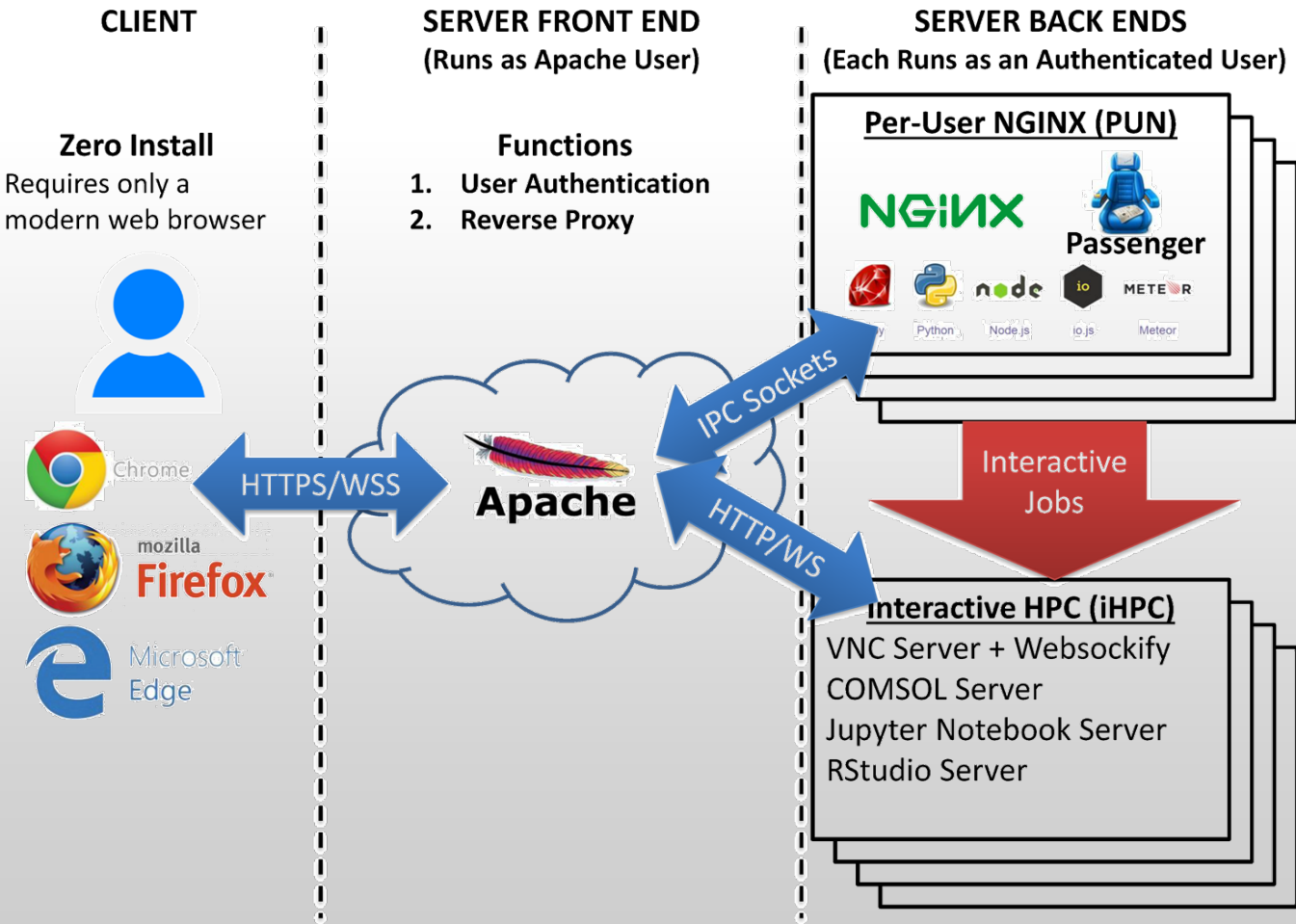
See the [documentation](#) for installation directions, app development tutorials, and an overview of the components and applications that make up OnDemand. We also have a [walkthrough video](#) showing the various components of an Open OnDemand instance available.

Organizations using or exploring OnDemand

Below is a list of organizations that have deployed or are looking at deploying Open OnDemand. Please contact us via the [news list](#) if your organization is not on this list and should be included!

We also have a [page with testimonial comments from many of these organizations](#)

Architecture



Customizing OnDemand: Branding

- Institution logo
- Navbar color
- Portal name
- Display MOTD
- Display announcements

The screenshot displays the Open OnDemand portal interface. At the top, a dark grey navigation bar contains the text "Open OnDemand" on the left and user options "</> Develop", "Help", "efranz", and "Log Out" on the right. Below this, the "OPEN OnDemand" logo is prominently displayed, with the tagline "OnDemand provides an integrated, single access point for all of your HPC resources." A secondary navigation bar features "Bridges OnDemand" and menu items for "Files", "Jobs", "Clusters", and "Interactive Apps". The main content area is titled "A PITTSBURGH SUPERCOMPUTING CENTER RESOURCE" and features a large image of server racks. A red banner across the middle contains the text "Welcome to Bridges" and a secondary navigation bar with "OSC OnDemand" and menu items for "Files", "Jobs", "Clusters", and "Interactive Apps". Below the banner, the "Ohio Supercomputer Center" logo and name are shown, along with the text "An OH·TECH Consortium Member". The tagline "OnDemand provides an integrated, single access point for all of your HPC resources." is repeated. The "Message of the Day" section includes two announcements: "2017-05-04 - NEW SCRATCH STORAGE POLICY IN EFFECT JUNE 1" and "2017-04-03 - GPUS NOW AVAILABLE ON OWENS".

Open OnDemand 2.0 Project Overview

- Previous three year NSF SI2 award (#1534949) to develop OnDemand 1.x
- Awarded followon NSF CSSI award (#1835725) to develop OnDemand 2.x
 - Project runs from Jan 2019 to Dec 2023
 - Collaborators include SUNY Buffalo and Virginia Tech
- Four areas
 - **Visibility:** Enhancing resource utilization visibility by integrating the existing Open XDMoD platform
 - **Scalability:** support more types of computing resources and software
 - **Accessibility:** appeal to more scientists in more fields of science
 - **Engagement:** establish community of departmental, campus and national HPC users and administrators

Open XDMod

- XDMod: XD Metrics on Demand
- On demand access to job accounting & performance data
- Optimize resource utilization & performance
 - Utilization metrics
 - Measure infrastructure QoS
 - Job and Cloud level performance data
- 200+ academic & industrial installations worldwide
- <http://open.xdmod.org/>

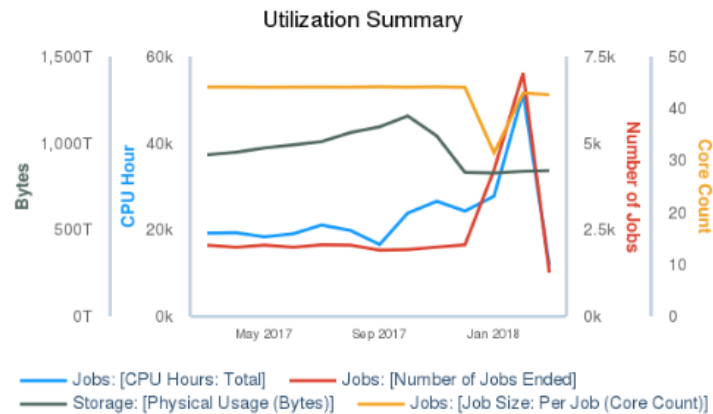
Open XDMoD and OnDemand Integration

OnDemand provides an integrated, single access point for CCR's HPC resources

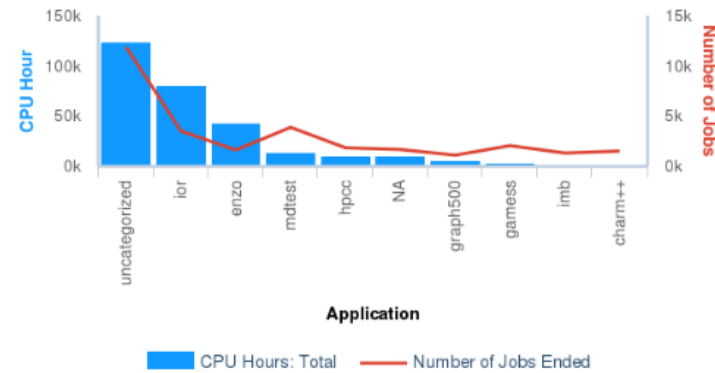
Users can transfer files, access a shell environment on the cluster front-end login server, launch interactive and remote visualization jobs, and monitor jobs all without installing any client software or web plug-ins. Access these features using the menus at the top of this page. Note that many of the apps will launch in a new tab or new browser window but the dashboard will remain open in the original window.

Utilization Summary

	Previous Month	Previous Quarter	Year To Date
Total CPU Hours	51,541	74,617	298,725
Number of Jobs	7,017	5,973	32,551
Average Job Size (Cores)	42.1	43.9	44.1
Storage (GB)	834	1,008	964,150



Application Summary



Walkthrough – File Explorer

OSC OnDemand

Files ▾

Jobs ▾

Clusters ▾

Interactive Apps ▾

My Interactive Sessions

- Home Directory
- /fs/project/PZS0712
- /fs/scratch/PZS0712

Ohio Supercomputer Cen

An OH·TECH Consortium Member

File Explorer

Go To...

>_ Open in Terminal

New File

New Dir

Upload

Show Dotfiles

Show Owner/Mode

Home Directory

- 7479989.oak-batch.osc.edu
- 7482682.oak-batch.osc.edu
- 7482705.oak-batch.osc.edu
- Amber_GPU
- Amber_test
- Desktop
- Documents
- Downloads
- July17-Bigdata
- Mar0917-Bigdata
- Music

/users/appl/kcahill/

View

Edit

A-Z Rename

Download

Copy

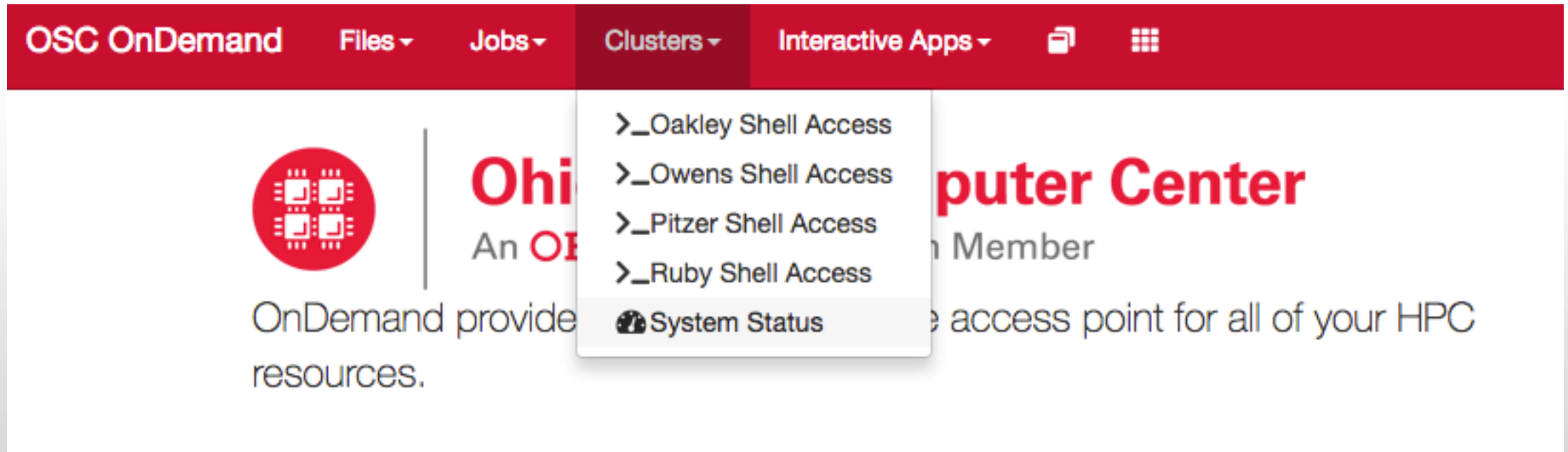
Paste

*(Un)Select All

Delete

name	size	modified date	owner	mode
..	<dir>	.	---	---
7479989.oak-batch.osc.edu	<dir>	09/12/2016	20238	rwX r-X r-X
7482682.oak-batch.osc.edu	<dir>	09/12/2016	20238	rwX r-X r-X
7482705.oak-batch.osc.edu	<dir>	09/12/2016	20238	rwX r-X r-X
Amber_GPU	<dir>	05/22/2017	20238	rwX r-X r-X
Amber_test	<dir>	02/06/2017	20238	rwX r-X r-X

Walkthrough – Clusters



The image shows a screenshot of the OSC OnDemand web interface. At the top, there is a red navigation bar with the following items: "OSC OnDemand", "Files", "Jobs", "Clusters", and "Interactive Apps". The "Clusters" menu is open, showing a list of options: "_Oakley Shell Access", "_Owens Shell Access", "_Pitzer Shell Access", "_Ruby Shell Access", and "System Status". The "System Status" option is highlighted. Below the navigation bar, the main content area features the Ohio State University logo (a red circle with four white squares) and the text "Ohio State University Computer Center". To the right of the logo, the text "An Ohio State University Member" is visible. Below the logo, the text "OnDemand provides..." is partially visible. To the right of the logo, the text "Computer Center" is visible. Below the text "Computer Center", the text "Member" is visible. Below the text "Member", the text "access point for all of your HPC" is visible.

OSC OnDemand Files Jobs Clusters Interactive Apps

Ohio State University Computer Center

An Ohio State University Member

OnDemand provides... resources.

Member access point for all of your HPC

- >_Oakley Shell Access
- >_Owens Shell Access
- >_Pitzer Shell Access
- >_Ruby Shell Access
- System Status

Walkthrough – Apps

Home / My Interactive Sessions / ParaView

Interactive Apps

Desktops

- Oakley Desktop
- Owens Desktop
- Ruby Desktop
- Oakley VDI
- Owens VDI
- Ruby VDI

GUIs

- ANSYS Workbench
- Abaqus/CAE
- COMSOL Multiphysics
- MATLAB
- ParaView**

ParaView

This app will launch a [ParaView](#) GUI on the [Owens Cluster](#) using a **shared node**. You will be able to interact with the ParaView GUI through a VNC session.

Project

You can leave this blank if **not** in multiple projects.

Number of hours

Resolution

width	1536	px	height	864	px
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* All ParaView session data is generated and stored under the user's home directory in the corresponding [data root directory](#).

Walkthrough – Jobs

OSC OnDemand Files Jobs Clusters Interactive Apps



Ohio Supercomputer Center

An OH-TECH Consortium Member

- Active Jobs
- Job Composer

OnDemand provides an integrated, single access point for all of your HPC resources.

Jobs

+ New Job

☆ Create Template

From Default Template

From Template

From Specified Path

From Selected Job

> Open Terminal

▶ Submit

■ Stop

🗑 Delete

Search:

Created Name ID Cluster Status

September 26, 2018 10:45am	MPI Hello World		Owens	Not Submitted
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Job Details

Job Name:

MPI Hello World

Submit to:

Owens

Account:

Not specified

Items 'Coming Soon'

System Stuff

1. Linux host adapter
2. Dashboard with XDMoD
3. Keycloak identity brokering
4. Kubernetes adapter
5. Custom classroom deployment
6. System status with GPUs
7. Globus integration
8. OpenHPC integration
9. Ansible role
10. OpenStack

Apps

11. Stata app
12. Tensorboard app
13. QGIS app
14. Job composer with XDMoD
15. Completed jobs app with XDMoD
16. Render app
17. Galaxy app
18. Shell reconnect
19. Visual Studio Code Server
20. New Files app

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