University at Buffalo
Center for Computational Research

Ohio Supercomputer Center

VIRGINIA TECH

OPEN OnDemand

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Supercomputing. Seamlessly.

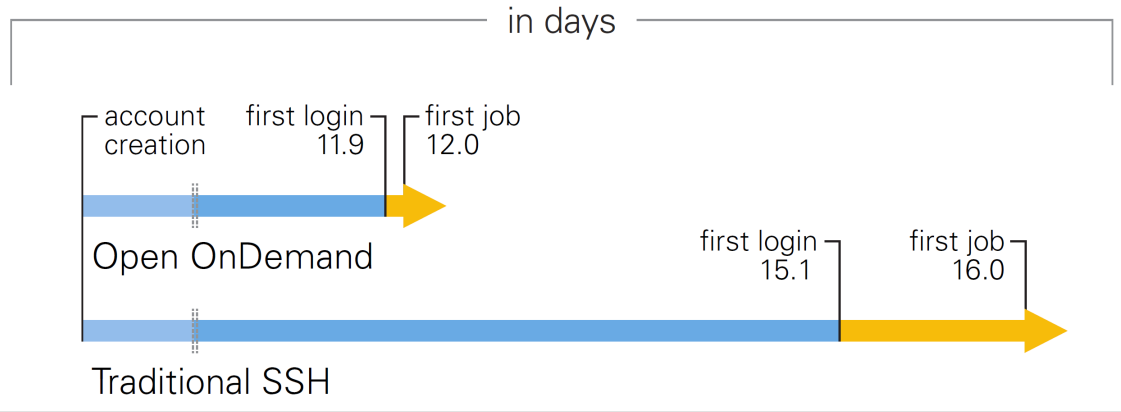
An intuitive, innovative, and interactive interface to remote computing resources

Open OnDemand helps computational researchers and students efficiently utilize remote computing resources by making them easy to access from any device. It helps computer center staff support a wide range of clients by simplifying the user interface and experience.

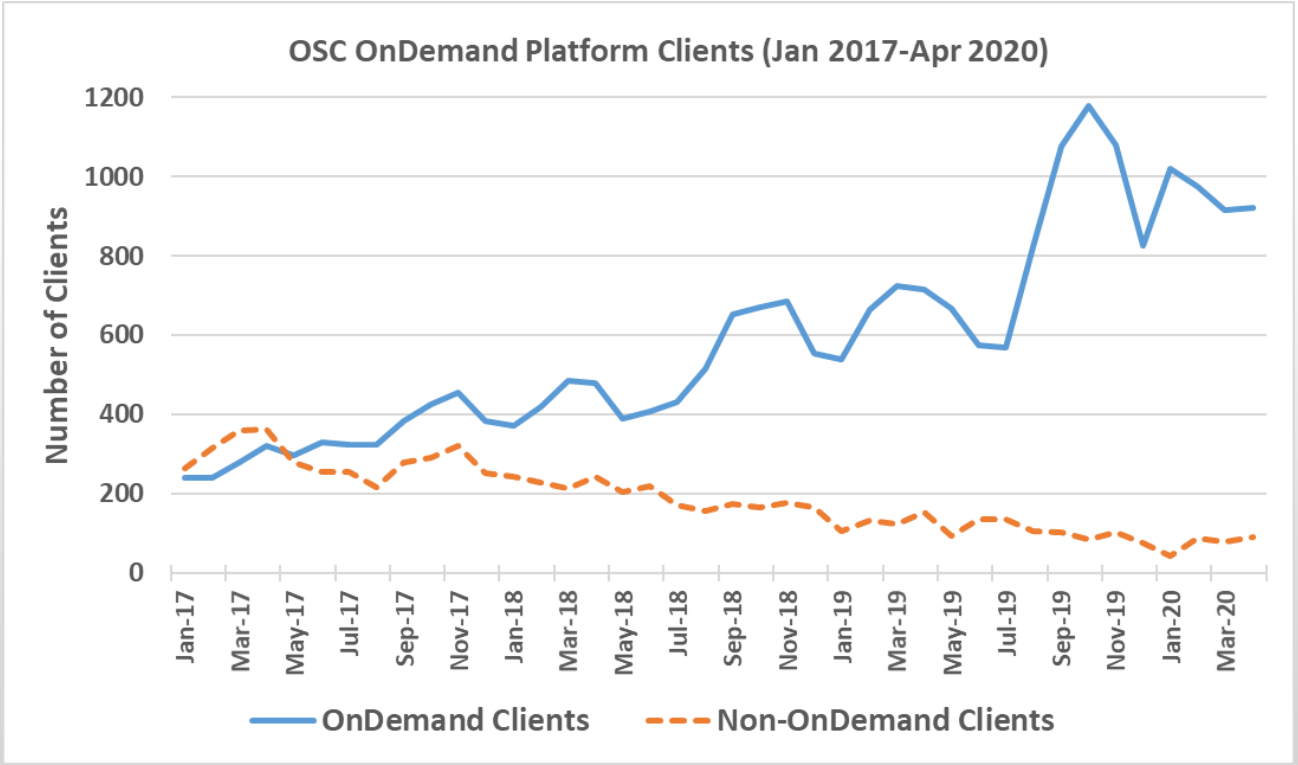
<u>Key Benefits & Impact</u>

- Key benefit to you, the end user:
  You can use any web browser to access resources at a computing service provider.
- Key benefit to you, the computer center staff:
  A wide range of clients/needs can utilize your computing resources.
- Overall impact:
  Users are able to use remote computing resources faster and more efficiently.

Impact at OSC

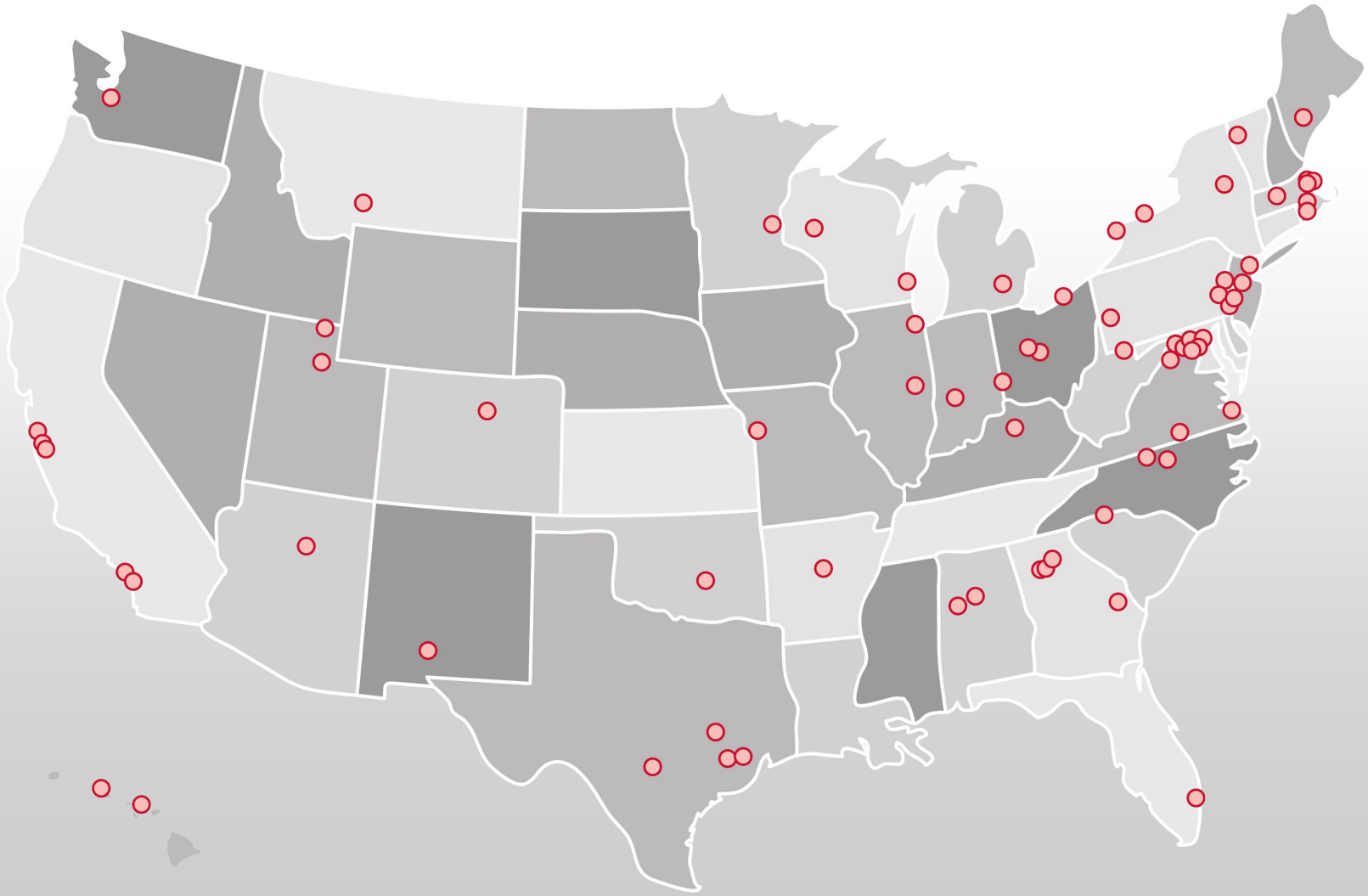


OnDemand users start work faster than traditional users, both in terms of first login and job submission



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

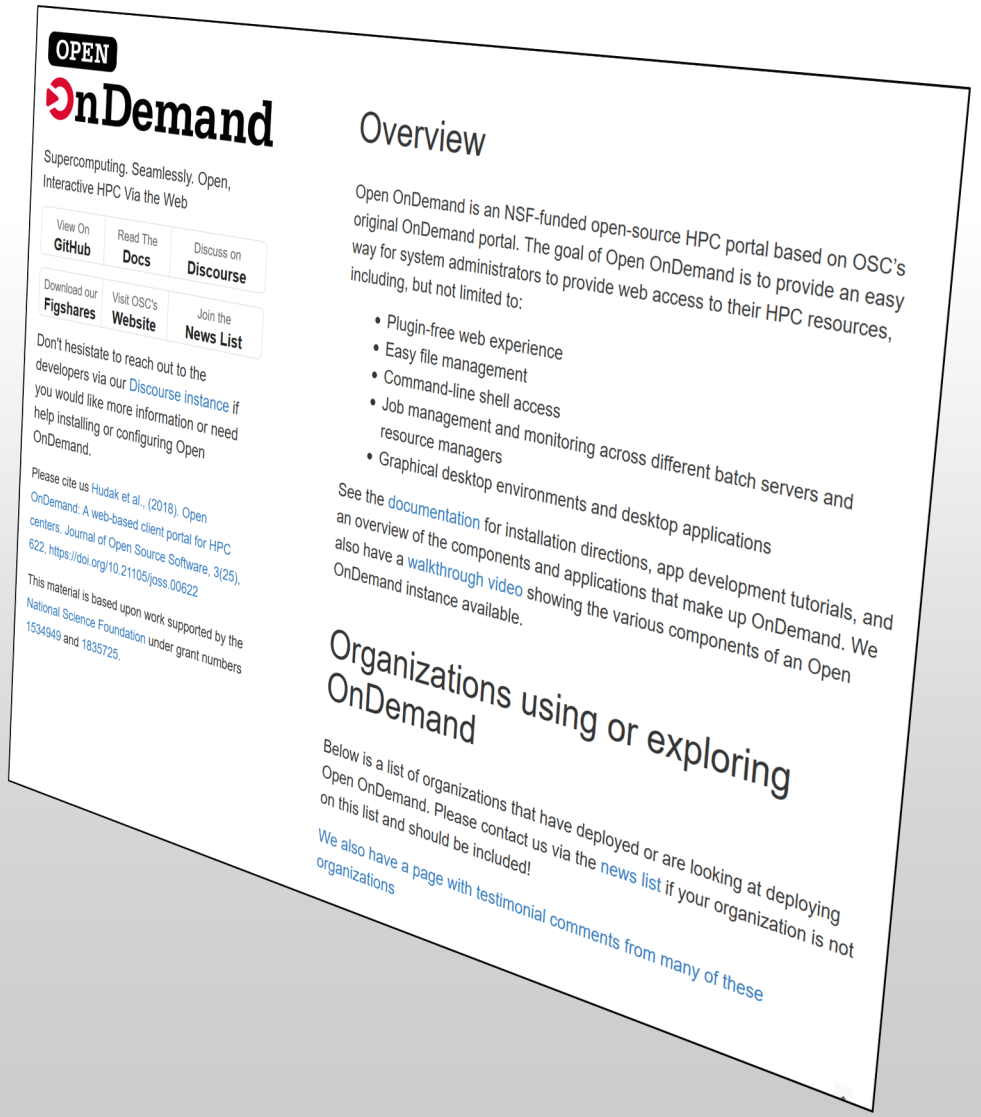
Production Deployments

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



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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

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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
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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!

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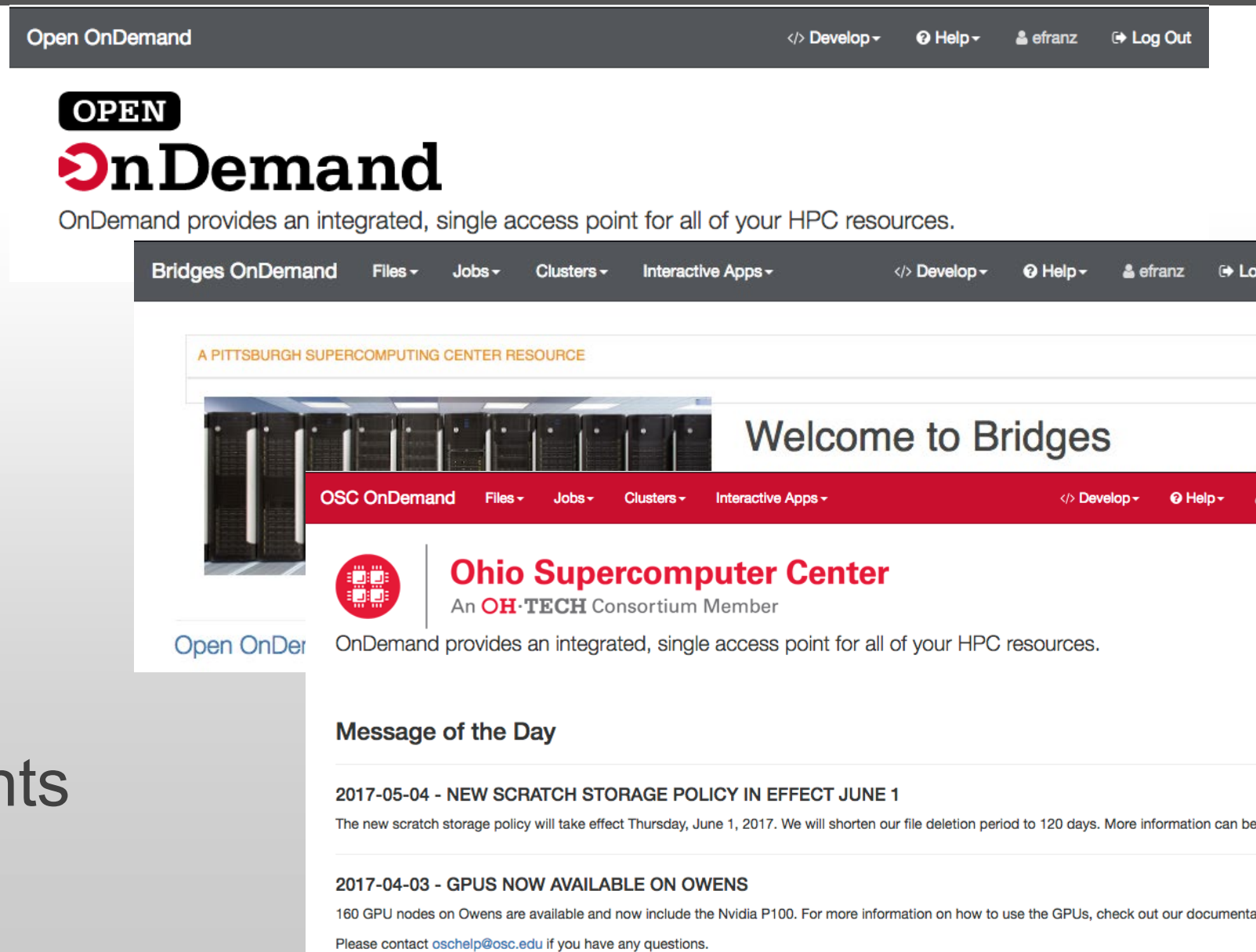
Customizing OnDemand: Branding

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



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

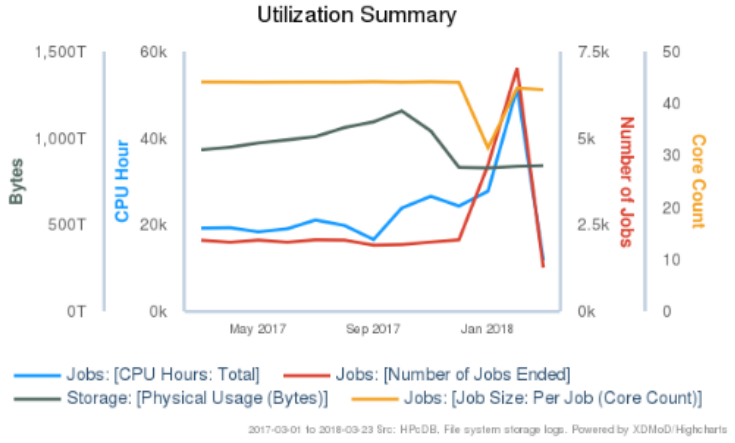
CCR OnDemand BETA | Files | Jobs | Clusters | Interactive Apps | Help | Logged in as smgallo | Log Out

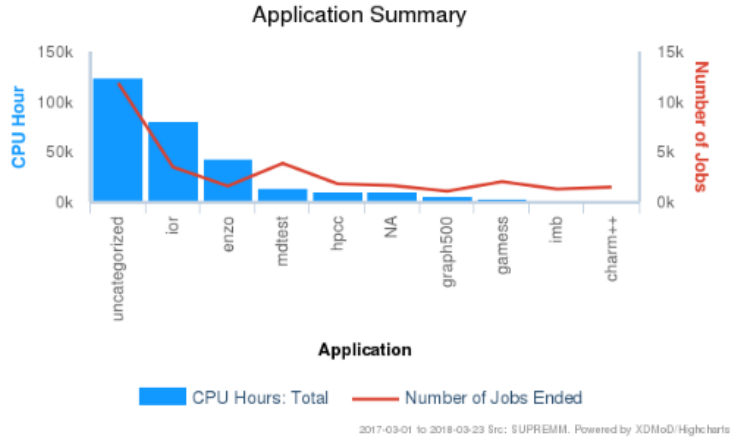
OnDemand provides an integrated, single access point for CCR's HPC resources

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.

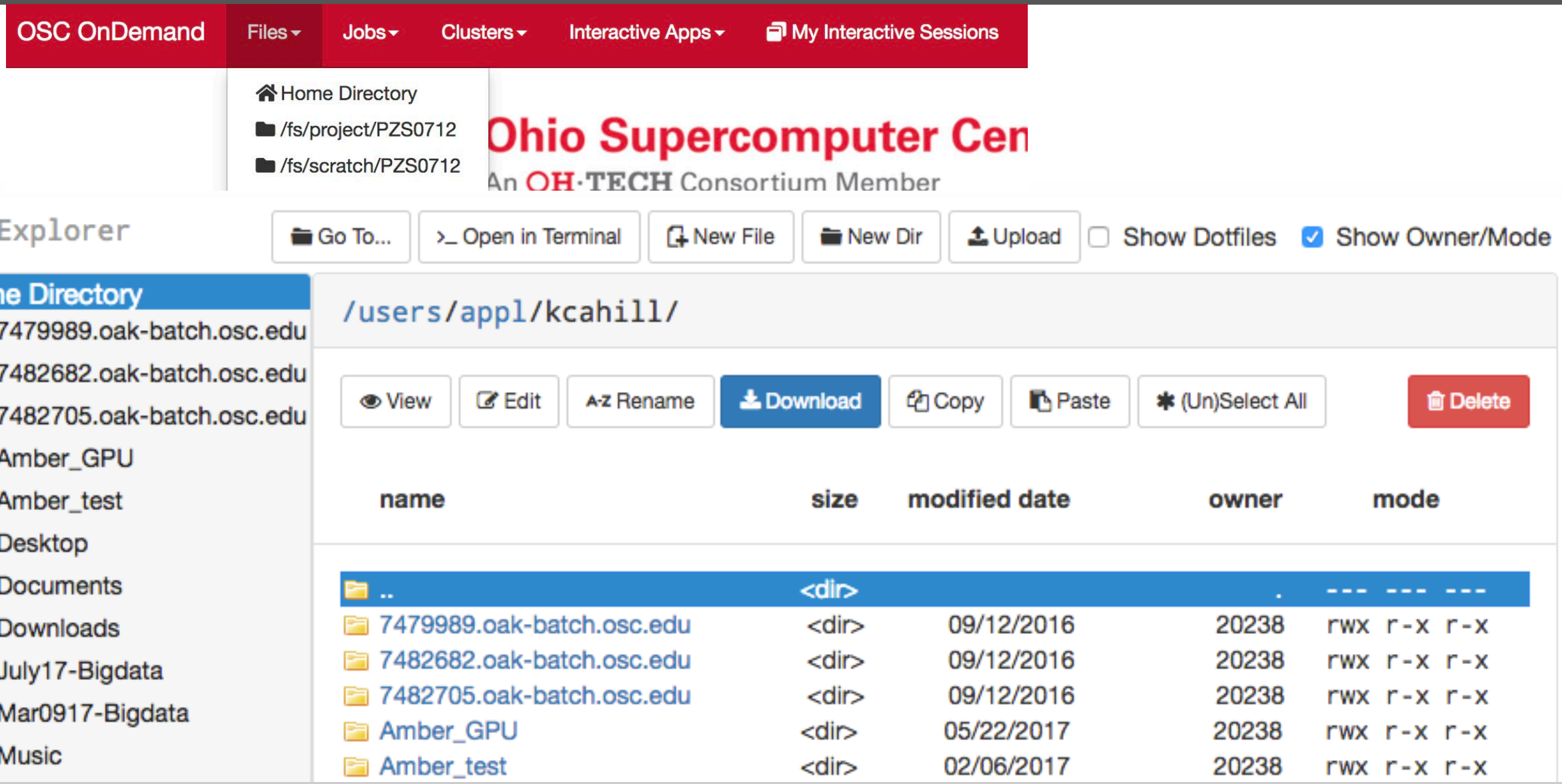
Utilization Summary

	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

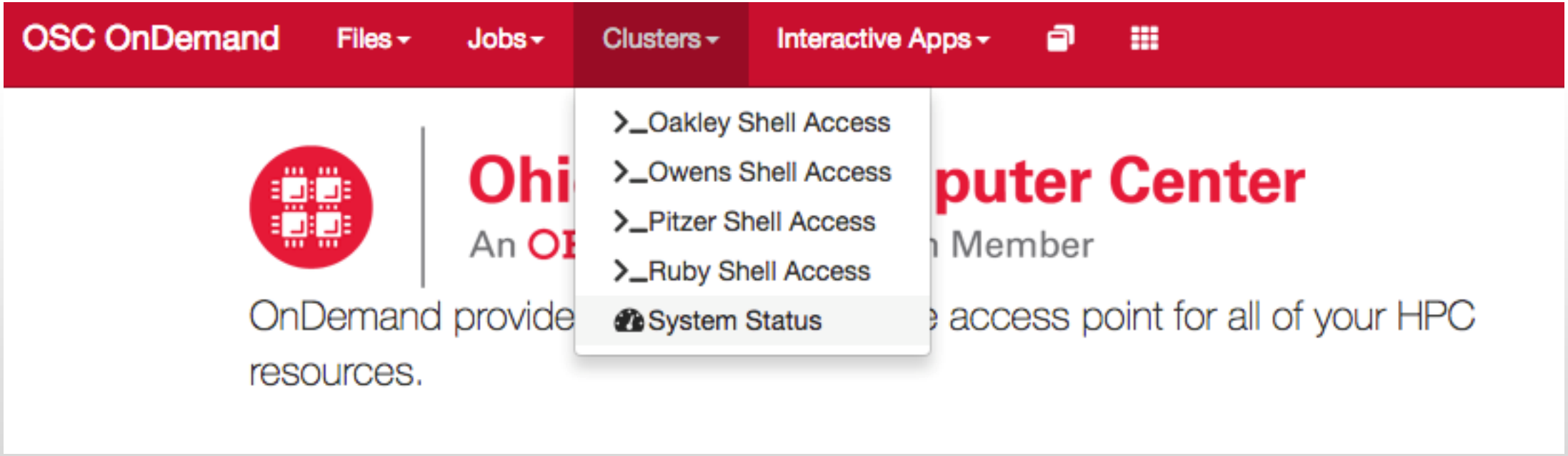




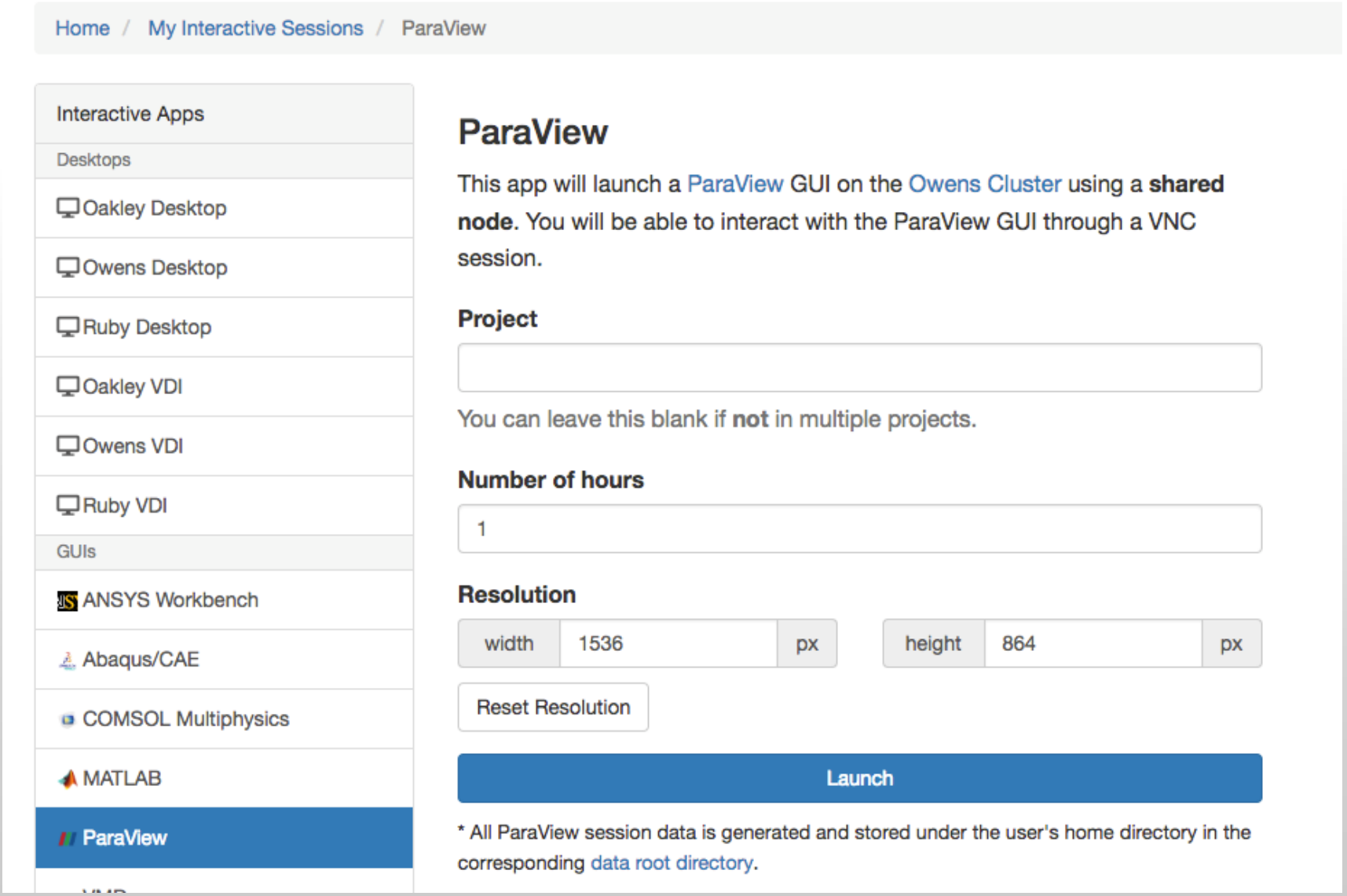
Walkthrough – File Explorer



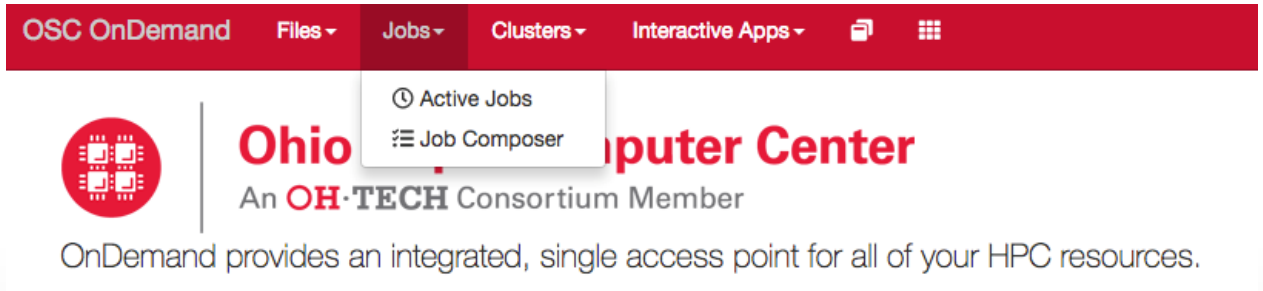
Walkthrough – Clusters

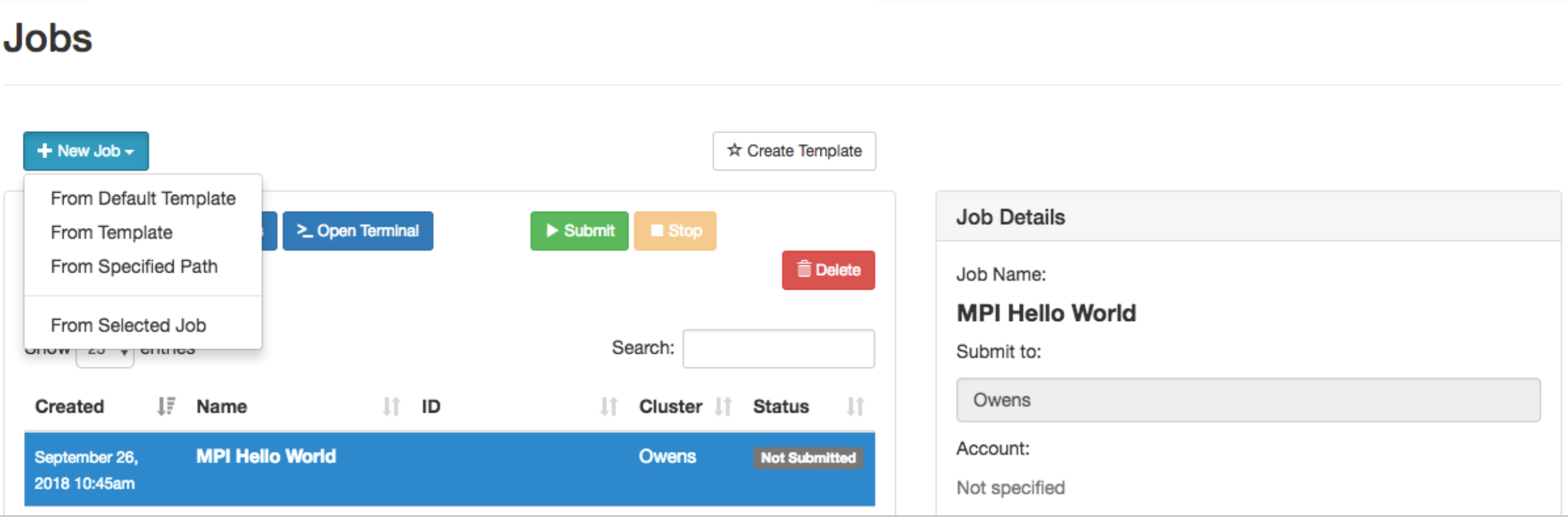


Walkthrough – Apps



Walkthrough – Jobs





Items ‘Coming Soon’ or Recently Added

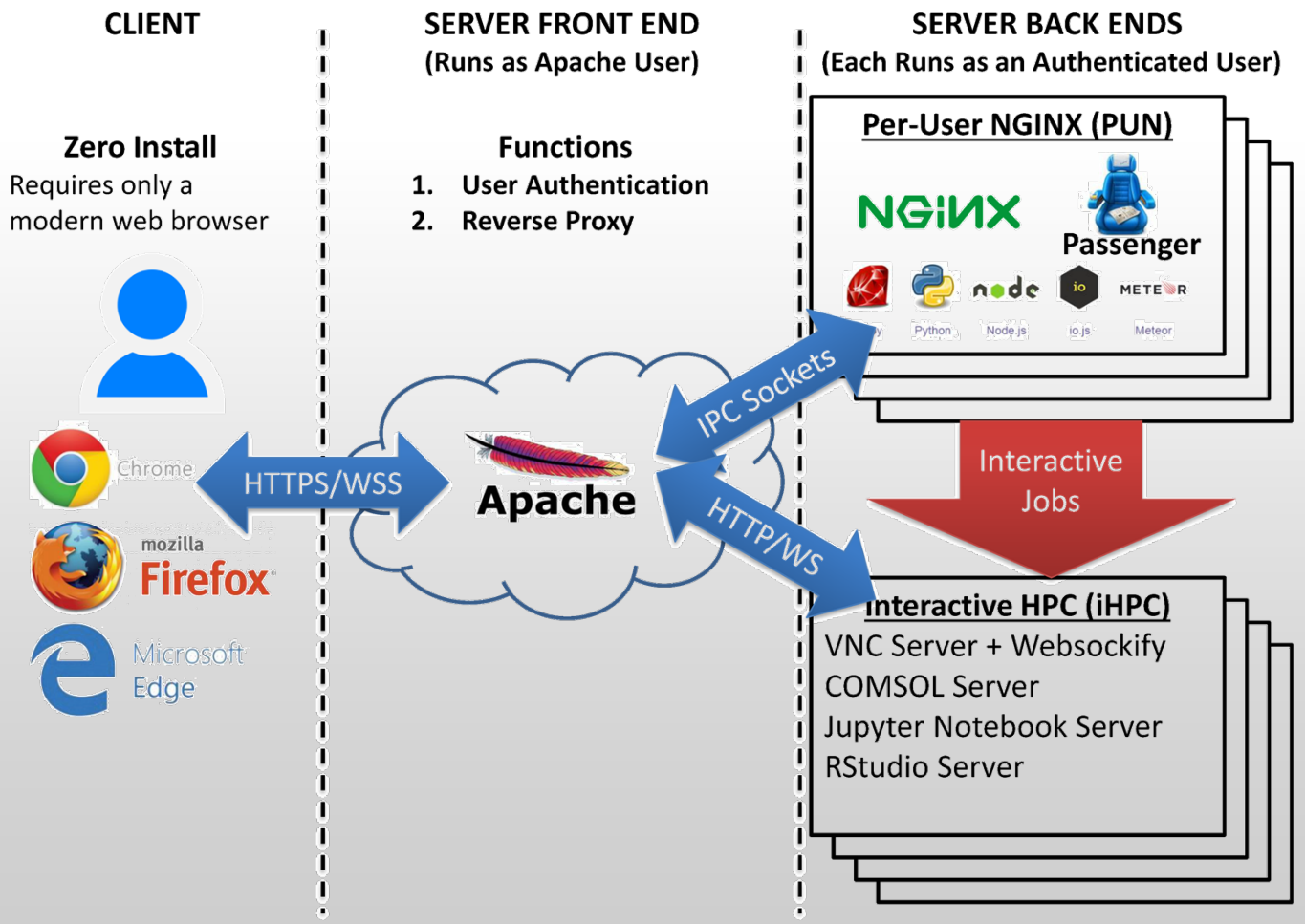
System Stuff

1. Linux host adapter (1.7)
2. Keycloak identity brokering (1.7)
3. Ansible role (1.7)
4. OpenHPC integration (1.7)
5. Dashboard with XDMoD (1.8)
6. Kubernetes adapter (1.8)
7. Classroom deployment (2.0)
8. Globus integration (2.0)
9. System status with GPUs (OSC)
10. OpenStack (OSC)

Apps

11. Job composer with XDMoD (1.8)
12. Shell reconnect (1.8)
13. Completed jobs app (2.0)
14. New Files app (2.0)
15. Stata app (OSC)
16. Tensorboard app (OSC)
17. QGIS app (OSC)
18. Render app (OSC)
19. Galaxy app (OSC)
20. Visual Studio Code Server (OSC)

Architecture



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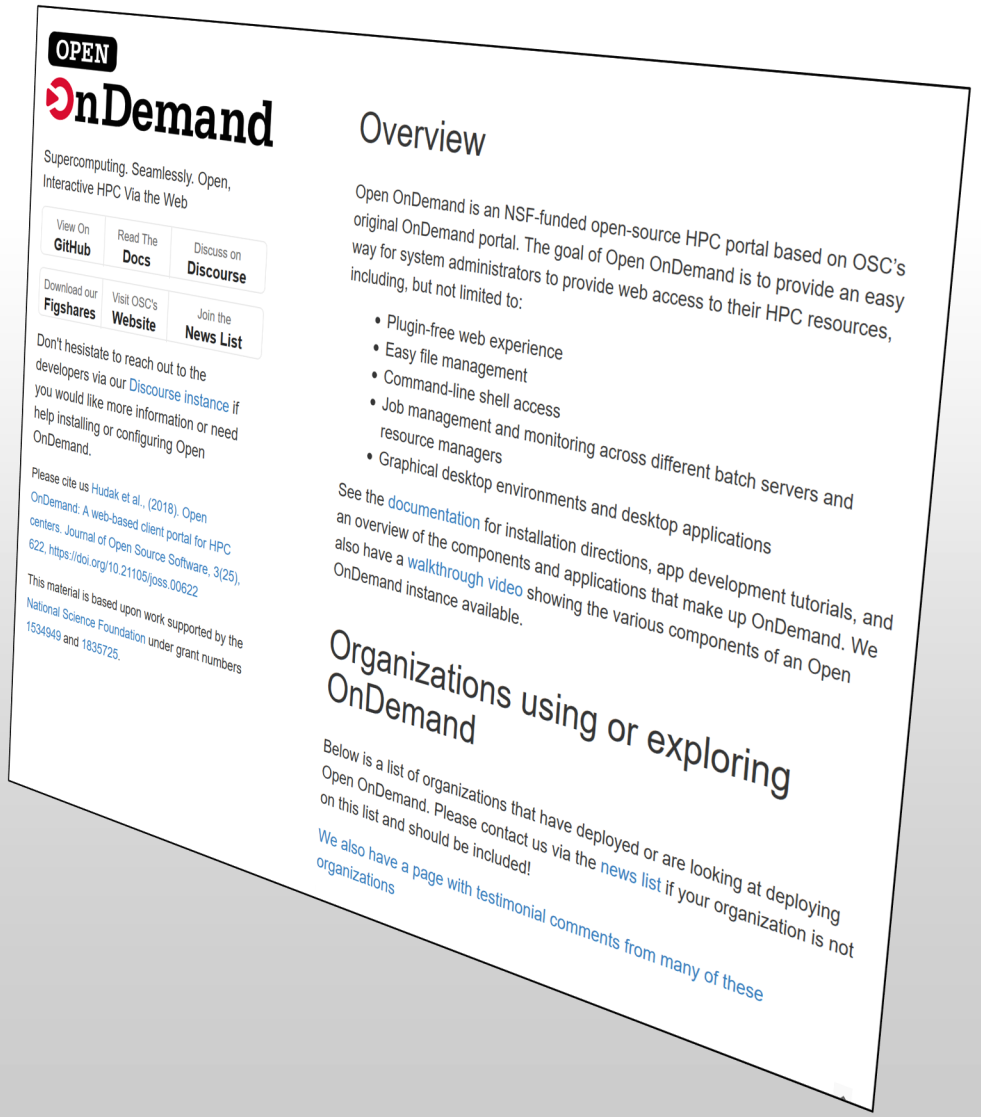

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