



nDemand

OSC has a job opening on the Open OnDemand team!

Full details are available here:

<https://www.oh-tech.org/employment#ohio-supercomputer-center>

User Group BoF Agenda



Ohio Supercomputer Center



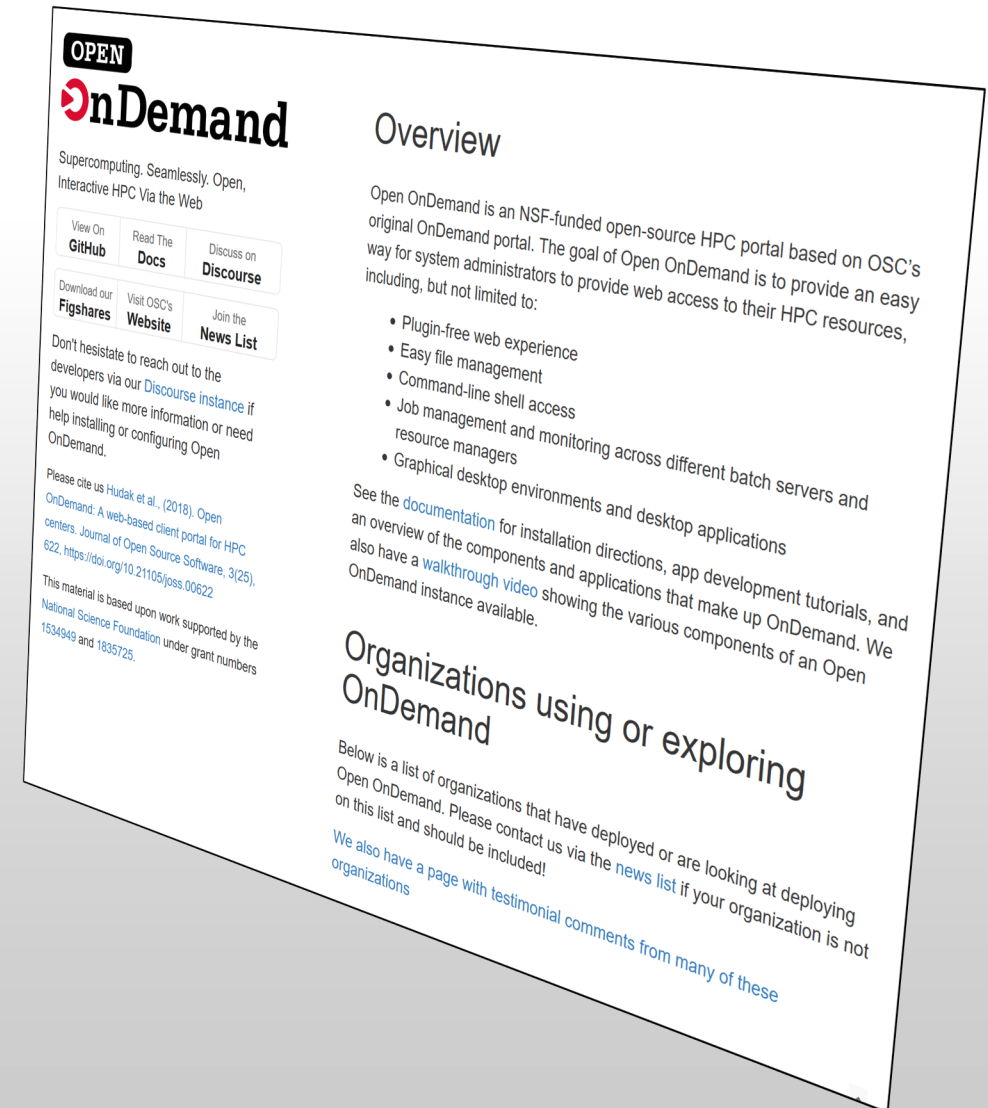
1. **About Open OnDemand**
2. Open OnDemand 2.0 Project Roadmap
3. Key Items of Note
4. Open Floor Discussion



Find Out More!

openondemand.org

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



Supercomputing. Seamlessly.

Open OnDemand: Open, Interactive HPC Via the Web

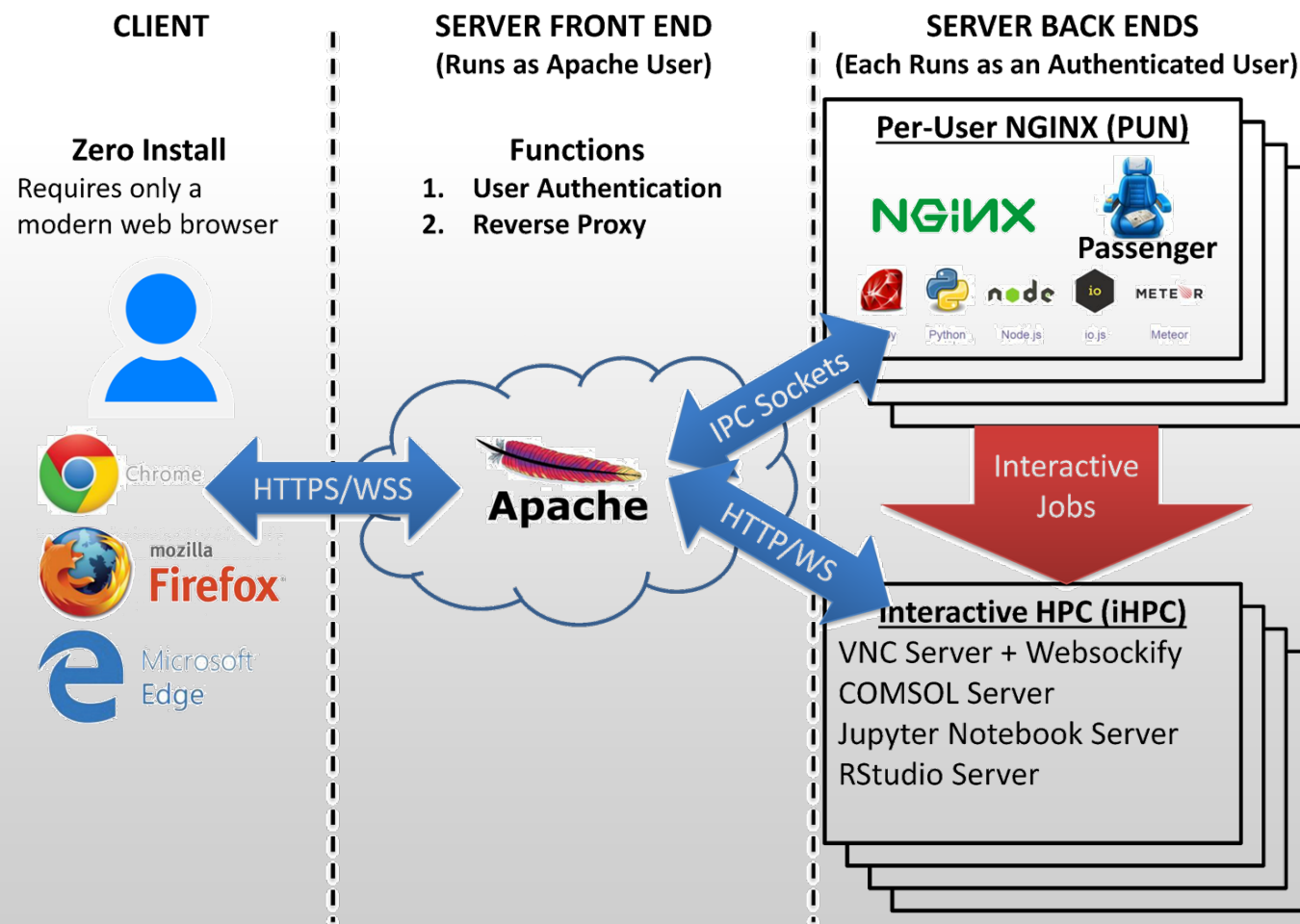
Provides an easy to install and use, web-based access to supercomputers, resulting in intuitive, innovative support for interactive supercomputing.

Features include:

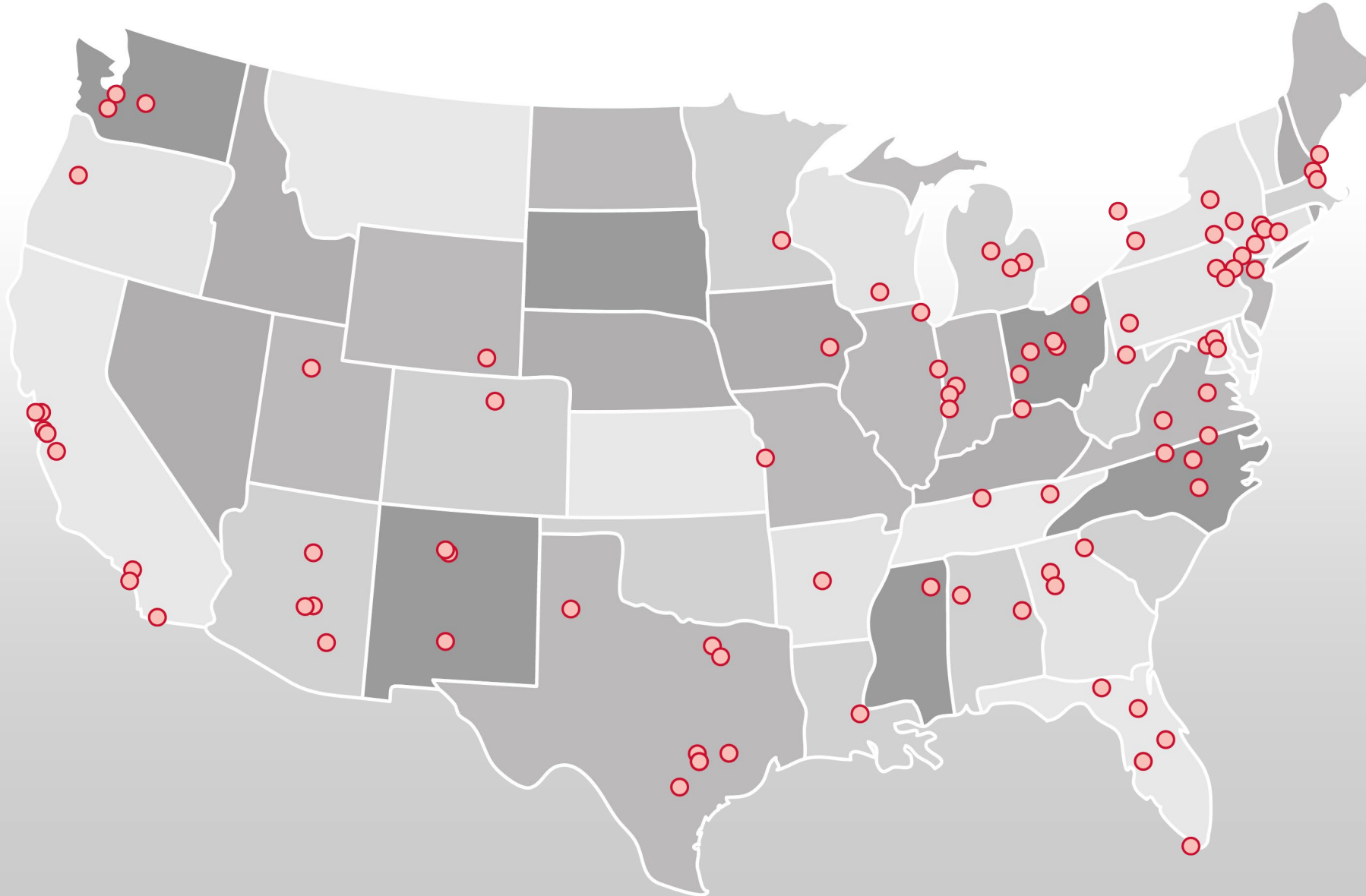
- Plugin-free web experience
- Easy file management
- Command-line shell access
- Job management and monitoring
- Graphical desktop environments and applications



Architecture



Approx Number of Institutions based on RPM logs



- 133 unique US locations
- 83 unique international locations

Example Current Engagements and Deployments

Production Deployments



In Process of Installing



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Open OnDemand 2.0 Project Overview



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- Previous three year NSF SI2 award (#1534949) to develop OnDemand 1.x
- Awarded follow on NSF CSSI award (#1835725) to develop OnDemand 2.x
 - Project runs from Jan 2019 to Dec 2023
 - Collaborators include SUNY Buffalo and Virginia Tech

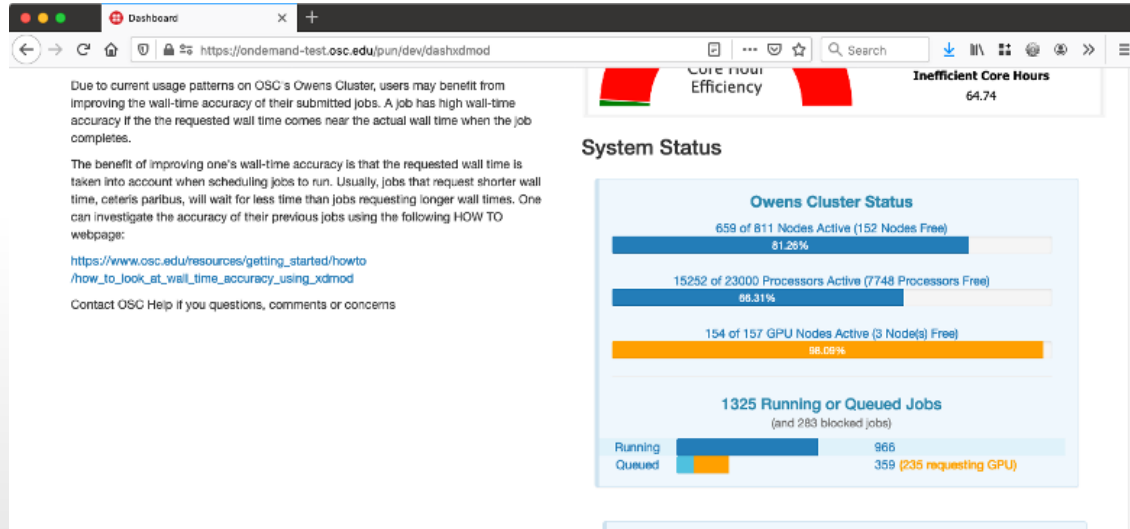
Open OnDemand 2.0 Project Overview

- 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/>

Visibility -- improving resource utilization

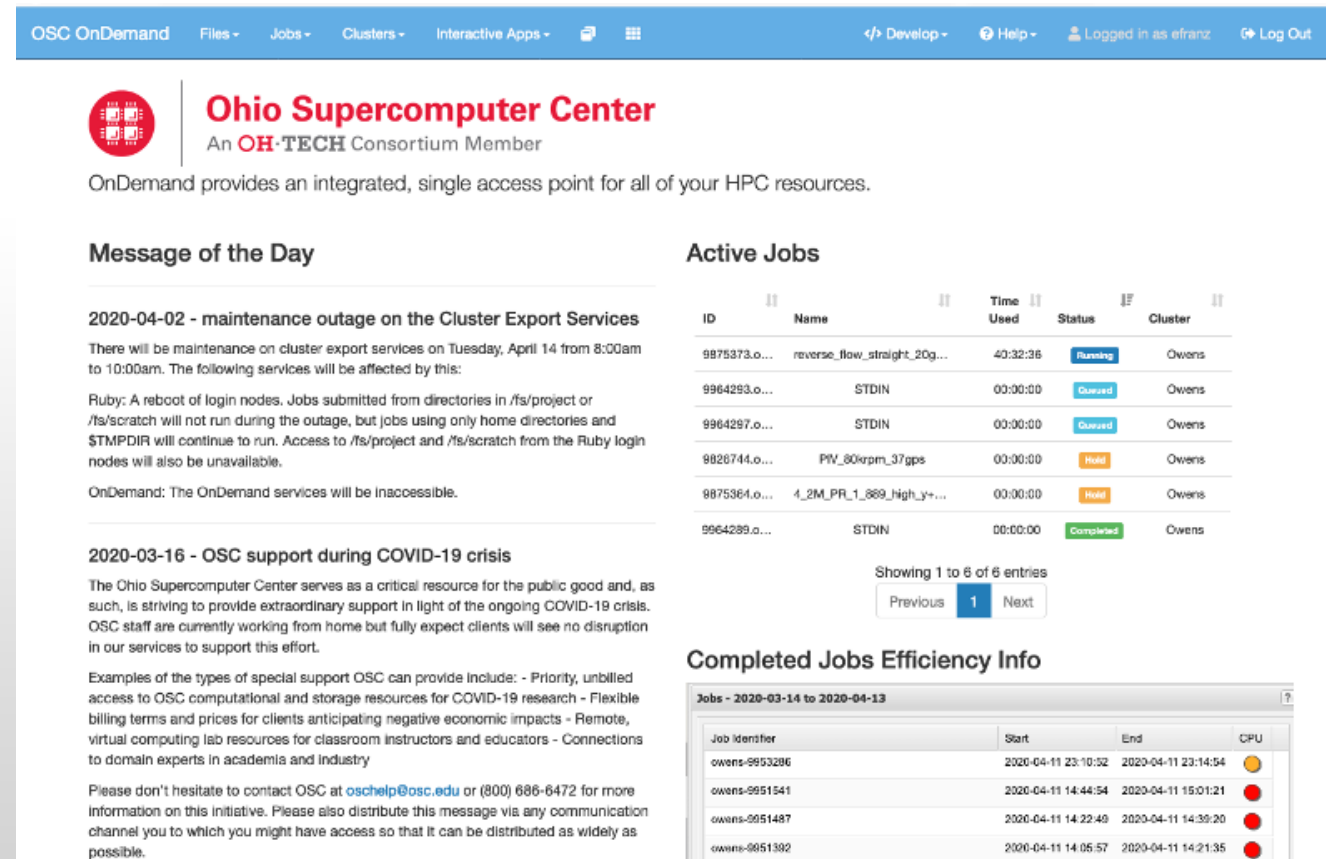


Info on where to submit

- Overviews of the system status
- Indication of specialty hardware availability

Info on job performance

- Jobs efficiencies
- Links to XDMoD for more info



OSC OnDemand Files Jobs Clusters Interactive Apps

Ohio Supercomputer Center
An OH-TECH Consortium Member

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

Message of the Day

2020-04-02 - maintenance outage on the Cluster Export Services

There will be maintenance on cluster export services on Tuesday, April 14 from 8:00am to 10:00am. The following services will be affected by this:

Ruby: A reboot of login nodes. Jobs submitted from directories in /fs/project or /fs/scratch will not run during the outage, but jobs using only home directories and \$TMPDIR will continue to run. Access to /fs/project and /fs/scratch from the Ruby login nodes will also be unavailable.

OnDemand: The OnDemand services will be inaccessible.

Active Jobs

ID	Name	Time Used	Status	Cluster
9875373.o...	reverse_flow_straight_20g...	40:32:36	Running	Owens
9964293.o...	STDIN	00:00:00	Queued	Owens
9964297.o...	STDIN	00:00:00	Queued	Owens
9826744.o...	PIV_80krpm_37gps	00:00:00	Hold	Owens
9875364.o...	4_2M_PR_1_889_high_y+...	00:00:00	Hold	Owens
9964289.o...	STDIN	00:00:00	Completed	Owens

Showing 1 to 6 of 6 entries

Previous 1 Next

Completed Jobs Efficiency Info

Jobs - 2020-03-14 to 2020-04-13

Job Identifier	Start	End	CPU
owens-9953286	2020-04-11 23:10:52	2020-04-11 23:14:54	Yellow
owens-9951541	2020-04-11 14:44:54	2020-04-11 15:01:21	Red
owens-9951487	2020-04-11 14:22:40	2020-04-11 14:39:20	Red
owens-9951392	2020-04-11 14:05:57	2020-04-11 14:21:35	Red

2020-03-16 - OSC support during COVID-19 crisis

The Ohio Supercomputer Center serves as a critical resource for the public good and, as such, is striving to provide extraordinary support in light of the ongoing COVID-19 crisis. OSC staff are currently working from home but fully expect clients will see no disruption in our services to support this effort.

Examples of the types of special support OSC can provide include: - Priority, unbilled access to OSC computational and storage resources for COVID-19 research - Flexible billing terms and prices for clients anticipating negative economic impacts - Remote, virtual computing lab resources for classroom instructors and educators - Connections to domain experts in academia and industry

Please don't hesitate to contact OSC at oschelp@osc.edu or (800) 686-6472 for more information on this initiative. Please also distribute this message via any communication channel you to which you might have access so that it can be distributed as widely as possible.

Scalability – What resources can users hit?

- OpenHPC support
- Cloud
 - On **Prem** (OpenStack ...)
 - Public (Cloudify)
- Kubernetes connector
- Improve resource utilization from the systems side
 - Interactive work without a batch scheduler
 - Scaling of NGINX process improvements
- App build out

Accessibility – Improve administrative load and user experience

- **Reduce Administrative Load (installation, configuration, debugging)**
 - Streamline the install
 - Reduce config time
 - Improve app building process (debugging, 1 app – multi clusters)
- **Streamlining interface (reduce steps to accomplish a task)**
 - Improve job management
 - Reduce clicks
 - Iconify the experience
 - App launch from desktop icon
 - Integrate apps (file/job/etc)
- **Support workflows**

Engagement: Goals

- Targeting non-traditional HPC disciplines
- Advocating for the beginner user
- Outreach
- Ensure the project is community guided

Webinars

Date	Title	Slides	Media
2017-03-08	Introducing Open OnDemand	Download	Video
2017-06-07	Open OnDemand: Supporting your HPC needs now more than ever	Download	Video
2017-09-06	Open OnDemand – Jupyter, iHPC, and Authentication	Download	Video - Missing 1st 9.5 min Audio – Complete
2018-01-29	Customizing and Extending Open OnDemand	Download	Video
2018-10-17	Using Open OnDemand for Training and Education	Download	Video
2019-4-17	Open OnDemand Project Recap and Roadmap	Download	Video
2019-8-20	Open OnDemand and OpenHPC	Download	Video
2020-1-17	Open OnDemand Live Demo	N/A	Video
2020-3-18	Open OnDemand Project Summary	Download	Video
2020-7-02	NVIDIA HPC Summit 2020 - Integrating Cloud Tools to HPC Workflows	Download	Video
2020-7-08	Supercomputing. Seamlessly. Interactive computing via Open OnDemand. Everywhere.	Download	Video

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Resources

Your browser is the supercomputer: On Demand is a no-tears shortcut to research-computing

Matt Windsor | UAB Reporter

June 24, 2019 | [Print](#) | [Email](#)

Here is the old way for new users to access Cheaha, UAB's supercomputer:

- Sign up for a Cheaha account.
- Open a Terminal window.
- Type in a list of commands.
- Send an email to Research Computing about the errors you get.

The traditional method of logging on to the Cheaha cluster, the fastest in Alabama, was “like something out of ‘Tron’ or ‘War Games,’” said William Monroe, the UAB IT Research Computing scientist who often was on the other end of those emails.

Today there is UAB Research Computing On Demand, a web portal — at rc.uab.edu — that brings Cheaha supercomputer access as close as the nearest web browser. “This helps people who are not ‘command-line commandos,’ who are used to a windowed interface,” said Ralph Zottola, Ph.D., assistant vice president for research computing. ([Learn more about Zottola and his plans for UAB Research Computing in this related story.](#)) “It’s opening access to a lot of new users. And we’ve already seen a benefit in reduced calls for support.”

In addition to Cheaha access, the portal “includes all the popular applications that people are using here, including MATLAB, RStudio, SaS and Jupyter Notebooks,” Zottola added. “You start them up on your browser, but they’re not running on your computer. They’re running on the supercomputer.”



John-Paul Robinson, high-performance computing architect, displays On Demand in front of the Cheaha supercomputer.

Twitter Account



The screenshot shows the Twitter profile of Open OnDemand. At the top is the header with the 'OPEN' logo and 'nDemand' text. Below this is the bio: 'Supercomputing. Seamlessly. Open, Interactive HPC Via the Web'. The profile picture is a red circle with a white play button icon. To the right of the profile picture is a 'Follow' button. The name 'Open OnDemand' and handle '@open_ondemand' are displayed. The bio text reads: 'An @NSF-funded open-source #HPC portal based on @OSC's original OnDemand portal providing easy web access to HPC resources.' Below the bio is a link to 'openondemand.org' and the text 'Joined March 2020'. The statistics show '19 Following' and '23 Followers'. The tabs 'Tweets', 'Tweets & replies', 'Media', and 'Likes' are visible. The first tweet is from 'Open OnDemand @open_ondemand' posted 4 hours ago, with the text: 'Count us in on 'almost all' of these @sciencegateways presentations. Thanks for the list #SGCI!' followed by three emojis: a green pencil, a purple snowflake, and a yellow pencil.

OPEN  **nDemand**

Supercomputing. Seamlessly. Open, Interactive HPC Via the Web

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Open OnDemand
@open_ondemand

An @NSF-funded open-source #HPC portal based on @OSC's original OnDemand portal providing easy web access to HPC resources.

openondemand.org  Joined March 2020

19 Following 23 Followers

[Tweets](#) [Tweets & replies](#) [Media](#) [Likes](#)

 **Open OnDemand** @open_ondemand · 4h
Count us in on 'almost all' of these @sciencegateways presentations. Thanks for the list #SGCI!   

Trello Board & Major Release Schedule

1.8 Release

Dashboard with XDMoD widgets

4

DH MC WT

Job Composer with XDMoD links

1

MC

Kubernetes Adapter

Dashboard with system status widgets

1

MC

One app submit to multiple clusters

MC

Retain interactive job card after job completes

1

Improve error reporting when testing interactive apps




Better validation of cluster config files

Use dex as default authenticator

2.0 Release


Launch interface redesign

1

DH   MC PC  WT


Files app replacement

1

DH  MC WT


Completed Jobs App (screenshot)

1

DH  PC WT

Unified Batch plugin

1 4


 MC

iHPC authentication abstraction with SSL

1

Improved Linux Host adapter

1

 MC


Make dashboard widgets configurable (undecided feature)

1

MC

Globus Online Integration

2

 MC

Other Dev projects/ideas

Develop ability to string apps in a pipeline

Integrate GIT

tag apps with science domain for filtering and discovery

XDMoD -- add the ability to add timing marks to code that appear in the performance graphs

1

App Catalog

1

Community requests from SGCI Survey & SC (TODO)

Visibility OOD-XDMoD integration

Incorporate Job Accounting and Performance Summary


Develop direct link capability XDMoD <- OOD

Provide OOD usage metrics through XDMoD

Link to XDMoD Job Viewer from Active Jobs app

User report card

support user customization of OOD dashboard



DL/ML automated detection of job efficiency opportunities

Scalability

Interactive work without a batch scheduler


Increase supported app build/deploy languages

improve OOD platform performance -- better response, lower start time, decrease mem usage

support horizontal scaling of per user NGINX processes

implement persistence options to support things like caching

OpenStack



OpenHPC integration

Ansible role

Open Nebula Integration

Accessibility

improve job management

reduce administrative load (installat config, etc)

streamline interface (reduce clicks)

integrate job/file management/app launching interfaces

Items ‘Coming Soon’ or Recently Added

Version	System Stuff	Apps
V1.7 (June 1)	Linux host adapter Keycloak identity brokering Ansible role OpenHPC integration	
V1.8 (August 17)	Dashboard with XDMoD DEX authentication Easier debugging apps (retain session card after job completes)	App submission to cluster set Job composer with XDMoD Visual Studio Code app (beta)
V2.0 (December 1)	Kubernetes adapter SSL+auth abstraction for apps	New launch interface UX Files app replacement Completed Jobs App Configurable Dashboard widgets
Current “OSC only” features	System status with GPUs OpenStack Globus Integration	Stata, Tensorboard, QGIS, Render, Galaxy, Visual Studio Code Server, R Shiny

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