



# nDemand

Alan Chalker, Ph.D.

Jeff Ohrstrom, Travis Ravert & Gerald Byrket

**OSC has a job opening on the Open OnDemand team!**

Full details are available here:

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

This work is supported by the National Science Foundation of the United States under the awards NSF SI2-SSE-1534949 and CSSI-Software-Frameworks-1835725.

# User Group BoF Agenda



Ohio Supercomputer Center



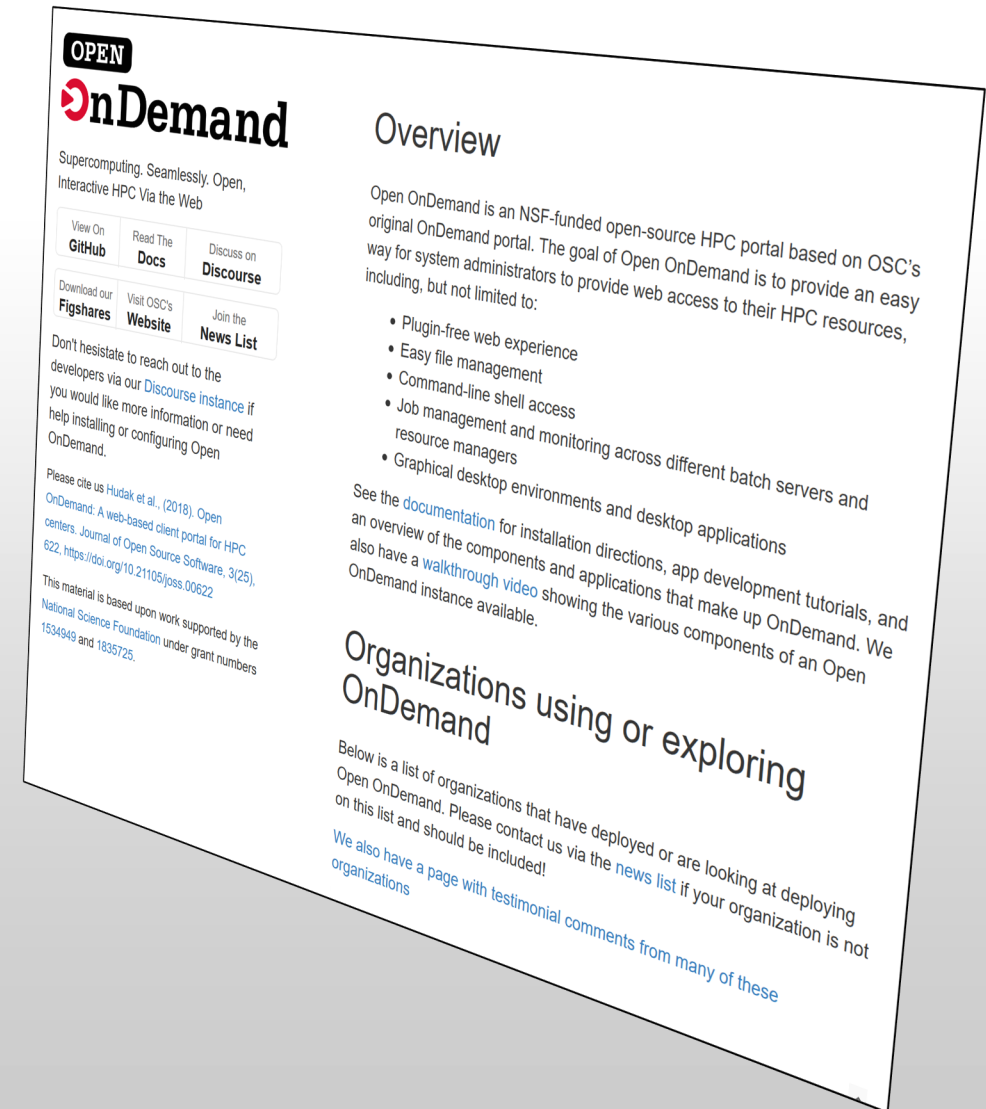
1. About Open OnDemand
2. New Features
3. Key Items of Note
4. Open Floor Discussion

**OPEN**  **nDemand**

# Find Out More!

# [openondemand.org](https://openondemand.org)

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



# Supercomputing. Seamlessly.

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

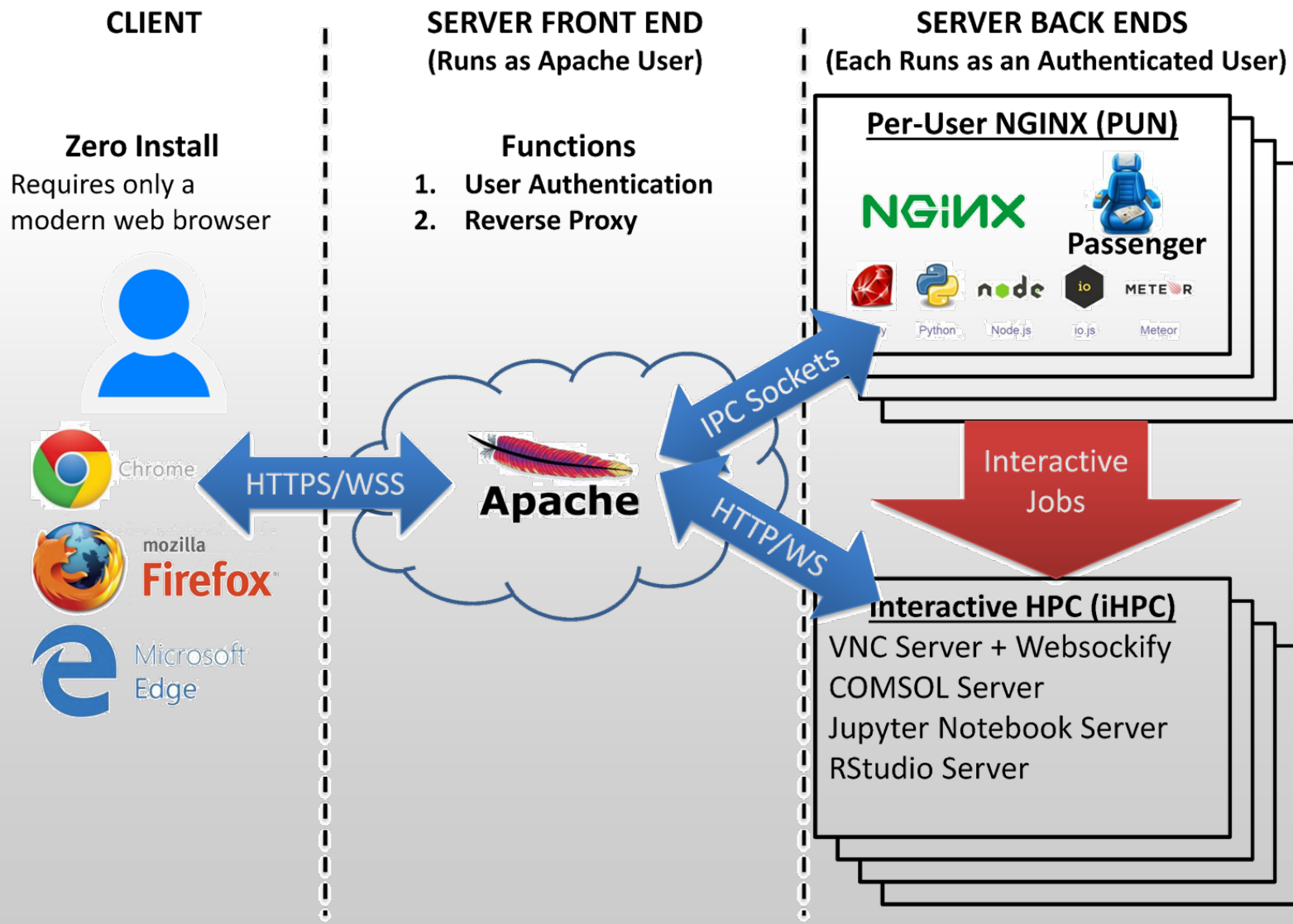
Open OnDemand helps computational researchers and students efficiently utilize remote computing resources by making them easy to access from any device. It helps computer center staff support a wide range of clients by simplifying the user interface and experience.

### Key Benefits & Impact

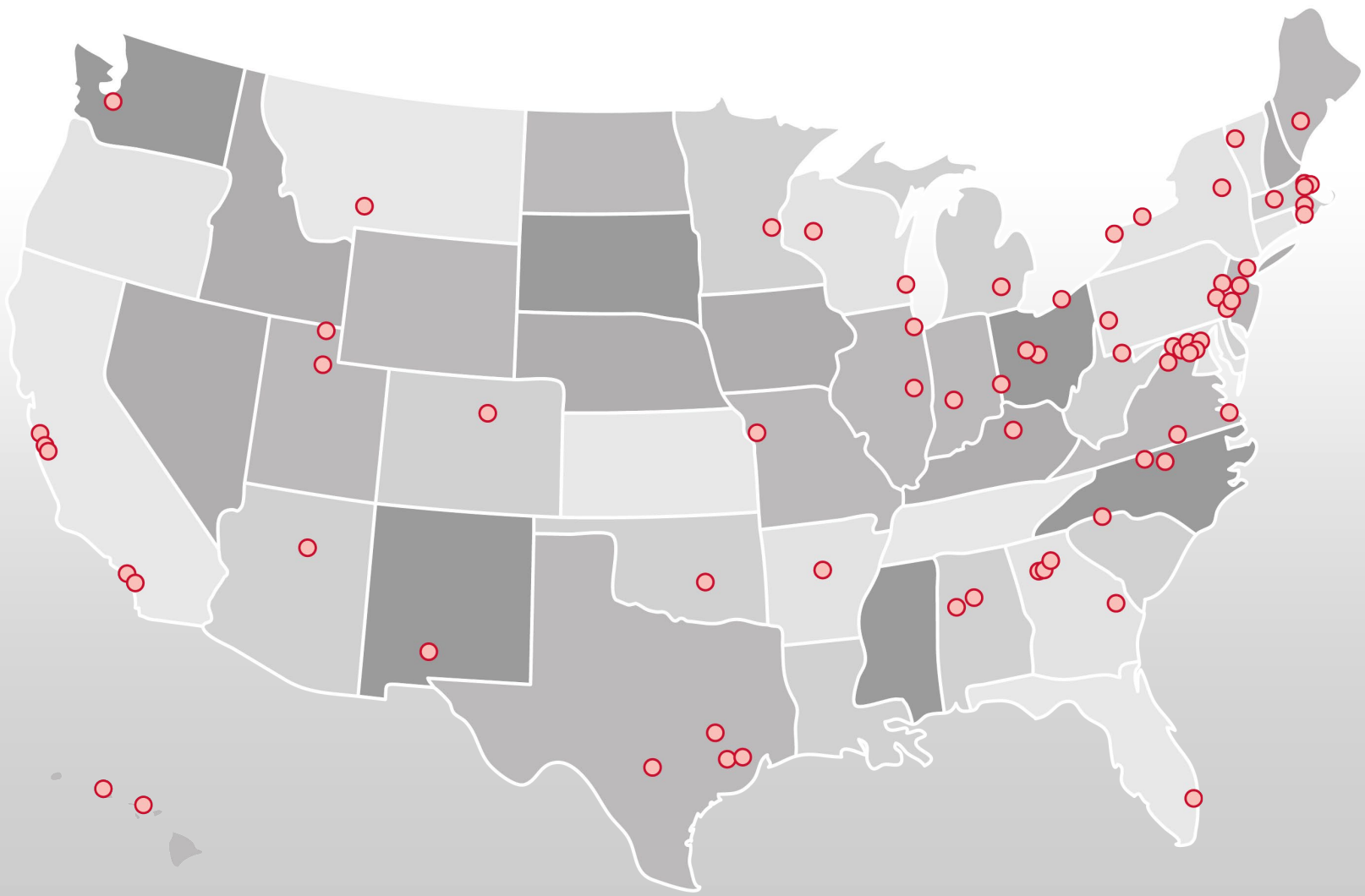
- Key benefit to you, the end user:  
You can use any web browser to access resources at a computing service provider.
- Key benefit to you, the computer center staff:  
A wide range of clients/needs can utilize your computing resources.
- Overall impact:  
Users are able to use remote computing resources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



# Architecture



# Approx Number of Institutions based on RPM logs



- 136 unique US locations
- 70 unique international locations



# Production Deployments

OPEN

 nDemand

 Arizona State University

 THE UNIVERSITY OF ALABAMA AT BIRMINGHAM

 UNIVERSITY OF ARKANSAS FOR MEDICAL SCIENCES

 THE UNIVERSITY OF ARIZONA

 NM STATE

 THE COLLEGE OF NEW JERSEY

 UNSW SYDNEY

 Ohio Supercomputer Center  
An OH-TECH Consortium Member

 THE OHIO STATE UNIVERSITY

 BOSTON UNIVERSITY

 University at Buffalo

 BERKELEY LAB

 University of CINCINNATI

 OLD DOMINION UNIVERSITY

 PURDUE UNIVERSITY

University of Pittsburgh

 PRINCETON UNIVERSITY

 Queen Mary University of London

 Berkeley UNIVERSITY OF CALIFORNIA

 UNIVERSITY OF Central Oklahoma

 Caltech

 PennState

 PITTSBURGH SUPERCOMPUTING CENTER

 上海交通大学 SHANGHAI JIAO TONG UNIVERSITY



 CASE WESTERN RESERVE UNIVERSITY EST. 1826

FLORIDA STATE UNIVERSITY

 UF UNIVERSITY OF FLORIDA

 ROSWELL PARK COMPREHENSIVE CANCER CENTER

Stanford

 SMU

Seattle Children's HOSPITAL · RESEARCH · FOUNDATION

 GHENT UNIVERSITY

 university of groningen

 GEORGIA SOUTHERN UNIVERSITY

 HARVARD UNIVERSITY

 SOUTH DAKOTA STATE UNIVERSITY

 SwRI

 USC University of Southern California

 SDSC SAN DIEGO SUPERCOMPUTER CENTER

 ILLINOIS NCSA | National Center for Supercomputing Applications

 INL Idaho National Laboratory

 UIC

 JOHNS HOPKINS UNIVERSITY

 Tufts UNIVERSITY

 TEXAS A&M UNIVERSITY

 THE UNIVERSITY OF TENNESSEE KNOXVILLE

 University of Kentucky

 LSU

 LEHIGH UNIVERSITY

 TEXAS TECH UNIVERSITY

 UTSA The University of Texas at San Antonio

 INSTITUUT LORENTZ

 MASSACHUSETTS GREEN HIGH PERFORMANCE COMPUTING CENTER

 LAFAYETTE COLLEGE

 UNIVERSITY OF MICHIGAN

 TANDY SUPERCOMPUTING CENTER

 TRUBA Turkish Science Infrastructure

 THE UNIVERSITY OF UTAH

 UNIVERSITY OF VIRGINIA

 MISSISSIPPI STATE UNIVERSITY

 UNIVERSITY OF NEBRASKA LINCOLN

 NDSU NORTH DAKOTA STATE UNIVERSITY

 GEORGE MASON UNIVERSITY

 VANDERBILT UNIVERSITY

 VIRGINIA TECH

 The University of Vermont

 NOR-TECH People Friendly Technology

 NORTHERN ARIZONA UNIVERSITY

 THE UNIVERSITY of NORTH CAROLINA at CHAPEL HILL

 NVIDIA

 WAGENINGEN UNIVERSITY & RESEARCH

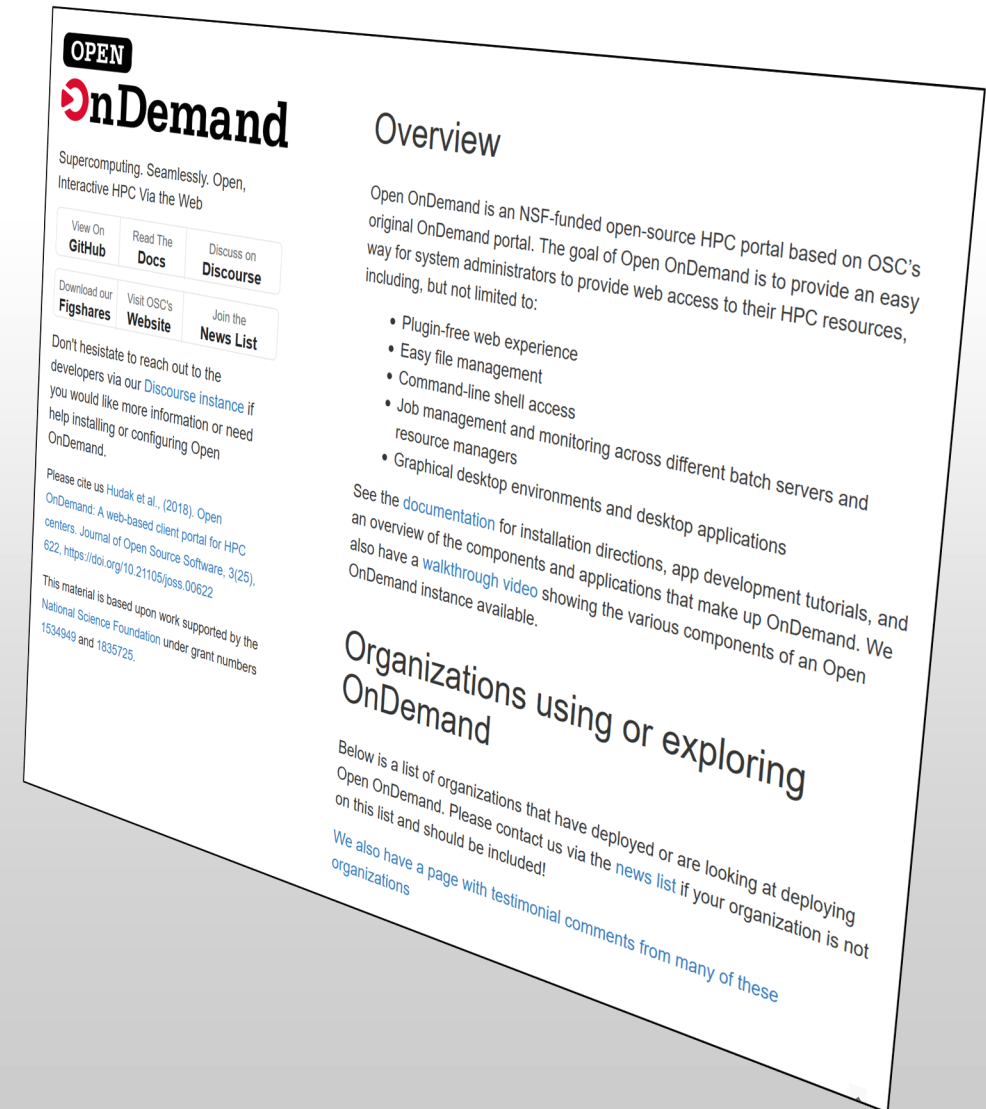
 WRIGHT STATE UNIVERSITY

 Yale

# Find Out More!

# [openondemand.org](https://openondemand.org)

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





# User Group BoF Agenda



Ohio Supercomputer Center



~~1. About Open OnDemand~~

**2. New Features**

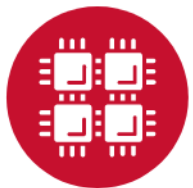
3. Key Items of Note

4. Open Floor Discussion



**nDemand**

# Pinning Apps to the Dashboard









## Ohio Supercomputer Center

An OH-TECH Consortium Member

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

Pinned Apps A featured subset of [all available apps](#)

 <p>IQmol</p> <p>System Installed App</p>	 <p>RStudio Server (Owens and Pitzer)</p> <p>Sandbox App</p>	 <p>System Installed App</p>	 <p>Jupyter (Owens and Pitzer)</p> <p>Sandbox App</p>
 <p>Pitzer Desktop</p> <p>System Installed App</p>	 <p>Home Directory</p> <p>System Installed App</p>		

# Configurable Landing Page Layout

The screenshot shows the Ohio Supercomputer Center OnDemand landing page. At the top is a blue navigation bar with the following items: Ohio Supercomputer Center (An OH-TECH Consortium Member), Apps, Files, Jobs, Clusters, Interactive Apps, Gateway Apps, My Interactive Sessions, All Apps, Develop, Help, Logged in as johrstrom, and Log Out.

The main content area features the Ohio Supercomputer Center logo (a red circle with four white squares) and the text "Ohio Supercomputer Center An OH-TECH Consortium Member". Below this is a message: "OnDemand provides an integrated, single access point for all of your HPC resources."

On the left, there is a widget titled "johrstrom's current groups" which contains a table of group names:

Group
PZS0714
PAS1759
PAS1936
PAS1604
PZS1008
PZS1010
PZS1117

The main content area is divided into two sections: "Pinned Apps" and "Message of the Day".

The "Pinned Apps" section is titled "A featured subset of all available apps" and is divided into two sub-sections: "Desktops" and "GUIs".

The "Desktops" section contains three items, each with a monitor icon and the text "System Installed App":

- Owens Desktop
- Pitzer Desktop
- VDI (Owens and Pitzer)

The "GUIs" section contains four items, each with a software logo and the text "System Installed App":

- ANSYS Workbench
- SIMULIA Abaqus/CAE
- COMSOL Multiphysics
- IQmol

The "Message of the Day" section contains the following text:

2021-07-07 - Please review your usage of /fs/ess

Recent improvements to a routine OSC accounting process resulted in larger adjustments to file counts and quota usages than anticipated for some accounts. The updated metrics are more accurate but some users may now have less free space than expected. Please review your usage closely and, if necessary, remove unneeded data or request a quota expansion via OSCHelp to avoid exhausting your

Add custom widgets- Left most groups widget is completely custom

# New Files App

OSC OnDemand Files Jobs Clusters Interactive Apps My Interactive Sessions All Apps

Develop Help Logged in as johrstrom Log Out

Open in Terminal New File New Directory Upload Download Copy/Move Delete

Home Directory

- /fs/project/PZS0714
- /fs/project/PAS1604
- /fs/scratch/PZS0714
- /fs/scratch/PAS1759
- /fs/scratch/PAS1604
- /fs/scratch/PZS1008
- /fs/scratch/PZS1010
- /fs/ess/scratch/PZS0714
- /fs/ess/scratch/PAS1936
- /fs/ess/scratch/PZS1117
- /fs/ess/PZS0714
- /fs/ess/PAS1759
- /fs/ess/PZS1008

/ users / PZS0714 / johrstrom / Change directory Copy path

Show Owner/Mode  Show Dotfiles Filter:

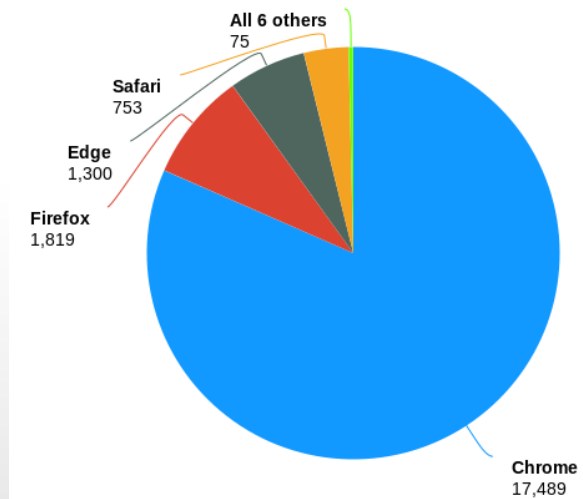
Showing 27 of 136 rows - 0 rows selected

Type	Name	Size	Modified at	Owner	Mode
<input type="checkbox"/>	Adlm	-	7/31/2019 12:38:55 PM	johrstrom	750
<input type="checkbox"/>	awesim	-	3/5/2021 3:55:52 PM	johrstrom	750
<input type="checkbox"/>	bin	-	6/10/2021 5:44:00 PM	johrstrom	750
<input type="checkbox"/>	Desktop	-	6/7/2021 3:33:18 PM	johrstrom	750
<input type="checkbox"/>	Documents	-	4/13/2020 2:37:10 PM	johrstrom	750
<input type="checkbox"/>	Downloads	-	6/10/2019 4:05:28 PM	johrstrom	750
<input type="checkbox"/>	drop	-	6/1/2021 9:01:25 AM	johrstrom	750

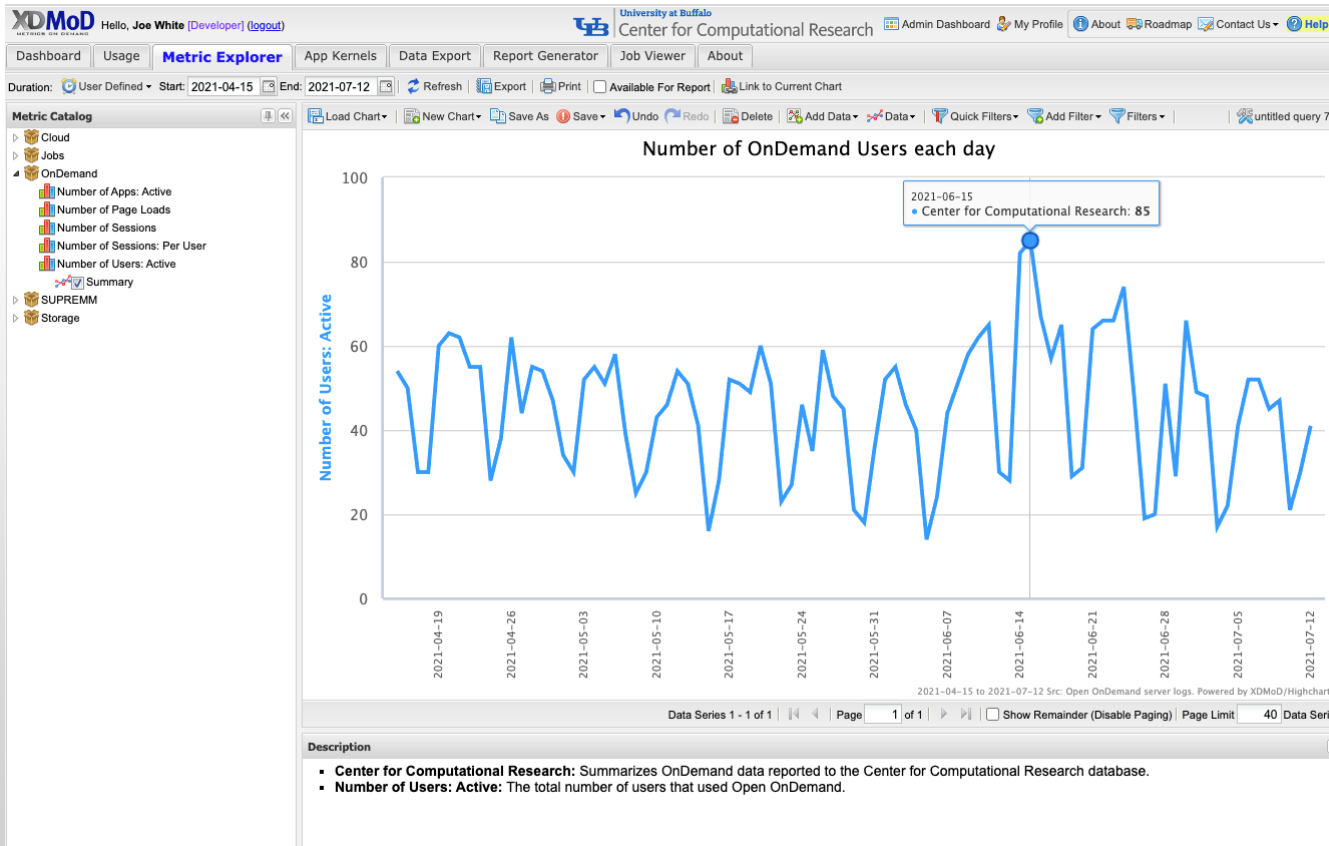
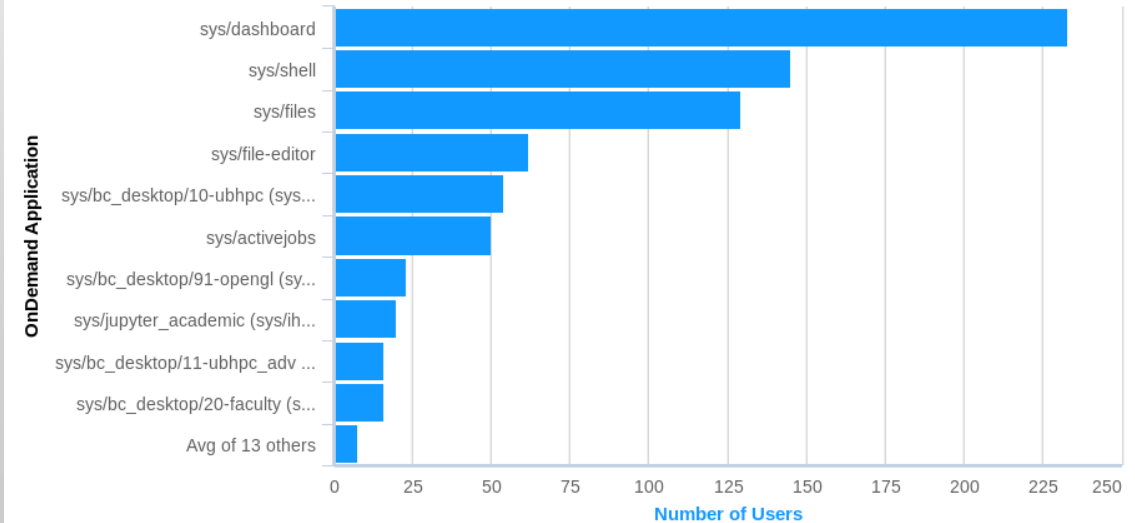
This will make it easier to maintain and add new features.

# OnDemand Metrics in XDMoD

Open OnDemand Sessions By Browser



Top 10 Open OnDemand Apps by Number of distinct users







# Dashboard Example: Pinning Apps to the dashboard


Open OnDemand Apps Files Jobs Clusters Interactive Apps


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


Pinned Apps A featured subset of [all available apps](#)


  
 HPC Cluster Shell Access  
System Installed App

  
 Active Jobs  
System Installed App

  
 Home Directory  
System Installed App

  
 Desktop  
System Installed App

  
 Job Composer  
System Installed App


  
 Jupyter Notebook  
System Installed App

Open OnDemand Apps Files Jobs Clusters Interactive Apps


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

Pinned Apps A featured subset of [all available apps](#)

Clusters

  
 HPC Cluster Shell Access  
System Installed App

Files

  
 Home Directory  
System Installed App

# Dashboard Example: Changing the layout

Before


After

Open OnDemand Apps ▾ Files ▾ Jobs ▾ Clusters ▾ Interactive Apps ▾ My Interactive Sessions Develop ▾ Help ▾ Logged in as hpcadmin Log Out


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

Pinned Apps A featured subset of [all available apps](#)

**Clusters**

  
HPC Cluster Shell Access  
System Installed App

**Files**

  
Home Directory  
System Installed App

**Message of the Day**

**Tutorial links**

- Coldfront: <https://localhost:2443>
- OnDemand: <https://localhost:3443>
- XDMoD: <https://localhost:4443>
- Login to frontend: `ssh -p 6222 hpcadmin@localhost`
- GitHub Repo: <https://github.com/ubccr/hpc-toolset-tutorial>
- Accounts: <https://github.com/ubccr/hpc-toolset-tutorial/blob/master/docs/applications.md>
- OnDemand Tutorial: <https://github.com/ubccr/hpc-toolset-tutorial/blob/master/ondemand/README.md>

**Project links**

- Coldfront: <https://github.com/ubccr/coldfront>
- OnDemand: <https://openondemand.org>
- XDMoD: <https://open.xdmod.org>

**Notes**

Setup python environment for using Jupyter

Open OnDemand Apps ▾ Files ▾ Jobs ▾ Clusters ▾ Interactive Apps ▾ My Interactive Sessions Develop ▾ Help ▾ Logged in as hpcadmin Log Out

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

**Message of the Day**

**Tutorial links**

- Coldfront: <https://localhost:2443>
- OnDemand: <https://localhost:3443>
- XDMoD: <https://localhost:4443>
- Login to frontend: `ssh -p 6222 hpcadmin@localhost`
- GitHub Repo: <https://github.com/ubccr/hpc-toolset-tutorial>
- Accounts: <https://github.com/ubccr/hpc-toolset-tutorial/blob/master/docs/applications.md>
- OnDemand Tutorial: <https://github.com/ubccr/hpc-toolset-tutorial/blob/master/ondemand/README.md>

**Project links**


- Coldfront: <https://github.com/ubccr/coldfront>
- OnDemand: <https://openondemand.org>
- XDMoD: <https://open.xdmod.org>

**Notes**


Setup python environment for using Jupyter

Pinned Apps A featured subset of [all available apps](#)

**Clusters**

  
HPC Cluster Shell Access  
System Installed App

**Files**

  
Home Directory  
System Installed App

# Dashboard Example: Adding a new widget



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

Thank you for attending the PEARC 2021 Open OnDemand Tutorial!

## Message of the Day

### Tutorial links

- Coldfront: <https://localhost:2443>
- OnDemand: <https://localhost:3443>
- XDMoD: <https://localhost:4443>
- Login to frontend: `ssh -p 6222 hpcadmin@localhost`
- GitHub Repo: <https://github.com/ubccr/hpc-toolset-tutorial>
- Accounts: <https://github.com/ubccr/hpc-toolset-tutorial/blob/master/docs/applications.md>
- OnDemand Tutorial: <https://github.com/ubccr/hpc-toolset-tutorial/blob/master/ondemand/README.md>

### Project links

- Coldfront: <https://github.com/ubccr/coldfront>

## Pinned Apps A featured subset of [all available apps](#)

### Clusters



HPC Cluster Shell  
Access

System Installed App

### Files



# Kubernetes

- Documentation for using Kubernetes as a resource for Open OnDemand is online.
- It's been in since 1.8, but 2.0 had lots of updates.
- Running in production at OSC.
- <https://osc.github.io/ood-documentation/latest/installation/resource-manager/kubernetes.html>

# In Progress – dynamic javascript

- Hide options depending on current selection
  - hide *hugemem* when cluster changes to *owens*.
- Set min & max
  - Set *hugemem*'s min and max to 42 when cluster changes to *owens*.
- Set a field based on another
  - Set account to *python27* when 2.7 option is chosen.
- Semantics use the existing `data-` attributes.
- More to come!

```
- [
  "gpu",
  # this bad option is kept here so that in testing, it doesn't throw errors
  data-option-for-not-real-choice: false,
  data-max-some-element-for-3rd-element-value: 10,
  data-max-bc-num-slots-for-cluster-owens: 28,
  data-min-bc-num-slots-for-cluster-owens: 2,
  data-max-bc-num-slots-for-cluster-oakley: 40,
  data-min-bc-num-slots-for-cluster-oakley: 3,
]
- [
  "hugemem",
  data-option-for-cluster-oakley: false,
  data-max-bc-num-slots-for-cluster-owens: 42,
  data-min-bc-num-slots-for-cluster-owens: 42
]
- [
  "advanced",
  data-option-for-cluster-oakley: false,
  data-max-bc-num-slots-for-cluster-oakley: 9001
]
```

```
- [
  "2.7",
  data-option-for-node-type-advanced: false,
  data-set-bc-account: 'python27'
]
```



## In Progress – Debian support

### **Rake task `rake package:deb` merged earlier this week**

- Ubuntu 20.04 is the first target platform

### **Nightly RPMs available**

- New RPM every day. Only deployed in the dev environment at OSC.
- <https://yum.osc.edu/ondemand/nightly/>

# User Group BoF Agenda



Ohio Supercomputer Center



- ~~1. About Open OnDemand~~
- ~~2. New Features~~
- 3. Key Items of Note**
4. Open Floor Discussion

**OPEN**  **nDemand**

# Project Planning Revamp

- We're trying to drive engagement on features that matter.
- GitHub Projects now show the progress of large upcoming features
  - Examples are new Job Composer or Ubuntu packaging
- There's an 'Entire Project' that shows estimated version of different features
- GitHub milestones track smaller issues to a given release.

# GitHub Projects

OSC / ondemand

Unwatch 11 Unstar 46 Fork 35

Code Issues 381 Pull requests 22 Actions **Projects 6** Wiki Security 6 Insights Settings

is:open

New project

6 Open ✓ 3 Closed		Sort ▾
<b>Entire Project</b> Updated 20 days ago	10,000 foot view of the project's progress.	...
<b>APIs</b> Updated 14 days ago	APIs for creating and managing jobs.	...
<b>JavaScript Optimization</b> Updated 24 days ago	Refactor and optimize the way we package javascript for performance and easier maintenance.	...
<b>New Job Composer Alpha</b> Updated 24 days ago	Brand new Job Composer app which is way more configurable. Released as alpha behind a feature flag.	...
<b>Quick Launch Icons</b> Updated 15 days ago	This project is to enable quick launch icons that start apps based on some set parameters. Users won't need to use a web form, instead just submitting the job with presets.	...
<b>Ubuntu Packaging</b> Updated yesterday	This project intends to add support for building .deb packages for Ubuntu focal (20.04).	...

# Current Projects in Flight

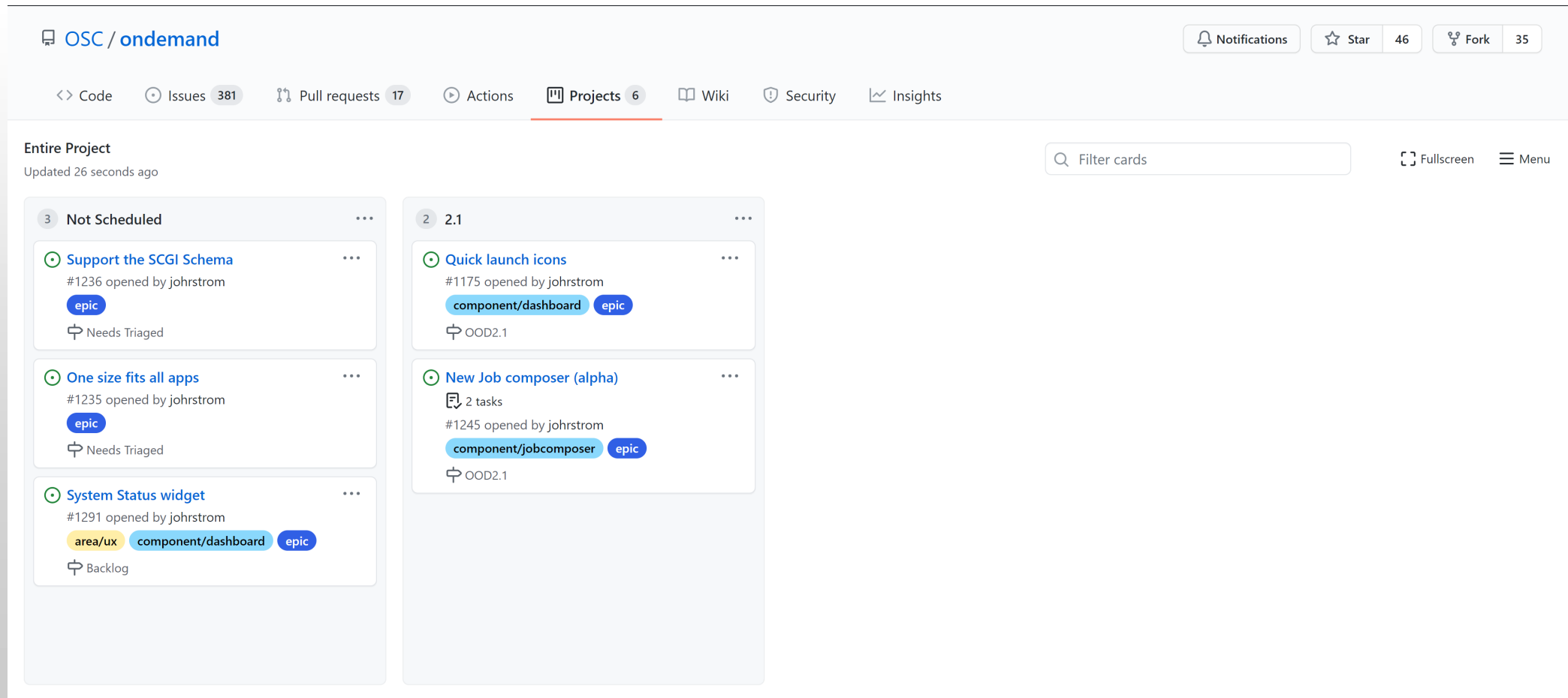
- APIs
- New Job Composer (alpha)
- Quick Launch Icons
- Ubuntu Packaging
- Kubernetes

Comment on tickets or react with thumbs +/- 1!



# Entire Project View

- Entire Project view shows feature commitments
- Trying to limit promises in progress



The screenshot shows the GitHub 'Entire Project' view for the repository 'OSC / ondemand'. The interface includes a navigation bar with tabs for Code, Issues (381), Pull requests (17), Actions, Projects (6), Wiki, Security, and Insights. The 'Projects' tab is active, displaying a grid of project cards. Each card represents a project with a title, issue number, creator, labels, and a status icon. The 'Not Scheduled' column contains three cards: 'Support the SCGI Schema' (epic, Needs Triaged), 'One size fits all apps' (epic, Needs Triaged), and 'System Status widget' (area/ux, component/dashboard, epic, Backlog). The '2.1' column contains two cards: 'Quick launch icons' (component/dashboard, epic, OOD2.1) and 'New Job composer (alpha)' (component/jobcomposer, epic, OOD2.1, 2 tasks).

# Microsoft Azure / Google Cloud Instances

## Azure HPC OnDemand Platform: Cloud HPC made easy.

By  xpillons

Published 07-12-2021 07:01 AM

1,099 Views

As many customers are looking at running their HPC workloads in the cloud, onboarding effort and cost are key consideration. As an HPC administrator, in such process you try to provide a unified user experience with a minimal disruption, in which the end users and the cluster administrators can retrieve most of their on-premises environment while leveraging the power of running in the cloud.

The **Specialized Workloads for Industry and Mission** team that works on some of the most complex HPC customer and partner scenarios has built a solution accelerator **Azure HPC OnDemand Platform** (aka **az-hop**) available in the [Azure/az-hop](#) public GitHub repository to help our HPC customers onboard faster. **az-hop** delivers a complete HPC cluster solution ready for users to run applications, which is easy to deploy and manage for HPC administrators. **az-hop** leverages the various Azure building blocks and can be used as-is, or easily customized and extended to meet any uncovered requirements.

Based on our experience, from years of customer engagements, we have identified some common principles that are important to our customers and designed **az-hop** with these in mind:

- A pre-packaged HPC Cluster easy to deploy in an existing subscription, which contains all the key building blocks and best practices to run a production HPC environment in Azure,
- A unified and secured access for end users and administrators, so each one can reuse their on-premises tools and scripts,
- A solution to integrate applications under the same unified cloud experience,
- Build on standards, common tools and open blocks so it can be easily extended and customized to accommodate the unique requirements of each customer.

## CloudyCluster & GCP: Introducing HPC VM Pre-Tuned Images

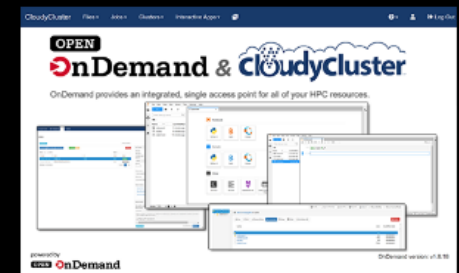


Feb. 8, 2021 - Today, we're excited to announce the release of version 3.1.1 of CloudyCluster on Google Cloud Platform, leveraging a CentOS 7-based Virtual Machine (VM) image optimized for high performance computing (HPC) workloads. This new release is designed with a focus on tightly-coupled MPI workloads. [Read the full blog here-->](#)

## INTERACTIVE RESEARCH COMPUTING

With the latest release of CloudyCluster, users can now take advantage of the GUI developed by **OSC** and the cloudyCluster Team. This new inclusion offers non-computer scientists a pathway to cloud-based HPC tools, without having to utilize the CLI. Upload and Download files with a file browser-like interface. You can now: draft job scripts with the built-in Job Script tool, spin-up new computing instances with or without a variety of GPU Acceleration, and have them tear down automatically after your specified work window. The current release includes JupyterLab with Jupyter Notebooks in Python 3 for true interactive code testing.

[CloudyCluster online documentation-->](#)  
[Open OnDemand Project-->](#)



# Second TrustedCI Engagement

About Trusted CI	1
Acknowledgments	1
Using & Citing this Work	1
Executive Summary	2
1. Background	6
2. Factual Summary	7
2.1. Significant changes identified since prior engagement with Open OnDemand	7
2.2. Automated Assessment Tools	8
2.3. Current Vulnerability Disclosure Process	9
2.4. Code Review	10
3. Findings	11
3.1 Dependency Analysis Tools	11
3.1.1 How do dependency tools work?	11
3.1.2 Lockfiles	12
3.1.3 Command-line and web integration of dependency tools	13
3.1.4 Branches	14
3.1.5 Vulnerability suppression	14
3.1.6 How to run dependency tools	15
3.1.7 Comparison of dependency tools	15
3.1.8 Pricing considerations	16
3.2 Static Analysis Tools	17
3.2.1 How do static analysis tools work?	17

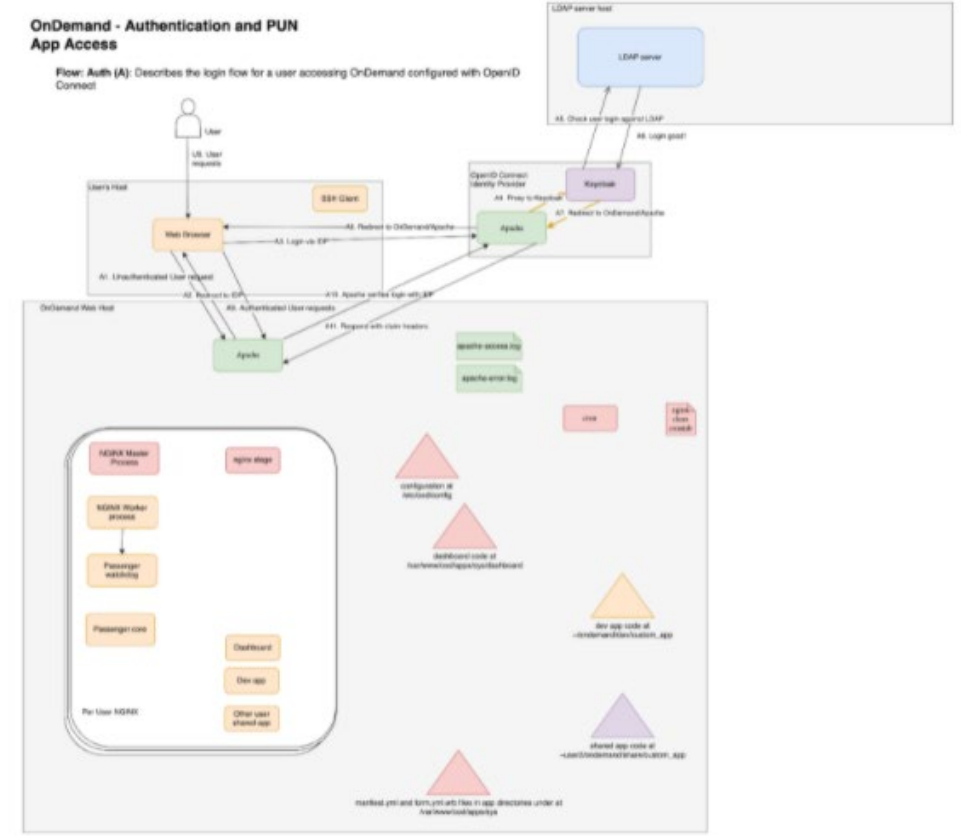


Figure D1. Authentication Flow for Open OnDemand version 1.8.19

# Intel Case Studies

## Case Study

High Performance Computing (HPC)  
Intel® Xeon® Scalable Processors



# Ohio Supercomputer Center OnDemand Portal Accelerates Remote Learning

Web-based interface provides students with HPC virtual laboratories based on Intel Xeon Scalable processors

### Ohio Supercomputer Center Clusters

#### Pitzer

- Dell EMC PowerEdge C6420 servers with CoolIT Systems' Direct Contact Liquid Cooling coupled with Dell EMC PowerEdge R740 servers
- Intel Xeon Platinum 8268 processors
- Intel Xeon Gold 6148 processors

#### Owens

- Dell EMC PowerEdge servers including C6320, R730 and R930 servers
- Intel Xeon E5 2680 v4 processors



### Executive Summary

Because of the COVID-19 pandemic, students at Ohio State University (OSU) and many other schools have had to adapt to remote learning situations. This proved to be especially challenging for work normally done in labs for a wide range of areas such as science, math, computer science, statistics, business, and other disciplines.

But, thanks to the [Ohio Supercomputer Center](#) (OSC), OSU was well prepared for the switch to remote learning. Plus, they were able to provide other universities with virtual laboratory portals as well. The center provides these virtual computer labs by offering students an easy to use web-based interface in a tool they developed called [OnDemand](#). The students use customized dashboards developed by OSC for access to digital labs across multiple disciplines of classes including architecture, statistics, crop sciences and more. When students log on to OSC OnDemand, they have access to an OSC supercomputer capable of running large workloads with advanced processing capabilities not typically available to users on their own computers.

### Challenge

Historically, the high performance computing (HPC) community did their work via a command-line interface to enter system commands and move through files or directories, as well as run programs. Lack of a web-interface in HPC led to the perception that HPC work was lagging behind in ease of use.

Many students have only used web-based graphical user interfaces (GUIs) and are not interested in spending time learning about file systems, directories, and command line entries. Scientists and engineers would rather spend their time advancing their disciplines than learning HPC. Developing an easy-to-use web-based interface would lower the barrier to entry so that students, commercial clients, and government researchers have access to OSC supercomputer cluster systems.

### Solution

Alan Chalker, Ph.D., Director of OSC Strategic Programs, explained that the inspiration behind OSC OnDemand was that every other technology developed web-based user portals so end-users could easily interact with the technology.

OnDemand is an accessible web interface that allows anyone with OSC access to log into and use one of the OSC supercomputer clusters. This would allow students, researchers, or commercial customers need to meet their most challenging data processing and research simulation needs.

OnDemand's novel architecture ensures that clients can utilize any modern web browser and helps utilize the underlying system security and user management.



Since 1987 - Covering the Fastest Computers in the World and the People Who Run Them

- Home
- Technologies
- Sectors
- COVID-19
- AI/ML/DL
- Exascale
- Specials
- Resource Library
- Podcast
- Events
- Job Bank
- About
- Our Authors
- Solution Channels
- Subscribe



December 21, 2020

*Editor's note: This special guest post explores the use of the OnDemand and Open OnDemand web interfaces, developed by Ohio Supercomputer Center to facilitate use of powerful HPC resources, and used by academia and industry, including NASCAR.*

Historically, the HPC community has done their work via a command-line interface to enter system commands and move through files or directories, as well as run programs. To facilitate greater use of its significant computational resources, Ohio Supercomputer Center ([OSC](#)) developed [OnDemand](#), an accessible web interface that allows anyone with OSC access to log into and use one of the OSC supercomputer clusters. With funding through the National Science Foundation (NSF), OSC created an open source version called Open OnDemand (OOD) that allows research institutions and universities to run their own instance of OnDemand. In addition, OSC created a special OnDemand portal for commercial customers called AweSim OnDemand.

OSC's OnDemand high performance computing environment includes clusters based on Intel Xeon processors. Pitzer, OSC's newest system, is an Intel Xeon processor-based cluster built by Dell. When students and customers log onto OSC OnDemand, they have access to a supercomputer capable of running large workloads with advanced processing capabilities not typically available to all users on their own computers. Running on an OSC cluster accelerates the time to insight during data analysis and lowers the cost-per-terabyte during data processing. One AweSim user, NASCAR, uses workflows developed by TotalSim to perform simulations of race cars.



*OSC addresses the computational demands of academic and industrial research communities with a robust shared infrastructure. Pictured is OSC's Dell/Intel Owens cluster. "Owens" is the namesake of J.C. "Jesse" Owens, who won four gold medals at the 1936 Olympics.*

# Monthly Meetings

## Tips and Tricks calls

- First Thursday of the month
- 1PM – 2PM ET
- OOD community presenter

## Open Office Hours

- Second Tuesday of the month
- 11:15 AM – 12:45 PM ET
- Project team available to answer any questions



# User Group BoF Agenda



Ohio Supercomputer Center



- ~~1. About Open OnDemand~~
- ~~2. New Features~~
- ~~3. Key Items of Note~~
- 4. Open Floor Discussion**

**OPEN**  **nDemand**

# Find Out More!

# openondemand.org

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

**OPEN**  
**OnDemand**

Supercomputing. Seamlessly. Open,  
Interactive HPC Via the Web

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 1534349 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](#)