



# Try | Create | Share

Customizations with OnDemand Plugins

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IQSS Research Computing

<https://github.com/hmdc/good25>

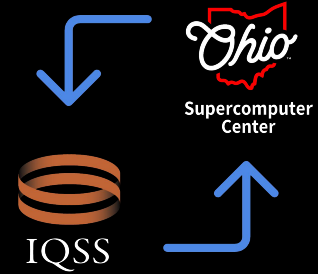
# Intro







Personalization



Customization



## IQSS Research Computing Contributions

-  Configuration Profiles
-  Custom Navigation
-  Custom Pages
-  Support Ticket Feature

Collaboration with OSC

Create more generic and reusable versions of the IQSS Research Computing features to contribute them to the Open OnDemand project

# Intro



## Motivation

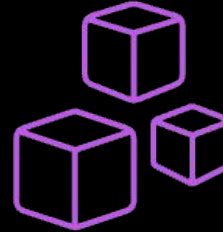
Facilitate tailored user experiences that are easy to configure using a single installation of OnDemand

Departments

Schools

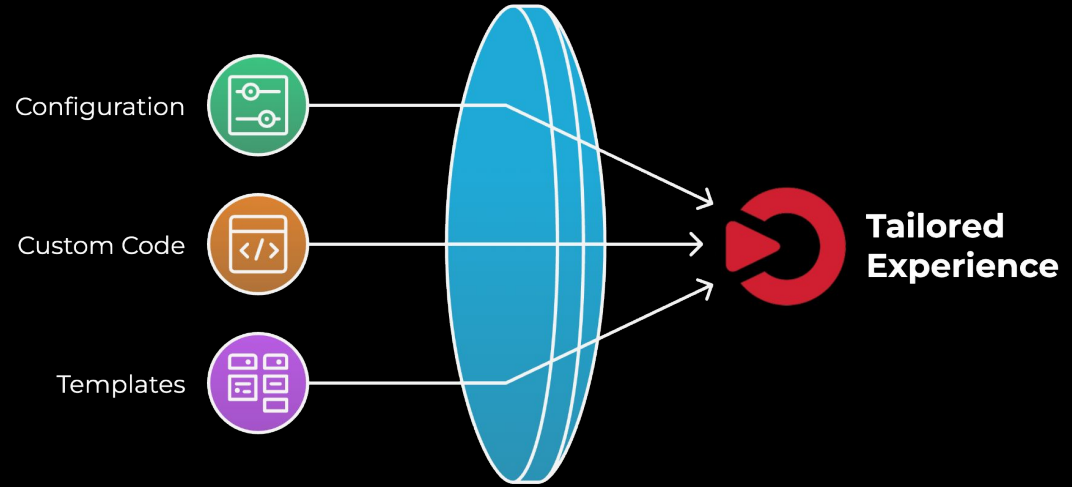


# Intro



## OnDemand Plugins

# OnDemand Customizations 101



What are customizations?

Modifications and extensions made to the platform to tailor its functionality, appearance, and user experience to meet the specific needs of your organization

# OnDemand Customizations 101



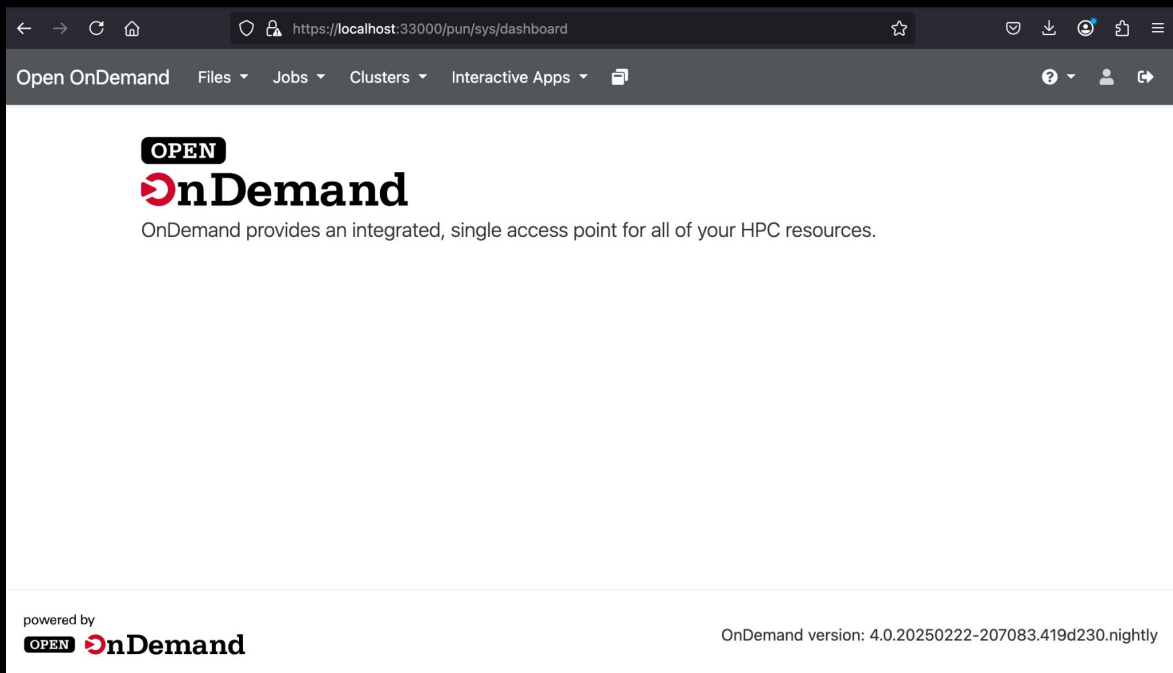
## Configuration

Environment variables  
and YAML configuration

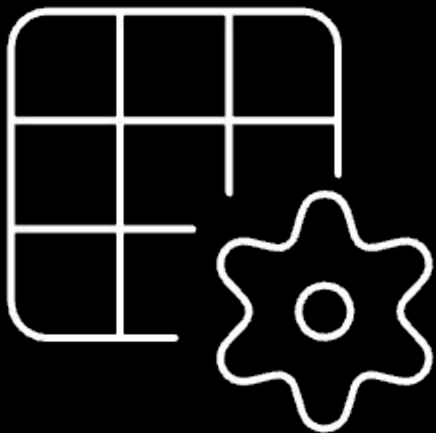


## Custom Code and Templates

Code initializers, libraries and  
Rails supported templates



# Configuration-Based Customizations



## Pre-defined

A comprehensive list of features available for configuration



## Well Documented

Extensive documentation for guidance and support



## UI Focus

Mainly changes to the UI Look and Feel



## Limited Control

Restricted customization options for admins



## No Code Required

No programming skills required and easy to configure.

# Configuration-Based Customizations



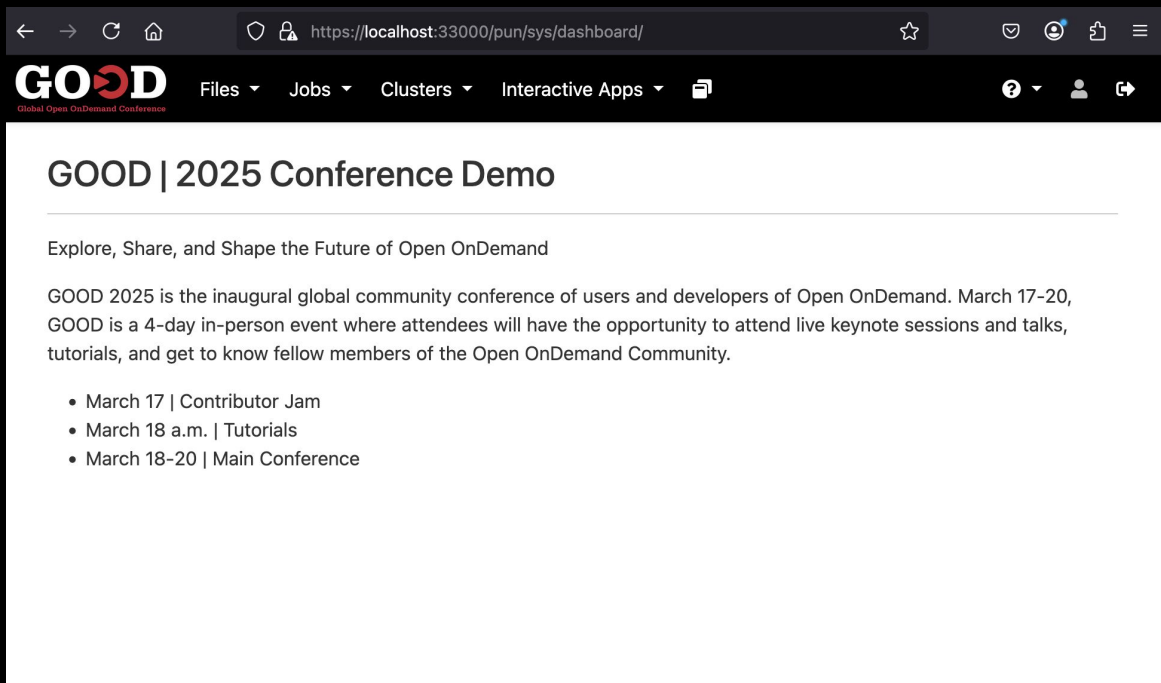
## Environment Variables

Settings set in the user profile or nginx stage setup



## Configuration Files

Settings set in the YAML files under the OOD configuration directory





# Code-Based Customizations



## Greater Control

Allows for complex, feature-rich modifications and extensions



## OOD Knowledge

Understanding of OOD Core components and classes needed



## Web Development

Customizations involve Ruby on Rails / HTML / CSS / JavaScript



## Lifecycle

Development, deployment, and testing practices recommended.

# Code-Based Customizations



/etc/ood/config/apps/dashboard



## Initializers

Configuration classes and setup code



## Lib

Utility functions and feature core classes



## Views

Custom templates and widgets

Screenshot of the IQSS dashboard showing session details for 'Rstudio Dev (1)'.

URL: [https://localhost:33000/pun/sys/dashboard/batch\\_connect/sessions](https://localhost:33000/pun/sys/dashboard/batch_connect/sessions)

Navigation: Files ▾ Jobs ▾ Clusters ▾ Interactive Apps ▾ My Interactive Sessions

Help ▾ Logged in as ood Log Out

Home / My Interactive Sessions

**Interactive Apps**

- Desktops
- Remote Desktop
- Servers
- Rstudio Dev

**Rstudio Dev (1)** Completed | |

Created at: 2025-03-03 14:35:51 UTC Delete

Session ID: [3b878823-17a9-4b55-974a-ab9d7a45d3db](#)

Problems with this session? [Submit support ticket](#)

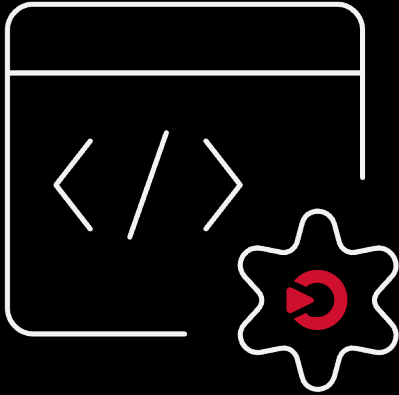
— Job Efficiency: CPU 0.8% | Memory 34.7% | Time 17.4%

Metrics	Efficiency	Allocated	Used	Other
CPU	0.75%	1.0 CPU Hrs	0.01 CPU Hrs	Walltime 0.18 CPU Hrs
Memory	34.7%	0.49G	0.17G	N/A
Time	17.34%	01H:00m	00H:10m	Waiting Time 00m:00s
GPU	N/A	0.0 GPU Hrs	N/A	Walltime 0.0 GPU Hrs

Slurm Exit status: CANCELLED by 502

For debugging purposes, this card will be retained for 6 more days

# OnDemand Features Code Customizations



OOD v1.3.2  
Oct 2017

Initializers & Views Support



OOD v2.0.1  
Apr 2021

Configurable Widgets



OOD v3.1.0  
Jan 2024

\*lib\* Folder Support



OOD v4.0.1  
Feb 2025

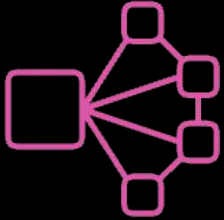
Widget Partials



OOD v4.0.2  
????

Plugins

# OnDemand Widget Partial



More Dynamic and Flexible Customizations

Widgets Partial enable developers to directly call and render widgets, acting as a Web Service for dynamic UI components.



## HTML Snippets

Enables on-the-fly HTML generation for responsiveness



## Webservice

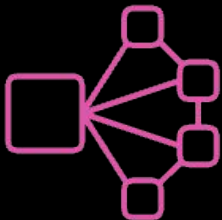
Capable of loading and storing data in any format.



## User Experience

Facilitates creating richer and more interactive workflows

# OnDemand Widget Partials



## Controller

/pun/sys/dashboard/widgets/<widget\_path>



## widget\_path

Indicates widget location in the OOD views/widgets folder

The screenshot shows the Open OnDemand web interface at [https://localhost:33000/pun/sys/dashboard/batch\\_connect/sessions](https://localhost:33000/pun/sys/dashboard/batch_connect/sessions). The navigation bar includes links for Open OnDemand, Files, Jobs, Clusters, Interactive Apps, and My Interactive Sessions. The main content area displays a list of interactive sessions under the heading "My Interactive Sessions".

**Home / My Interactive Sessions**

**Favorites**

- 9e752b3e-4e28-4a1d-9ba4-198d5d266bb7
- fb3ef806-078c-463a-957b-392e79d11980

**★ Remote Desktop (2)** Completed | [Edit] | [Refresh]

**Created at:** 2025-03-11 11:03:11 UTC

**Session ID:** fb3ef806-078c-463a-957b-392e79d11980

**Problems with this session?** [Submit support ticket](#)

For debugging purposes, this card will be retained for 7 more days

**★ Rstudio Dev (1)** Completed | [Edit] | [Refresh]

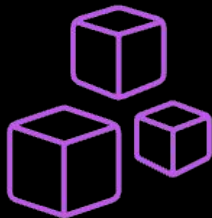
**Created at:** 2025-03-11 11:02:51 UTC

**Session ID:** 9e752b3e-4e28-4a1d-9ba4-198d5d266bb7

**Problems with this session?** [Submit support ticket](#)

For debugging purposes, this card will be retained for 6 more days

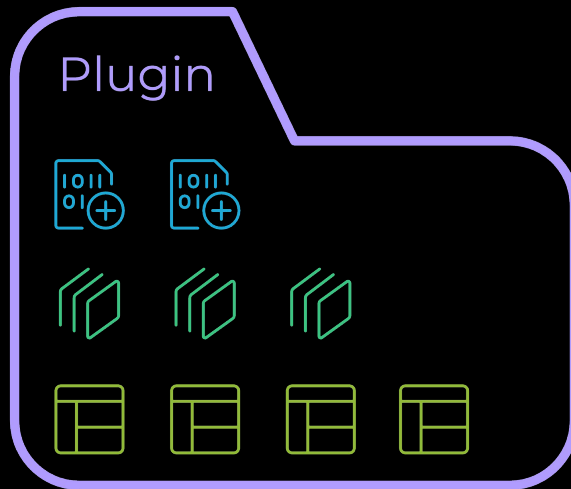
# OnDemand Plugins



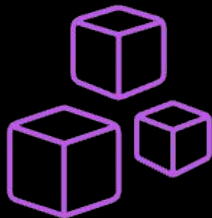
New mechanism for deploying code-based customizations by grouping related components into a self-contained folder.

This folder is deployed as an independent customization.

And this is now known as a plugin.



# OnDemand Plugins



What are we trying to improve?

Different customizations are deployed together in shared directories, making it harder to manage, troubleshoot, and maintain individually.

This approach complicates support efforts and increases the risk of conflicts.



/etc/ood/config/apps/dashboard



## Initializers

Configuration classes and setup code



## Lib

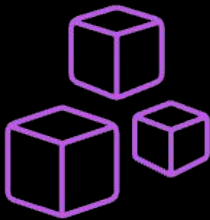
Utility functions and feature core classes



## Views

Custom templates and widgets

# OnDemand Plugins



## Inspiration for Plugins

Follow a well-established pattern for managing customizations.

Just like Interactive and Passenger apps in OnDemand are installed, developed, and managed independently, we wanted this approach for customizations.

To ensure a modular, practical, and maintainable solution.



/etc/ood/config/plugins



Plugin

### Metrics\_Widget

Code and templates for Slurm metrics widget



Plugin

### Favorite\_Sessions

Adds favorites functionality to interactive sessions



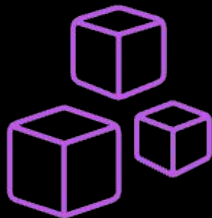
Plugin

### IQSS\_Guide

Widget with content for the IQSS guide



# OnDemand Plugins



## More Manageable Customizations

Customizations can now be neatly organized into individual folders instead of being grouped together in the same directory .



### Installation

Simplify deployment and management of customizations



### Development

Improve development and organization of customizations



### Community

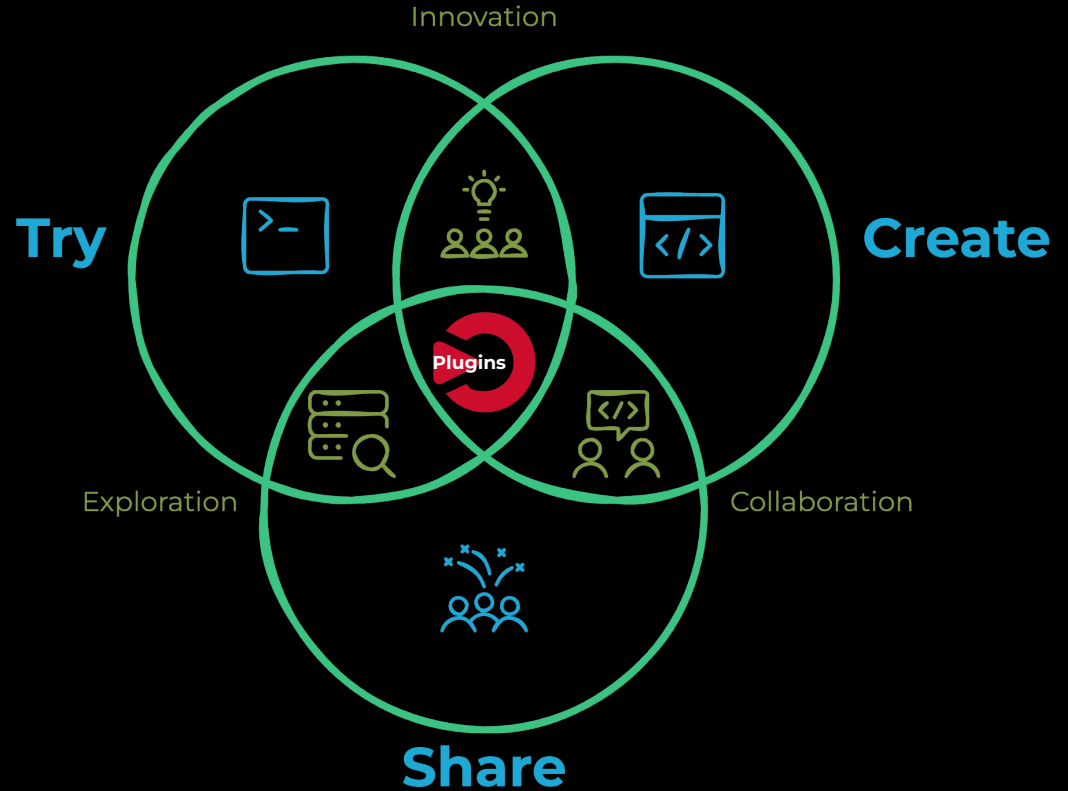
Boost community contributions and engagement

# Summary

## OnDemand Plugins

Build tailored OnDemand experiences with a feature-rich ecosystem of plugins

Boost community engagement, collaboration and contributions



Thank You



Research Computing



Supercomputer  
Center

OPEN

nDemand

the agile  
monkeys.