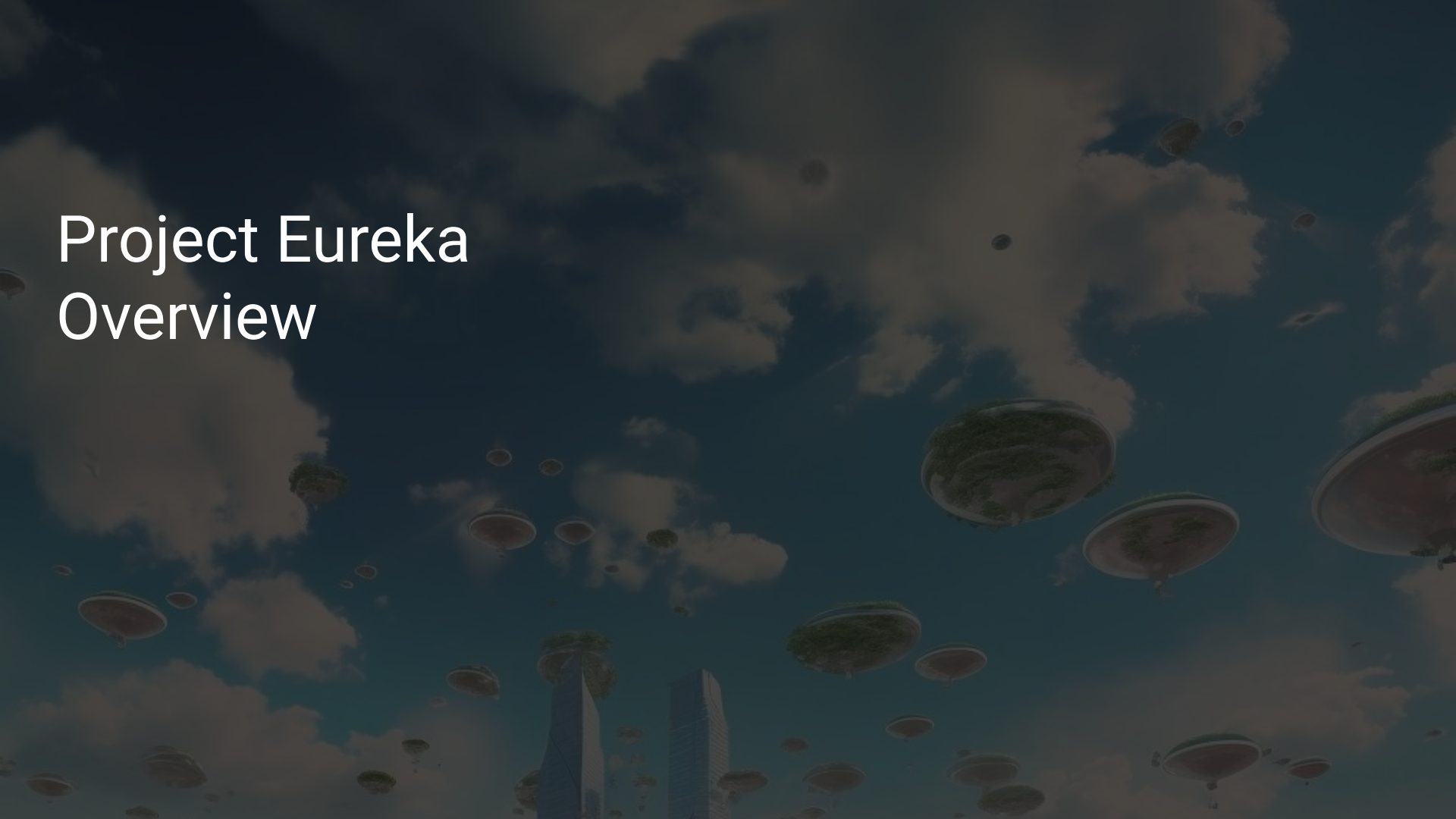
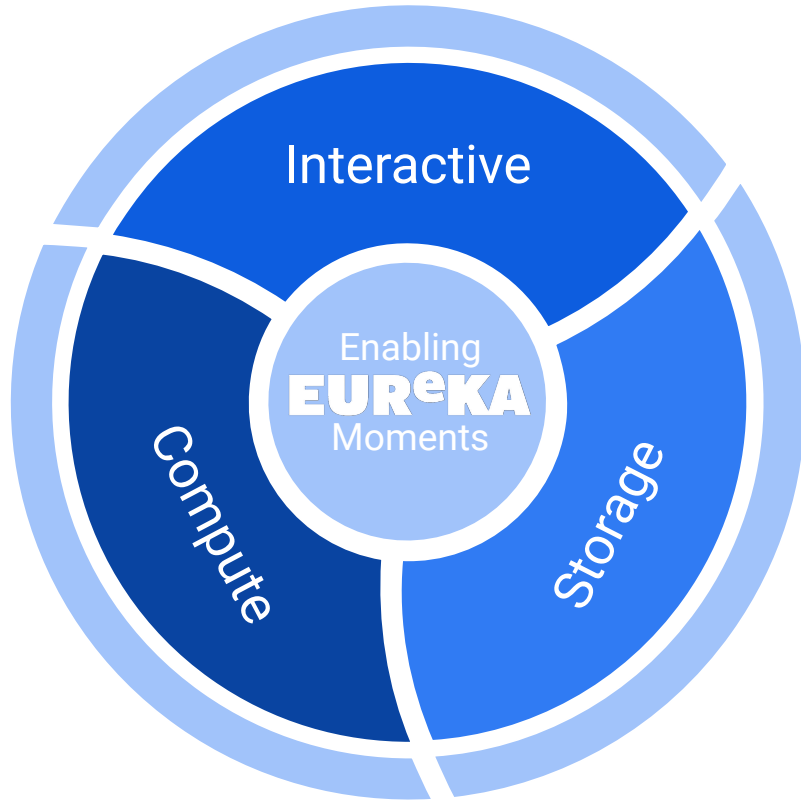


Project Eureka Overview



Project Eureka Vision

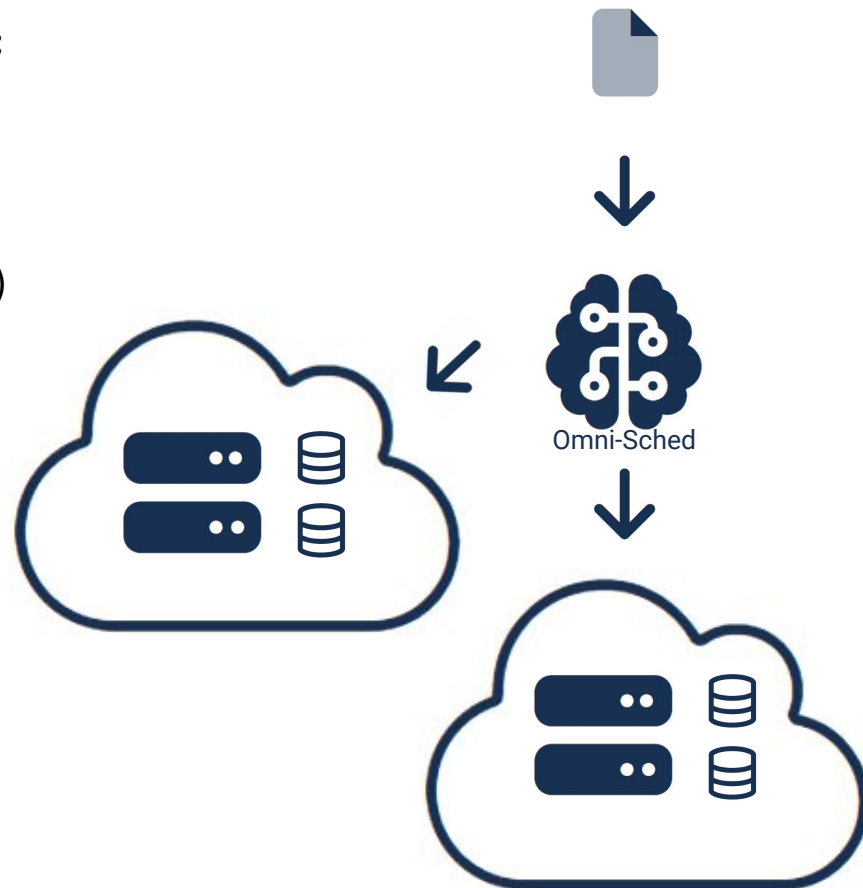


- **Interactive Applications**
 - Applications & Launchers
 - API Applets & SaaS Apps
 - Project Focused
- **Computational Apps**
 - **Compute Anywhere** (HPC, AI, & Beyond)
 - **Enable Cloud Specialties**
 - **Simplify Compute and Storage Interactions**
- **Storage Integration**
 - **Integrate Diverse Storage Resources**
 - **Collaborate First**
 - **Project Level Data Lifecycle**

The Omni-Scheduler Approach

Expand meta-scheduler concept (OmniSched) to handle:

- Dynamic Scratch
 - Driven by job Directives
- Data Staging
 - Driven by Job Directives (Input Data & Results)
- Beyond HPC
 - Data Science & Engineering Apps
 - HPC adjacent (publishing, websites, etc..)
 - Generative AI
 - Enable Apache Spark
 - K8s
- Scheduling Data Movements
 - iRODS integration
- Cross Cloud - leveraging Constellation / TerraForm
 - Enable On-Prem (TF -> kvm)
- Job routing between locations



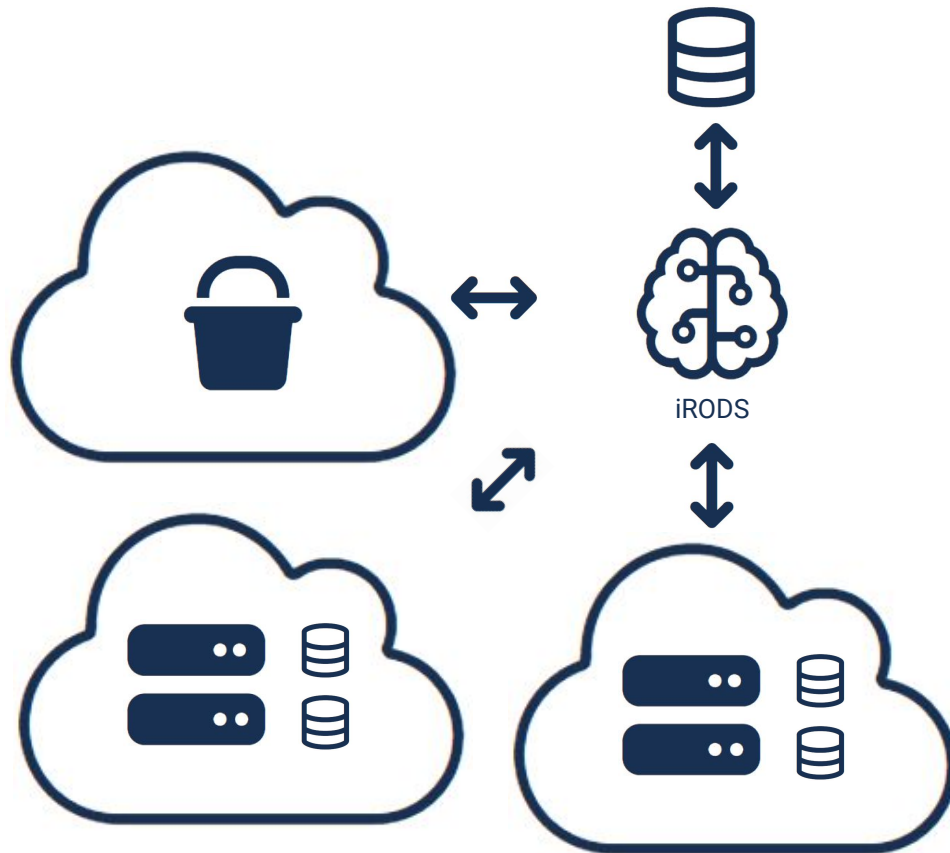
The Integrated Data Management

In addition to job based directives

Data Management Capabilities

- Replicate
- Archive
- Ingest
- Tier
- Publish

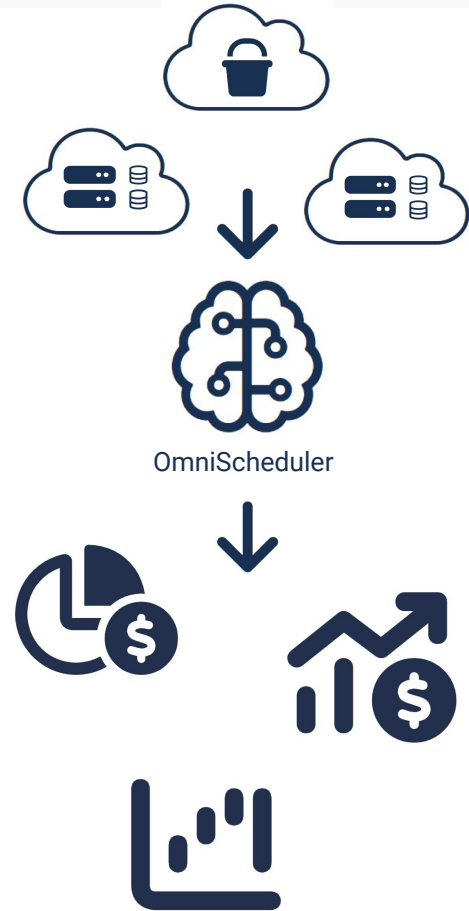
All configured in Eureka/OOD
with iRODS



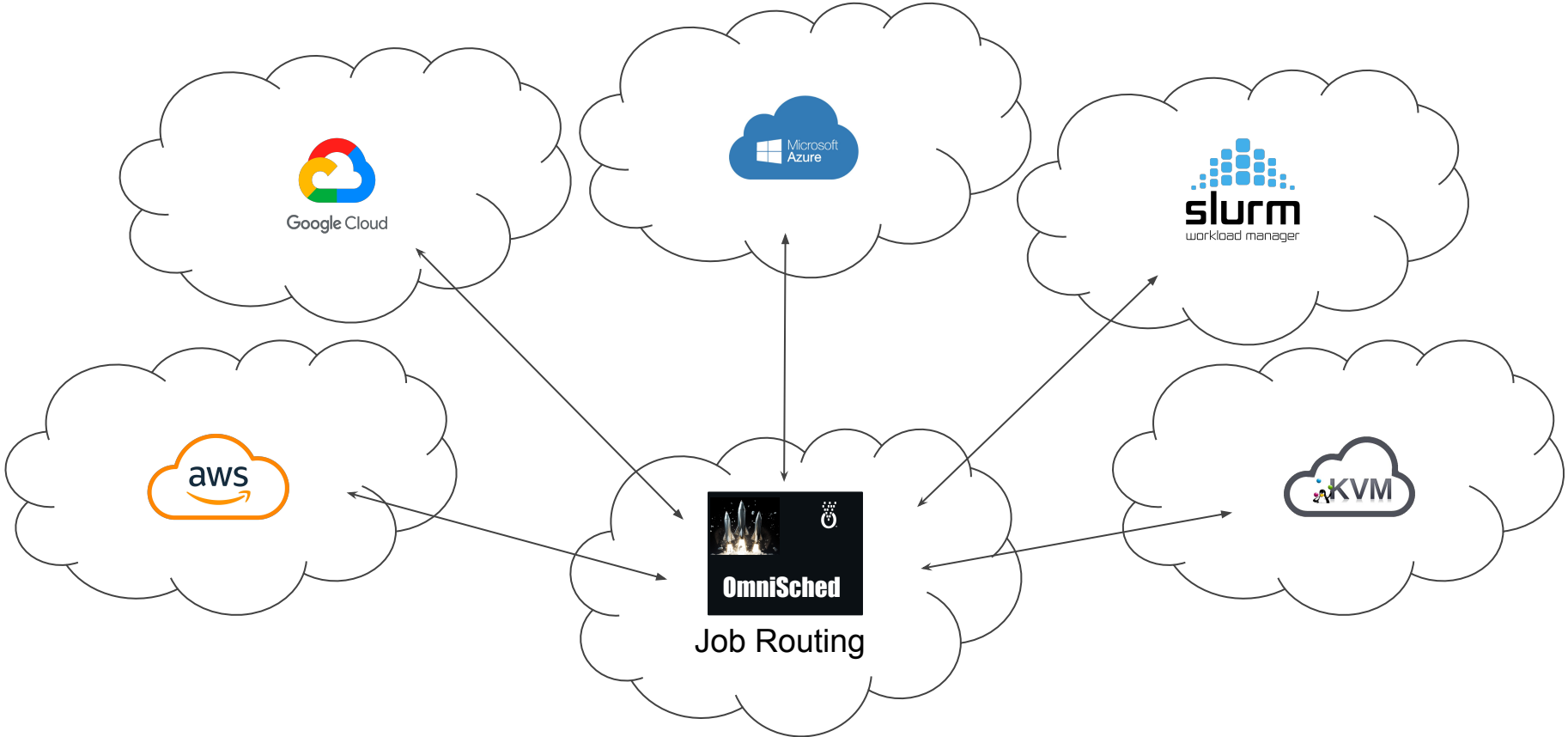
The Integrated Budget Management

Budget Management

- Person
- Project
- Department
- Limits with Actions
- Tag Integration with Cloud Providers Billing

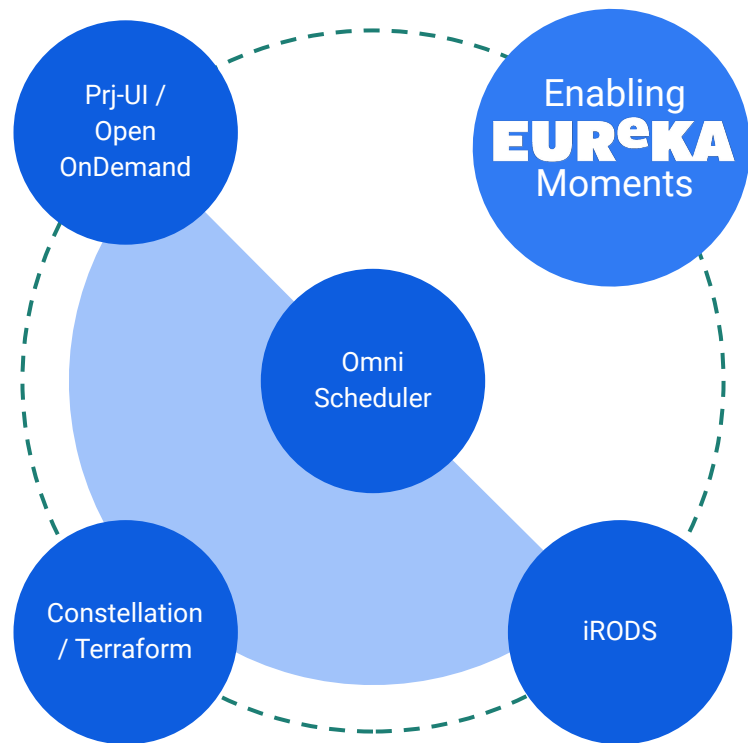


Multi-Cloud Architecture



Technology

- **Project UI with Open OnDemand**
 - HPC Industry Standard
 - Project-UI - Simplify & Empower
- **iRODS**
 - Metadata Driven Data Management & Movement
 - Designed for Diverse Storage
- **Constellation Driven Terraform**
 - Vendor Supported Interfaces
 - Multi-Cloud Enabler
- **Omni-Scheduler**
 - Coordinates UI, Storage, & Compute

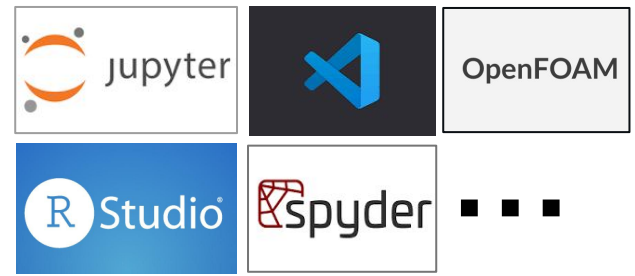


Overarching Architecture

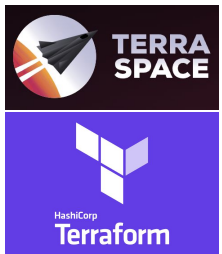
Project Based UI



Interactive and HPC Apps



Cloud Integration



Integrated Storage



Eureka User Experience

CloudyCluster Files Jobs Clusters Interactive Apps

OPEN
OnDemand & CloudyCluster

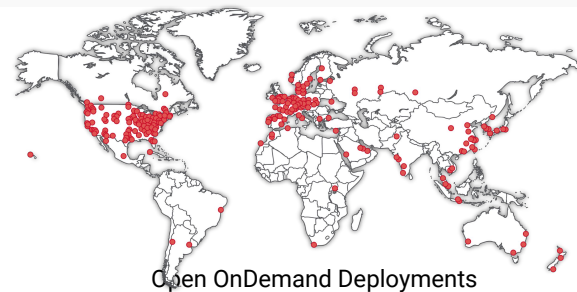
OnDemand provides an integrated, single access point for all of your HPC resources.

Message of the Day

With Open OnDemand you are able to leverage a graphical user interface, while accessing the power of High Performance Computing With CloudyCluster. Other benefits include:

- Startup Interactive Resources, like Jupyter Notebook and Virtual Desktops
- File access which resembles Windows, MacOS and Linux file managers
- Job Composer tool to help build your job script files

This material is based upon work supported by the [National Science Foundation](#) under grant numbers 1534949 and 1835725, and under active development by a team from the [Ohio Supercomputer Center](#), [U. of Buffalo CCR](#), and [Virginia Tech](#)



Data Science Platform BW

Active Projects

Advanced Discovery

MIACDFBW Collaborators: 1 Running, 2 Cores, 0 GPUs

| Sessions | State | Cores | GPUs | Time |
|----------|-------|-------|------|--------|
| VS Code | | 2 | 0 | 0h 18m |
| Desktop | | 0 | 0 | 0h 11m |
| VS Code | | 0 | 0 | 0h 11m |
| RStudio | | 0 | 0 | 0h 8m |

Data Science

MIACDFBW Collaborators: 0 Running, 0 Cores, 0 GPUs

| Sessions | State | Cores | GPUs | Time |
|----------|-------|-------|------|------|
|----------|-------|-------|------|------|

NewProj

MIACDFBW Collaborators: 0 Running, 0 Cores, 0 GPUs

| Sessions | State | Cores | GPUs | Time |
|----------|-------|-------|------|------|
|----------|-------|-------|------|------|