

project EUREKA!

AI Supercomputer Anywhere

TAMU Briccs 2025

Boyd Wilson
Boyd at omnibond.com

Omnibond

Software for the real world

Omnibond History & Background

Omnibond

a customer-focused software
product engineering and
support company

Sprouted from Academia (Clemson)

The principals have over 40 years combined experience in facilitating and supporting academic and corporate research using large-scale computing and data handling.

Technology & Product Experience:

- Expert Library Manager (ExLM)
- Identity Manager
(Novell, Microfocus, opentext)
- TrafficVision (DOTs, Tollways)
- OrangeFS (orangefs.org)
- Adaptive Framework(AFW.tools)
- CloudyCluster
(We want “all this” but on-prem)
- ProjectEuerka

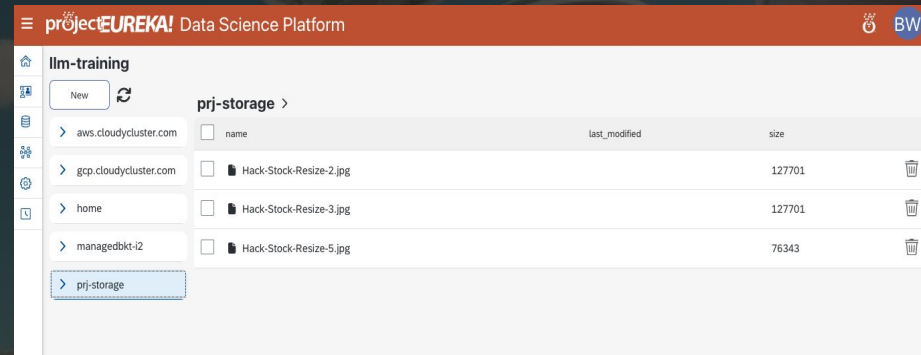
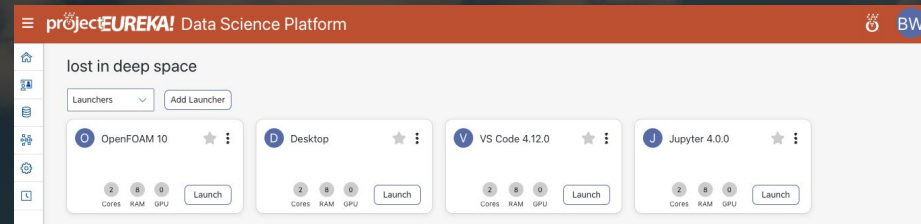
projectEUREKA!

Integrated tools for:
Data - Compute - Interactive

Free for
non-commercial R&E

- Part of the business model
- Support, services, customization and future premium add-ons will be available

Looking for Beta Test
Sites



project EUREKA!

AI Supercomputer Anywhere



AI-Driven Transformation Platform

Unleash innovation with an AI platform built for workgroups and projects. -- throughout the enterprise

Seamless Data, Workload and Compliance Control

Orchestrate AI, simulations, and compute where your data lives or transfer data to where your GPUs are.

Flexible Deployment, Anywhere

On-prem or multi-cloud—send data and workloads across Kubernetes, AWS, Azure, Google Cloud, and Slurm.

Virtual Desktops for Science & Engineering

Run advanced applications alongside your data, effortlessly.

project *EUREKA!*

in 4 Part Harmony



**Multi-Cloud &
On-Prem**



**Workload
Orchestration**

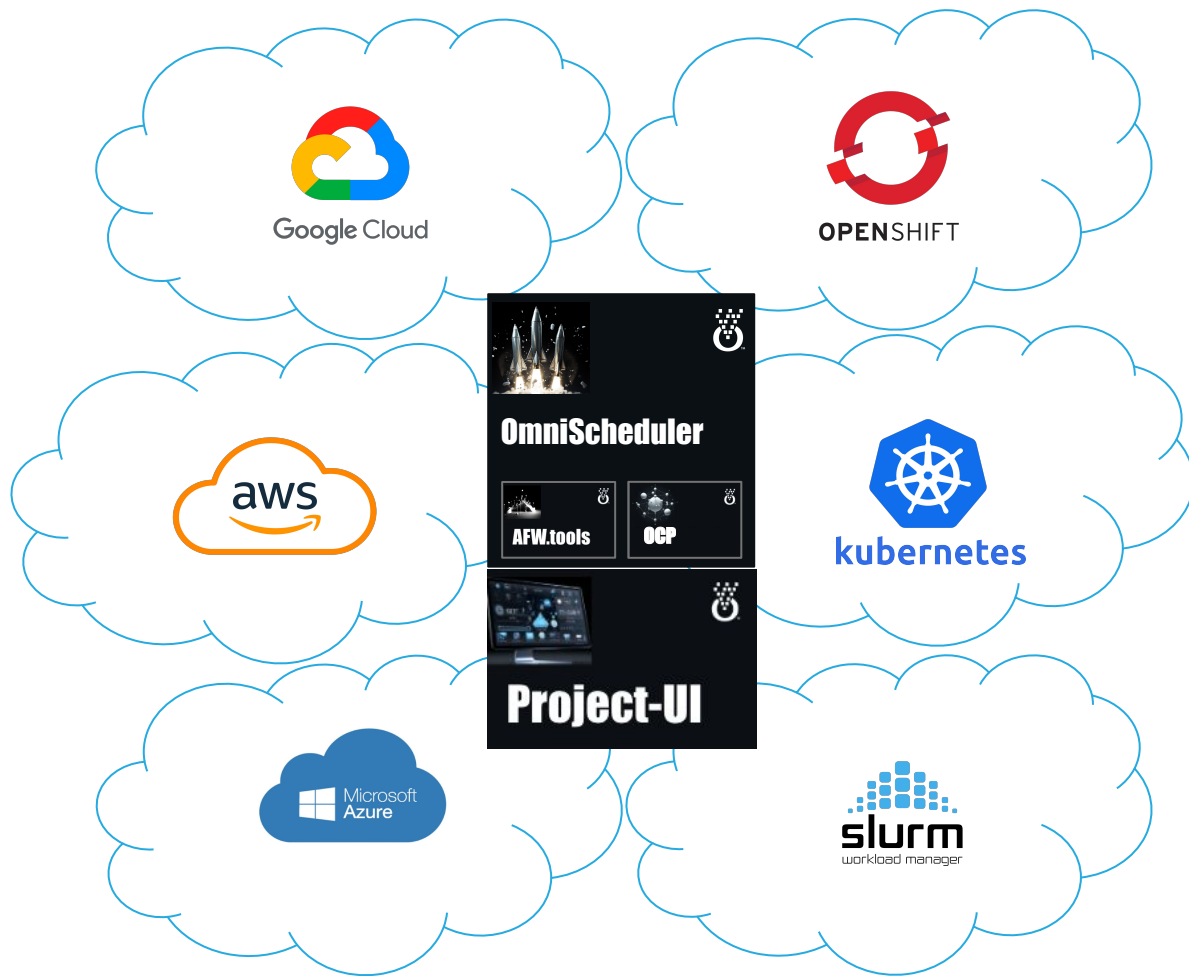


**Multi-Site
Data Orchestration**

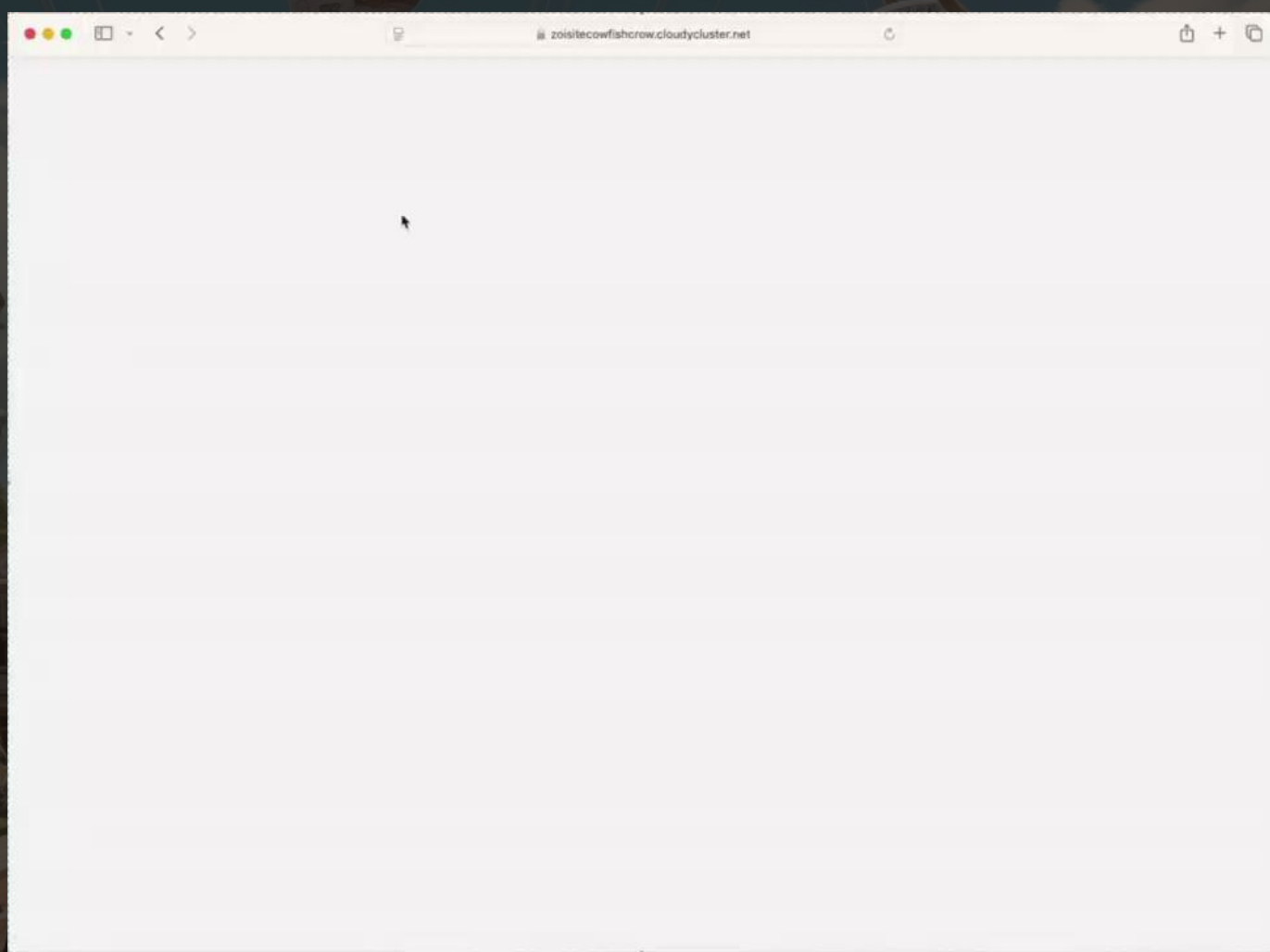


**Project
Organization**

Multi-Cloud & On-Prem

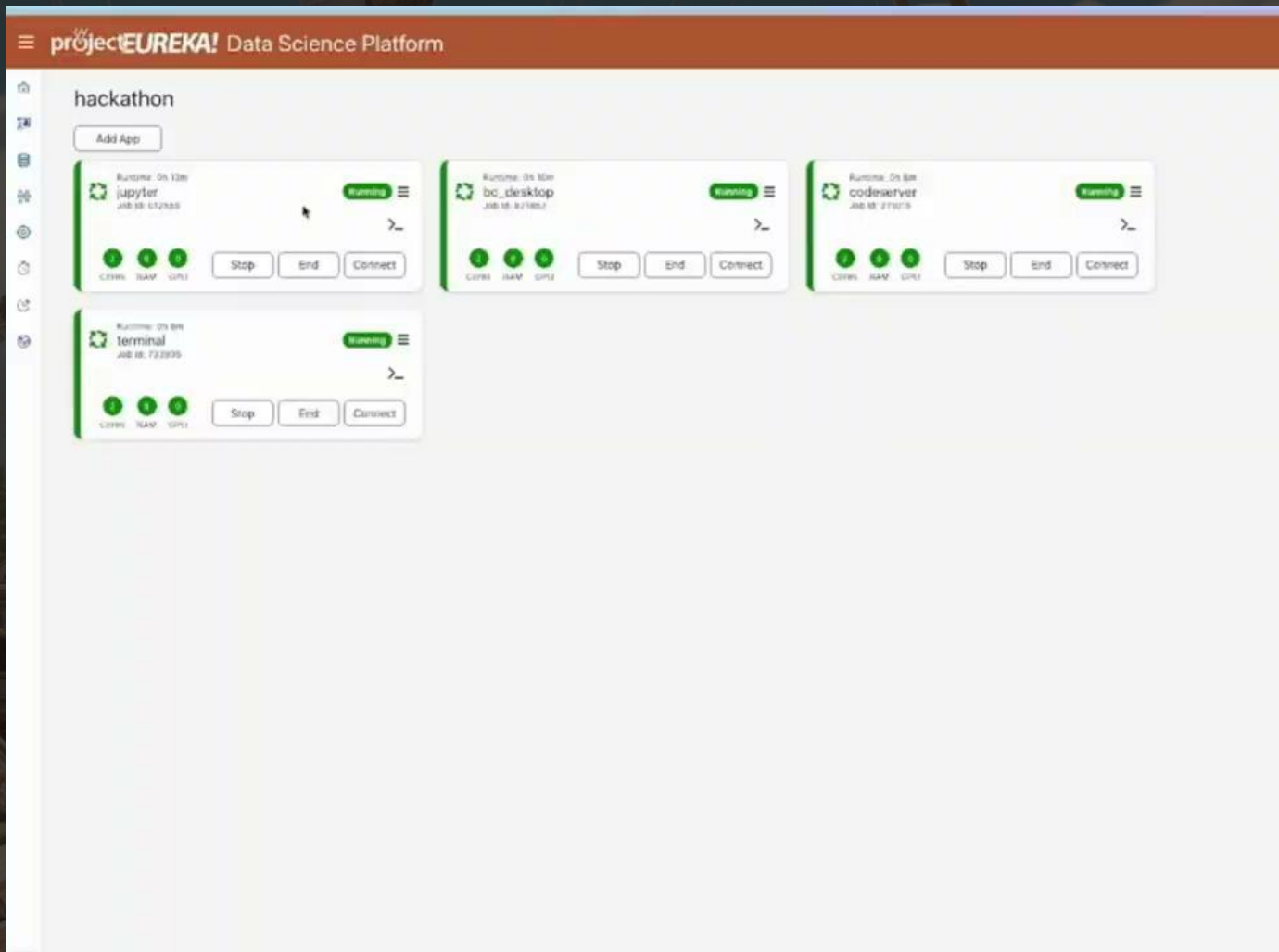


Project Centric User Management and Application Configuration



Data Adjacent Application Deployment

Jupyter Notebook Example



Data Adjacent Application Deployment

Linux Desktop Example

The screenshot displays the 'projectEUREKA! Data Science Platform' interface. The top navigation bar is orange with the platform name and a user profile icon labeled 'JP'. A left sidebar contains icons for home, user, data, applications, settings, clock, refresh, and search. The main content area is titled 'Ollama Environment' and features an 'Add App' button. Below this, three application cards are shown, each with a green 'Running' status indicator and a menu icon. The first card is for 'terminal' (Job id: 972565), the second for 'jupyter' (Job id: 984334), and the third for 'bc_desktop' (Job id: 518038). Each card displays resource usage: 2 Cores, 8 RAM, and 0 GPU. At the bottom of each card are 'Stop', 'End', and 'Connect' buttons. A mouse cursor is hovering over the 'Connect' button for the 'bc_desktop' application.

projectEUREKA! Data Science Platform

Ollama Environment

Add App

terminal
Runtime: 0h 14m
Job id: 972565
Running
2 Cores 8 RAM 0 GPU
Stop End Connect

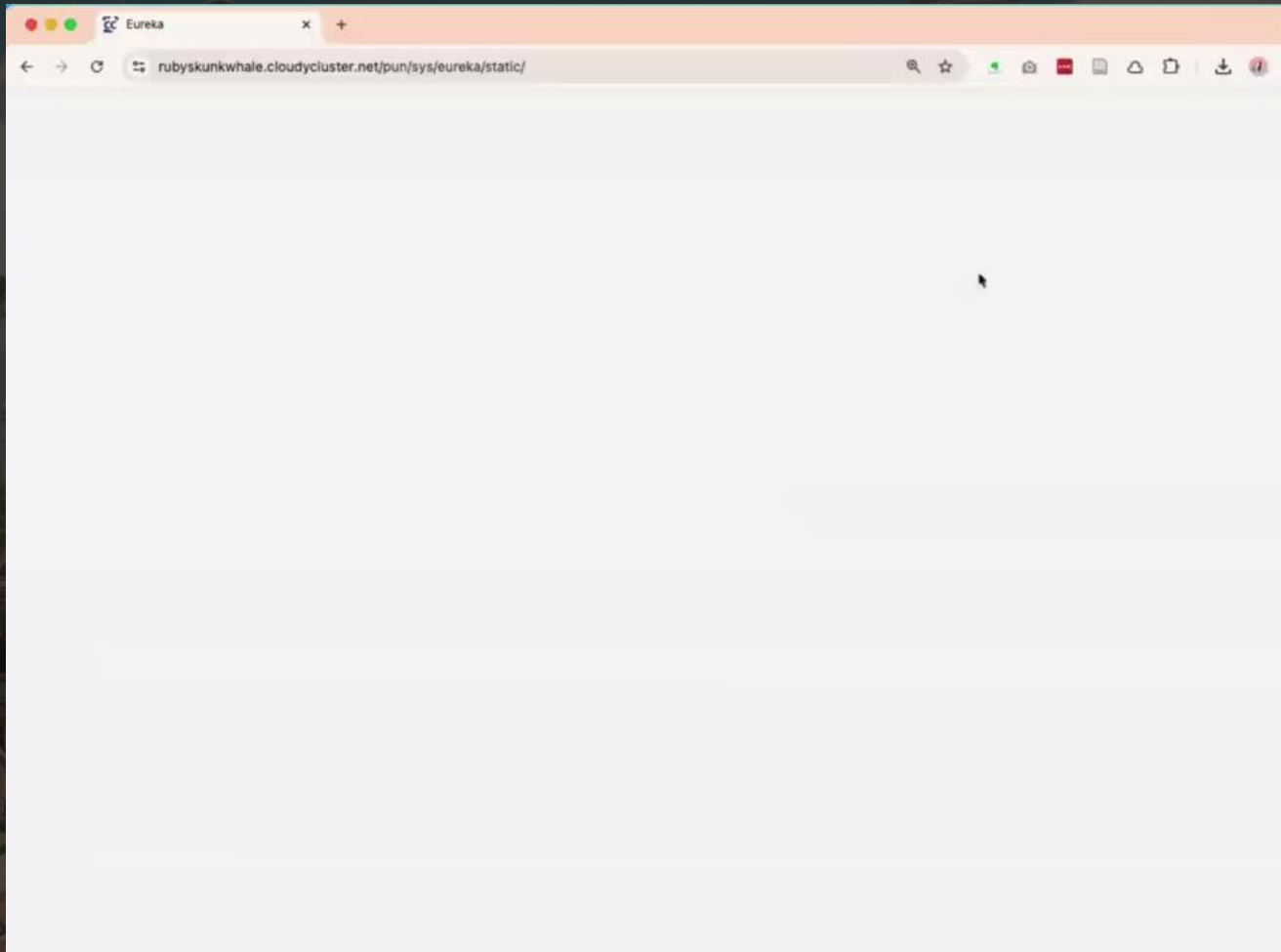
jupyter
Runtime: 0h 14m
Job id: 984334
Running
2 Cores 8 RAM 0 GPU
Stop End Connect

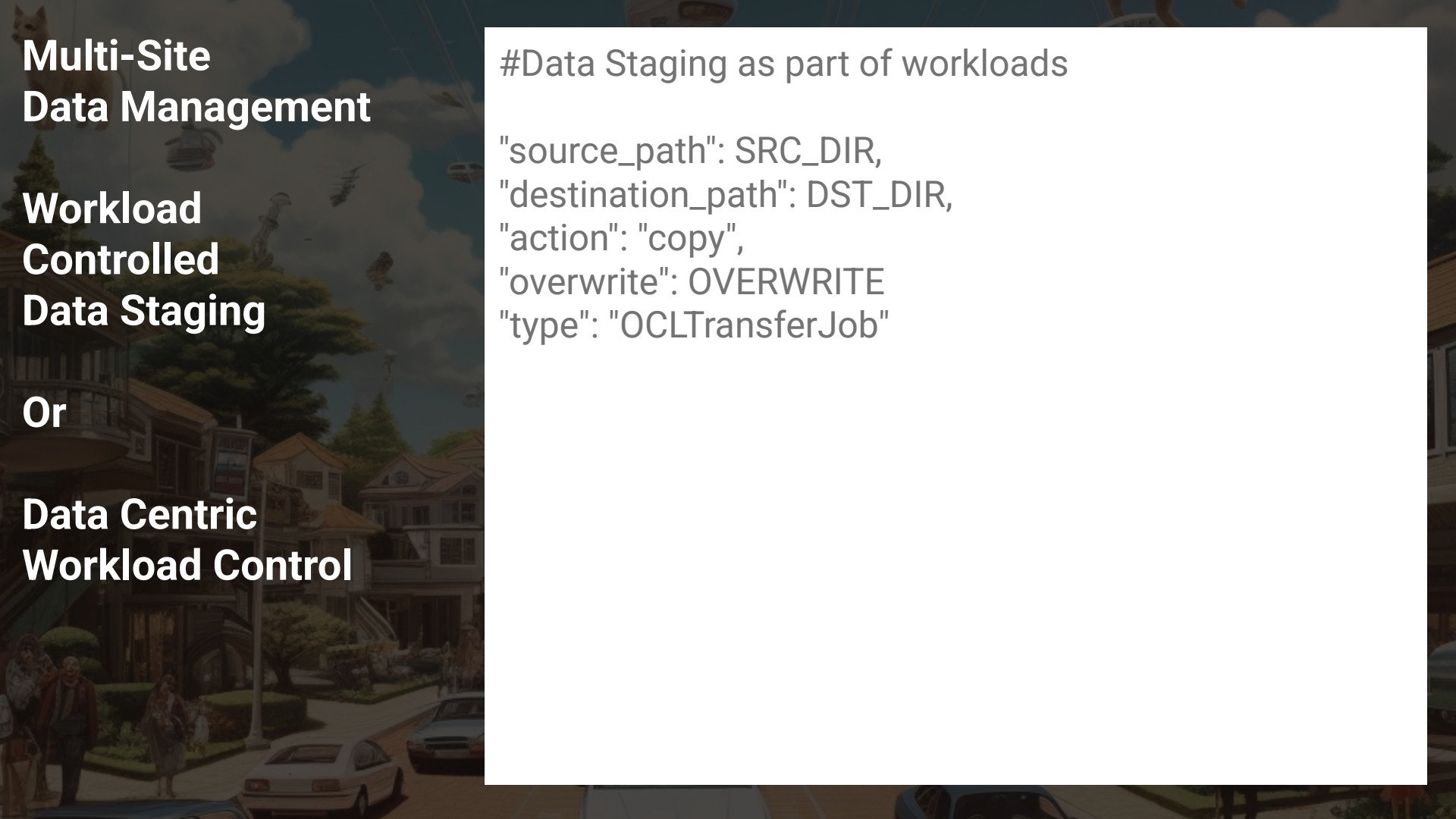
bc_desktop
Runtime: 0h 0m
Job id: 518038
Running
2 Cores 8 RAM 0 GPU
Stop End Connect

**Multi-Site
Data Management**

**Multi-Site
Storage Manager
UI**

**Object Storage
and Mounted
File System
Compatible**





**Multi-Site
Data Management**

**Workload
Controlled
Data Staging**

Or

**Data Centric
Workload Control**

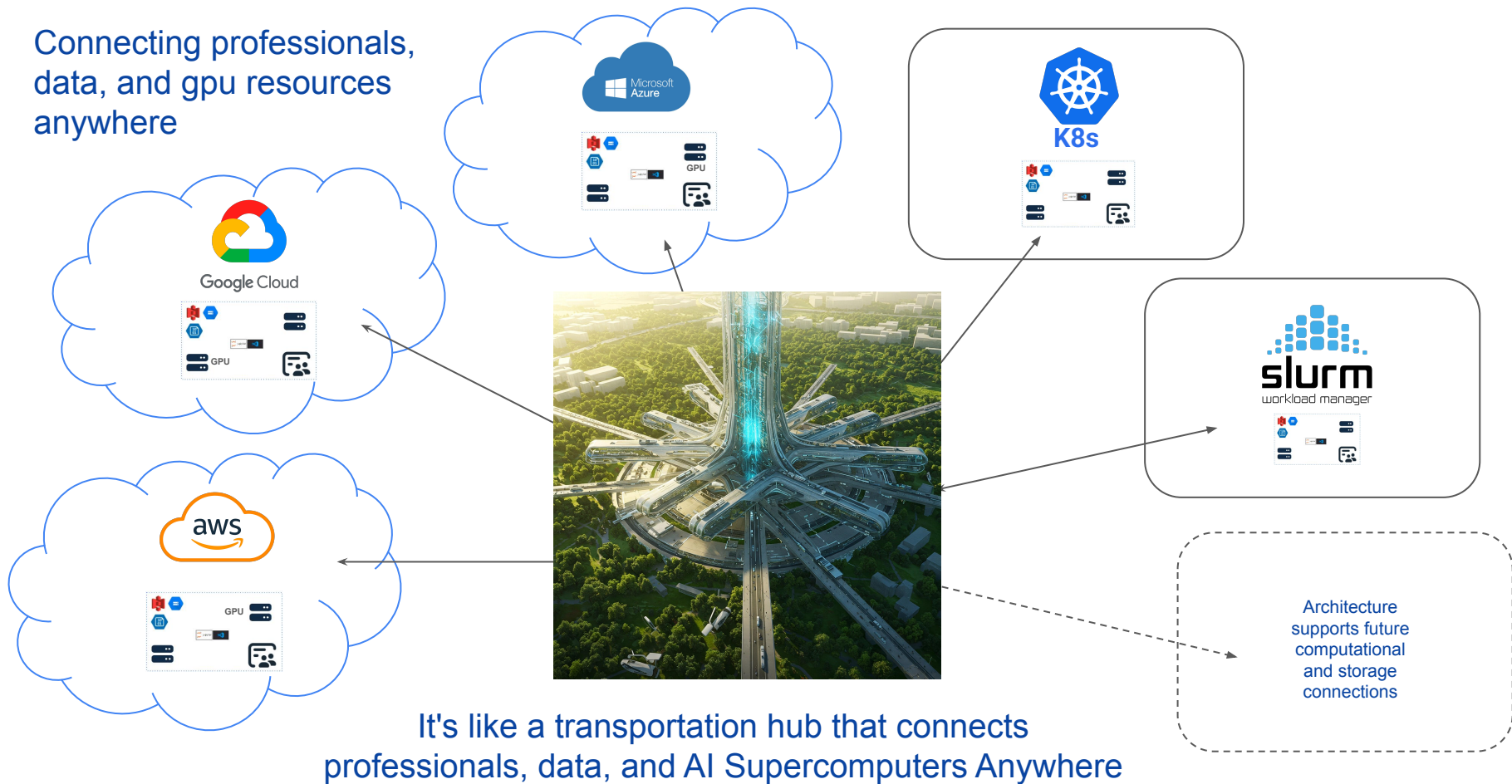
#Data Staging as part of workloads

```
"source_path": SRC_DIR,  
"destination_path": DST_DIR,  
"action": "copy",  
"overwrite": OVERWRITE  
"type": "OCLTransferJob"
```

AI Supercomputer Anywhere

project **EUREKA!**

Connecting professionals,
data, and gpu resources
anywhere

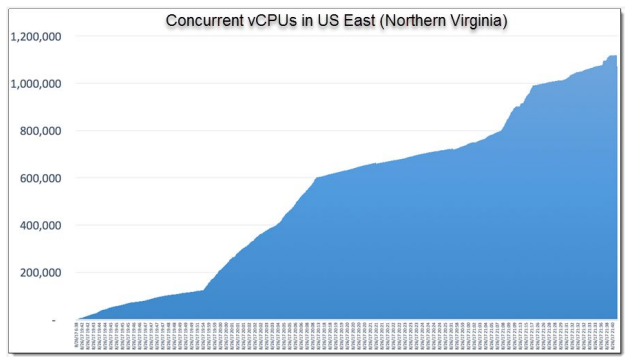
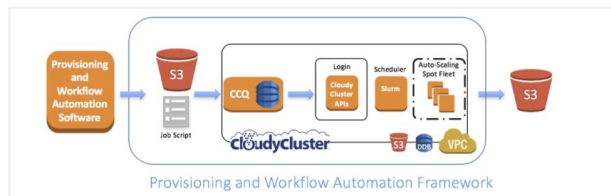


It's like a transportation hub that connects
professionals, data, and AI Supercomputers Anywhere

Scaling Projects

AWS News Blog

Natural Language Processing at Clemson University –
1.1 Million vCPUs & EC2 Spot Instances



Google Blog Post

Cloud against the storm: Clemson's 2.1 million VCPU experiment

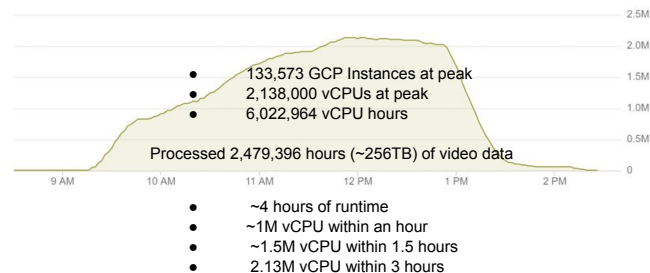
<https://cloud.google.com/blog/topics/hpc/clemson-experiment-uses-2-1-million-vcpus-on-google-cloud>



Urgent HPC can Burst Affordably to the Cloud

<https://www.nextplatform.com/2020/01/08/urgent-hpc-can-burst-affordably-to-the-cloud/>

GCP CPU Core Ramp and Count



Total Cost: \$52,598.64 USD

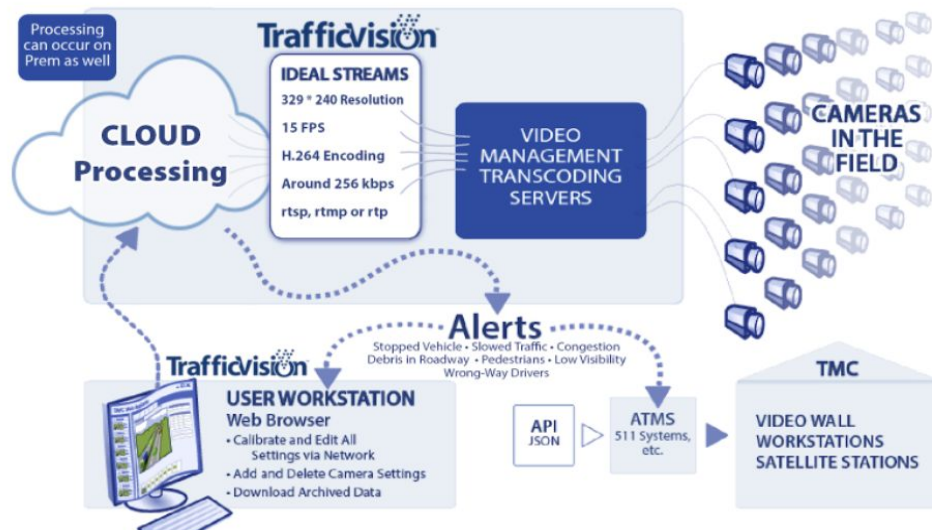
Average cost of \$0.008 USD per vCPU hour



TrafficVision®

Real-Time AI

TrafficVision®



Features

Incident Detection

- Stopped Vehicle
- Slowed Traffic
- Debris in Roadway
- Low Visibility
- Pedestrians
- Wrong-Way Drivers*

Alerts, Incident Images & Clips

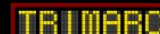
Real-Time Data Collection

- Speeds Per Lane / Per Direction
- Vehicle Counts Per Lane / Direction
- Lane Occupancy and Density
- Congestion Index
- Classification:

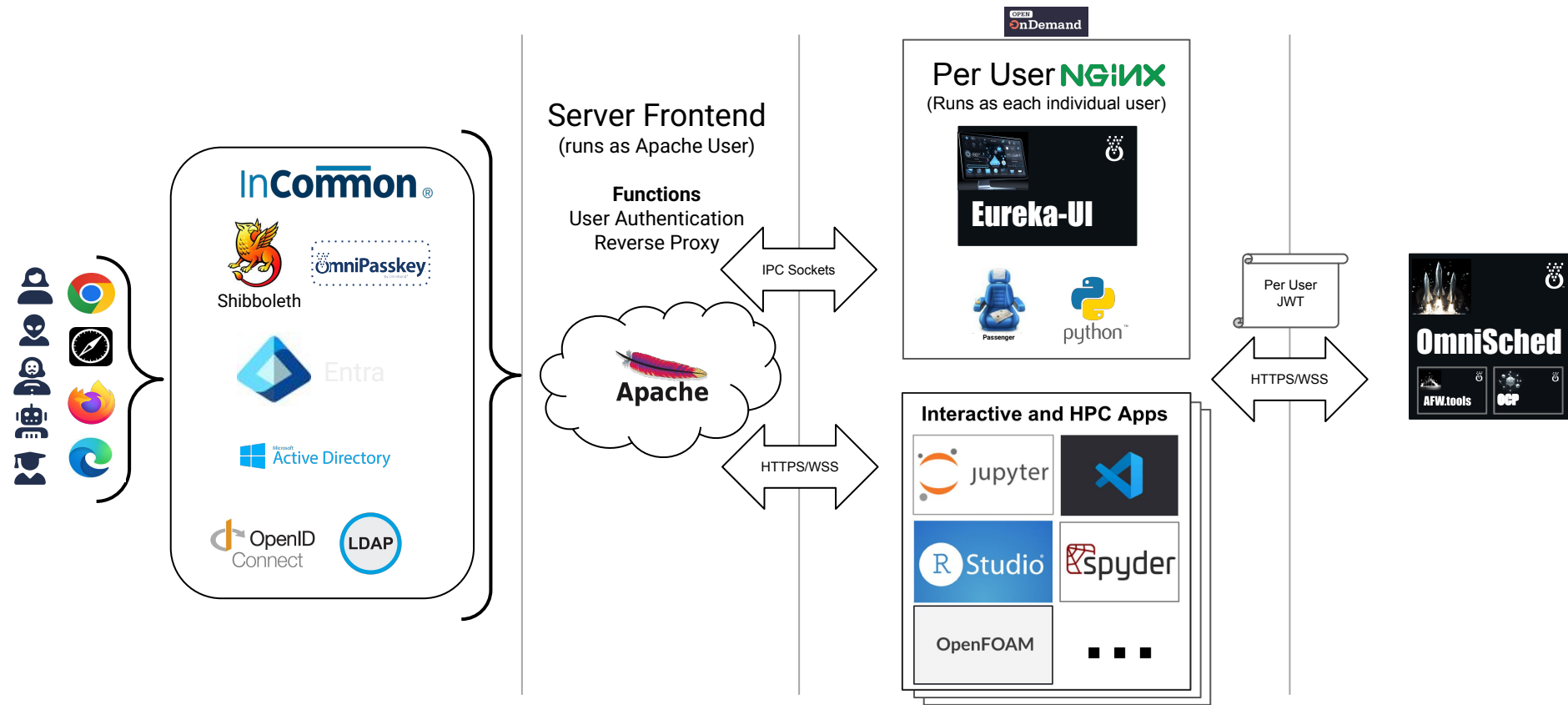
**Motorcycle / Car / Truck / Large Truck

Data CSV export & JSON API

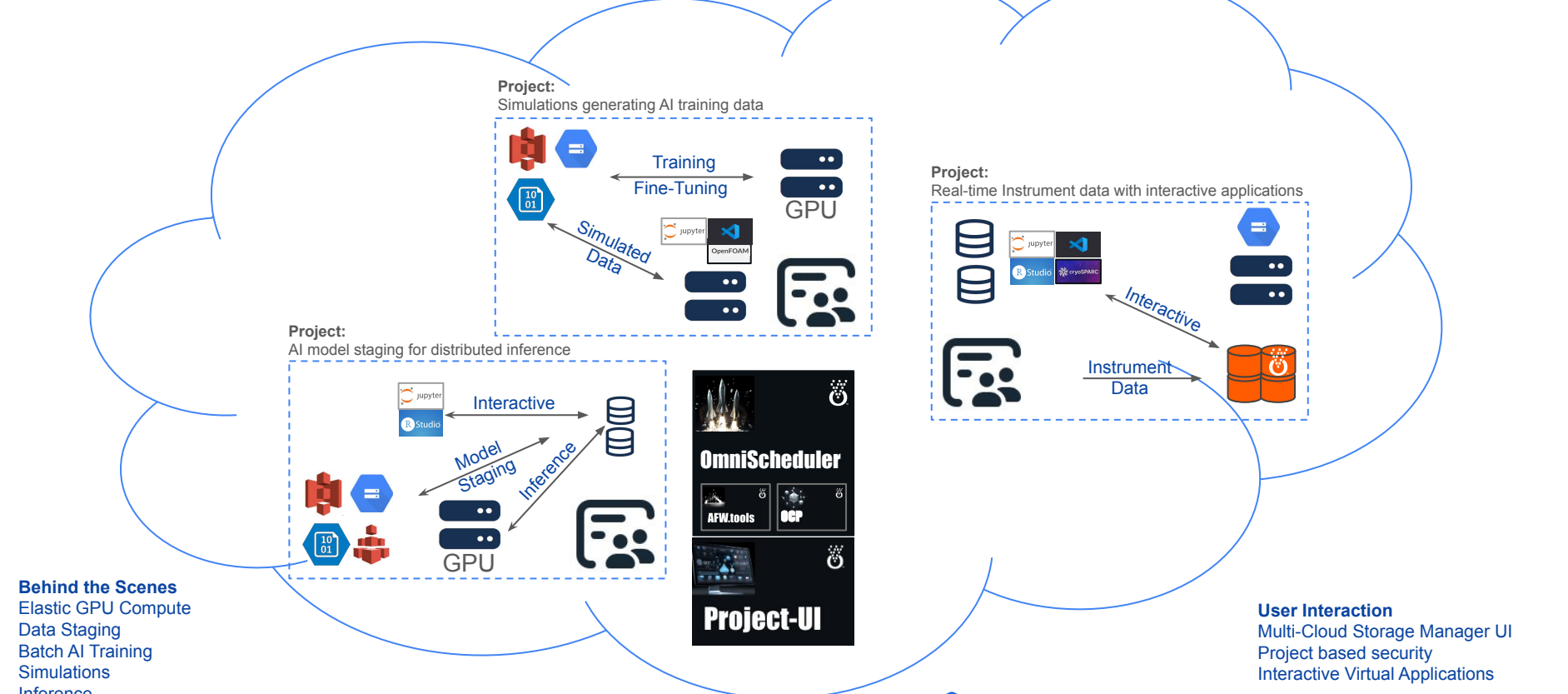
Customers



User-Level Security Architecture (Based on Open OnDemand)



Project Oriented Architecture



Behind the Scenes
 Elastic GPU Compute
 Data Staging
 Batch AI Training
 Simulations
 Inference

User Interaction
 Multi-Cloud Storage Manager UI
 Project based security
 Interactive Virtual Applications



Thank You! Questions?

Beta Sign Up: projecteureka.ai

Please Connect!

Boyd Wilson

Boyd at omnibond.com

linkedin.com/in/boydwilson

x.com/boydwilson

Instagram.com/boydfryguy