

Introduction to OpenStack and Jetstream(2)

Marty Kandes, Ph.D.

Computational & Data Science Research Specialist
High-Performance Computing User Services Group
San Diego Supercomputer Center
University of California, San Diego

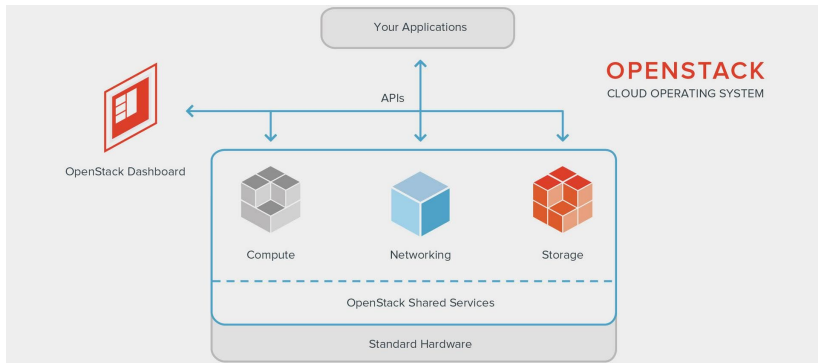
SDSC HPC/CI Training Series
Friday, March 4th, 2021
3:00 PM - 4:00 PM PST

Today

- ▶ What is OpenStack?
- ▶ What is Jetstream(2)?
- ▶ Getting Started with Jetstream
- ▶ Demo: Building a Singularity Container on Jetstream

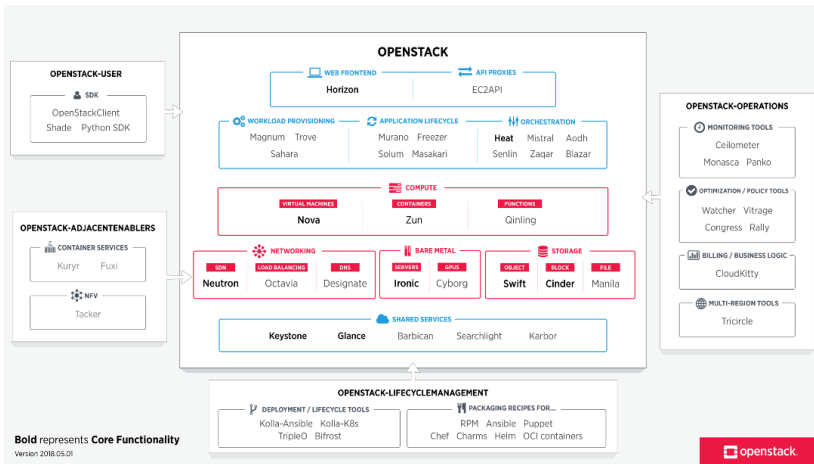


What is OpenStack?

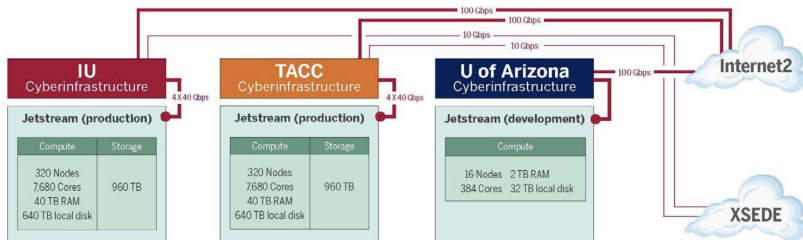


OpenStack is a cloud operating system that controls large pools of compute, storage, and networking resources throughout a datacenter, all managed and provisioned through APIs with common authentication mechanisms.

OpenStack Software Ecosystem

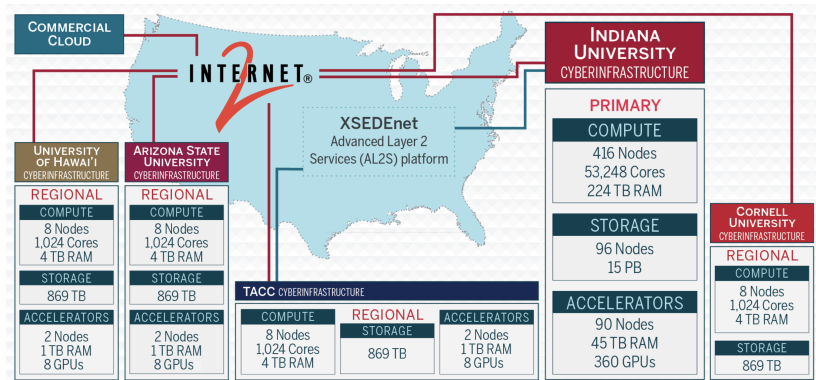


What is Jetstream? *Decommissioning Spring 2022*



Jetstream is XSEDE's OpenStack-based cloud computing environment designed to give researchers access to interactive computing and data analysis resources on demand, whenever and wherever they want to analyze their data.

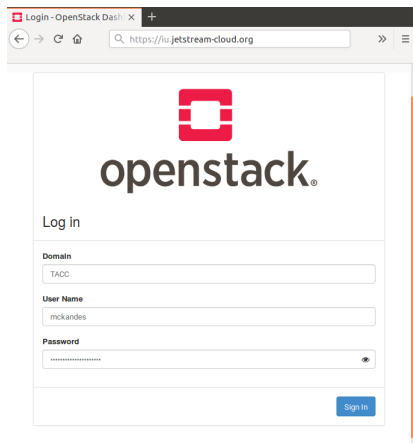
What is Jetstream2? *Production Early 2022*



Jetstream2 is NSF's next-generation OpenStack-based cloud computing platform for on-demand computing and data analysis.

Getting Started on Jetstream

- ▶ Step 1: Request a TACC Portal Account
- ▶ Step 2: Using the OpenStack Horizon GUI Interface
- ▶ Step 3: Creating an instance with a custom sized root disk in Horizon



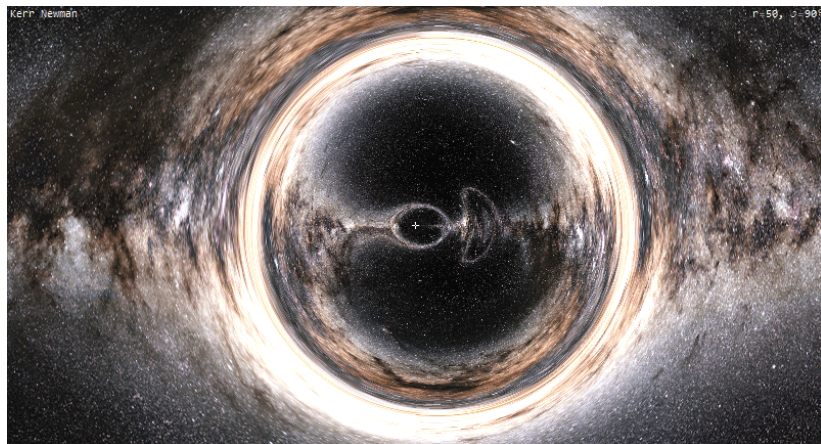


Our Jetstream Project is a Shared Account!

- ▶ We all have full access to the same project account on Jetstream.
- ▶ Please do not delete/modify/access any resources you have not created yourself without permission from either myself or the user who created them.
- ▶ If you do end up using Jetstream, please include your XSEDE username in the name (or label) of any resources you create to distinguish them from those created by other users.
- ▶ Always shutdown (or delete) your instances when they are not in use.



Demo: Building a Singularity Container on Jetstream



<https://github.com/mkandes/naked-singularity>

<https://iu.jetstream-cloud.org>

Additional References

- ▶ Jetstream2: <https://jetstream-cloud.org>
- ▶ Jetstream Public Wiki: <https://iujetstream.atlassian.net/wiki/spaces/JWT/overview>
- ▶ Introduction to Jetstream:
<https://cvw.cac.cornell.edu/jetstream>
- ▶ Using the Jetstream APIs:
<https://cvw.cac.cornell.edu/JetstreamAPI>
- ▶ Terraform on Jetstream
<https://cvw.cac.cornell.edu/JetstreamOrc>