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Jetstream2: Accelerating science and engineering on-demand

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NSF innovative computing technology testbed community exchange

PEARC22 – 12 July 2022

Jetstream2

Is Jetstream2 a “testbed?”

- No, but it’s a great place to test!
- Ease-of-use focus, rapid on-ramp to XSEDE/ACCESS
- **On-demand** interactive computing and persistent services for science gateways
- Enables configurable environments; **programmable cyberinfrastructure**

By Maria Morris: JS2 rear doors (lower) Banksy adaptation [non-commercial] (right)



Now with GPUs,
large-memory,
more faster PB!

Jetstream2



COMMERCIAL CLOUD

INTERNET®

INDIANA UNIVERSITY
CYBERINFRASTRUCTURE

XSEDEnet
Advanced Layer 2
Services (AL2S) platform

UNIVERSITY OF HAWAII
CYBERINFRASTRUCTURE

ARIZONA STATE UNIVERSITY
CYBERINFRASTRUCTURE

PRIMARY
Compute
416 Nodes 53,248 Cores 224 TB RAM
Storage
96 Nodes 14 PB
Accelerators
90 Nodes 45 TB RAM 360 GPUs

CORNELL UNIVERSITY
CYBERINFRASTRUCTURE

REGIONAL
Compute
8 Nodes 1,024 Cores 4 TB RAM
Storage
768 TB

TACC CYBERINFRASTRUCTURE
Compute
8 Nodes 1,024 Cores 4 TB RAM
REGIONAL
Storage
768 TB
Accelerators
2 Nodes 1 TB RAM 8 GPUs

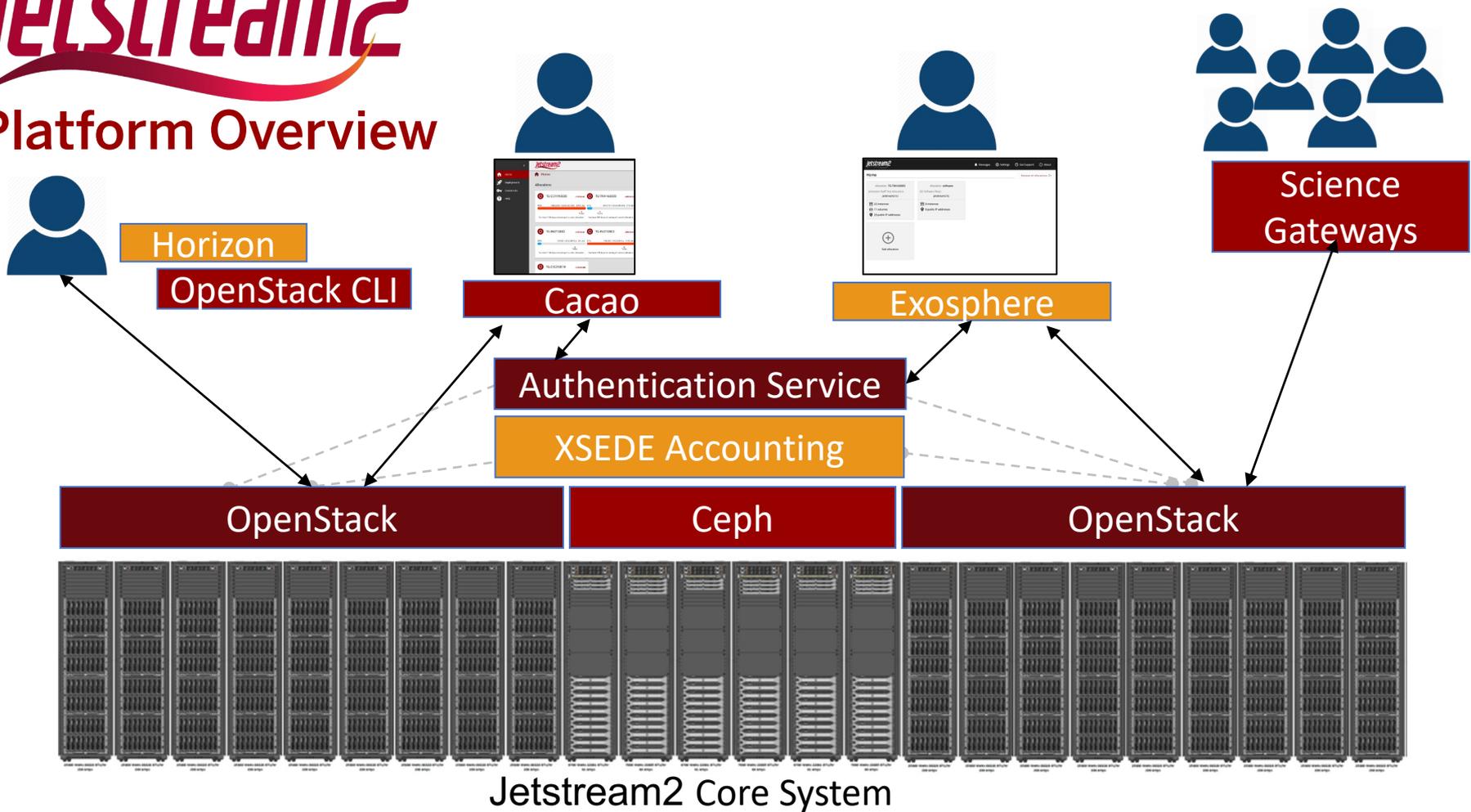
REGIONAL
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Jetstream2

Platform Overview



Home > Project TG-CCR190024

iu.jetstream-cloud.org - TG-CCR190024

Remove Allocation Create

Instances

Instances used 11 of 25 total Cores used 26 of 132 total RAM used 100 of 388 GB

Select All

- Ready formally_trusty_urchin
- Shelved optionally_certain_longhorn with GUI
- Ready wildly_united_mite

Hiding 8 Instances created by other users

Show

Volumes

Volumes used 2 of 10 total Storage used 279 of 1,100 GB

Home > Project TG-CCR190024 > instances > Instance formally_trusty_urchin

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Remove Allocation Create

Instance formally_trusty_urchin

Created 19 minutes ago / by user tg836338 / from image JS-API-Featured-CentOS8-Latest

Status Ready
UUID 2bc77f59-73bf-470f-95b6-51dc31d7577f
Flavor m1.small
SSH Public Key Name smart
IP addresses Public IP Address 149.165.157.3 Unassign

IP Details

Volumes Attached

(none)

Attach volume

Interactions

- Web Shell
- Web Desktop
- Native SSH: exouser@149.165.157.3
- Console

Password

Try logging in with username "exouser" and the following password:

Show password

Actions

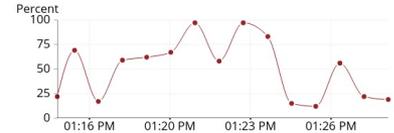
- Lock Prevent further instance actions until it is unlocked
- Suspend Save execution state to disk
- Shelve Shut down instance and offload it from compute host
- Image Create snapshot image of instance
- Reboot Restart instance
- Delete Destroy instance

Action History

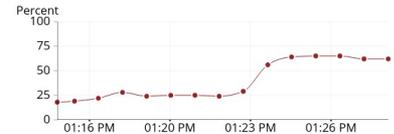
Action	Time
create	19 minutes ago (2021-10-26 20:10:54 UTC)

System Resource Usage

CPU Usage



Memory Usage



Early Operations Projects & Activity

- First PI invitations and projects added in early February 2022
- Followed push for all projects to migrate in May – July.
- June 2022: 245 projects and 1,144 individuals (391 students)
- Includes multiple science gateways and education/training allocations
- Entering “production” upon NSF approval
- Goal to retire Jetstream[1] this month



"Bike Exchange - 2009 IU Women's Little 500" by
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- Vendors, particularly Dell and NVIDIA, also deserve recognition for their efforts

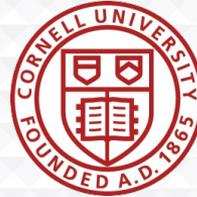


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Jetstream2 partners



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UNIVERSITY**



UCAR



<http://jetstream-cloud.org/>
National Science Foundation
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