



UNIVERSITY
of HAWAII
SYSTEM



HAWAII DATA SCIENCE

Jetstream 2 NSF's Next Generation of Cloud Computing

Dr. Sean Cleveland
Associate Director of Cyberinfrastructure

2023-04-14

Jetstream2



datascience.hawaii.edu



AI For Everyone

- The system is designed to be user-friendly for researchers who have limited experience with high performance computing (HPC) or cloud computing.
- It serves academic communities with no access to such resources
- It provides a uniquely flexible environment for researchers looking to take advantage of the latest cloud-native approaches.
- Also available for Education - use it for courses!

Jetstream2

COMMERCIAL CLOUD

INTERNET²

CONNECTnet
Advanced Layer 2
Services (AL2S) platform

INDIANA
UNIVERSITY
CYBERINFRASTRUCTURE

PRIMARY

Compute

416 Nodes
53,248 Cores
224 TB RAM

Storage

96 Nodes
15 PB

Accelerators

90 Nodes
45 TB RAM
360 GPUs

CORNELL
UNIVERSITY
CYBERINFRASTRUCTURE

REGIONAL

Compute

8 Nodes
1,024 Cores
4 TB RAM

Storage

869 TB

TACC CYBERINFRASTRUCTURE

Compute

8 Nodes
1,024 Cores
4 TB RAM

REGIONAL

Storage

869 TB

Accelerators

2 Nodes
1 TB RAM
8 GPUss

UNIVERSITY
OF HAWAII
CYBERINFRASTRUCTURE

REGIONAL

Compute

8 Nodes
1,024 Cores
4 TB RAM

Storage

869 TB

Accelerators

2 Nodes
1 TB RAM
8 GPUss

ARIZONA STATE
UNIVERSITY
CYBERINFRASTRUCTURE

REGIONAL

Compute

8 Nodes
1,024 Cores
4 TB RAM

Storage

869 TB

Accelerators

2 Nodes
1 TB RAM
8 GPUss

Accessing Jetstream2



Go To <https://jetstream-cloud.org/>

BUT before you can use Jetstream2 you must first get an Access ID an Allocation is required...



What is Access?



Provides Access to National Advanced Computing Resources

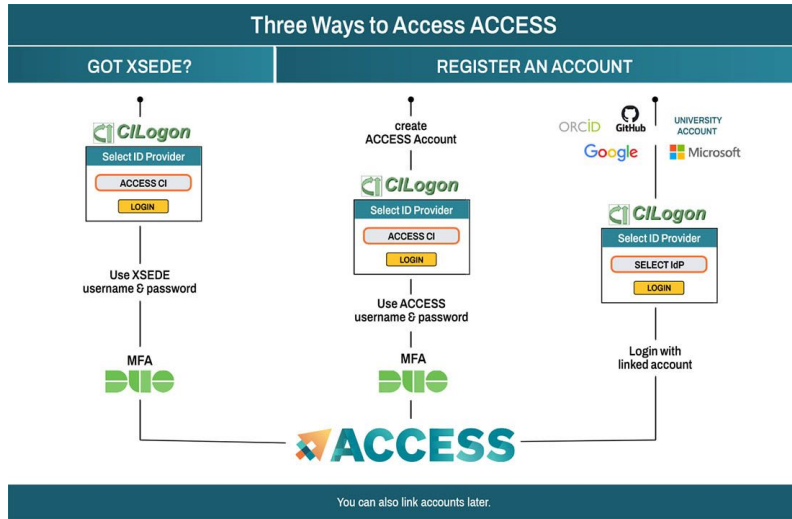
<https://access-ci.org/>

The NSF's ACCESS (Advanced Cyberinfrastructure Coordination Ecosystem: Services & Support) program builds upon the successes of the 11-year XSEDE project, while also expanding the ecosystem with capabilities for new modes of research and further democratizing participation.

Getting an ACCESS ID

In order to Apply for an allocation OR be able to login to any resources an Access ID is required.

Go To <https://identity.access-ci.org/new-user>



Getting Your Own Allocation



<https://access-ci.org/>

Applying for an allocation is like applying for a small grant that provides computational resources.

The first level of application “Explore ACCESS” is a single form and only takes a few minutes approval comes at the longest in a few days. *~\$40,000 worth of cloud resources for a few minutes of effort.*

Use Someone Else's Allocation



<https://access-ci.org/>

If a collaborator or other person in your group has an existing Access Allocation you can request that your Access ID be added to their allocation and you will then be able to use the resources associated with that allocation.

Login to Jeststream2 <https://jetstream-cloud.org/>



Jetstream2

JETSTREAM2 LOGIN



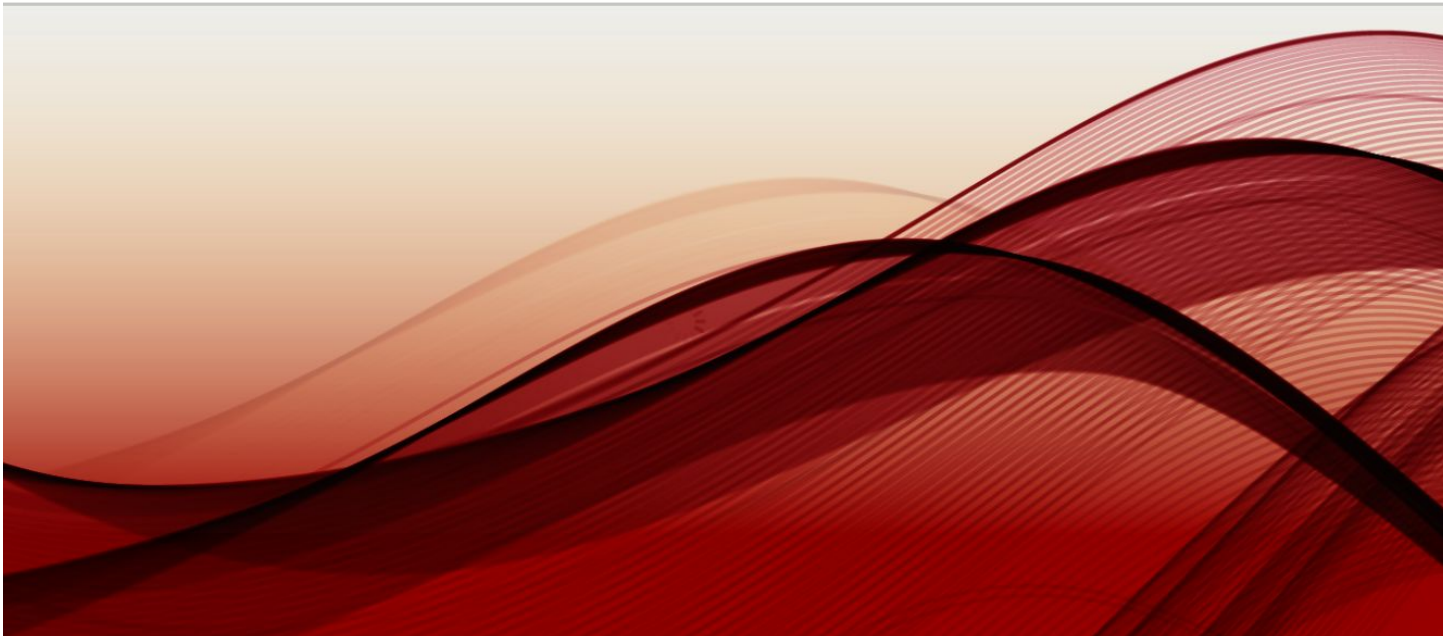
ABOUT

DOCUMENTATION & TRAINING

NEWS & EVENTS

RESEARCH

CONTACT



Select your Identify Provider - Most likely you will choose “ACCESS CI (XSEDE)”



Consent to Attribute Release

[Jetstream 2](#) requests access to the following information. If you do not approve this request, do not proceed.

- Your CILogon user identifier
- Your name
- Your email address
- Your username and affiliation from your identity provider

Select an Identity Provider

ACCESS CI (XSEDE) ▲ ?

Remember this selection ?

Log On

By selecting "Log On", you agree to the [privacy policy](#).

Use you ACCESS ID and Password to complete logging in.



Login to CILogon

ACCESS Username

ACCESS Password

Don't Remember Login

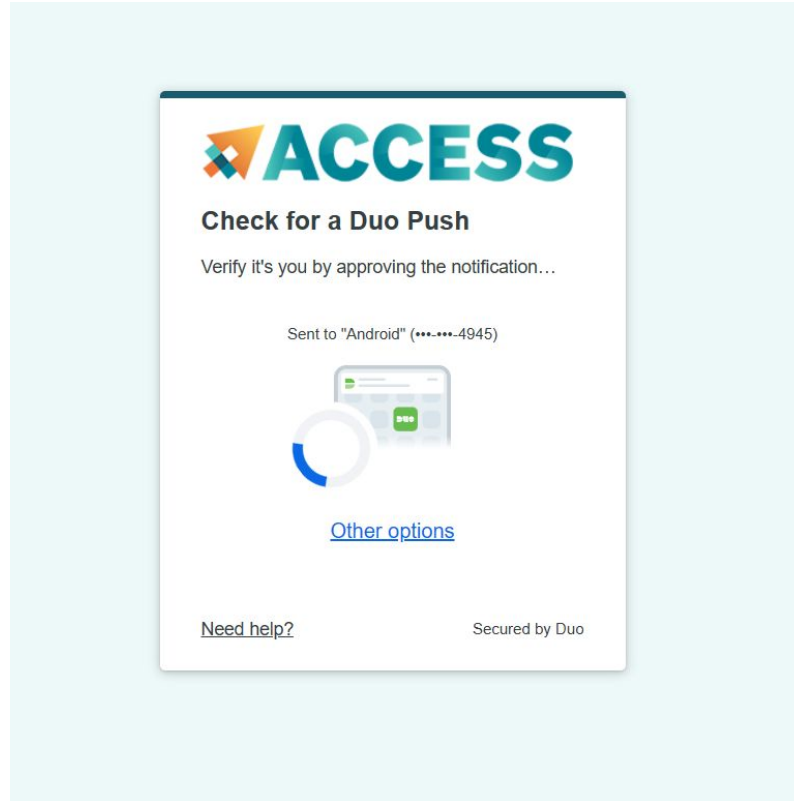
Login



CILogon facilitates secure access to CyberInfrastructure (CI).

- ⚠ If you had an XSEDE account, please enter your XSEDE username and password for ACCESS login
- > Register for an ACCESS Account
- > Forgot your password?
- > Need Help?

Complete the two-factor authentication challenge - most likely Duo



After Successful Login You Will See The Exosphere Interface



Home

[Remove All Allocations](#) [→]

Allocation ASC190026

Hawaii EPSCoR Project
Jetstream2 IU

- 8 instances
- 7 volumes
- 8 public IP addresses

Allocation ASC190026

Hawaii EPSCoR Project
Jetstream2 UH

- 1 instance
- 2 volumes
- 1 public IP address

Allocation CIS220123

Mining Gene Omnibus Expression ...
Jetstream2 IU

- 1 instance
- 1 public IP address

Allocation CIS230038

Developing a proof-of-concept Ser...
Jetstream2 IU

Allocation CIS230039

Drone Photogrammetry to 3d mes...
Jetstream2 IU

Allocation CIS230040

Sage3 instances on Jetstream2
Jetstream2 IU

Allocation EES230016

Jetstream2 Workshop for Universi...
Jetstream2 IU

- 5 instances
- 1 volume
- 5 public IP addresses



Add allocation

If you don't see an Allocation "Card" klik "Add Allocation"

<p>Allocation ASC190026 Hawaii EPSCoR Project Jetstream2 IU</p> <p> 8 instances 7 volumes 8 public IP addresses</p>	<p>Allocation ASC190026 Hawaii EPSCoR Project Jetstream2 UH</p> <p> 1 instance 2 volumes 1 public IP address</p>	<p>Allocation CIS220123 Mining Gene Omnibus Expression ... Jetstream2 IU</p> <p> 1 instance 1 public IP address</p>	<p>Allocation CIS230038 Developing a proof-of-concept Ser... Jetstream2 IU</p>
<p>Allocation CIS230039 Drone Photogrammetry to 3d mes... Jetstream2 IU</p>	<p>Allocation CIS230040 Sage3 instances on Jetstream2 Jetstream2 IU</p>	<p>Allocation EES230016 Jetstream2 Workshop for Universi... Jetstream2 IU</p> <p> 5 instances 1 volume 5 public IP addresses</p>	<p> + Add allocation</p>

Now you can select to add your Access Allocation by clicking “Add ACCESS Account” - you may be required to login to ACCESS to choose an allocation.

Add ACCESS Account



Add ACCESS Account

Recommended login method for
Jetstream2

[Other Login Methods](#)

Select the region that Jetstream2 should use your allocation in. “IU - Indiana University” should be the region unless you have requested or been invited to use a different region.



Messages



Settings



Get Support



About

[Home](#) > [Select Regions for Allocation](#)

Choose Regions for Allocation ASC190026

- ASU — Arizona State University
- Cornell — Cornell University
- IU — Indiana University
- TACC — Texas Advanced Computing Center
- UH — University of Hawaii

Choose

Select your Identify Provider - Most likely you will choose “ACCESS CI (XSEDE)”



Consent to Attribute Release

[Jetstream 2](#) requests access to the following information. If you do not approve this request, do not proceed.

- Your CILogon user identifier
- Your name
- Your email address
- Your username and affiliation from your identity provider

Select an Identity Provider

ACCESS CI (XSEDE) ▲ ?

Remember this selection ?

Log On

By selecting "Log On", you agree to the [privacy policy](#).

Use you ACCESS ID and Password to complete logging in.



Login to CILogon

ACCESS Username

ACCESS Password

Don't Remember Login

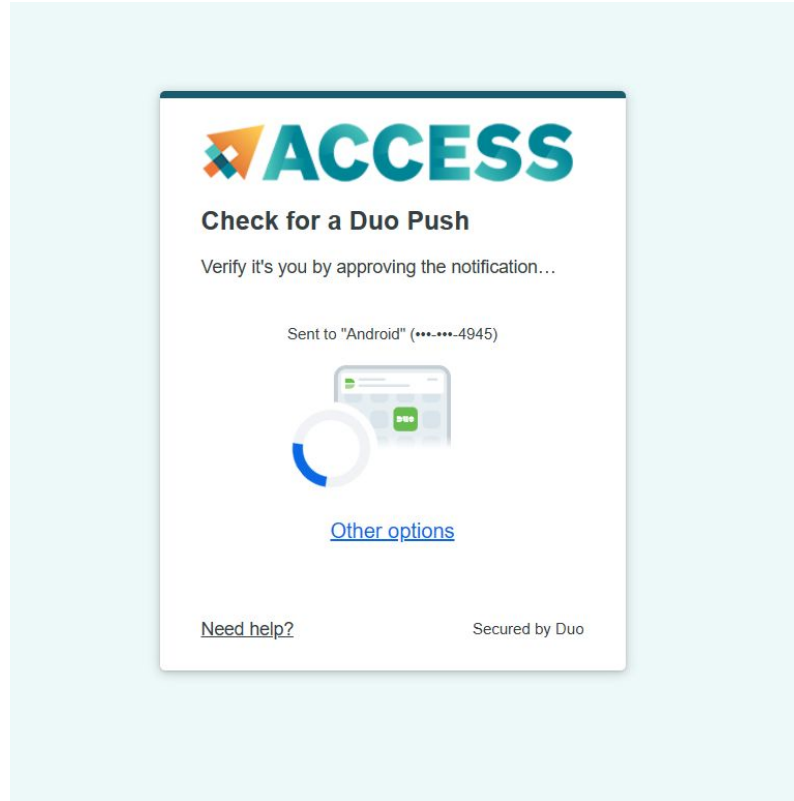
Login



CILogon facilitates secure access to CyberInfrastructure (CI).

- ⚠ If you had an XSEDE account, please enter your XSEDE username and password for ACCESS login
- > Register for an ACCESS Account
- > Forgot your password?
- > Need Help?

Complete the two-factor authentication challenge - most likely Duo



Select with Allocation(s) to use. And click “Choose”



Messages



Settings



Get Support



About

[Home](#) > [Select Allocations for js2](#)

Choose Allocations for js2.jetstream-cloud.org

- ASC190026 — Hawaii EPSCoR Project
- CIS220123 — Mining Gene Omnibus Expression Data: Enabling Cross-Experimental Gene Expression Analysis
- CIS230038 — Developing a proof-of-concept Service/Gateway to look at 3d images/meshes/point-cloud data for outreach and annotation.
- CIS230039 — Drone Photogrammetry to 3d mesh & point-cloud products for terrestrial data
- CIS230040 — Sage3 instances on Jetstream2
- EES230016 — Jetstream2 Workshop for University of Hawaii EPSCoR

Choose

Now your allocations should appear as “Card” and you can Click on the Allocation Card you with to manage virtual machines within.



Messages

Settings

Get Support

About

Home

[Remove All Allocations](#) [→]

Allocation ASC190026

Hawaii EPSCoR Project
Jetstream2 IU

8 instances

7 volumes

8 public IP addresses

Allocation ASC190026

Hawaii EPSCoR Project
Jetstream2 UH

1 instance

2 volumes

1 public IP address

Allocation CIS220123

Mining Gene Omnibus Expression ...
Jetstream2 IU

1 instance

1 public IP address

Allocation CIS230038

Developing a proof-of-concept Ser...
Jetstream2 IU

Allocation CIS230039

Drone Photogrammetry to 3d mes...
Jetstream2 IU

Allocation CIS230040

Sage3 instances on Jetstream2
Jetstream2 IU

Allocation EES230016

Jetstream2 Workshop for Universi...
Jetstream2 IU

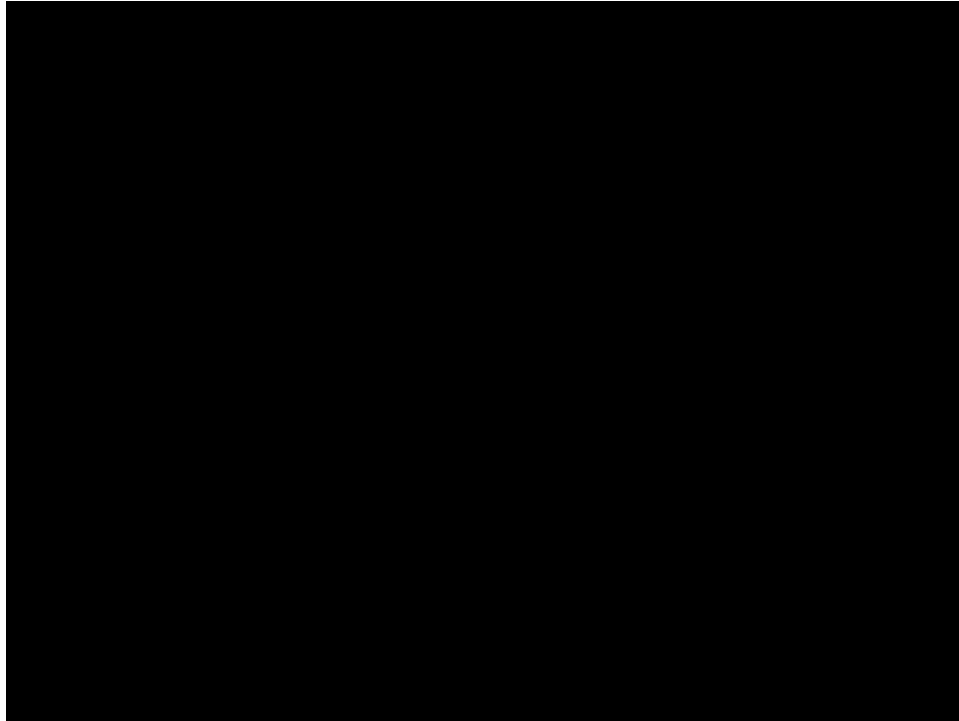
5 instances

1 volume



Add allocation

See Walkthrough introduction video
for the rest of “Getting Started”



Link to video https://drive.google.com/file/d/1_PO9phIoL7oFa65yo8dH4YuGybWjnTtx/view?usp=sharing