

Introduction to



(And ACCESS Resources at Texas A&M University)

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PACES Research Training Workshop

Outline

- ACCESS Overview
- TAMU-specific systems:
 - FASTER
 - ACES
 - Launch
- Logging In

*If you haven't told us your
ACCESS ID, we need it now!*

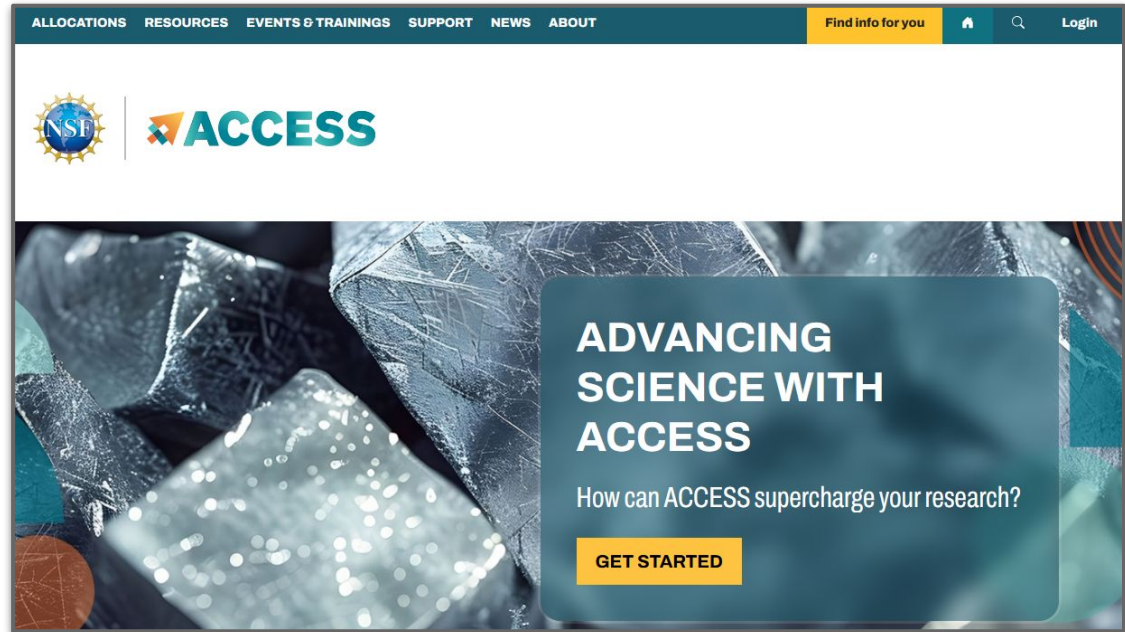
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ACCESS

Advanced
Cyberinfrastructure
Coordination
Ecosystem:
Services &
Support

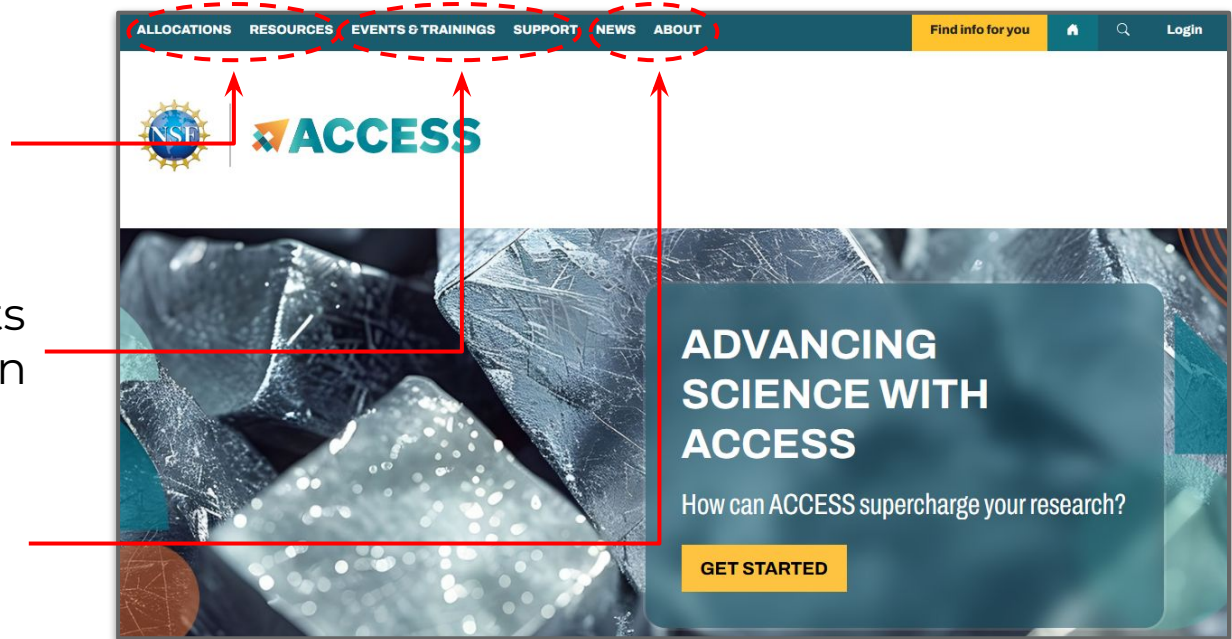
NSF-funded program to
help connect researchers
and educators with
computing resources
across the nation



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

What You Can Do With ACCESS

- Find computing resources and manage your accounts on them
- Find training events and documentation
- Stay up-to-date on high performance computing and ACCESS news



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Resource Providers

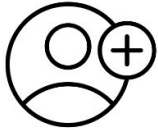
Over a dozen institutions and organizations offering compute resources and support. Some institutions offer multiple clusters!



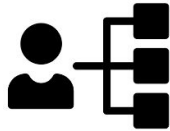
(See <https://allocations.access-ci.org/resources> for full list and more details)

How to Use ACCESS Resources

General steps:



CREATE
ACCOUNT



SELECT
OPPORTUNITY



REQUEST
ALLOCATION



RECEIVE
CREDITS



EXCHANGE
CREDITS

For this event you will be added to one of *our* Allocations to be given access to our clusters. After this event you'll need your own allocation!

Project Types / Allocation Levels

There are four ACCESS project types a researcher can apply for:



Explore: For simple grad student projects, testing, etc.



Discover: Moderate research, large classes, etc.



Accelerate: Collaborations, power users, etc.



Maximize: Large-scale research

More info: <https://allocations.access-ci.org/project-types>

Project Types / Allocation Levels

There are four ACCESS project types a researcher can apply for:



Explore: For simple grad student projects, testing, etc.



Discover: Moderate research, large classes, etc.

Generally a PI applies for an allocation and sponsors accounts for their researchers.

However, graduate students may also apply for their own Explore/Discover allocations with a letter of collaboration from their PI.

More Info: <https://allocations.access-ci.org/allocations-policy>

Explore ACCESS Request



Applicants must submit:

- A summary of the planned work
- NSF biosketch, CV or Resume for PI and Co-PIs (pdf)
- Letter of collaboration from advisor (for graduate students)
- Data fields:
 - Title of project
 - Research keywords
 - Field of science
 - Supporting grant details, if applicable

See <https://allocations.access-ci.org/current-projects> for examples of public abstracts.

<https://allocations.access-ci.org/prepare-requests>

Discover ACCESS Request



Applicants must submit:

- All items required for the Explore request
- One-page description of proposed use of ACCESS resources
 - How you plan to use ACCESS resources
 - Research or Education Objectives (e.g., research questions, classroom exercises, other activities)
 - Description of resource needs
 - Specific computing architectures (e.g. GPUs, large memory)
 - Storage needs
 - Specific software needed

<https://allocations.access-ci.org/prepare-requests>

Accelerate ACCESS Request

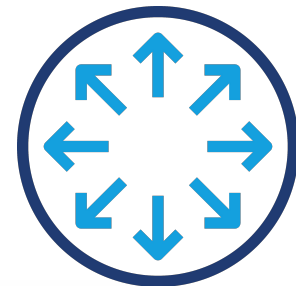


Applicants must submit:

- All items required for the Explore request
- Three-page description of the project, explaining how you plan to use ACCESS resources
 - Research Objectives
 - Estimate of Compute, Storage, and Other Resources
 - Computational plan
 - Software & Specialized Needs
 - Team and Team Preparedness (team qualifications and readiness)

<https://allocations.access-ci.org/prepare-requests>

Maximize ACCESS Request



Maximize allocations are for large-scale research projects that are beyond the scope of an Accelerate allocation.

Maximize requests are open for submission on a semi-annual basis

Please visit: <https://allocations.access-ci.org/prepare-requests> for submission windows and instructions to submit a successful Maximize ACCESS request.

<https://allocations.access-ci.org/prepare-requests>

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FASTER

- Our first “composable” cluster
- Available via:
 - NetID for TAMU users
 - ACCESS ID for everyone else
- Hardware:
 - 180 nodes
 - 11,520 cores
 - NVIDIA GPUs:
A100s, A10s, A30s, A40s and T4s



<https://hprc.tamu.edu/kb/User-Guides/FASTER/>

NSF award #2019129

ACES

- Composable accelerator testbed
- Accessible via ACCESS
- Hardware:
 - 130 nodes
 - 11,888 cores
 - Composable components:
 - NVIDIA H100 and A30 GPUs
 - Intel PVC GPUs
 - Graphcore IPU
 - Intel Optane SSDs
 - (and more!)



<https://hprc.tamu.edu/kb/User-Guides/ACES/>

NSF award #2112356

Launch

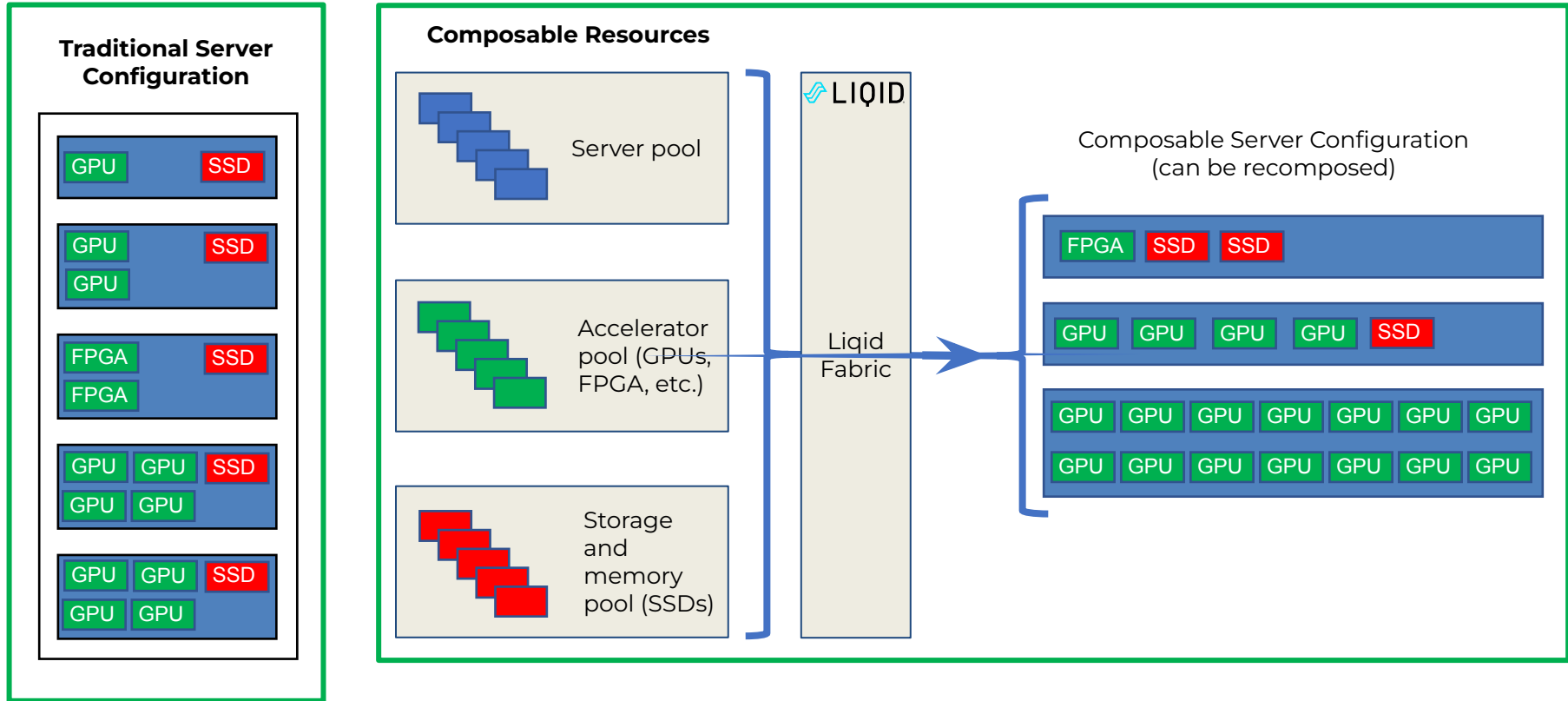
- Regional computing resource
- TAMU-affiliated institutions access via ACCESS
- Hardware:
 - 45 nodes
 - 8640 cores
 - NVIDIA A30s

<https://hprc.tamu.edu/kb/User-Guides/Launch/>

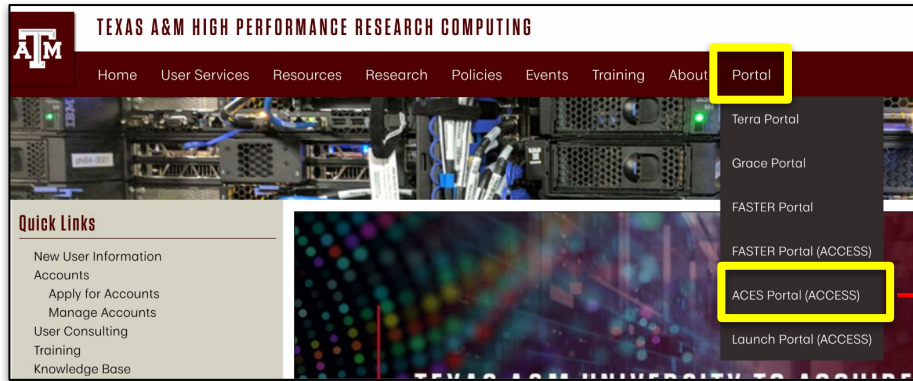


NSF award #2232895

Composability

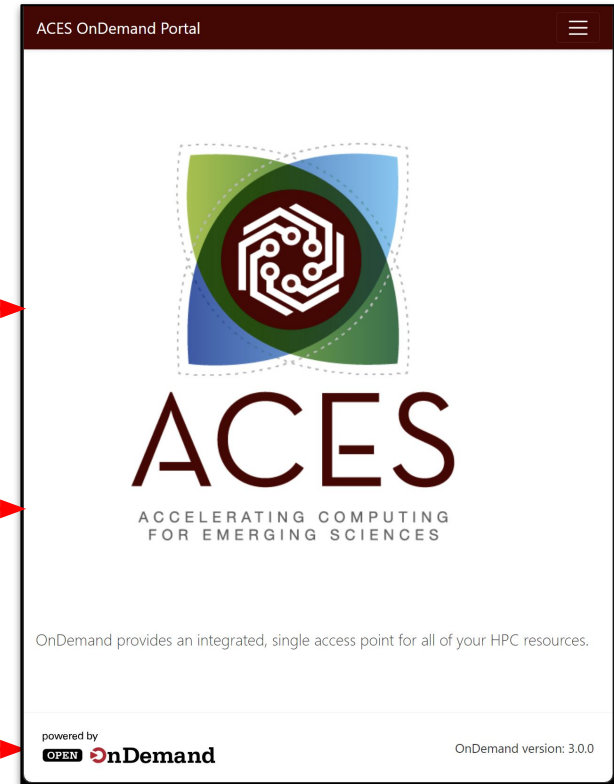


Resources: OpenOnDemand Portal



ACES Portal portal-aces.hprc.tamu.edu
is the web-based user interface for the ACES cluster

Open OnDemand (OOD) is an
advanced web-based graphical
interface framework for HPC users



Resources: Documentation

Our Knowledge Base has pages covering many topics:

- Hardware for each cluster
- Software guides
- Accounting procedures
- ...and other topics, including:

Getting Started with ACCESS:

<https://hprc.tamu.edu/kb/Helpful-Pages/ACCESS-ID/>

The screenshot displays the Texas A&M HPRC Knowledge Base interface. The main content area is titled 'Getting Started with ACCESS' and includes a 'Table of contents' on the right with links to various topics. The 'Apply for an ACCESS ID' section provides introductory text and a flowchart for registration options.

Table of contents:

- Table of contents
- Apply for an ACCESS ID
- Two Registration Options
- Create your ACCESS ID
- Set up Authentication
- How to Login
- Two-factor Authentication
- Troubleshooting ACCESS ID
- Get Help
- Forgot ACCESS ID
- Get Onto a Cluster through ACCESS

Apply for an ACCESS ID

ACCESS is a national program through which researchers can apply to use computing resources at many different institutions. Read more about ACCESS itself [on this page](#).

The ACES, FASTER, and Launch clusters can be used via ACCESS. To do so, start by getting an ACCESS ID. Follow this guide to complete the steps. Try to complete all the steps in a single session; incomplete registration breaks the system.

Two Registration Options

Please apply for an ACCESS ID at the [ACCESS New User page](#).

On this page, there are two ways to proceed (numbered 1 and 2). **Option 1** ("Register with an existing identity") is the better option, but it's not available to all researchers. To determine if **option 1** is available to you, click on **option 1** and give it a try. If it doesn't work, go back and choose **option 2**.

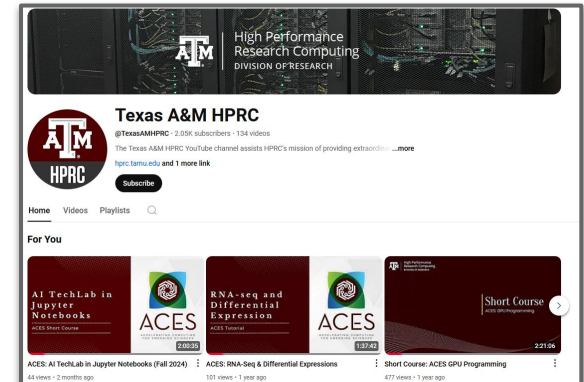
Flowchart:

```
graph TD
    A{Existing Identity?} -- "Yes or I don't know" --> B[Option 1]
    A -- "No" --> C[Option 2]
    B -- "It didn't work" --> C
```

Resources: Support

We support researchers at all levels of experience in several ways:

- Live training events:
<https://hprc.tamu.edu/training/>
- HPRC YouTube Channel:
<https://www.youtube.com/texasamhprc>
- Helpdesk:
help@hprc.tamu.edu



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Logging In: Find the Portal

From our homepage: <https://hprc.tamu.edu/>

TEXAS A&M HIGH PERFORMANCE RESEARCH COMPUTING

Home User Services Resources Research Policies Events Training About **Portal**

Hover (don't click)

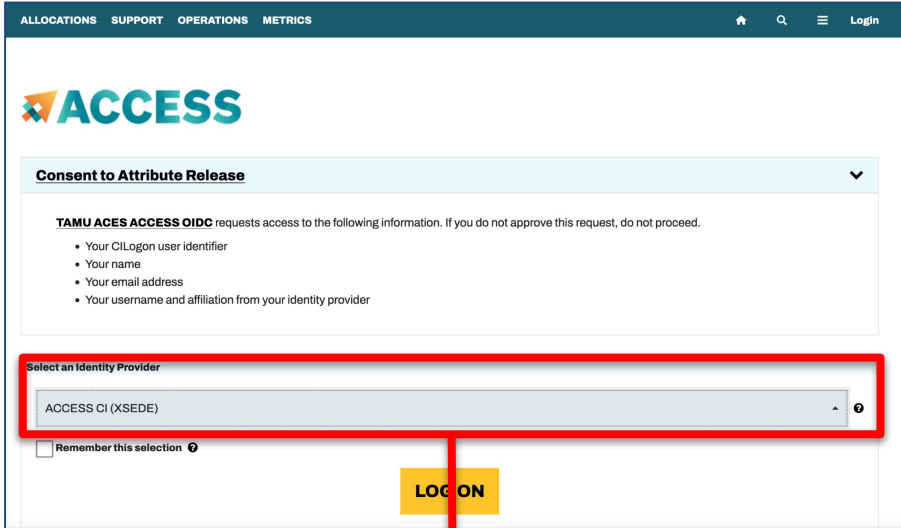
Quick Links

- New User Information
- Accounts
 - Apply for Accounts
 - Manage Accounts
- User Consulting
- Training
- Knowledge Base

Portal

- Terra Portal
- Grace Portal
- FASTER Portal
- FASTER Portal (ACCESS)
- ACES Portal (ACCESS)**
- Launch Portal (ACCESS)

Logging In: ACCESS



ALLOCATIONS SUPPORT OPERATIONS METRICS

ACCESS

Consent to Attribute Release

TAMU ACES ACCESS OIDC 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

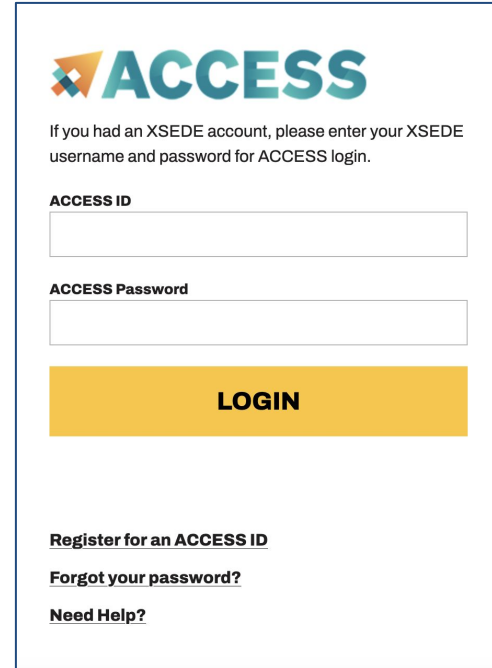
Select an Identity Provider

ACCESS CI (XSEDE)

☐ Remember this selection

LOG ON

Select the Identity Provider appropriate for your account.



ACCESS

If you had an XSEDE account, please enter your XSEDE username and password for ACCESS login.

ACCESS ID

ACCESS Password

LOGIN

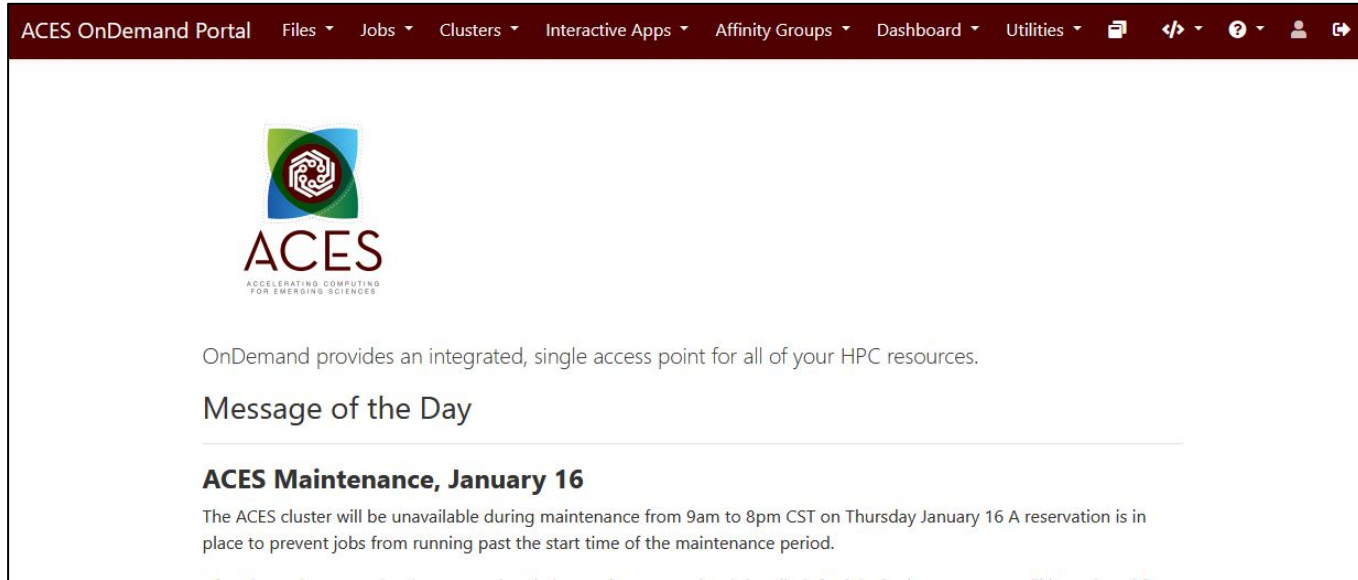
[Register for an ACCESS ID](#)

[Forgot your password?](#)

[Need Help?](#)

Log-in using your ACCESS or institutional credentials.

The Open OnDemand Portal



You should end up here.
You're now logged-in to ACES!