ACCESS

Free National Supercomputer Resources

ACCESS | Advancing Innovation

National Supercomputer Resources: ACCESS

- Advanced Cyberinfrastructure Coordination Ecosystem: Services & Support (ACCESS)

- ACCESS is an advanced computing and data resource supported by the National Science Foundation (NSF).

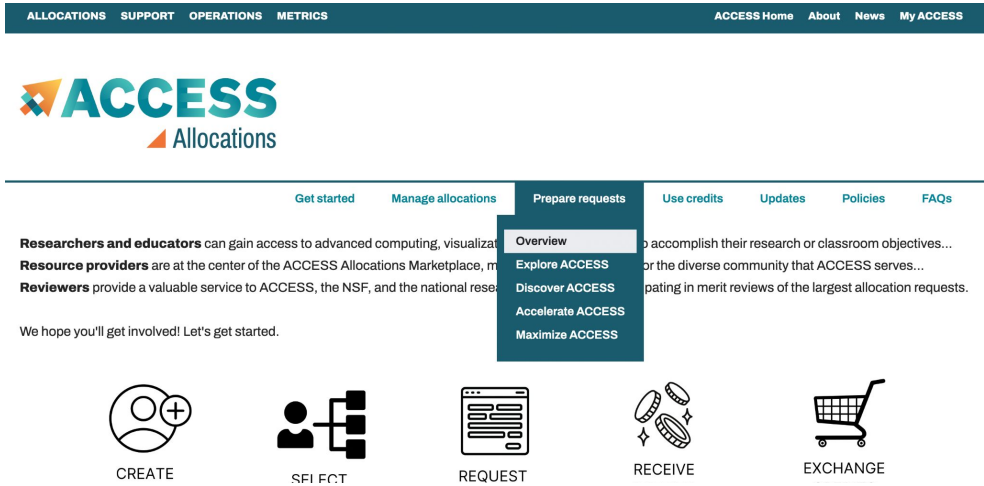
- ACCESS Services include Allocations, Support, Operation and Metrics, along with a Coordination Office

- Access website: https://access-ci.org/

National Supercomputer Resources: ACCESS

Four Allocation Opportunities to suit a variety of needs (credit thresholds):

- ***Explore (400,000)***
  - Best-suited for endeavors with light resource requirements
    - Grad students can be PIs
- ***Discover (1,500,000)***
  - Minimal effort to start production research activities
    - Potential best-fit for Campus Champion Allocations
- ***Accelerate (3,000,000)***
  - More substantial resource requirements
    - Multi-grand research, Gateways, etc.
- ***Maximize (No upper limit)***
  - For large-scale research project with extreme resource needs
    - Will largely resemble XRAC process



ACCESS Credits and Thresholds

Researchers have opportunities to request ACCESS allocations at four levels, which are described at the links in the table.

Allocation	Credit Threshold
Explore ACCESS	400,000
Discover ACCESS	1,500,000
Accelerate ACCESS	3,000,000
Maximize ACCESS	Not awarded in credits.

Allocation Eligibility

- Available to any research or educator as US academic, non-profit research, or educational institution.
- Can be in any official position including adjunct or instructional
- Postdoctoral researchers can be a PI of any project type
- Graduate students can lead an “Explore” ACCESS allocation under their advisor’s guidance
- NSF Graduate Fellows and Honorable mentions can apply for “Discover” allocations
- Ref: https://allocations.access-ci.org/access-allocations-policies#eligibility

Comparison Table

Comparison Table

Opportunity	Explore	Discover	Accelerate	Maximize
Purpose	Resource evaluation, grad student projects, small classes and training events, benchmarking, code development and porting, similar small-scale uses.	Grants with modest resource needs, Campus Champions, large classes and training events, NSF graduate fellowships, benchmarking and code testing at scale, gateway development.	Mid-scale resource needs, consolidating multi-grant programs, collaborative projects, preparation for Maximize ACCESS requests, gateways with growing communities.	Large-scale research projects.
Allocation credit threshold	Small	Medium	Large	No upper limit
Allocation duration	Supporting grant duration or 12 months	Supporting grant duration or 12 months	Supporting grant duration or 12 months	12 months
Requests accepted	Continuously	Continuously	Continuously	Every 6 months
	Multiple requests allowed	Multiple requests allowed	Multiple requests allowed	1 allowed (some exceptions)
Requirements and review process	Overview	1-page proposal	3-page proposal (max. length)	10-page proposal (max. length)
	Confirmation of eligibility and suitability of requested resources	Confirmation of eligibility and suitability of requested resources	Panel merit review	Panel merit review

Ref: https://allocations.access-ci.org/prepare-requests-overview

Resource Providers (PRs)

- ACCESS consists of a set of Resource Providers (PRs) that offer a wide range of computational resources including systems such as high-performance computing (HPC) clusters, virtualization (cloud-style) clusters, high throughput computing (HTC) clusters, massive storage clusters, large memory clusters, and composable clusters.

- ACES (Texas A&M)
- Anvil (Purdue)
- Bridges-2 (PSC)
- DARWIN (Delaware)
- Delta (NCSA)
- Expanse (SDSC)
- FASTER (Texas A&M)
- Jetstream2 (IU)
- OOKAMI (Stonybrook)
- KyRIC (Kentucky)
- Rockfish (JHU)
- Stampede-2 (TACC)
- RANCH (TACC)
- Open Science Grid (OSG)
- Open Storage Network (OSN)

National Supercomputer Resources: ACCESS

ACCESS Allocations

Purdue Anvil CPU

Purdue Anvil GPU

SDSC Expanse CPU

SDSC Expanse GPU

Resource Type:	Compute
Resource Description:	Expanse GPU will be a Dell integrated cluster, NVIDIA V100 GPUs with NVLINK, interconnected with Mellanox HDR InfiniBand in a hybrid fat-tree topology. There are a total of 52 nodes with four V100 SMX2 GPUs per node (with NVLINK connectivity). There are two 20-core Xeon 6248 CPUs per node. Full bisection bandwidth will be available at rack level (52 CPU nodes, 4 GPU nodes) with HDR100 connectivity to each node. HDR200 switches are used at the rack level and there will be 3:1 oversubscription cross-rack. In addition, Expanse also has four 2 TB large memory nodes. The system will also feature 12PB of Lustre based performance storage (140GB/s aggregate), and 7PB of Ceph based object storage.
Recommended Use:	GPUs are a specialized resource that performs well for certain classes of algorithms and applications. Recommend to be used for accelerating simulation codes optimized to take advantage of GPUs (using CUDA, OpenACC). There is a large and growing base of community codes that have been optimized for GPUs including those in molecular dynamics, and machine learning. GPU-enabled applications on Expanse will include: AMBER, Gromacs, BEAST, OpenMM, NAMD, TensorFlow, and PyTorch.
Organization:	San Diego Supercomputer Center
Units:	GPU Hours
Description:	

SDSC Expanse Projects Storage

allocations | Prepare requests | Use credits | Updates | Policies | FAQs

- Overview
- Available resources
- Exchange calculator

g, visualization, and data res… r research or classroom objectives…

ketplace, making research p… mmunity that ACCESS serves…

tional research community … views of the largest allocation requests.

REQUEST ALLOCATION

Exchange Calculator

Number of units on this resource:

10,000	ACCESS Credits

Equals this many units on this resource:

186	SDSC Expanse GPU

RESET

National Supercomputer Resources: ACCESS

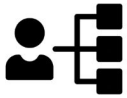
ACCESS Allocations

Get started | Manage allocations | Prepare requests | Use credits | Upd

- Overview
- Submit a request
- Manage my projects
- Manage users
- Allocations Usage

Researchers and educators can gain access to advanced , and data resources to accomplish their resea
Resource providers are at the center of the ACCESS Alloc ng research possible for the diverse communit
Reviewers provide a valuable service to ACCESS, the NSF h community by participating in merit reviews o

We hope you'll get involved! Let's get started.

CREATE RECEIVE

Maximize ACCESS – March 2023

Submissions open: 2022-12-15 – 2023-01-15

For projects with resource needs beyond those provided by an Accelerate ACCESS project, a Maximize ACCESS request is required. ACCESS d
an upper limit on the size of allocations that can be requested or awarded at this level, but resource providers may have limits on allocation amoun
resources.

SUBMIT A MAXIMIZE ACCESS – MARCH 2023 REQUEST

ACCESS Allocations

Get started | Manage allocations | Prepare requests | Use credits | Updates | Policies | FAQs

Available Opportunities

Here are the open opportunities for which you may request an allocation. Find the opportunity that aligns with your best estimate of your resource needs. Don't worry about starting too small. As you clarify your needs, you can upgrade to a larger-scale opportunity when you're ready.

Explore ACCESS

Explore ACCESS allocations are intended for purposes that require small resource amounts. Researchers can try out resources or run benchmarks, instructors can provide access for small-scale classroom activities, research software engineers can develop or port codes, and so on. Graduate students can conduct thesis or dissertation work.

SUBMIT AN EXPLORE ACCESS REQUEST

Discover ACCESS

Discover ACCESS projects are intended to fill the needs of many modest-scale research activities or other resource needs. The goal of this opportunity is to allow many researchers to request allocations with a minimum amount of effort so they can complete their work. To submit a request, you will need to submit a one-page description of the project to address the review criteria. You can also ask for an advisory review from the community to guide you to appropriate resources.

SUBMIT A DISCOVER ACCESS REQUEST

Accelerate ACCESS

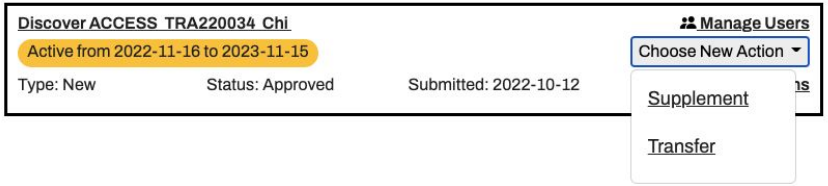
Accelerate ACCESS projects support activities that require more substantial resource amounts to pursue their research objectives. Researchers are expected to have reasonably well defined plans for their resource use and to submit a 3-page project description for merit review. Reviewers will look more closely at how your resource usage plan addresses the review criteria.

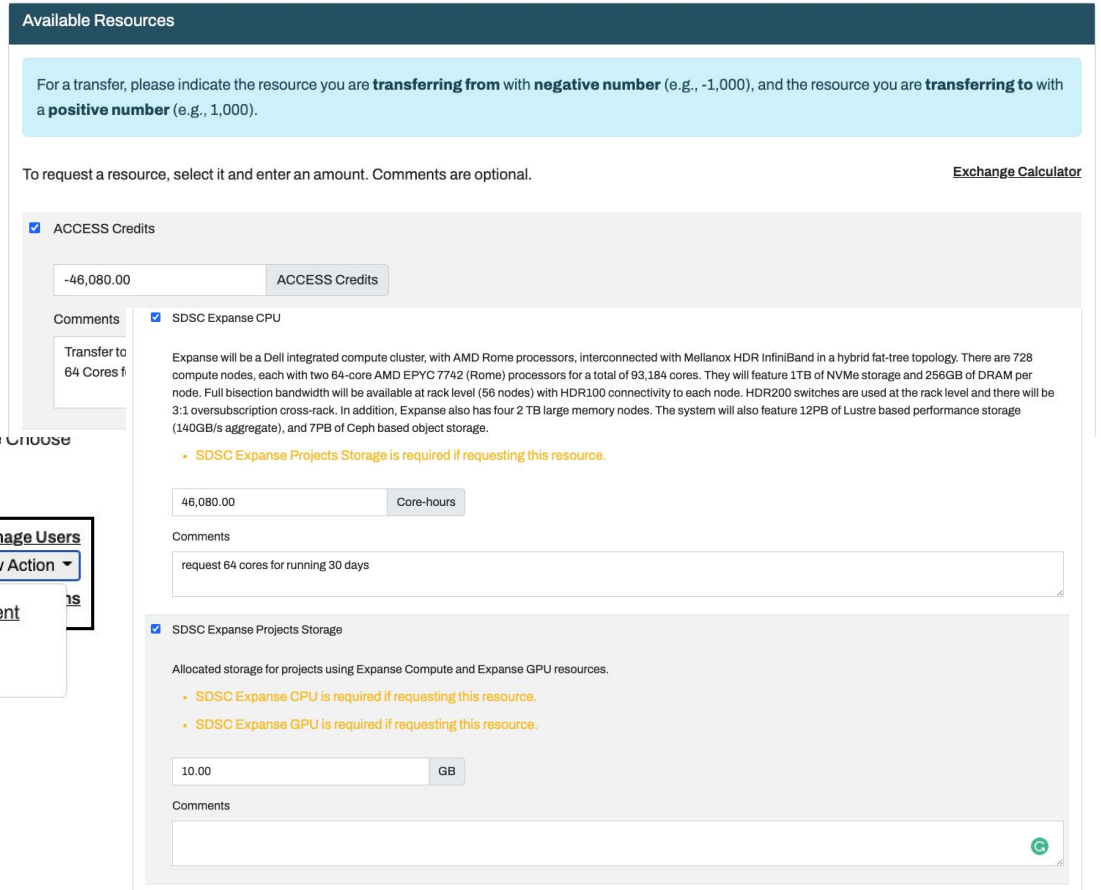
SUBMIT AN ACCELERATE ACCESS REQUEST

National Supercomputer Resources: ACCESS

List of ACCESS Allocations Requests

Please click the View Actions link to see actions on each of your requests. You can use the Choose New Action arrow menu to add new actions to the request.





Cloud Computing: Indiana JstStream2

Indiana Jetstream2

Resource Type:	Compute
Resource Description:	Jetstream2 is a user-friendly cloud environment designed to give researchers and students access to computing and data analysis resources on demand as well as for gateway and other infrastructure projects. Jetstream2 is a hybrid-cloud platform that provides flexible, on-demand, programmable cyberinfrastructure tools ranging from interactive virtual machine services to a variety of infrastructure and orchestration services for research and education. The primary resource is a standard CPU resource consisting of AMD Milan 7713 CPUs with 128 cores per node and 512gb RAM per node connected by 100gbps ethernet to the spine.
Recommended Use:	For the researcher needing virtual machine services on demand as well as for software creators and researchers needing to create their own customized virtual machine environments. Additional use cases are for research-supporting infrastructure services that need to be "always on" as well as science gateway services and for education support, providing virtual machines for students.
Organization:	Indiana University
Units:	SUs
Description:	1 SU = 1 Jetstream2 vCPU-hour. VM sizes and cost per hour are available https://docs.jetstream-cloud.org/general/vmsizes/

Indiana Jetstream2 GPU

Indiana Jetstream2 Large Memory

Indiana Jetstream2 Storage

RP: Indiana JstStream2

Jetstream2 is a user-friendly cloud computing environment for researchers and educators running on OpenStack and featuring Exosphere as the primary user interface. It is built on the successes of Jetstream1 and continues the main features of that system while extending to a broader range of hardware and services, including GPUs, large memory nodes, virtual clustering, programmable cyberinfrastructure with OpenStack Heat and Terraform, and many other features. It is designed to provide both infrastructure for gateways and other "always on" services as well as giving researchers access to interactive computing and data analysis resources on demand.

For a more in-depth description please see the System Overview.

Jetstream2 Status

Overall JS2 system status	Operational

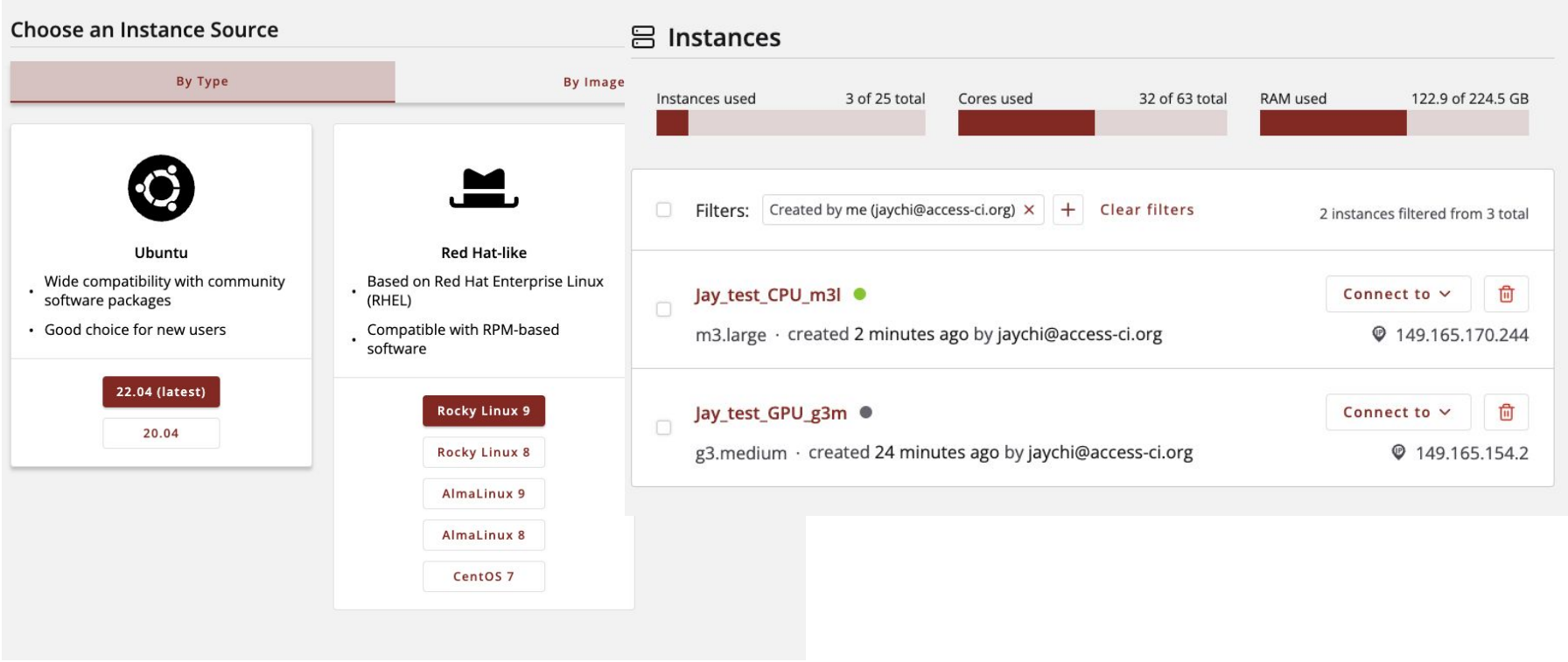
Please visit https://jetstream.status.io/ for detailed system status information and planned maintenance announcements. Also see, Jetstream2 system status and information for additional information on our outages and maintenance mailing list and community chat.

Accessing Jetstream2

Access to Jetstream2 is available solely through Advanced Cyberinfrastructure Coordination Ecosystem: Services & Support (ACCESS) allocations. You must be on a valid allocation or the PI of a valid allocation to have access to Jetstream2.

Ref:
https://docs.jetstream-cloud.org/

RP: Indiana JstStream2



RP: Indiana JstStream2