

Anvil 101

New User Tutorial

The Anvil Team, Purdue Research Computing

Acknowledgement

“This material is based upon work supported by the National Science Foundation under Grant No. 2005632.”

Disclaimer: “Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.”

Full Agenda

- **Anvil system architecture**
- **Sign up for Access/Anvil accounts and apply for allocations**
- **Data management and transfer on Anvil**
- **Running Jobs on Anvil**
- **Q&A**

About Anvil

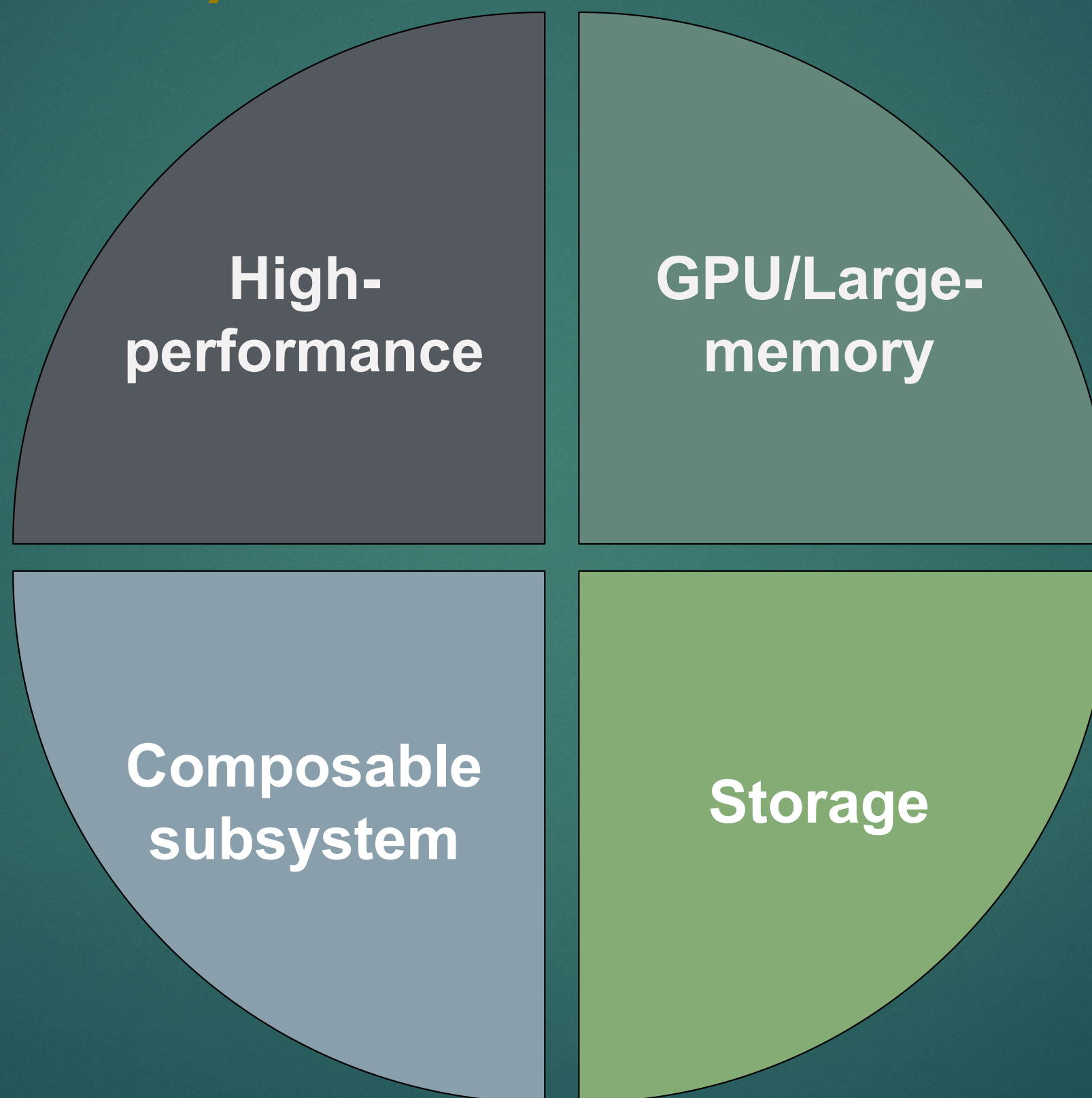
- **Category I:** A national composable advanced computational resource for the future of science and engineering
- By the Purdue research computing team. Full access started **February, 2022**
- NSF award **#2005632**; **5 years** of operations; allocated via NSF ACCESS



System Resources

- 1000 compute nodes
- 128 core AMD 3rd Gen EPYC 7763 processors
- 5.3 PF peak performance

- 8 large memory & storage nodes
- Kubernetes – Rancher for DevOps



- 16 nodes with 4 NVIDIA A100 GPUs each
- 32 large memory nodes with 1 TB of RAM

- Multi-tier storage (including object storage)
- 10 PB of parallel filesystem, and 3 PB of all-flash storage
- Globus data transfer

Service & Support



Quick
turnaround
via ACCESS
support
tickets

[support.access-
ci.org/](https://support.access-ci.org/)



Support
team

[comprising
domain experts
from multiple
disciplines]



Advanced
user support

[data science
consulting, HPC
performance
optimization,
science gateway
development]



Multimodal
Training
Delivery

[live lessons,
online tutorials,
video lessons]

Agenda

2. Getting started

- Get anvil account and allocation
- Logging in
- Check account usage

Obtaining ACCESS and Anvil Account

Anvil is accessible to ACCESS users who are given an allocation on the system. To obtain an account, users may submit a proposal through:

[ACCESS Allocation Request System:](https://allocations.access-ci.org/)
<https://allocations.access-ci.org/>

- Sign up for an ACCESS account (if you don't have one already) at <https://allocations.access-ci.org>
- Prepare an allocation request with details of your proposed computational workflows (science, software needs), resource requirements, and a short CV. See the individual "Preparing Your ... Request" pages for details on what documents are required:

Obtaining an Allocation

[How do I get onto Anvil through ACCESS?](#)

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

Obtaining an Allocation

When your request is approved, you only get ACCESS **credits** awarded. You still need to go through the step of exchanging these credits for time on Anvil.

You need not use up all your credits and may also use part of your credits for time on other ACCESS resources.

Exchange calculator (https://allocations.access-ci.org/exchange_calculator)

You will also need to go to the allocations page and add any users you would like to have access to these resources.

Note that they will need to sign up for ACCESS accounts as well before you can add them.

For other questions you may have, take a look at the FAQs on the ACCESS page here:

(<https://allocations.access-ci.org/ramps-policies-faqs>)

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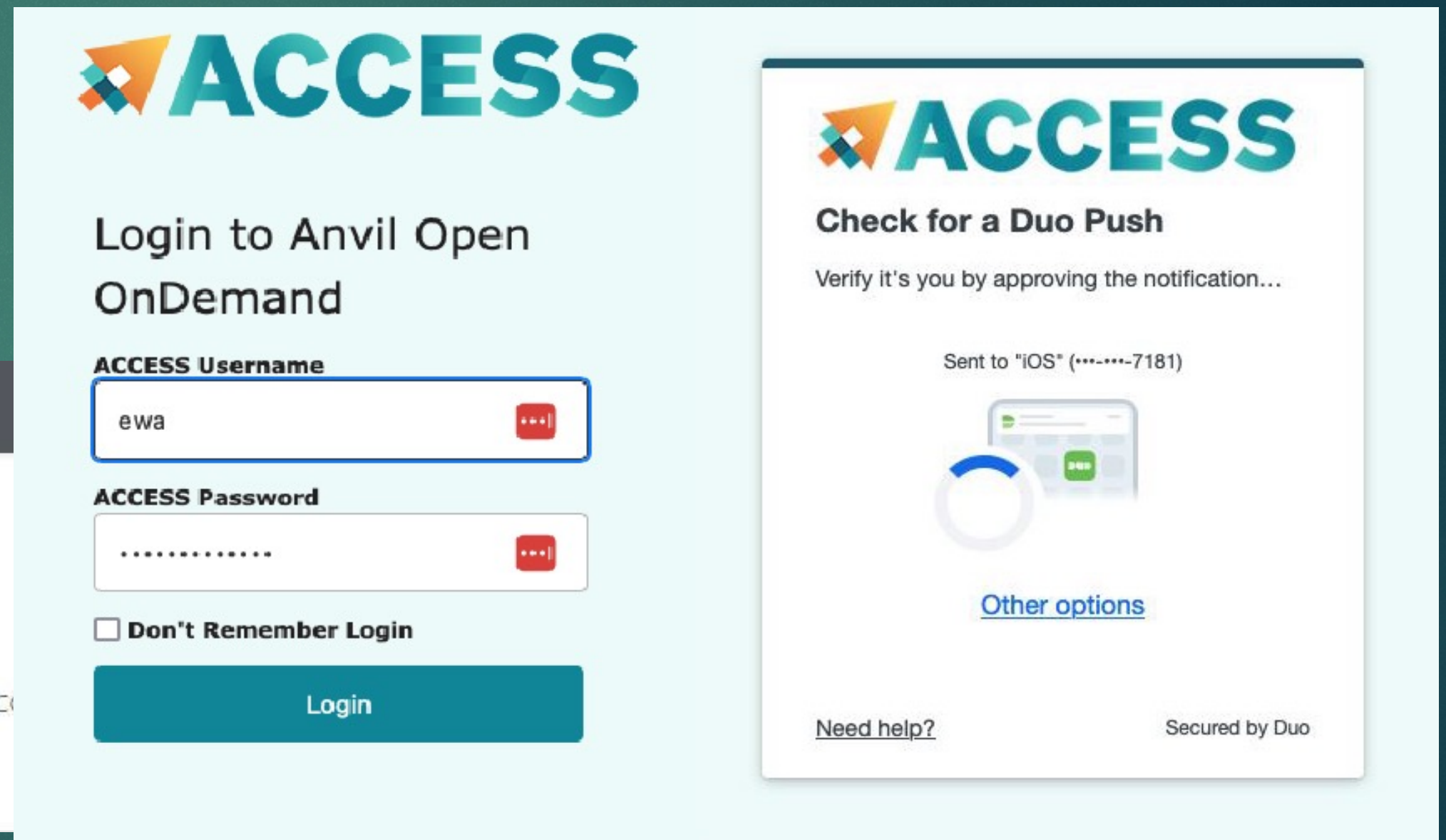
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Open OnDemand

Open OnDemand allows one to interact with HPC resources through a web browser and easily manage files, submit jobs, and interact with graphical applications directly in a browser, all with no software to install.

Navigate to <https://ondemand.anvil.rcac.purdue.edu>

Log in using your **ACCESS portal username and password**



The screenshot shows the ACCESS login interface. On the left, a navigation bar includes 'Anvil', 'Files', 'Jobs', 'Clusters', 'Interactive Apps', and 'My Interactive Sessions'. Below the navigation bar is a 'Message of the Day' section featuring an ANVIL logo and the text 'ANVIL FORGING THE FUTURE BY COMPUTING'. On the right, the login form is titled 'Login to Anvil Open OnDemand'. It contains two input fields: 'ACCESS Username' with the value 'ewa' and 'ACCESS Password' with masked characters. Below the password field is a checkbox for 'Don't Remember Login' and a teal 'Login' button. To the right of the login form is a 'Check for a Duo Push' notification. It displays the ACCESS logo, the text 'Check for a Duo Push', and 'Verify it's you by approving the notification...'. Below this, it shows 'Sent to "iOS" (****-7181)' and an illustration of a smartphone with a notification. At the bottom of the notification are links for 'Other options', 'Need help?', and 'Secured by Duo'.

More training section about Open OnDemand will be given by Anvil team in the future.

The screenshot shows the OnDemand dashboard interface. At the top, there is a navigation bar with the following items: Anvil, Files, Jobs, Clusters, Interactive Apps, My Interactive Sessions, Help, Logged in as x-adams, and Log Out. Below the navigation bar, there is a banner image with the text "OnDemand provides an integrated, single access point for all of your HPC resources." and a "Message of the Day" section. The main content area features four navigation menus, each with a yellow highlight box around its title: 1. "Files" menu, which is open and shows a list of directories including "Home Directory", "Scratch /anvil/scratch/x-...", "Project x-.../anvil/projects/x-...", "Project x-.../anvil/projects/x-...", and "Project ...". 2. "Jobs" menu, which is open and shows "Active Jobs" and "Job Composer". 3. "Clusters" menu, which is open and shows ">_Anvil Shell Access". 4. "Interactive Apps" menu, which is open and shows "Desktops", "Desktop", "Servers", "Jupyter Notebook", and "RStudio Server". At the bottom left, there is a logo for "powered by OPEN OnDemand". At the bottom right, there is text indicating "OnDemand version: v2.0.13".

THANK YOU!

Contact Us

For user support please submit a ticket at [Help Desk](#), by selecting the appropriate Anvil resource to have it routed to us.