

# Navigating and Connecting to NERSC



New User Training  
February 15, 2024

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Science Engagement Engineer  
User Engagement Group

# Agenda

- NERSC account set up
- Navigating Iris (<https://iris.nersc.gov>)
- Connecting to Perlmutter
  - a. Connecting with SSH
  - b. <https://jupyter.nersc.gov> notebooks and terminals in your browser
  - c. NoMachine (<https://docs.nersc.gov/connect/nx/>) for GUI apps
- Submitting a User Ticket (<https://help.nersc.gov>)
- Navigating NERSC Documentation
- Navigating NERSC Home Page

# Account Set Up



# Accounts vs. Allocations

There are two types of accounts at NERSC:

- Your personal, private, user account
  - Associated with your *login* or *username*
  - Provides *authentication* (personal identity) and *authorization* (which resources are accessible)
  - Principal Investigator (PI) or Project Manager can send you a link to request an account

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- Your personal, private, user account
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  - Principal Investigator (PI) or Project Manager can send you a link to request an account
  
- A Project allocation account, or *project*
  - **Like a bank account you use to “pay” for computer time and file storage usage**
  - All NERSC users belong to at least one project
  - An individual user may belong to more than one project
    - But only one *default project*



# User Account Policies

- **All users must sign an Acceptable Use Policy form**
  - This is incorporated into the Self-Service account request form

<https://www.nersc.gov/users/policies/appropriate-use-of-nersc-resources/>



SYSTEMS **FOR USERS** NEWS R & D EVENTS LIVE STATUS

Home » For Users » Policies » Appropriate Use of NERSC Resources

## APPROPRIATE USE OF NERSC RESOURCES

### NERSC is an Open Scientific Research Center

NERSC supports open research intended to be published in open scientific journals. The production of proprietary results and/or data is not permitted.

NERSC does not allow the use of the following:

- Classified or controlled military defense information
- Export controlled or ITAR codes or data
- Personally identifiable information
- Protected health information

#### TABLE OF CONTENTS

1. **NERSC is an Open Scientific Research Center**
2. **User Accountability**
3. **Resource Use**
4. **Government Rights**
5. **Passwords and Usernames**
6. **Notification**
7. **Software and Data**
8. **Use by Foreign Nationals**
9. **Deviations from Authorized Privileges Not Allowed**
10. **Data Retention**
11. **Account Sharing**
12. **Monitoring and Privacy**

# User Account Policies

- **Password policies**
  - Must change password every year (365 days)
  - **Do not share passwords**
  - **Do not email passwords**
- **Account locked after 5 consecutive login failures**
  - Login to Iris to clear login failures
  - If you have forgotten your password, there is a link on the Iris login page that will lead you through the process of resetting a password
  - Email NERSC Account Support for more help

## Good Password Examples:

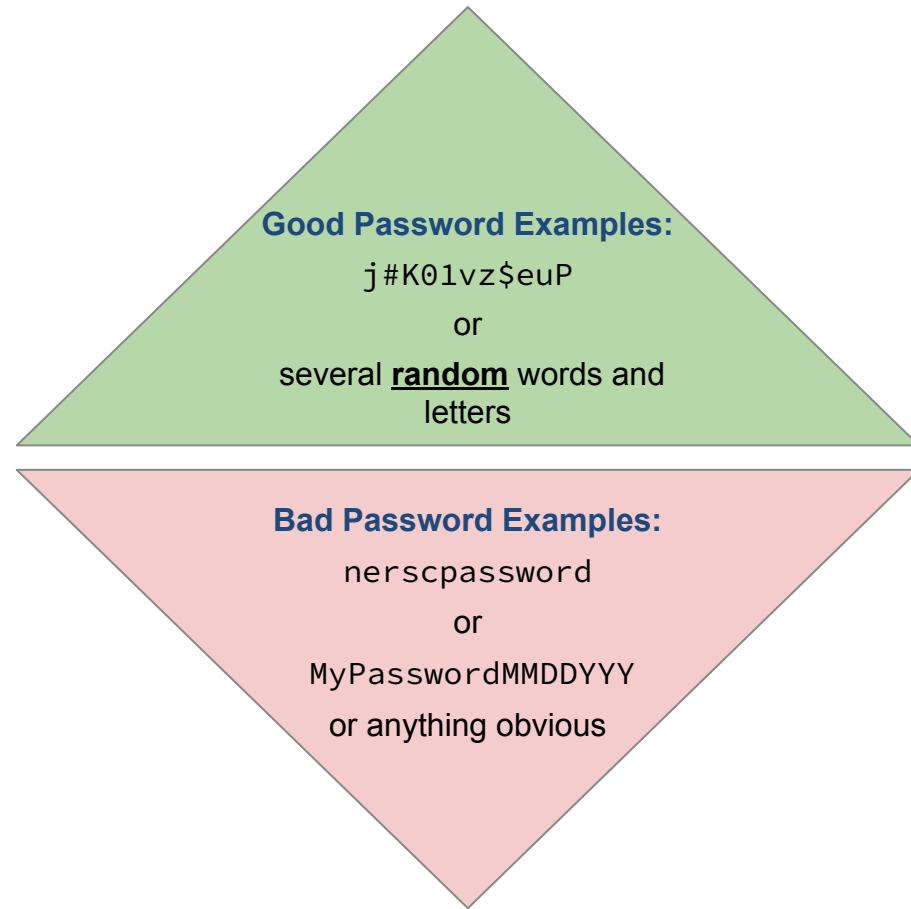
j#K01vz\$euP

or

several random words and letters

# User Account Policies

- **Password policies**
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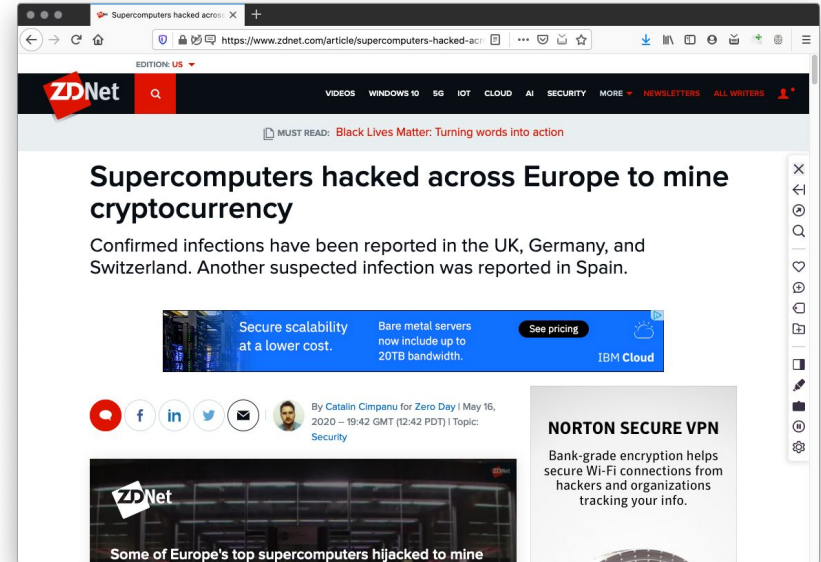




# Multi-Factor Authentication (MFA)

Tip: you will use this a LOT

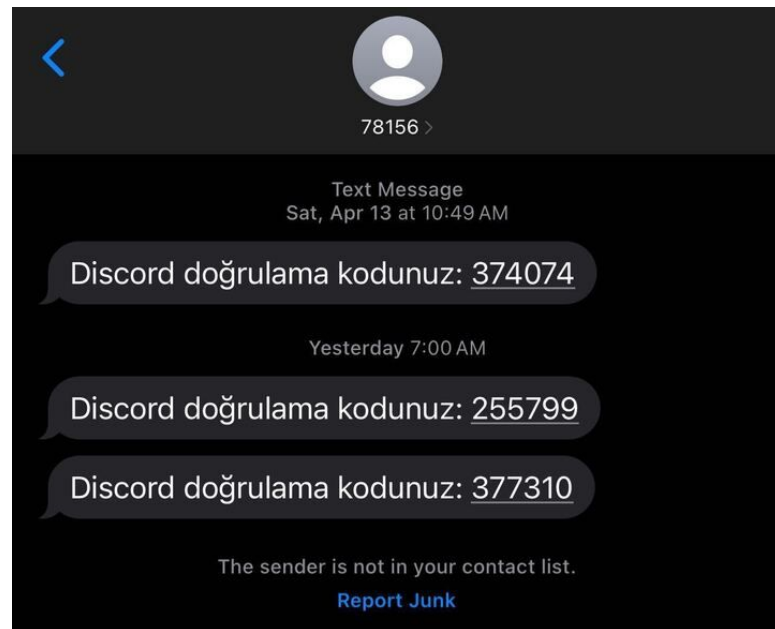
- Protects NERSC users from attacks like this →
- MFA is **REQUIRED** at NERSC



# Multi-Factor Authentication (MFA)

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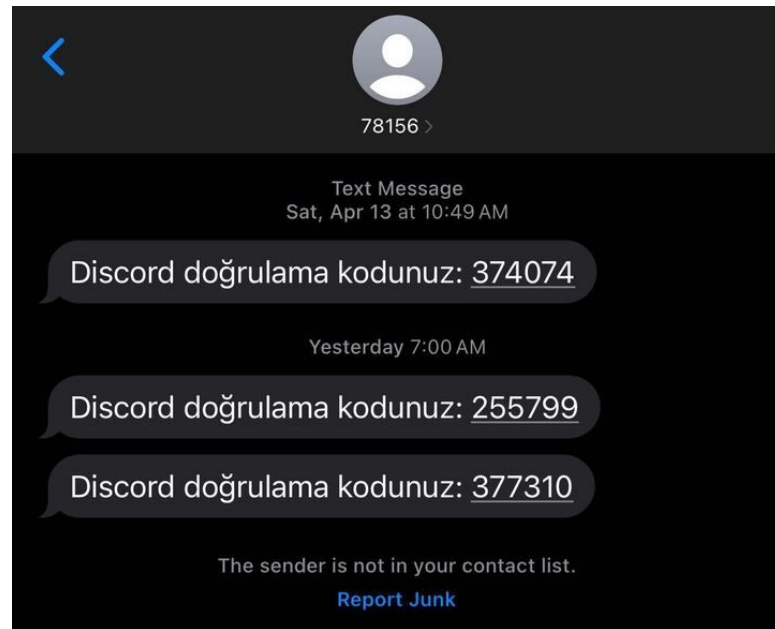


# Multi-Factor Authentication (MFA)

Tip: you will use this a LOT

- Protects NERSC users from attacks like this →
- MFA is **REQUIRED** at NERSC

MFA set up is done using Iris... but what is Iris?

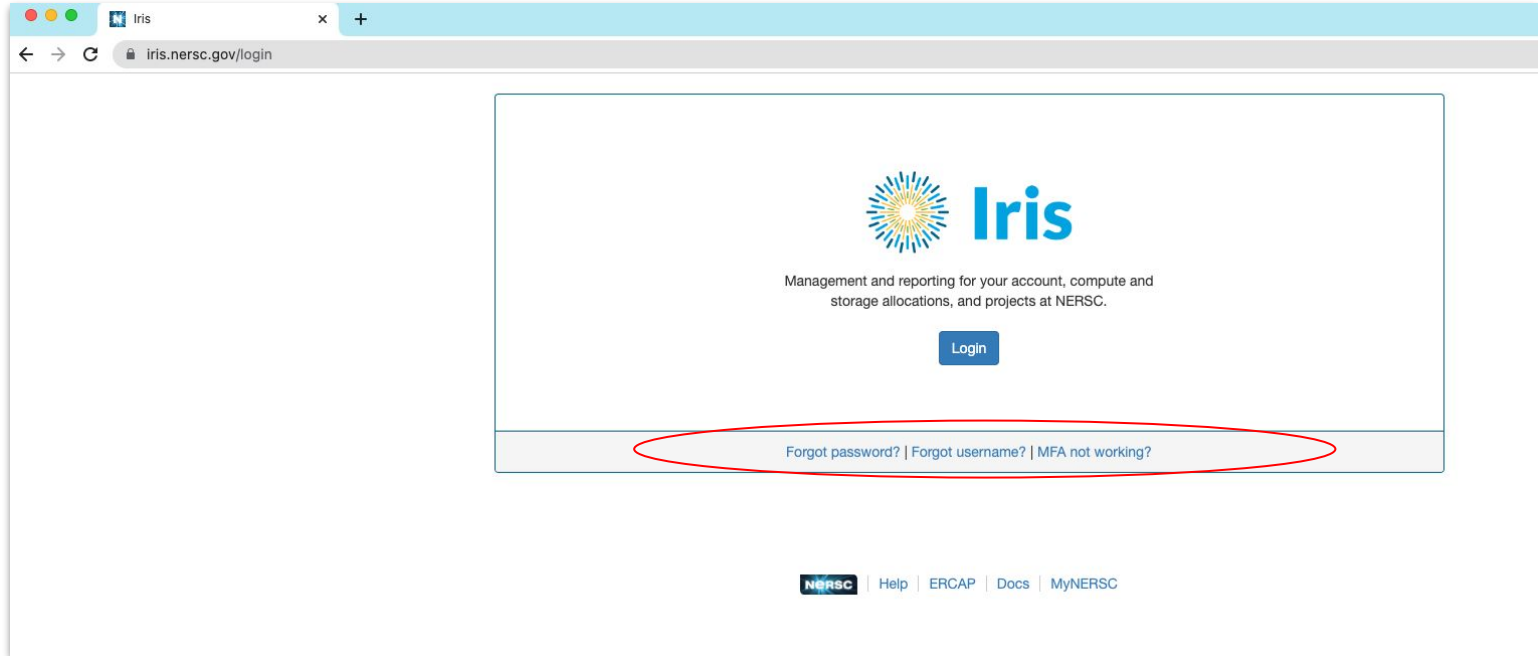


# Navigating Iris



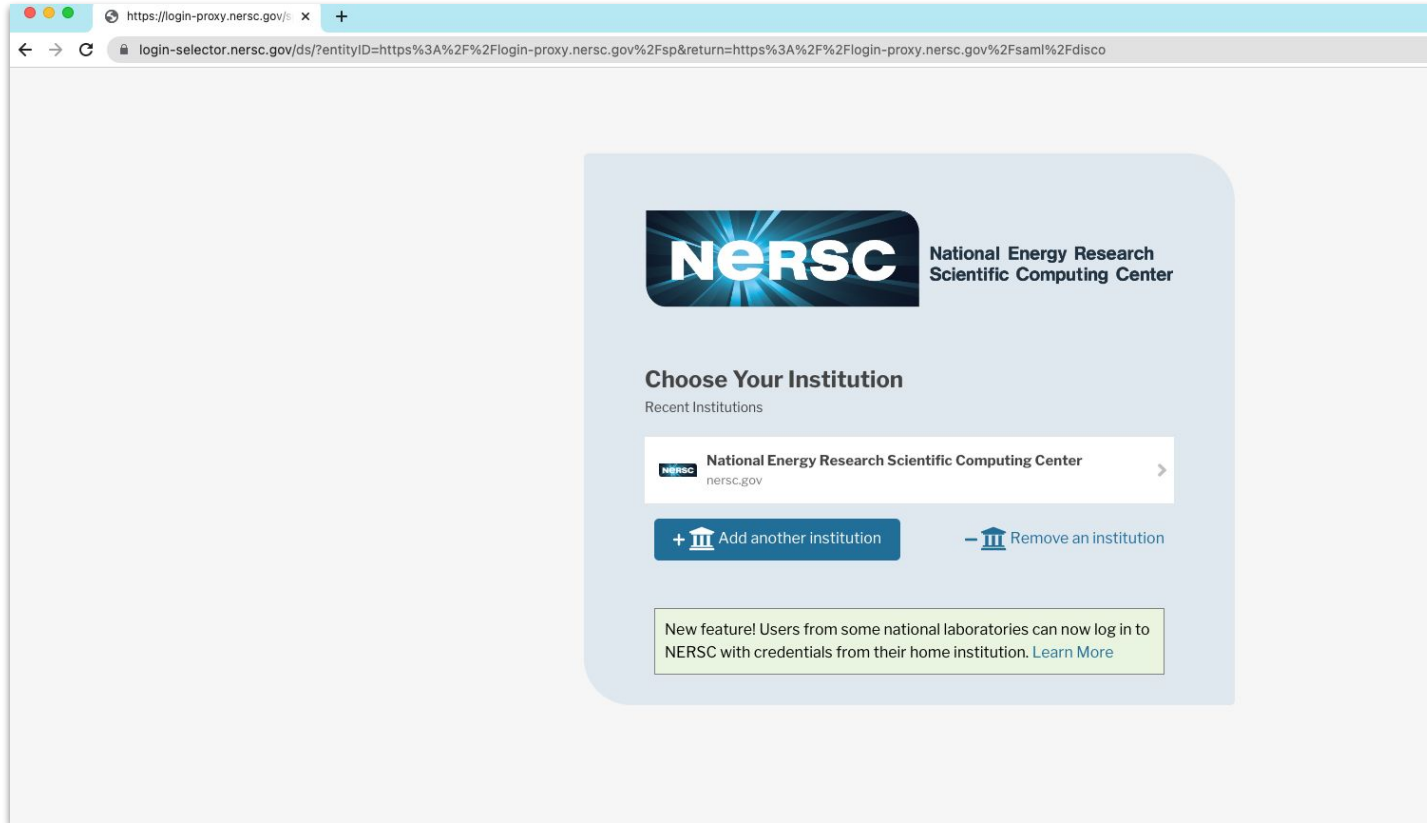


# Iris (<https://iris.nersc.gov>) for Your Account





# Iris (<https://iris.nersc.gov>) for Your Account



The screenshot shows a web browser window with the URL `https://login-proxy.nersc.gov/...`. The main content area features the NERSC logo and the text "National Energy Research Scientific Computing Center". Below this is a section titled "Choose Your Institution" with the subtext "Recent Institutions". A single institution is listed: "National Energy Research Scientific Computing Center" with the domain "nersc.gov". There are two buttons: "+ Add another institution" and "- Remove an institution". A note at the bottom states: "New feature! Users from some national laboratories can now log in to NERSC with credentials from their home institution. [Learn More](#)".

# Iris (<https://iris.nersc.gov>) for Your Account

NERSC Login

<https://shib.nersc.gov/idp/profile/SAML2/Redirect/SSO?execution=e1s2>



**NERSC** National Energy Research Scientific Computing Center

Username

Password

Log In

[Forgot your password?](#)

  U.S. DEPARTMENT OF ENERGY  
Office of Science

[Contact us](#)  
[Privacy & Security Notice](#)



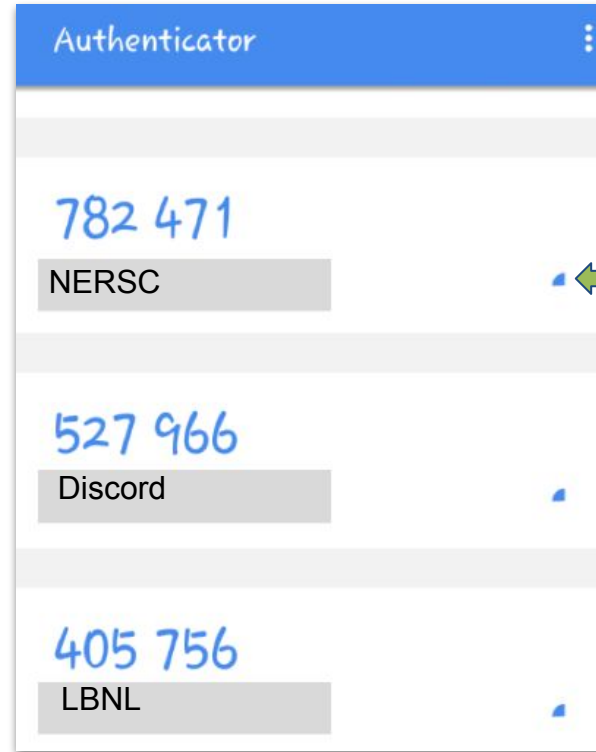
# Setting Up MFA in Iris

- First install Google Authenticator on your smartphone (works on Apple and Android)

<https://safety.google/authentication/>

Search "MFA" at

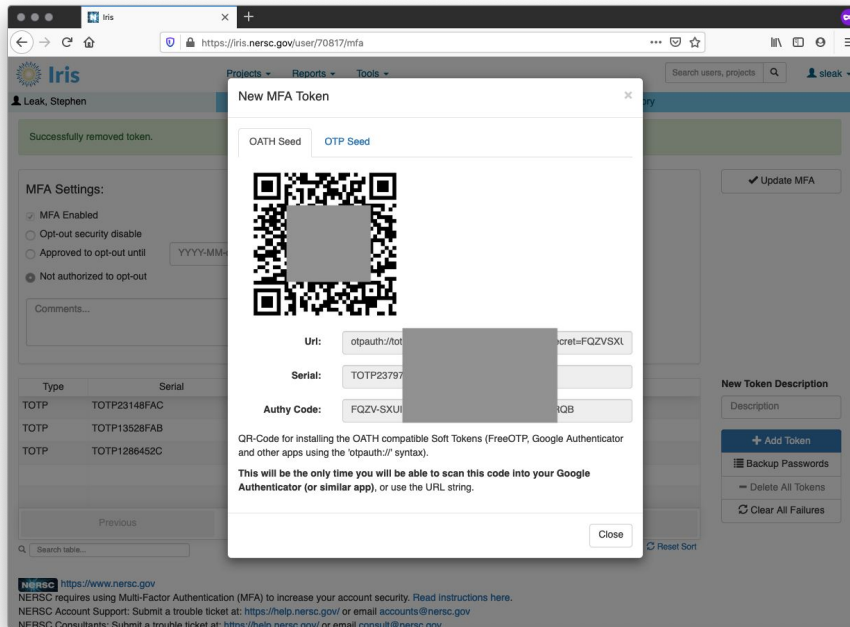
<https://docs.nersc.gov>



only valid  
for 30  
seconds at  
a time!

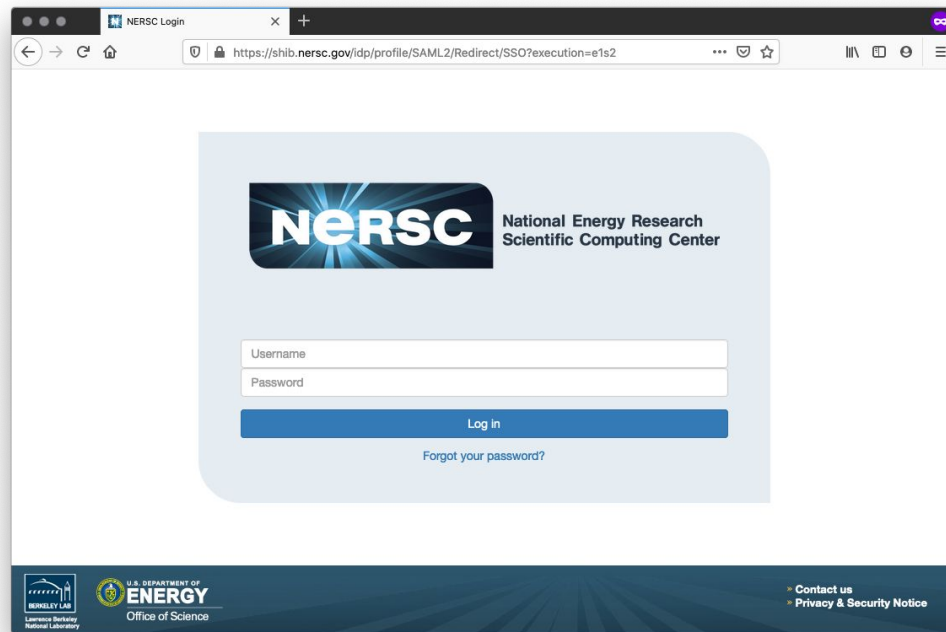
# Setting Up MFA in Iris

- Click the "MFA" tab
- Click the "Add Token" button
- Scan the QR code with the Authenticator app (or, paste the Authy code into Authy)



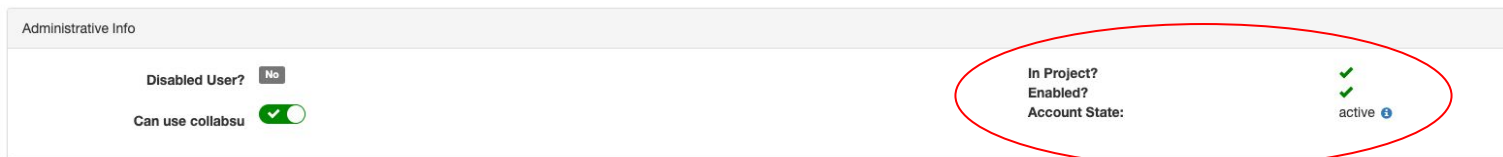
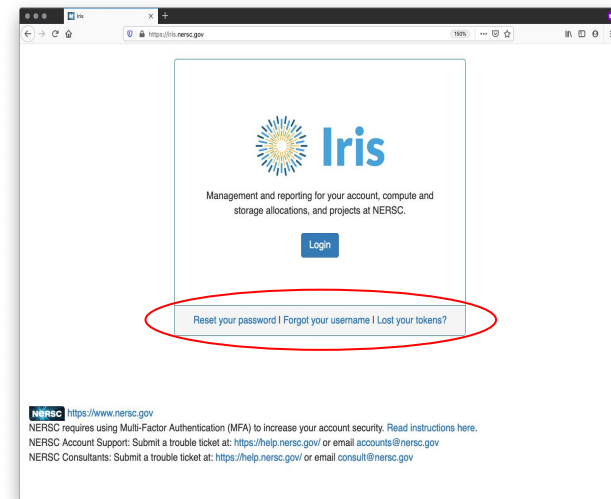
# Logging in with MFA

After single-sign-on page you'll be asked for your one-time password (6 digits from app)



# Troubleshooting Account Access

- I can't login to Iris
  - New account? It may not be approved yet (can take a few days)
  - Forgot password? Lost MFA tokens? Use the links on the Iris login page
- I can login to Iris, but not Perlmutter
  - Are you in a project? Check "Roles" tab








# Navigating Iris - Menu Bar

The screenshot shows the Iris web interface. At the top, a navigation menu bar contains the following items: CPU, GPU, Jobs, Storage, Roles, Groups, MFA, Profile, and History. Annotations with arrows point to these items: 'CPU Account Membership' points to CPU, 'GPU Account Membership' points to GPU, 'Storage Details' points to Storage, 'NERSC Account Membership' points to Roles, 'MFA Token' points to MFA, and 'Profile Information' points to Profile. Below the menu bar, the 'User Organization' section is visible, containing a table of user details. Annotations point to 'Jobs' (labeled 'Jobs'), 'Groups' (labeled 'Unix Group Membership'), and 'History' (labeled 'Audit Log').






Organization	Lawrence Berkeley National Laboratory - NERSC
Role	PROSTAFF
Org Type	NERSCOPS
Address	1 Cyclotron Road
City	Berkeley
State	CA
Province	
Postal Code	94720
Country	United States of America (US)
Website	<a href="http://www.nersc.gov">www.nersc.gov</a>
ROR ID	<a href="https://ror.org/05v3mvq14">https://ror.org/05v3mvq14</a>

# Navigating Iris - Finding Account Details



 Search users, projects   Igupta

Gupta, Lipi
CPU
GPU
Jobs
Storage
Roles
Groups
MFA
Profile
History

Project	Account	Default	Node Hours Charged	Machine Hours	Node Hours	Avg CF	Remaining	% Remaining	Allocated Hours <small>(End with % for percentage.)</small>	Computed Allocation	Last Updated
 als	als	<input type="checkbox"/>	0	0	0	0.0	0.0	758 <div style="width: 100%;"><div style="width: 100%;">100.0%</div></div>	758	1%	2024-06-10 10:39
 m3792	m3792	<input checked="" type="checkbox"/>	0	0	0	0.0	10 <div style="width: 100%;"><div style="width: 100%;">100.0%</div></div>	10	1%	2024-06-10 10:39	
 m4232	m4232	<input type="checkbox"/>	0	0	0	0.0	71 <div style="width: 100%;"><div style="width: 100%;">100.0%</div></div>	91	100%	2024-06-10 10:39	
 m4388	m4388	<input type="checkbox"/>	0	0	0	0.0	150 <div style="width: 100%;"><div style="width: 100%;">100.0%</div></div>	150	10%	2024-06-10 10:39	
 nstaff	nstaff	<input type="checkbox"/>	0	0	0	1.0	11,025 <div style="width: 100%;"><div style="width: 100%;">100.0%</div></div>	11,025	5%	2024-06-10 10:39	

# Navigating Iris - Finding Account Details

Project	Account	Default	Node Hours Charged	Machine Hours	Node Hours	Avg CF	Remaining	% Remaining	Allocated Hours <small>(End with % for percentage.)</small>	Computed Allocation	Last Updated
als	als	<input type="checkbox"/>	0	0	0	0.0	0.0	758 <div style="width: 100%;"><div style="width: 100%;">100.0%</div></div>	758	1%	2024-06-10 10:39
m3792	m3792	<input checked="" type="checkbox"/>	0	0	0	0.0	0.0	10 <div style="width: 100%;"><div style="width: 100%;">100.0%</div></div>	10	1%	2024-06-10 10:39
m4232	m4232	<input type="checkbox"/>	0	0	0	0.0	0.0	71 <div style="width: 100%;"><div style="width: 100%;">100.0%</div></div>	91	100%	2024-06-10 10:39
m4388	m4388	<input type="checkbox"/>	0	0	0	0.0	0.0	150 <div style="width: 100%;"><div style="width: 100%;">100.0%</div></div>	150	10%	2024-06-10 10:39
nstaff	nstaff	<input type="checkbox"/>	0	0	0	1.0	1.0	11,025 <div style="width: 100%;"><div style="width: 100%;">100.0%</div></div>	11,025	5%	2024-06-10 10:39

My Account
m4388
CPU GPU Jobs Storage Roles Groups Details History

Add Image  
Click image to edit

Allocation transfer report

### Project funding

**Allocation Pool:** DOE Allocation Pool  
**Allocation Type:** Director Reserve Allocations  
**Office:** NERSC Directors Reserve  
**Program:** NERSC Education  
**Science Category:** Computer Science : General  
**Slurm Category:**

### ERCAP project details

**Organization:** Lawrence Berkeley National Laboratory - NERSC, US  
**DOE Sensitive Identifiers:**  
**Compute requested in ERCAP:** 1.5 K hours  
**GPU requested in ERCAP:** 2.0 K hours  
**HPSS requested in ERCAP:** 1.0 TB  
**CFS storage available:** 20.0 TB  
**CFS files available:** 10.0 M  
**CFS max procecdirs:** 10  
**Funded by DOE Office of Science?** Y  
**Request #** ERCAP0029265  
**Quarterly Estimates** 10%, 30%, 40%, 20%

### Project owners

pi: [He, Yun \(Helen\)](#)  
[yhe@lbl.gov](mailto:yhe@lbl.gov)

pi proxy: [Lively, Charles](#)  
[charleslively@lbl.gov](mailto:charleslively@lbl.gov)

pi proxy: [Fulton, Daniel](#)  
[dfulton@lbl.gov](mailto:dfulton@lbl.gov)

pi proxy: [Hartman-Baker, Rebecca](#)  
[rjhartmanbaker@lbl.gov](mailto:rjhartmanbaker@lbl.gov)

pi proxy: [Gupta, Lipi](#)  
[lipigupta@lbl.gov](mailto:lipigupta@lbl.gov)

# Navigating Iris - Changing User Shell

## Server Logins

Ldap Tree	Home Directory	Login Shell	Username	GID	Group	Actions
alvarez	/global/homes/s/siddiq90	/bin/bash	siddiq90	92503	siddiq90	<a href="#">Edit</a> <a href="#">Delete</a> <a href="#">Search</a>
cori	/global/homes/s/siddiq90	/bin/zsh	siddiq90	92503	siddiq90	<a href="#">Edit</a> <a href="#">Delete</a> <a href="#">Search</a>
datatran	/global/homes/s/siddiq90	/bin/zsh	siddiq90	92503	siddiq90	<a href="#">Edit</a> <a href="#">Delete</a> <a href="#">Search</a>
gerty	/global/homes/s/siddiq90	/bin/zsh	siddiq90	92503	siddiq90	<a href="#">Edit</a> <a href="#">Delete</a> <a href="#">Search</a>
hpss	/home/s/siddiq90	/bin/bash	siddiq90	92503	siddiq90	<a href="#">Edit</a> <a href="#">Delete</a> <a href="#">Search</a>
muller	/global/homes/s/siddiq90	/bin/zsh	siddiq90	92503	siddiq90	<a href="#">Edit</a> <a href="#">Delete</a> <a href="#">Search</a>
nim-ldap	/home/siddiq90	/bin/bash	siddiq90	92503	siddiq90	<a href="#">Edit</a> <a href="#">Search</a>
nx	/global/homes/s/siddiq90	/bin/zsh	siddiq90	92503	siddiq90	<a href="#">Edit</a> <a href="#">Delete</a> <a href="#">Search</a>
perimutter	/global/homes/s/siddiq90	/bin/bash	siddiq90	92503	siddiq90	<a href="#">Edit</a> <a href="#">Delete</a> <a href="#">Search</a>
server	/home/siddiq90	/bin/bash	siddiq90	92503	siddiq90	<a href="#">Edit</a> <a href="#">Delete</a> <a href="#">Search</a>

Previous Page 1 of 2 10 rows Next

Search table... .csv Options

**Many users use the default bash shell**

## Add a new Server Login

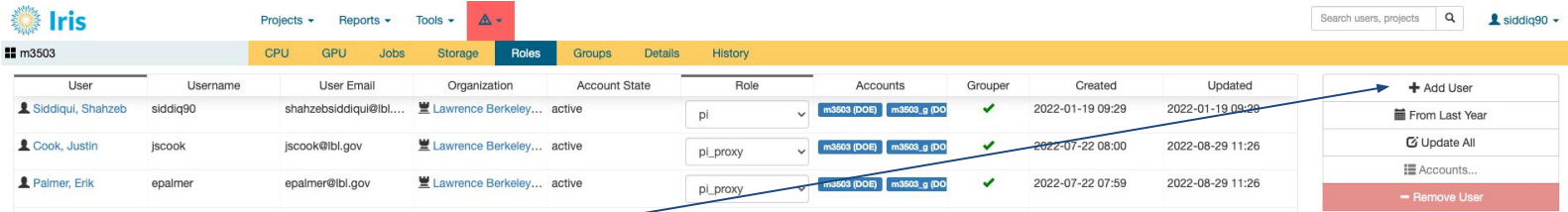
Server	<input type="text" value="/bin/bash"/>
Home Directory	<input type="text" value="/bin/csh"/>
Login Shell	<input type="text" value="/bin/tcsh"/>
Username	<input type="text" value="/bin/ksh"/>
GID	<input type="text" value="/bin/sh"/>
Group Name	<input type="text" value="✓ /bin/zsh"/>
	<input type="text" value="siddiq90"/>
	<input type="text" value="92503"/>
	<input type="text" value="siddiq90"/>

Save Changes

Cancel

# Navigating Iris - Adding User to Account

## PI and PI Proxy only!



User	Username	User Email	Organization	Account State	Role	Accounts	Group	Created	Updated
Siddiqui, Shahzeb	siddiq90	shahzebsiddiqui@lbl...	Lawrence Berkeley...	active	pi	m3503 (DOE) m3503_g (DO)	✓	2022-01-19 09:29	2022-01-19 09:29
Cook, Justin	jscook	jscook@lbl.gov	Lawrence Berkeley...	active	pi_proxy	m3503 (DOE) m3503_g (DO)	✓	2022-07-22 08:00	2022-08-29 11:26
Palmer, Erik	epalmer	epalmer@lbl.gov	Lawrence Berkeley...	active	pi_proxy	m3503 (DOE) m3503_g (DO)	✓	2022-07-22 07:59	2022-08-29 11:26

Add a user to Project **m3503**

Use this form to add an **active** NERSC user to this project. To add a **new** or **deactivated** user, please [invite them](#) instead.

Select a user   
Please select a valid user.

Role

You can either grant this user a number of node hours they cannot exceed, or a percentage of the project's compute allocation. The latter takes precedence in case they're both specified.

**CPU allocation**

Allocated Hours

% of Project's Hours

**GPU allocation**

Allocated Hours

% of Project's Hours

Please specify what is the max percent of the project's HPSS allocation that can come from this user.

% of HPSS Storage



# Connecting to NERSC Systems



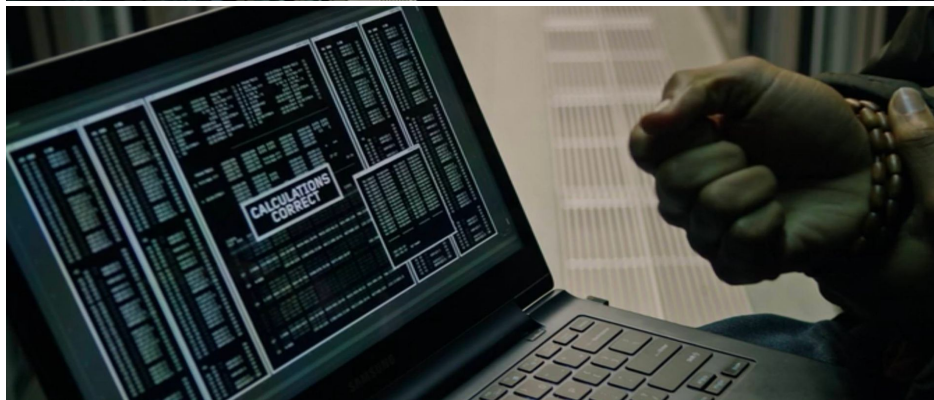
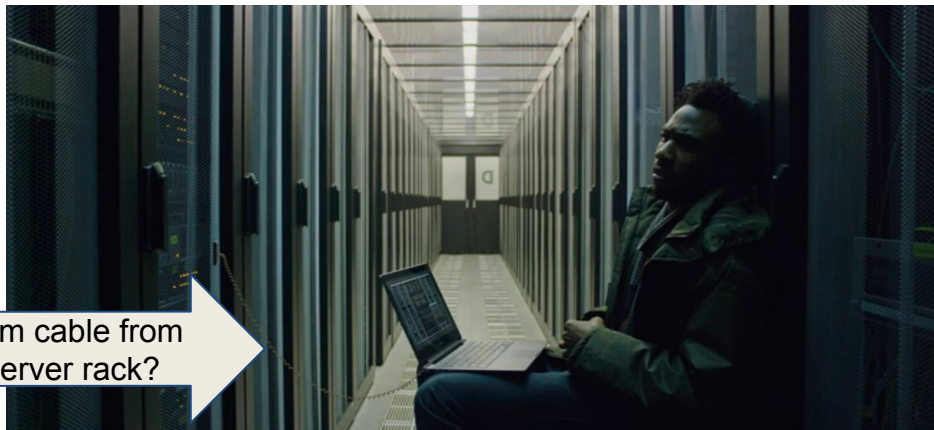


# What NOT to do!

I love this movie, by the way. This is just NOT how to connect to an HPC resource!



some random cable from laptop to server rack?



# Connecting to NERSC is EASY

What you DO need:

- An internet connection
- a laptop or computer with terminal
- Username, password and Multi-Factor Authentication method



# Connecting with SSH

↑  
the internet!



You will need a (text) terminal program!

- Mac: terminal (built-in) or "iTerm2" (<https://www.iterm2.com/>)
- Windows: PuTTY (<https://www.putty.org/>), MobaXterm (<https://mobaxterm.mobatek.net/>) or XWin32 or Git BASH
- Linux: Your own favorite :)
- Chromebook: crosh (developer mode) or Crostini (Linux-in-a-container) or SSH App

# Jupyter

You can access NERSC systems from any web browser, via <https://jupyter.nersc.gov>

	Shared CPU Node	Shared GPU Node	Exclusive CPU Node	Exclusive GPU Node	Exclusive Large Memory Node	Configurable GPU	Configurable DDX
Alvarez	start						
Muller	start	start	start			start	
Gerty	start						
Perlmutter	start	start	start	start		start	start
Cori	start	start					

Resources: Use a node shared with other users' notebooks but outside the local cluster. Use your own node within a job allocation using defaults. Use multiple compute nodes with specialized settings.

Use Cases: Visualization and analysis that do not need memory intensive and can run on just a few cores. Visualization, analysis, machine learning that is compute or memory intensive but can be done on a single node. Multi-node analysis jobs, jobs in iterations, custom project changing, and more.

```
Directory: /global/u1/s/sleak
Wed Jun 3 16:24:54 PDT 2020
16:24 sleak@cori19:sleak$
```



# Running GUI Apps

GUI apps can be painfully slow over a network

Examples:

- Matlab
- DDT (debugging)
- Nsight (performance)

Why is this, and how can we fix it?



NoMachine



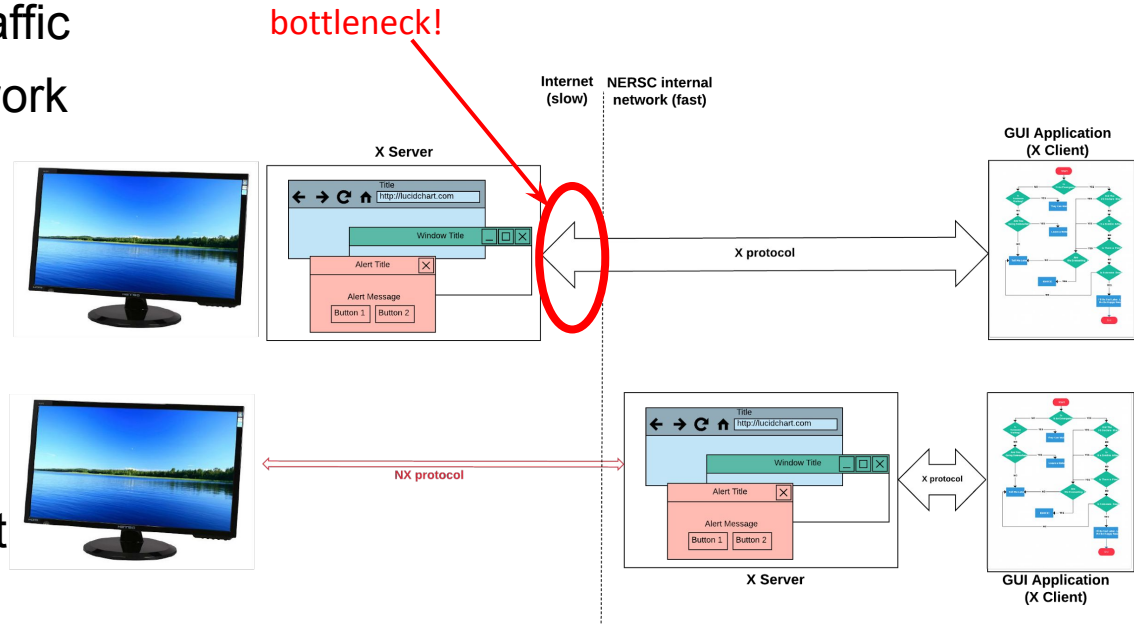


# NoMachine: Accelerated X

X protocol makes a lot of traffic

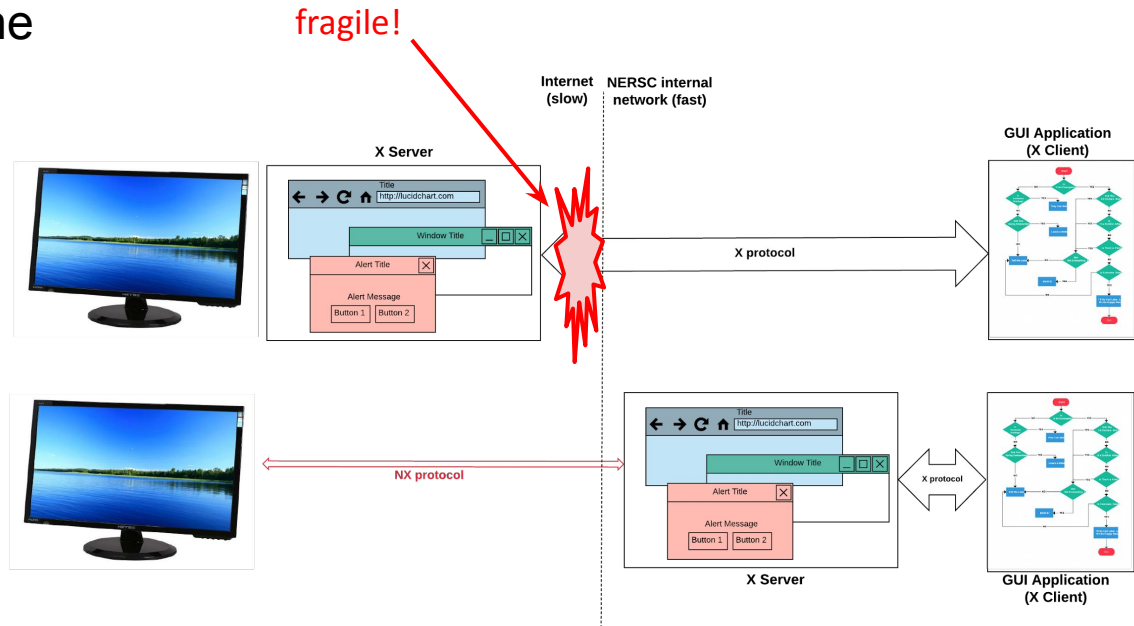
- OK over the (fast) network internal to NERSC
- Not OK over the (slow) internet

NoMachine runs **inside** NERSC, and sends less data over the (slow) internet



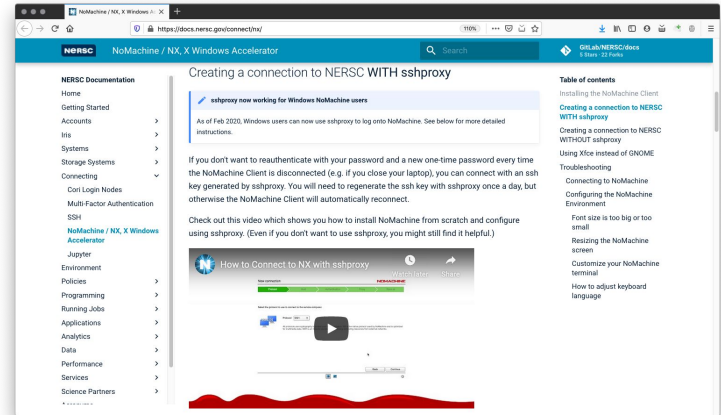
# NoMachine: Accelerated X

NoMachine also removes the weakest link, so broken connections don't kill your application



# How to Set It Up

- <https://docs.nersc.gov/connect/nx/> has detailed instructions
  - Download the client (<https://www.nomachine.com/download-enterprise#NoMachine-Enterprise-Client>) (Make sure to get the **client**, not the server or workstation)
  - Setup a connection (can optionally use the key you generated with `sshproxy.sh`)



# Getting Help! (Submitting a User Ticket)



# NERSC Help Portal: <https://help.nersc.gov/>

neresc.servicenowservices.com/sp/

Perlmutter Job Submissions  
Project allocation on Perlmutter CPU-only node jobs use (#SBATCH -A mXXXX); for the Perlmutter GPU node jobs you must use the \_g\_ accounts (#SBATCH -A mXXXX\_g).

NERSC

Classic View NERSC Homepage

## NERSC Help Portal

Search Incidents and Requests

**Documentation**  
Technical documentation for users, including examples

**Open Ticket**  
Contact NERSC support to report a problem

**Open Request**  
Quota increases, reservations, databases, etc.

**Service Announcements**  
No upcoming maintenances in the next two weeks

**Useful Links**

- Password Reset
- Book Consulting appointment
- NERSC Status Page
- NERSC Users Slack
- ERCAP
- IRIS

**My Recent Incidents**

- Sijie account do not deactivate  
INC0189990 • Closed • 3d ago

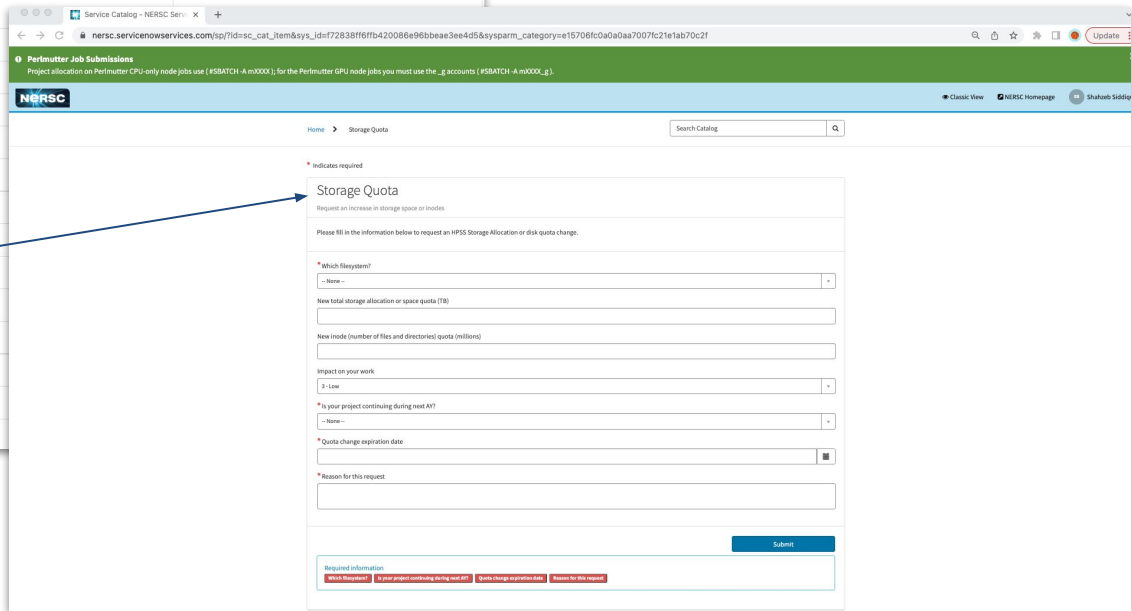
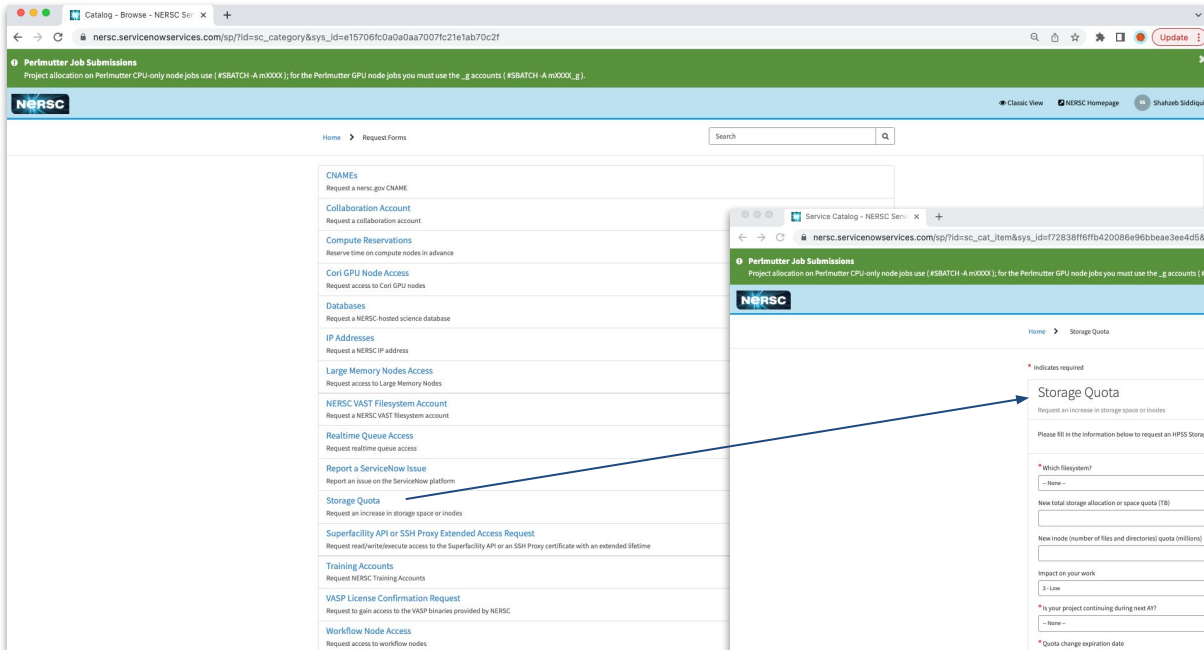
**My Watchlist Open Incidents**

- BerkeleyGW epsilon run not normal  
INC0177149 • 10mo ago • User Updated • Tang, Hong (tang2017)
- disk quota  
INC0190580 • 9h ago • Awaiting User Info • Prota, James (jprota)
- Quantum chemistry programs on Perlmutter  
INC0190578 • 8d ago • Awaiting User Info • Greenman, Loren (loreng)

**My Projects' Open Incidents**

- Compute Reservation Request  
INC0190690 • 11d ago • Active-Expectations Set • Ross, Hannah (hross)
- Unable to login to NERSC systems  
INC0190549 • 13d ago • Awaiting User Info • Bhalachandra, Sridutt (sriduttb)
- Degraded Performance on Perlmutter nid001532  
INC0190002 • 13d ago • New • Bhalachandra, Sridutt (sriduttb)
- Compute Reservation Request  
INC0185551 • 4mo ago • Active • Blaschke, Johannes (blaschke)
- DGEMM performance issues with Perlmutter Nodes (nid003069 and nid003177)  
INC0179995 • 7mo ago • Awaiting Vendor • Bhalachandra, Sridutt (sriduttb)
- HPSS Allocations  
INC0180078 • 8mo ago • User Updated • Nugent, Peter (nugent)

# Request Forms





# How to file a Good Ticket

## Do Include:

- error messages, JobID, location of relevant files on system, output of module list
- Steps to reproduce

## Don't Include:

- Screenshots! (This seems helpful but usually cannot be read easily, and can't copy/paste text from an image!)



**Pasting  
a bare  
error message**



**Providing  
all  
the steps  
to reproduce**

<https://docs.nersc.gov/getting-started/#how-to-file-a-good-ticket>

# For Example!

## Hard to troubleshoot

- My code is slow
- My job won't start
- Perlmutter is broken



**It's always helpful to include the actual error message, even if it's long!**

## Better to troubleshoot

- JobID 123456 was 3x slower than JobID 234566.
- The jobscript located at `$HOME/submit_job.sh` works on Cori but not on Perlmutter. This was the error message:...
- Running `python $SCRATCH/test_cori.py` crashes with this error message.

# Navigating NERSC User Documentation



# What is User Documentation?

[docs.nersc.gov](https://docs.nersc.gov)

The screenshot shows the NERSC Documentation website. The header is blue with the NERSC logo and 'NERSC Documentation' text. A search bar is on the right. The main content area is white with a blue sidebar on the left. The sidebar lists various documentation topics. The main content area has a large heading 'NERSC Technical Documentation' and a paragraph describing NERSC's services. Below this is a section 'Top documentation pages' with a list of links to various guides. At the bottom, there is a section 'Computing Resources' with a link to 'Perlmutter'.

docs.nersc.gov

NERSC NERSC Documentation

Search

GitLab/NERSC/docs  
☆ 24 ▼ 86

NERSC Documentation

[Home](#)

Getting Started at NERSC

Understanding Our Systems >

Getting and Managing Your Account >

Connecting to NERSC >

Working in a NERSC Shell >

Running Jobs >

Running Workflows >

Using Applications and Frameworks >

Developing and Installing Software >

Managing Data >

Building Your Own Services >

Managing Projects and Allocations >

Acronyms

## NERSC Technical Documentation

[National Energy Research Scientific Computing \(NERSC\)](#) provides High Performance Computing (HPC) and Storage facilities and support for research sponsored by, and of interest to, the U.S. Department of Energy (DOE) Office of Science (SC).

### Top documentation pages

- [Getting Started at NERSC](#) - Information for new and existing NERSC users
- [Getting Help](#) - How to get support
- [Queues and Charges](#) - Charge factors, run limits, submit limits
- [Example Job Scripts](#) - Curated example job scripts
- [Basics of Running Jobs - Slurm](#) commands, job script basics, submitting, updating jobs
- [Jupyter](#) - Interactive [Jupyter Notebooks](#) at NERSC
- [Globus](#) - High-performance data transfers
- [Unix File Permissions](#) - Summary of Unix file permission commands, Unix groups, and options for adjusting permissions at NERSC
- [Multi-Factor Authentication \(MFA\)](#) - How to set up and use MFA for your NERSC account

### Computing Resources

- [Perlmutter](#) - A Cray EX system with AMD EPYC CPUs and NVIDIA A100 GPUs

Table of contents

- Top documentation pages
- Computing Resources
- Other NERSC web pages

NERSC

Office of Science



# Includes How-To Guides!

**NERSC** NERSC Documentation Search GitLab/NERSC/docs ☆24 👤86

**NERSC Documentation**

- Supported Applications and Frameworks
  - AMBER
  - Abinit
  - BerkeleyGW
  - CP2K
  - Dask
  - E4S
  - GAMSS
  - Gromacs
  - Jupyter
    - Jupyter Overview
    - How-To Guides**
  - Reference
  - Background
- LAMMPS
- Mathematica
- MATLAB
- MOLPRO
- NAMD
- NCL
- NWChem
- ORCA
- ParaView

## Jupyter at NERSC: How-To Guides

These how-to guides may require you to edit files at NERSC. To do this, use the editor of your choice from an [SSH session](#), a terminal in [NoMachine / NX](#), a terminal pane in JupyterLab, or use JupyterLab's built-in text editor.

### How to Use a Conda Environment as a Python Kernel

If you already have a Conda environment you want to use as a Jupyter kernel, make sure it includes the IPython kernel package `ipykernel`. Otherwise, create a new Conda environment with the packages you want plus `ipykernel`:

```
nersc$ module load python
nersc$ conda create -n <environment-name> ipykernel <other-packages...>
```

Activate the environment and use `ipykernel install` to set up a Jupyter [kernelspec](#). Suppose our environment is called `env`:

```
nersc$ conda activate env
nersc$ python -m ipykernel install \
--user --name env --display-name MyEnvironment
Installed kernelspec env in /global/u1/e/elvis/.local/share/jupyter/kernels/env
```

The kernelspec is written in JSON to `kernel.json` in the installation directory:

#### Table of contents

- How to Use a Conda Environment as a Python Kernel
- How to Validate That a Kernelspec is Valid JSON
- How to Set Environment Variables for a Python Kernel
- How to Customize a Kernel with a Helper Shell Script
- How to Use a Container to Run a Jupyter Kernel
- How to Use Matplotlib in Your Notebooks
- How to Fix "Spawn Failed: Insufficient Storage"
- How to Fix "Unexpected Error While Saving File"
- How to Use Jupyter at NERSC as a Tutorial

# Jobscript Generator

**NERSC** NERSC Documentation Search GitLab/NERSC/docs ☆24 🗨86

**NERSC Documentation**

- Home
- Getting Started at NERSC
- Understanding Our Systems >
- Getting and Managing Your Account >
- Connecting to NERSC >
- Working in a NERSC Shell >
- Running Jobs
  - Basics of Running Jobs
  - Running Jobs on Perlmutter
  - Resource Usage Policies
  - Scheduling
  - Queues and Charges
  - Interactive
  - Example Jobs
  - Best Practices
  - Jobscript Generator**
  - Troubleshooting Jobs
  - Monitoring
  - Affinity

## Jobscript Generator

Use this tool to generate a customized batch file for submitting jobs to NERSC systems. You may need to scroll within the configuration area to see all options. This tool is exactly the same as the tool that appears in Iris, provided here without login.

### Jobscript Generator

This tool generates a batch script template which also realizes specific process and thread binding configurations.

**Configuration:**

**Machine**  
Select the machine on which you want to submit your job.  
Perlmutter - CPU ✓

**Application Name**  
Specify your application including the full path.  
✓

**Job Name**  
Specify a name for your job.  
✓

**Email Address**

**Job script:**  
Your script will be displayed here.





# Navigating NERSC Home Page



# Navigating [www.nersc.gov](http://www.nersc.gov)

- General Information about NERSC!
- New articles and policy information
- “Now Computing” - see who is doing what!



The screenshot shows the NERSC website homepage. At the top, there is a navigation bar with links for HOME, ABOUT, SCIENCE, SYSTEMS, FOR USERS, NEWS, R & D, EVENTS, and LIVE STATUS. Below this is a large banner image of a building under construction with a blue overlay containing the text: "BOOSTING CARBON-NEGATIVE BUILDING MATERIALS. Locking greenhouse gases into building materials could store them safely for many years. Researchers using NERSC resources are advancing the science behind this idea. » Read More". Below the banner is a paragraph: "NERSC is the mission scientific computing facility for the U.S. Department of Energy Office of Science, the nation's single largest supporter of basic research in the physical sciences." Below this is a section titled "COMPUTING AT NERSC" with four buttons: "OUR SYSTEMS", "DOCUMENTATION FOR USERS", "CENTER STATUS", and "APPLY TO USE NERSC". To the right of this section is a "NERSC@50" section with three news items: "David Baker Talks Protein Design on June 3" (JUNE 2, 2024), "Manos Mavrikakis to Deliver May 20 NERSC@50 Seminar" (MAY 9, 2024), and "NERSC@50 Seminar Series Kicks off April 15" (APRIL 8, 2024). Below the "COMPUTING AT NERSC" section is a "NOW PLAYING" section with the heading "SOME SCIENTIFIC COMPUTING NOW IN PROGRESS AT NERSC". Below this is a table with columns for PROJECT, SYSTEM, NODES, and NODE HOURS USED.

PROJECT	SYSTEM	NODES	NODE HOURS USED
Energy Exascale Earth System Modeling (E3SM) Biological & Environmental Research PI: Lai-Yung Ruby Leung, Pacific Northwest	perlmutter	512	370,430

# Navigating [www.nerisc.gov](http://www.nerisc.gov) (NERSC Events)

NERSC 50 Powering Scientific Discovery for 50 Years

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HOME ABOUT SCIENCE SYSTEMS FOR USERS NEWS R & D **EVENTS** LIVE STATUS

EVENTS

- NERSC Events Calendar
- NERSC@50 Seminars
- Grads@NERSC Community Calls

Home » Events » NERSC Events Calendar

## NERSC EVENTS CALENDAR

### Training, Meetings, Office Hours, & Special Events

Keep up with [trainings](#) sponsored by NERSC and others, [NERSC User Group \(NUG\) webinars](#) and meetings, office hours, seminars, and other special events, such as our [50th Anniversary speaker series](#) and special [community calls for graduates and postdocs](#).

#### NERSC Training & Events Calendar

Today June 2024

Sun	Mon	Tue	Wed	Thu	Fri	Sat	Jun 1
26	27	28	29	30	31		
					10am Spin Office		
2	3	4	5	6	7	8	
		11am Training: AL	9am SpinUp: Serr	11am Training: AL	10am Spin Office		
9	10	11	12	13	14	15	
	9am OpenMP Trail	11am Training: AL	9am NERSC June	9am NERSC June	10am New User Tr		
			9am SpinUp: Haci	1pm SpinUp: Hac	10am Spin Office		
			11am Training: AL				
16	17	18	19	20	21	22	
	10am AL/ML Office	10am Training: Ju		8am Training: Por	10am Training: Ju		
	1:30pm NERSC 50			11am NUG Comm	10am Spin Office		
23	24	25	26	27	28	29	
				10am Perimutter	9am Training: Cra	10am Spin Office	
30	Jul 1	2	3	4	5	6	
		10am Perimutter			10am Spin Office		
		1pm FUN Office H					

Events shown in time zone: Pacific Time - Los Angeles

Google Calendar

Add this calendar to your own calendar!



# Live Status: (<https://www.nersc.gov/live-status/motd/>)

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SEARCH...

HOME ABOUT SCIENCE SYSTEMS FOR USERS NEWS R & D EVENTS **LIVE STATUS**

LIVE STATUS

- Live Status (MOTD)
- Scheduled Outages
- Queue Look
- My NERSC

Home » Live Status » Live Status (MOTD)

## LIVE STATUS (MOTD)

**Compute Systems:**

System	Status	Jobs Running	Jobs Queued	Cores in Use	Load	Description/Notes
Perimutter:	Up					

**Global Filesystems:**

System	Status	Description/Notes
Community File System (CFS):	Up	
DNA:	Up	
Data Transfer Nodes:	Up	
Global Common:	Up	
Global Homes:	Up	

**Mass Storage Systems:**

System	Status	Description/Notes
HPSS Archive (User):	Up	
HPSS Regent (Backup):	Up	

**Service Status:**

All services are available.

**Planned Outages:**

<b>Spin:</b>	02/13/24 14:00-18:00 PST Scheduled Maintenance Workloads in the development cluster may be unavailable for brief periods (1-2 min) during the window for a time-sensitive upgrade to system software.
<b>HPSS Regent (Backup):</b>	02/15/24 9:00-12:00 PST Scheduled Maintenance Some retrievals may be delayed during tape library maintenance.
<b>Perimutter:</b>	02/21/24 6:00-16:00 PST Scheduled Maintenance Perimutter will be unavailable during the listed times due to scheduled maintenance.
<b>Spin:</b>	02/21/24 13:00-18:00 PST Scheduled Maintenance Workloads in the production cluster will be unavailable for brief periods (1-2 min) during the window for an upgrade to system software.
<b>HPSS Regent (Backup):</b>	03/06/24 9:00-13:00 PST Scheduled Maintenance System down for quarterly maintenance.
<b>HPSS Archive (User):</b>	03/13/24 9:00-13:00 PDT Scheduled Maintenance System down for quarterly maintenance.

**Lipi's Top Tip:**  
Add disruptive outages to your calendar so you can plan ahead!

# Navigating [www.nersc.gov](http://www.nersc.gov) (Scheduled System Outages)

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HOME ABOUT SCIENCE SYSTEMS FOR USERS NEWS R & D **EVENTS** LIVE STATUS STAFF ONLY

Home » Events » Scheduled System Outages

## NERSC SCHEDULED SYSTEM OUTAGES

NERSC Outages

Today Thursday, September 7

Print Week Month Agenda

**Wednesday, September 13**

6:00am	Perimutter Scheduled Maintenance
9:00am	HPSS Regent (Backup) Scheduled Maintenance
9:30am	Globus Scheduled Maintenance

**Tuesday, September 19**

9:30am	Globus Scheduled Maintenance
--------	------------------------------

**Wednesday, September 20**

6:00am	Perimutter Scheduled Maintenance
--------	----------------------------------

Showing events until 11/15. [Look for more](#)

Events shown in time zone: Pacific Time - Los Angeles

GoogleCalendar

Last edited: 2018-05-02 15:38:06

BERKELEY LAB U.S. DEPARTMENT OF ENERGY Office of Science

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**ENERGY**

Office of  
Science



# Navigating [www.nerisc.gov](http://www.nerisc.gov) (NERSC User Slack)

My NERSC | A-Z Index | Share | Follow

search...

HOME ABOUT SCIENCE SYSTEMS **FOR USERS** NEWS R & D EVENTS LIVE STATUS

FOR USERS

- Getting Help
- Live Status
- Getting Started
- Accounts & Allocations
- Documentation
- Policies
- My NERSC
- Job Logs & Statistics
- Training & Tutorials
- NERSC Users Group
- Monthly NUG Webinars
- Annual Meetings
- SIG Experimental Facility Users
- NUGEX
- NUGEX Nominations
- Charter
- NERSC Users SLACK
- Task Forces/Working Groups

Home » For Users » NERSC Users Group

## NERSC USERS GROUP (NUG)

The NERSC Users' Group, NUG, welcomes participation from all NERSC users. NUG provides advice and feedback to NERSC on the current state and future delivery of NERSC resources and services. NUG promotes the effective use of the high performance computing facilities at NERSC by sharing information about experiences in using the facility, suggesting new research and technology directions in scientific computing, and voicing user concerns.

NUG members converse with NERSC and DOE through monthly teleconferences, NUG email lists, and yearly face-to-face meetings.

NERSC holds annual face-to-face meetings.

### Monthly NUG Webinars »

This page lists the NERSC User Group (NUG) monthly user telecons and webinars. [Read More »](#)

### NUG Annual Meetings »

NUG holds annual meetings. The annual meetings usually consist of one "business day" and one to three days of High Performance Computing training. [Read More »](#)

### SIG Experimental Facility Users »

NUG is sponsoring a Special Interest Group (SIG) within the NERSC Users Group for Experimental Facility Users. [Read More »](#)

### NUG Executive Committee (NUGEX) »

NUGEX is the voice of the user community to NERSC and DOE. While all NUG events are open to all NERSC users, NUGEX members regularly participate in the monthly teleconferences and the annual face-to-face meeting. NUGEX is consulted on many NERSC policy issues, e.g., batch configurations, disk quotas, services and training offerings. Members of NUGEX also participate in their office's NERSC Requirements Reviews of High Performance Computing and Storage. There are three representatives from each office and three members-at-large. [Read More »](#)

### NUGEX Positions - Now accepting nominations »

We are currently seeking volunteers and nominations for NUGEX - if you would like to participate, or to nominate a potential NUGEX member, please fill in and submit the form at <https://forms.fcl3d/hISPd6WLV77> The Executive Committee (NUGEX) of the NERSC User's Group (NUG) is a group of NERSC users who oversee NUG activities for the benefit of NERSC's user community of over 8,000 researchers across all scientific domains of the DOE Office of Science. NUGEX will meet regularly (up to 1... [Read More »](#)

NERSC Users Group

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HOME ABOUT SCIENCE SYSTEMS **FOR USERS** NEWS R & D EVENTS LIVE STATUS STAFF ONLY

Home » For Users » NERSC Users Group » Monthly NUG Webinars

## MONTHLY NUG WEBINARS

NUG holds monthly teleconferences with NERSC, usually on the second Thursday of the month, from 11 a.m. to 12 p.m. Pacific Time. All NERSC users, regardless of experience or sophistication, are welcome and encouraged to attend. Connection details are sent monthly via email to all NERSC users.

NUG teleconferences are also listed on the [Events Calendar](#).

### NUG Meeting August 24, 2023 »

August 24, 2023  
Date: Thursday, August 24, 2023 Time: 11:00 PST The Monthly NUG Meeting is a regular opportunity for our users to show off what they've done, for NERSC to get feedback from users, and for users to exchange ideas. Zoom: <https://lbnl.zoom.us/j/285479463> (full connection details below). We'll also use the NERSC Users Slack #webinars channel for discussion before, during and after the meeting. Add meeting series to calendar/Agenda Announcements and Calls for... [Read More »](#)

### NUG Meeting July 20, 2023 »

July 20, 2023  
Date: Thursday, July 20, 2023 Time: 11:00 PST The Monthly NUG Meeting is a regular opportunity for our users to show off what they've done, for NERSC to get feedback from users, and for users to exchange ideas. Zoom: <https://lbnl.zoom.us/j/285479463> (full connection details below). We'll also use the NERSC Users Slack #webinars channel for discussion before, during and after the meeting. Add meeting series to calendar/Agenda Announcements and Calls for Participation: Upcoming... [Read More »](#)

### NUG Meeting June 15, 2023 »

June 15, 2023  
Date: Thursday, June 15, 2023 Time: 11:00 PST The Monthly NUG Meeting is a regular

FOR USERS

- Getting Started
- Accounts & Allocations
- Getting Help
- Live Status
- Documentation
- NERSC Code of Conduct
- Policies
- My NERSC
- Training & Tutorials
- NERSC Users Group
- Monthly NUG Webinars





Thank You and  
Welcome to  
NERSC!

