



# Getting a Research Computing Account

# Getting a Research Computing Account

Instructor: Trevor Hall  
Workshop: Quick Byte

- Website: [www.rc.colorado.edu](http://www.rc.colorado.edu)
- Helpdesk: [rc-help@colorado.edu](mailto:rc-help@colorado.edu)
- Slides: [https://github.com/ResearchComputing/New\\_User\\_Seminar](https://github.com/ResearchComputing/New_User_Seminar)
- Survey: <http://tinyurl.com/curc-survey18>

# RMACC Cyber Infrastructure Portal



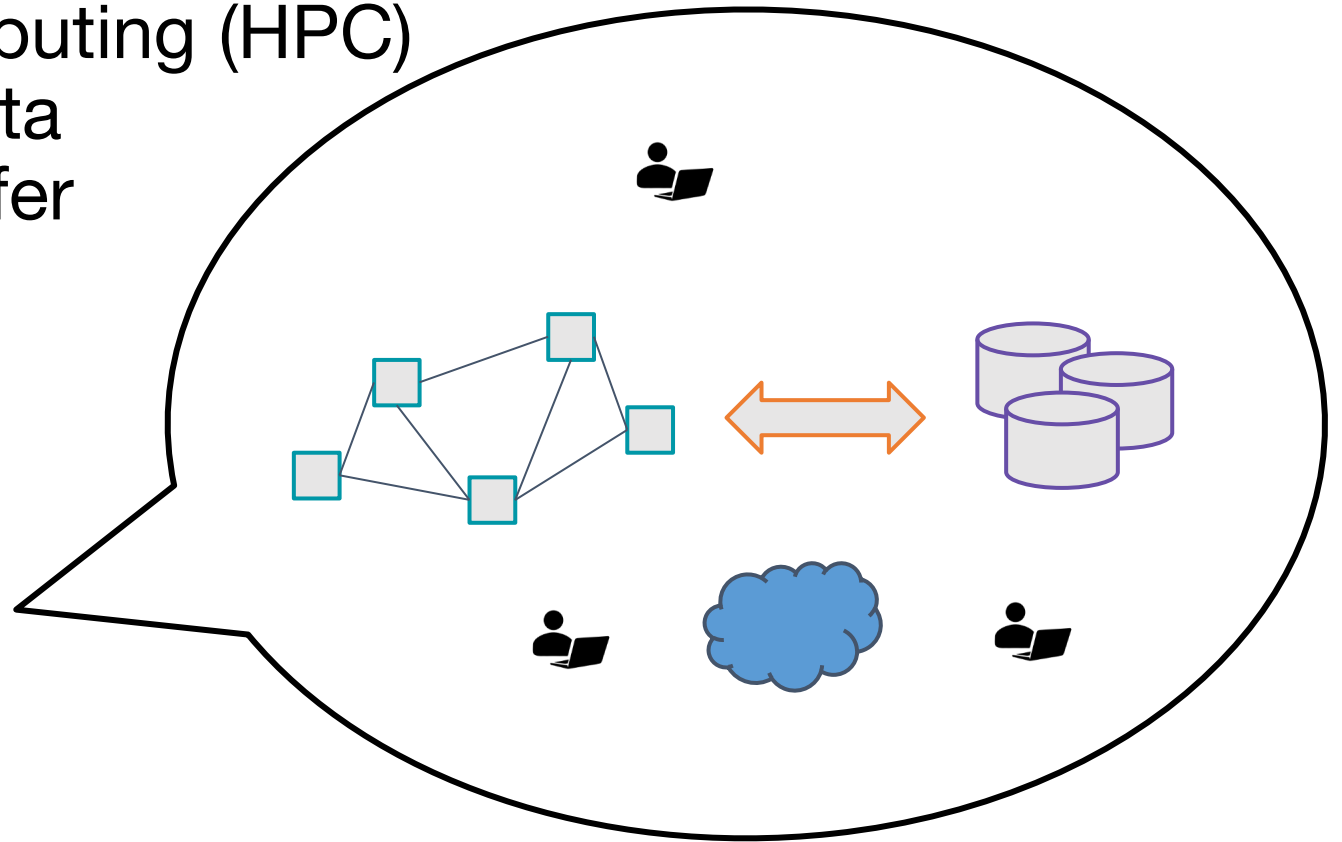
- <https://ask.cyberinfrastructure.org/c/rmacc/65>
- This forum provides opportunity for RMACC members to converse amongst themselves and with the larger, global research computing community.
- The “go to” general Q&A platform for the global research computing community - researchers, facilitators, research software engineers, CI engineers, sys admins and others.

# Learning Goals

1. Understand Basic CURC Resources & the Alpine cluster
2. Getting an account & logging in

# CURC Resources Include:

- High Performance Computing (HPC)
- Storage of Research Data
- High-Speed Data Transfer
- Data Sharing
- Cloud Computing
- Training and Education
- Secure Research





# Primarily known for: High Performance Computing (HPC)

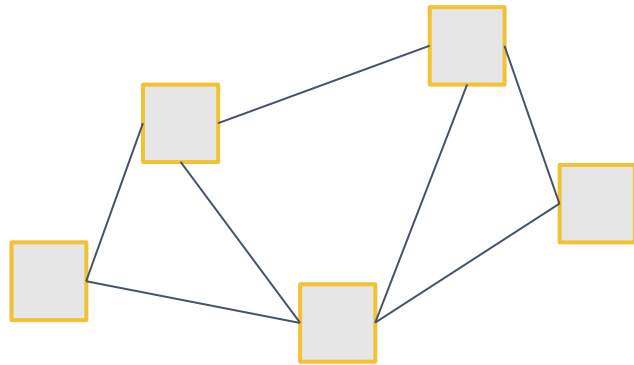


# What can / use HPC for?

- Solving large problems that require more:
  - Memory than you have on your PC
  - cores/nodes/power than you have on your PC
- Jobs that require hardware you may not have:
  - High Performance GPU computing
  - Specific Operating System
- Visualization rendering

# HPC Cluster: Alpine

Alpine

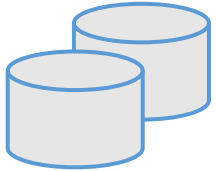


- Alpine is the 3rd-generation HPC cluster at CURC, following:
  - Janus
  - RMACC Summit
- Alpine is a heterogeneous cluster with hardware currently provided by CU Boulder, CSU, and Anschutz
- Access available to CU Boulder, CSU, AMC and RMACC users



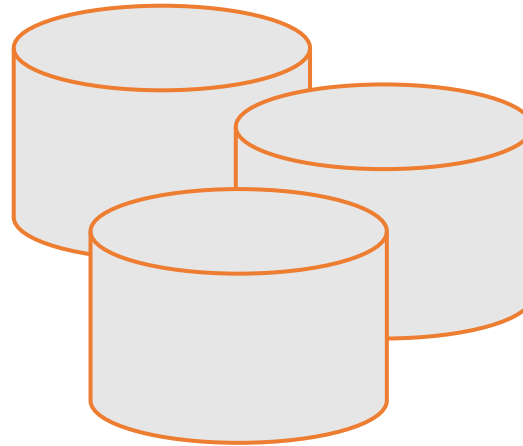
# Storage at CURC

## Core



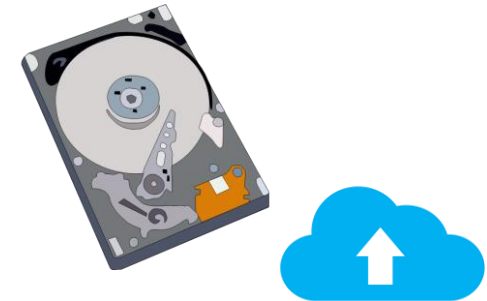
- Included with RC account
  - /home
  - /projects
  - scratch space

## PetaLibrary



- Paid Service for:
  - Storage
  - Archive
  - Sharing of research data

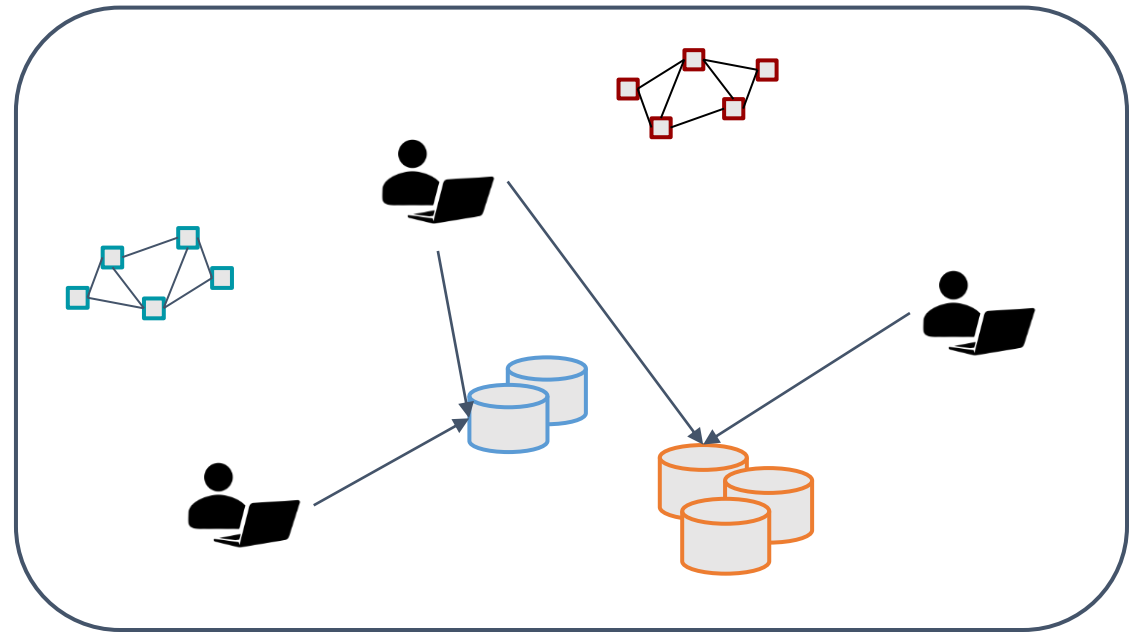
## Local or Cloud



- You can download your data locally or to a variety of other cloud resources
- Cloud Foundations at Research Computing

# Data Sharing: Within RC

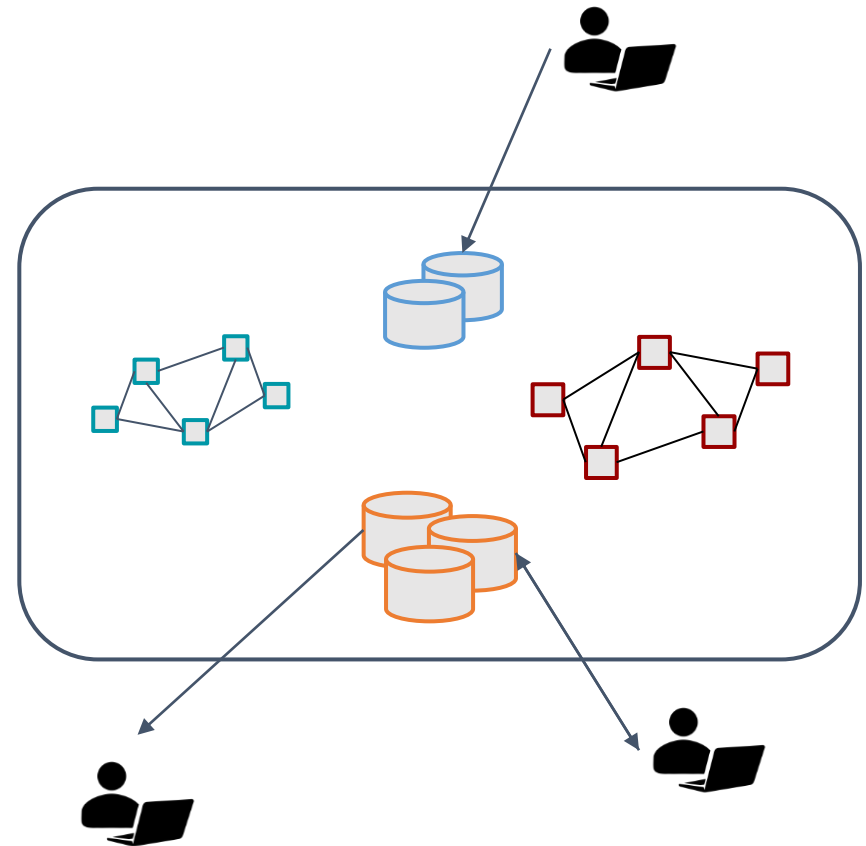
- Sharing workspaces
  - Project space
  - Scratch Space
  - PetaLibrary Space\*



\*If you have purchased PetaLibrary space

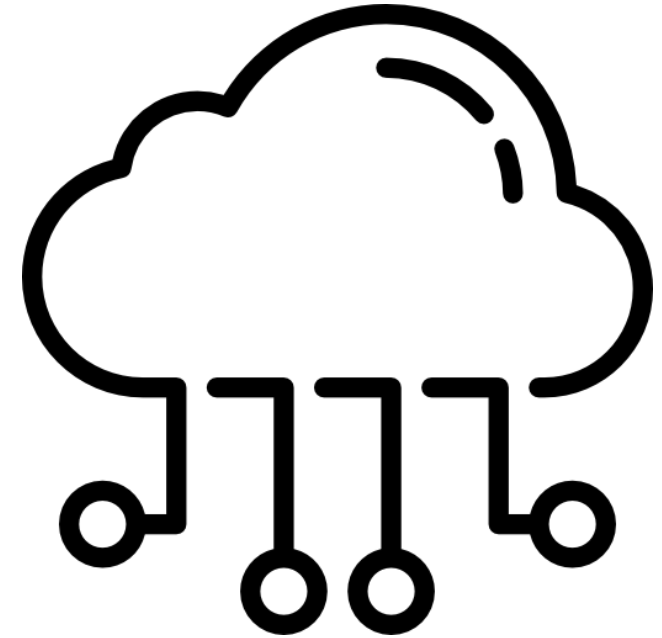
# Data Sharing: Outside RC

- Globus (recommended):
  - GUI Web Application
  - Automates large transfers
  - Resumes failed transfers
  - Distributes large transfers across DTNs
  - Endpoints that can shared
- Data Transfer Nodes (DTN)
  - Internal CU network needed (VPN)
- Command line tools
  - scp, sftp, rsync, rclone



# Cloud Computing

- CURC supports AWS, Azure, and GCP cloud
  - For use cases not well-supported by HPC
- Can be used as an alternative to HPC
- Can be used to enhance HPC
  - Automatic job submission, high availability, etc.





# Accessing Research Computing

# How to Access RC Resources?

- 1. Get an RC account**
- 2. Set up two-factor authentication with Duo**
3. (Inform us of any specific needs)
- 4. Log in**
5. Create greatness! (responsibly)

# Getting an RC Account

- **University of Colorado, Boulder users and affiliates:**
  - Request an account through the RC Account request portal
  - <https://rcamp.rc.colorado.edu/accounts/account-request/create/organization>
- **Colorado State University users:**
  - Request an CSU eID if you don't have one
  - Fill out account application form
  - Duo authentication
    - <https://it.colostate.edu/duo-two-factor-authentication/how-to-register-devices/#register-app>
- **CU Anschutz Users:**
  - Create an [ACCESS-CI](#) Account in the ACCESS user portal
  - Reach out to [hpcsupport@cuanschutz.edu](mailto:hpcsupport@cuanschutz.edu) to receive and sign the End-User Agreement
- **RMACC Users:**
  - Create an [ACCESS-CI](#) Account in the ACCESS user portal
  - Email us at [rc-help@colorado.edu](mailto:rc-help@colorado.edu) and request an account. Please include the following information: your ACCESS username, your institutional affiliation, your role, your department, your first and last name, your preferred email address for communication

# Demo: Getting an Account

- CU Boulder, CSU users and affiliates:
  - Request an account through the RC Account request portal:  
<https://rcamp.rc.colorado.edu/accounts/account-request/create/organization>
- AMC, RMACC users and affiliates:
  - Request an account through the ACCESS-CI User Registration Portal:  
<https://identity.access-ci.org/new-user.html>



# Your RC Account

## Access to:

1. Alpine Cluster
2. Core Storage
3. PetaLibrary Storage\*
4. Open OnDemand
5. Approximately 2,000 Service Units (SUs) per month

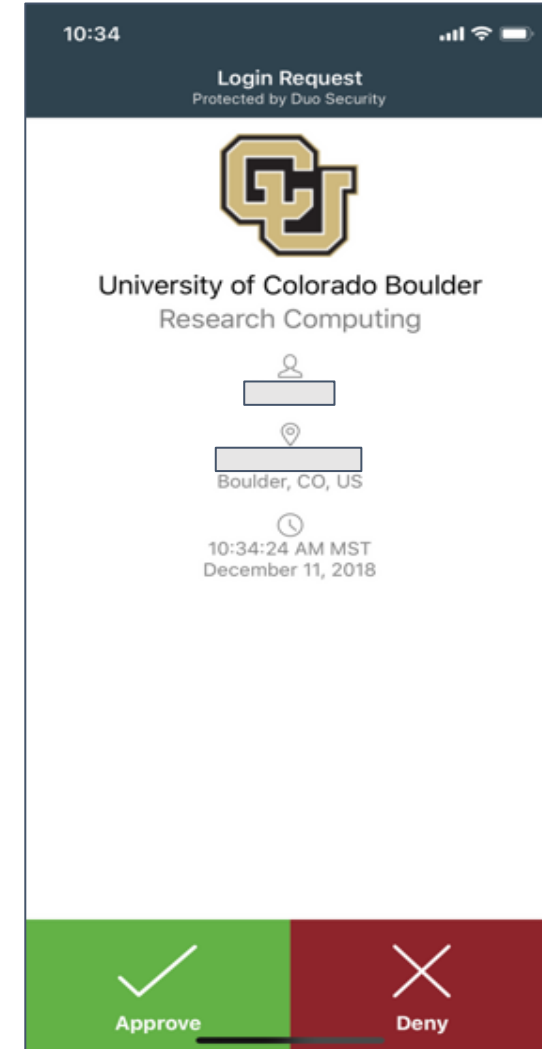
\*If purchased

# Two Factor Authentication (Duo)

- Provides an extra level of authentication
  - We are outside the firewall!
  - Valuable resources
  - Inviting, high-profile target
- Duo
  - You will receive a Duo invitation when your RC account is created

# Duo Authentication

1. Duo smartphone app (recommended)
2. Phone Call/Text as alternatives



# Demo: Logging in via Terminal

- To login to an RC login node:

```
$ ssh <username>@login.rc.colorado.edu
```

Supply your IdentiKey password and your Duo app will alert you to confirm the login

\*CU and CSU exclusive (AMC available by request)

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# Demo: logging in with OnDemand

CURC Open OnDemand is a browser based, integrated, single access point for all of your HPC resources at CU Research Computing.

- CU Boulder: Visit <https://ondemand.rc.colorado.edu>.
- Other RMACC Institutions: Visit <https://ondemand-rmacc.rc.colorado.edu/>

# Logging In

- It's important to note that you are ***NOT*** logging into any specific resource, Alpine, Blanca, etc.
- When you log in, you land on our ***login nodes***
- From ***there***, you can access our other resources:
  - Alpine
  - Blanca
  - Petalibrary

# Questions?

- **Documentation:** [curc.readthedocs.io/](http://curc.readthedocs.io/)
- **Trainings with Center for Research Data and Digital Scholarship (CRDDS):** <https://www.colorado.edu/crdds/>
  - **Coming up:**
    - [RC Primer: Alpine New User Seminar](#) (1/25)
    - [RC Short Course: Supercomputing Spinup Part 1 – Working with Linux](#) (1/30)
    - [RC Short Course: Supercomputing Spinup Part 1 – Working with Linux](#) (2/1)
- **Helpdesk:** [rc-help@colorado.edu](mailto:rc-help@colorado.edu)
- **Consult Hours** (Tuesday 12:00-1:00, Thursday 1:00-2:00)

# Survey and feedback

<http://tinyurl.com/curc-survey18>