Research Computing Knowledge Base

Knowledge Base

This knowledge base is designed to help users of NCAR's supercomputing, data analysis, and visualization clusters.

Enter keywords in the search field to find articles related to common user issues and questions.

Help Desk

Don't find what you need? Log in here to submit a help request: **NCAR Research Computing.**

You need a CIT password to use the service desk. Call **303-497-2400** if you don't have one.

How-to articles

CIT passwords

Duo: Getting started with two-factor authentication

Duo authentication and user portal

Get an allocation or account login

How do I subscribe to the CISL Daily Bulletin?

How to join CISL on Sundog

How to report a job failure

Recover lost or deleted files

Systems Accounting Manager (SAM)

Using "sudo" on NCAR systems

YubiKey basics

Troubleshooting articles

Batch job(s) crashing

Duo: Can I log in without my smartphone?

Duo: I'm not getting a "push"

Duo: Intermittent push and passcode issues

Duo for YubiKey 4 users: The mobile app fails sometimes. What can I do?

Login node processes killed

peak_memusage output fails

Why did my Cheyenne job fail?

HPC user documentation

Allocations

- NCAR allocations
  - NCAR Strategic Capability (NSC) projects
- University allocations
  - University Large Allocation Request Preparation Instructions

Authentication and security

- Authenticating with Duo
- Enrolling your phone or tablet for Duo 2FA
- Strong passwords
- VPN access
- YubiKey authentication token

Benchmarks

- NCAR benchmarking applications-2015 release
- NCAR benchmarking applications - 2019-2020 release

Campaign Storage file system

Casper cluster

- Compiling GPU code on Casper nodes
- Compiling multi-GPU MPI-CUDA code on Casper
- Software modules and packages
- SSH tunneling with PuTTY
- Starting Casper jobs with PBS
  - Casper job script examples
- Using FastX for remote desktops
- Using NVIDIA MPS in Casper GPU jobs
- Using remote desktops on Casper with VNC

Cheyenne supercomputer

- Cheyenne use policies
- Code development support
  - Compiler diagnostic flags for Cheyenne users
  - Compiling code
  - Intel Parallel Studio XE tools
  - Running DDT, MAP and PR jobs on Cheyenne

- Quick start on Cheyenne
- Software on Cheyenne
    - Starting VisIt on Cheyenne
    - Using NCL in the Cheyenne environment
- Starting Cheyenne jobs
    - Cheyenne job script examples
        - Example scripts: peak_memusage
        - Hyper-threading on Cheyenne
        - Intel MPI and Open MPI
        - Process binding
    - Job-submission queues and charges
    - Managing and monitoring PBS jobs
    - Peer scheduling between Cheyenne and Casper
    - Propagating environment settings to a PBS job
- User environment
    - Environment modules on Cheyenne
    - Installing Cheyenne SSH keys

CISL HPC Allocations Panel

- CHAP: Allocation Review Criteria
- CHAP: Conflict of Interest Policy

CMIP Analysis Platform

Data transfers and sharing

- BBCP
- Globus file transfers
    - Sharing data and making unattended transfers
- PSCP and PSFTP
- SCP and SFTP
- Transferring files to Google Drive or DropBox
- UCAR FTP server
- Using data-access nodes
- WinSCP

Derecho supercomputer

- Batch job script examples - Derecho
- Debugging and profiling with Forge tools on Derecho
- Environment
- Job preemption with PBS
- Lustre scratch file system
- System use policies

Getting started with NCAR systems

- Compiling code on NCAR systems
    - Compiler diagnostic flags
- Environment modules
- Managing your allocation
- Starting and managing jobs with PBS

GLADE file spaces

- Recovering files from snapshots
- Removing large numbers of files
- Setting file and directory permissions
- Using access control lists

Gust test system user guide

NCAR HPC User Group

New user orientation

- Acknowledging NCAR and CISL
- Best practices for supercomputer users
- Parallel computing concepts
- Storing temporary files with TMPDIR
- User accounts and HPC system access
- User responsibilities

Quasar archive for data collections

- Quasar system specifications

Software for HPC users

- Community models
  - Optimizing WRF performance
  - WRF scaling and timing
- Data analysis and visualization
- Machine learning and deep learning
- Software libraries and modules
  - Jupyter and IPython
  - JupyterHub at NCAR
  - Math Kernel Library
  - MATLAB Parallel Computing Toolbox on Casper and Cheyenne
  - NCAR Classic Libraries for Geophysics
  - Using Conda and Python

Stratus object storage system

- Getting started with an object storage admin account

Thunder test system

Tutorials for supercomputer users

User support

- Advanced visualization support
- Checking memory use
- Common causes of job failures
- Determining computational resource needs
- NCAR Computing Support scheduling portal
- Personalizing start files
- Running Singularity containers on NCAR systems
- Systems Accounting Manager
- Utilities

Browse by keyword

1. A-B
   - access
   - account
   - allocation
   - authenticate
   - authentication

- backup
- balance

2. C-G
    - casper
    - cheyenne
    - cisldoc
    - cit
    - core-hours
    - deleted
    - duo
    - error
    - fail
    - failure
3. H-O
    - hpc
    - intranet
    - job
    - killed
    - learning
    - lockout
    - login
    - lost
    - memory
    - modulenotfound
4. P-R
    - passcode
    - password
    - phone
    - process
    - project
    - rc-ss
    - replace
5. S-U
    - security
    - smartphone
    - software
    - storage
    - sudo
    - sundog
    - token
    - training
    - tutorials
    - unrestored-unknown-attachment
6. V-Z
    - visualization
    - yubikey