

Managing your allocation

Actively managing and monitoring your allocation of computing and storage resources will help ensure that you use these resources as efficiently as possible. Allocations are made to the project lead, who is designated in the allocation request. The project lead often is the principal investigator (PI) for the associated funding awards.

The sections below describe how to perform basic administrative tasks and use the Systems Accounting Manager ([SAM](#)) to monitor charges against your allocation. All authorized users on a project can manage their own preferences and review their own usage reports in SAM.

To get the most from your allocation, be sure to fully utilize the compute resources you request and use available memory efficiently. Also be aware that event failed jobs use some of your allocation, so be proactive in identifying reasons for failures (and contact the [NCAR Research Computing help desk](#) if you need assistance).

See these pages for more information:

- [Checking memory use](#)
- [Common causes of job failures](#)

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Guidelines and allocation management

The project lead may authorize a project administrator (project admin) to perform some tasks on behalf of the project, such as adding or removing users. To designate a project admin, submit a request through the [NCAR Research Computing help desk](#).

Here are some guidelines for managing user access to an allocation:

- Establish user accounts only for appropriate personnel and make users aware of relevant [responsibilities](#) and [best practices](#).
- Request removal of users' accounts when those individuals are no longer associated with your project.

Adding and removing user accounts

Some users who are authorized to share access to a project's allocation are identified when the allocation is requested. PIs, project leads, and project admins can also add other users to their projects any time after receiving an allocation award.

To add new user accounts for a project, send a request through the help desk link above or call 303-497-2400. Include the user's name, email address, phone number, and a full shipping address for delivery of the new user's authentication token if a physical token is required. You do not need to include a shipping address if the user already has a CISL token.

A PI, project lead, or project admin can deauthorize or remove a user from a project by contacting the help desk.

Specifying project to be charged

A user account must be associated with at least one allocated project and may be associated with more than one. You will have an alphanumeric **project code** for each such project. These project codes are used to charge your use of computing and storage resources against the appropriate allocations. Take care to specify the correct project code when you submit jobs.

Even if you have only one project code, you **must** specify the project code to be charged when you submit a job. How to do this is described in the documentation for each HPC system.

Charges for computing

Projects must have allocations of both *CPU core-hours* and *GPU hours* in order to use both types of nodes. Depending on which computing resources are being used, charges are assessed in **adjusted core-hours or GPU hours** or both in the case of hybrid jobs. These metrics are defined as the number of processors requested multiplied by the duration of the job in hours and, for Derecho and Cheyenne jobs, modified by *job priority*.

Priority level	Charging factor
Economy	0.7x
Regular	1.0x
Premium	1.5x

If you are concerned about your usage rate, contact the [NCAR Research Computing help desk](#) for guidance on running jobs more efficiently and conserving your allocation. Sometimes jobs can be configured to make better use of the compute resources, and you may be able to save allocation by using a less-expensive priority level. Seek help if you notice anything amiss with your allocation.

Charging formula

All jobs on Derecho and Casper are charged according to the following formula:

$$\text{wall-clock hours} \times \text{requested resource (ncpus or ngpus)} \times \text{queue factor}$$

Consider the impact of your choice of nodes before you submit a job on these systems.

- When using *exclusive* nodes in the "main" submission queue on Derecho, *you will be charged for all CPUs or GPUs on those nodes regardless of how many you request*. For example, if you request two nodes with **ncpus = 18** on each node, you will still be charged for 256 CPUs when running in main because those nodes are for your exclusive use when your job is running.
- Conversely, when using *shared* nodes in the "develop" queue on Derecho or the "casper" queue on Casper, you will be charged only for the CPUs or GPUs that you requested.

When using GPU nodes, you are not charged for the CPU wall-time used on those nodes. However, it is possible for a job to incur both CPU and GPU costs if you use a heterogeneous mix of node types, with each node being charged according to the dominant resource type (GPUs take precedence).

Tracking usage

Individuals can track their HPC system usage in the Systems Accounting Manager (see below). SAM reports show usage data and charges against your allocations. Charges for computing are calculated and updated daily; storage use reports are updated weekly.

Using the Systems Accounting Manager

User preferences

Log in at sam.ucar.edu and select *User*, then *Preferences*.

From there, you can:

- Change your **primary group** if you belong to more than one UNIX group for using NCAR computing resources.
- Specify your **default login shell** for the systems to which you have access.
- See what your **home directory** is on each system.

SAM reports

Log in to sam.ucar.edu and you will see the following choices on the **Reports** menu:

- My Account Statements
- My 30/90 Day Use
- Project Search

If you are authorized to charge usage to multiple projects, you will see them listed when you select either of the first two report types. Select one of the projects listed to get information.

NCAR divisional users often have access to numerous projects, while individual university users most often have just one or a few.

In either case, use **Project Search** to:

- go directly to a report on a specified project, or
- search by username to see all projects with which you are associated.

My Account Statements

Your **account statement** includes an overall report on the status of your project's computing and storage allocation and the usage associated with it. If you are authorized to charge usage to more than one project, you will have an account statement for each project.

Overall Usage

Resource	Status	Start	End	Allocation	Usage/Charges	Adjustments to Charges	Balance	
Cheyenne	Normal	2022-10-01	2023-09-30	1,000,000	484,225	0	515,775	Activity
Casper	Normal	2022-10-01	2023-09-30	10,000	2,531	0	7,469	Activity
Casper GPU	Normal	2022-10-01	2023-09-30	999,999	196	0	999,803	Activity
GLADE	Normal	2022-10-01	2023-09-30	10	2	0	8	Activity
Data_Access	Normal	2022-10-01	2023-09-30	1	0	0	1	Activity

The overall usage report on project activity shows your allocations' start and end dates, amounts allocated, and remaining balances.

The **Activity** link at the end of each line reveals more details: the project's allocation history, a monthly summary of job charges, and other activity, such as refunds. You can select a month and then view or download the individual job records.

Another table includes additional information regarding your project's status in relation to any 30- and 90-day usage thresholds that apply and to any related projects. This is most common for NCAR users on divisional projects. Your own statement may show lines for multiple projects or subprojects, as is often the case for NCAR divisional allocations.

My 30/90 Day Use

This selection lets you focus on your usage in relation to any 30- and 90-day usage thresholds that apply. Again, this is most common for NCAR divisional projects.

Project Search

You can search by individual project code and get an account statement as described above.

If you search by your username, you will see a list of any projects you are associated with and you can select any of them to get an account statement.

Project Search

Project Code

Username

Search