

Increase Your Priority with Alpine Allocations

An RC Quick Byte

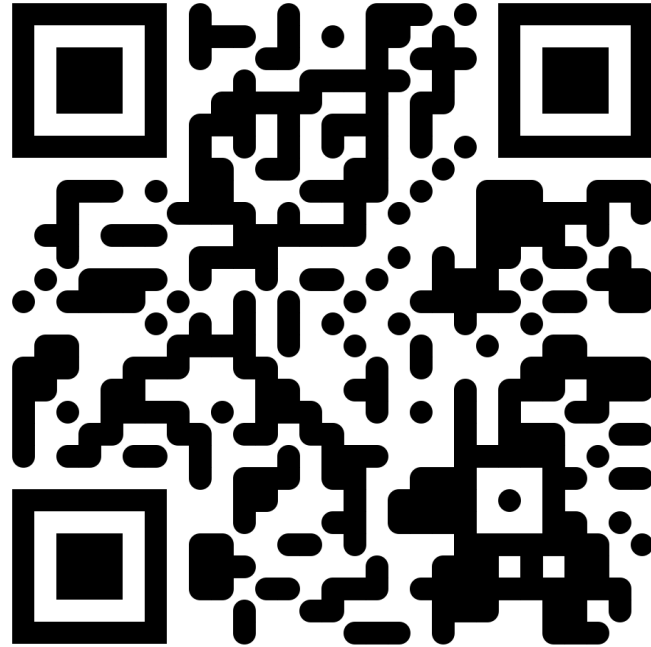
February 5, 2024

Layla Freeborn

layla.freeborn@colorado.edu



Slides



<https://bit.ly/alpineallocationsqb>



Overview

1. FairShare & Priority
2. Allocations
3. Alpine Allocation Tiers
4. Monitoring Your Usage and LevelFS



FairShare Scheduling

Jobs submitted by people who have **underutilized** their allocated resources get **higher** priority, while jobs submitted by people who have **overutilized** their allocated resources get **lower** priority.

Level FairShare

Level Fairshare (**LevelFS**) is a value calculated by Slurm's Fairshare Algorithm.

A user's assigned shares (determined by their allocation) and usage (based on their job history) contribute to their LevelFS value.



If there are no other pending jobs and enough resources are available then your job will run regardless of your previous usage.



Priority Score

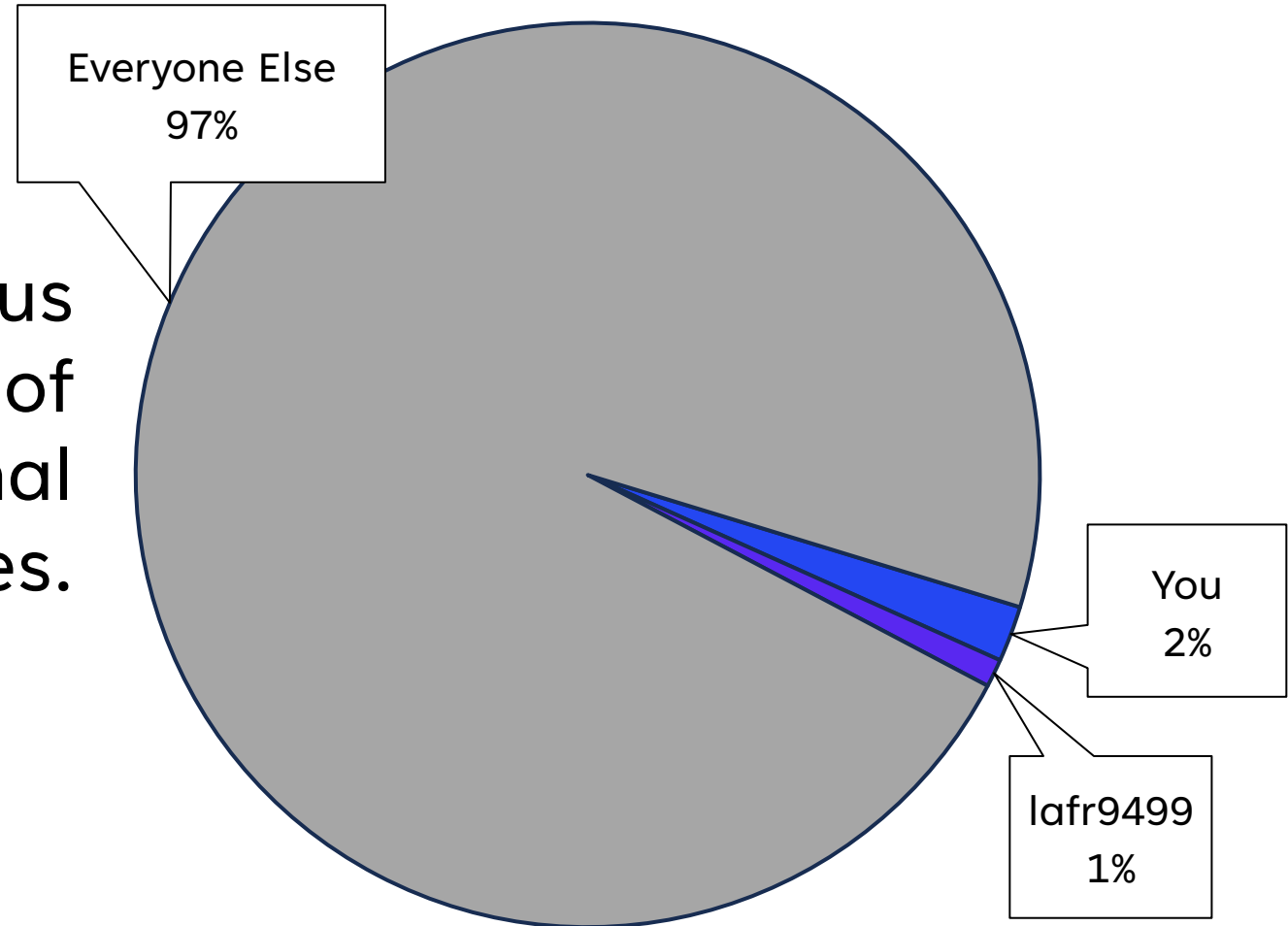
When you request resources on Alpine, your job's priority determines its position in the queue relative to other jobs.

A job's priority is based on multiple factors, including (but not limited to)

- FairShare score
- job age
- resources requested
- job size
- QOS

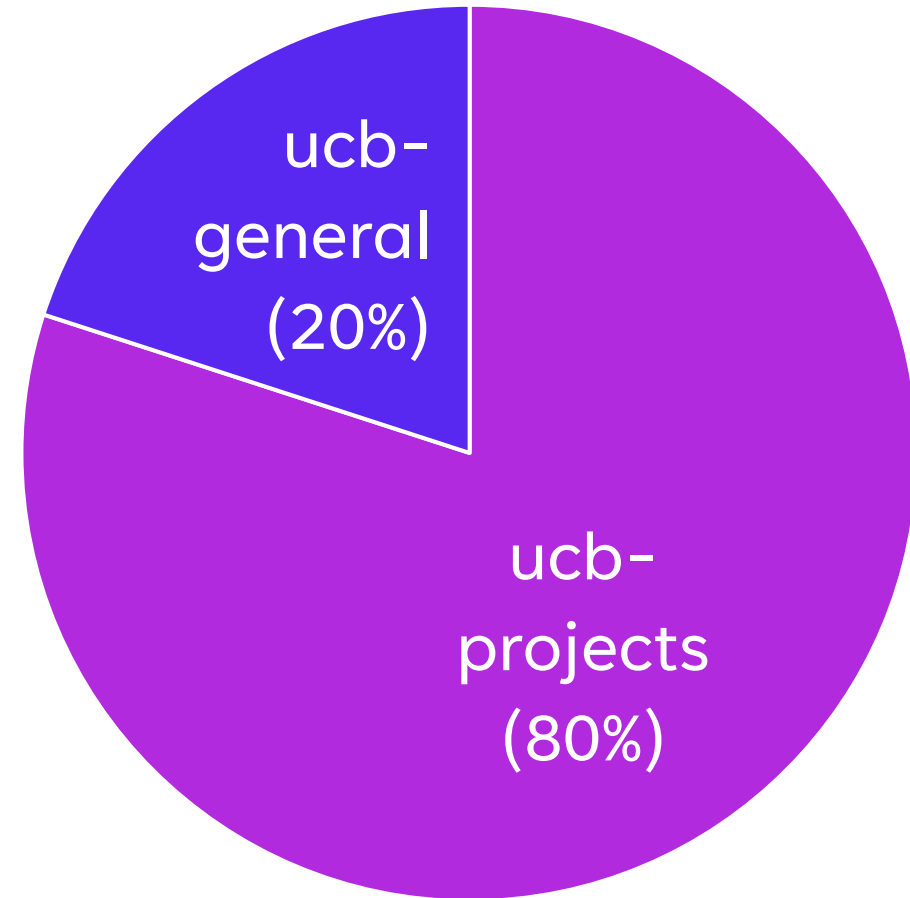
Allocations

An allocation is a way for us to specify your cut of Alpine's computational resources.



ucb-general vs ucb-projects

The 'general' and 'project' accounts are structured such that your jobs are likely to have a **higher** priority if they are running in the '**project**' account.



Alpine Allocation Tiers



Trailhead

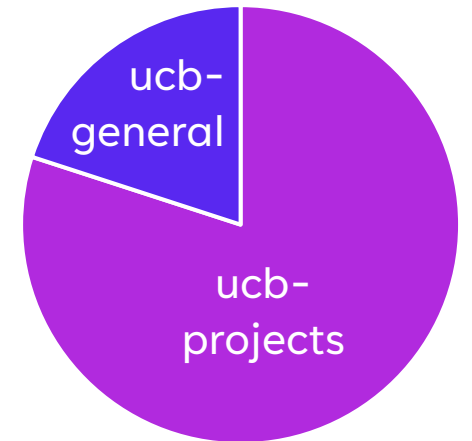
- Automatic with a CURC account.
- ~couple thousand SUs in **ucb-general**
- Does not expire



Ascent



Peak



<https://curc.readthedocs.io/en/latest/clusters/alpine/allocations.html>



Ascent vs Peak Allocations



Ascent

- Size Limits- 350,000 SUs over 12 months per user, 1,400,000 SUs per research group
- Required Info- Title and project description, FOS, PI and role, collaborator usernames, partitions, acknowledgment of CURC User Policies; provide via Ascent Allocation Form
- Approval Process- quick, no review by CURC Allocations Committee
- Expiration & Renewal- auto expires after 1y, complete Ascent Renewal Form



Peak

- Size Limits- 6,000,000 SUs over 12 months per research group
- Required Info- all info required by Ascent, plus example jobs and software info, via Peak Allocation application form
- Approval Process- reviewed by CURC Allocations Committee, may need to improve job efficiency
- Expiration & Renewal- auto expires after 1y, complete Peak Renewal form, justify size



Using Your Allocation

Allocations are referred to as accounts in Slurm's documentation and are indicated by the `--account` directive:

```
#SBATCH --account=<your allocation name>
```

or

```
sbatch --account <your allocation name> yourjob.sh
```

Monitoring Your Usage and LevelFS

```
module load slurmttools  
suacct ucb-general 1  
suuser ralphie 15
```

```
sacctmgr -p show associations user=$USER
```

```
sshare -U -l  
levelfs $USER
```

Monitoring Your Usage and LevelFS

```
lafr9499@login12:[~]$: levelfs lafr9499
```

```
LevelFS for user lafr9499 and institution ucb:
```

Account	LevelFS_User	LevelFS_Inst
-----	-----	-----
admin	0.777013	0.951674
ucb-general	91.183291	0.951674
ucb346_asc1	0.659674	0.951674
ucb346_asc2	inf	0.951674

Thank you!

Please take our survey!

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



FAQ: Am I competing with my collaborators?

