

Exploring Compute Usage from User Facing Portals:

James Desjardins
SHARCNet, July 17th, 2024

Overview

Previous presentations on this topic.

Job shape and the measurement of resource consumption

Job resources allocated, pending and the target share of the account

Visualizing job resources allocated time series at portal.alliancecan.ca

Allocated vs used job shape

Exploring job resource usage at portail.narval.calculquebec.ca

Previous presentations on this topic

Exploring job properties with the ViewClust Python package

github.com/Andesha/ViewClust

README MIT license

ViewClust

python v0.8.0 docs failing

Python package for computing cluster measure

- Free software: MIT license
- Documentation: <https://viewclust.readthedocs.org/en/latest/>

Features

- Calculates job usage based on inputs from frames
- Plots cumulative and instantaneous usage
- Accepts dynamic targets for account and s
- Provides a basic interface for generating jo

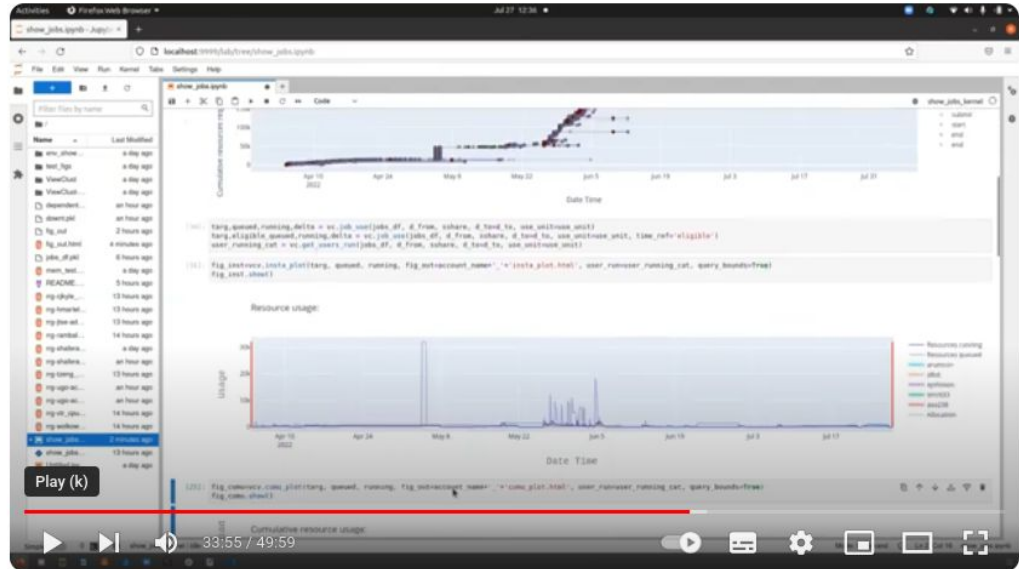
For more plotting options and dashboard suites package.

Credits

- [Tyler Collins](#)
- [James Desjardins](#)
- [Sergiy Khan](#)
- [Pier-Luc St-Onge](#)
- [Jose Sergio Hleap](#)
- [Chris Want](#)

YouTube CA

sharcnet visualizing job



Visualizing job properties for wait time assessment

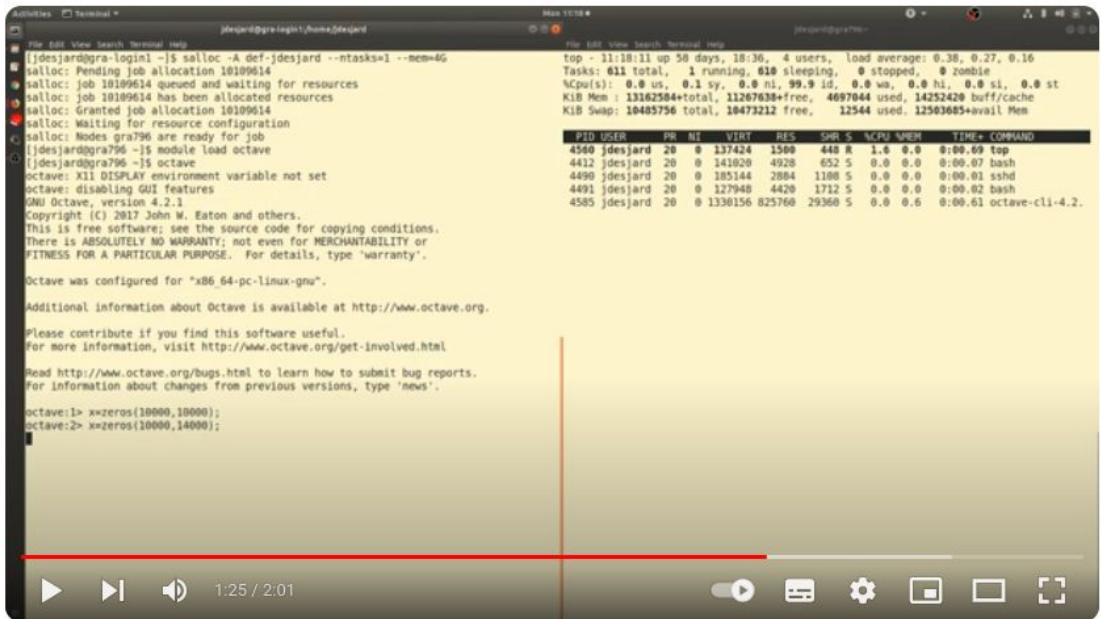
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Previous presentations on this topic

Estimating the memory usage of a process within an interactive job allocation using top.

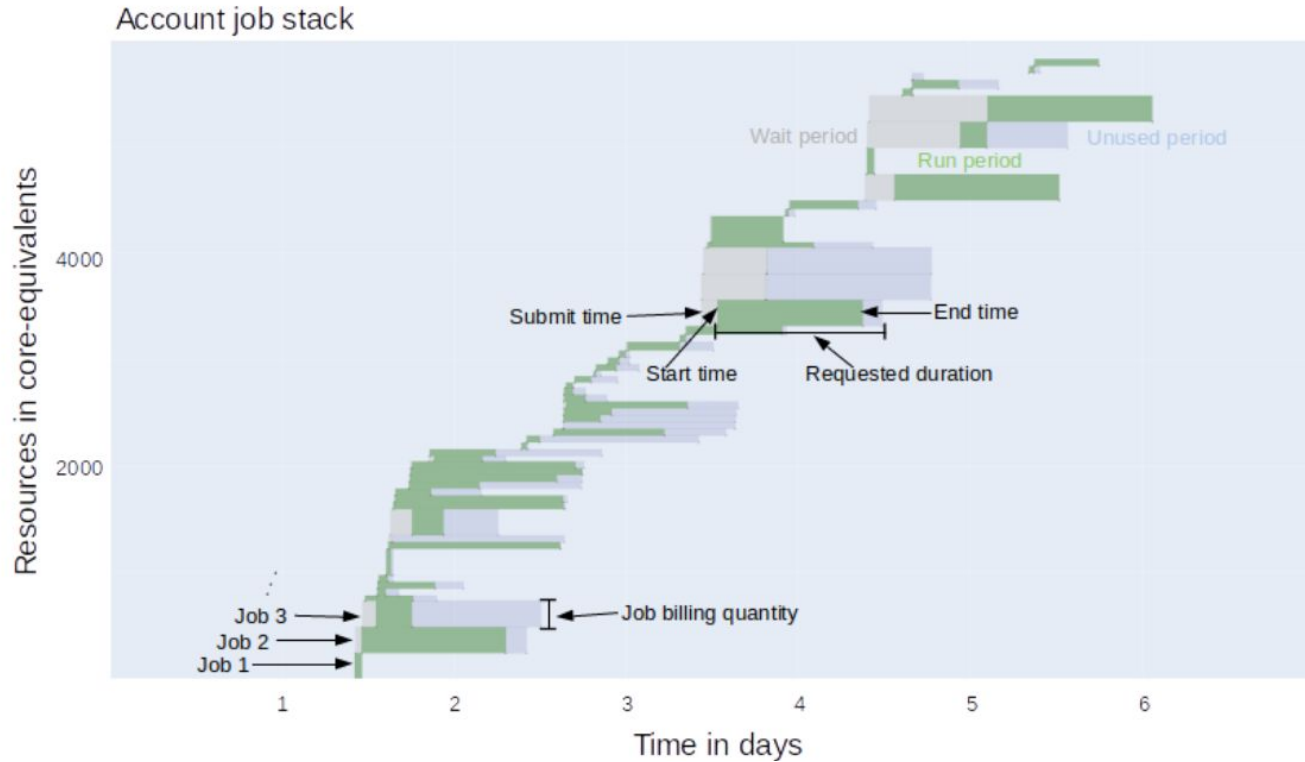


Estimating the memory footprint of your code



Job shape and the measurement of resource consumption

Jobs can be visualized as multi-dimensional rectangles. In this case time and billing units.

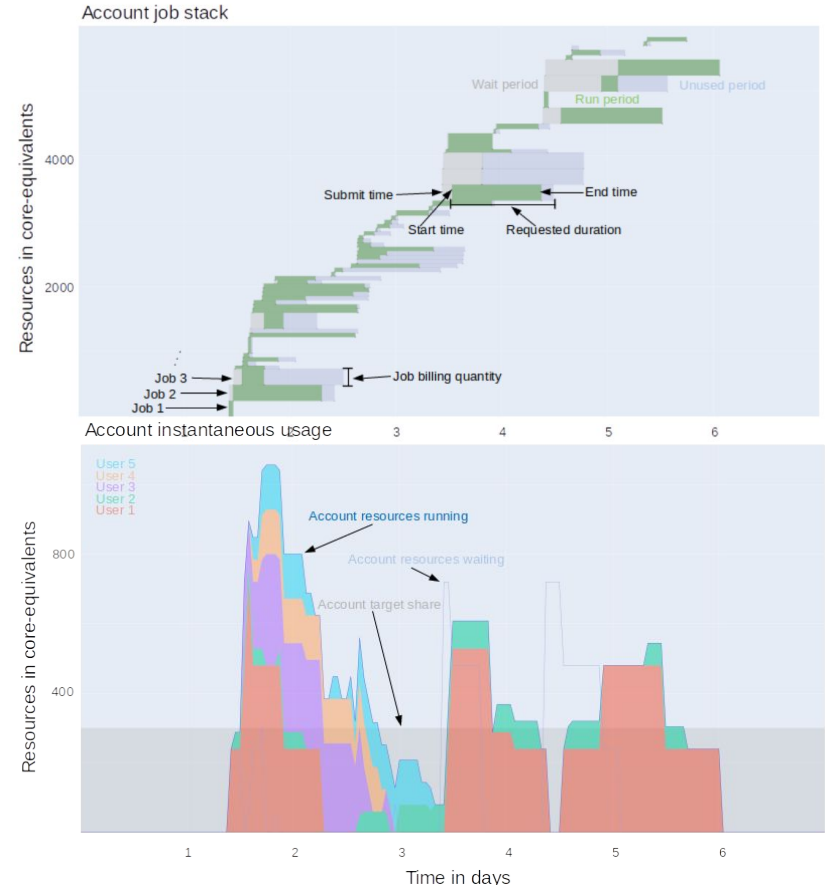


Job shape and the measurement of resource consumption

Summing the billing units at each time point across all jobs provides a time series of resource consumption.

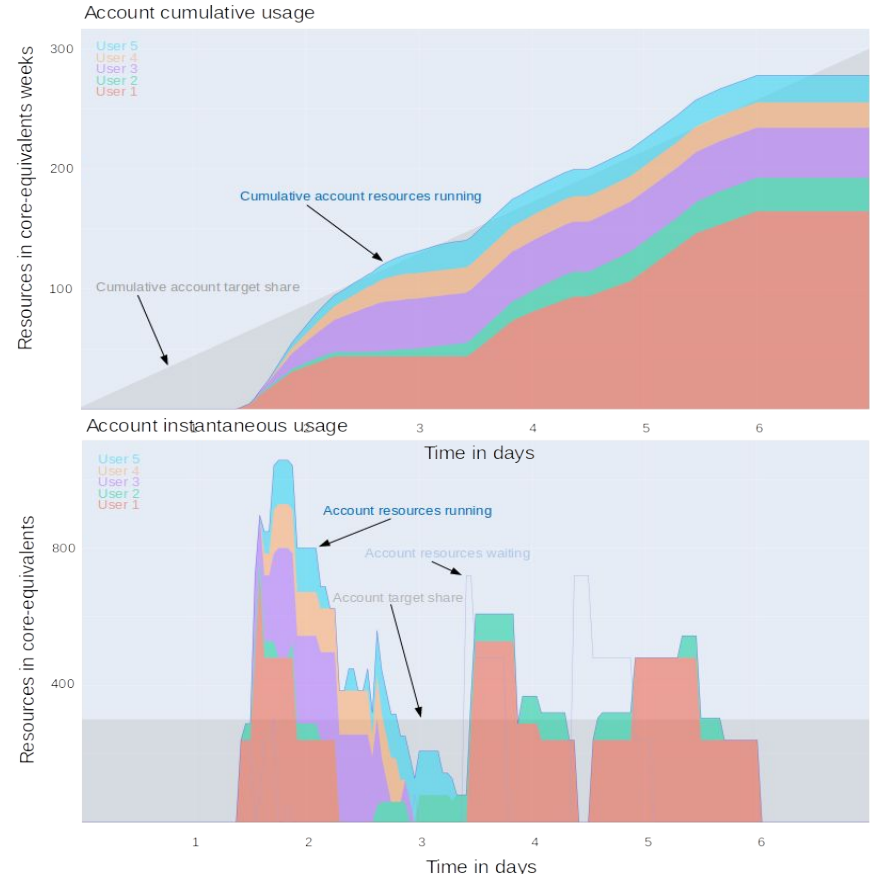
A similar time series can be generated for pending resources at each time point.

These metrics can then be compared to the account's target share to determine states like expected wait times.

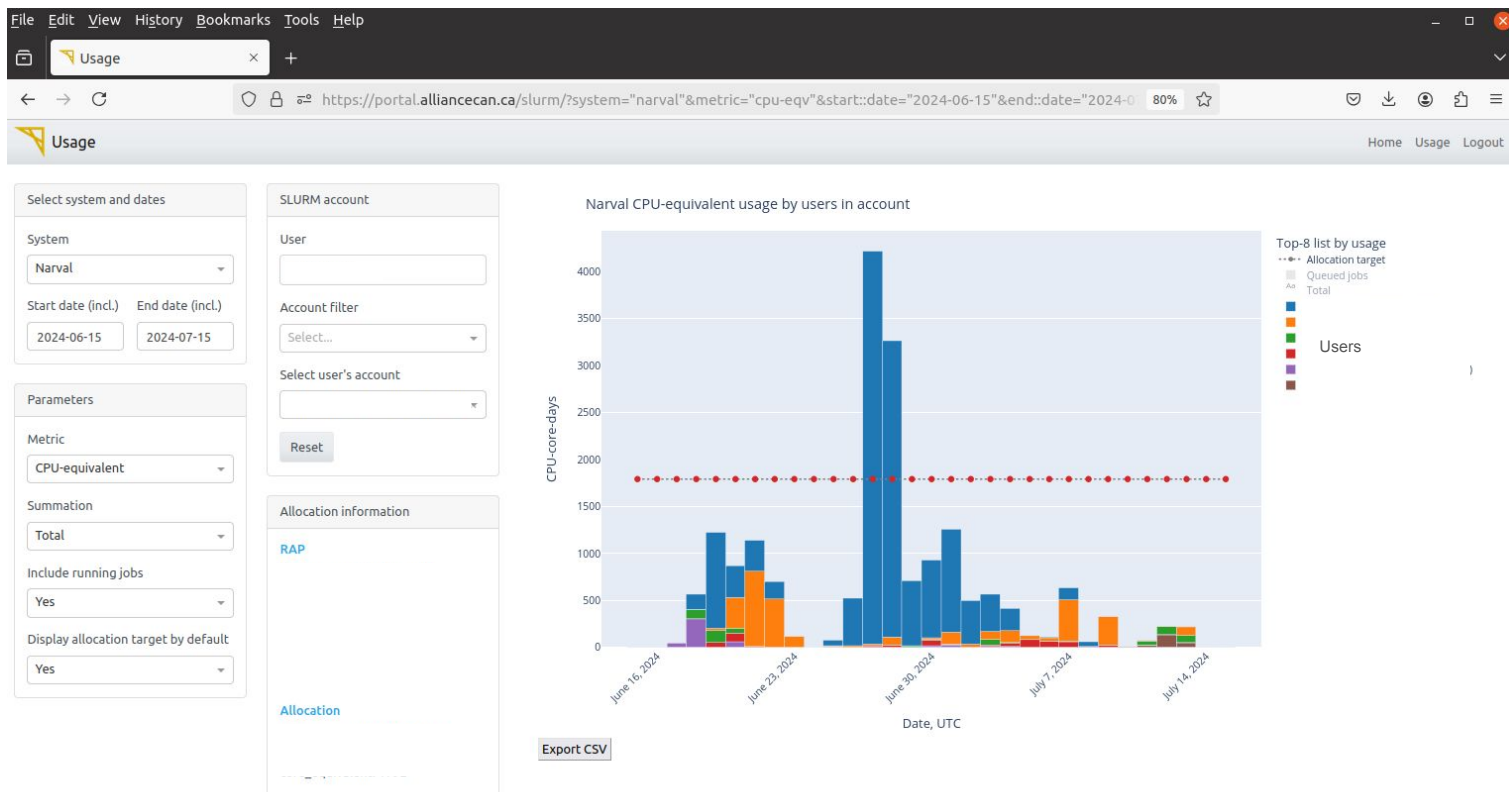


Job shape and the measurement of resource consumption

Converting the resource consumption time series provides a view of how the usage is relating to the target share over time.



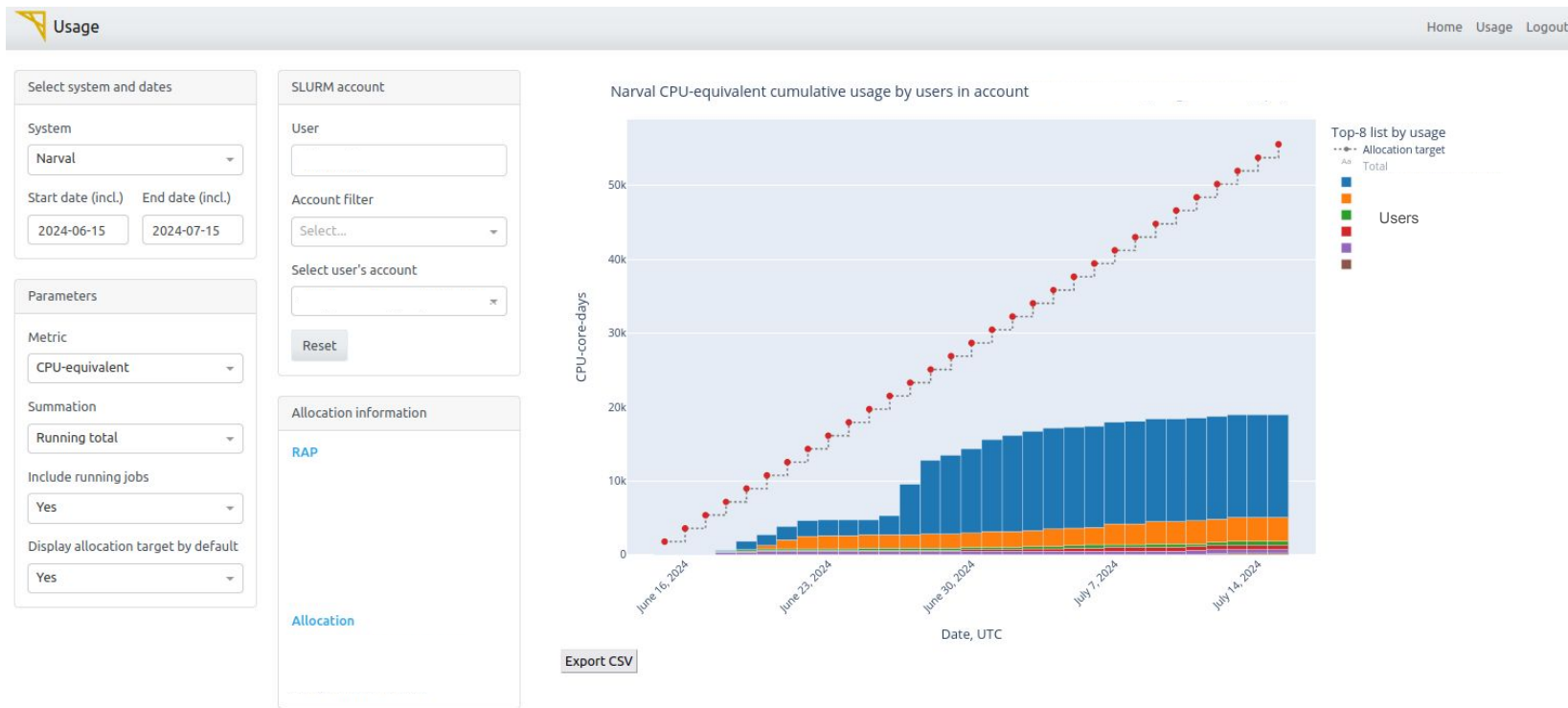
Visualizing job resources allocated time series at portal.alliancecan.ca



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Visualizing job resources allocated time series at portal.alliancecan.ca

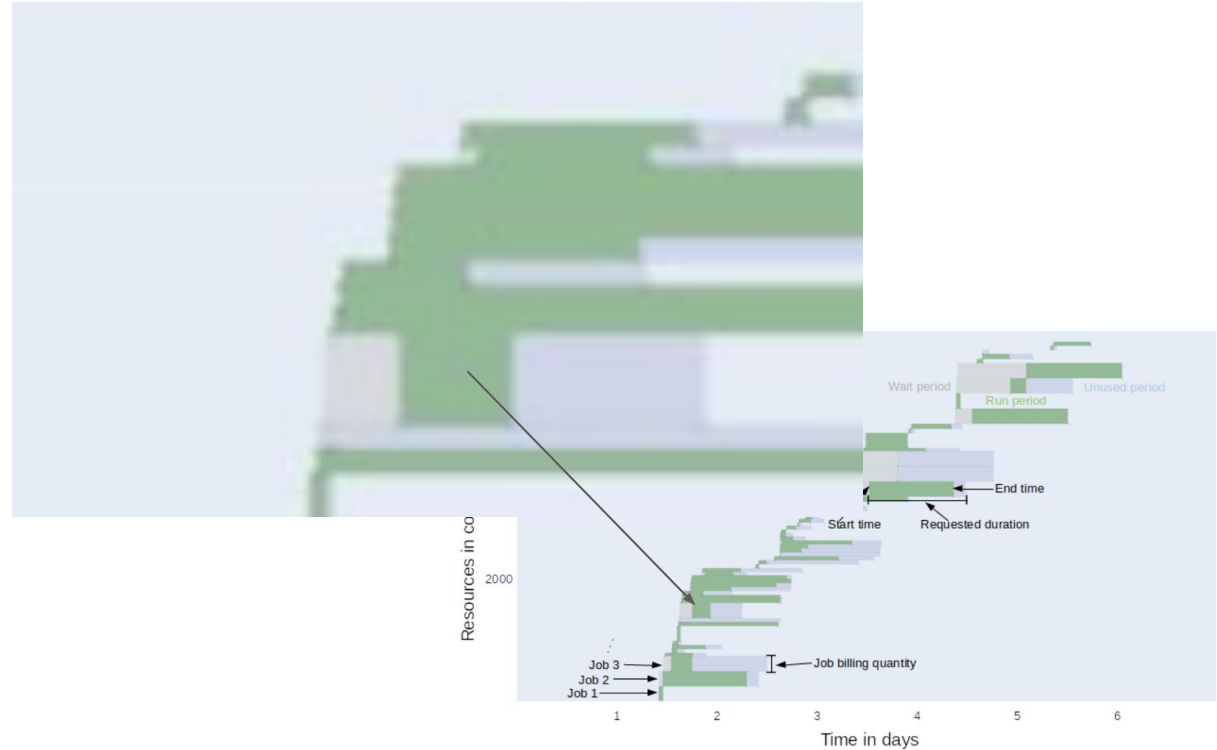


Visualizing job resources allocated time series at portal.alliancecan.ca

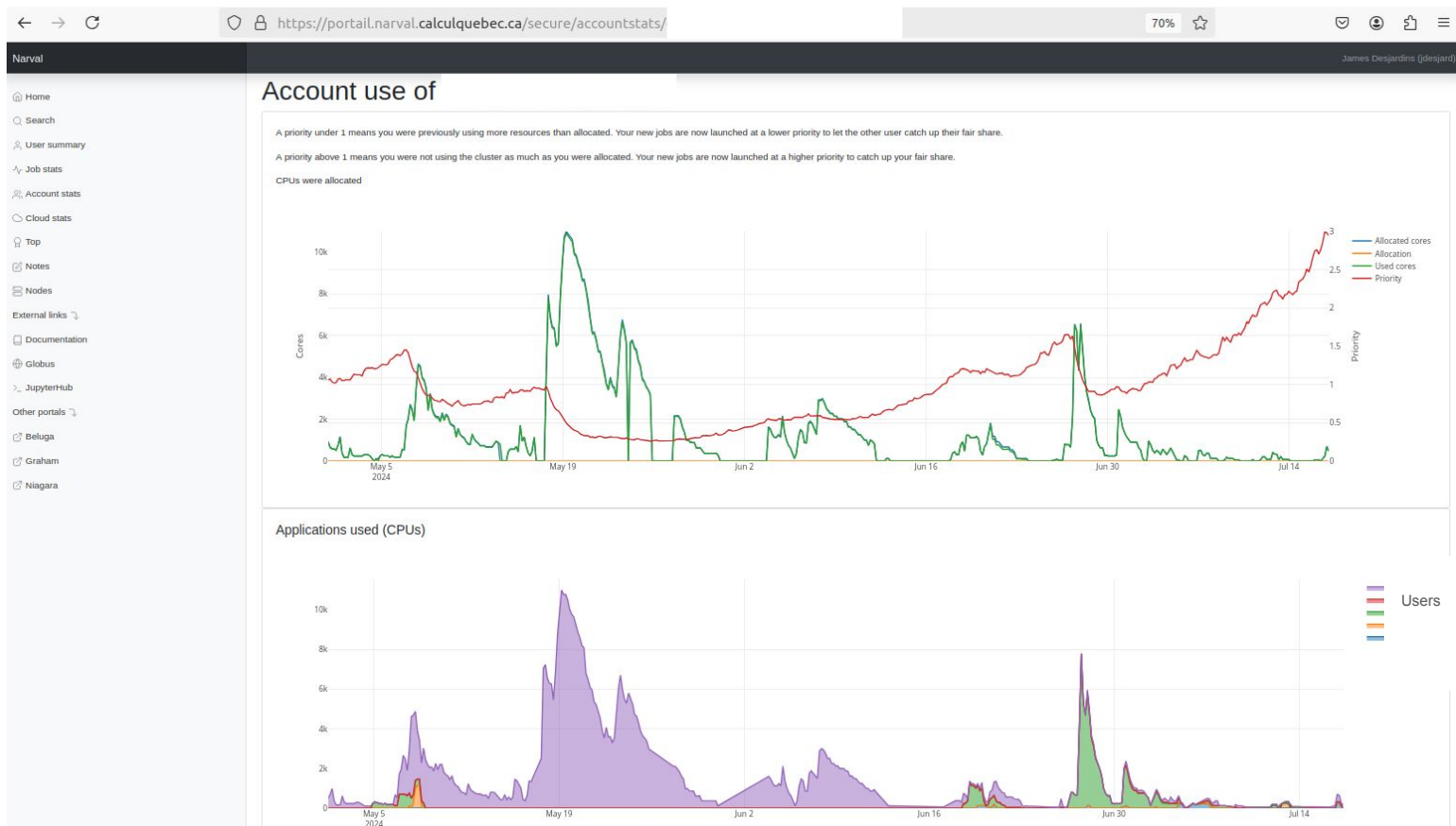


Allocated vs Used job shape

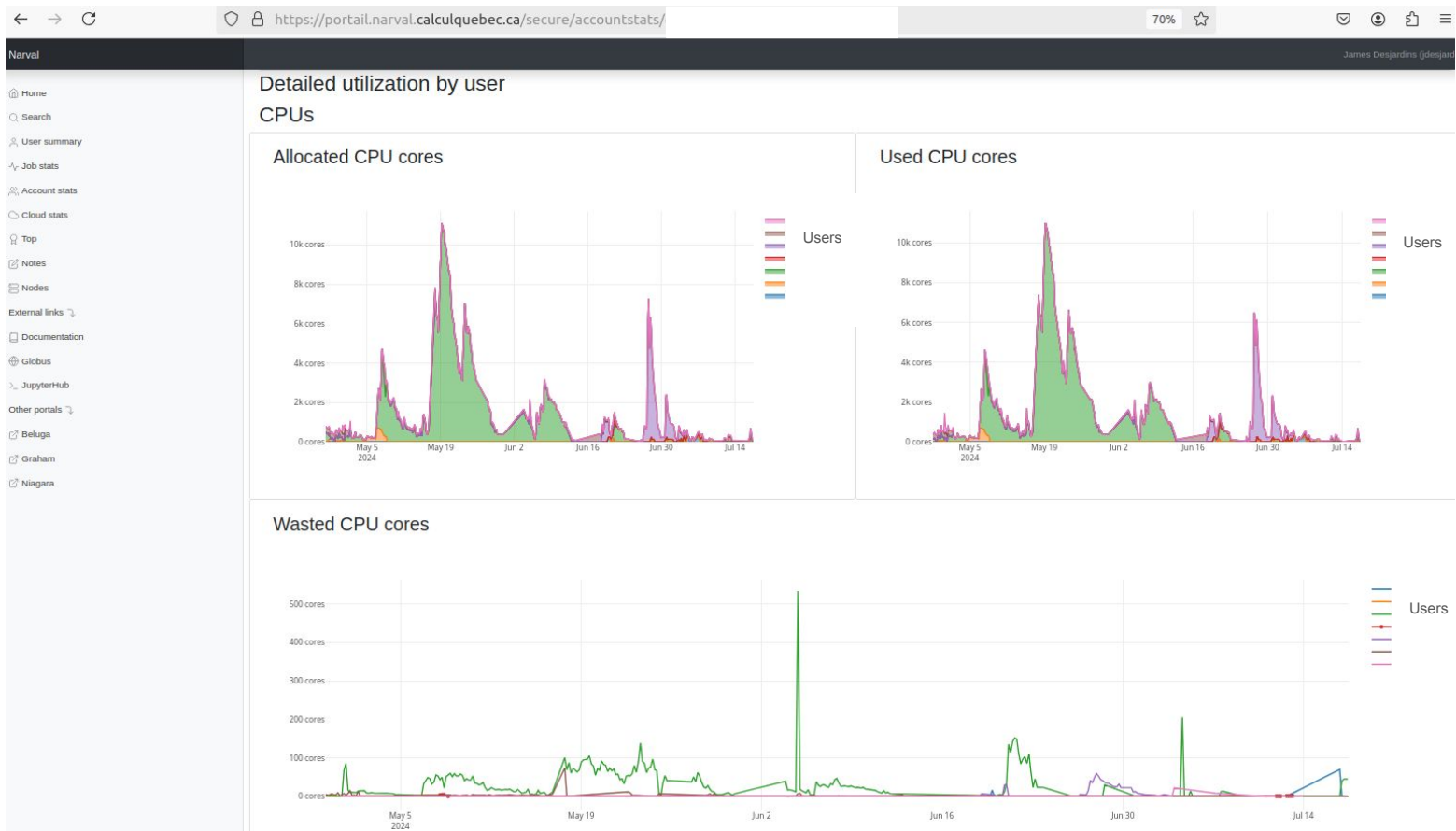
The scheduler “bills” toward fairshare based on the resources reserved for a job. The resources reserved may be substantially different than the resources used for the procedures executed in the job.



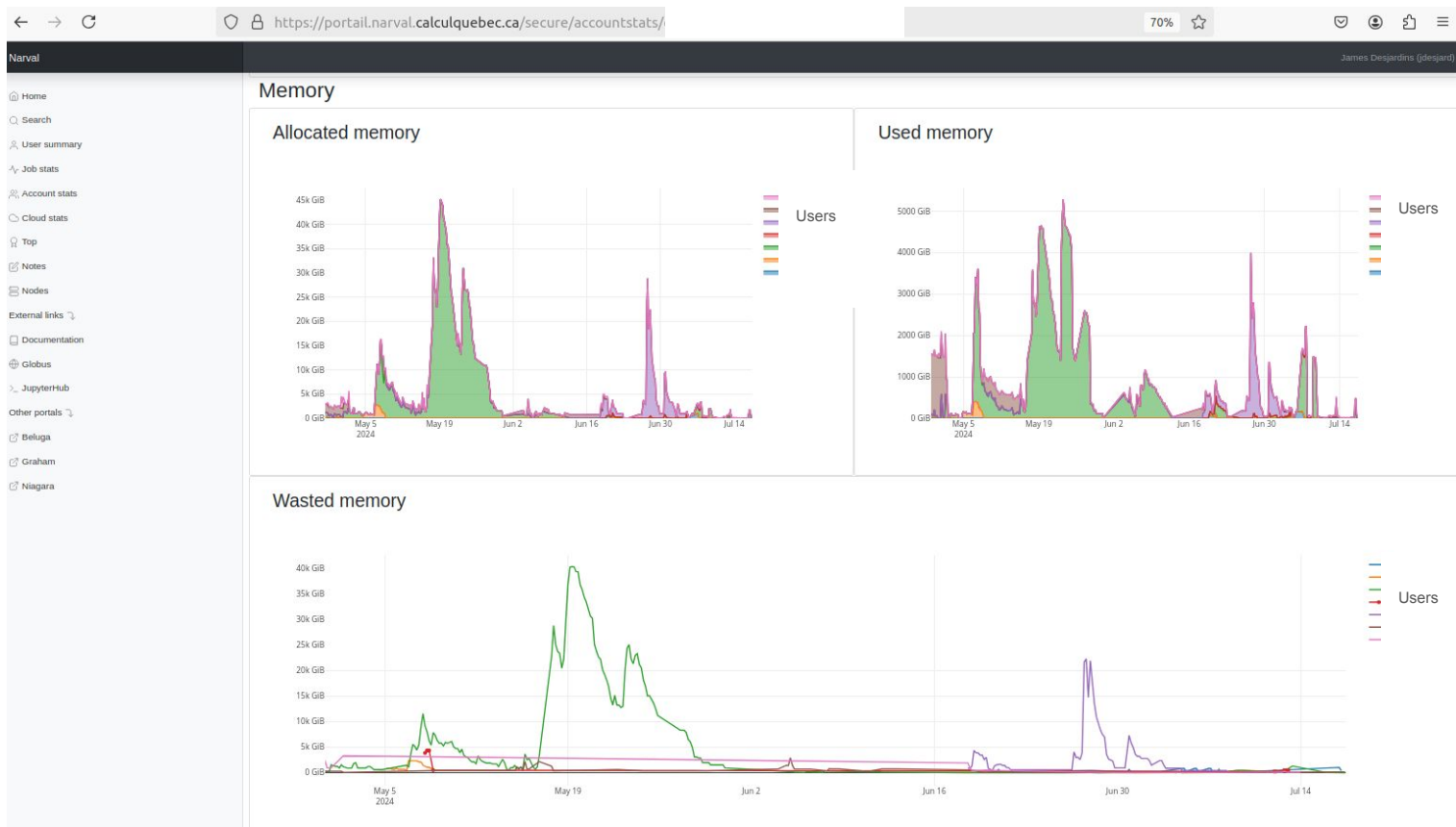
Exploring job resource usage at portail.narval.calculquebec.ca



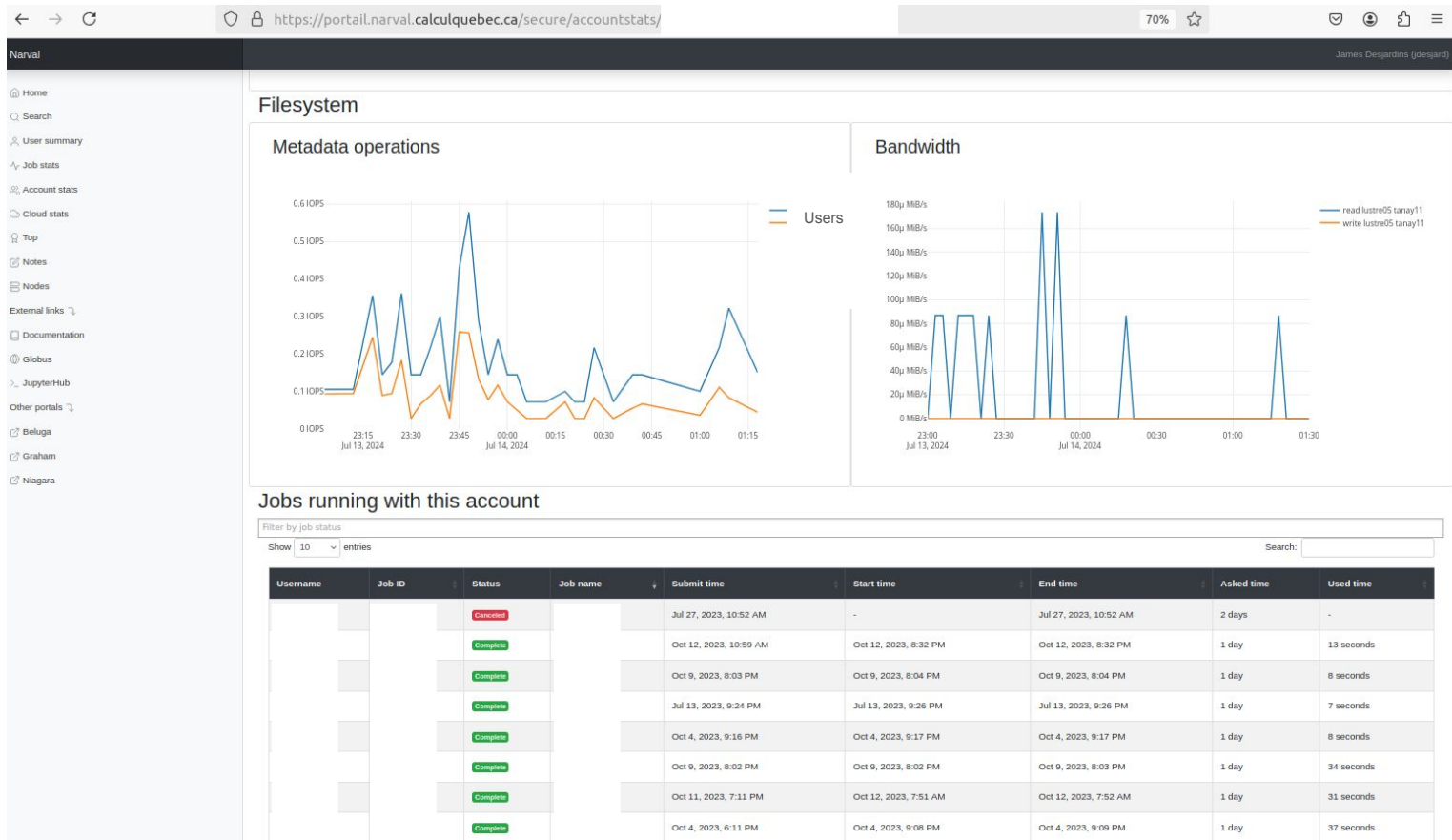
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Demonstration and discussion