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Title: HPCInfo Improvements with Focus on Fairshare

Abstract:

HPCInfo is a reporting tool that uses Grafana to visualize valuable cluster, project, and user activity at Los Alamos National Laboratory. This tool allows management to view cluster usage data, PIs to view allocation data for all the members of their projects, and users to track their cluster usage as well as visualize certain characteristics of their jobs. One data point that would help users better understand their cluster utilization and possibly why their jobs aren't running on the clusters is fairshare value.

As a part of my project, I successfully designed and implemented a panel to display fairshare value for a given user on a Grafana dashboard. In addition to the new fairshare panel, I was able to fix several other lingering issues with the HPCInformer codebase. One of these issues was partition states not being set correctly in one of the python scripts that collect data for HPCInfo. This involved adding another dictionary to the python script to accurately track partition states for each cluster. Another fix involved creating a new data point that tracks DST activity to one of the SQL tables used by HPCInfo. Future improvements were looked at as well such as daemonizing the server side of HPCInformer which currently operates through cron jobs as well as fully moving my changes over to production.