

Mines ITS: Cyberinfrastructure and Advanced Research Computing (CIARC)

Automation of Invoice Communication for HPC

Company Background:

ITS' CIARC team works to identify research needs across Mines and to provide research computing and data resources, services and infrastructure to advance research and achieve our Mines @150 vision. CIARC will assist faculty by identifying information technology solutions and facilitating their research in areas such as: high-performance computing, evaluation of cloud vs. on-premise computing, storage and transfer of research data, project management with respect to IT solutions, etc. By providing consultation services and by acting as a liaison between faculty and ITS groups, CIARC is able to efficiently provide customized solutions to fit research needs.

<https://ciarc.mines.edu>

Problem description:

CIARC is moving to an Operational Cost model to recover the purchase of the hardware used for Mines research on the High-Performance Computing (HPC) cluster Wendian. The data will be pulled from SLURM, our job scheduler, which records billable numbers. Also, data from a scan directory storage usage, and a server share size. This data collected will need formatting into a communication to admin staff for submission to Mines accounting and to users and research grant Principle Investors (PIs) in the form of an invoice email to them on a monthly basis, and available daily on our webpage user portal interface Open Ondemand.

Project Goals:

- Write scripts in bash/python to report usage data for admin staff and users
- Incorporate billing information into the final communication and formatted email
- Build a Ruby-on-Rails widget into Open Ondemand to report daily billing numbers on the Dashboard

Team Size:

A team of three to four.

Skills

- Bash or python scripts
- Web front end UI (Javascript, HTML, Ruby-on-Rails)

Location of Work:

The work location is extremely flexible and the students will have the opportunity to either work in person on campus or remotely whichever works best for them.