Analytics Dashboard for RADICAL Cybertools
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Goal
- Building a visualization dashboard to facilitate domain scientists in their research of distributed cyberinfrastructure and its applications.

Motivation & Objectives

Motivation
- To support applications of distributed cyberinfrastructure in diverse scientific domains such as Molecular Dynamics, Earth Science, & Physics

Objectives
- Parse Ensemble Toolkit (EnTK) profiles (data logs) to gain information about the status of different PST’s (pipelines, stages, and tasks)
- Implement PST execution plots, constantly updated at run-time, and shown in a new window (the frontend)

Research Challenges
- Understanding functionality of Cybertools and its components (primarily EnTK), the architecture that unites them, and real-world applications for high-end scalability
- Adjusting to a Linux environment and analyzing EnTK profiles (data logs) while learning how to build a complex system without sufficient prior experience
- Learning Python to build the backend, along with use of several libraries such as Bokeh, JavaScript library used for visualizations, and Flask, a web framework written in Python for the backend server

Conclusion & Future Work

Conclusion
- We discovered a way to provide meaningful visual task execution analytics and learned that we can accomplish much more in terms of analytics capability

Future Work
- Extend the potential of the system to allow for new plots and use cases, providing a more enhanced analytics capability
- Testing system speed and memory limitation to analyze extent of scalability and performance

Acknowledgement
We would like to thank our Advisor, Professor Matteo Turilli, and Vivek Balasubramanian, Andre Merzky, and the rest of the RADICAL group.

References