

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

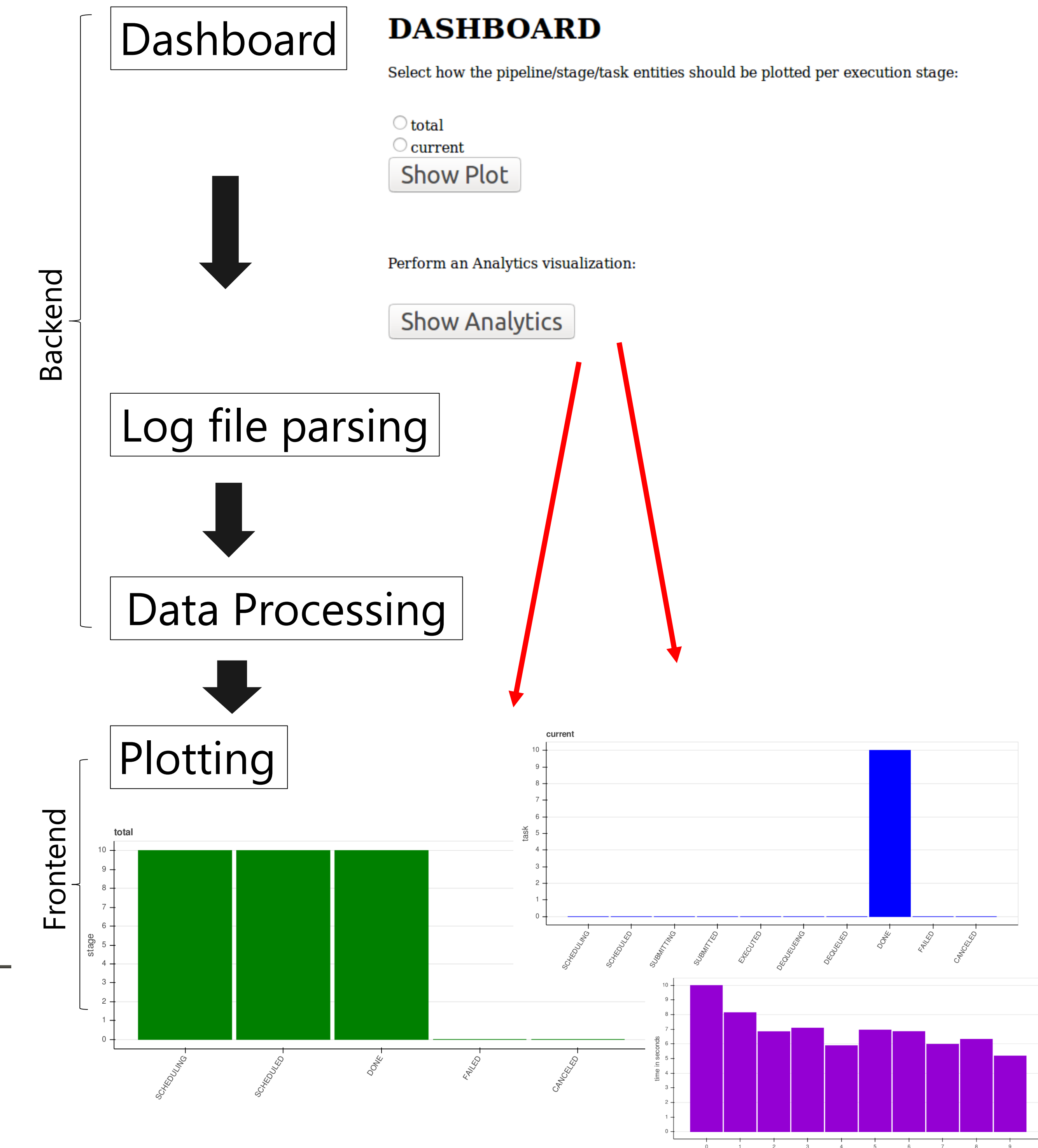
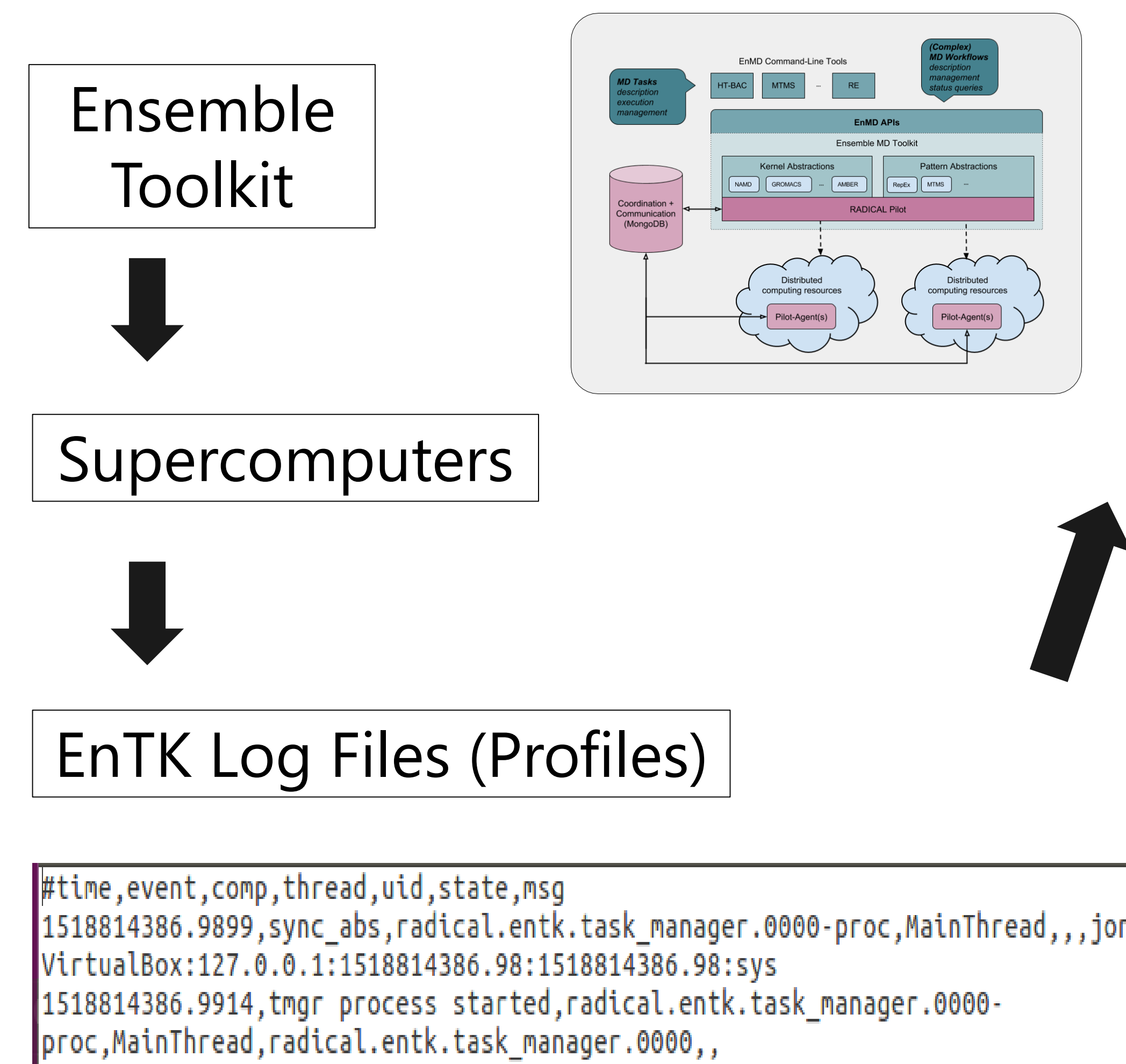
- Understanding functionality of Cybertools and its components (primarily EnTK), the architecture that unites them, and real-world applications for high-end scalability
- Adjusting to a Linux environment and analyzing EnTK profiles (data logs) while learning how to build a complex system without sufficient 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

Acknowledgement

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Methodology

- Data is read, parsed, and stored from EnTK profiles
- Backend communicates to frontend using Flask server
- PST models available on Dashboard



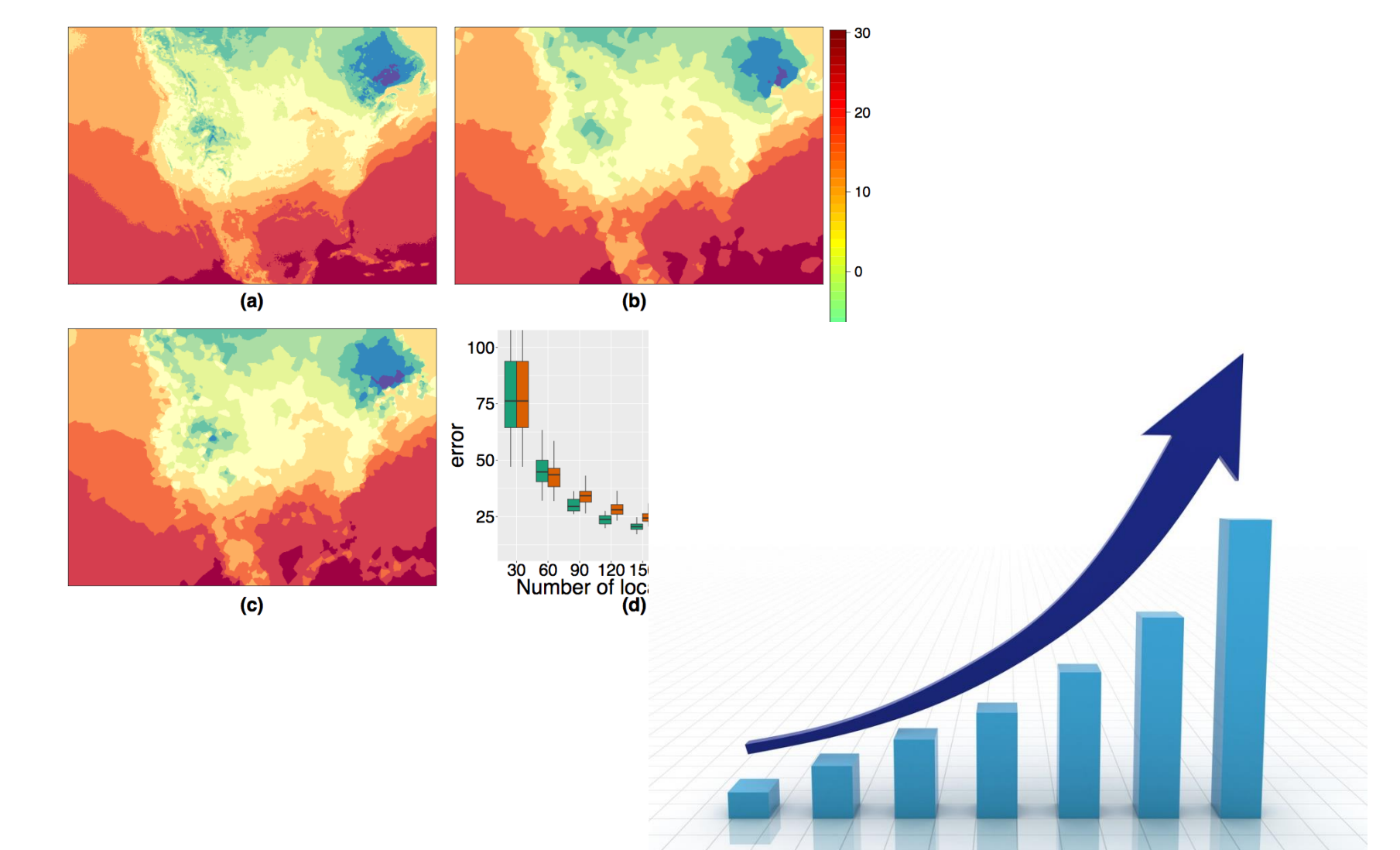
Conclusion & Future Work

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



References

- [1] <https://radical-cybertools.github.io/index.html>