



# Flux Realtime Instrumentation for Performance Probing

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# Background & Problem

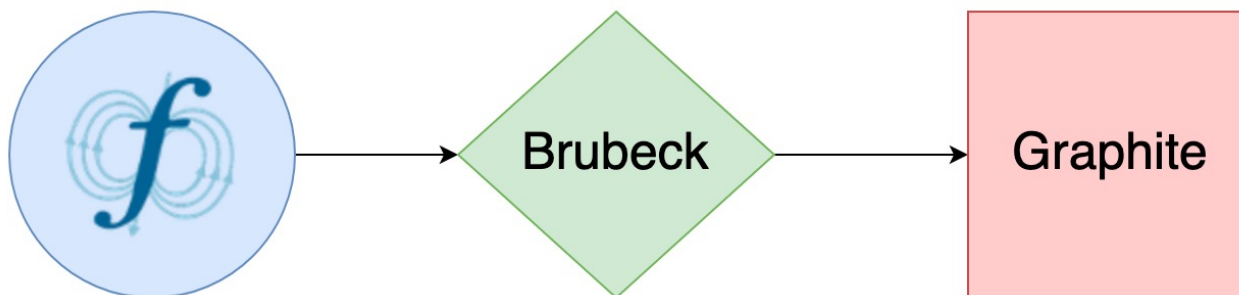
- Flux is an HPC resource manager framework and scheduler
  - Designed as the successor to SLURM
- Problem
  - Flux is a distributed system which uses asynchronous communication
  - Performance analysis tools like perf and flux logs provide narrow or incomplete insights
  - Hard to get an overarching picture of the system's performance and how it evolves over time





# Solution & Challenges

- Leverage existing cloud community monitoring tools
  - Brubeck (Github) - metric aggregator
  - Graphite (Orbitz) - frontend for graphing time series data
- Collect different performance metrics from within flux
  - Counters, gauges, & timers



- Challenges
  - Minimizing number of messages sent
  - Overhead of aggregation & sending metrics

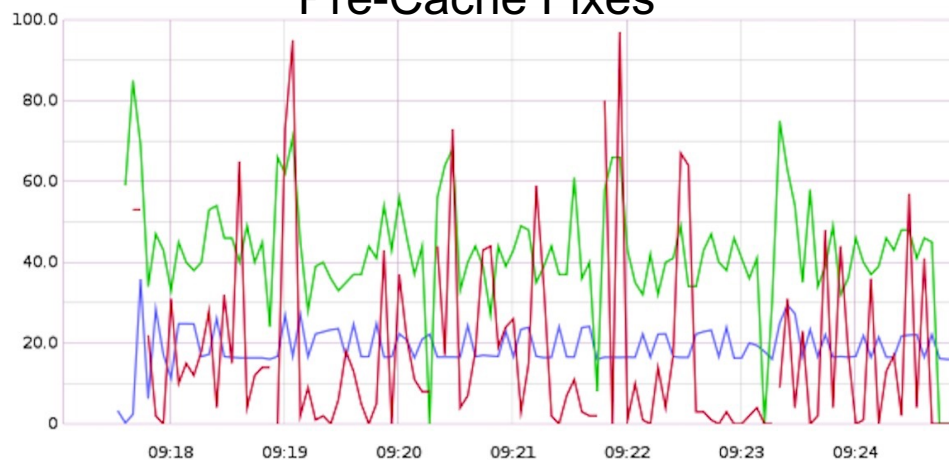


# Results & Going Forward

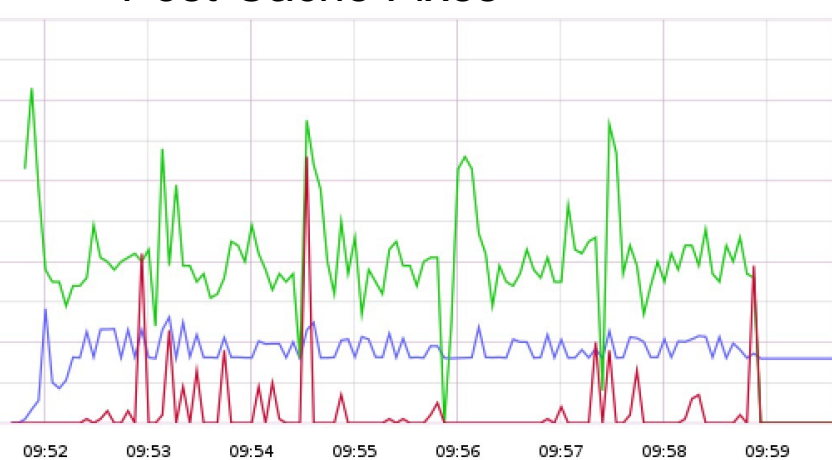
## ■ Results

- Flux can now collect and send internal metrics

Pre-Cache Fixes



Post-Cache Fixes



## ■ Future

Legend: Running Jobs | Cache Size (MB) | Dirty Entries

- More work to handle scalability
- Add control over instrumentation



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