Flux Realtime Instrumentation for Performance Probing

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LLNL-PRES-825167
This work was performed under the auspices of the U.S. Department of Energy by Lawrence Livermore National Laboratory under contract DE-AC52-07NA27344. Lawrence Livermore National Security, LLC

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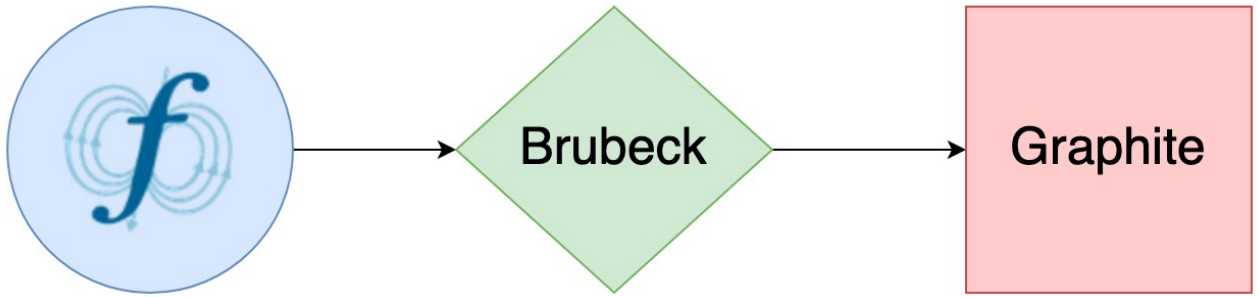
Background & Problem

- 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

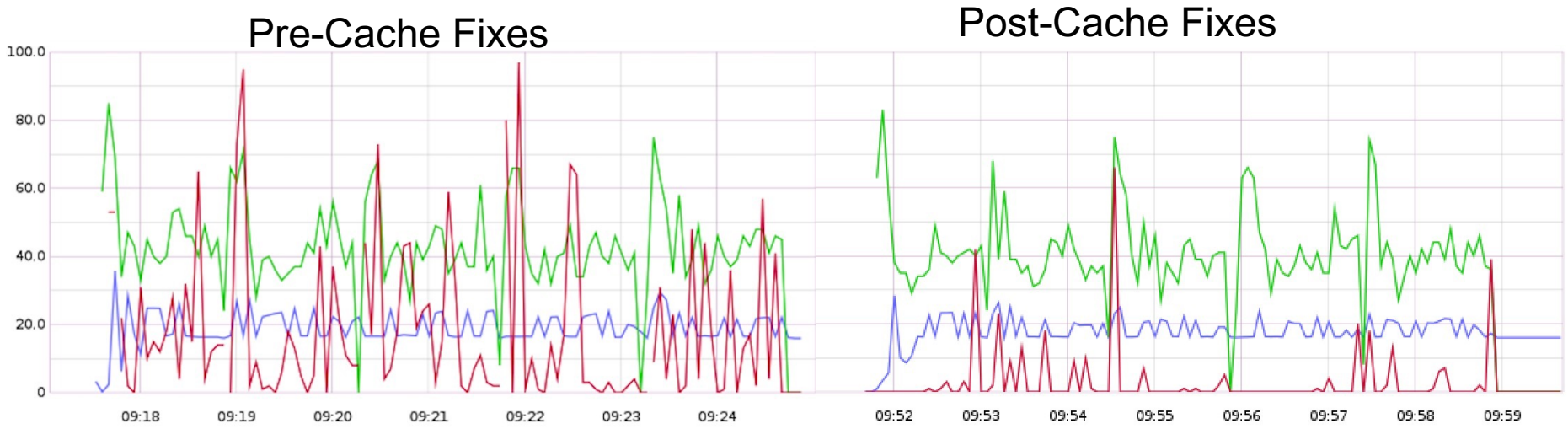
- Leverage existing cloud community monitoring tools
  - Brubeck (Github) - metric aggregator
  - Graphite (Orbitz) - frontend for graphing time series data
- Collect different performance metrics from within flux
  - Counters, gauges, & timers



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

Results & Going Forward

- Results
  - Flux can now collect and send internal metrics



- Future
  - More work to handle scalability
  - Add control over instrumentation