Performance Testing and Analysis of Qpid-Dispatch Router

Term Project

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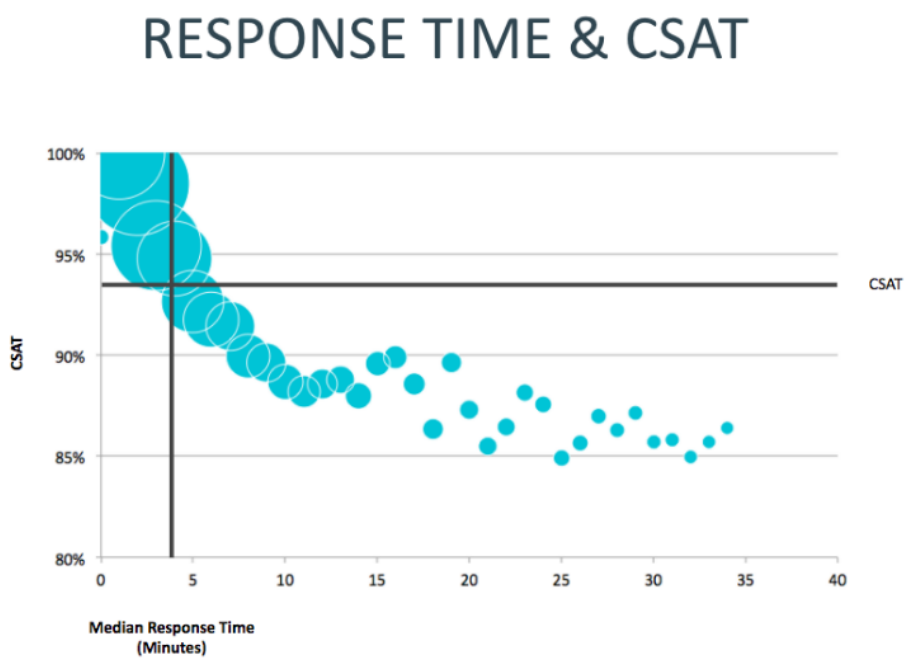
Motivation

- Why should we care about performance?
  - Good Performance $\rightarrow$ Good Quality.
  - Solid performance leads to a good customer satisfaction.
- Why should performance testing be automated?
  - Can reveal potential performance bugs.
  - Can lead to overall application performance by locating performance hotspots.



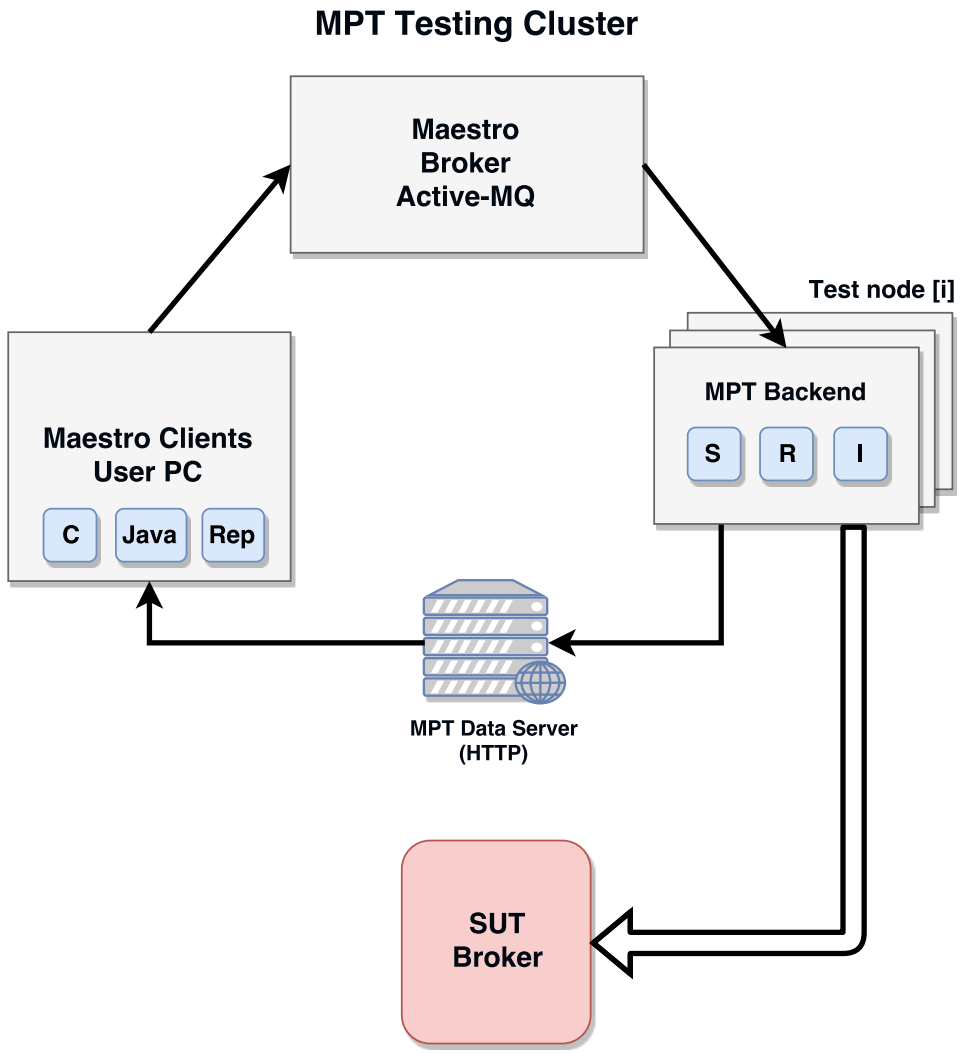
[1] CSAT Figure - https://www.linkedin.com/pulse/faster-response-times-linked-high-csat-peter-thalman

Qpid-Dispatch

- Application layer router.
- Take care of message routing in the network.
- Communication with Messaging Broker and Messaging Clients.
- Each router has configuration file with specified links to other components.
- Network with routers can be configured with redundant links in case of any node crash.

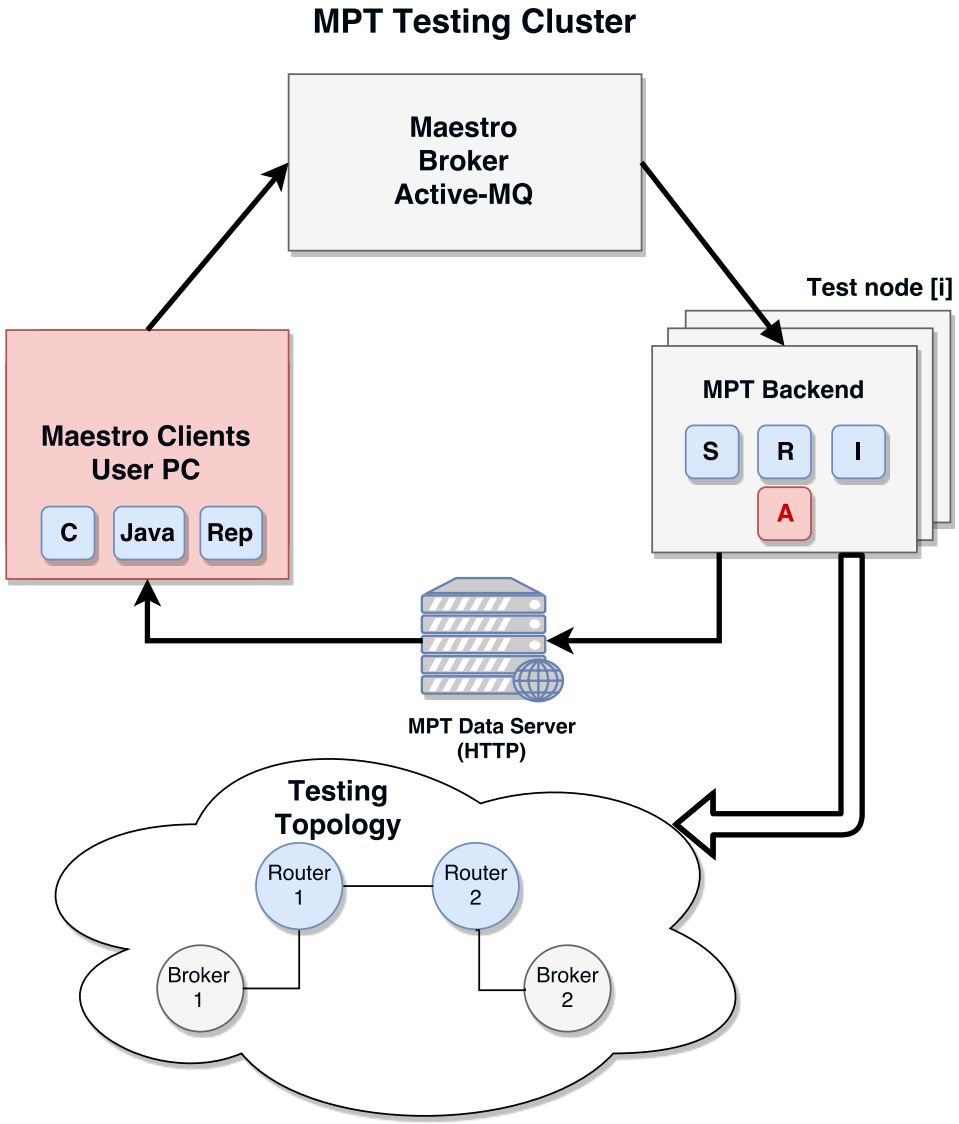
Messaging Performance Tool

- Cluster performance system
- Load handlers are Sender and Receiver
- Inspector is monitoring component
- Communication between back-end and Maestro Clients through Maestro Broker
- Measured data are send to data server from Inspector



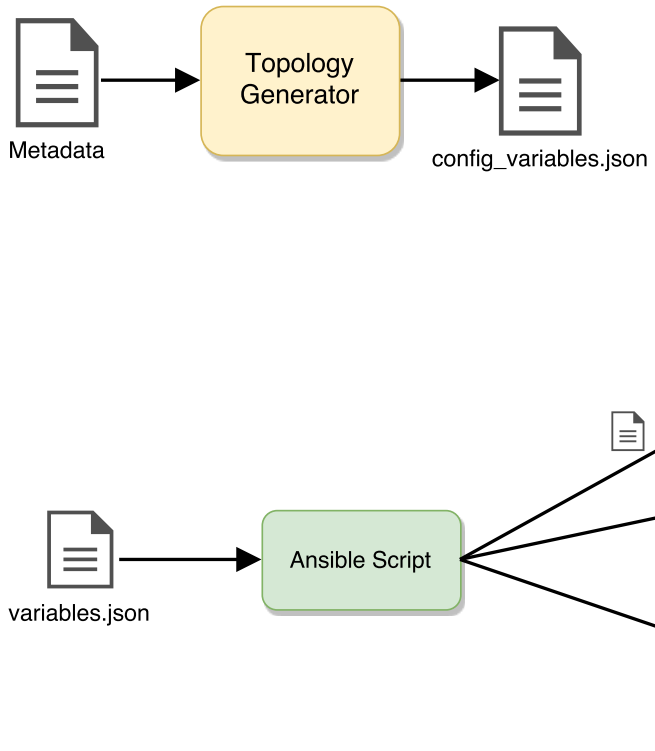
Messaging Performance Tool: Proposed Extension

- Maestro Clients update (New Commands)
- New component: Agent
- Ability to change topology (Shut down router, etc.)
- Finished work:
  - Updated Maestro Clients with new commands
  - Updated Maestro Broker with new topics
  - Implemented Agent component



Topology Generator

- Metadata are transformed into Configuration files
- Metadata consists of Inventory or Graph File (topology description)
- Configuration files are based on Qpid-Dispatch version (specific Template for Ansible)
- Automatic deployment of configuration files by Ansible to specific nodes



Summary

- Extension of Messaging Performance Tool
  - Added new commands to Maestro Clients
  - Implemented Qpid-Dispatch Agent
- Plan for next semester
  - Improvements of Topology Generator (more user friendly input, more default graphs)
  - Qpid-Dispatch performance measurements (measure the highest throughput and other metrics)
  - Experiments with Qpid-Dispatch recovery and topology convergence