

# Performance Testing and Analysis of Qpid-Dispatch Router

## Term Project

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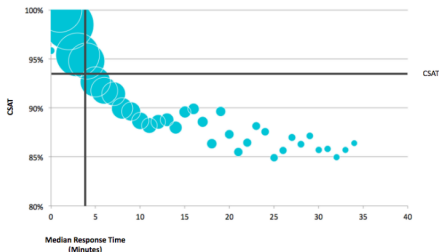
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## Motivation

- Why should we care about performance?
  - ▶ Good Performance → 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.

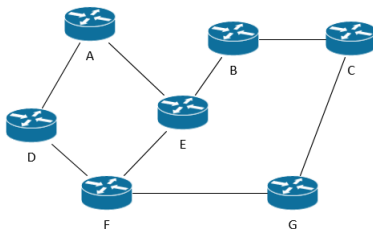
### RESPONSE TIME & CSAT



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

## Qpid-Dispatch

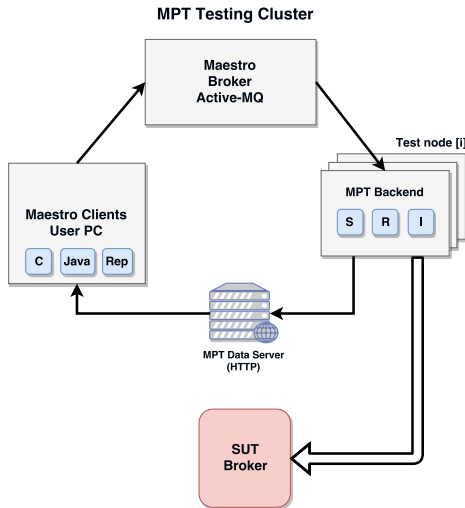
- Application layer router.
- Manages message routing in the network.
- Communicates with Messaging Broker and Messaging Clients.
- Each router has configuration file with specified links to other components.
- Networks with routers can be configured with redundant links in case of node crash.



<sup>2</sup>Routing Figure - <http://coretanbocahit.blogspot.cz/2016/10/lab-39-eigrp-filtering-ip-genap.html>

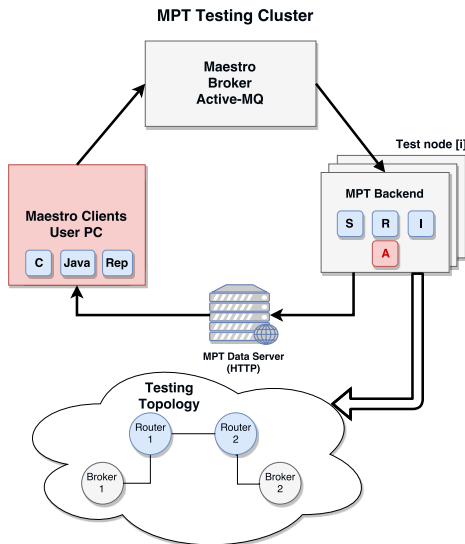
# Messaging Performance Tool

- Cluster performance testing 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.



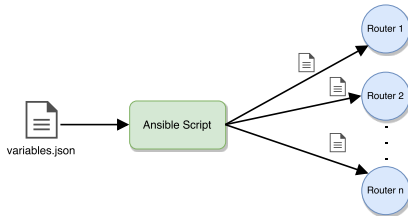
# Messaging Performance Tool: Proposed Extension

- Required changes:
  - ▶ 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.



- 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.