

Performance Testing and Analysis of Qpid-Dispatch Router

Bc. Jakub Stejskal

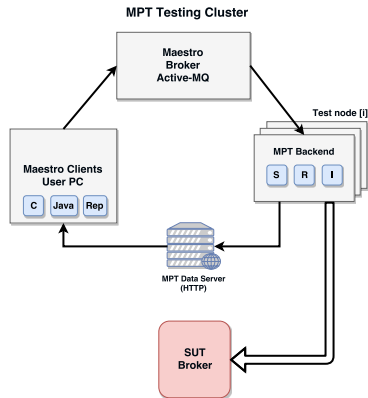
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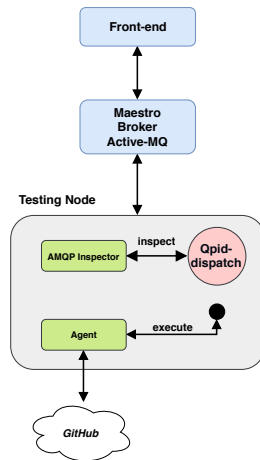
Motivation

- What is Maestro?
 - ▶ Performance tool for **Message-oriented middleware**.
 - ▶ Automated, provides reporting.
 - ▶ Single node, multi node or cluster testing.
- Capabilities
 - ▶ **Throughput** measurements.
 - ▶ **Latency** measurements.



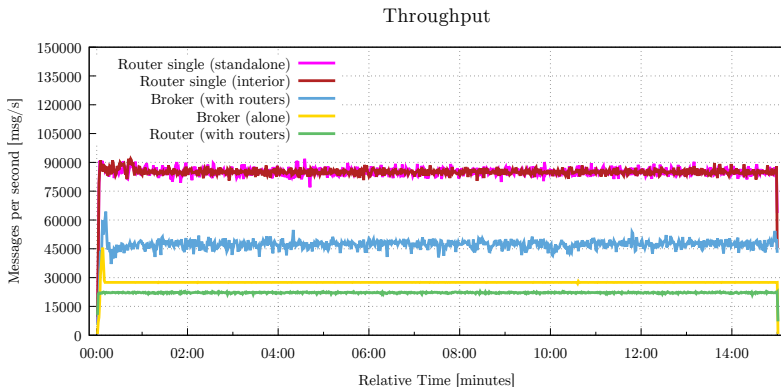
Extensions: Maestro-Agent and AMQP Inspector

- Enables automatic **SUT** (Software Under Test) changes during the test.
- **Groovy** code handler.
- Can fetch and process external repositories.
- Monitors **Qpid-dispatch**.
- Request-response mechanism over **AMQP**.
- **Topology Generator** for automatic deployment and configuration.



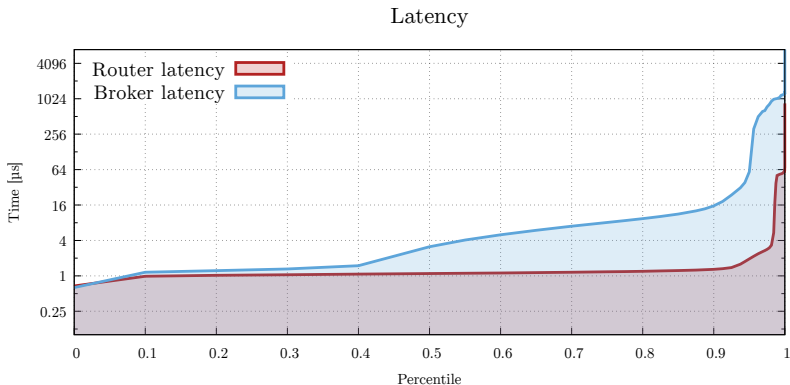
Experimental Evaluation

- **Latency vs. Throughput vs. Behavioral** testing.
- The figure shows throughput comparison of **Messaging Broker** and **Qpid-dispatch**.



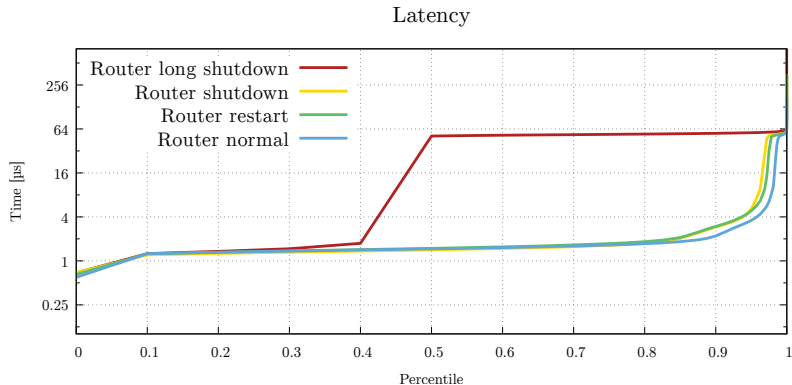
Experimental Evaluation

- Latency is measured by **Maestro Receiver**.
- The figure shows latency comparison between **Messaging Broker** and **Qpid-dispatch**.



Experimental Evaluation

- Latency and throughput can be affected by the **Agent**.
- The figure shows behavioral test case, during which one node of topology is shut down.



Summary

- Extensions of the Maestro
 - ▶ **Maestro-Agent**
 - ▶ **AMQP Inspector**
 - ▶ **Topology Generator** (external tool)
- Experimental Evaluation
 - ▶ **Throughput** and **latency**, **behavioral** testing.
 - ▶ Single node, multi node or cluster topologies.
 - ▶ Topologies consists of **Qpid-dispatch** and other messaging services.
 - ▶ Automatic generation of specific topologies.



- Jakub Stejskal — jstejska@redhat.com, xstejs24@stud.fit.vutbr.cz
- Otavio Rudolfo Piske — opiske@redhat.com (Author of Maestro)
- GitHub — <https://github.com/maestro-performance/>