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Chair for Network Architectures and Services
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Thesis B.Sc.

IDP

Test the Cloud – Evaluate Tools for 40 Gbit Networks

Motivation

Modern implementations of web servers like the Seastar HTTPD server are able to serve millions of requests per second. Systems like these are able to generate throughput to load multiple 10 Gbit links at once. Available load testing tools like `ab` or `httperf` cannot keep up with those speeds. This makes testing highly scalable applications a challenging task. For instance the test setup gets complicated as multiple clients are required to fully load a single Seastar HTTPD server. After testing, the results of multiple instances need to be aggregated from all clients to generate a final report.

Seastar waiting for `GET` requests

The goal of this thesis is to identify currently available HTTP load generation tools, evaluate their performance, and compare the different solutions. A web traffic testing tool called Seawreck is already integrated in the Seastar project to efficiently test the HTTPD server. Therefore, Seawreck should be one of the test candidates. We also suggest to include standard tools like `httperf` or `ab`. However, if you know of interesting tools or know promising solutions you are very welcome to include these in your tests.

Your Task

- Evaluate the performance of currently available test tools (e.g. `httperf`, `ab`, or Seawreck)
- Compare the different solutions
- The actual tasks to be performed are determined by the type of thesis
- Experience with standard web test tools or high-performance frameworks like Seastar or DPDK may come in handy but are not required to do this thesis

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