

Thesis
B.Sc.

Thesis
M.Sc.

Guided
Research

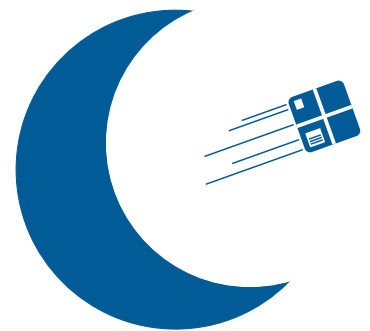
Performance Analysis of Hyperscan

Motivation

Deep packet inspection to detect ongoing attacks in a network requires to analyse packets at line-rate of 10 Gbit/s and beyond. A simple but promising approach is to create regexes for the kind of traffic that is of interest (addresses, ports, flags, ...) and apply the expression to incoming packets.

Hyperscan [1] is a high-performance multiple regex matching library based on the syntax of the libpcre library with an API written in C.

The goal of this thesis is to evaluate the performance of Hyperscan and integrate it with libmoon, a framework for efficient packet processing in Lua that is developed at the Chair of Network Architectures and Services.



Your task

Implement a module to integrate Hyperscan for libmoon in C and Lua. The main requirements are:

- Test the tool! How does it work?
- Analyse the performance: how fast, which requirements/constraints, ...
- Integrate Hyperscan with libmoon
- Write an example (DPI) application for libmoon

Experience with C and Lua are helpful but not required.

[1] <https://01.org/hyperscan>

References

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