

Thesis
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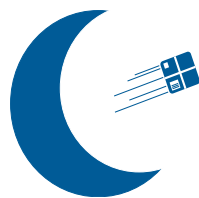
Snabb- compat: accelerating Snabb Apps

Motivation

Snabb [1] is a framework for fast software packet project building on a userspace driver. It uses Lua as programming language in combination with LuaJIT to offer the user a simple, yet fast, scripting environment. Each App has a well defined interface: packets are received on input ports, processed and finally pushed out again on output ports. This allows to implement Apps with small functionality, which can be combined for larger applications.



www.snabb.co



libmoon [2] is a framework for building packet processing applications in the scripting language Lua. It combines the userspace packet processing framework DPDK with the Lua just-in-time compiler LuaJIT. In previous research we have shown that applications based on libmoon are capable of performing high-performance packet processing tasks.

Highly modularized Snabb Apps and the same underlying programming language and general design for both frameworks raises the idea: can Snabb Apps be accelerated when run on top of libmoon? Or as Paul would say: libmoon and Snabb both do sort of the same thing. So why not run Snabb apps on libmoon?

Your Task

Implement a compatibility layer to integrate Snabb Apps with libmoon in Lua and C. The main requirements are:

- Analyse the structure of Snabb Apps in comparison to the libmoon framework
- Develop a compatibility layer to run Snabb Apps with libmoon
- Evaluate the performance of an example App when run with Snabb compared to when run with libmoon

Experience with C and Lua is helpful but not required.

References

- [1] <https://github.com/snabbco/snabb>
[2] <https://github.com/libmoon/libmoon>

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