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## Antrittsvortrag zur Bachelorarbeit

# Performance-Analyse von VPP

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Beginn: 12/2018  
Ende: 04/2019

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## Topic

VPP (Vector Packet Processing) [1] is an open source software for providing efficient network switching and routing. In contrary to common hardware switches, the whole packet processing is done in software. This allows a more versatile use of the same router in different applications and provides flexibility regarding hardware it can run on.

Typically hardware router are expected to be faster than software router, but VPP has several approaches to perform better compared to similar software projects like Open vSwitch or the Linux Router: As the name indicates, it processes packages in vectors, in other words, multiple packages at a time which reduces overhead per package. Furthermore it uses an own driver for it's network interfaces.

The scope of this Bachelor's thesis shall be to measure the performance of VPP and to evaluate which scenarios are important to be tested.

## Approach

Fist of all this Bachelor's Thesis shall explain, why the below stated scenarios have been selected to measure the performance of VPP. Afterwards automated tests shall be implemented to run the scenarios on the Baltikum testbed. In the end a conclusion shall be made, giving VPP a rough rank relative to real world routing solutions.

This Bachelor's Thesis shall test VPP towards IPv4 versus IPv6, packet sizes, cpu scaling (optionally multi socket NUMA architectures) and routing table sizes (BGP table size  $>600.000$  entries in 2017 [2]). Optionally one specific VPP feature like tunneling, firewall or NAT can be analyzed, too.

Measurement results shall contain package count (per time), latency, package loss and whitebox testing results: cpu load and cache misses.

\*\* planned scenarios / parameters

\*\* timetable

## Literatur

- [1] FD.io, "Vpp website," <https://wiki.fd.io/view/VPP>, accessed on 2018-11-10.
- [2] <http://www.bgphelp.com/2017/01/01/bgpsize/>.