

Measurement Framework for Data Plane Acceleration

Deniz Gurkan, Levent Dane – University of Houston

Nicholas Bastin – Barnstormer Softworks

Marc Suñé, Hagen Woesner, Andreas Köpsel – EICT/BISDN, Berlin, Germany



Packet Generation

Use low fidelity, software-based solutions to create an understanding

Use high fidelity, hardware solutions to characterize behavior

Alternative OpenFlow Software Switch to use with GENI experiments

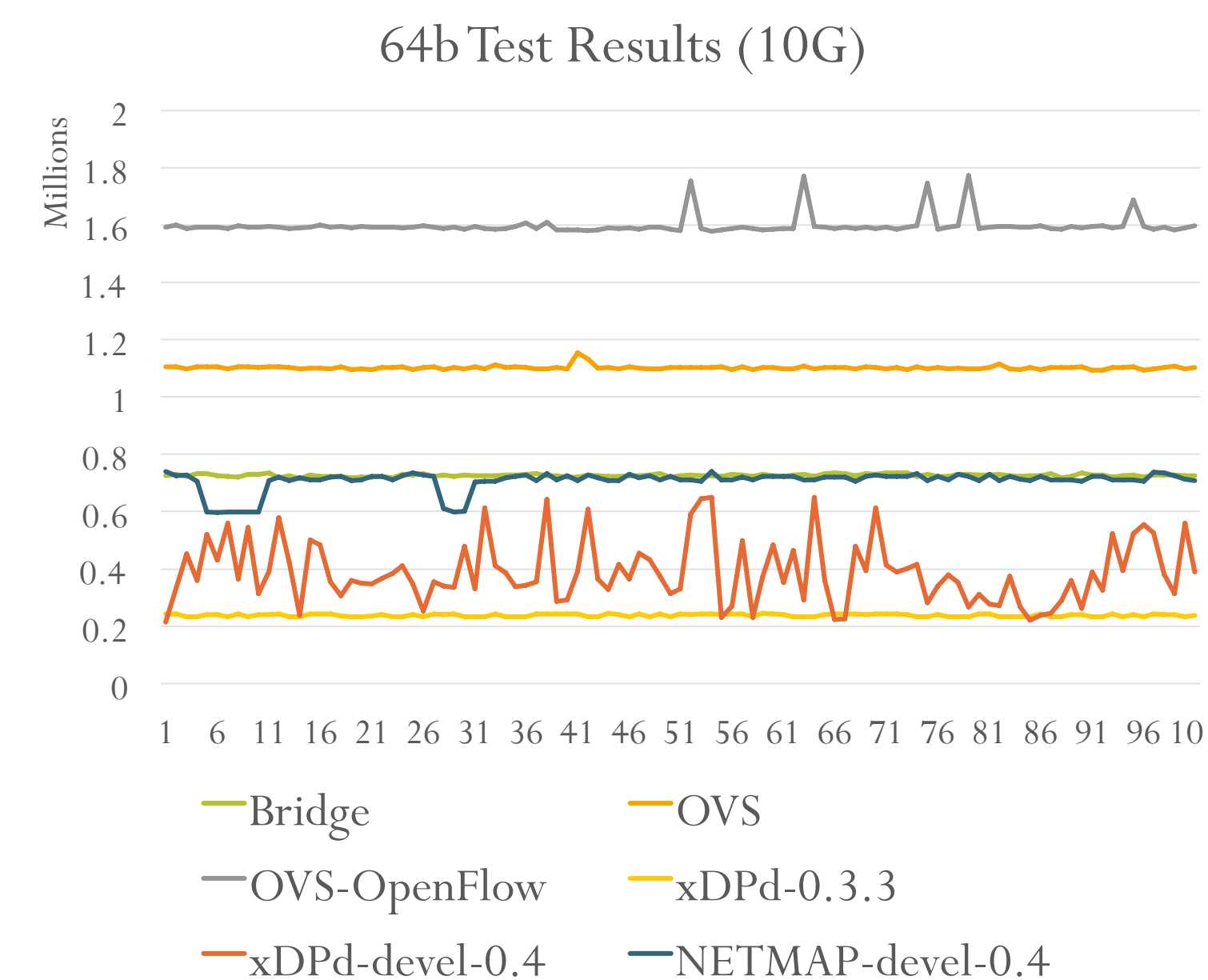
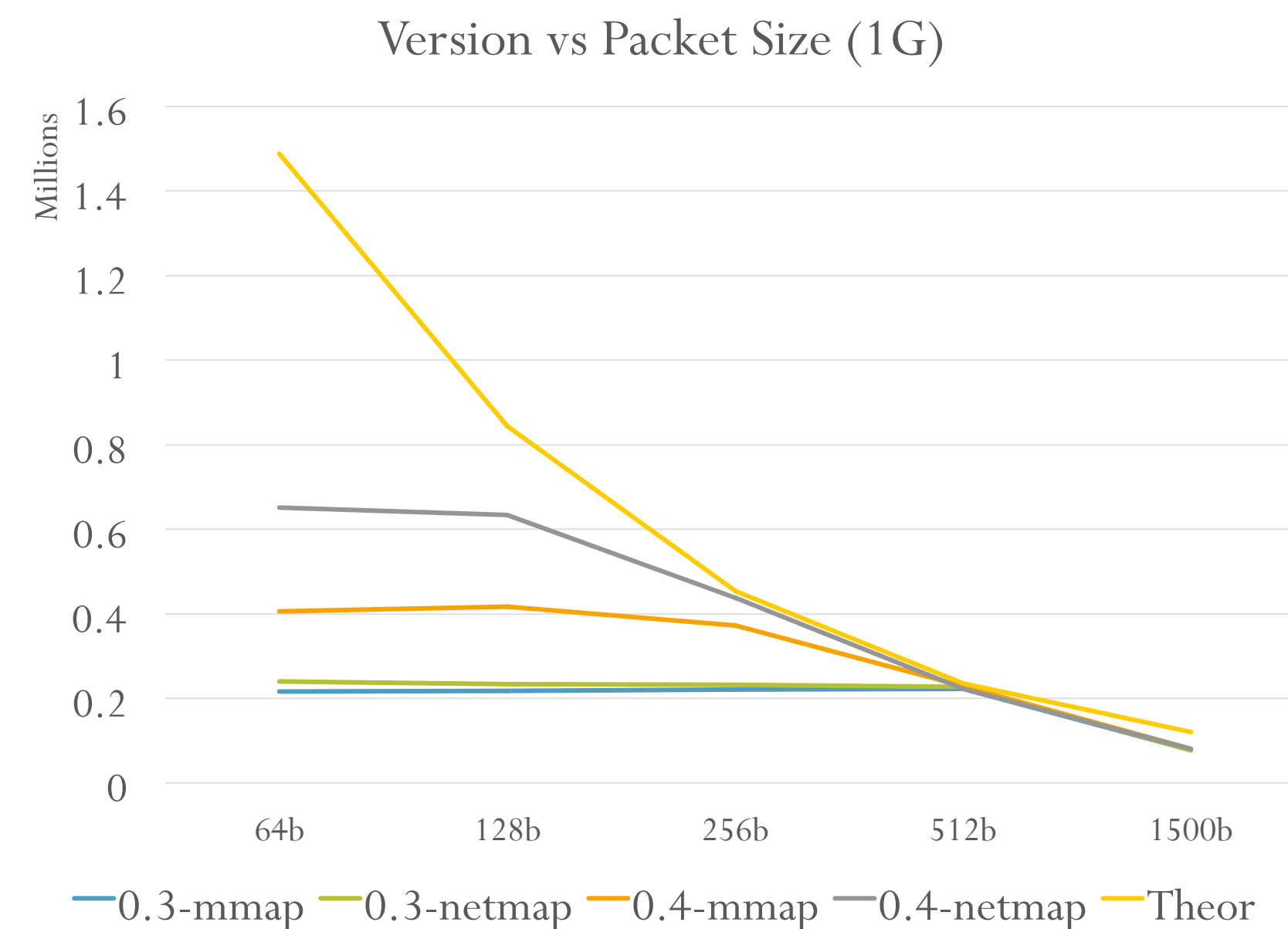
Testing Method

Flow table size
Interleaved MAC/IP addresses
Less than max rate

Where are the misses happening?
...

Evaluation

Characterize with a baseline performance for a given hardware
Push the limits in performance with a systematic methodology



SDN 75100



SDN 87100



Objective: Increasing number of packet processed by second.

Methodology: Bypassing Linux Kernel with NETMAP zerocopy framework