DEMO: A benchmarking methodology for evaluating software switch performance for NFV

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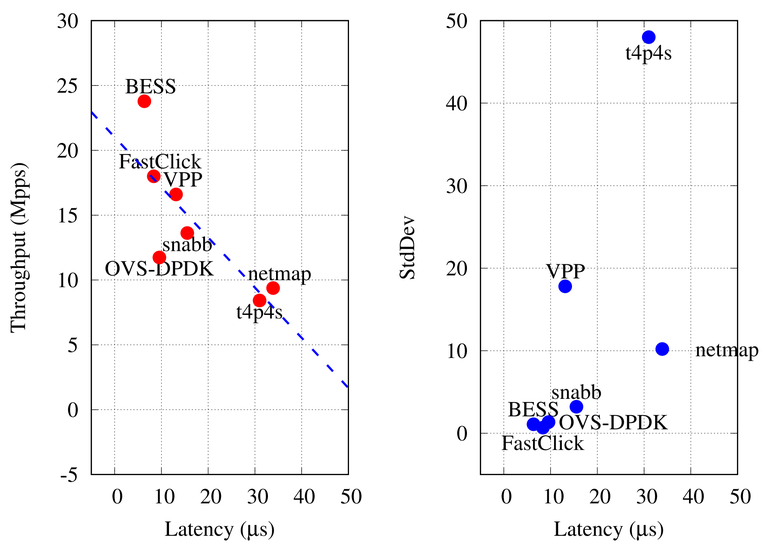
Background

- Software switches are increasingly used as dataplane to forward traffic in the context of NFV
- Still missing comprehensive performance study:
  - Large spectrum of solutions
  - Fair comparison is difficult
  - Hard to choose the “best” metrics

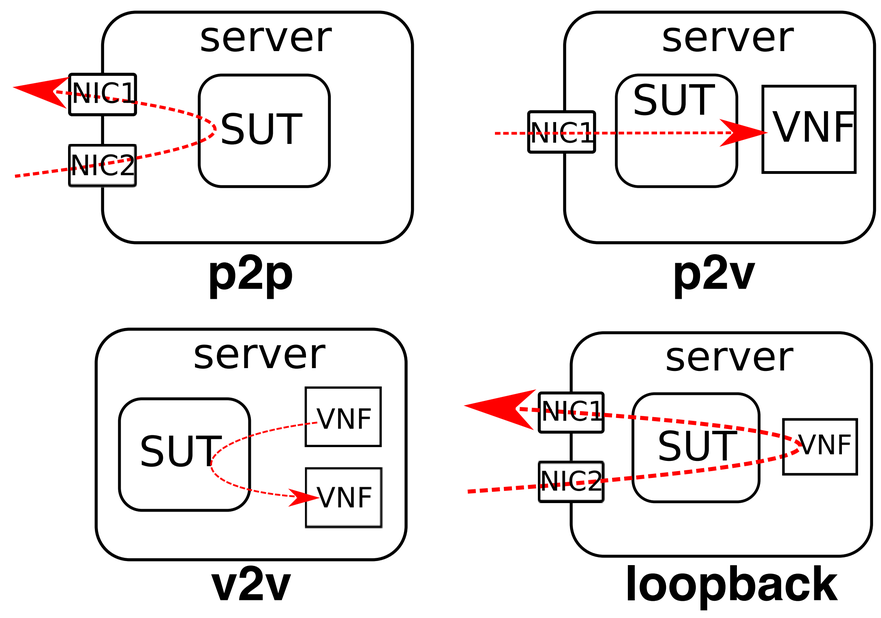
Contributions

- Propose a methodology to benchmark software switches for NFV
- Compare the performance of seven state-of-the-art solutions:
  - BESS, FastClick, OVS-DPDK, snabb, FD.io VPP, netmap, and t4p4s



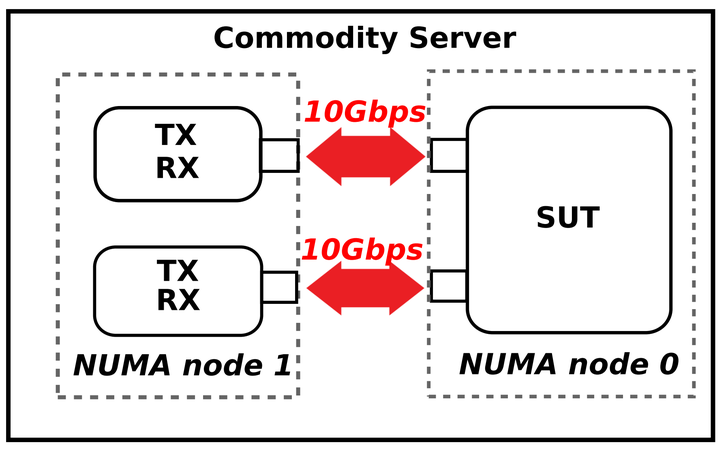
Methodology

- System Under Test (SUT) evaluated under four representative test scenarios

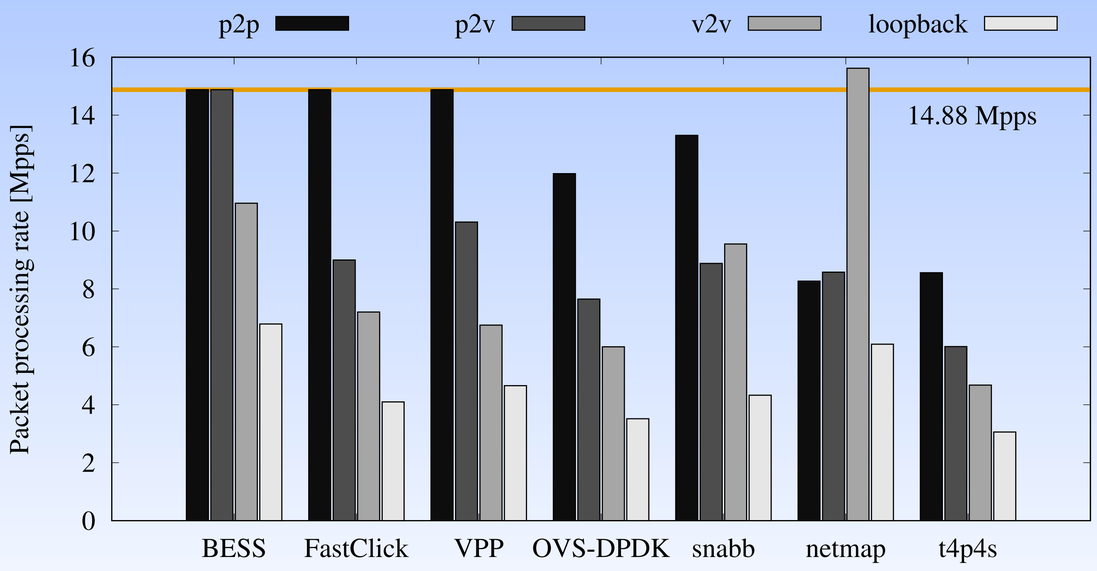


- Metrics
  - Throughput (unidirectional and bidirectional)
  - Latency (RTT)
- Synthetic input traffic
  - 10Gbps
  - Different packet sizes

Testbed setup

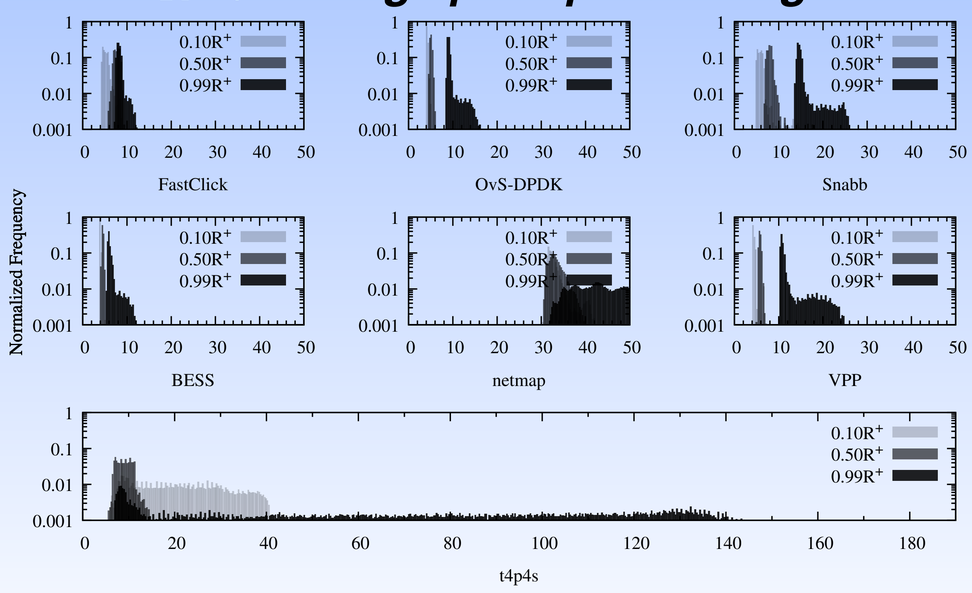


Experimental results



Unidirectional throughput test under 64B synthetic traffic

R^+ : ***Average peak processing rate***



Normalized distribution of p2p latency (μs) under 64B synthetic traffic

Scripts: https://github.com/ztz1989/software-switches