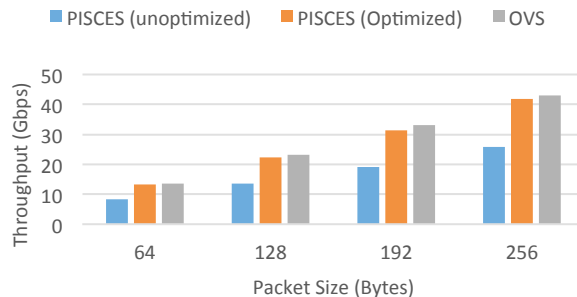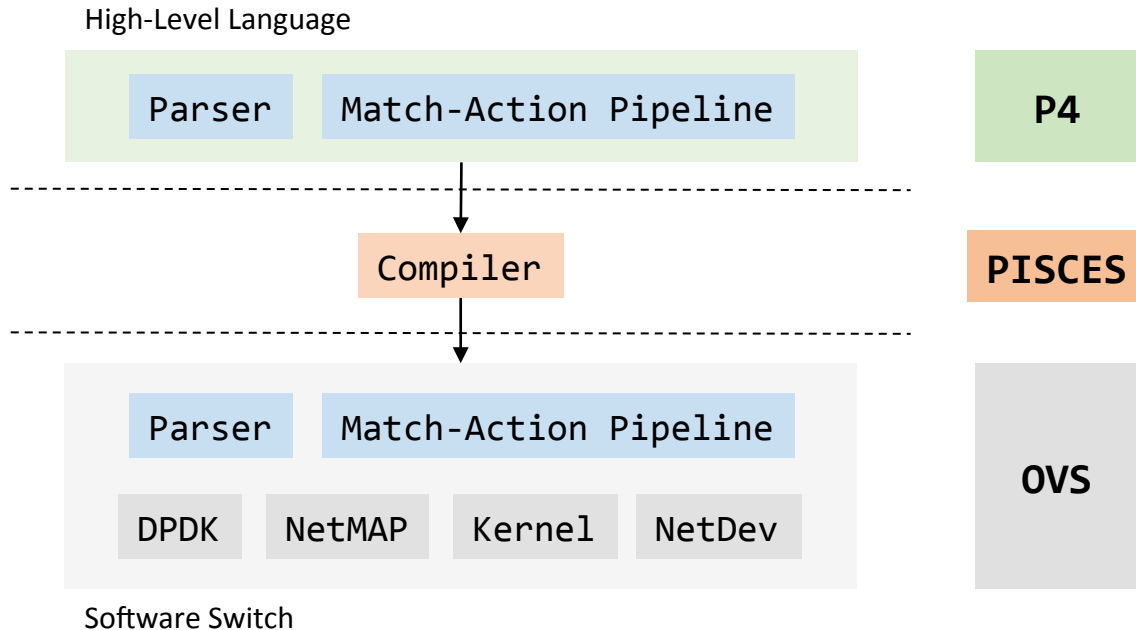# PISCES: A Programmable, Protocol-Independent Software Switch

Muhammad Shahbaz, **Sean Choi,** Ben Pfaff, Changhoon Kim, Nick Feamster, Nick McKeown, and Jennifer Rexford

High-Level Language

| Parser | Match-Action Pipeline |

P4

- -

Compiler

PISCES

- -

| Parser | Match-Action Pipeline |

| DPDK | NetMAP | Kernel | NetDev |

OVS

Software Switch

Throughput (Gbps) vs Packet Size (Bytes)

Legend: PISCES (unoptimized), PISCES (Optimized), OVS

Packet sizes: 64, 128, 192, 256

PISCES programs are on average about **40 times shorter** than equivalent OVS programs and incur a forwarding performance **overhead of only about 2%**.