

FPGA and vRouter: Fixing a performance bottleneck in cloud-native environment

The cloud-native approach stays a more and more popular in datacenters. The cloud-native means stateless applications working in containers that communicate each other using virtualization tunnels like Vxlan implemented by vRouters. There are many deployment models supported today from performance oriented DPDK based application to micro-service models where multiple applications shares single CPU core. The Contrail vRouter is a way that implements router, NAT, firewall, SFF and load-balancer in one box. The SW implementation of vRouters stays a bottleneck due to limited flow learning rate achieved and architecture that can touch a packet multiple times until the packet arrives to its destination. The vRouter supported by FPGA can address that bottleneck improving dramatically the flow learning rate and making possible to deliver packet as close as possible to user application. The presentation offers the overview of pros and cons of that HW based approach and discuss next steps towards achieving high performance cloud-native environment.

Presenter Bio:

Mirosław (Mirek) Walukiewicz is Intel Solution Architect working in Programmable Solution Group with more than 25 years' experience in networking industry. He is working on defining FPGA enabled accelerators for SDN and NFV solutions connecting together SW and HW efficiently.