

NFV: Virtual Router based on DPDK

Objective

Calsoft was engaged with the customer to provide routing capabilities in virtualised environment.

Solution

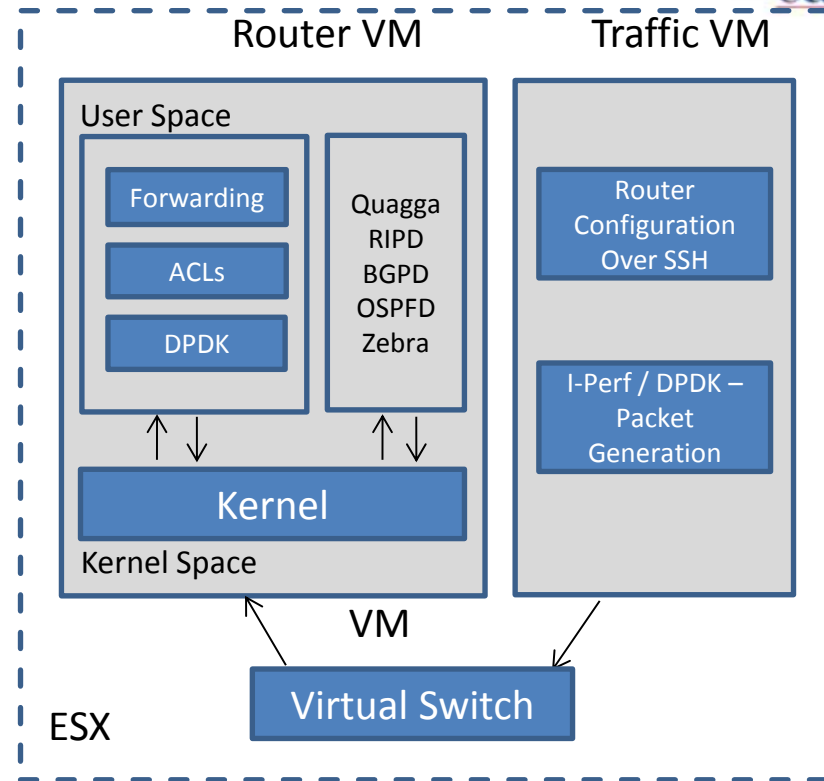
- ❑ The forwarding path is optimized with DPDK.
- ❑ Routing services like OSPF , BGP etc. Are provided with the help of Quagga.
- ❑ Virtual Router has support of L3/L4 ACLs which can be configured with the help of CLI
- ❑ Switching many packets using the LPM algorithm
- ❑ Making this switching scalable with the possibility of adding more packet queues/CPU's

Calsoft's contribution

- ❑ Cloud image based on Ubuntu 14.04 with Virtual Router DPDK based application and Quagga.
- ❑ Ubuntu OS image is fully optimized to achieve highest throughput performance.
- ❑ Used DPDK optimized iperf tool for performance testing.

Technology

- ❑ OS – Linux
- ❑ Language – C, DPDK
- ❑ Tools – Quagga



Benefits

- ❑ The packets are generated using DPDK-PktGen which is configured for sending 64 Bytes UDP packets with a random source and destination IP. When Configured with 4 RX queues, Virtual Router is able to forward packets with 3 times more throughput compared to the forwarding in Linux Kernel.