Dynamically Reprogrammable Data Plane Codesign Technology Broadening Utilization for Software Switches

Lagopus FPGA preserves the advantages of Lagopus software OpenFlow switch and can be used as a network interface card on commodity servers. This comprehensive architecture enhances Lagopus’s 10GbE line rate to 40GbE and assists in network troubleshooting that is essential for realizing a dependable virtualized network with less than 10% x86 CPU power dissipation.

Features

- Accelerates software switches and NFV applications
  Lagopus FPGA NIC assists high-intensity data plane operations such as packet classification, editing, search, dispatch, load balancing and statistics metering; realized over multiple line rates (10GbE/40GbE/100GbE) without compromising the performance.

- Achieving reliable virtualized network
  Real-time packet mirroring enables dependable node redundancy. Quick, reconfigurable packet pipeline capability enables to address "just-in-time" deployment of new features. Harnessing predictive information of network faults to operators enable new frontiers to manage, monitor, and verify carrier-grade software-oriented appliances.

Application Scenarios

- SDNet\(^2\) powered Lagopus FPGA architecture covers wide range of use cases both in datacenters as well as in wide area networks.

- Flexible software-defined hardware design technology enables agile deployment of differentiated network services.

Creating the future with value partners

This demonstration is executed in cooperation with Lagopus professional support services and Xilinx Inc. We are co-designing a software switch and hardware using an advanced FPGA and design tools.

*1 FPGA (Field Programmable Gate Array): an integrated circuit designed to be configured by a customer after manufacturing. FPGAs are increasingly used in datacenters because of their higher power efficiency than CPUs.

*2 SDNet (Software Defined Specification Environment for Networking) is the name of Xilinx Inc.’s packet processing tool chain.