

OVERVIEW

Today's trend of using commodity hardware to virtualize network functions and adopt separation of control and data path brings significant performance issues.

The role of hardware accelerators is becoming more and more important as they allow to give a boost to data path that has become slower in virtualized environments.

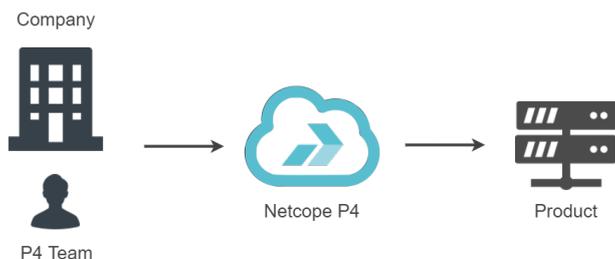
A crucial requirement in virtualized environment is the ability to adopt new features, which requires the accelerator to be repurposed through in-field reconfigurability. This is the situation when programmable Smart NICs come in handy.

NETCOPE P4

Netcope chose high-level P4 language as their next-generation means to program Smart NICs. This domain-specific language focused on description of packet forwarding plane is becoming widely supported in network devices. Due to its platform independence, it has never been easier to use the same program on CPUs, NPUs, ASICs or FPGAs.

Using P4 language allows network specialists to benefit from programmable hardware without expert knowledge of FPGAs. Other advantages are full customization of protocol stack to support any encapsulation protocol, possibility of integration of custom accelerators into data path, support of multiple network technologies on a single Smart NIC, etc.

To ease custom development, Netcope offers a web service that manages the whole process of transformation of P4 description into firmware bitstream for FPGA chip of the Smart NIC. No need to bother with licensing and using complicated firmware development tools. With Netcope's "Firmware as a service" concept, firmware generation is a matter of hours.



BENEFITS

- ▶ High-level synthesis based on description in P4
- ▶ Simple web-based user interface
- ▶ Firmware generation in time horizon of hours
- ▶ No need of expert knowledge of FPGA
- ▶ Design can be carried out by a network architect
- ▶ Shorter time-to-market than with HDL
- ▶ Optimized performance to achieve 100Gbps
- ▶ Deployable on Netcope's Smart NICs
- ▶ Deliverable as IP core

USE CASES

- ▶ Programmable protocol stack
- ▶ Segment routing
- ▶ In-band network telemetry
- ▶ Network troubleshooting and tuning
- ▶ Open vSwitch acceleration
- ▶ Customizing header fields for hash-based distribution over CPU cores
- ▶ Stripping and inserting headers of encapsulation protocols (MPLS, VLAN, GRE...)

ORDERING INFORMATION



Please contact Netcope Technologies for pricing and additional information about this product.