OpenFastPath Services

The exponential growth in data traffic puts ever-increasing demands on the packet processing elements in the network, resulting in a need for high performance IP packet handling. Projects like OpenDataPlane (ODP) and Data Plane Development Kit (DPDK) provide a hardware abstraction layer and a common API for applications and libraries for the networking dataplane. However, they do not include commonly required functionality such as IP forwarding or IPsec. To solve this, an additional piece of technology is required - an open IP stack that provides necessary protocols and features for high performance environments.

## FAST PATH TO ACCELERATE NETWORK FUNCTIONS

OpenFastPath (OFP) is a cross-platform TCP/IP stack which enables network application developers to create high performance and scalable applications.

Exceptional scalability and performance. OFP is designed to provide multicore throughput scalability. IP switching performance scales linearly using ODP-NETMAP on standard servers as well as embedded devices.

A portable and reliable fast path. OFP supports multiple hardware (ARM, X86 and MIPS) and software platforms (ODP, DPDK, Netmap). Besides, key parts of the implementation are based on the stable and well-tested BSD TCP/IP stack. The OFP project has invested significant resources to rework, extend and improve the implementation.

OFP is an open source project that enables a more flexible engagement model than traditionally licensed software. You can decide to license the software, maintenance and services from Enea, or work directly with the project depending on the resources and expertise you have.

20 times higher IP forwarding performance compared to Linux TCP/IP stack. OFP running in Linux user space enables remarkably better scaling and throughput compared to most Linux kernel implementations. In fact, we are measuring 20x performance improvement on 12 cores compared to a standard Linux IP stack:

IP forwarding application in user space - 256 routes, 4 x 10 Gbps, 64B packets
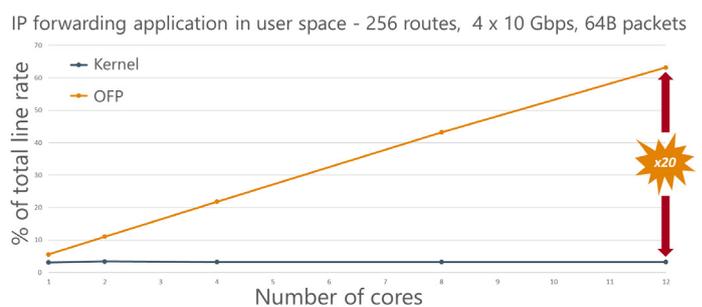
Intel Xeon E5-2697 v3 processor - Two 82599 NICs – Kernel 3.16.0 - CPU isolation used - OFP fpm_burstmode example application - ODP with multi queue packet I/O support

TRUSTWORTHY PARTNER IN NETWORKING

Enea is the co-founder of OpenFastPath and a significant open source community player. As a member of relevant communities such as Open Platform Network Function Virtualization (OPNFV), Linaro, Yocto Project and OpenDataPlane (ODP). Enea holds key roles like Linaro Networking Group (LNG) kernel maintainer, Yocto Carrier-Grade Linux (CGL) meta-layer maintainer, etc.

Enea has **extensive experience and reputation in networking** and telecom sector. Enea has been a player in the telecom market for 40 years and has accumulated remarkable expertise in real-time embedded systems and applications. Enea is the company behind the most extensively deployed embedded operating system in the communication market.

Enea customers enjoy **world-class support** coverage to address immediate and long term support needs. Enea ensures the lifetime of your application with over 400 engineers and offices in 8 countries within Europe, North America and Asia. Open source services is an important area where Enea invests a significant part of the overall R&D investment.

SERVICE PACKAGES:

■ **Integration services:**
Integration of OFP on customer's specific hardware and software system. Might include replacing existing proprietary data plane APIs with ODP or creating a packet processing partition using ODP or DPDK; customized application API's and communication with the control plane; and customizations to support special hardware configurations.

■ **Hardware porting and optimization services**
Test and verification of silicon vendor ODP implementation together with OFP. Optimization for a specific hardware, which optionally includes implementing support for vendor specific SDK API's and HW accelerators.

■ **Feature development services**
Pre-study, specification and implementation of new features and protocols within OFP. Additions can be made to a customer specific OFP branch or to the OFP mainline.

■ **Production test, maintenance and support services**
Test and validation, release management, maintenance and backport of specific features, from mainline to a customer specific branch.