Overview

Packet pROcessing eXecution Engine (PROX) which is a DPDK application. PROX can do operations on packets in a highly configurable manner. The PROX application is also displaying performance statistics that can be used for performance investigations.

Intel® DPPD - PROX is an application built on top of DPDK which allows creating software architectures, such as the one depicted below, through small and readable configuration files.

The figure shows that each core is executing a set of tasks. Currently, a task can be any one of the following:

- Classify
- Drop
- Basic Forwarding (no touch)
- L2 Forwarding (change MAC)
- GRE encap/decap
- Load balance based on packet fields
- Symmetric load balancing
- QinQ encap/decap IPv4/IPv6
- ARP
- QoS
- Routing
- Unmpls
- Policing
- ACL
- ...

One of the example configurations that is distributed with the source code is a Proof of Concept (PoC) implementation of a Broadband Network Gateway (BNG) with Quality of Service (QoS). The software architecture for this PoC is presented below. For more information, see RA 3.0 and RA 3.3.
The display shows per task statistics through an ncurses interface. Statistics include: estimated idleness; per second statistics for packets received, transmitted or dropped; per core cache occupancy; cycles per packet. These statistics can help pinpoint bottlenecks in the system. This information can then be used to optimize the configuration. Other features include debugging support, scripting, Open vSwitch support... A screenshot of the display is provided below.