Master Thesis— Using a Fast Packet Framework in Linux Applications

Background
5G mobile telecommunication systems use packet based communication to a great extent. In order to fulfill requirements on the capacity of packet processing in 5G systems, various packet processing frameworks can be used. One such framework is called Express Data Path. This framework is implemented in the Linux kernel and provides a high performance, programmable network data path that can be used by Linux applications.

We now want to investigate how our high demands on capacity and speed can be met by the Express Data Path Framework.

Thesis Description
The following steps are envisioned as part of the thesis work:

- Investigate possible options for how the Express Data Path framework can be used to implement packet processing at high speed in Linux applications.
- Investigate how capacity of packet processing applications using Express Data Path can scale using a multi CPU Linux system.
- Implement a simple Linux application using Express Data Path and analyze the packet processing capacity of this application.

The thesis will be concluded with a result presentation for Ericsson.

Qualifications
This project aims at students in electrical engineering, computer science, computer engineering or similar.

Extent
1-2 students, 30hp each

Location
Ericsson AB Mjärdevi, Linköping

Preferred Starting Date
Spring 2022

Keywords
Mobile Telecommunication, Linux, Packet processing

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