MASTER THESIS – INTER PROCESS COMMUNICATION BETWEEN LINUX CONTAINERS

Background
Mobile networks are used all over the world and are the cornerstone in the networked society, where everything that benefits from a connection shall be connected. To support the vast amount and diversity of data expected in future networks, Ericsson are developing products to drive and support the networked society. The subjects for Master Thesis are defined to investigate and develop algorithms, architecture, tools etc. to support huge increase of speech, data and massive IoT for Radio Access Networks.

Thesis Description
Parts of the 5G network might be deployed in a virtualized environment using containers to improve ease of deployment and software management. It also has implications for scaling of the application. It is crucial to maintain efficient and reliable communication between the containers to reach the required radio network performance. The aim of this thesis is to evaluate the performance of communication between containers in the context of a real-time 5G application. The scope includes:

- Exploring different models of measuring IPC performance on virtual environments and containers.
- Creating and running a synthetic benchmark for evaluating container IPC (Inter process communication performance).
- Creating a recommendation/guideline for optimal IPC performance in containers, using various parameters and tunables.

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

Qualifications
This project aims at students in electrical engineering, computer science, computer engineering or similar. Interest in cloud technology and Linux is a merit.

Extent
1-2 students, 30hp each

Location
Ericsson AB Mjärdevi, Linköping

Preferred Starting Date
Spring 2018

Keywords
C++, Mobile Telecommunication, Cloud, Linux, Containers

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