Bachelor Thesis - Characteristics in a Containerized Environment – Monitor Performance in a Kubernetes Cluster

Background
In a telecommunication system which is required to be able to serve thousands of users, it is crucial to understand how the load on the system affects the performance of the service. When moving towards a cloud-based RAN, where available resources can vary between deployments, it would be of great value to be able to monitor and probe important performance metrics in the system at any given point.

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

• Develop a performance probe program that is possible to deploy in both a Kubernetes environment as well as in an embedded system, that has some standard ways to measure performance metrics like time for writing to memory, network latency, IPC communication latency, etc.
• Compare performance in cloud with embedded – running a capacity test
• How performance is affected by the load on the system

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

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

Extent
1-2 students, 15hp each

Location
Ericsson AB Mjärdevi, Linköping

Preferred Starting Date
Spring 2021

Keywords
Programming, Docker, Kubernetes, Mobile Telecommunication

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