
Background
Traditionally the Ericsson RAN (Radio Access Network) applications have been hosted on Ericsson proprietary hardware. This hardware has been built to support high availability (99.999% or better). The current trend is to deploy the RAN applications on Commercial-off-the-shelf (COTS) hardware and/or public/private clouds. These are typically not built to deliver high availability (On an execution node level). This will require RAN application to be adapted to provide the high availability in execution environments that does not natively support this.

Thesis Description
- Investigate the availability KPI:s (Key performance indicator) of commonly used cloud platforms.
- Investigate if it’s possible to build high availability micro clouds (3-6 execution units) using COTS hardware and open source software. If feasible, realize a proof-of-concept demonstrator.
- Identify failure conditions in cloud and COTS environments that needs to be mitigated.
- Investigate / propose patterns for building 99.999% level availability in execution environments that do not natively support this.
- Investigate how to handle high availability of state-full portions of the RAN Application.
- The thesis will be concluded with a result presentation for the Ericsson RAN architecture team.

Qualifications
This project aims at students in computer science, computer engineering or similar. Background in wireless communication is preferred.

Extent
1-2 students, 30hp each

Location
Ericsson AB Mjärdevi, Linköping

Preferred Starting Date
Spring 2019

Keywords
Cloud, large scale computing, reliability, virtual machines