
Scheduling at the edge

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Abstract

As the number of Internet of Things devices becomes larger every day, the amount of data produced by such devices increases as well.

Following this trend, the paradigm of Edge Computing has emerged in the recent years,

in which the computing power is put as close as possible to where the data are produced:

that is, at the edge of the network.

Typical scheduling tools, that were initially designed for high performance and cloud computing platforms, are not adapted to edge platforms due to a high heterogeneity and volatility of the platforms components as well as for the high latency and uncertainty of the network connections.

There is a strong need of methods and effective tools for the orchestration for an efficient coherent use of all these components of the edge.

In this talk, we will present the edge platform of the Qarnot Computing company, composed of smart heaters (built upon multi-cores), and its related scheduling problems.

Then, we will show how we designed a digital twin to simulate the behaviour of the platform enabling easily to implement different

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scheduling algorithms.

They are finally assessed in an experimental campaign based on real logs of the Qarnot platform.