Internet of Things (IoT) architectures

Internet of Things relies on sensors and actuators to measure the real world. We work on the confluence on IoT and Fog Computing to exploit their common objectives.

Summary

Internet of Things (IoT): It refers to objects that are equipped with identifying devices (sensors and actuators mostly) and that can be inventoried by computers. If all objects could be identified and located by computers the Internet could interact with them in many different ways. This would represent an important change in our daily lives, first companies would know accurately their stock, individuals could be aware of what/when exactly they have consumed and lost or stolen objects could be easily tracked and located. Clearly, the Internet of Things places important challenges to distributed systems, since it requires very large amounts of computing power and storage as well as massive scalability. The combination of the advantages brought by Fog Computing paradigm has placed it as the natural technology to facilitate the IoT explosion.

Objectives

1. Design architectures for IoT workloads maintaining the real-time constraints
2. Propose new data consistency models to adapt to the changing environment
3. Analyze and study of new architectural solutions to deal with the scalability and the complexity
4. Determine the impact of the Ultra-Large Scale systems