

## **Planning Fog networks for time-critical IoT requests**

### **ABSTRACT**

The massive growth of the Internet of Things (IoT) applications and the challenges of Cloud computing have increased the importance of Fog networks for timely processing the requests from delay-sensitive applications. A Fog network provides local aggregation, analysis, and processing of IoT requests that may or may not be time-critical. One of the major issues of Fog is its capacity planning considering the traffic load of time-critical requests. The response time can be huge if a time-critical request is processed on Cloud. The response time of a time-critical request can be big on the Fog layer if it is not prioritized. Hence, there is a need to handle the time-critical traffic on a priority basis at the Fog layer. In this paper, a priority queuing model with preemption has been proposed considering the mixed types of requests at the Fog layer. The proposed approach determines the required number of Fog nodes in order to satisfy the desired Quality of Service (QoS) requirements of IoT requests. The proposed mechanism is evaluated through simulations using the iFogSim simulator. The work can be used in the capacity planning of Fog networks.