

***Abstract***—Fog computing (FC) is new architecture that enables a set of low-power fog nodes (FNs) to provide service for cloud centers clients. FNs are managed by fog nodes owners (FNO). FC extends cloud computing services and support economical and low latency data centers for future Internet of Things (IoT). In this paper, we consider FC network consisting of a set of data service agents (DSAs) who manage a set of FNSs that provide the required service to cloud clients. Setting service price based on dynamic demand is an important application in the cloud computing. In this work, we propose new scheme to efficiently capture client's consumption behavior based on service price. Each client accepts the service price based on his requirements and the budget constraint.

We model the problem of allocating FNO's resources to clients as Stackelberg game where FNO aims to maximize his profit, while DSA try to pay the lowest price and be served in time. After submitting the bids of all DSAs, FNO sets an optimal service price based on DSAs' bids. Simulation results stress that the FNO can maximize his profit and the DSA requests will be served in time.