

# Dynamic Pricing Scheme: Towards Cloud Revenue Maximization

## ABSTRACT

Cloud computing providers in the infrastructure as a service (IaaS) layer provide their utility computing and IT services as virtual machines to customers, who then pay for resources based on time usage. One of the most subtle challenges is pricing stagnant resources dynamically, which combines the static pricing strategy of active resources to maximize cloud computing profits. This paper investigates cloud dynamic pricing and proposes an efficient model that manages virtual machines in regards to revenue management, formulating the maximum expected reward under discrete finite horizon Markovian decisions, characterizing model properties under optimum controlling conditions, approximating optimal dynamic programming policy using a linear programming approach, developing a new algorithm based on this approximation, and finally presenting evaluation results. Our results provide fundamental insights into cloud computing revenue.