

Agent-based pricing determination for cloud services in multi-tenant environment

ABSTRACT

Cloud computing acts as a resource sharing pool that provides services to multiple customers, which are called tenants through the Internet. One of the big challenges in cloud is providing a price for leasing the services while adapting with budget limit of the tenants. In order to meet the rapidly growing and dynamic demands of tenants, this paper proposes a pricing determination scheme for cloud services using mathematical analysis. It aims to balance satisfaction between tenants and service provider in terms of budget and profit. Specifically, our pricing determination procedure aggregated the budget constraint of tenants and service cost to calculate the potential price of service. Service level agreement (SLA) is handled by an agent for determining minimum and maximum prices that represent in a range. Hence, the service cost that charged by the provider is identified within the price range in order to meet tenants' requests. The results from our simulation demonstrate that the proposed pricing determination scheme provides better tenant satisfaction while sustaining provider profitability.

Keyword: Cloud computing; Multitenant; Pricing determination scheme; Service level agreement