

Robust Pricing for Cloud Computing

Dirk Bergemann and Rahul Deb

Abstract

We study the robust sequential screening problem of a monopolist seller of multiple cloud computing services facing a buyer who has private information about his demand distribution for these services. At the time of contracting, the buyer knows the distribution of his demand for various services and the seller simply knows the mean of the buyer's total demand. We show that a simple "committed spend mechanism" is robustly optimal: it provides the seller with the highest profit guarantee against all demand distributions that have the known total mean demand. This mechanism requires the buyer to commit to a minimum total usage and a corresponding base payment; the buyer can choose the individual quantities of each service and is free to consume additional units (over the committed total usage) at a fixed marginal price. This result provides theoretical support for prevalent cloud computing pricing practices while highlighting the robustness of simple pricing schemes in environments with complex uncertainty.