**Abstract:**

The cloud database as a service is a novel paradigm that can support several Internet-based applications, but its adoption requires the solution of information confidentiality problems. We propose a novel architecture for adaptive encryption of public cloud databases that offers an interesting alternative to the trade-off between the required data confidentiality level and the flexibility of the cloud database structures at design time. We demonstrate the feasibility and performance of the proposed solution through a software prototype. Moreover, we propose an original cost model that is oriented to the evaluation of cloud database services in plain and encrypted instances and that takes into account the variability of cloud prices and tenant workload during a medium-term period.