Abstract

Cloud computing is an Internet-based computing model. This model enables access to resources and services on demand. Cloud computing users have applications with different Quality of Service requirements. On the other hand, there are different cloud service providers offering services with different qualitative characteristics. Determining the best cloud computing service for a specific application is a significant research problem. Ranking of cloud service providers compares different services offered by different providers based on quality of service, in order to select the most suitable cloud service provider.

QoS parameters provide valuable information for making optimal cloud service selection from a set of functionally equivalent service candidates. To obtain QoS values, real-world invocations on the service candidates are usually required. This project proposes a QoS ranking prediction framework for cloud services that eliminates delay and expenses involved in real-world service invocations. It makes use of the past service usage experiences of other users. This framework does not require any additional invocations of cloud services while making QoS ranking
prediction.

The algorithm is implemented by considering both cost and benefit parameters such as response time and throughput respectively using a database containing response time and throughput values of 300 users for 10 different cloud providers. Also, sensitivity analysis is done by varying weights of individual QoS parameters to verify the correctness of the algorithm. It is observed from the results that the proposed cloud service selection algorithm is able to appropriately choose the best cloud service provider depending on the weights of the respective QoS parameters.

References


Index Terms

Computer Science

Information Sciences

Keywords

Cloud computing, Quality of Service, ranking prediction, personalization