Scalability enhancement for cloud-based applications using software oriented methods

ABSTRACT

Scalability refers to the ability of a system to handle resource utilization in a constant and smooth fashion when high or low volume of data is applied. It is among the key attractions for migration to a cloud based infrastructure. Most of the previous studies in this area are based on the enhancement of cloud scalability in terms of hardware resources and network infrastructure However in this case the cost of additional hardware resources and expansion of network infrastructural components to improve the cloud scalability is a major hurdle. Improving scalability of software on cloud platform by improving the software design is very less explored area. This paper focuses on two major concepts that involve measuring of software scalability using different methods and secondly exploring the software design based approaches to improve scalability. At the end, researchers have also explored the use of software design patterns to enhance scalability and flexibility in software applications on available cloud platforms especially Platform-as-a-Service (PaaS).

Keyword: Software scalability; Scalability measurement methods; Scalability enhancement methods; Cloud infrastructure; Platform-as-a-service (PaaS); Software design patterns.