

Increasing the System Availability of Data Centers by Using Virtualization Technologies

Authors : Chris Ewe, Naoum Jamous, Holger Schrödl

Abstract : Like most entrepreneurs, data center operators pursue goals such as profit-maximization, improvement of the company's reputation or basically to exist on the market. Part of those aims is to guarantee a given quality of service. Quality characteristics are specified in a contract called the service level agreement. Central part of this agreement is non-functional properties of an IT service. The system availability is one of the most important properties as it will be shown in this paper. To comply with availability requirements, data center operators can use virtualization technologies. A clear model to assess the effect of virtualization functions on the parts of a data center in relation to the system availability is still missing. This paper aims to introduce a basic model that shows these connections, and consider if the identified effects are positive or negative. Thus, this work also points out possible disadvantages of the technology. In consequence, the paper shows opportunities as well as risks of data center virtualization in relation to system availability.

Keywords : availability, cloud computing IT service, quality of service, service level agreement, virtualization