Intelligent Resource Allocation Technique for Desktop-as-a-Service in Cloud Environment

Volume 96 - Number 3
Year of Publication: 2014

Authors:
Gandhi Kishan
Rajanikanth Aluvalu
Ajay Shanker Singh

Abstract

The specialty of desktop-as-a-service cloud computing is that user can access their desktop and can execute applications in virtual desktops on remote servers. Resource management and resource utilization are most significant in the area of desktop-as-a-service, cloud computing; however, handling a large amount of clients in the most efficient manner poses important challenges. Especially deciding how many clients to handle on one server, and where to execute the user applications at each time is important. This is because we have to ensure maximum resource utilization along with user data confidentiality, customer satisfaction, scalability, minimum Service level agreement (SLA) violation etc. Assigning too many users to one server leads to customer dissatisfaction, while assigning too little leads to higher investments costs. So we have taken into consideration these two situations also. We study different aspects to optimize the resource usage and customer satisfaction. Here in this paper We proposed Intelligent Resource Allocation (IRA) Technique which assures the above mentioned parameters like minimum SLA violation. For this, priorities are assigned to user requests based on their SLA Factors in order to maintain their confidentiality. The results of the paper indicate that by applying IRA Technique to the already existing overbooking mechanism
will improve the performance of the system with significant reduction in SLA violation.

References

- Nilabja Roy, Abhishek Dubey and Aniruddha Gokhale, "Efficient Autoscaling in the Cloud using Predictive Models for Workload Forecasting".
- Nilabja Roy, Abhishek Dubey and Aniruddha Gokhale, "Efficient Autoscaling in the Cloud using Predictive Models for Workload Forecasting".

Index Terms

Computer Science
Distributed Systems

Keywords
Cloud computing  Desktop-as-a-Service  service level agreements (SLA)
Intelligent Resource Allocation (IRA)
resource overbooking
resource management strategies