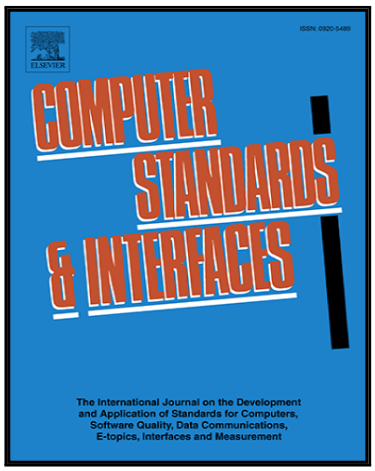

Performance Analysis of Multi-Core VMs hosting Cloud SaaS Applications

Said El Kafhali , Khaled Salah

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Highlights

- An analytical model to capture the dynamics and behavior of SaaS cloud services is presented. At any given workload, the model can estimate the minimum number of multi-core Virtual Machines (VMs) needed to satisfy QoS parameters.
- Mathematical formulas for key performance are derived. These formulas can be used for capacity engineering and scalability solutions for SaaS cloud services.
- Discrete Event Simulations are used to validate the analytical model.
- Results show that MaaS systems under heavy workload can benefit in terms of cost efficiency and system responsiveness from the deployment of multi-core VMs as opposed to single-core VMs.