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**A Task-Based Load Distribution Scheme for Multi-Server-Based Distributed Virtual Environment Systems**

more options

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Abstract: Multi-server-based distributed virtual environment (MSDVE) systems have become prevalent, supporting a large number of internet users. In MSDVEs, the load balancing among servers is an important issue to achieve system scalability. However, existing approaches must pay high migration overhead for the state transition of users or regions, thus the excessive holding time during load distribution makes it difficult for the system to keep the interactive performance acceptable. This paper aims to provide an efficient load distribution mechanism in which a group of servers takes charge of regions and shares region information among servers. The proposed mechanism dynamically classifies task types based on features of requested messages, and distributes each task fairly to neighboring servers. We have implemented the proposed mechanism extending our network framework for DVE, ATLAS, and our experiments show that the task distribution reduces both communication and processing overhead during load distribution without significant classification overhead.

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**Server-Based Computing Solution Based on Open Source Software**

Author(s): Niemi T (Niemi, Tapio)1, Tuisku M (Tuisku, Miika)1, Hameri A (Hameri, Ari-pekka)2, Curtin T (Curtin, Tamara)3

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Abstract: Server-Based Computing (SBC), i.e., replacing workstations with thin clients, is an effective solution to many IT problems, while free open source software is a cost-efficient alternative to proprietary software. We studied synergies of these two approaches. The results indicated that the open source SBC solution offered at least the same quality of service as the proprietary implementation but lowered the total cost of ownership around 50% compared to previous desktop PC solutions.

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**Orchestrating end-to-end network and IT resources according to application level service level agreements**

more options

Author(s): Wittgreffe J (Wittgreffe, J.), Khan K (Khan, K.)

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Abstract: For the end-user, the complexities of the underlying network and IT infrastructure should be invisible: the end-user simply wants their application to work. This demands adequate network, compute, and storage resources to provide an acceptable session performance. However, behind the application may be a complex myriad of Information and Communications Technology (ICT) components from the desktop through to the data centre, each of which contributes to the overall performance experienced by the end-user, from PC to Local Area Network (LAN), to access network, to Wide Area Network (WAN), to data centre, servers, and application functionality. Whilst there have been recent advances in both data centre virtualisation and WAN optimisation technology, most virtualisation systems have focussed on the data centre and the data centre LAN. In this paper, we show how the addition of Service Oriented Infrastructure (SOI) technologies can enable us to deliver a total orchestration of ICT resources across both WAN and data centre, to meet the needs of user applications and to enable application-level Service Level Agreements (SLAs). In addition, we explain a prototype BT has developed that manipulates multi-site WAN resources, server resources, and storage resources together according to application needs.

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