پژوهشگاه دانش‌های بنیادی
پژوهشکده علوم کامپیوتر

سخنرانی علمی

Design and Implementation of Fragmented Clouds for Evaluation of Distributed Databases

یاسر منصوری

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Abstract

In this presentation, we present a Fragmented Hybrid Cloud (FHC) that provides a unified view of multiple geographically distributed private cloud datacenters. FHC leverages a fragmented usage model in which outsourcing is bi-directional across private clouds that can be hosted by static and mobile entities. The mobility aspect of private cloud nodes has important impacts on the FHC performance in terms of latency and network throughput that are reversely proportional to time-varying distances among different nodes. Mobility also results in intermittent interruption among computing nodes and network links of FHC infrastructure. To fully consider mobility and its consequences, we implemented a layered FHC that leverages Linux utilities and bash-shell programming. We also evaluated the impact of the mobility of nodes on the performance of distributed databases as a result of time-varying latency and bandwidth, downsizing and upsizing cluster nodes, and network accessibility. The findings from our extensive experiments provide deep insights into the performance of well-known big data databases, such as Cassandra, MongoDB, Redis, and MySQL, when deployed on a FHC.

Biography

Yaser Mansouri is a Fellow Researcher, and he has five years research and development experience in Cloud Computing at the University of Melbourne, Qatar University and the University of Adelaide. Yaser obtained his Ph.D. from Cloud Computing and Distributed Systems (CLOUDS) Laboratory, Department of Computing and Information Systems, the University of Melbourne, Australia. His research interests cover the broad area of Distributed Systems, with special emphasis on big data and data management in cloud-based storage services.

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