Abstract

Grid computing is the virtualization and pooling of IT resources such as compute power, storage and network capacity, and so on into a single set of shared services that can be provisioned or distributed, and then redistributed as needed. Researchers integrate the mobile devices in the grid which results in Mobile Grid. The mobile agent paradigm has attracted many attentions recently but it is still not widely used. One of the barriers is the difficulty in protecting an agent from failure because an agent is able to migrate over the network autonomously. An important technique that speeds up data access in Mobile Grid systems replicates the data in multiple locations so that a user can access it from a site in his vicinity. It has been shown that data replication not only reduces access costs, but also increases data availability in many applications. Replication of data from primary repositories to other locations can be an important optimization step to reduce the frequency of remote data access. Fault tolerance is an important property in Grid computing as the dependability of individual Grid resources may not be able to be guaranteed. The Replica Supporting Fault-Tolerance (RSFT) algorithm is formulated to
support QoS-aware replica placement, balancing the load of replicas and to reduce the communication cost in mobile grid environment using bottom-up dynamic programming approach. Then, a resource selection algorithm is integrated with bottom-up dynamic programming approach to support fault tolerance in mobile grid environment by considering the dynamic characteristics of mobile devices.

Reference

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