Abstract

A mobile agent is a computer program that runs autonomously on behalf of a user and travels through a certain itinerary in a network of computers. When compared with normal client/server architecture, mobile agent paradigm adds up additional reliability problems since agents programs could be totally or partially lost due to failures that come from bad communication or computer agent’s crash with the recent increase of considering mobile agent in different E-World applications, reliability is considered as a crucial issue to be faced. Most of existing mobile agent systems considers check pointing or replication as a mechanism in achieving reliable and fault tolerant execution. In this paper we present new model which employs the benefits gained from combing both mechanisms to achieve reliable mobile agent execution. Our model uses group communication services to avail different essential issues such as agent’s synchronization to facilitate the implementation the protocol. The proposed approach is dynamic in the sense that it allows a flexible membership mechanism to join or leave a mobile agent groups used in achieving the reliable execution.
- Peter Braun, and Wilhelm Rossak. Mobile Agents Basic Concepts, Mobility Models, and
the Tracy Toolkit. s. l. : Morgan Kaufmann, 2005. 1558608176.
- A dynamic approach to reliable mobile agents systems using group communication
71 - 76. 978-1-4244-5949-0.
pp. 280 - 288. 0-81867195-5 .
- Using active clients to minimize replication in primary-backup protocols. Daniel J.
Rosenkrantz, S. S. Ravi Parvathi Chundi, Ragini Narasimhan,. 1996. Computers and
- Stefan Pleisch, Andr´e Schiper. Approaches to Fault-Tolerant Mobile Agent Execution.
- Evaluation and Checkpointing of Fault Tolerant Mobile Agents Execution in Distributed
Systems. Hodjatollah Hamidi, Abbas Vafaei, Seyed Amirhassan Monadjemi. Isfahan, Iran :
- FATOMAS - A Fault-Tolerant Mobile Agent System Based on the Agent-Dependent
- The mobile groups approach for the coordination of mobile agents. Raimundo J. A.
- GCS-MA: A group communication system for mobile agents. Wei Xu, Jiannong Cao,
Beihong Jin , Jing Li, Liang Zhang. 3, Hong Kong, China : Journal of Network and Computer
- Group Communication: From Practice to Theory. Schiper, Andr´e. Berlin - Heidelberg :
Distributed Systems - ACM Proc of the European SIGOPS Workshop.

Index Terms

Computer Science Communication Systems

Keywords

Mobile Agent Fault Tolerance Reliability Replication Check-pointing Group