Mechanisms to Locate Mobile Agents in Multi Agents Environment

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Abstract

Mobile Agent (MA) is autonomous software entity which moves from host to host in the open network like internet under its own control. It is once launched its creator or base host has no information about its location until it come back to the creator after completing its itinerary. In multi agent environment where multiple agents are launched, different MAs often need to locate each other in order to communicate, cooperate and to take decisions collectively. Mobile Agent (MA) location monitoring is a necessity in highly dynamic and large-scale mobile networks to control and communicate with agents after launching. Effectiveness of any Location Management (LM) strategy mainly depends on the cost of searching and updating the database. This paper presents different mechanisms to locate MA in a multi agent environment with the objectives to reduce the search and update cost. Proposed approach divides the global network in regions. In each region there is a centralized component responsible to maintain the location of all MAs presently executing in its region. It also records the address of the region where MA is migrating. Various search and update schemes are then used to locate MA by its base host or other cooperating MAs. Paper proposes alternative approaches for two different cases, first when Base Host of communicating MAs are same and second when Base Hosts for communicating MAs are different. Paper also proposes a mailbox based techniques to provide communication among the MAs.
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References

- "Tracker: A Universal Location Management System for Mobile Agents," George Samaras, Constantinos Spyrou, Evaggelia Pitoura+, Marios Dikaiakos Department of Computer Science, University of Cyprus CY-1678 Nicosia, Cyprus, cssamarar@cs.ucy.ac.cy + Department of Computer Science, University of Ioannina GR 45110, Ioannina, Greece, pitoura@cs.uoi.gr
- In 2002 Stefan Pleisch, "Fault-tolerant and transactional Mobile agent execution."
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- Rama Sushil, Rama Bhargava, Kumkum Garg, "Location update schemes for mobile agents" 1Asst. Prof. SGRRTS D. Dun, R/S Dept. Of Maths, I. I. T. Roorkee, India, ramasushil@yahoo.co.in, 2Prof. Of Mathematics, I. I. T. Roorkee, India, bhargava_iitr@rediffmail.com, 3Prof. Of Computing, I. I. T. Roorkee, India, Sr. Member IEEE, kgargfec@iiternet.in


**Index Terms**

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**Keywords**

Mobile Agent (MA) Mobile Agent System (MAS) Multi Agent System (MS) Location Management (LM)
Base Host (BH).