Abstract

Mobile Agent (MA) is an autonomous software entity which moves from host to host in the open network like the internet under its own control. It is once launched, its creator or base host has no information about its location until it comes 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 into 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 technique to provide communication among the MAs.
References

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Mechanisms to Locate Mobile Agents in Multi Agents Environment


Index Terms

Computer Science

Information Sciences

Keywords

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