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Jade Java Agent

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Multi-agent systems are used in situations where you have to solve the problem of a diffuse character, or a complex calculation eg search information on the web, management of telecommunications networks, air traffic control, as well as in more mundane situations, which is eg control and running appliances. Java Agent Development framework, in short JADE is an environment that supports the construction of multi-agent systems written in Java. Allows you to construct and administer agents. This publication contains basic information about agents, the criteria for their creation and standards of JADE.

Introduction

Agent is an application that runs on a device supported by the SNMP protocol. This protocol assumes the existence of two types of managed network devices, managers and managed. Application agent manages the relevant computer resources.

Foundation for Intelligent Physical Agents

An important factor in the field of agents is FIPA, Foundation for Intelligent Physical Agents registered in Geneva, Switzerland. The purpose of FIPA is to promote the success of emerging agent-based applications, services and devices, which is achieved by providing an internationally agreed specifications that maximize interoperability across applications. This is done through an open international collaboration of member organizations, which are companies and universities active in the field agent. FIPA specifications are publicly available, but these are not technology for a particular application, but

the general technologies for various areas of application, a set of core technologies that can be integrated by developers into complex systems with a high degree of interoperability.

JADE Java Agent

Jade is a framework program fully implemented in Java. This facilitates the implementation of interoperable intelligent multi-agent systems through middleware that complies with FIPA and using a set of graphical tools that supports the debugging and deployment phases . The aim is to simplify development while ensuring standard compliance through a comprehensive set of system services and agents.

The basic elements included in JADE application include:

- Runtime agents - container within which agents operate . The collection container creates the platform. The platform stands out one container - main container, which is always active and with the help of which are recorded in other containers.
- Class Library support the creation of agents used for basic software "vital functions" agent.
- A set of tools , programs such as graphical tools to allow monitoring and administration of the agents and all the elements of the JADE infrastructure.

The root container in addition to the registration of other container always contains two agents with special status

- AMS manages the rules of coexistence agents on a platform such as uniqueness of names of agents
- DF - deals with the delivery of the directory service , agents can register their services with the DF agent to share them with other agents , for which the agent is DF - Yellow Pages, or directory services.

Organization JADE infrastructure is shown in Fig. 1.

An important feature of the platform is the ability to communicate with each other agents. Agents can exchange messages / posts in accordance with the standard ACL in an asynchronous manner . Each agent has its own message queue , which get messages addressed to him . When a message arrives , the agent is notified of this fact. Standard ACL defines the parameters describing the message: the sender, the recipient , the parameter describing the so-called. intention of communication, the language in which the message is expressed, content, and others.

JADE uses a model client direct connections Peer-to- Peer . Agent systems are P2P systems , each agent is a node that needs to communicate with other agents as well as being able to provide information to other agents. Agendowego system model is based on three main features:

- Agents are active entities see loosely communicating with each other
- Agents perform actions, and communication is a kind of action.

- Communications carries the importance of semantics, when the agent is an object of communication actions, i.e. when it receives a message, the agent must be able to properly understand the meaning of the shares, in particular, should know why this action was taken, i.e. what is the intention of communicating the message sender.

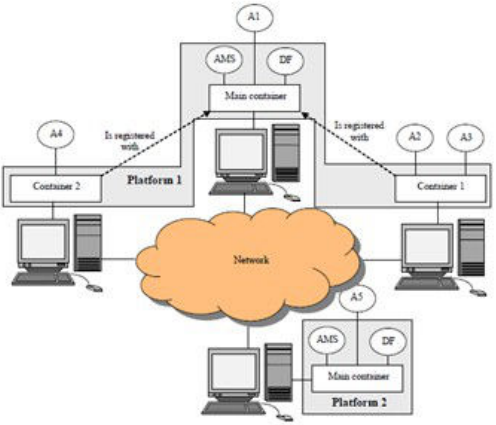

Fig.1 Organization JADE infrastructure.

Summation

JADE is a software middleware developed by TILAB under open source for the development of distributed applications based on multi-agent architecture of P2P communication. Both intelligence, initiative, information, resources, and control can be fully distributed on mobile terminals and computers in the fixed network. Communication between the nodes irrespective of whether they are run on a wireless or wired network is completely symmetrical, wherein each node can act as the initiator and the corresponding. JADE is fully embedded in java and is based on the principles of interoperability, consistency, portability and ease of use.

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З розвитком комп’ютерної техніки також стрімко розвивається і програмне забезпечення комп’ютера. В зв’язку з цим виникає проблема вибору того чи іншого програмного забезпечення для реалізації певного