JADE Tutorial for beginners

organized by the JADE Board
http://jade.tilab.com

The Hague, 12th Oct. 2004

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About JADE

JADE (Java Agent Development Framework) is a middleware that enables faster time-to-market for developing multi-agent distributed applications.

It is a software framework

- that simplifies the development of applications
- that is fully implemented in Java

It complies with the FIPA specifications.

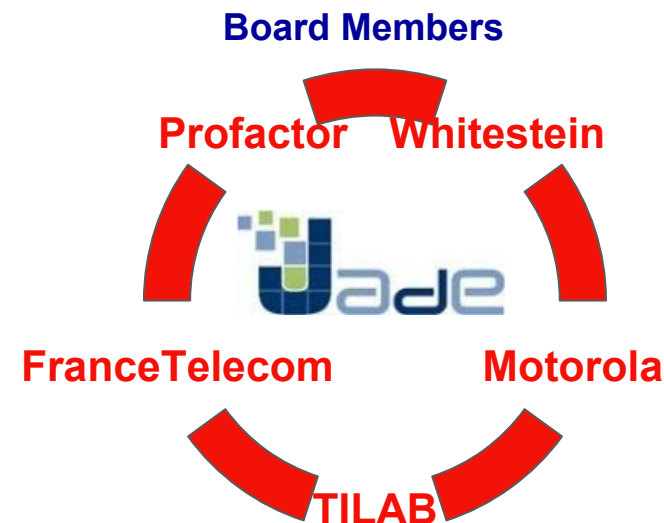It is Open Source distributed under LGPL license.

Target users of JADE and of this tutorial: agent programmers for MAS

About the JADE Board

Founded on March 2003

Is a not-for-profit contractual consortium among the Members

Its mission is to promote, govern, and implement the evolution of JADE

Board Members

Profactor   Whitestein

FranceTelecom   Motorola

TILAB

JADE Board

- **Leading Principles**
  - **not-for-profit association**
  - **The Board is open and welcomes all companies and organizations that have a concrete business interest in the exploitation of JADE and that commit to its development and promotion**
  - **JADE APIs are public and its evolution is controlled by the Board**
  - **strength of the Open source process**
  - **a Consortium Agreement regulates copyright and IPR issues between members**

- **Activities of the Board**
  - **govern and implement the evolution of JADE through:**
    - **the definition of public API's,**
    - **the development of the underlying software**
  - **decide on the content/functionalities of the JADE releases**
  - **specify the technical activities of the JADE Board Software Team**
  - **advise on the content of the JADE Web site**
  - **nominate and elect new Members**

Roadmap 2003-2004

JADE 3.0b1
- consolidation of previous features
- integrated JADE and LEAP
- split container mode
- update for compliance to new FIPA standards
- persistent DF
- XMLCodec
- misc add-on

JADE 3.1
- consolidation of previous features
- tutorial for beginners + more documentation
- new service-based kernel based on a Distributed Composition Filter pattern
- support for replication of the main container
- support for application specific message persistency through the PersistentDeliveryService
- support for FIPA Propose, 2phase-commit interaction protocol
- HTTP, JMS MTPs
- Bean-generator, and RDFCodec add-ons

JADE 3.2
- consolidation of previous features
- security add-on including support for authentication, authorization, and end-to-end message integrity and confidentiality (J2SE only)
- HTTP MTP
- Test Suite Framework
- Persistent Service
- threaded behaviours
- agent loading from jar file
- logging
- SerializableOntology that handles homogeneously ontological concepts and serializable objects
- Automatic DF clean-up when a registered agent dies

JADE 3.3
- consolidation of previous features
- security add-on (J2ME)
- Web Service Integration
- Agent Launcher (Univ. Aachen)
- Performance Scalability

19/3/03	18/12/03	15/7/04	15/12/04
3.0b1	3.1	3.2	3.3

Programme

- **The FIPA specifications, Dominic Greenwood**
  - **Introduction to Multi-agent systems and FIPA**
  - **Walk through the FIPA documents**
  - **The most relevant FIPA specifications (agent management, agent platform, envelope, AMS, DF, content language, ACL, interaction protocols, ontologies)**
- **Using JADE, Fabio Bellifemine**
  - **What is JADE**
  - **Main features of JADE**
  - **How to install and use JADE**
  - **Graphical tools to monitor and debug agent systems**
  - **Configuring JADE**
- **Programming with JADE, Giovanni Caire**
  - **JADE Agents – the Agent class**
  - **agent Tasks – the Behaviour class**
  - **agent communication – the ACLMessage class**
  - **yellow page service – the DFService class**
  - **some advanced features**
  - **JADE for J2ME**
- **Demos and examples of applications, Alois Reitbauer**