ObjectWeb Consortium
Sustainable Development of Next Generation Software Infrastructure.

Club Irisatech - February 4th, 2005.

Christophe Ney
ObjectWeb Executive Director
Development Project Director, INRIA Rhône-Alpes
Agenda

- ObjectWeb: A consortium to bring open-source middleware to the heart of the main stream market.

- JOnAS: ObjectWeb’s implementation of the J2EE specifications

- ObjectWeb and Open-Source in Next Generation of GRID Software
NG Software Infrastructure

Middleware and Grid Software
- Abstract network resources
- Ease development, deployment, management of distributed apps
- Service Oriented Architecture
- Convergence between Business/Computing
- Stake for the future of Information Society

Software Infrastructure is critical for everyone

“...economic and social life becomes dependent upon a common computing infrastructure.”
Professor Siobhan O’Mahony, Harvard Business School

Software Infrastructure is shared by everybody

Software Infrastructure “offers far more value when shared than when used in isolation”
Nicholas Carr in “IT Doesn’t Matter”, Harvard Business Review

ObjectWeb Consortium
[...] The importance of Software production goes beyond industrial and economic reasons.

In highly-connected environments with pervasive computing, social, ethical and legal issues will have an ever increasing significance. The implementation of regulations and laws will be partially coded in the software. If we lose the capability to produce software, business methods, accounting standards, privacy rules and intellectual property rights will be subject to interpretation and implemented by foreign-based corporations. **Free / Open Source Software may play a positive role** here in promoting the competivity of European industry [...]
ObjectWeb: First International Consortium for Open-Source Distributed Infrastructure Software

International

- Initiated by BULL, France Telecom and INRIA
- Supported by French Ministry of Industry, RNTL, RNRT, ITEA
- Endorsed by 41 organisations worldwide (Public & Private, EU, US, Asia)
- A community of 1300+ individual members from 65 countries

Mission

- To guarantee a sustainable Open-Source alternative to proprietary middleware

Open and Neutral

- Compliance with open standards (W3C, OMG, JCP, OSGi, WfMC,...)
- Non-profit Consortium hosted by INRIA (cf. W3C)
- Open to any organisation / individual
- Based on a collegial structure
ObjectWeb Governance Structure

Board of Directors
Approves Strategy, Plans, Policies

College of Architects
Defines & Maintains Architecture

Executive Committee
Conducts operations, establishes the roadmap, deliver the vision

Project 1  Project 2  Project 3  Project 4

ObjectWeb Forge Committers
Develop, maintain & enhance ObjectWeb Middleware

Membership at Large
Approves Vision, Bylaws, Builds the Ecosystem
Open Source, a key of the success

- **A New Way to Produce Software**
  - Open Source is a *process*, not a product.
    - Copyright to liberate, not to restrain
    - Collective Invention vs. proprietary
    - **Independence** guaranteed
  - A process to develop **Commons**
    - Community at large
    - Business & Public
  - Thanks to **Shared R&D**

- **Why does it succeed?**
  - A vehicle for *fast propagation* of technologies
  - Feedback from **Users**
  - **Open implementations** of Standards are critical for Information Society: *Interoperability, Equity*
  - Participate to **commoditisation** of infrastructure
  - **Higher control** over costs, evolution & security
  - Enable diverse interests to converge
    Research, Industry, Business
ObjectWeb Components & Platforms

Visibility and Reuse

- JOnAS
- C-JDBC
- JORAM
- RmiJDBC
- Sync4J
- JaWE

- Octopus
- ASM
- JOM
- XAPool
- BSFramw
- Bonita

- OSCAR
- Speedo
- JAC
- Monolog
- XQuark
- XMLC

- Zeus
- Perseus
- CAROL
- MEDOR
- DODs
- Rubis

- JORM
- FDB
- DotNetJ
- GOTM
- Director
- Baracuda

- ModFact
- Mobilitools
- SOFA
- CLIF
- StockOnline
- Byline

- JASS
- Ishmael
- DREAM
- MOBE
- Oyster
- EAF

- ProActive
- Kilim
- ActiveXML
- Jonathan
- Rubbos
- eXo

- JORM
- FDB
- DotNetJ
- GOTM
- Director
- Baracuda

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Integrating ObjectWeb Components: Examples

ObjectWeb’s J2EE1.4 Java Enterprise Platform JOnAS (BULL)

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<th>Servlet</th>
<th>EJB</th>
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<th>JAAS</th>
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ObjectWeb Consortium
Sustainable Development & Business Ecosystem

ObjectWeb Initiatives

- Real-world use-cases
- Architecture Expertise
- Shared R&D Effort
- Open-source branding
- Beta-test feedback
- Product think-tank opportunities

Funded R&D Projects
Research publications
Higher-education courses
IT Publication & Training
Market Trends
Professional Services
Proprietary Products
Business Network
Professional Services

ObjectWeb Consortium
Some Benefits for Software Industry

- No Legal Issues With Redistribution
- Alternative to Proprietary Software
- Standards, Quality & Independence
- Perpetuate Technology
- Protect Investment
- Increase User’s Confidence
- Enable Wealth: Education & Business
- Accelerate Time to Market
- Increase Productivity & Decrease Cost
ObjectWeb >100% Growth per Year!

Dec’ 2003

- **People**
  - 26 legal entity members
  - 543 individual members
  - 2,763 mailing lists users
  - 874 accounts in the Forge
  - 165 committers

- **Web Stats**
  - 71 projects in the Forge
  - 1,500,000 hits on main Web
  - 50,000 visitors
  - 876,000 hits on Forge
  - 19,000 visitors

Dec’ 2004

- **People**
  - 56 legal entity members (+17 pending)
  - 1,335 individual members
  - 7,485 mailing lists users
  - 3,694 accounts in the Forge
  - 314 committers

- **Web Stats**
  - 88 projects in the Forge
  - 3,152,025 hits on main Web
  - 87,080 visitors
  - 3,403,727 hits on Forge
  - 45,019 visitors

They Have Joined ObjectWeb

- Air France - www.airfrance.com *
- Argia - www.argia.fr
- BULL - www.bull.com
- CEA - www.cea.fr *
- Charles University Prague - nenya.ms.mff.cuni.cz
- Cap Gemini - www.capgemini.com *
- CNAF - www.caf.fr
- Code Lutin - www.codelutin.com
- Cotranet - www.cotranet.com
- Dassault Aviation - www.dassault-aviation.com
- eMAXX - www.emaxx.nl
- Erlang Projects - www.erlangprojects.org *
- Eteration - www.eteration.com
- eXo platform - www.exoplatform.org
- ExerLog - www.exerlog.com
- France Telecom - www.francetelecom.com
- Funambol - www.funambol.com
- I3S/CNRS - www.i3s.unice.fr
- IMAG/LSR - www-lsr.imag.fr
- INRIA - www.inria.fr
- iProfs - www.iprofs.nl
- LIBeLIS - www.libelis.com
- Librados, Inc. - www.librados.com
- LIFL/USTL - www.lifl.fr
- Linagora - www.linagora.com
- Lynx SRL - www.lynxonline.com
- Mandrake Soft - www.mandrakesoft.com
- MySQL - www.mysql.com
- NÉC Soft, Ltd. - www.necsoft.co.jp/index_e.html
- Open Wide - www.openwide.fr
- Red Hat - www.redhat.com
- ScalAgent - www.scalagent.com
- SourceBeat - www.sourcebeat.com
- Sysdeo - www.sysdeo.fr *
- SUSE LINUX - www.suse.com
- Ministère de l’Intérieur - www.interieur.gouv.fr *
- THALES - www.thalesgroup.com
- Together Teamlösungen - www.together.at
- XQuark Group - www.xquarkgroup.com
- Yangfan Soft - www.yangfansoft.com

Consider ObjectWeb when looking for a single source for a comprehensive set of open-source middleware and development tools», Yefim Natis, VP Distinguished Analyst, Gartner, November 2004.

ObjectWeb is probably best known for its involvement with Jonas, the open-source J2EE (Java 2 Enterprise Edition) application server, but its work encompasses around 50 open-source projects including workflow utilities and message-oriented middleware», ComputerWeekly, November 17, 2004.
ObjectWeb Today: an International Leader

Global Visibility – Q4 ‘04
- 130,000+ Visitors / month
- 80,000+ downloads / month
- 3,700 developers, 314 committers
- Hits: 40% America, 60% EMEA
- Community keeps growing!

References
- Thales (63,000p), France Telecom (230,000p), …
- e-learning, e-gov., e-business, e-health
- Distributions: Red Hat, Mandrake, Enhydra
- Deployed in Europe, USA, Asia

World Wide Recognition
- JCP - J2EE Certification (JOnAS)
- Apache – Common Projects
- Eclipse – WebTools Project
ObjectWeb Flagship Platform
JOnAS J2EE compliant App. Server
JOnAS Momentum

- Open Source since July 1999
  - Within the Objectweb International Consortium
  - Open community of users and developers
    - > 200,000 JOnAS downloads (2000 to 5000 per month)
    - ~ 500 users on the JOnAS list (10 to 20 mails per day)
  - Operational applications
  - JOnAS is distributed under LGPL (GNU Lesser General Public License)
    - >800 000 lines of ObjectWeb code (incl. > 400 000 pour JOnAS)
- Achievements 2004
  - Embedded in Mandrake & Red Hat distributions
  - J2EE 1.4 Certification Scholarship granted by Sun
- Result from an important national and European R&D effort:
  - Corsica (IST), Pepita (ITEA), Parol (RNRT), Impact (RNTL), Osmose (ITEA), …
JOnAS Today: World Class J2EE Application Server

- **J2EE 1.4 Compliant**
  - Completed J2EE1.4 Certification Compliance this week
- **Scalability and Availability**
  - Clustering (HTTP, RMI, DB), Failover (HTTP Sessions replication)
  - Optimization mechanisms (pooling, caching, …)
- **Enterprise Integration**
  - Multi-tier Infrastructure
  - Apache, LDAP, DBMSs, J2EE CA connectors to ERPs, mainframes
  - Web Services
- **Integrated Development Environments**
  - Eclipse plug-ins
- **Administration**
  - Web Console, script commands, API (JMX, JSR77)
- **Professional Offers**
  - Multiple Sources of Support, Services and complementary products
- **Web Services Endpoints (J2EE1.4)**
  - JOnAS deployment tools and Axis integration enable exposure of any « EJB stateless session » or « JAX-RPC class in the Web container » to be exposed as a Web Service.

- **Web Services clients**
  - As a J2EE1.4 compliant server, JOnAS allows any J2EE component (Servlet/JSP/EJB) to access external Web Services.

- **WS Registry**
  - JOnAS embeds JUDDi to provide WS Registry services.
ObjectWeb and Open-Source in Next Generation of GRID Software
Clustering Issues in JOnAS

- **Deployment**
  - Dynamic Resource Assignment (Cartography)
  - Middleware Deployment (Installation, Configuration)
  - Application Deployment

- **Availability**
  - Load Balancer mechanisms
  - Replication mechanisms (sessions)
  - Failure detectors

- **Scalability**
  - Dynamic Resource Allocation and Partitioning

- **Autonomic Management**
  - Dynamic Reconfiguration
Advanced Grid Technologies : The IST View

- **Application Sector 1**
- **Application Sector 2**

Grid-enabled Applications & Services for business and society
Research, development, validation and take-up of generic environments and tools

Grid Foundations
Architecture, design and development of technologies and systems for building the invisible Grid

Network-Centric Grid Operating System
Potential new fabric layer for future distributed systems and services
ObjectWeb Vision of NG Middleware

Application Semantics (Configuration, Tools, Ontology, …)

Service Oriented Platform (Web Services, J2EE, WS-*)

Network Enabled Operating Systems (Nets, Grids, Devices)

Trust & Security

Interoperability

Services & Management

ObjectWeb Consortium
Innovative building blocks for Grid Middleware

- **ProActive**
  - An Open Source Java Library for parallel, distributed and concurrent computing. It features mobility and security in a uniform framework. With a reduced set of primitives, it provides a comprehensive API that simplify the programming of applications distributed on: Local Area Network, Cluster of Workstations, Internet Grids, Peer-to-peer intranets,

- **Fractal**
  - A generic-purpose open-source software composition framework that support component-based programming including: component (type) definition and configuration (instantiation), runtime management including dynamic reconfiguration.

- **And Also**
  - ActiveXML, Xquark, …
Will Open-Source Grid Middleware be yours?

More information
www.objectweb.org
christophe.ney@objectweb.org