

France Telecom and OW2 highlights of an open-source strategy

Orange Labs

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unrestricted



France Telecom and OW2



quick facts

- **10 years of active membership**
 - 1999 : France Telecom R&D **co-founder** of ObjectWeb
 - France Telecom **Strategic Member** of OW2 since its creation
- **numerous Orange Labs contributions to the code base**
 - Fractal, ASM, CLIF, Salome-TMF, persistence, ...
- **strong Group-wide commitment on JOnAS**
 - qualification and industrialisation process
 - recommended on Group Catalog since 2003
 - growing share of deployed JOnAS within France Telecom Group
 - recognition and support of JOnAS Java EE 5 certification



open source



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open source within the Group

- **contribution** to open source software, often from R&D
 - includes OW2 strategic membership
- widespread **usage** of open source products
 - includes industrialisation process, just like for commercial software
 - OSS recommended alongside with commercial software
 - internal infrastructure and development catalogue includes Linux, MySQL, Eclipse, JOnAS, Salomé-TMF, CLIF, CXF, ...
 - free access to open source alternative package for client PC
 - increased share of open source software as alternative
- internal open source **community**
 - information sharing (on OSS, licenses – ex GPL v3, expertise ...)
 - webinars open to all
 - weekly watch letter, mailing list, ...

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IT usage of open source

- France Telecom Group uses Linux and open source in its IT environment
 - today's technology is mature and ready for operational use on servers
- Linux is strongly recommended to run Web Servers, databases and Java EE Application Servers
 - reference for Web Server: Apache
 - strong recommendation on JOnAS as Java EE Application Server
 - but some use cases need commercial Web Application Servers to support proprietary applications requiring such products

France Telecom and OW2 research & innovation incentives

- availability of open experimentation platforms
- knowledge of technologies deployed in our systems
- contribute to reinforce a **community** in this domain
- contribute to the creation of an **ecosystem**
 - integrating labs, start-ups and corporate companies
- reinforce dissemination and **valorisation** of results
- new types of **partnership** on service infrastructure
- “netiquette”: we use open source software, let us contribute to its production
- internal use of open source software development principle for a better software **component re-use**

France Telecom and OW2 deployment & exploitation incentives

- availability of software infrastructure with **key features**
 - standard (relies on presence at standardisation bodies for evolution of standards)
 - efficient, secure and reliable
 - prone to reactivity and evolutions
- **mastery** of the complete software chain
 - from the client to the network
- **independence** from software providers
- reduction of deployment and maintenance **costs**
 - licenses, in-house R&D on the products



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Orange Labs active contributor

- R&D expertise
 - in distributed systems architecture, persistence, application platforms, embedded systems, validation and tests
- from research and incubation ...
 - various internal research projects
 - Fractal, JORM, MEDOR, Perseus OW2 projects
- ... to developments and industrialisation
 - internal development projects
 - includes support and communication activities
 - aims at internal recommendation
 - Java EE – JOnAS, JASMINE
 - software engineering – CLIF, Salome-TMF

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Orange Labs and OW2 Projects

<u>ASM</u>	byte code manipulation
<u>CLIF</u>	load injection and performance measurement
<u>Fractal</u>	component-based architecture framework (w/ ref. impl)
JASMINE	deployment and management
JOnAS	Java EE platform
JORAM	JMS MOM
<u>JORM</u>	multi-support persistence service
Lomboz	Eclipse plug-in for J2EE
<u>MEDOR</u>	distributed queries
<u>MobiliTools</u>	mobile agents
<u>MonoLog</u>	logging and trace
PetALS	Enterprise Service Bus
<u>Salomé-TMF</u>	test management
<u>Speedo</u>	JDO container
<u>THINK</u>	framework for OS kernels

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Orange Labs & cooperative research

- OW2 projects are often the **dissemination** target, or are used by cooperative research projects
- “historical” cooperative projects
 - French RNTL/RNRT Arcad, Parol, Impact
 - ITEA PEPiTA, OSMOSE
- recent cooperative projects related to OW2
 - French RNTL SelfWare, JOnES
 - French ANR SCORWare, SelfXL, SemEUsE
 - IST FP6 SelfMan, *FP7 ASPIRE*
 - CELTIC Servery



JOnAS



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JOnAS, a Group-wide success story

- introduced in 2003 (3.3 version)
- the only AS for development since 2006
 - local development platform (JOnAS + Eclipse)
 - even for applications deployed on other AS
- today 1st Application Server's Choice
 - within the Group in France
- migrations from other AS to JOnAS
 - accompanied by in-house IT support
 - very positive feedback

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rationale for choosing JOnAS

- **strategic reasons**

- Orange Labs is a strong contributor to the OW2 code base
- JOnAS is more than just a Java EE Application Server
 - OW2 develops other interesting components

- **performance and robustness reasons**

- stress tests show very good performances and robustness
- we have the same level of operation as other Java EE Applications Servers
- same rules and tools

- **economical reasons**

- JOnAS has an LGPL license and follows a common open source business model based on support cost

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JOnAS adoption and evolutions

- **internal expert team**
 - promote and help use of JOnAS in projects
 - like other open source components
 - associated to an external support
 - support contract from Bull
- **funding of additional developments**
 - for core JOnAS evolutions
 - for France Telecom specific needs

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JOnAS industrialisation process

- France Telecom's specific JOnAS industrialisation
 - specific system parameters settings
 - implementation of security rules and standardised naming conventions
 - system scripts to manage JOnAS (incl. clusters/farms)
- in-house benchmarks to qualify Linux+JVM+JOnAS
 - Web container level: JSP, Servlet technologies
 - EJB container level: EJB session stateless technology
 - MOM (JMS)
 - connectors : JDBC, Jolt (Tuxedo)

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in-house usage context of JOnAS

- used only on Linux systems
 - tested for Red Hat EL 4 and 5.2
 - JOnAS 4.10 is now the current release
- packaged with Tomcat to offer a complete Java EE platform
 - Apache can be used in frontal for large volume of static content (portals), load balancing and connection pools
 - static pages should be served by Apache
- clustering and cluster management
 - low usage of session replication
 - mostly use of centralized administration for JOnAS farm management

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in-house usage of JOnAS examples

- more than 300 applications with JOnAS in production
- JOnAS on Information System and Services Platforms (for internal and external customers)
- usage examples
 - Address book
 - MaLigneTV programme guide
 - Internal SOA bus
 - M2M framework
 - IOS-W (web services technical bus)
 - many internal IS applications
 - ...

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in-house development recommendations

- JOnAS is the chosen app. server for Java EE development since 2003
 - automatic installation on France Telecom desktop
 - used by hundred of developers
- current development recommendations includes
 - JOnAS 4.10.3
 - Eclipse Europa 3.3.2
 - open source plugins : Spring IDE, Subversive, JPA with Hibernate, ...
 - CVS (SVN under way), Maven2
 - internal France Telecom plugins : Java EE toolkit, PMD extension, ...
- prototyping of applications aligned on development recommendations and testbed environment
 - includes CLIF load injection, JOnAS-Apache instances, MySQL-Oracle databases, JMX monitoring...

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in-house development recommendations (cont)

- Spring 2.5 for IOC framework
- CXF 2.1 used for web services
- MDB 2.1 recommended behind JMS queues
- France Telecom “Java EE toolkit”
 - Eclipse plugin
 - integrates France Telecom Ant scripts allowing the compilation, packaging and deployment on JOnAS or other web application server
- Eclipse WTP to control the JOnAS server
 - alternative of using command lines

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JOnAS perspectives

- 2009 programme
 - qualification of cluster management to complete the recommendation (JASMINe)
 - dynamic reconfiguration of JOnAS applications on clusters
 - towards JOnAS 5 recommendation
- study of other components complementary to JOnAS
 - SOA architecture and tools
 - JMS JORAM as an open source alternative
 - ExoPortal



thank you

