

# France Telecom and OW2 highlights of an open-source strategy

Orange Labs

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1 April 2009, OW2 Conference



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



# France Telecom and OW2

## 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, ...

# France Telecom and OW2

## 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



# Orange Labs



# France Telecom and OW2

## 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

# France Telecom and OW2



## Orange Labs and OW2 Projects

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

# France Telecom and OW2

## 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



# France Telecom and OW2

## 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

# France Telecom and OW2

## 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

# France Telecom and OW2

## 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

# France Telecom and OW2

## 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)

# France Telecom and OW2

## 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

# France Telecom and OW2

## 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
  - ...

# France Telecom and OW2

## 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...

# France Telecom and OW2

## 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

# France Telecom and OW2

## 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

