



La S O A Open S ource  
avec



Démos / Outils PEtALS

Sept. 2007



## La route vers la SOA...



Un **ESB** (Enterprise Service Bus) basé sur les standards  
**Java, JBI** et **Web Services**  
est une bonne technologie pour instancier une SOA.

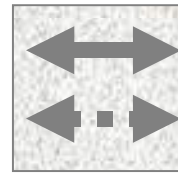




L'ESB traite tous les aspects **non fonctionnels**, relatifs à **l'exposition de services**, en dehors du périmètre applicatif.



**Service Level Agreement**



**Communications A & Synchrones**



**Sécurité**



**Robustesse Scalabilité**



**Couplage faible**



**Supervision**





De plus....

- Un ESB doit permettre **l'exposition de services patrimoniaux** (« legacy ») via un middleware standard

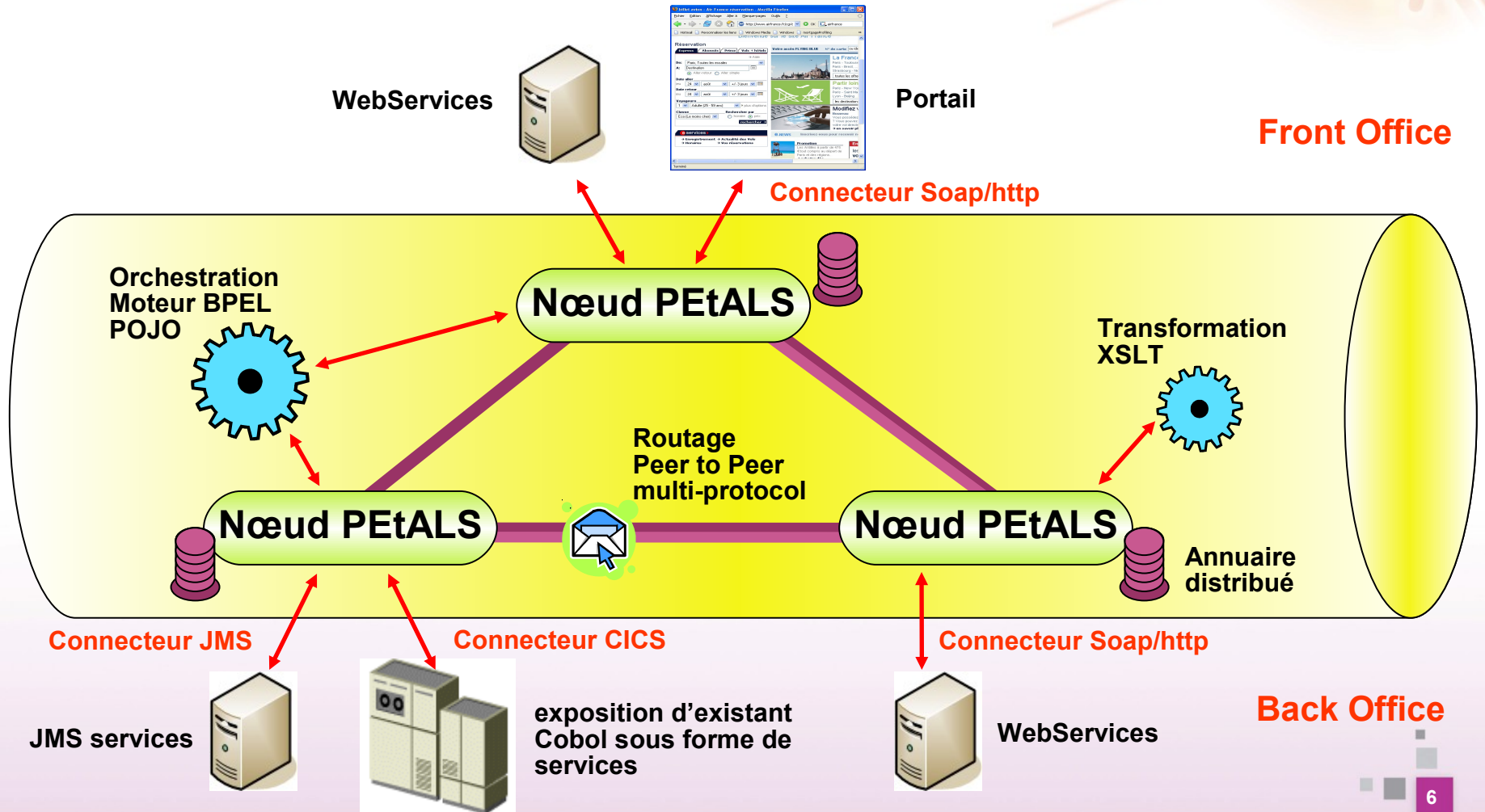
Enfin...

- Un ESB,
  - Propose un **annuaire des services** ou « registry » (UDDI or ebXML) ou doit pouvoir s'intégrer à un annuaire d'entreprise
  - Intègre un **moteur d'orchestration** (BPEL) pour créer des services composites

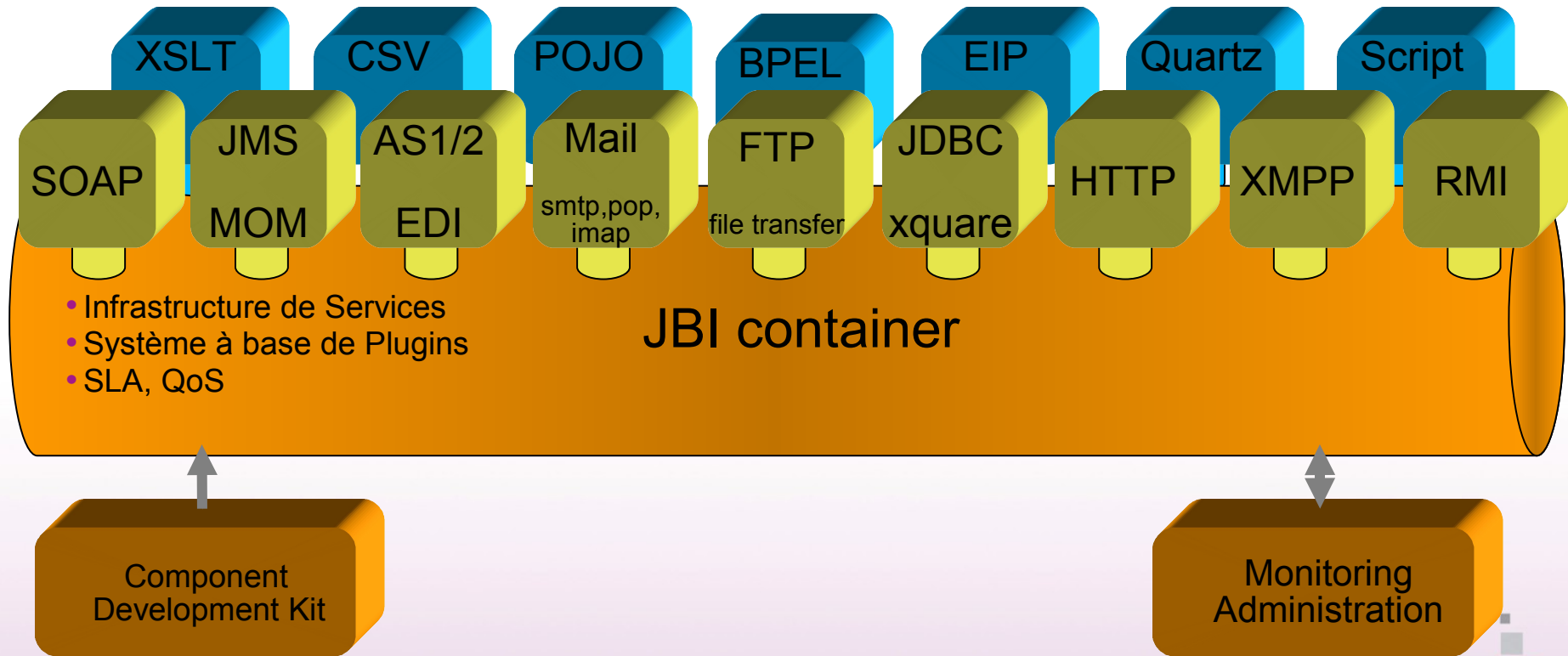


- **Interface**
  - Exposition et appel des services (ESB agit souvent en tant que proxy)
  - Connecteurs
- **Distribution & Routage**
  - Service de routage A2A
  - Routage basé sur le contenu
- **Transformation**
  - Transformation de formats de données
  - Exemple : XSLT
- **Orchestration**
  - Assemblage de services pour créer un service composite
- **Administration**
  - Qualité de service
  - Gestion du cycle de vie des services
  - Monitoring de l'infrastructure

# PEtALS : l'ESB JBI distribué



# Composants





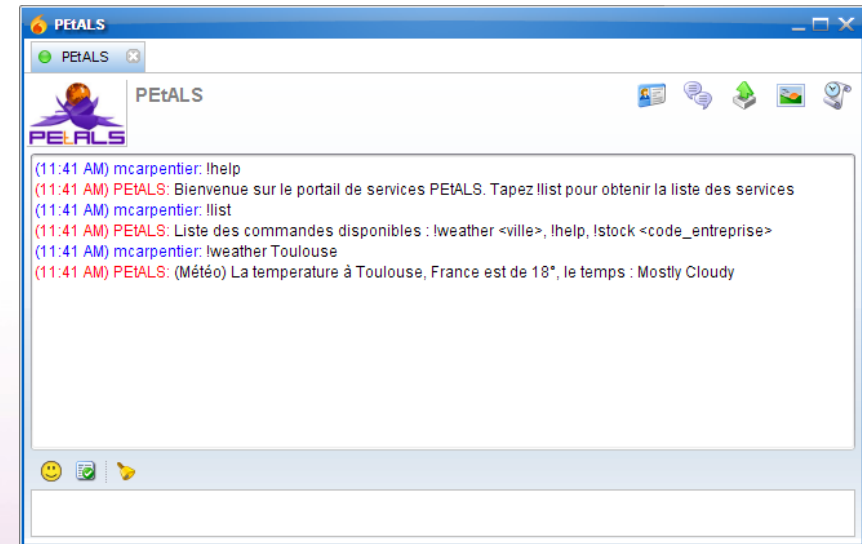
- **Portail « SOA »** 
  - Exposition / Enchaînement de service selon le cas d'usage « Portail de services »
- **Plug-ins de développement**
  - Administration / Configuration & déploiement des composants
  - Interface de configuration graphique
- **Monitorat / Administration**
  - Console Web PEtALS





## Acteurs

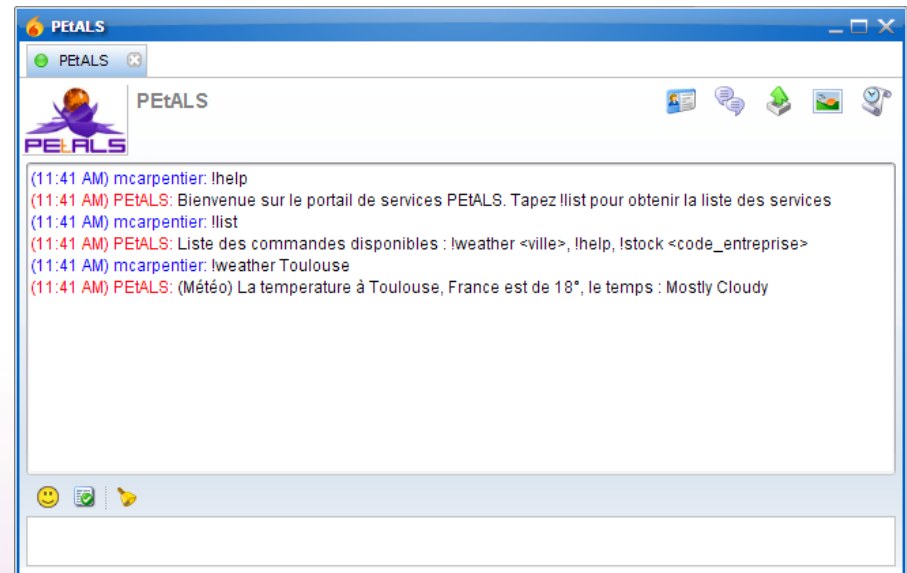
- Enterprise Service Bus **PEtALS**
- Serveur Jabber (jabber.objectweb.org)
- Client Jabber (Spark)
- Services externes (météo, bourse,...)





## Objectifs

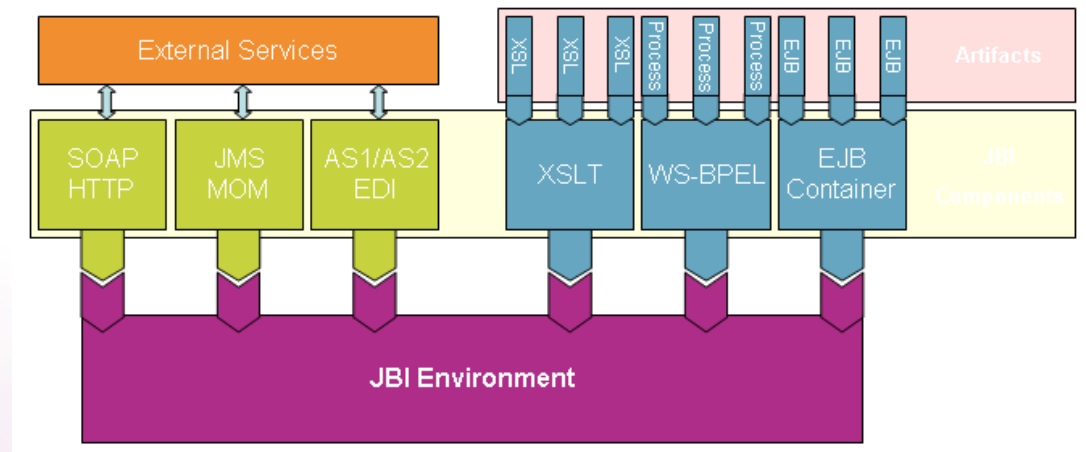
- Transformation de protocoles
- Transformation de données
- Orchestration





## Transformation de protocoles

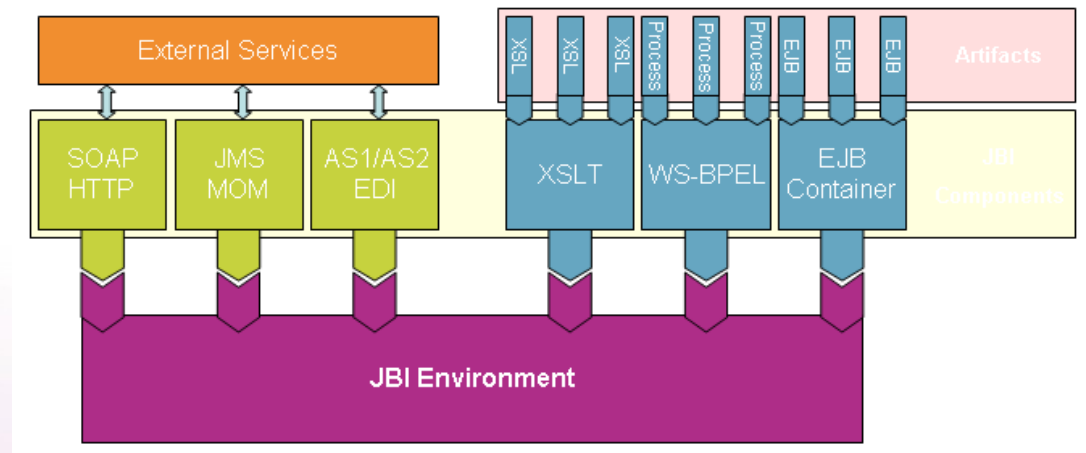
- Binding Composant XMPP
- Binding Composant HTTP





## Transformation de données

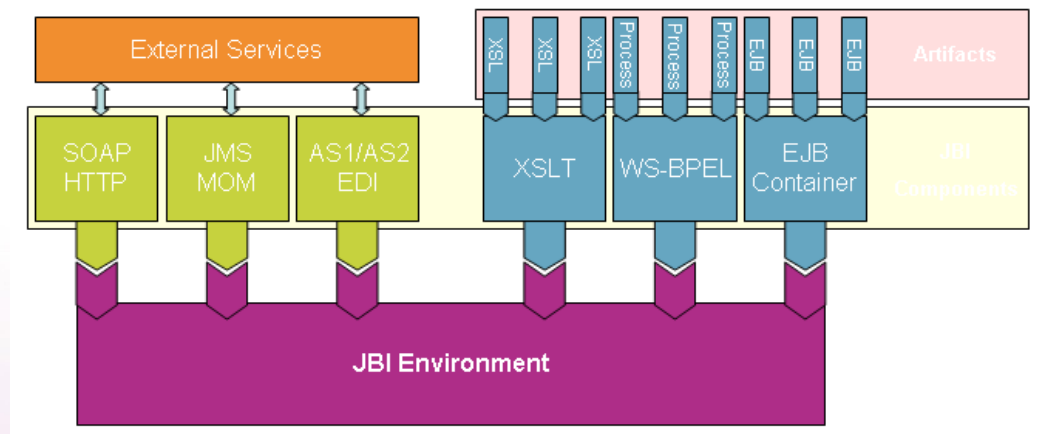
- Conversation XMPP
- Requêtes HTTP : météo, bourse
- Message Exchanges JBI



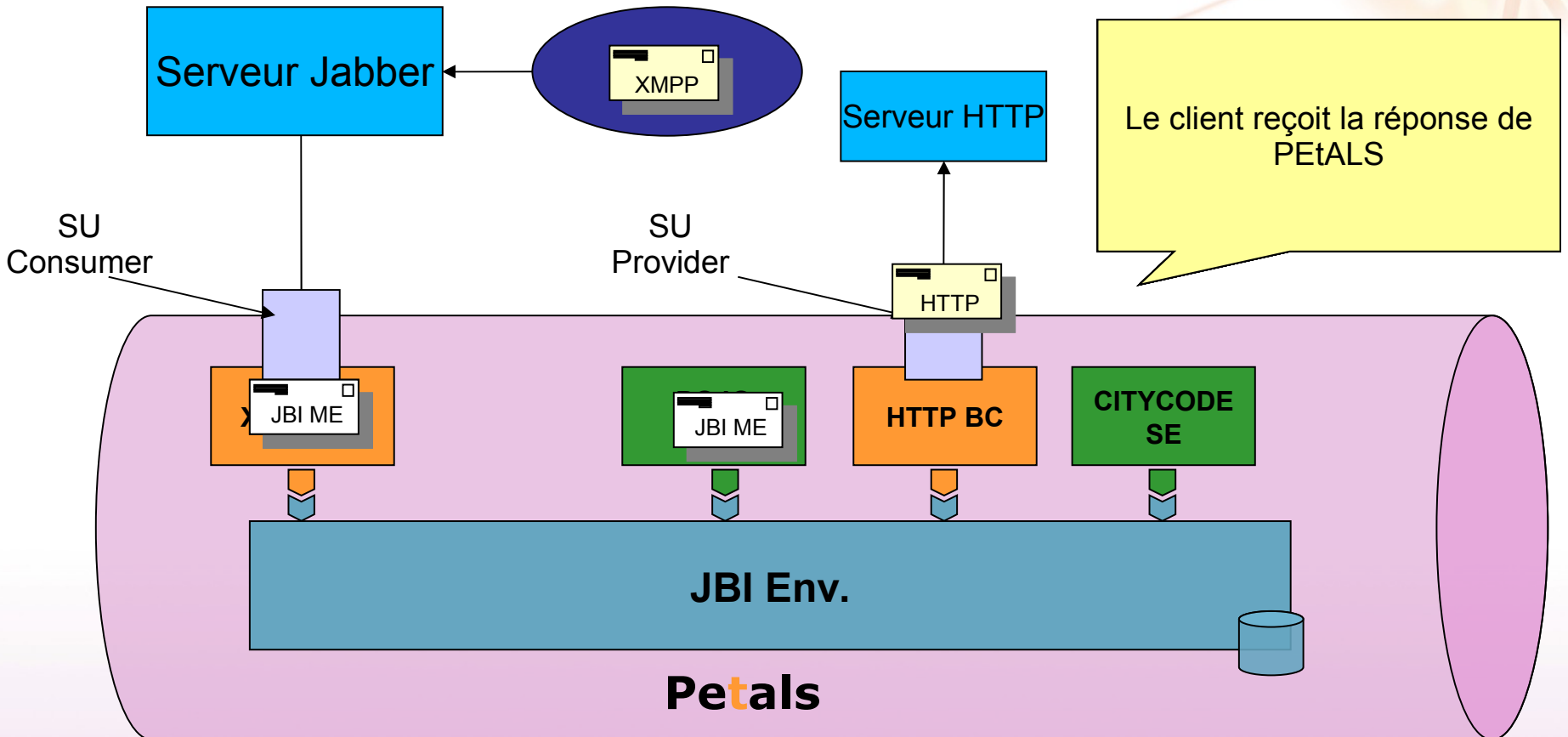


## Orchestration

- Service Engine Portal
- Appel de multiples services
- Construction du Message Exchange à partir des différentes réponses



# Démonstration

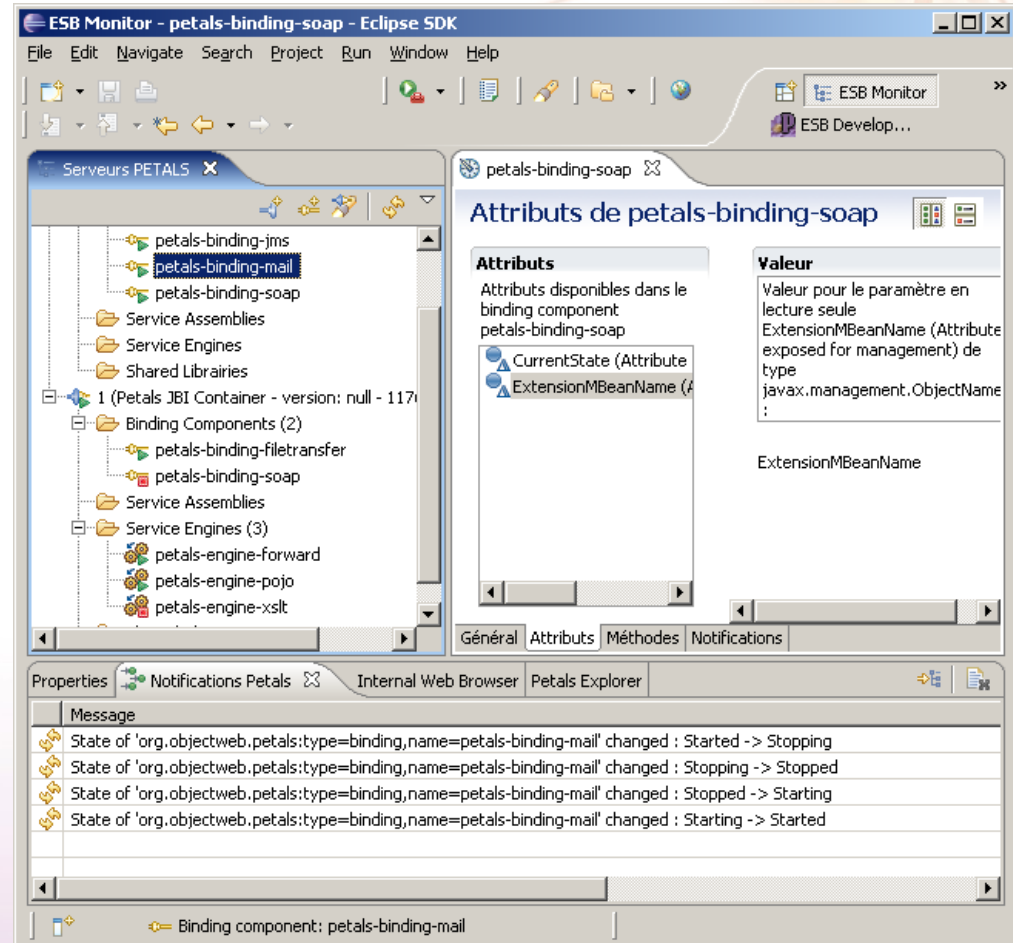




- **Portail « SOA »**
  - Exposition / Enchaînement de service selon le cas d'usage « Portail de services »
- **Plug-ins de développement** 
  - Administration / Configuration & déploiement des composants
  - Interface de configuration graphique
- **Monitorat / Administration**
  - Console Web PEtALS

# Eclipse plug-in to monitor JBI containers

- The plug-in allows to monitor several JBI containers and manage them
- Based on the JMX MBeans define by the JBI specification
- The plug-in is JBI compliant, as it only use the MBeans defined by JBI specification



The screenshot displays the ESB Monitor Eclipse plug-in interface. The main window shows a tree view of JBI containers under 'Serveurs PETALS'. The selected component is 'petals-binding-soap', and its attributes are displayed in the right-hand pane. The attributes include 'CurrentState' and 'ExtensionMBeanName'. The bottom pane shows a message log with state changes for the 'petals-binding-mail' component.

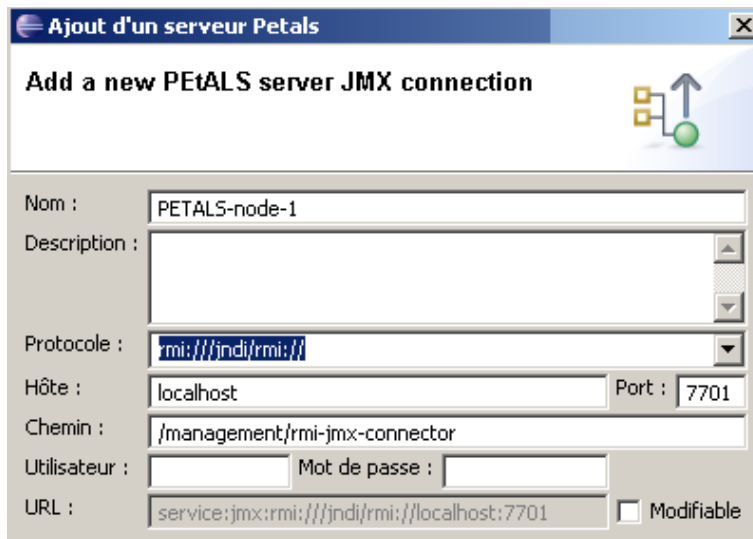
Attributs	Valeur
Attributs disponibles dans le binding component petals-binding-soap	Valeur pour le paramètre en lecture seule
CurrentState (Attribute)	ExtensionMBeanName (Attribute exposed for management) de type javax.management.ObjectName
ExtensionMBeanName (Attribute)	:
	ExtensionMBeanName

Message Log:

- State of 'org.objectweb.petals:type=binding,name=pets-binding-mail' changed : Started -> Stopping
- State of 'org.objectweb.petals:type=binding,name=pets-binding-mail' changed : Stopping -> Stopped
- State of 'org.objectweb.petals:type=binding,name=pets-binding-mail' changed : Stopped -> Starting
- State of 'org.objectweb.petals:type=binding,name=pets-binding-mail' changed : Starting -> Started

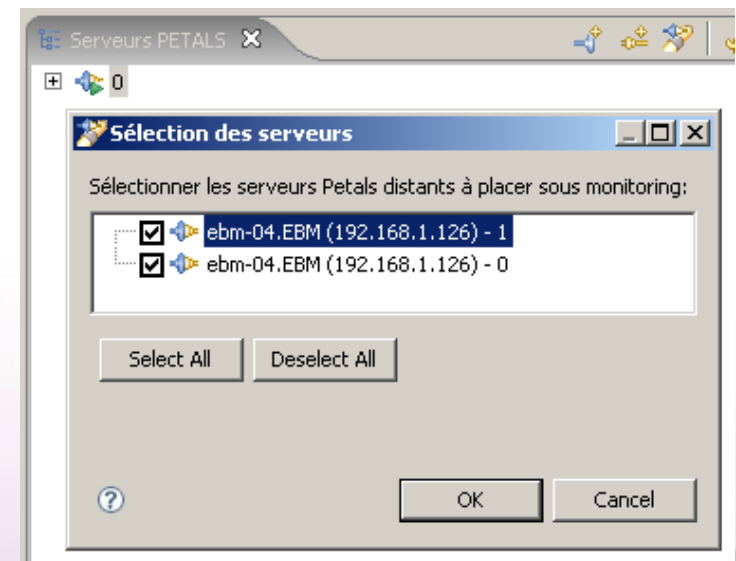


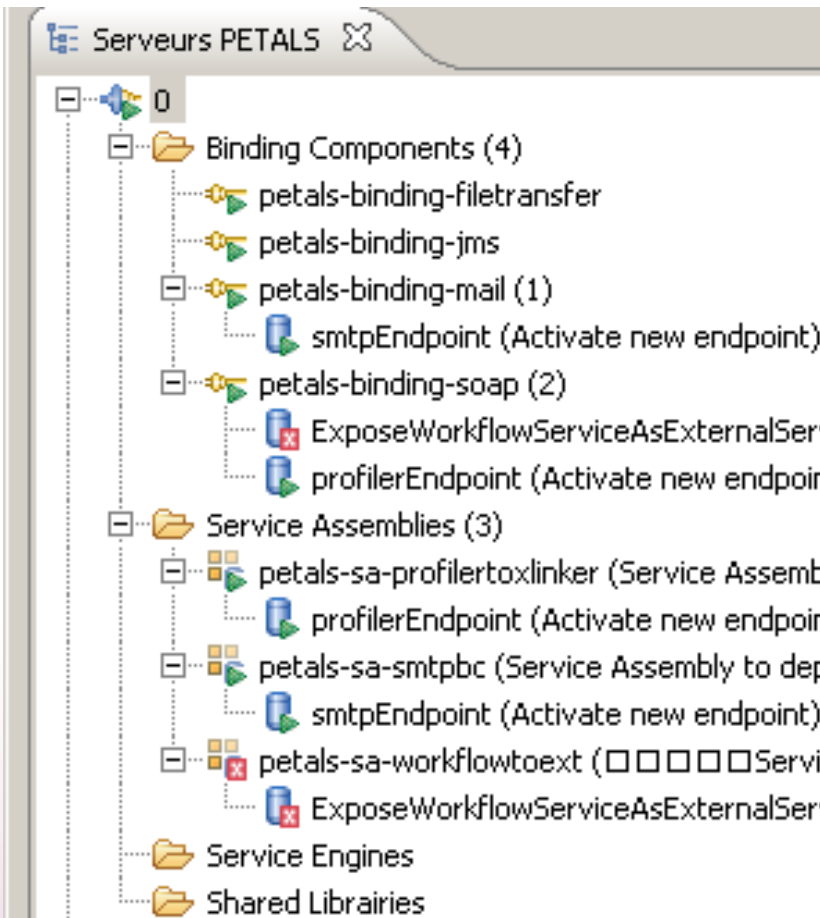
- Connect via JMX to a JBI container



A screenshot of a software dialog box titled "Ajout d'un serveur Petals" (Add a new PETALS server JMX connection). The dialog contains several input fields: "Nom" (Name) with the value "PETALS-node-1", "Description" (empty), "Protocole" (Protocol) with a dropdown menu showing "rmi://jndi/rmi://", "Hôte" (Host) with "localhost" and "Port" (Port) with "7701", "Chemin" (Path) with "/management/rmi-jmx-connector", "Utilisateur" (User) and "Mot de passe" (Password) fields (both empty), and "URL" with the value "service:jmx:rmi:///jndi/rmi://localhost:7701". There is a "Modifiable" checkbox which is unchecked.

- Can retrieve the JBI containers running in the same domain (PETALS specific functionality)





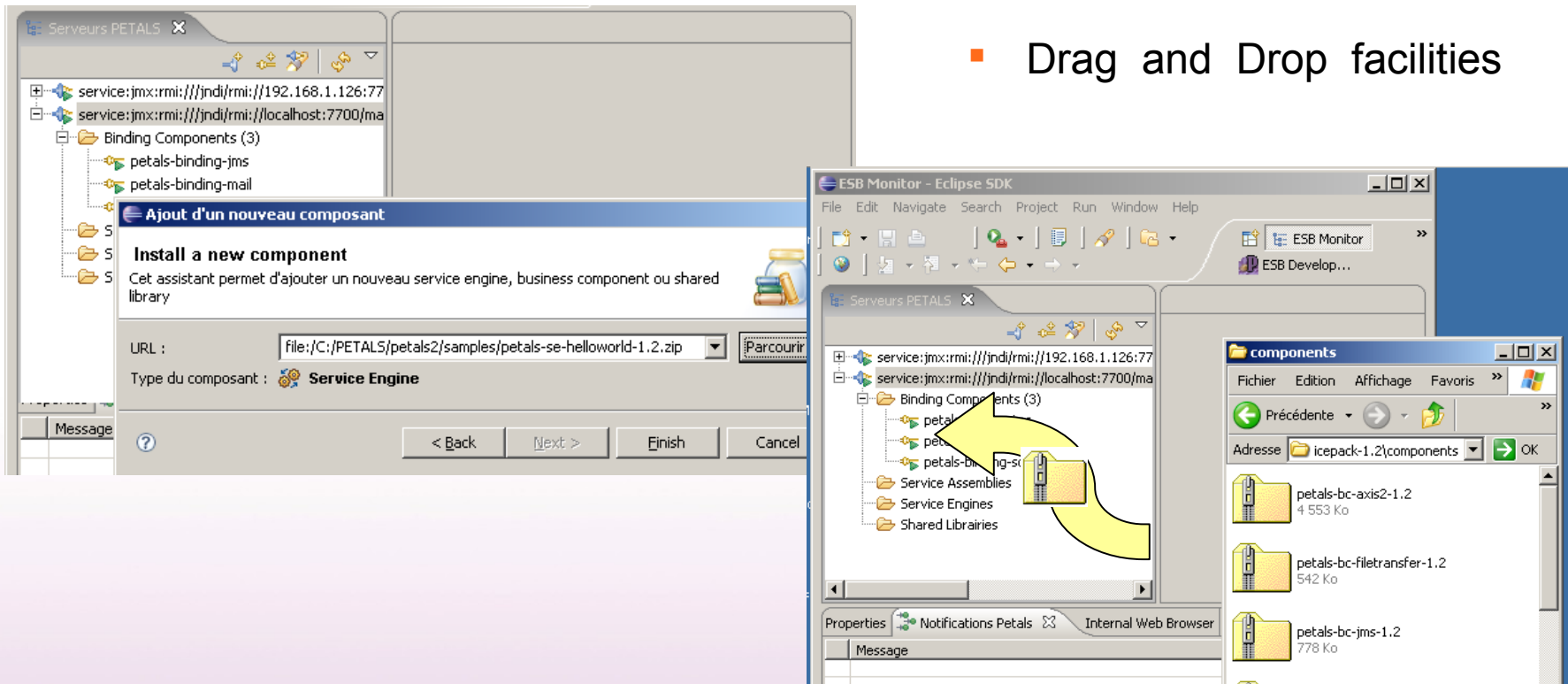
## ■ The JBI Container explorer

- Binding Components
  - Service units deployed
- Service Engines
  - Service Units deployed
- Service Assemblies
  - Services units
- Shared Libraries

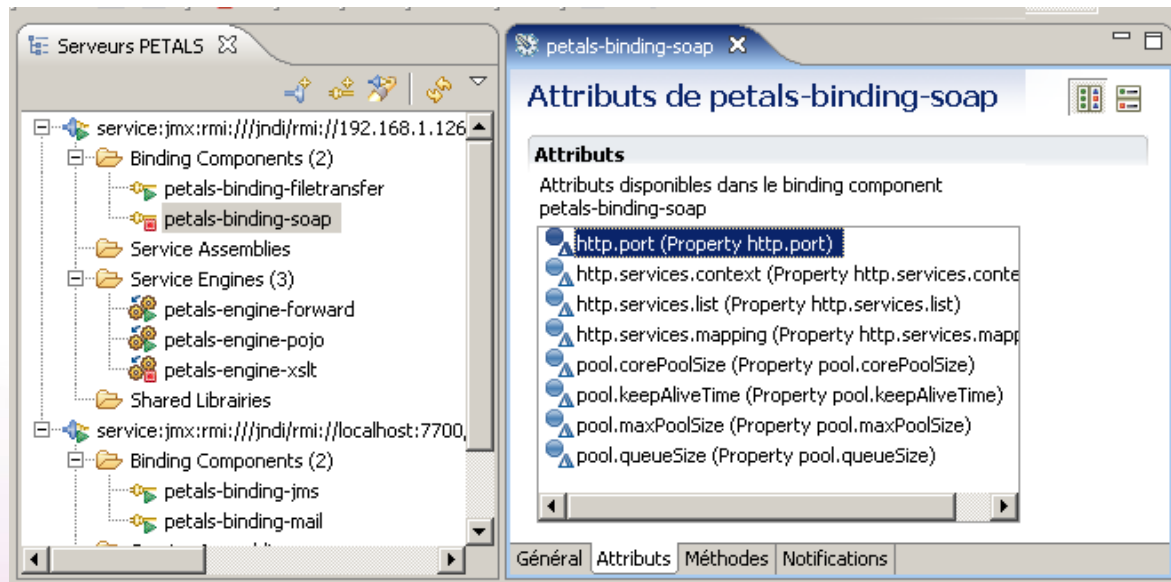


- Install Components, Service Assemblies or Shared Libraries on a container

- Drag and Drop facilities



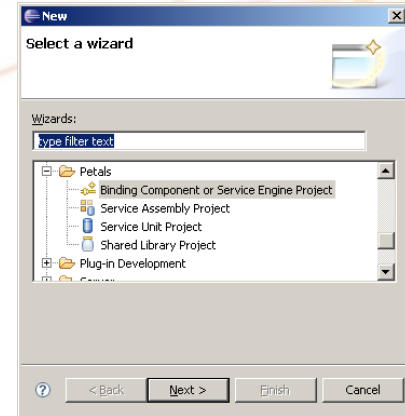
- During the installation phase of a JBI Component, the JMX attributes and methods of the component's Configuration-Mbean are dynamically exposed and can be set



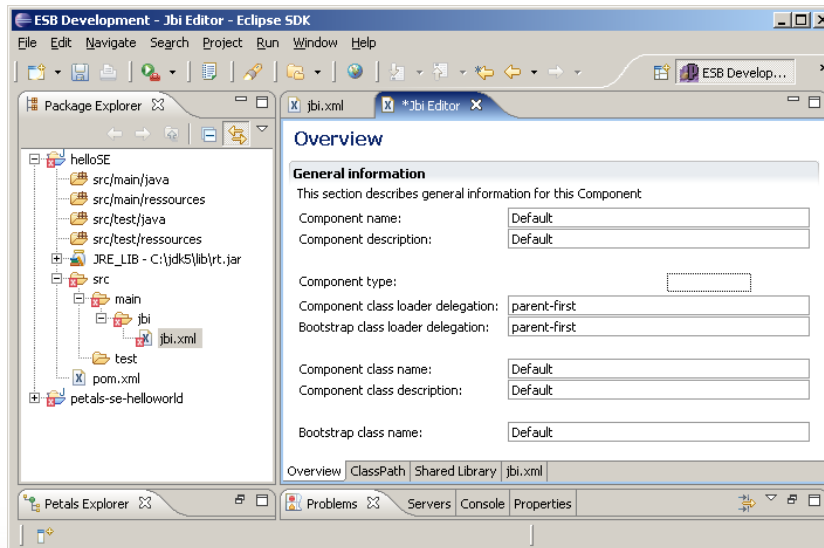
# Eclipse plug-in for development



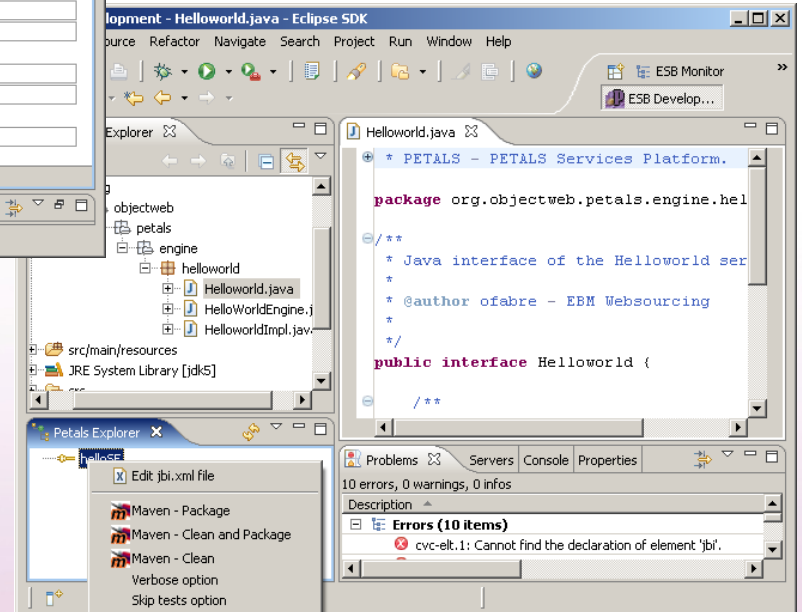
- Wizard to create components, service units, service assemblies and shared libraries artefacts



- JBI.XML editor



- Packaging of the artefact (with Maven2)



# Interface de configuration graphique



Java - PetalsCimero/petals.cimero2\_diagram - Eclipse SDK

File Edit Diagram Navigate Search Project Run Window Help

Tahoma

Package Explor Hierarchy

petals.cimero2\_diagram

petals.cimero2

petalsCimero

- petals
  - build
    - petals\_eip3.zip
    - petals\_mail4.zip
    - petals\_xmpp0.zip
    - petals\_xsquare7.zip
    - petals\_xst5.zip
    - petals.zip
  - SA
    - META-INF
      - jbi.xml
    - SUs
    - eip3
    - mail4
    - xmpp0
    - xsquare7
    - xst5
    - build.xml
    - petals.cimero2
    - petals.cimero2\_diagram

Diagram showing connections between components:

- Human icon (User) connects to EIP (Event-Driven Integration Platform).
- XSquare connects to EIP.
- Mail icon (Mail) connects to a component with a crossed-out 'X'.

Palette:

- Select
- Connection
- citycode
- clock
- csv
- EIP
- forward
- helloworld
- pojo
- soapportal
- xst
- filetransfer
- FTP
- ftp
- http
- jms
- mail
- Http
- soap
- xmpp
- xquare

Task List

Find: | All

Uncategorized

Outline

Problems @ Javadoc Declaration Properties

Component Instance mail4

Property	Value
Component	
01- name	mail4
02- Exclusive properties	
01- consumes	
01- endpoint-name	EIP mail4
02- mep	++
03- operation	FA
04- timeout	FA
05- org.objectweb.petals.routing.strategy	FA
06- org.objectweb.petals.transport.compress	FA
07- org.objectweb.petals.messaging.noack	FA
08- org.objectweb.petals.transport.qos	FA
09- interface-name	
10- service-name	
11- su-interceptors	
12- params	

démarrer

Courrier ent... Download C... Parce qu'on ... Spark Jabbe... Ajouter ou s... 9 PowerSh... Java - Instal... Spark - nsal... <oxgen/> ... eclipse

Java - Petal... FR 15:40

# Interface de configuration graphique



The screenshot displays the Eclipse IDE interface for configuring a B2B integration project. The main workspace shows a graphical diagram with three components: a person icon, an 'EIP' (Event-driven Process Integration) component, and a connector icon. Arrows indicate a flow from the person icon to the EIP, and from the XQare component to the connector icon. A context menu is open over the connector icon, listing actions such as 'Generate Ant Task and JBI descriptors'. The left sidebar shows a package explorer with a tree structure of project files. The bottom status bar shows the system tray with various application icons and the time 15:41.



- **Portail « SOA »**
  - Exposition / Enchaînement de service selon le cas d'usage « Portail de services »
- **Plug-ins de développement**
  - Administration / Configuration & déploiement des composants
  - Interface de configuration graphique
- **Monitorat / Administration** 
  - Console Web PEtALS





The screenshot shows the PEtALS Monitoring console in a Mozilla Firefox browser window. The browser title is "Monitoring - Network - Mozilla Firefox" and the address bar shows "http://localhost:8080/petals-webconsole/showNetwork.do". The page content includes the PEtALS logo, the tagline "The open source ESB solution for Services Oriented Architectures", and navigation tabs for "PEtALS Admin", "JUDDI Admin", and "Monitoring".

**Network**

- Server 0
  - Binding components
    - petals-binding-xmpp
  - Service engines
    - petals-se-soaportal
    - petals-sample-client
    - petals-se-citycode
  - Messages Exchanges
  - Endpoints

**Started Servers :**

- Start monitoring all servers with messages content
- Start monitoring all servers without messages content
- Stop monitoring all servers

**Server 0**

**Components :**

- petals-se-soaportal (Stopped)
- petals-binding-xmpp (Started)
- petals-sample-client (Started)
- petals-se-citycode (Shutdown)

**Monitor the Server :**

- Monitoring status : started - Message content shown : true
- Start monitoring Server 0 with messages content
- Start monitoring Server 0 without messages content
- Stop monitoring Server 0

**Server Informations :**

- IP : 192.168.1.139
- jmxPort : 7700

**Stopped Servers :**

no stopped server known

Terminé





Administration - Mozilla Firefox

Echier Edition Affichage Historique Marque-pages Outils 2

http://localhost:8080/petals-webconsole/showAdminSA.do?server=0

Google

The open source ESB solution for Services Oriented Architectures

**PEtALS**

PETALS Admin JUDDI Admin Monitoring

Network

- Server 0
  - Admin Components
  - Admin Service Assemblies

**Service Assembly Administration For Server 0**

sa-xmpp-provide (Started)

Upload & install a new service assembly :

Terminé

Hors ligne

# Console de supervision PEtALS

Monitoring - Server - Mozilla Firefox

Eichier Édition Affichage Historique Marque-pages Outils ?

http://localhost:8080/petals-webconsole/showComponent.do?server=0&component=petals-binding-xmpp

Google

The open source ESB solution for Services Oriented Architectures

**PETALS**

OW2 Consortium

PETALS Admin JUDDI Admin Monitoring

Network

- Server 0
  - Binding components
    - petals-binding-xmpp**
  - Service engines
  - Messages Exchanges
  - Endpoints

**Binding Component details**

- **Name** : petals-binding-xmpp
- **Description** :
- **State** : Started
- **Type** : Binding component
- **ObjectName** : org.objectweb.petals:name=petals-binding-xmpp,type=binding
- **ServiceUnits** : none

http://localhost:8080/petals-webconsole/showComponent.do?server=0&component=petals-binding-xmpp

Hors ligne

# Console de supervision PEtALS



Monitoring - Server - Mozilla Firefox

http://localhost:8080/petals-webconsole/showComponent.do?server=0&component=petals-sample-client

The open source ESB solution for Services Oriented Architectures

PEtALS

PEtALS Admin JUDDI Admin Monitoring

Network

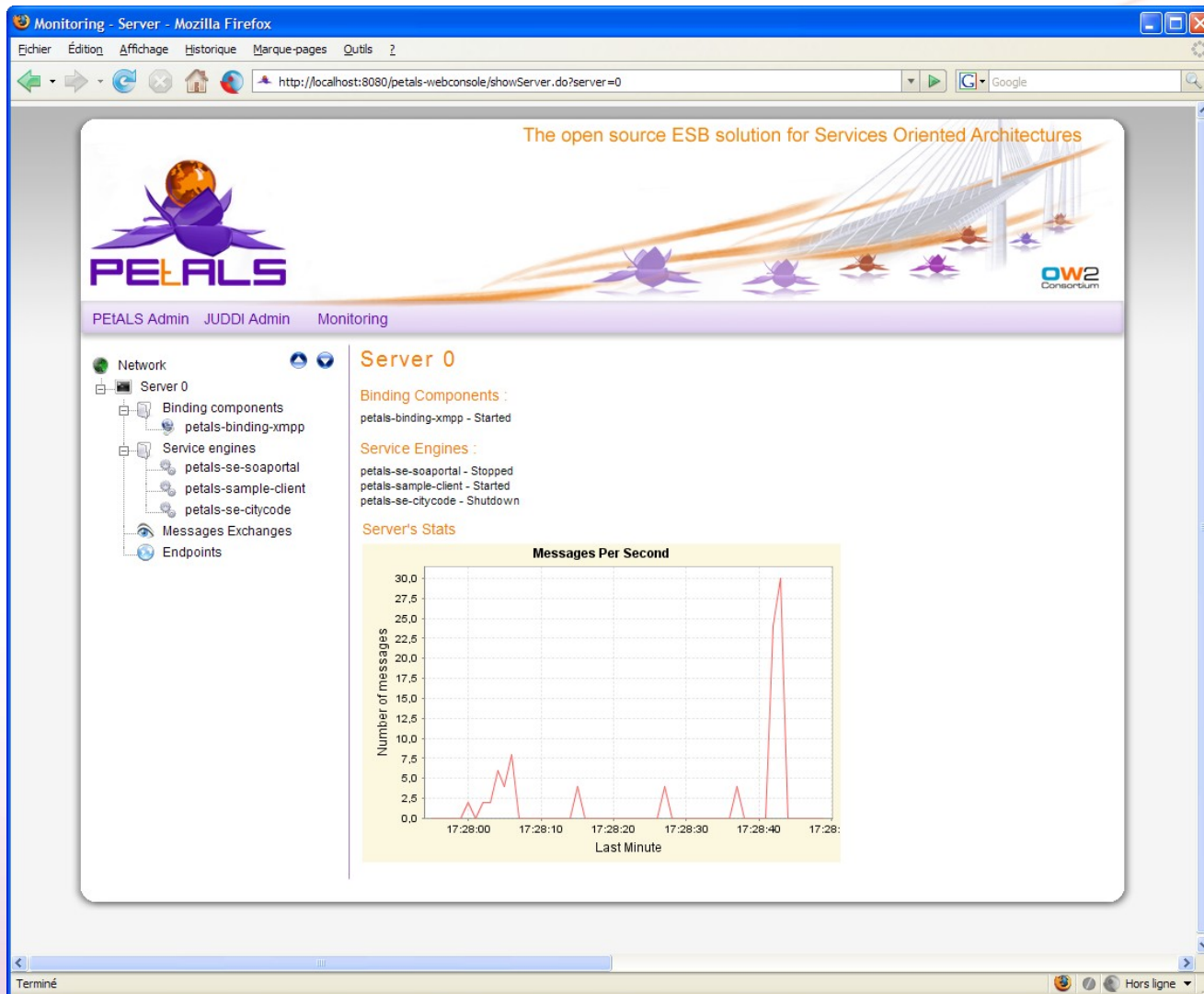
- Server 0
  - Binding components
    - petals-binding-xmpp
  - Service engines
    - petals-se-soaportal
    - petals-sample-client**
    - petals-se-citycode
  - Messages Exchanges
  - Endpoints

**Service Engine details**

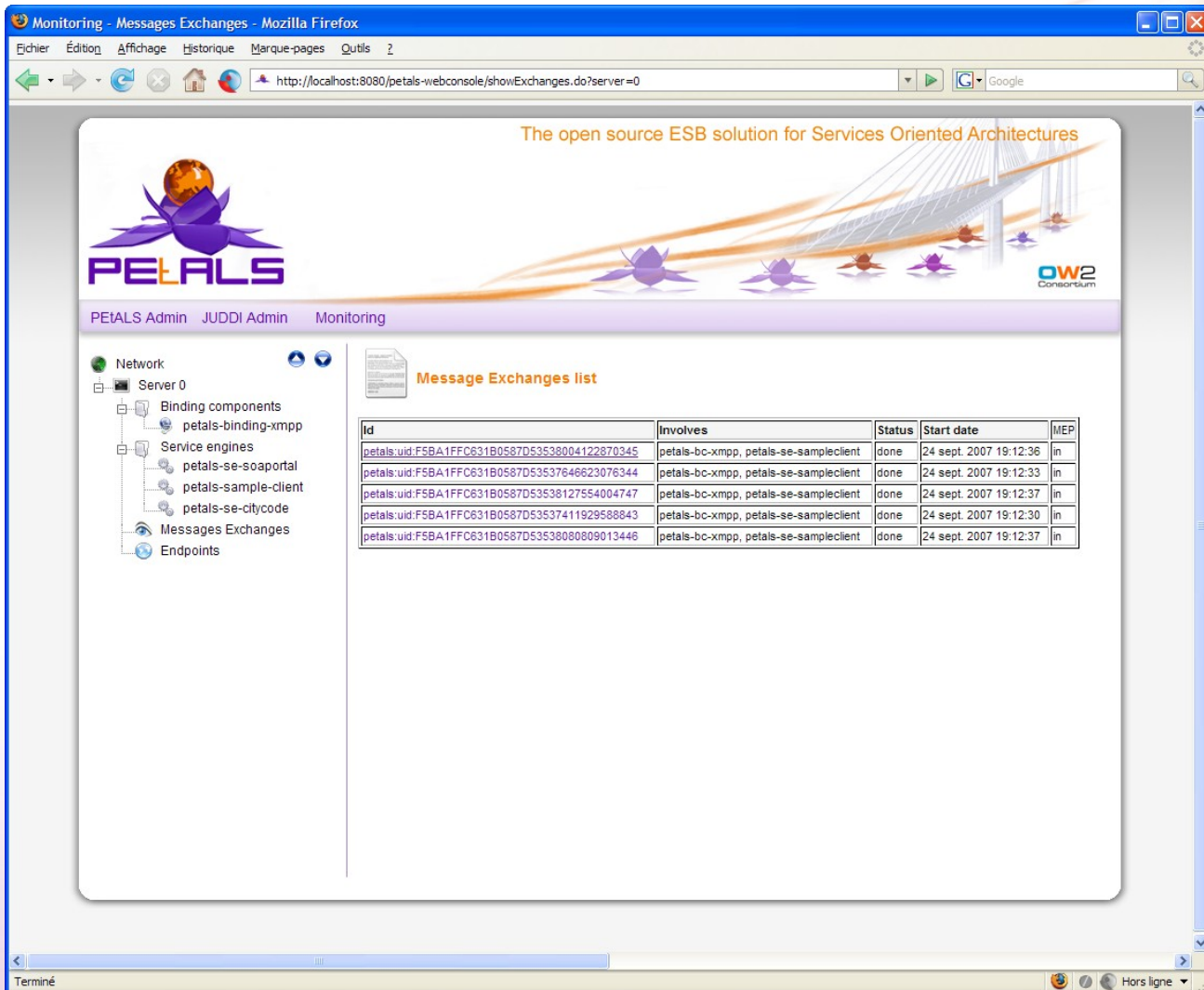
- Name : petals-sample-client
- Description :
- State : Started
- Type : Service engine
- ObjectName : org.objectweb.petals.name=petals-sample-client,type=engine
- ServiceUnits : none

http://localhost:8080/petals-webconsole/showComponent.do?server=0&component=petals-sample-client



Hors ligne



# Console de supervision PEtALS



The open source ESB solution for Services Oriented Architectures

**PETALS**  

PETALS Admin JUDDI Admin Monitoring

Network  
Server 0

- Binding components
  - petals-binding-xmpp
- Service engines
  - petals-se-soaportal
  - petals-sample-client
  - petals-se-citycode
- Messages Exchanges
- Endpoints

**Message Exchanges list**

Id	Involves	Status	Start date	MEP
petals.uid:F5BA1FFC631B0587D53538004122870345	petals-bc-xmpp, petals-se-sampleclient	done	24 sept. 2007 19:12:36	in
petals.uid:F5BA1FFC631B0587D53537646623076344	petals-bc-xmpp, petals-se-sampleclient	done	24 sept. 2007 19:12:33	in
petals.uid:F5BA1FFC631B0587D53538127554004747	petals-bc-xmpp, petals-se-sampleclient	done	24 sept. 2007 19:12:37	in
petals.uid:F5BA1FFC631B0587D53537411929588843	petals-bc-xmpp, petals-se-sampleclient	done	24 sept. 2007 19:12:30	in
petals.uid:F5BA1FFC631B0587D53538080809013446	petals-bc-xmpp, petals-se-sampleclient	done	24 sept. 2007 19:12:37	in


Terminé



Monitoring - Message Exchange Details - Mozilla Firefox

http://localhost:8080/petals-webconsole/showExchangeDetails.do?server=0&exchangeId=petals:uid:F5BA1FFC631B0587D53537411929588843

The open source ESB solution for Services Oriented Architectures



OW2 Consortium

PEtALS Admin JUDDI Admin Monitoring

Network

- Server 0
  - Binding components
    - petals-binding-xmpp
  - Service engines
    - petals-se-soapportal
    - petals-sample-client
    - petals-se-citycode
  - Messages Exchanges
  - Endpoints

### Message Exchange details

Id	Start time	End time	Status	Mep
petals:uid:F5BA1FFC631B0587D53537411929588843	24 sept. 2007 19:12:30	24 sept. 2007 19:12:32	done	in

0 1 2 3

### Normalized Message #2

component	petals-binding-xmpp
content	This is a test message
status	done
time	24 sept. 2007 19:12:32
service	{http://petals.objectweb.org/extensions}xmppService
endpoint	xmppEndpoint

http://localhost:8080/petals-webconsole/showExchangeDetails.do?server=0&exchangeId=petals:uid:F5BA1FFC631B0587D53537411929588843&messageId=1190653952203

Hors ligne



# Console de supervision métier : Spagic



Spagic Home - Mozilla Firefox

http://localhost:8080/consolidoSP/ViewServlet.do?TTPPAGE=LeanProcess&DW\_SESSION=TRUE

Service Monitoring

Lean Process

Lista Processi

Nome	Inizio Validita	Fine validita	Instance			
SimpleEnricher	23/03/07		0			
Simple	09/03/07		12			
FlgSenzalIncentivo	21/03/07		0			
TestCDR11	31/01/07		0			
TestCDR3	25/01/07		0			
TestCDR1	25/01/07		0			
Le-KDPS	23/01/07		7			
Groupy	01/01/06		8			
Enricher	01/01/06		0			
TestEnricher	01/01/06		0			

Nome: TestCDR11      Descrizione: Dev di linea per Test CDR11

Inizio Validita: 30/01/07 15:45      Fine Validita:

Organizzazione: Engineering      Nome UDC: cdt.LB11

Definizione Processi      **Instanze Processi**

myWebServiceEnricher

myGenericEnricherEnricher

myGenericEnricherEnricherHttp

myScreenOutputEnricher