

# **FuegoBPM System Administrator 5 Guide**

**Fuego, Inc.**



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# **FuegoBPM System Administrator 5 Guide**

by Fuego, Inc.

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## **FuegoBPM System Administrator 5 Guide**

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# Chapter 1. Introduction

## Introduction

### About the FuegoBPM (TM) System Administration Guide

This guide is a reference for those responsible for installing, configuring and managing the FuegoBPM applications and environment. In this guide you will find technical tips, descriptions of common tasks, checklists for important procedures, and steps for installing and configuring FuegoBPM and third-party software to work with the FuegoBPM platform.

The FuegoBPM System Administration Guide is written for the following audiences:

- **System Administrators** who need to install FuegoBPM Servers, configure web servers, and configure other supporting software such as directory services and databases to make them work with the FuegoBPM Suite.
- **End User Support Personnel** who need to install FuegoBPM clients such as Admin Center, Web Console, Work Portal, Portal Administration, and the Logviewer in end user machines.
- **Developers** who build and test processes designed with FuegoBPM, and who need to simulate production environments.

## Audience

The reader of this System Administration Guide should have a basic knowledge of FuegoBPM applications and the third-party software used with the FuegoBPM platform. In particular, knowledge of directory services, relational databases, Java, and web technology is



essential.

In addition to becoming familiar with the software, the system administrator must have significant privileges in their network environment to install the FuegoBPM applications and required third-party software.

## **FuegoBPM Suite applications**

The FuegoBPM system contains the following applications and is designed to work on a variety of platforms.

**FuegoBPM Studio**

**FuegoBPM Designer**

**FuegoBPM Enterprise Administration Center**

**FuegoBPM Logviewer**

**FuegoBPM Server**

**FuegoBPM Web Console Web Application**

**FuegoBPM Work Portal Web Application**

**FuegoBPM Portal Console Web Application**

**FuegoBPM Data Store Service**

## **System Requirements**

The following sections list the minimum hardware and software requirements. However, the actual requirements for your system may be greater, depending on the complexity of your specific FuegoBPM environment.

## **Operating Systems**

FuegoBPM supports the following operating systems:

**Table I**



<b>Operating System</b>	<b>FuegoBPM Studio</b>	<b>FuegoBPM Designer</b>	<b>FuegoBPM Server</b>	<b>FuegoBPM Enterprise Administration Center</b>
'98, ME	X	X		
NT 4.0 Workstation (Service Pack 3 or higher)	X	X	X	X
NT 4.0 Server (Service Pack 3 or higher)	X	X	X	X
NT 4.1 Workstation	X	X	X	X
NT 4.1 Server	X	X	X	X
Windows 2000 Professional, Server, Advanced Server, or 2003	X	X	X	X
Windows XP	X	X	X	X
Sun Solaris ver. 2.6 or higher	X		X	X
AIX 4.3 or higher	X		X	X
HP-UX 11.00 (Java.1.4.2 support)	X		X	X
Linux Red Hat distribution ver. 6.x or higher	X	X	X	X



<b>Operating System</b>	<b>FuegoBPM Studio</b>	<b>FuegoBPM Designer</b>	<b>FuegoBPM Server</b>	<b>FuegoBPM Enterprise Administration Center</b>
Linux SUSE distribution ver. 6.0 or higher	X	X	X	X

**Table II: FuegoBPM Web Applications**

<b>Operating System</b>	<b>FuegoBPM Work Portal</b>	<b>FuegoBPM Portal Console</b>	<b>FuegoBPM Web Console</b>
'98, ME	X		X
NT 4.0 Workstation (Service Pack 3 or higher)	X	X	X
NT 4.0 Server (Service Pack 3 or higher)	X	X	X
NT 4.1 Workstation	X	X	X
NT 4.1 Server	X	X	X
Windows 2000 Professional, Server, Advanced Server, or 2003	X	X	X
Windows XP	X	X	X
Sun Solaris ver. 2.6 or higher	X*	X	X
AIX 4.3 or higher	X*	X	X
HP-UX 11.00 (Java.1.4.2	X*	X	X



<b>Operating System</b>	<b>FuegoBPM Work Portal</b>	<b>FuegoBPM Portal Console</b>	<b>FuegoBPM Web Console</b>
support)			
Linux Red Hat distribution ver. 6.x or higher	X*	X	X
Linux SUSE distribution ver. 6.0 or higher	X*	X	X

\*If a Java Servlet / JavaServer Pages (JSP) Server can be deployed in operating system.

**Table III: Other FuegoBPM Applications**

<b>Operating System</b>	<b>COM Bridge</b>	<b>FuegoBPM Process Analyzer</b>
'98, ME	X	X
NT 4.0 Workstation (Service Pack 3 or higher)	X	X
NT 4.0 Server (Service Pack 3 or higher)	X	X
NT 4.1 Workstation	X	X
NT 4.1 Server	X	X
Windows 2000 Professional, Server, Advanced Server, or 2003	X	X
Windows XP	X	X
Sun Solaris ver. 2.6 or higher		X
AIX 4.3 or higher		X
HP-UX 11.00		X



Operating System	COM Bridge	FuegoBPM Analyzer	Process Analyzer
(Java.1.4.2 support)			
Linux Red Hat distribution ver. 6.x or higher		X	
Linux SUSE distribution ver. 6.0 or higher		X	

## Fuego Enterprise running on J2EE Application Servers

### Application Server Versions supported:

- IBM WebSphere 5.1.1.x
- BEA WebLogic 8.1 Service Pack 5 or greater Service Pack
- JBoss 3.2.x with latest Service Pack.

Application Server deployments are limited to the platforms supported by the Application Server vendor. Fuego has certified the Fuego's Enterprise Engine for J2EE has been tested on the following platforms:

- IBM WebSphere 5.1.1.x: Checks on Windows 2000, 2003, Solaris, Linux RedHat and SUSE.
- BEA WebLogic 8.1 Service Pack 5 or greater: Checks on Windows 2000, 2003, Sun Solaris, Linux RedHat and SUSE.
- JBoss 3.2.x: Checks on Windows 2000, 2003, Solaris, Linux RedHat and SUSE.



## Disk Space, RAM and Processor

Successful installation of FuegoBPM requires that you follow the requirements listed in the two following tables.

### Disk Space Requirements

Platform	With Java Virtual Machine	Without Java Virtual Machine
Windows	450 MB	380 MB
UNIX	450 MB	380 MB

### RAM Requirements and Directory Services/RDBMS Access

FuegoBPM Tool	RAM (MB)	Directory Services Access Necessary?	RDBMS Access
FuegoBPM Studio	512 MB Minimum	No	No
FuegoBPM Designer	512 MB Minimum	No	No
FuegoBPM Web Console Application on Web Server	256 MB Minimum and Recommended.	Yes (it will update the Fuego Object metadata in the Directory Service).	No.
FuegoBPM Enterprise Server (Standalone and Application Server Edition)	512 MB Minimum - 1GB Recommended, subject to the type and amount of processes being run.	Yes	Yes
FuegoBPM Enterprise Administration	128 MB Minimum - 256 Recommended	Yes (to create and extend Directory Service Schemas)	Yes



<b>FuegoBPM Tool</b>	<b>RAM (MB)</b>	<b>Directory Services Access Necessary?</b>	<b>RDBMS Access</b>
Center			
COM Bridge	8 MB Minimum - 16 MB Recommended	No	No
FuegoBPM Work Portal Web Application on Web Server	128 MB Minimum - 256 MB Recommended (see note below)	Yes	No

### Note



the range shown for the Work Portal Web Application on a Web Server is for a cache of 5,000 instances, with 16 KB per instance maximum size.

### Processor

<b>FuegoBPM Tool</b>	<b>Processor</b>
FuegoBPM Studio	Pentium (R) III Processor at 750 MHz
FuegoBPM Enterprise Server (Standalone and Application Server Edition)	Pentium (R) 4 Processor at 1 Ghz

## Java Development Kit

FuegoBPM is compatible with any of the following versions of the Java Development Kit (JDK) and Java Runtime Environment (JRE):

- Sun J2SE 1.4.2 SDK for Microsoft Windows platforms (latest patches included)



- Sun J2SE 1.4.2 SDK for Solaris platforms (latest patches installed)
- Sun J2SE 1.4.2 SDK for Linux platforms (latest patches installed)
- IBM J2SE 1.4.2 SDK for AIX platforms (latest patches installed)

## Relational Databases

The following relational database management systems (RDBMSs) can be used by the FuegoBPM Server:

- Oracle 8i, Oracle 9i and Oracle 10g Enterprise or Standard versions through Oracle JDBC Drivers
- Microsoft SQL Server 7 or higher through I-net JDBC Drivers
- IBM DB2 Universal Database version 8 or greater through DB2 (Type 2 or Type 4) JDBC Drivers
- Sybase (AES) version 12.5 through Sybase JDBC Drivers
- Informix IDS version 9.4 UC2 or higher through Informix JDBC Drivers

## Directory Services

FuegoBPM supports the following directory services:

- LDAP Directory Services (accessible through JNDI):
  - Microsoft Active Directory 2000
  - Sun ONE Java System Directory Server 5.2 (former Netscape iPlanet Directory Service)



- RDBMS Directory Services (accessible through JDBC):
  - Oracle 9i and 10g: Oracle JDBC Drivers version 10.2.x.x
  - Microsoft SQL Server 2000 and 2005: INet Merlia JDBC Drivers - 6.05 y 6.06 (recommended) and Microsoft SQL Server 2005: Microsoft JDBC Driver for Sql Server 2005
  - IBM DB2 8.1: IBM DB2 JDBC Drivers Types 2, 3 and 4
  - Sybase ASE 12.5: Sybase JDBC Drivers - jConnect 5.5
  - Informix 9.4: IBM Informix JDBC Driver for IBM Informix Dynamic Server 2.21.x

## **Web Server and Java Servlet / JSP Server**


The web server and Java Servlet / JavaServer Pages (JSP) server work together so that end users can connect to FuegoBPM's Work Portal, FuegoBPM's Portal Console and FuegoBPM's Web Console using an Internet browser.

FuegoBPM supports the following web servers and servlet servers:


- BEA Web Logic Application Server 8.1 SP5 or higher
- IBM WebSphere Application Server 5.1.1.x
- JBoss 3.2.x
- Microsoft IIS with Tomcat 4.1.30 or 4.1.x where  $x > 30$
- Tomcat 4.1.30 or 4.1.x where  $x > 30$
- Apache with Tomcat 4.1.30 or 4.1.x where  $x > 30$



### **Note**

 FuegoBPM Web Applications (FuegoBPM Work Portal, FuegoBPM Portal Console and FuegoBPM Web Console) must run in a JSP/Servlet Container running a 1.4.2 Compatible Java Virtual Machine.

### **Note**

 FuegoBPM supports any JSP/Servlet server that supports Servlet 2.3 and JSP 1.2 specifications.

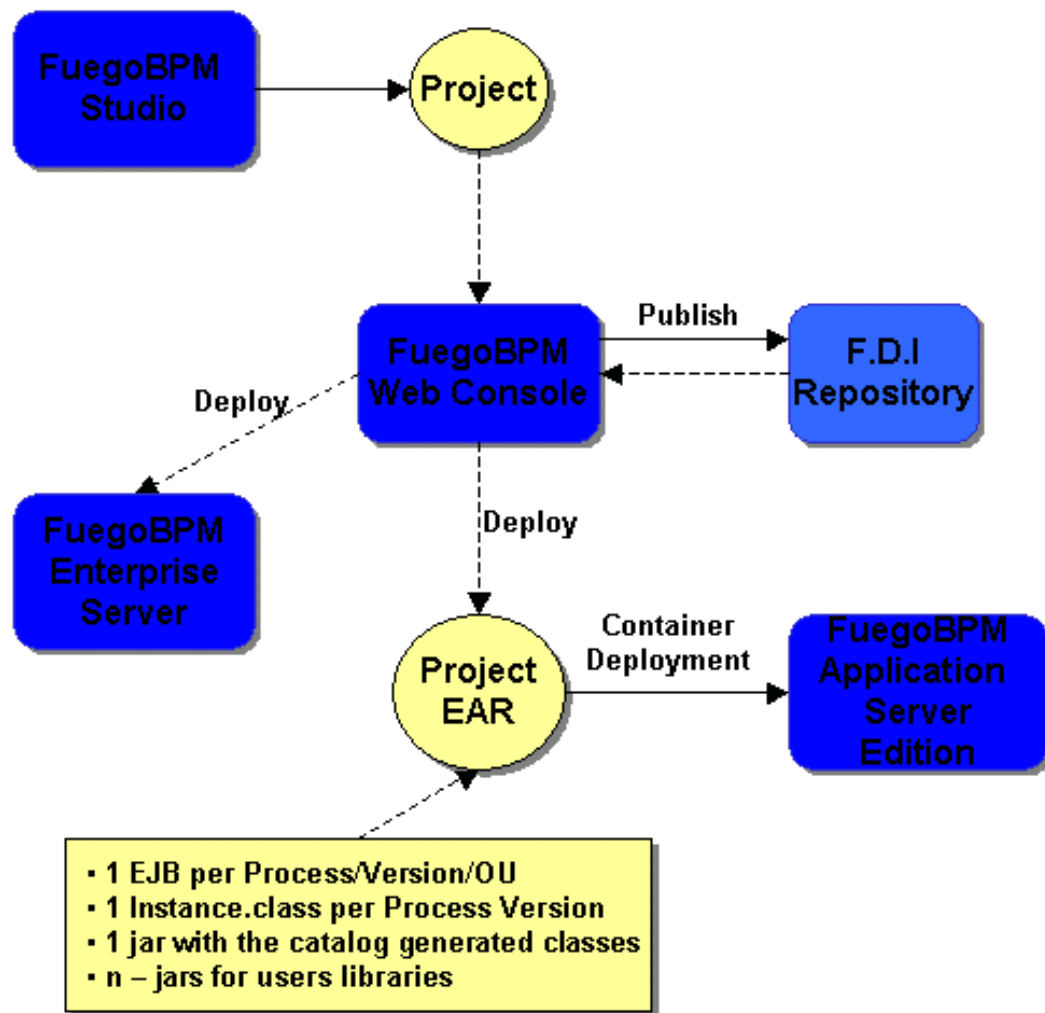
## **Internet Browsers**

For end users using FuegoBPM's Work Portal, FuegoBPM supports the following Internet browsers:

- Internet Explorer, version 6.0 or higher
- Netscape Navigator, version 7.2 or higher
- Firefox, version 1.0 or higher

## **FuegoBPM Architecture**





FuegoBPM Studio manages **projects**. The FuegoBPM Web Console **publishes** the project into the FDI Repository (FuegoBPM Directory Interface). After publishing the project, it can be **deployed** to a Server. The Server can be FuegoBPM's Server or a FuegoBPM Application Server Edition.

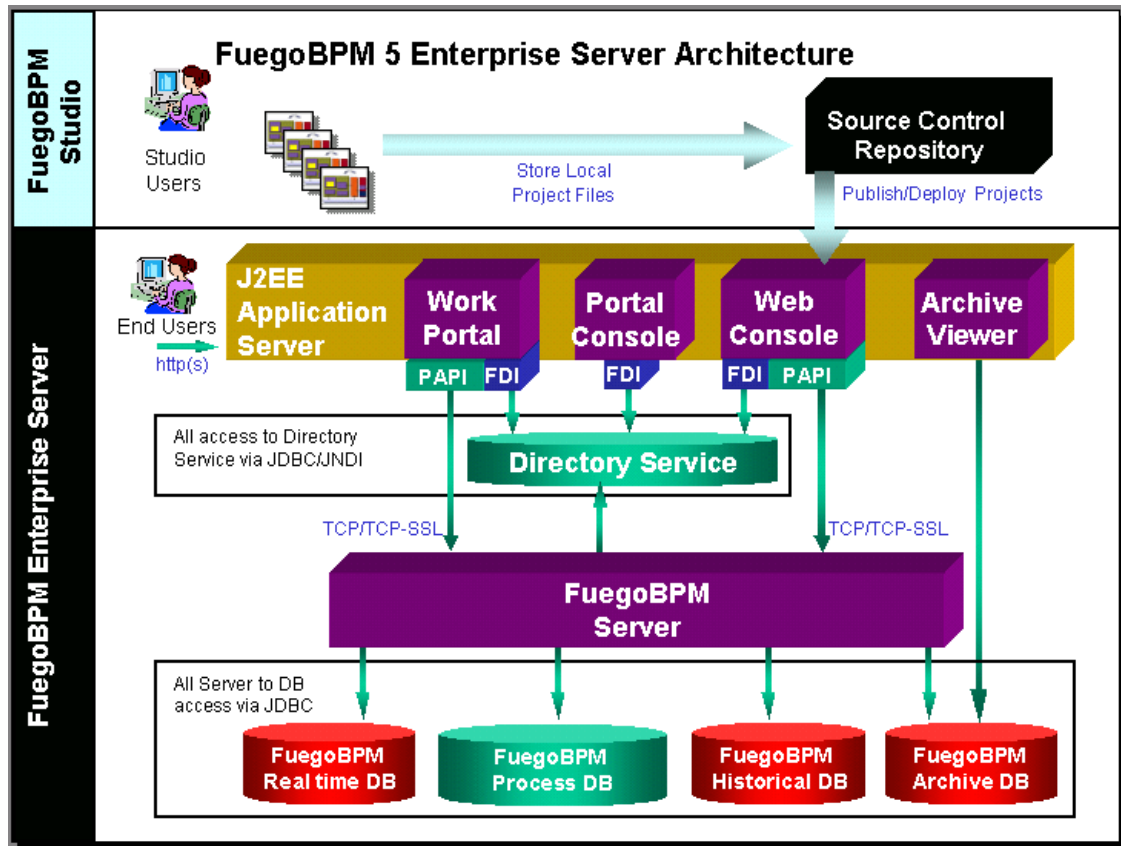
In the case of an Application Server Edition, the deployment executes 2 steps. First of all the Project EAR is generated and then deployed to the Server Application.

## FuegoBPM Enterprise Server

The following is a diagram showing how FuegoBPM's tools work together to provide a seamless solution to integrate, design, deploy,



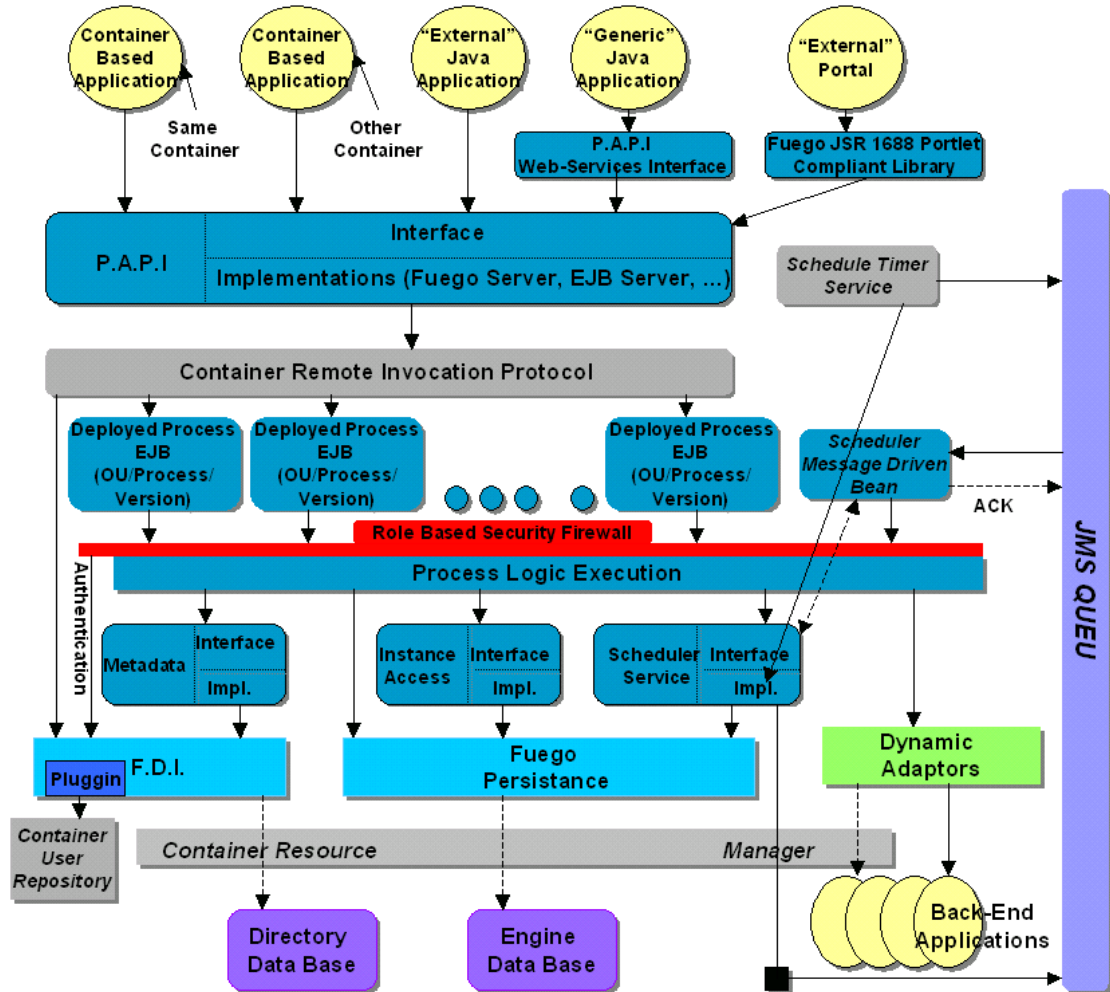
and evolve your most important enterprise activities.



## FuegoBPM Application Server Edition

The following is the architecture when projects are deployed to an EJB based Server:





**P.A.P.I:** Process API through which any application can interface with FuegoBPM's process. It contains an implementation that enables connection to a FuegoBPM Application Server Edition deployed in an J2EE application server.

**Container Remote Invocation Protocol:** API to interface with the J2EE Application server. It is used by PAPI to interface with the J2EE application server.

**Deployed Processes:** each FuegoBPM project is deployed as an application in a J2EE application server. Each of the processes within the project has its own EJBs and MDBs. These beans act like the entry to the **Process Logic Execution**.



**FuegoBPM FDI:** validates the users who have permission to work, based on the assigned roles.

**Metadata:** to be able to perform the **Process Logic Execution**, FuegoBPM uses the metadata of the processes and the participants using the FuegoBPM FDI.

**Instance access:** the process instances status are stored in a data base using **FuegoBPM persistence**.

**Scheduler service:** FuegoBPM Application Server Edition uses a **scheduler service** to trigger the execution of all automatic task in the Server.

**Dynamic adaptors:** are the tools used to interface with back-end applications.

**Container resource manager:** provides the access to all the resources (databases, directories, etc) that the FuegoBPM Application Server Edition needs. J2EE application servers provide resources through this cointaner.

**JMS Queue:** the Java Messages Service queue triggers the execution of all automatic tasks (the processes ones or the server's ones).

**Scheduler Message Driven Bean:** each MDB executes the corresponding automatic task based on the polled message.

**Scheduler Timer Service:** provides a persistent scheduler service for application servers. This scheduler service is used to implement all scheduled actions. The Scheduler Timer Service polls for due items and dispatches JMS messages to trigger its execution.

## FuegoBPM Studio

FuegoBPM Studio provides an integrated user interface for process modelling and integration with other technologies and applications.



FuegoBPM Studio displays a main window. This main window is primarily used by the developer. Several other windows can be minimized and expanded as needed. The window panels can be moved from one area to another depending on your preferences. All these windows are stored on Studio's desktop.

Business analysts use FuegoBPM Studio to model business processes. These business processes include activities, the transitions between each activity and the roles associated with each activity.

To ensure maintainability and readability, FuegoBPM Studio supports both peer-to-peer and n-level process nesting. These process models are stored as XML files, making them portable. This portability and XML format also encourages reuse and sharing.

To define the appropriate business rules for each activity within the process, the business analyst uses Fuego's Business Process Methods (BP\_Method). BP\_Method is a simple scripting tool that is very similar to a 4GL scripting language. BP\_Method is also used to associate specific components (underlying application services) with each activity in the process to create business Fuego Objects. In this way, companies can write a few simple lines of BP\_Method code to generate the pages of manually written Java code customarily used with middleware integration architectures. The business analyst can also create use-case information that can be automatically generated into documentation by the product, and then stored as HTML pages for browser access.

For processes requiring integration with applications, FuegoBPM's supervisory applications communicate with underlying application services through components. The components are managed by FuegoBPM Studio through the Project Catalog. Components are also cataloged for use in your directory services.

FuegoBPM uses separately licensed "technology adapters" that instead of only connecting to a particular application, can connect to common industry standard technologies such as Java, EJB, COM, CORBA/IDL, JDBC/ODBC, XML, JMS, and other middleware. This



allows FuegoBPM Studio to connect to any object and provides the ability to introspect any object technology and read its methods and properties to create a "wrapper" that interfaces with it directly.

For example, FuegoBPM can connect to Siebel by introspecting the Siebel Application Programmer Interface (API), which is delivered as Java Jar files. This presents FuegoBPM Studio with a list of the methods and properties available within the Siebel API. Next, the customer selects the methods they want to make available to FuegoBPM, and then updates the Project Catalog. This automatically builds a component for Siebel with each method that the customer wants to use. A side benefit is that in addition to being used by FuegoBPM processes, the component can be used by any other technology as well.

For legacy applications, FuegoBPM can introspect an Enterprise Java Bean (EJB) such as a WebSphere or Weblogic Application Server, or a VisualAge front-end to IBM's Information Management System (IMS) and Customer Information Control System (CICS) applications. Additionally, if an organization has already adopted a middleware strategy, FuegoBPM can communicate directly to its middleware through the Java Message Service (JMS). This allows the organization to leverage their previous investment.

## **FuegoBPM Directory Interface**

Once the process model is complete, it is published. The published process translates the model and business rules in Business Process Methods (BP\_Methods) into Java classes and stores them in a directory service. Directory services are a cornerstone of the FuegoBPM system architecture. The resultant Java classes are the executable business processes, referred to as "supervisory applications". One or more FuegoBPM Servers run these supervisory applications to perform the business process by connecting process participants, third party applications, and data.



## **FuegoBPM Web Console**

Web Console is the FuegoBPM web application use to administer both the FuegoBPM Servers and an organization's data. To manage process participants, Web Console interacts with an organization's directory services to define the organization (including any divisions or organizational units), process roles, users, and any calendar rules that may apply. This enables organizations to manage which people participate within a process, when they participate, and how much authority they have. For processes that span corporate boundaries, directory service referrals are performed. To manage FuegoBPM Servers, the Web Console interacts with the directory service and database. Is by using the Web Console that Servers are created, configured and executed.

## **FuegoBPM Server**

Processes are deployed to the FuegoBPM Server(s), which ensures that each process is executed. The server communicates with the directory service to determine which processes it will run, which participants will be involved, and which components it will use.

The FuegoBPM Server is a process-server that maintains the state of each executing process instance, regardless of whether it runs for a few minutes or for months at a time. This is accomplished through the use of a relational database management system (RDBMS) such as Oracle or DB2 that enables the server to persist process instance data quickly and securely.

FuegoBPM Servers may be run as a federation of servers. This means that the FuegoBPM system can be deployed in parallel and is therefore infinitely scalable. Servers communicate between each other inside the firewall via Remote Method Invocation (RMI), and outside the firewall through XML/SOAP via TCP/IP for communication. This use of an ubiquitous architecture enables the FuegoBPM system to be deployed in virtually any organization in the world.



FuegoBPM Servers are also highly optimized for exceptional performance, and include programmatic load-balancing, failover, redundancy, and backup capabilities to ensure uptime and execution performance. An important feature of the server is the ability to manage the simultaneous execution of different process versions. This enables companies to implement process changes with no downtime (zero-latency).

## **FuegoBPM Work Portal**

When a process activity requires human participation, the FuegoBPM Server pushes work to the Work Portal to allow human interaction with the process. The Work Portal can be accessed through an Internet browser. The Work Portal enforces the roles and permissions as defined in the directory services, and as such, only displays activities relevant to the logged-on individual. Additionally, users may interact with or start a process from third-party applications.

## **FuegoBPM Portal Console**

FuegoBPM Portal Console is designed to provide FuegoBPM end users with the ability to customize the FuegoBPM Work Portal.

FuegoBPM Portal Console is a Web application that works independently of Work Portal. However, the actions performed in FuegoBPM Portal Console have a direct impact on the way users work during their Work Portal sessions.

You use FuegoBPM Portal Console to define how users see the information corresponding to instances, applications and attachments. Such information is grouped in views defined as needed.

FuegoBPM Portal Console also allows you to customize the Work Portal actions toolbar.



FuegoBPM provides an option to generate a set of default views for every deployed process so that instances can be displayed in a user's Work Portal with no extra administrative steps. Portal Administrator allows process developers and administrators to work together to design a suitable set of custom views for Work Portal users.

Developing custom views and custom presentations also permits the meaningful and useful display of project and external data variables for process models.

## **FuegoBPM Data Store Service**

The FuegoBPM Server captures and stores information about the processes that it executes. Information from each server can be aggregated into an Operational Data Store for reporting and analysis purposes.



---

# Chapter 2. FuegoBPM Enterprise Administration Center

## Introduction

FuegoBPM Enterprise Administration Center is the FuegoBPM application designed to help you administer your FuegoBPM implementation. The Administration Center also guides and helps you configure your FuegoBPM applications.

From the FuegoBPM Enterprise Administration Center you can:

- Generate service directories for your implementation
- Configure Web Application Server, Web Console, Work Portal, and Portal Console preferences
- Launch the Web Console, the Work Portal, the Portal Console and Archive Viewer
- Start and stop the Web Application Server
- Update FuegoBPM Enterprise with new Service Packs
- Display logged information

## Launching the FuegoBPM Administration Center

### Interactively

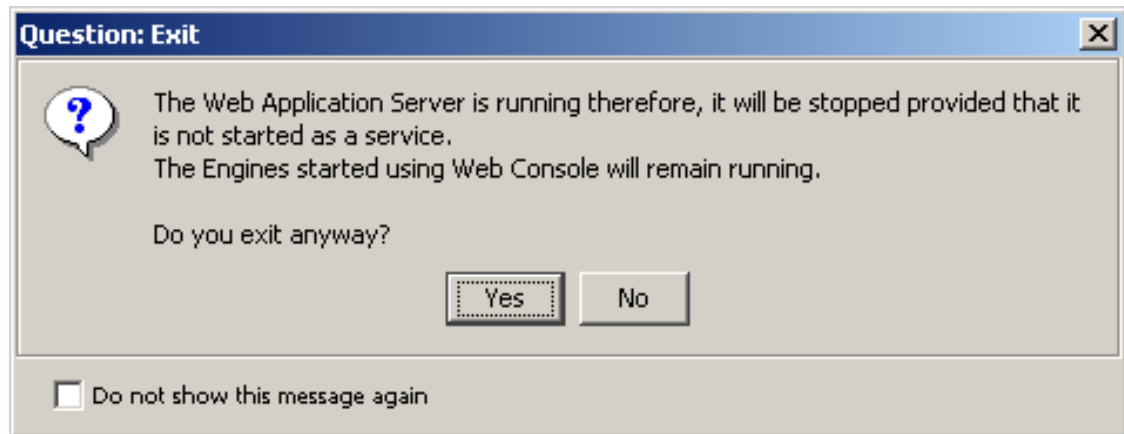
To start the FuegoBPM Administration Center interactively run the command *fuegoadmcenter* located in:

**\$FUEGO/enterprise/bin/** or **\$FUEGO/j2ee/bin/**.



## Exiting the Administration Center

When you exit the FuegoBPM Enterprise Administration Center, a dialog is displayed asking for confirmation in the case that the WAS is still running. You can disable this dialog to be displayed by checking the box in the dialog. If you want to restore it, go to Configuration/Web Application Server, and uncheck the corresponding check box in the *Preferences* area of the window.



## In background mode

If you don't want to run the FuegoBPM Administration Center to start the Fuego Web Application Server, you can start it in a batch mode.

In the directory: **\$FUEGO/enterprise/bin/** you will find (or **\$FUEGO/j2ee/bin/** :

- **\$FUEGO/enterprise/bin/startwebconsole**, to start the Fuego WAS,
- **\$FUEGO/enterprise/bin/stopwebconsole**, to stop the Fuego WAS.

Both **.sh** in any UNIX environment and **.bat** in Windows.

To run these commands you must fulfill the following Environment Variable pre-requisites:



- CATALINA\_HOME: May point at your Catalina "build" directory.
- JAVA\_HOME: Must point at your Java Development Kit installation.

## **FuegoBPM Enterprise: *About information***

Click on the **About** button at the right top corner of the FuegoBPM Enterprise Administration Center main window to:

- Display information about:
  - FuegoBPM Version, Service Pack, License information and Copyrights
  - Virtual Machine Properties
- Add a new license key





### To add a license key

1. Click the **Enter License Key** button and browse the location of the key file in the file system. Click **Open**.
2. The license is installed, and a dialog box appears telling you that the license was correctly installed.

## Launching Applications from the Administration Center

The Administration Center allows you to manually launch other FuegoBPM applications. The main window of the Administration Center shows the following options:



► **Start Web Application Server**

■  **Stop Web Application Server**

---

■ **Launch FuegoBPM™ Web Console**

■ **Launch FuegoBPM™ Work Portal**

■ **Launch FuegoBPM™ Portal Console**

■ **Launch FuegoBPM™ Archive Viewer**


---

- **Start Web Application Server** - Use this option to start the embedded Web Application Server (WAS). If you have manually started the Web Application Server, you can leave the Administration Center (**Exit** option), as it keeps on running. See Working with the Administration Center if you want to start/stop the Fuego WAS in background mode.
- **Stop Web Application Server** - Use this option to stop the Web Application Server. Have in mind, that after you have stopped it, the Web Console and other web FuegoBPM applications deployed in the embedded WAS will not be available until you restart it.
- **Launch FuegoBPM Web Console** - Click to launch FuegoBPM Web Console in your default browser.
- **Launch FuegoBPM Work Portal** - Click to launch FuegoBPM Work Portal in your default browser.
- **Launch FuegoBPM Portal Console** - Click to launch FuegoBPM Portal Console (also known as FuegoBPM Portal Admin) in your default browser.



- **Launch FuegoBPM Archive Viewer** - Click to launch FuegoBPM Archive Viewer in your default browser.

### Note

 If any of the **Launch** options are disabled, check the corresponding check box in the **Admin Center Configuration, Web Application Server** tab. The option is enabled based on the property of starting FuegoBPM Web Console / Work Portal /Portal Admin/ Archiving Viewer on Web Application startup

## Configuring FuegoBPM Enterprise

Launch the **Administration Center**.

Click the option **Configuration** in the main window of the FuegoBPM Enterprise Administration Center and start configuring your FuegoBPM Enterprise.



► **Start Web Application Server**

■ Stop Web Application Server

---


■ Launch FuegoBPM™ Web Console

■ Launch FuegoBPM™ Work Portal

■ Launch FuegoBPM™ Portal Console

■ Launch FuegoBPM™ Archive Viewer

---

 **Configuration**


✕ Exit

When you select this option, the **Configuration** window displays. It is organized with tabs to administer and configure properties for:

- Directory
- Web Server Application
- FuegoBPM Web Console
- FuegoBPM Work Portal
- FuegoBPM Portal Console
- Service Pack Updates

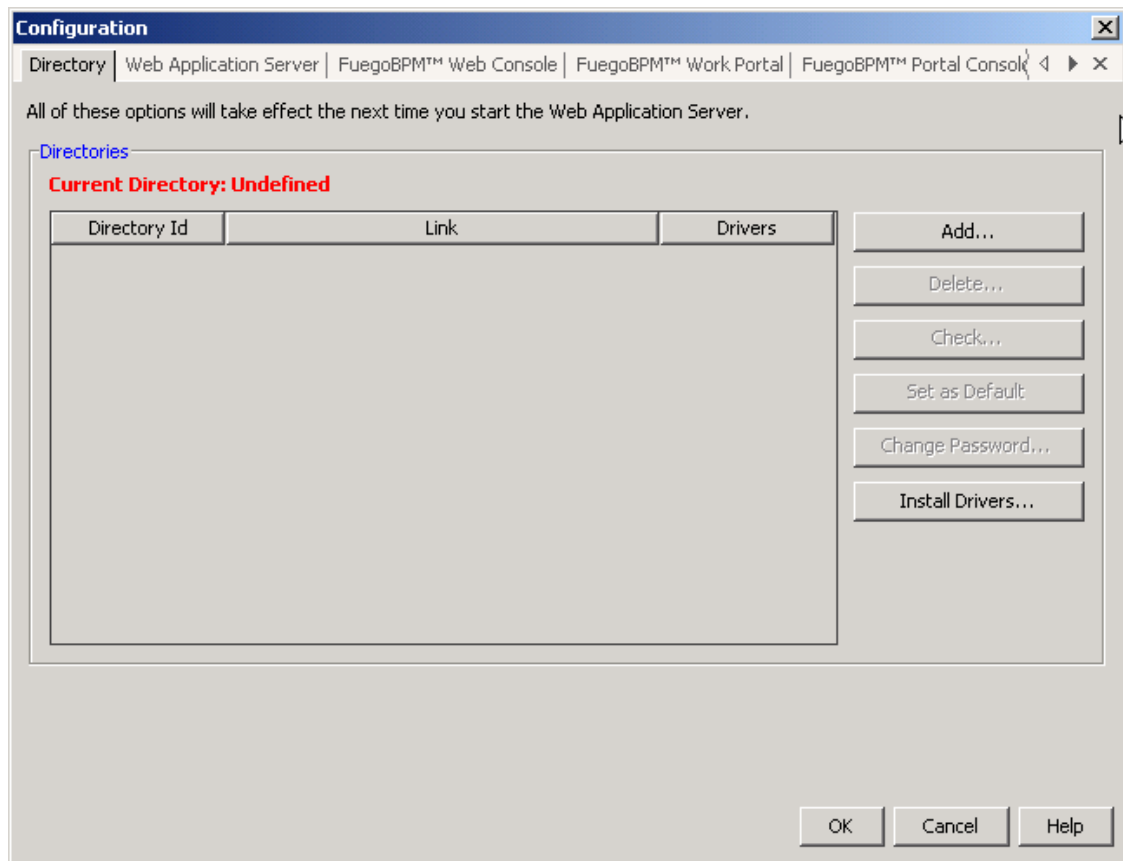
## Note




 You can also configure the FuegoBPM Enterprise without using the FuegoBPM Administration Center. To perform this configuration and Directory management you can use some Ant tasks. Refer to the System Administration Guide for detailed steps.

## Defining the Directory Services

Defining the directory service is the first step in your FuegoBPM Enterprise implementation. To define a directory service, you must first install the corresponding drivers and then add the required directory.



### Note

 You must restart the Web Application Server for your changes to take place.

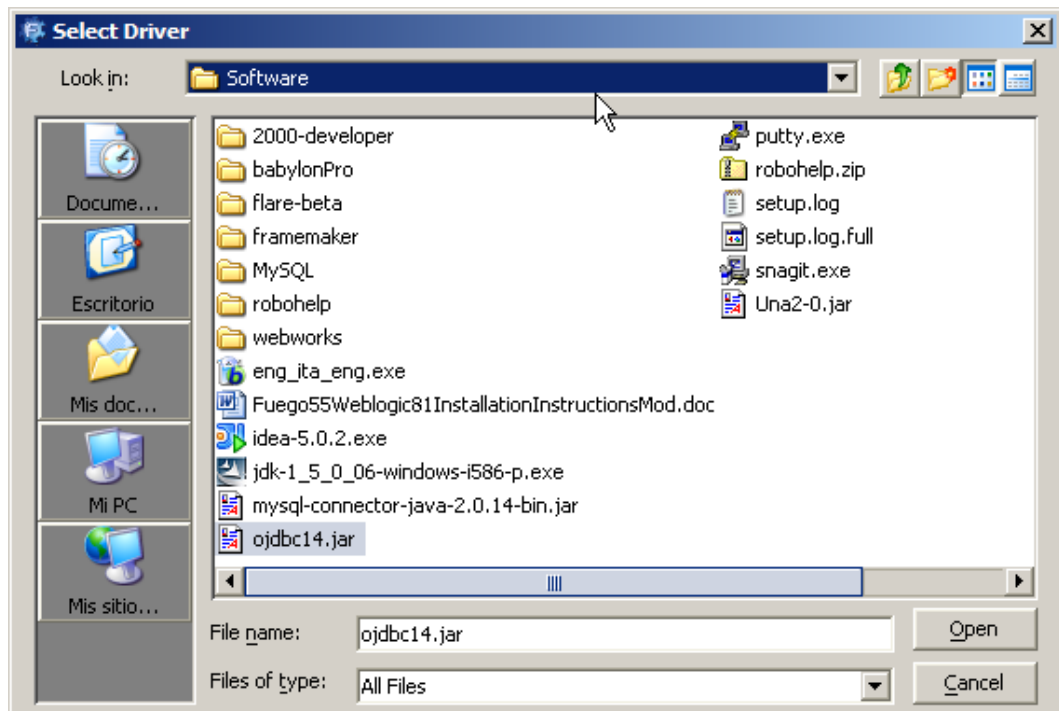
## Installing the drivers



If you are using a RDBMS for the Directory Service you must install the correct driver BEFORE creating the Directory Service and logging into the RDBMS.


### To install a driver

1. Select the button **Install Drivers....**
2. Browse to locate the jar file and click Open.



3. Click Ok to end installing the driver.

### Note

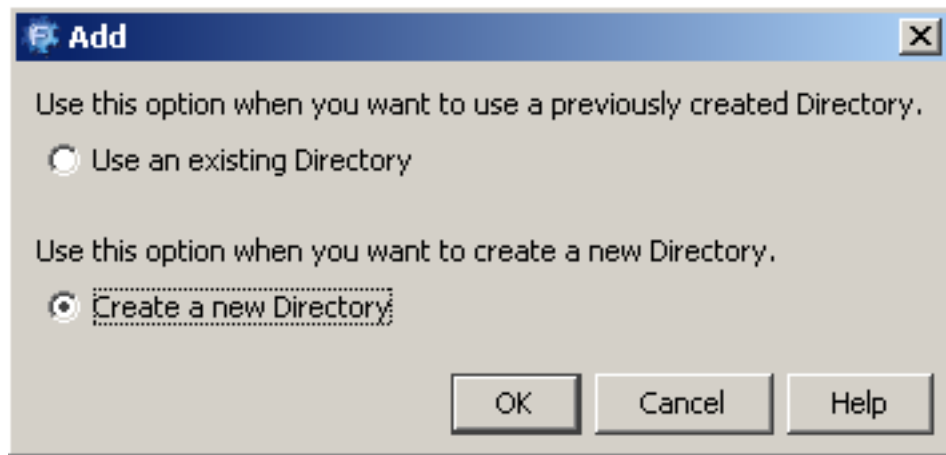
 the driver to install is Oracle 10g JDBC driver that connects to the Oracle 9i RDBMS.

## Adding a Directory Service

To add a new directory service,



1. Go to the **Directory** tab and click the **Add** button. The *Add* dialog box appears.
2. The following dialog will be presented to decide whether a new Directory Service should be created or not. Select one of the options. Click Ok.



3. A wizard opens to guide you through the creation of the directory.

## Directory Service Providers

Available providers are:

1. LDAP Directory Services (accessible through JNDI):
  - a. Microsoft Active Directory 2000
  - b. Sun ONE Java System Directory Server 5.2 (former Netscape iPlanet Directory Service)
2. RDBMS Directory Services (accessible through JDBC):
  - a. Oracle 9i and 10g: Oracle JDBC Drivers version 10.2.x.x



- b. Microsoft SQL Server 2000 and 2005: INet Merlia JDBC Drivers - 6.05 y 6.06 (recommended) and Microsoft SQL Server 2005: Microsoft JDBC Driver for Sql Server 2005
- c. IBM DB2 8.1: IBM DB2 JDBC Drivers Types 2, 3 and 4
- d. Sybase ASE 12.5: Sybase JDBC Drivers - jConnect 5.5
- e. Informix 9.4: IBM Informix JDBC Driver for IBM Informix Dynamic Server 2.21.x

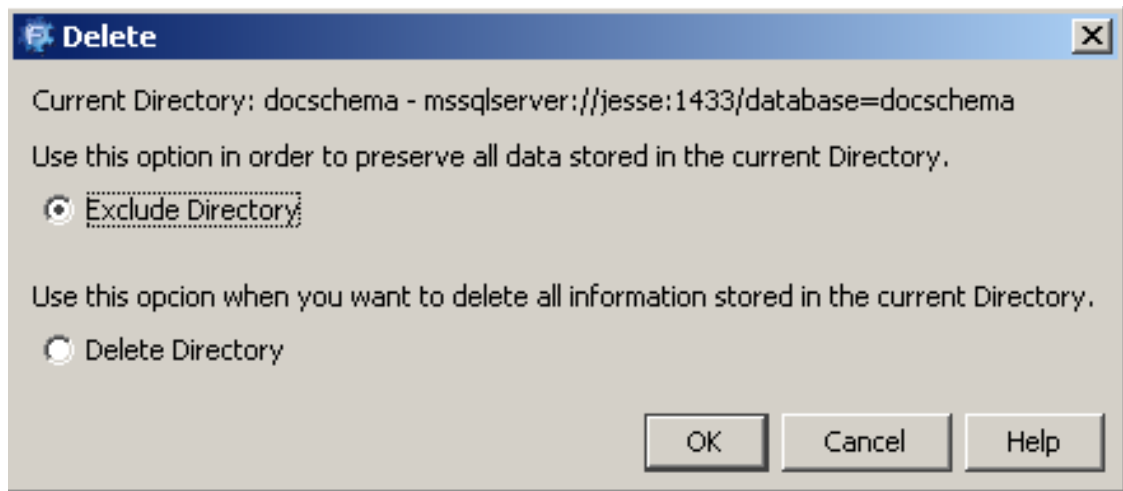
## Deleting a Directory Service

### To delete a directory service


Click the **Delete** button. The *Delete* dialog box appears. Select one of the following options, asking for the delete option.

- **Exclude Directory** - If you select this option, the directory will not be included in the list of directories any longer but the data will be retained. Use this option if you want to preserve the data stored in the directory.
- **Delete Directory** - This option deletes the directory data.





### Note

 The delete option works only on the directory set as the *default* directory. To delete a different directory than the default, set it as default first and then proceed to delete.

## Checking a Directory Service

By clicking the **Check** button, FuegoBPM verifies that the directory has been correctly generated and that no problems have occurred.

## Setting a Directory Service as Default

When you create the first directory in the Administration Center, it is set as default.

**To change the default directory if you have more than one directory created**

1. Select the directory in the directories list.
2. Click the **Set as default** button. The directory is set as default. The new default directory is shown in the top of the dialog box as the *Current Directory*.



## Changing the Password

Once that the FDI schema has been created, you may need to change the administrator user password. To do so,

1. Click the **Change Password** button. The **Password** dialog opens.



2. Type the user name and password to login to the fdi, and then the FuegoBPM user administrator and its new password. Click **OK** to confirm the change. This new password will be asked to you when for example, you are logging in to the FuegoBPM Web Console.

## FuegoBPM FDI Implementation using IPlanet

The FuegoBPM Enterprise Administration Center provides access to the IPlanet directory service using a JNDI interface provided by Sun in the J2SE.



## To configure FDI using IPlanet

1. Click the Configuration link on the FuegoBPM Enterprise Administration Center main window. The Configuration dialog box appears.
2. Click the Directory tab.
3. Click the **Add** button and select *to create a new directory* **or** *use an existing one* and click **OK**.
4. The wizard to create a directory is opened. Give a name to the directory you are about to create. This name is that which will later be used within the FuegoBPM system to identify this directory service configuration.
5. Select the **Provider**. In this case, choose the option *iplanet*. Complete the fields in the tabs displayed in the dialog as explained below.

## Basic Configuration

1. **LDAP host:** The name of the host where the directory service (LDAP) is installed.
2. **LDAP port:** The port number of the host where the directory service (LDAP) is installed.
3. **LDAP base DN:** The topmost entry of the directory service (LDAP). For example, o=fuego, c=us.
4. **Organization logical name :** Name of the organization.
5. **Root DN :** DN of the root user, for example cn=root Root
6. **Root password :** Password of the root user.



**FUEGO**  
DIRECTORY SERVICE

Directory Id: testfdisch

Provider: iplanet

Basic | Advanced

LDAP Host: localhost

LDAP Port: 389

LDAP Base DN: o=fuego,c=us

Organization logical name: fuego

Root DN: cn=root

Root password: \*\*\*\*\*

Start Cancel

## Advanced Configuration

1. **Administrator ID** - Identification name of the administrator user. This must be the ID assigned to the participant in the FuegoBPM system.
2. **Administrator real DN** - (Optional) In case you want to authenticate to iPlanet using a different user, for example "cn=fuegoroot". This should be an existing iPlanet user with permissions of user creation, modification and deletion, apart from being able to write in the *fuegoDirectoryRoot*. Whilst you will be required to connect using the logical name entered in 1. (Administrator id) FuegoBPM will use the Administrator real DN to authenticate to iPlanet.



3. **Fuego directory base DN** - Fuego directory base DN - Base distinguished name (DN) under which the FuegoBPM directory structure will be generated.
4. **Keep participants under own OU and Participant entries base DN** - Specify whether participant entries are going to be kept under each participant's OU or all participants are going to be kept under one single entry. Both values are optional.
5. **Participant entries base DN** - Base distinguished name (DN) under which the participants can be found. This is useful when the organization has participants present and wants to use them in the FuegoBPM system.
6. **Group entries base DN** - Specify the base DN for the group's location.
7. **Do not update users** - The following participant's data will be disabled if this property is true: first name, last name, telephone, fax and email.



The screenshot shows a window titled 'FUEGO DIRECTORY SERVICE'. On the left is a vertical banner with the Fuego logo and the text 'DIRECTORY SERVICE'. The main area has two tabs: 'Basic' (selected) and 'Advanced'. Under the 'Basic' tab, there are several fields: 'Directory Id' with the value 'testfdisch', 'Provider' with a dropdown menu showing 'iplanet', 'Administrator id' with the value 'root', 'Administrator real dn' (empty), 'Fuego directory base DN' (empty), 'Keep participants under own OU' (checkbox, unchecked), 'Participant entries base DN' (empty), 'Group entries base DN' (empty), and 'Do not update users' (checkbox, unchecked). At the bottom right are 'Start' and 'Cancel' buttons.

## FuegoBPM FDI Implementation using Oracle

FuegoBPM Enterprise Administration Center provides access to an Oracle database so that it can be used as a directory service. The database is accessed via a JDBC interface.

### To configure the Oracle database

1. Click the Configuration link on the FuegoBPM Enterprise Administration Center main window. The Configuration dialog box appears.
2. Click the Directory tab.
3. Click the **Add** button and select to *create a new directory or use an existing one* and click **OK**.



4. The wizard to create a directory is opened. Give a name to the directory you are about to create in the **Directory Id** field. This name is the name that later will be used within the FuegoBPM system to identify this directory service configuration.
5. Select the **Provider**. In this case, choose the option *oracle*. Complete the fields in the tabs displayed in the dialog as explained below.

## Basic Configuration

1. **Show the SQL sentences** - It should be checked if the Administrator wants to get the SQL Script executed to create the Directory Service Database structure. Refer to section Getting the schema SQL creation script in the System Administrator Guide to learn how to use this feature.
2. **Database host** - The host of the database server where the FuegoBPM FDI will be deployed.
3. **Database port** - The port for the Oracle server where the FDI will be deployed. Oracle JDBC driver connects with Oracle 9i using TCP/IP's protocol.
4. **Organization logical name** - The logical name of the organization to which the FDI will belong.
5. **Administrator User** - Oracle's Administrator user ID. This is a user with enough permission to create a Schema, a Login and tables on the created Directory Service Database.
6. **Administrator Password** - Administrator password.
7. **Schema name** - The name of the owner of the schema to create in the Oracle instance that will contain the FDI tables. This name is used to create the Oracle User that will contain the



FDI tables. This Oracle Schema or User will be created when executing the SQL Script provided when the Wizard is started.

8. **Schema password** – The password of the owner of the schema to create. The password for the Schema Name specified in the previous field.
9. **Confirm password** - Retype the password for confirmation. It is just for consistency when providing passwords as its value is not visualized to the Administrator entering the password.
10. **SID** – Schema ID.
11. **Specify JDBC url** - Check this box if you want to specify a URL different than the default one (connecting to a single Oracle Instance). Mainly if you are working with an Oracle clustering environment rack.
12. **JDBC url:** Define the custom Oracle JDBC URL when working with clustering.



Directory ID: DocDir

Provider: Oracle JDBC

Basic | Advanced

Show SQL Statements: ☐

Database Host: sputnik

Database Port: 1521

Organization Logical Name: company

Administrator User: system

Administrator Password: \*\*\*\*\*

Schema Name: docdir

Schema Password: \*\*\*\*\*

Confirm Password: \*\*\*\*\*

SID: sputnik

Specify JDBC URL: ☐

JDBC URL:

Start Cancel

## Advanced Configuration

1. **Administrator ID** - The Administrator ID *root* is the Oracle user through which FuegoBPM will access the Oracle database, the



Fuego Directory Service Administrator's ID. All FuegoBPM participants will access the Oracle database using the *root* user. If FuegoBPM handles the authentication, Root will be the first participant created in FuegoBPM (as defined above).

2. **Administrator password** - Administrator *root* password.
3. **Confirm password** - Retype the password for confirmation.
4. **Fuego Handles authentication** - If each participant with FuegoBPM will not be an Oracle user, then select *Fuego handles authentication*. This is the preferred authentication mechanism since all Fuego Business Process participants will be persisted in the Directory Service Database. If this checkbox is not selected, the authentication will rely on Oracle's database authentication. For more information refer to the Oracle FDI instructions.
5. **Table space** - The Fuego Administrator can decide in which tablespace the tables for the FDI tables will reside..
6. **Temporary tablespace** - The Fuego Administrator can decide in which tablespace the temporary structures related to the FDI Users should reside..
7. **Profile** - The Fuego Administrator can associate an Oracle profile to the FDI User being created..



The screenshot shows a configuration window for the FuegoBPM Enterprise Administration Center. The window has a title bar and a main content area. At the top, there is a section for 'Directory ID' with a text box containing 'DocDir'. Below this is a section for 'Provider' with a dropdown menu showing 'Oracle JDBC'. Underneath the provider section are two tabs: 'Basic' and 'Advanced'. The 'Basic' tab is selected, showing several fields: 'Administrator ID' with the value 'root', 'Administrator Password' with the value '\*\*\*\*', 'Fuego handles authentication' with a checked checkbox, 'Tablespace' with an empty text box, 'Temporary Tablespace' with an empty text box, and 'Profile' with an empty text box. At the bottom right of the window are two buttons: 'Start' and 'Cancel'.

Directory ID	DocDir
Provider	Oracle JDBC
Basic   Advanced	
Administrator ID	root
Administrator Password	****
Fuego handles authentication	<input checked="" type="checkbox"/>
Tablespace	
Temporary Tablespace	
Profile	
Start Cancel	

After successfully creating the Database, Oracle's Administrator should grant permissions to the FuegoBPM Directory Service Oracle User to access the tables:

- DBA\_2PC\_PENDING
- DBA\_2PC\_NEIGHBORS
- DBA\_PENDING\_TRANSACTIONS



This is needed in case transactions need to be rolled back when involving information persisted in the FuegoBPM Directory Service. Log in as "sys as sysdba". The following statement can be executed with Oracle's SQL Plus:

```
GRANT SELECT ON DBA_PENDING_TRANSACTIONS TO SCHEMA_NAME;
```

where SCHEMA\_NAME is the Oracle schema name given when the Directory Service schema was created (e.g. *docdir* is the Schema Name).

## FuegoBPM FDI Implementation using MsSQL

FuegoBPM Enterprise Administration Center provides access to a MsSQL database so that it can be used as a directory service. The database is accessed via a JDBC interface.

### Note



**Remember!** You must first install the correct driver so that FuegoBPM can access the database.

### To add a directory to a MsSQL database

1. Click the Configuration link on the FuegoBPM Enterprise Administration Center main window. The Configuration dialog box appears.
2. Click the Directory tab.
3. Click the **Add** button and select *to create a new directory* or *use an existing one* and click **OK**.
4. The wizard to create a directory is opened. Give a name to the directory you are about to create. This name is that which will later be used within the FuegoBPM system to identify this directory service configuration.



5. Select the **Provider**. Choose the option *mssqlserver*. Complete the fields as explained below.

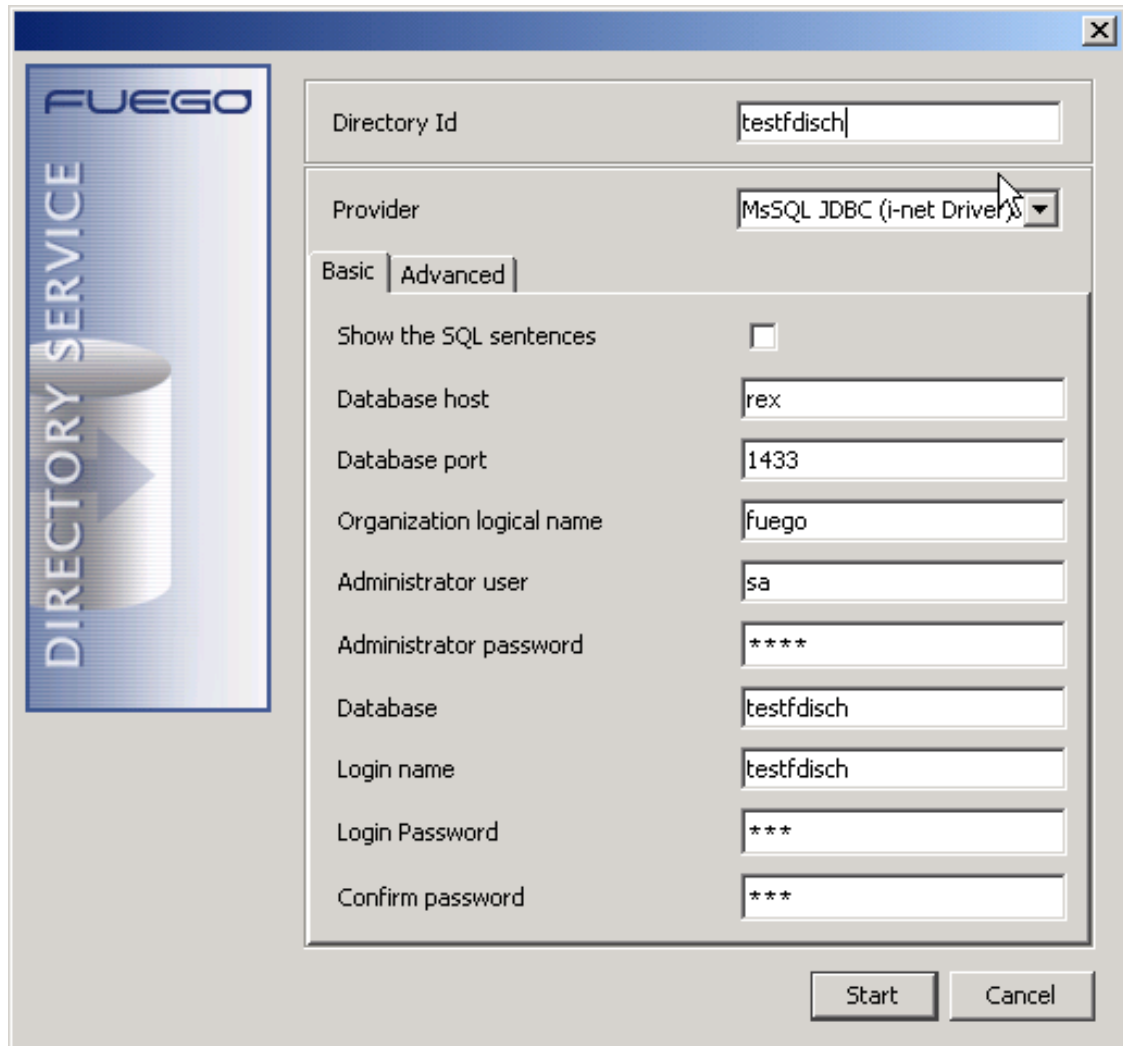
## Basic Configuration

1. **Show the SQL sentences:** Please refer to section Getting the schema SQL creation script to learn how to use this feature.
2. **Database host:** The host of the database server where the FuegoBPM FDI will be deployed.
3. **Database port:** The port for the MsSQL server where the FDI will be deployed.
4. **Organization logical name:** The logical name of the organization to which the FDI will belong to.
5. **Administrator User:** Administrator user ID. The *Administrator User* is used to create both, the *Database* and the *Login name* (if it doesn't exist). The user can be anyone with access to MSSQL Server, however he/she must have the following permissions:
  - a. Security Administrators
  - b. Database Creators
6. **Administrator Password:** Administrator password.
7. **Database:** Enter the name of the database that will contain the directory service you are creating. This database is created automatically by the wizard using the *Administrator User*.
8. **Login name:** User name of the MsSQL server that will be used when FuegoBPM needs to connect to the directory server. If the user does not exist it is created by the wizard using the



*Administrator User.*

9. **Login password:** The password of the user used to log in to the database.
10. **Confirm password:** Retype the password for confirmation.



The screenshot shows a Windows-style dialog box titled "FUEGO DIRECTORY SERVICE". On the left is a vertical banner with the Fuego logo and the text "FUEGO DIRECTORY SERVICE". The main area contains configuration fields:

- Directory Id: testfdisch
- Provider: MsSQL JDBC (i-net Driver) (dropdown menu)
- Tabs: Basic (selected), Advanced
- Show the SQL sentences: ☐
- Database host: rex
- Database port: 1433
- Organization logical name: fuego
- Administrator user: sa
- Administrator password: \*\*\*\*
- Database: testfdisch
- Login name: testfdisch
- Login Password: \*\*\*
- Confirm password: \*\*\*

At the bottom right are "Start" and "Cancel" buttons.

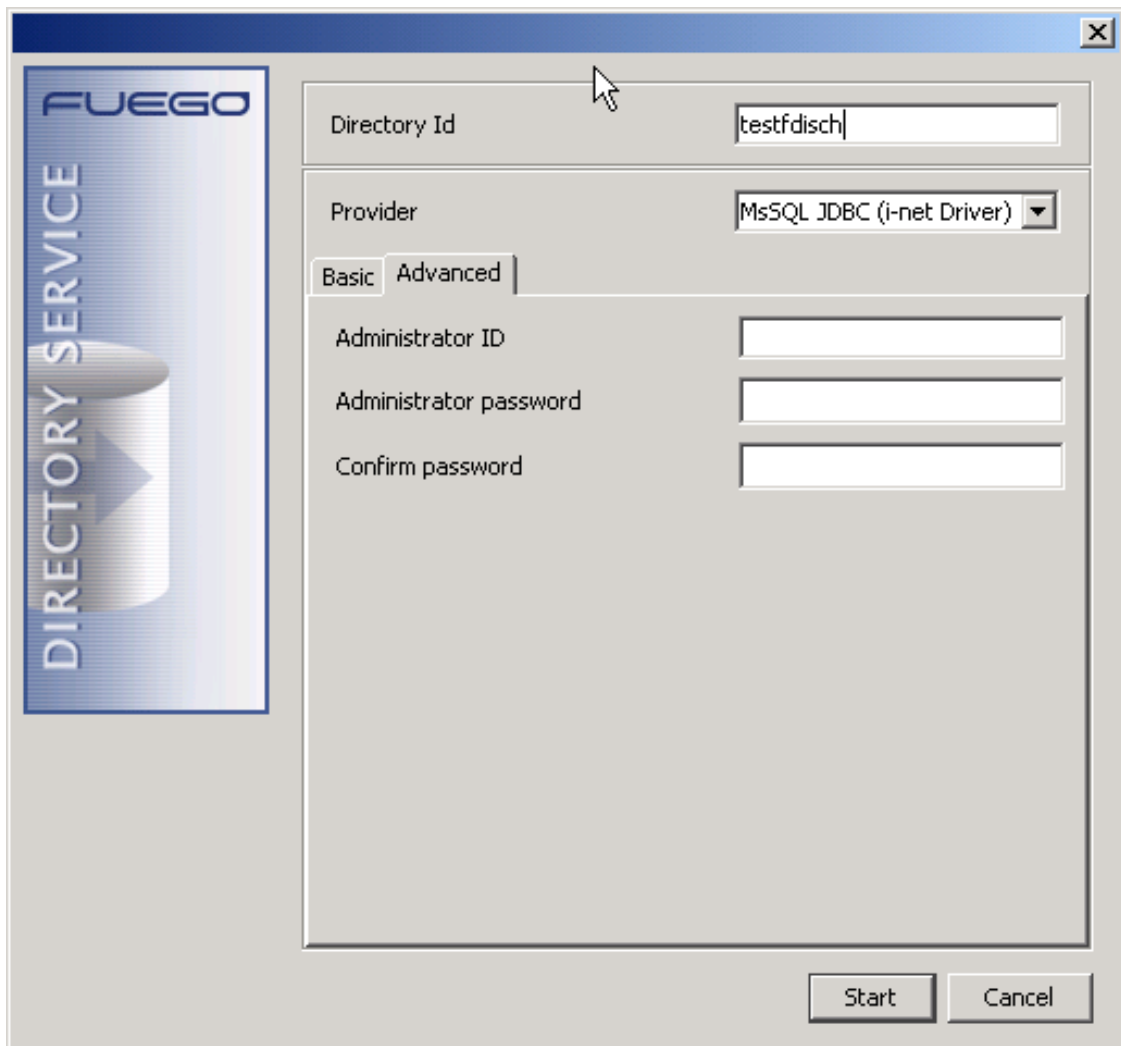
## Advanced Configuration

1. **Administrator ID:** Administrator ID for Fuego.



2. **Administrator password:** Fuego Administrator user password.
3. **Confirm password:** Retype the password for confirmation.

If the fields **Administrator ID / password** are empty, the Fuego's administrator id and password will be the ones specified in "Administrator user" and "Administrator password" in the Basic Configuration.



The screenshot shows a window titled "FUEGO DIRECTORY SERVICE". On the left is a vertical banner with the Fuego logo and the text "DIRECTORY SERVICE". The main area contains configuration fields: "Directory Id" with the value "testfdisch", "Provider" set to "MsSQL JDBC (i-net Driver)", and tabs for "Basic" and "Advanced". Under the "Basic" tab, there are three empty text boxes for "Administrator ID", "Administrator password", and "Confirm password". At the bottom right are "Start" and "Cancel" buttons.

## FuegoBPM FDI Implementation using IBM DB2

FuegoBPM Enterprise Administration Center provides access to IBM



DB2 databases to deploy the Organization information and process metadata in this RDBMS vendor. This integration is achieved using IBM DB2 JDBC Drivers Type 2 or 3.

### Note



**Remember!** You must first install the correct JDBC drivers so that FuegoBPM can access the database. The JDBC Drivers may be installed from the FuegoBPM Enterprise Administration Center Application.

### Configuring the DB2 database

1. Click on the Configuration link on FuegoBPM's Enterprise Administration Center main window. The Configuration dialog box will show up.
2. Click on the Directory tab.
3. Click on the **Add** button and select any of the 2 possible options: *create a new directory* or *use an existing one*. After the selecting on of these, click **OK** to proceed.
4. The wizard to create a directory will start. Provide a logical name to reference the Directory Service Database you are about to create. This name will later be used within the FuegoBPM System to reference the Directory Service Location and other configuration parameters.
5. Select the **Provider**. Choose the option *db2* or *db2type2*. Complete the fields as explained below.

### IBM DB2 (JDBC Driver Type 3 & 4)

#### Basic Configuration

1. **Show the SQL sentences** - Please refer to section Getting the



schema SQL creation script to learn how to use this feature.

2. **Database host** – The host of the database server where the FuegoBPM FDI will be deployed.
3. **Database port** – The port for the IBM DB2 JDBC Bridge server that will connect to the Database where the FDI Database will be deployed.
4. **Organization logical name** - The logical name of the organization to which the FDI will belong to.
5. **Administrator User** – Administrator user ID. This user in DB2 usually is "db2admin".
6. **Administrator Password** – Administrator password.
7. **Schema name** – The name of the schema to create within the selected database below.
8. **Database** - The database name where the schema will be created.



Directory Id: testfdisch

Provider: IBM DB2 JDBC (Type 4)

Basic | Advanced

Show the SQL sentences: ☐

Database host: localhost

Database port: 50000

Organization logical name: company

Administrator user: db2admin

Administrator password:

Schema name:

Schema password:

Database:

Start Cancel

The difference between type 3 and type 4 is the default database port shown, 6789 and 50000 respectively.

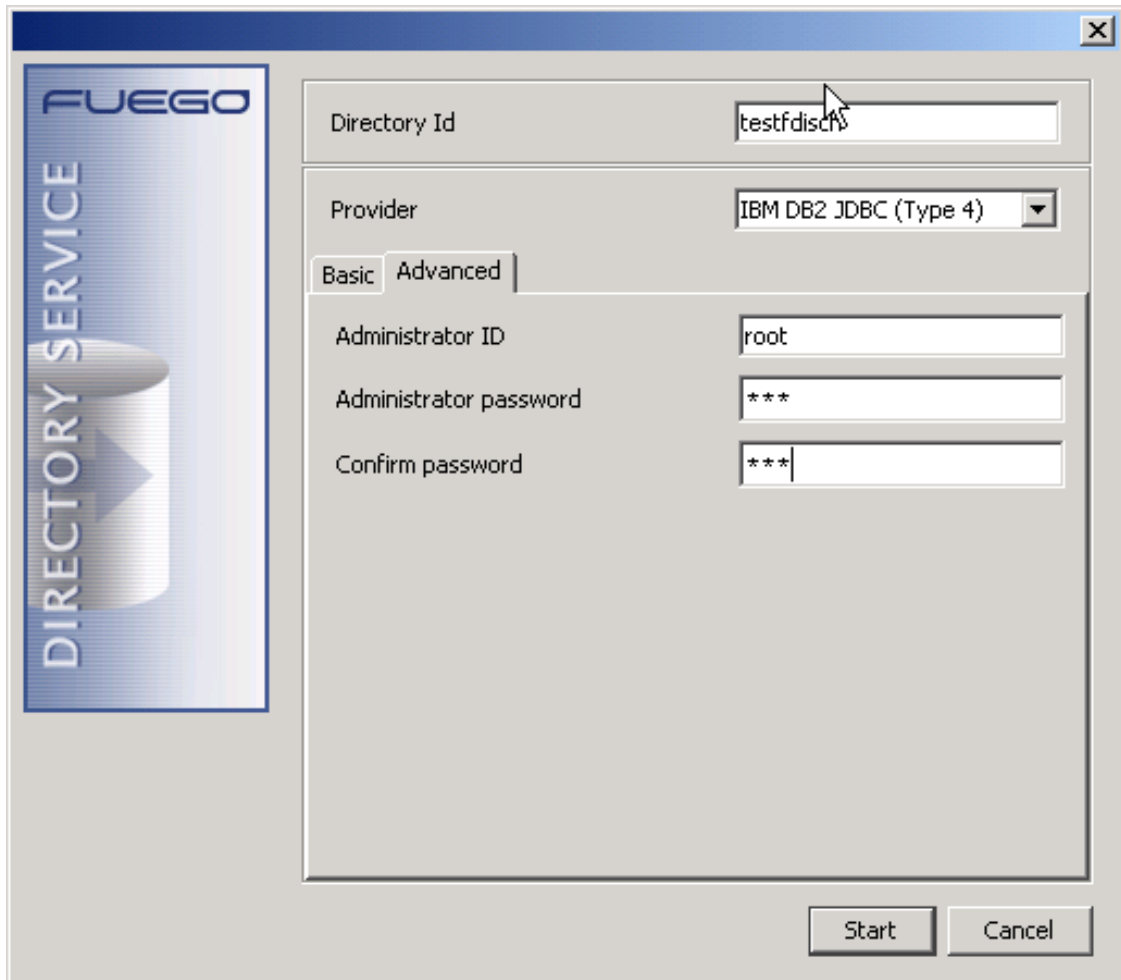
## Advanced Configuration

1. **Administrator ID** - The Administrator ID to access the FuegoBPM FDI IBM DB2 Schema. By default this Administrator ID is the one provided in the previous panel. If you want an Administrator User ID other than the IBM DB2 Database Administrator, you can change it here. FuegoBPM uses the convention of creating an Administrator user called "root". If FuegoBPM handles the authentication option is selected, the



"Administrator ID" entry will be the first participant created in FuegoBPM FDI Database.

2. **Administrator password** - Administrator's ID password.
3. **Confirm password** - Retype the password for confirmation.



The screenshot shows a Windows-style dialog box titled "FUEGO DIRECTORY SERVICE". On the left is a vertical banner with the Fuego logo and the text "DIRECTORY SERVICE". The main area contains configuration fields: "Directory Id" with the value "testfdisc", "Provider" with a dropdown menu showing "IBM DB2 JDBC (Type 4)", and a tabbed interface with "Basic" and "Advanced" tabs. Under the "Basic" tab, there are three input fields: "Administrator ID" with the value "root", "Administrator password" with three asterisks "\*\*\*", and "Confirm password" with three asterisks "\*\*\*". At the bottom right are "Start" and "Cancel" buttons.

### IBM DB2 (JDBC Driver Type 2)

The only difference with the option *db2* (db2 type 3), is that you do not have to configure **Database host** and **port**.

### Important Note



When using IBM DB2 Type 2 as your FDI source, the following error message may appear: *java.sql.SQLException: No suitable driver*. The reason for this is that technically the DB2 JDBC Type 2 driver needs to load native libraries (DLLs in Windows) and they cannot be loaded in more than one application classloader.

This error message may appear for example when both the FuegoBPM Web Console and FuegoBPM Work Portal Web Applications are booted together in the embedded Tomcat Web Server that comes with the FuegoBPM Enterprise distribution. Both web applications try to load the JDBC Driver in each other's classloader and the second one trying to load it, fails throwing the error message mentioned before.

To prevent this error from happening, do not include the *db2java.zip* into the Web Application's *WEB-INF/lib* directory, rather on the Tomcat's *share/lib* directory. By doing this, the class is loaded in the Tomcat's main classloader rather than on each one of the Web Application Classloaders.

If you are using IBM DB2's JDBC Type 2 Drivers, it is required that IBM DB2 Client package is installed in the same machines where FuegoBPM is deployed.

## FuegoBPM FDI Implementation using MAD

When using MS Active Directory as directory service, the LDAP is accessed via a JNDI interface provided by Sun in the J2SE. This section describes how to create the necessary directory structure and configure FuegoBPM to use it from within its applications.

### Creating the schema

It consists of the following steps:

- *Create the Directory*: the creation of the directory extends the schema as Fuego needs to add a number of attributes and object classes to the ones included in MS Active Directory before it can create the necessary directory entries. Once the schema includes



FuegoBPM's attributes and objectclasses the FuegoBPM directory entries can be created. This directory entries will contain all the data used by FuegoBPM. The creation of the directory extends the schema as Fuego needs to add a number of attributes and object classes to the ones included in MS Active Directory before it can create the necessary directory entries.

- *Grant Permissions:* finally, access permissions must be granted to certain entries in the MS Active Directory. This process can not be performed within FuegoBPM. To grant the necessary permissions the MSAD Administration Console must be used. FuegoBPM stores all the necessary information under the FuegoBPM Directory Root, a single entry named cn=fuego-directoryRoot. Every role, server, process, rule, property or process participant are kept under a separate entry below this FuegoBPM Directory Root. The only information that is accessed and modified outside the FuegoBPM Directory Root are the user's and OU's data.

## Wizard & Creation Options

The wizard presents a serie of steps which will have to be completed by the user selecting or entering the appropriate information. This information is used by the wizard to create and initialize the FuegoBPM Directory.

1. Give the name to the **Directory ID** and select *Microsoft Active Directory* from the **Provider** list.



The screenshot shows a configuration window for the FuegoBPM Directory Service. On the left is a sidebar with the 'FUEGO' logo and the text 'DIRECTORY SERVICE'. The main panel contains the following fields:

- Directory Id: MAD
- Provider: Microsoft Active Directory (dropdown)
- LDAP Host: carpintero.mad.fuegolabs.com
- Domain: mad.fuegolabs.com
- Organization logical name: Fuego
- Root DN: Administrator
- Root password: \*\*\*\*\*
- Fuego directory base DN: (empty)

At the bottom right are 'Start' and 'Cancel' buttons.

- a. *LDAP host* Name of the host where the LDAP is installed
- b. *Domain* MS Domain address where the Directory Service is installed
- c. *Organization logical name* Name of the organization
- d. *Root DN* DN of the root user (e.g. Administrator)
- e. *Root password* Password of the root user
- f. *Fuego directory base DN* [OPTIONAL] Base (DN) under which the FuegoBPM Directory Root will be created. This is useful when the organization has already an existing FuegoBPM Directory Root from a previous version. No two FuegoBPM Directory Roots can be under the same base DN.

## Directory ID

The wizard will request the user for a name, also known as the Directory ID, for the FuegoBPM Directory being created. This name



will be used to identify the directory connection properties (URL).

## Runtime Configuration

For FuegoBPM Server and FuegoBPM Work Portal properties configured in the `directory.properties` file, refer to `directory.properties` Configuration file.

## Permission Granting

Since MS Active Directory does not support permission assignment via the JNDI API, the administrator must perform some administrative tasks after the FuegoBPM schema is created from the MSAD Administration Console.

To access the console select the *Programs/Administrative Tools/ Active Directory Users and Computers* menu option. Once the console opens, verify that the options Users, Groups, and Computers as Containers and advanced Features are ON by selecting them from the View menu option.

Finally grant the following permissions:

1. Set **READ** permissions to *Everyone* on the root domain naming context.
2. Set **READ** permissions to *Everyone* on the path to the FuegoBPM Directory Root. This is to allow the anonymous connection to read that entry and search for the FuegoBPM directory root entry.
3. Set **READ** permissions to *Everyone* on the FuegoBPM Directory Root entry (`cn=fuego-directoryRoot`), for that object and all child objects. This is to allow the anonymous read of the FuegoBPM structure, since some applications might use anonymous connections to retrieve some data. For example the Web Work Portal servlet. Moreover, if the permission is not granted FuegoBPM applications will assume that the schema was not created.



4. Set **WRITE**, **CREATE** and **DELETE** to *Authenticated Users* to the Participant Properties root entry (cn=fuego-participantProperties), for that object and all child objects. This is needed because any authenticated user could modify the his properties.

### **Anonymous binding for Microsoft Active Directory 2003**

Microsoft Active Directory 2003 does not support anonymous binding. FDI uses anonymous binding when needs to connect to the ldap. This configuration has to be done adding which specific user the FDI has to use when it needs to anonymously connect to MAD.

1. After creating the FDI directory service, suppose its name is *develop*.
2. In the file located in the *conf* directory, *develop.dirprop*, set the authentication properties.
3. Set the *develop* directory as the default one, to make this authentication properties propagate to all the *directory.properties* files in the installation.

Properties are:

- `directory.default.anonymous-user`
- `directory.default.anonymous-password`

For Example:

```
directory.default.anonymous-user=Administrator@fuegolabs.com
The user needs to have the domain appended to the User Name.
```



```
directory.default.anonymous-password=password  
  
directory.default.anonymous-password=  
<encrypt>password_to_be_encrypted
```

For more information, please refer to `directory.properties` Configuration file.

## Features

The MS Active Directory Directory Service Provider does not support any of the features defined in the FuegoBPM Directory Interface guide.

- *Participants creation* MS Active Directory does not allow FuegoBPM to create users directly in the directory. Please use the MSAD Administration Console to create new user.
- *Participants removal* MS Active Directory does not allow FuegoBPM to delete users directly in the directory. Please use the MSAD Administration Console to delete an existing user.
- *Participants password modification* MS Active Directory does not allow FuegoBPM to change a user's password directly in the directory. Please use the MSAD Administration Console to change a user's password.
- *Changes notification* Since MS Active Directory does not notify changes occurred in the data stored in the directory, FuegoBPM implements a polling mechanism to check for changes occurred. In order to improve performance, the polling mechanism does not propagate participant's removal. This polling mechanism is transparent to the user.
- *Set permissions* MS Active Directory does not allow FuegoBPM to set access permissions to the different data stored in the directory. Please use the MSAD Administration Console to set access



permissions.

- *Change participant Organizational Unit* MS Active Directory does not allows FuegoBPM to change a user's organizational unit directly in the directory. Please use the MSAD Administration Console to change a user's organizational unit.
- *Create groups* MS Active Directory does not allows FuegoBPM to create user groups directly in the directory. Please use the MSAD Administration Console to create user groups.
- *Delete groups* MS Active Directory does not allows FuegoBPM to delete user groups directly in the directory. Please use the MSAD Administration Console to delete user groups.

## Troubleshooting

This section includes known pitfalls when using MS Active Directory as an FDI provider.

### **Enable Schema Modification (typically in Windows 2000 Servers - Not so common on Windows 2003 Server)**

In order to modify the schema, the MS Active Directory must be configured to allow schema modifications. This is performed by modifying the Windows registry of the machine where the MS Active Directory is installed.

The actual error reported in the log is:

```
javax.naming.OperationNotSupportedException:  
[LDAP:error code 53 - 0000213D: SvcErr: DSID-03020D38,  
problem 5003 (WILL_NOT_PERFORM), data 0
```

To solve the problem, edit the registry with the regedit command and



verify that the following entry exists and has the appropriate value.

**Hive:** HKEY\_LOCAL\_MACHINE

**Key:** System\CurrentControlSet\Services\NTDS\Parameters

**Name:** Schema Update Allowed

**Type:** REG\_DWORD

**Value:** 1

### Active Directory anonymous binding

When the MAD has not enabled the **anonymous-binding**, the error shown below will appear.

```
"Cannot connect to the directory in
[msad://sssss/aaaaa.bbbbb.com].

Detail:The Directory Service could not be reached.
Possibly the Directory Service is down, the server is unavailable,
a network problem exists or there are no Directory Service at
the specified location.

Caused by: [LDAP: error code 1 - 00000000:
LdapErr: DSID-0C090627, comment: In order to perform this
operation a successful bind must be completed on the connection.,
data 0, vece]"
```

To enable the **anonymous-binding**, the following two properties have to be added to the directory.properties:

```
directory.default.anonymous-user=Admin@aaaaaaa.bbbb.com
directory.default.anonymous-password=<encrypt>xxxxxxx
```

This properties have to be set with the user that Fuego uses to connect to the MAD in the case the connections are anonymous.



## Getting the schema SQL creation script

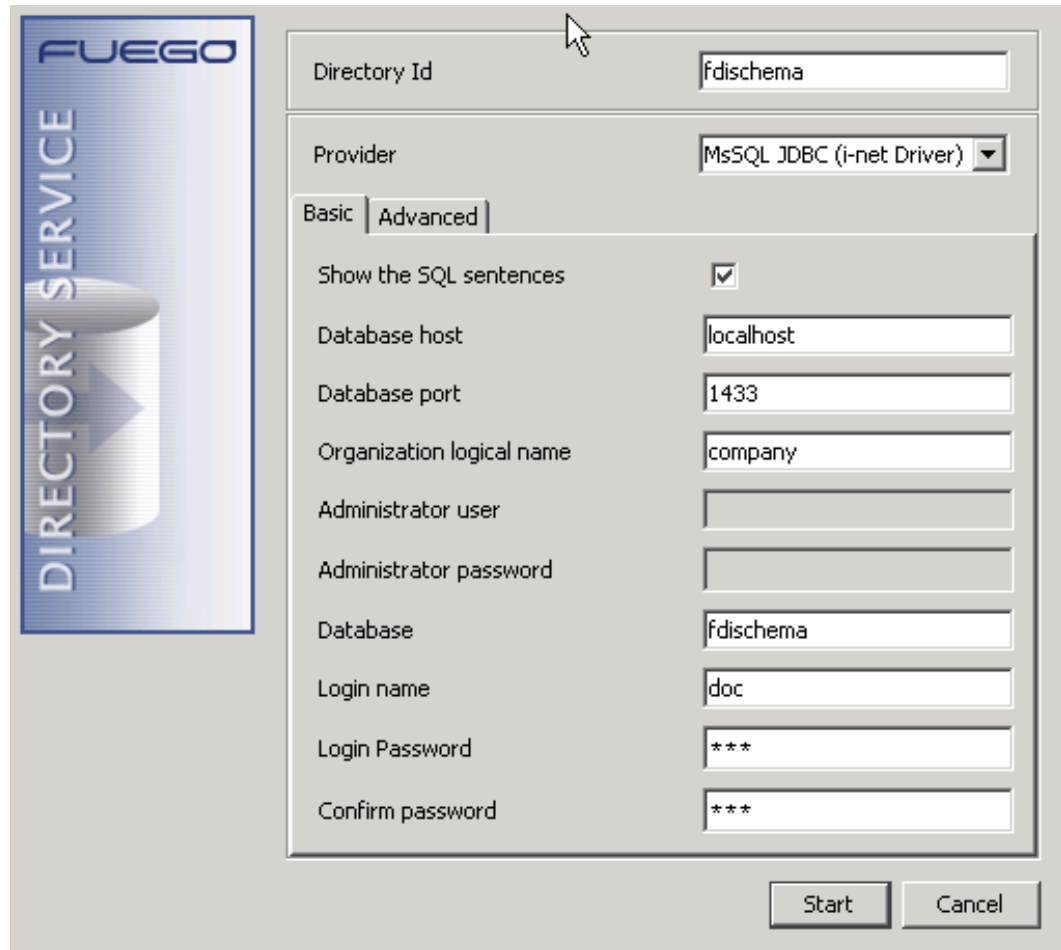
If it is required to generate the FDI schema on the database from outside the FuegoBPM Enterprise Administration Center, you can get the creation SQL script.

When the Wizard is started and if you selected to *Show the SQL sentences* when creating the Directory Service, a new panel containing the SQL Script to be executed by Oracle's Administrator is displayed.

### To get the SQL script

1. Follow the steps as if you were creating the FDI schema from the Administration Center.
2. After filling the fields according to the database, select the *Show SQL script* check box. The *Administrator User and password* are disabled. Click the **Start** button.





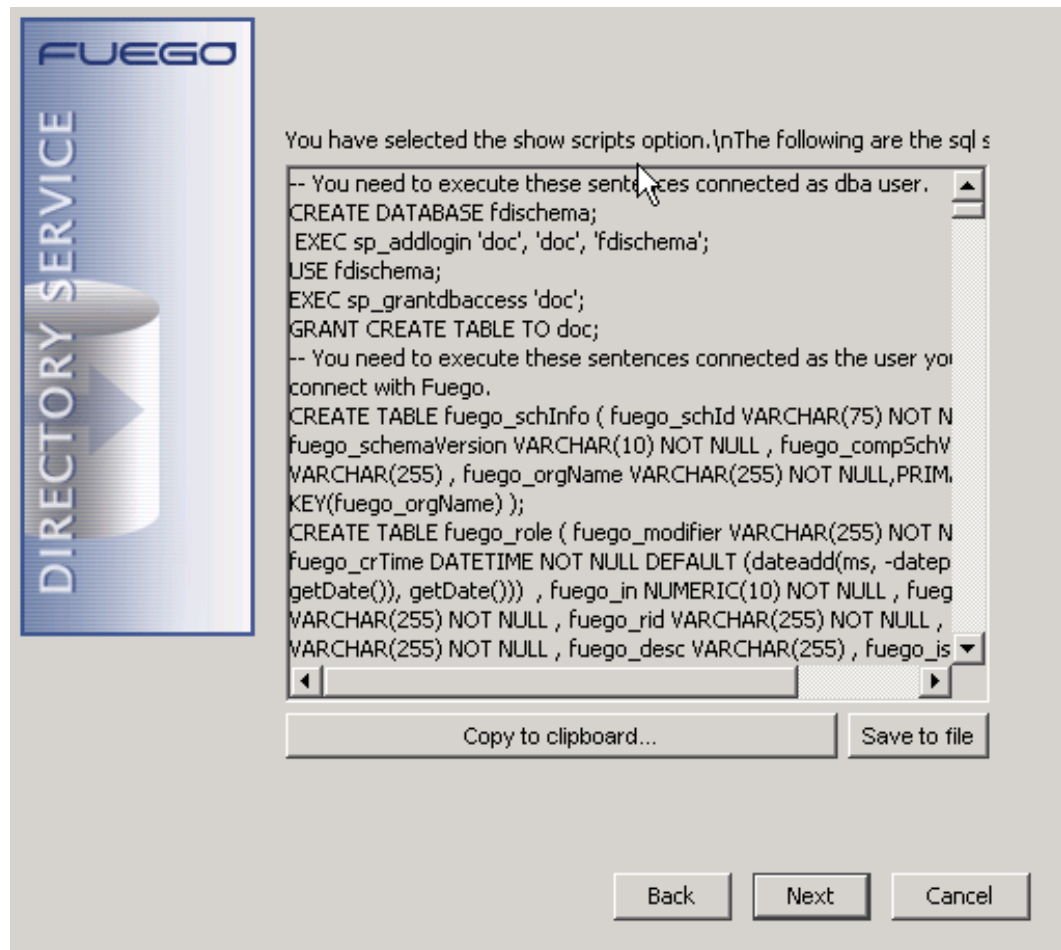
The image shows a configuration window for the Fuego Directory Service. On the left is a vertical banner with the Fuego logo and the text 'DIRECTORY SERVICE'. The main area contains a 'Basic' tab with various configuration fields. A mouse cursor is pointing at the 'Directory Id' field.

Field	Value
Directory Id	fdiscema
Provider	MsSQL JDBC (i-net Driver)
Show the SQL sentences	<input checked="" type="checkbox"/>
Database host	localhost
Database port	1433
Organization logical name	company
Administrator user	
Administrator password	
Database	fdiscema
Login name	doc
Login Password	***
Confirm password	***

Buttons: Start, Cancel

3. A screen with the sql scripts is displayed.





4. You can *copy to the clipboard* or *save to a file* the script. This script only creates the database schema. Give the scripts to the database administrator, so he creates it, before going on the next step. The script has to be executed by a user with database creation permission. At this moment, you should wait until the script is properly and successfully executed by the Database Administrator. After the script has been run, you can continue with the wizard creation to initialize the FuegoBPM Directory Service Databases.
5. After the database is created, click **Next** in this screen. The following screen explains that before going on with the initialization the schema has to be created. Click **Next** to proceed with the initialization.



## Configuring the Web Application Server

Some options and preferences for the Web Application Server can be configured through the FuegoBPM Enterprise Administration Center from the *Web Application Server* tab of the Administration Center.

### To configure the Web Application Server

1. Click the Configuration link on the FuegoBPM Enterprise Administration Center main window. The Configuration dialog box appears.
2. Click the Web Application Server tab.

#### Note



You must restart the Web Application Server for your changes to take place.

## Preferences

Preferences that can be set are:

- **JDK home directory** - The absolute path where the JDK is located. By default, the directory where the JDK is located when FuegoBPM Enterprise is installed (e.g. c:\fuego5.5\j2ee\jre).
- **Port** - This is the port used by the Web Console embedded Tomcat. The default port is set to 8585.
- **Shutdown port** - This is the port used internally to stop the Web Console embedded Tomcat. The default shutdown port is set to 8885.
- **Start FuegoBPM Web Console on Web Application Server startup** : this property enables the **Launch FuegoBPM Web Console** option in the Admin Center. In the case the Work Portal



is deployed in an application server this checkbox should remain unselected, as it will be deployed later with the Fuego Server deployment.

- **Start FuegoBPM Work Portal on Web Application Server startup:** this property enables the **Launch FuegoBPM Work Portal** option in the Admin Center. In the case the Work Portal is deployed in an application server this checkbox should remain unselected, as it will be deployed later with the Fuego Server deployment.
- **Start FuegoBPM Portal Console on Web Application Server startup:** click on this property to enable the **Launch FuegoBPM Portal Console** option in the Admin Center. In the case the Work Portal is deployed in an application server this checkbox should remain unselected, as it will be deployed later with the Fuego Server deployment.
- **Start FuegoBPM Archive Viewer on Web Application Server startup:** click on this property to enable the **Launch FuegoBPM Archive Viewer** option in the Admin Center. In the case the Work Portal is deployed in an application server this checkbox should remain unselected, as it will be deployed later with the Fuego Server deployment.

After changing any of the values, click **OK** to save them.

If you select **Cancel** a confirmation dialog is displayed asking if you still want to save the changes.

- **Show confirmation when exiting and the Web Application Server is running:** check or not this box according to your preferences, if you want to ask for the exit confirmation if the WAS is running.
- **Service Name:** This is the name of the Service to be granted to the Fuego Web Console Service. You to provide a name different



than the default one if you have to FuegoBPM installations in the same machine.

## Configuring FuegoBPM Web Console Preferences

General preferences and log preferences can be configured from the FuegoBPM Web Console tab of the Configuration dialog box.


### **To configure preferences for the FuegoBPM Web Console**

1. Click the Configuration link on the FuegoBPM Enterprise Administration Center main window. The Configuration dialog box appears.
2. Click the FuegoBPM Web Console tab.



The screenshot shows a 'Configuration' dialog box with a tabbed interface. The tabs are: 'Directory', 'Web Application Server', 'FuegoBPM™ Web Console' (selected), 'FuegoBPM™ Work Portal', and 'FuegoBPM™ Portal Console'. Below the tabs, a message states: 'All of these options will take effect the next time you start the Web Application Server.' The 'Preferences' section is active, showing a text box for 'Upload directory' with the value '/tmp' and a 'Browse...' button. Below this, the 'Log' section shows 'Preferences used by FuegoBPM™ Web Console.' with a 'Log directory' text box containing 'C:\fuego5.5\enterprise\log' and a 'Browse...' button. The 'Log message severity level' is set to 'Debug' with a dropdown arrow. At the bottom right are 'OK', 'Cancel', and 'Help' buttons.

## Note

 Any changes you make will not take place until you restart the Web Application Server.

## General Preferences

You must define a temporary upload directory for the Web Console from which to upload files while processing (for example, such as when publishing and deploying processes).

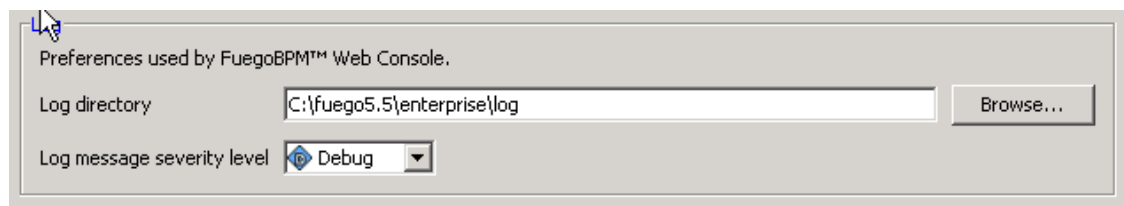
This screenshot shows a 'Preferences' dialog box. It contains a text box for 'Upload directory' with the value '/tmp' and a 'Browse...' button. At the bottom left is an 'Apply' button.



By default the temporary directory is set to */tmp*. If this directory does not exist in the file system, then it is displayed in red. If you try to start the Web Application Server without a temporary directory specified, the system detects a problem in the configuration and displays a warning message.

## Log Preferences

Configure log preferences for the Web Console in the Log area.



- **Log directory** - The directory where the Web Console is created. By default it is set to the *log* directory under the enterprise installation directory. The Web Console log file name is *webConsole.log*.
- **Log message severity level** - Select the severity level from the drop-down list. Only messages with this severity level or *worse* will be displayed. Severity levels are:
  - *Debug*
  - *Info*
  - *Warning*
  - *Severe*
  - *Fatal*

After changing any of the values, click **OK** to save them.



If you select **Cancel** a confirmation dialog is displayed asking if you still want to save the changes.

### Note



To display the Web Console log, go to the FuegoBPM Enterprise Administration Center main window and select flap **3: FuegoBPM Web Console**.

## Installing FuegoBPM Web Console

You can install the **Web Application Server** as a Service.

The Web Application Server starts a Tomcat embedded with **FuegoBPM Web Console** deployed on it. Installing it as a service enforces the Web Console to automatically start.

The Web Console, as well, is used in an Application Server environment to generate the EAR files to deploy on the Application Server.

### Install as a Service using a graphical platform

To install the Web Console as a service for Windows or Unix like systems (excluding Solaris):

1. Go to the **Web Application Server** tab, section *Install as Service*.
2. Change, if necessary the **Service Name**. This is the name by which the Web Console service is identified. By default it is *Fuego Web Console*. Customizing this name allows you to have two installations in the same machine.
3. Click the **Install as Service** button. This will install the Web Console as a service in your operating system. By doing this, you are no longer required to manually start the Web Console from the Administration Center.



To uninstall the Web Console as a service:

1. Click the **Uninstall as Service** button.

### Note



To install the Web Console as a service in **Solaris**, refer to the System Administrator Guide.

## Installing FuegoBPM Web Console with no graphical interface

### Installing FuegoBPM Web Console as a Service with no graphical interface

If you have a graphical interface, you can install the Web Console as a service using the Admin Center.

If you do not have a graphical interface to install nor uninstall the Web Application Server as a service you can do it manually.

### Windows platform

To **install** the Web Console as a service for **Windows**:

1. Go to the installation directory *\$FUEGO/enterprise/bin*.
2. Run the following script:

```
installwebconsole -name ProductionWebConsole
```



where *ProductionWebConsole* is the **Service name** for the Web Console service.

To **uninstall** the Web Console as a service for **Windows**:

1. Go to the installation directory *\$FUEGO/enterprise/bin*.
2. Run the following script:

```
uninstallwebconsole -name ProductionWebConsole
```

where *ProductionWebConsole* is the **Service name** for the Web Console service that is being uninstalled.

## Unix like system (except Solaris)

To **install** the Web Console as a service for a **Unix like system** execute the following commands:

```
cp $FUEGO_HOME/bin/fuegoautostartEnterprise /etc/init.d  
chkconfig --add fuegoautostartEnterprise
```

To **uninstall** the Web Console as a service for a **Unix like system** execute the following commands:

```
rm /etc/init.d/fuegoautostartEnterprise  
chkconfig --del fuegoautostartEnterprise
```

The *fuegoautostartEnterprise* script executes the shell script



`$FUEGO_HOME/bin/startwebconsole.sh` when receiving *start* as argument, or `$FUEGO_HOME/bin/stopwebconsole.sh` when receiving *stop* as argument.

## Solaris system

To **install** the Web Console as a service for **Solaris system** execute the following commands:

```
cp $FUEGO_HOME/bin/startwebconsole.sh /etc/init.d/startwebconsole
cp $FUEGO_HOME/bin/stopwebconsole.sh /etc/init.d/stopwebconsole
cd /etc/init.d
chmod 744 startwebconsole stopwebconsole
chown root:sys startwebconsole stopwebconsole
ln startwebconsole /etc/rc3.d/Sstartwebconsole
ln stopwebconsole /etc/rc3.d/Kstopwebconsole
```

To **uninstall** the Web Console as a service for **Solaris system** execute the following commands:

```
rm /etc/init.d/startwebconsole
rm /etc/init.d/stopwebconsole
rm /etc/rc3.d/Sstartwebconsole
rm /etc/rc3.d/Kstopwebconsole
```

## Starting FuegoBPM Web Console

To start Web Console, you can:



1. Start Web Console from the Admin Center. In this case the service is started automatically,
2. Start the installed Web Console service from the command line,
3. Start Web Console not as a service, or
4. Have it already started if it was installed as a service and during the system startup, the WebConsole service was correctly started.

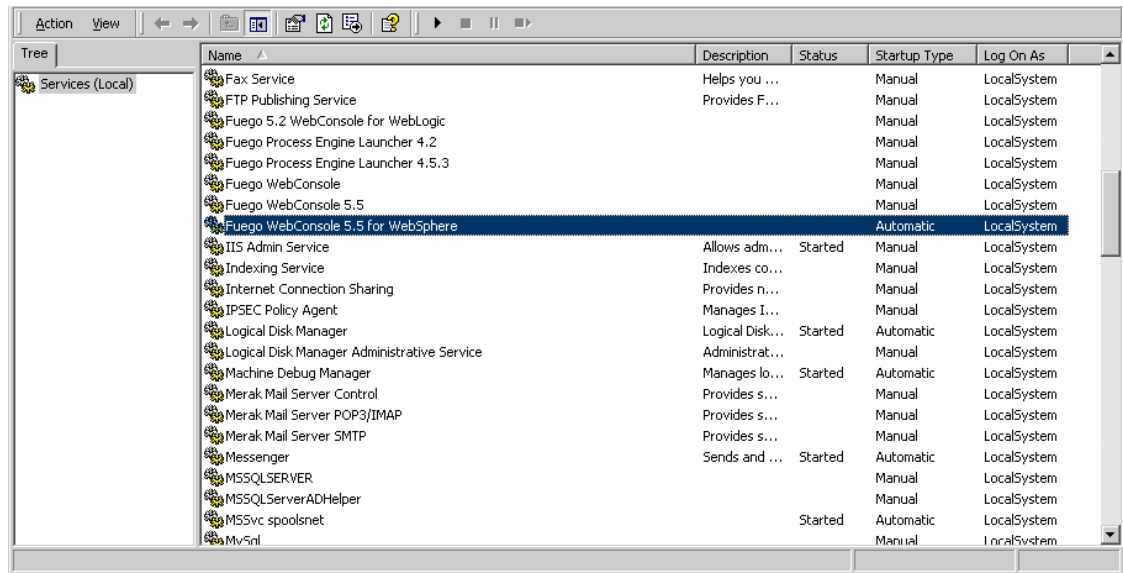
## Starting Web Console from the Admin Center

To start Web Console:

1. Click on the **Start Web Application Server** link in the main panel of the FuegoBPM Administration Center.
2. Once the Web Application Server is started, click on **Launch FuegoBPM Web Console**.

Check the Web Console Service was properly started by checking the system Services Panel depicted in the figure below.





## Starting the installed Web Console Service from the command line

To **start** the Web Console Service for **Unix like systems (except Solaris)** run the following:

```
. $FUEGO_HOME/bin/fuegoautostartEnterprise start
```

To **stop** the Web Console Service for **Unix like systems (except Solaris)** run the following:

```
. $FUEGO_HOME/bin/fuegoautostartEnterprise stop
```

If you have changed the *Service Name* when installing as a service the script name is `fuegoautostartEnterprise_serviceName`.

To **start** the Web Console Service for **Solaris** run the following:



```
startwebconsole
```

To **stop** the Web Console Service for **Unix like systems (except Solaris)** run the following:

```
stopwebconsole
```

## Starting the Web Console not as a service

To **start** Web Console for **Windows** run the following:

```
$FUEGO_HOME/bin/startwebconsole.bat
```

To **stop** Web Console for **Windows** run the following:

```
$FUEGO_HOME/bin/stopwebconsole.bat
```

To **start** Web Console for **Unix like systems (including Solaris)** run the following:

```
$FUEGO_HOME/bin/startwebconsole.sh
```

To **stop** Web Console for **Unix like systems (including Solaris)** run the following:



```
. $FUEGO_HOME/bin/stopwebconsole.sh
```

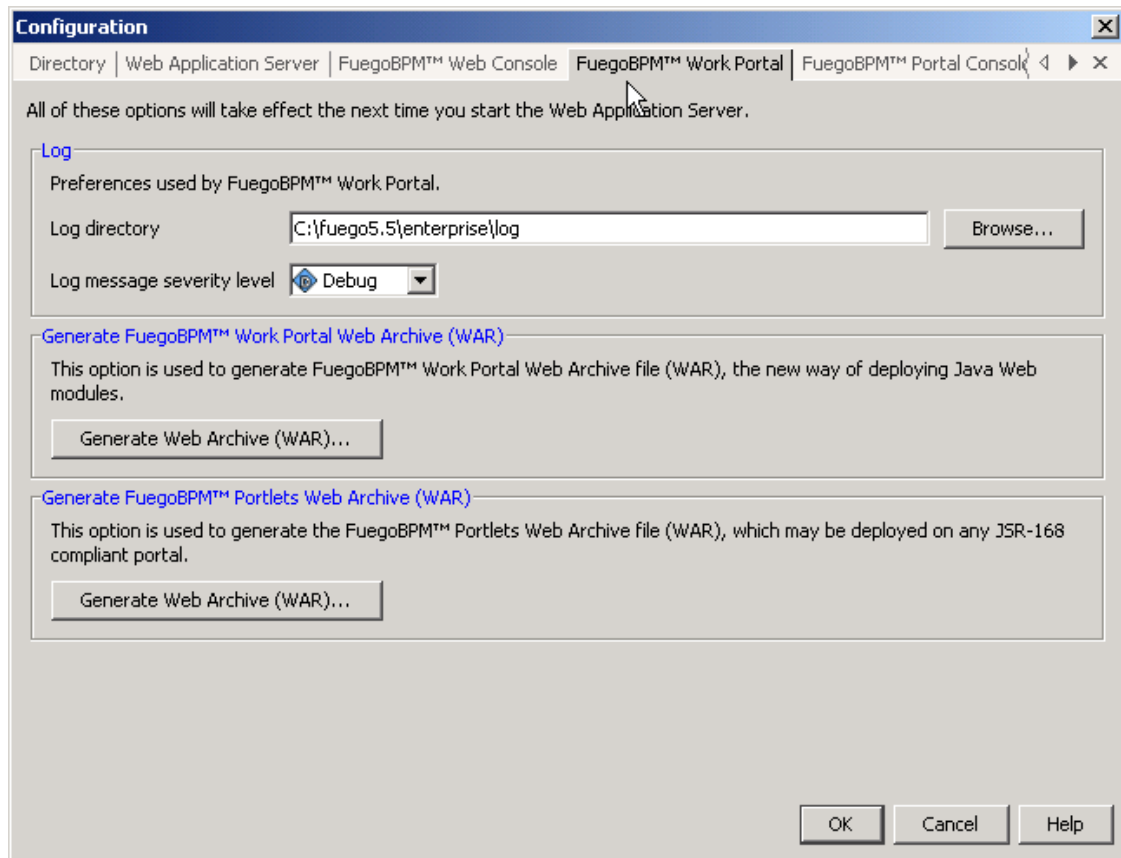
## Configuring FuegoBPM Work Portal Preferences

FuegoBPM Work Portal Preferences and the Work Portal WAR file can be configured from the FuegoBPM Work Portal tab of the Configuration dialog box.

### **To configure preferences and the WAR file for the FuegoBPM Work Portal**

1. Click the Configuration Link on the FuegoBPM Enterprise Administration Center main window. The Configuration dialog box appears.
2. Click the FuegoBPM Work Portal Tab.





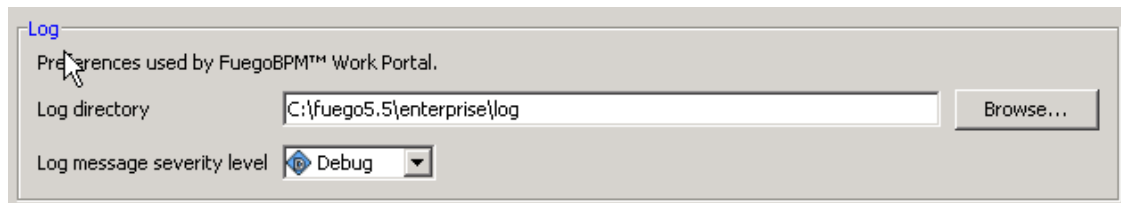
## Note



Any changes you make will not take place until you restart the Web Application Server.

## Preferences

You can configure Log preferences for the Work Portal in the Log area.





- **Log directory** - The directory where the Work Portal log is created. By default it is set to the *log* directory under the enterprise installation directory. The Work Portal log file name is *portal.log*.
- **Log message severity level** - Select the severity level from the drop-down list. Only messages with this severity level or worse will be displayed. Severity levels are:
  - *Debug*
  - *Info*
  - *Warning*
  - *Severe*
  - *Fatal*

After changing any of the values, click **OK** to save them.

If you select **Cancel** a confirmation dialog is displayed asking if you still want to save the changes.

### Note

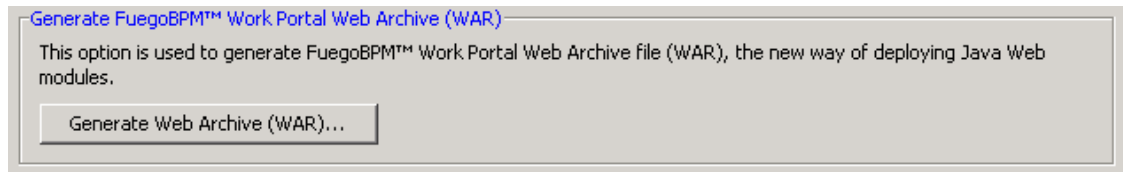


To display the Work Portal log, go to the FuegoBPM Enterprise Administration Center main window and select flap **4: FuegoBPM Work Portal**.

## Generate Work Portal Web Archive (WAR)

If you need to deploy the Work Portal web application in a web application server other than the embedded server provided by FuegoBPM, you can generate the WAR file for the Work Portal and use it to deploy the application in the other web application server.





## To generate the Work Portal WAR file

1. Click the **Generate Web Archive (WAR)** button. The *Save* dialog box is opened.
2. Browse the location where you want the file created. Change its name if required. The default name is *portal.war*. Click **Save** to continue.
3. A dialog box showing the progress of the generation appears. Click **Close** when the Web archive is generated.

The WAR file has to be copied to the WEBAPPS directory of the web application servet installed.

For example if it was a Tomcat: `/tomcat-4.1.30/webapps`

Once the WAS is started it has to be connected to an URL like:  
*http://host:8080/portal*

where

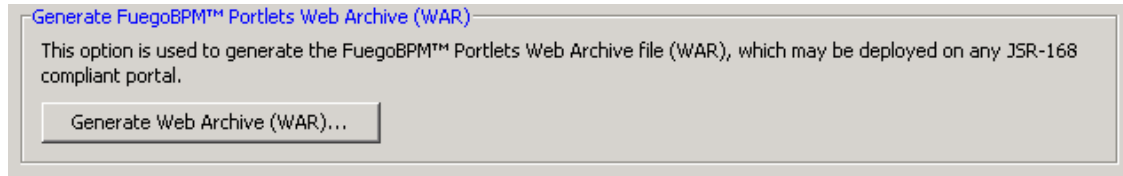
- host: server where the WAS runs.
- 8080: configurable port where the portal runs.
- portal: web application name.

## Generate FuegoBPM Portlets Web Archive (WAR)

If you need to generate the FuegoBPM Portlets WAR file Chlick the



**Generate Web Archive (WAR)** button in the **Generate FuegoBPM Portlets Web Archive (WAR)** area of the dialog.



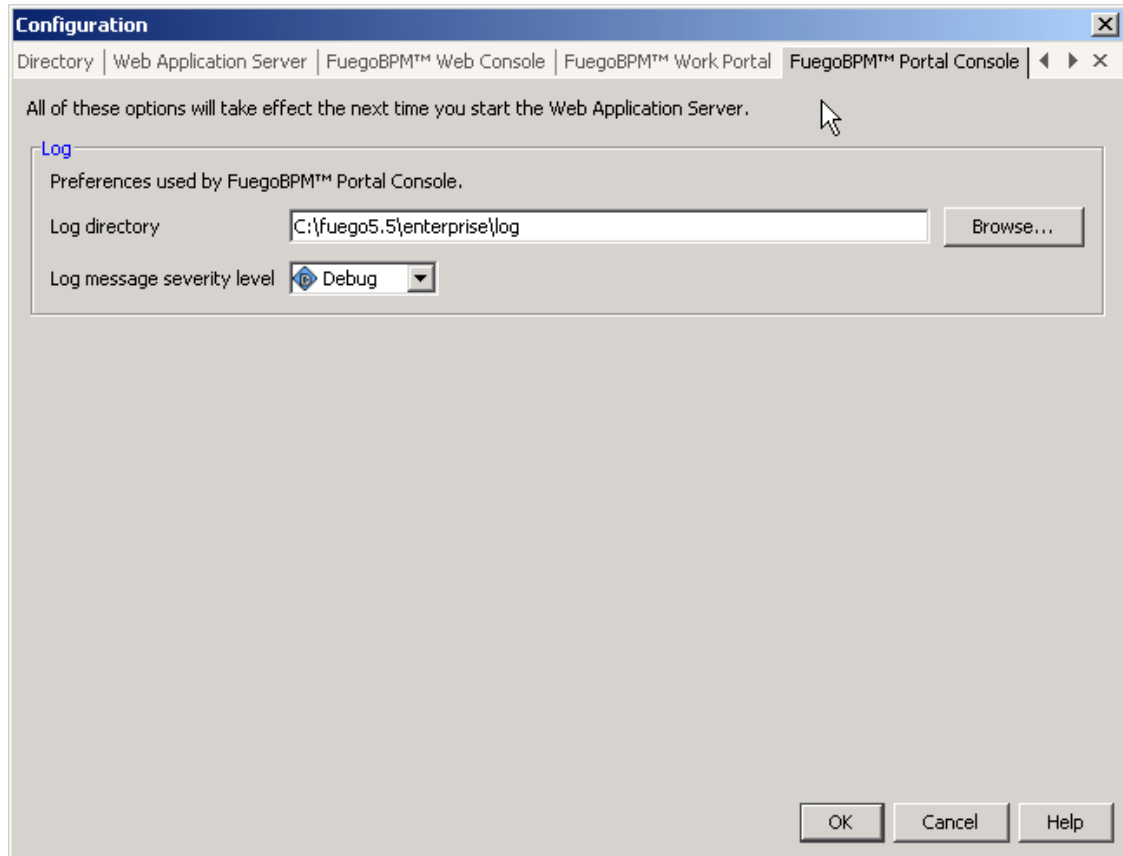
## Configuring FuegoBPM Portal Console Preferences

Log preferences can be configured from the FuegoBPM Portal Console tab of the Configuration dialog box.

### To configure log preferences for the FuegoBPM Portal Console

1. Click the Configuration link on the FuegoBPM Enterprise Administration Center main window. The Configuration dialog box appears.
2. Click the FuegoBPM Portal Console tab.





## Note



Any changes you make will not take place until you restart the Web Application Server.

- **Log directory** - The directory where the Portal Console log is created. By default it is set to the *log* directory under the enterprise installation directory. The Work Portal log file name is *portalConsole.log*.
- **Log message severity level** - Select the severity level from the drop-down list. Only messages with this severity level or worse will be displayed. Severity levels are:
  - *Debug*




- *Info*
- *Warning*
- *Severe*
- *Fatal*

After changing any of the values, click **OK** to save them.

If you select **Cancel** a confirmation dialog is displayed asking if you still want to save the changes.

### Note

 To display the Portal Console log, go to the FuegoBPM Enterprise Administration Center main window and select flap **5: FuegoBPM Portal Console**.

## directory.properties Configuration file

### Introduction

The Fuego *directory.properties* file, is used to define several properties required during FuegoBPM execution. These properties, can be required by the FuegoBPM Server, Work Portal, or API's.

The *directory.properties* file contains the properties for the Directory Service that has been set as default.

For each Directory Service you have defined, a *directory-name.prop* file exists that contains the properties settings. Any change that you may need to do on these properties, should be done in this file. When you set as default a Directory service, the content of its *.prop* file is propagate to all the *directory.properties* of the installation. For example, having the following directory services definition, the existing files in the \$INST\_DIR/conf are:



- **develop:** *develop.prop*
- **produc:** *produc.prop*
- **qa:** *qa.prop*

If, for example, **qa** is set as the default directory service, then the *directory.properties* files of your installation will have the same content than the *qa.prop* file.

## General

For those properties that need to be encrypted, as the password you should use the tag *encrypt*, to encrypt and save this value next time it is read.

## Directory URL

- *directory.default.url=msad://gondor/labs.fuegotech.com*

**Directory ID:** The directory ID is the name entered by the user as the directory name in the schema creation wizard in the Administration Center. This property's value should be the Directory Service URL.

## FuegoBPM Work Portal initialization

- *directory.default.preset.xobjects.participant=root*
- *directory.default.preset.xobjects.participant\_password=password*

**Fuego Object Presets :** These two properties define a participant to be used by the Work Portal to initialize any Fuego Object being used by the JSP pages currently deployed. If the JSP pages being used do not access Fuego Object functionality then these properties



can be omitted.

## Anonymous participant to access from FuegoBPM Work Portal

- **directory.default.preset.portal-anonymous.participant** — The user name of the user that is used to connect to the FuegoBPM Server. This name is an anonymous user that is created in the Organization Administrator. Note that the user must have permission to access the role where the Global Creation activity exists. Also, this user must support concurrent logins.
- **directory.default.preset.portal-anonymous.password** — The password for the anonymous user.

**Anonymous Presets** : The anonymous participant configured in these two properties, is used to execute actions from the Work Portal that require an exclusiveness session. These actions are those that do not work on instances. For example, when using the FuegoBPM HTML Process API, see FuegoBPM API Guide for details.

## Container Presets

These properties are used by the FuegoBPM Work Portal when implementing Single Sign On. This is valid only when FDI is deployed on an Ldap.

- `directory.default.preset.container-auth.java.naming.security.principal=Administrator@labs.fugotech.com`
- `directory.default.preset.container-auth.java.naming.security.credentials=password`

The previous setting is valid for a FDI deployed in a MAD.



- `directory.default.preset.container.auth.java.naming.security.principal=uid=pepe, dc=magic,dc=labs,dc=fuego,dc=com`
- `directory.default.preset.container.auth.java.naming.security.credentials=pepe`

The previous setting is valid for a FDI deployed in an IPlanet.

**Container Presets:** These properties are only needed if FuegoBPM is deployed within a web container. If this is the case, FuegoBPM delegates participant authentication to the web container. When an already

authenticated participant needs to connect to the Directory Service, the properties username/password are used by FuegoBPM to avoid asking the participant every time a task needs to be executed

**Note:** Remember that the appropriate trust must have been issued in the Directory Service before FuegoBPM can use these properties to connect any participant to the Directory Service.

## Anonymous User to access the Directory Service

- `directory.default.anonymous-user=Administrator@aaaaaa.bbbb.com`
- `directory.default.anonymous-password=xxxxxxx`

To enable the anonymous-binding, the above two properties have to be added to the `directory.properties`.

These properties have to be set with the user that Fuego uses to connect to the MAD in the case the bindings are anonymous. (MAD 2003)

## Fuego Cache

Properties:



- **fuego.cache.maxsize:** The size of the pool of process that can access the LDAP in a certain moment. This property has only sense when FDI is deployed in an LDAP. The cache is built as a matrix. Each entry of this cache, will contain an array of connections. This later array size is defined by the value assigned to the "fuego.cache.maxentrysize" property.
- **fuego.cache.maxentrysize:** number of simultaneous threads that can access the LDAP. This will drive the size of the connection pool. Ideally, this should match the number of Total Execution Threads (Automatic and Interactive Execution Threads) defined in the Fuego WebConsole for a given Engine. We should add a cushion for operations done by the Engine with FDI through Well Known ToDoItems. With this (in a full concurrency moment), all Threads executed by the Engine will be available to get their FDI transaction completed successfully. The estimates value should be: # Automatic Execution Threads + # Interactive Execution Threads + 10 (for Well Known ToDoItems). Default Value: 10.
- **fuego.cache.maxretries:** When an FDI Statement tries to execute, it may fail because all the connection in the cache are taken. This property will drive how many retries will be executed before the FDI statement can be considered to fail and raise the "fuego.lang.cache.NoDisposableEntriesException" exception. Default Value: 5
- **fuego.cache.retrytimeout:** When an FDI Statement tries to be executed and there is no available connection in the pool it will retry based on the value assigned to the "fuego.cache.maxretries". This property value will drive the



latency between retry and retry until it gets to the max retries time. This value is set in milliseconds. Default Value: 500L (half a second).

- **fuego.cache.timeout:** This property defines the idle timeout for opened connections in the cache. The default value is 5 minutes. This value is expressed in minutes.
- **fuego.cache.minnodisposable:** Minimum amount of conexions that will be mantained in the pool.

## Concurrent users

When the number of concurrent users that use Fuego increases, an error saying that there are no disposable entries may arise. ("NoDisposableEntries"). This happens because the processes pool that access to the LDAP has to be increased.

The *Max execution threads* Server parameter has to be increase through the FuegoBPM Web Console. In addition, two parameters have to be modify in the `directory.properties` file for both the Server and the Work Portal. That is, you have to modify the files localted in :

- `$INSTDIR/conf`
- `$INSTDIR/webapps/portal/WEB-INF`

The default values that should be changed are: `maxsize` and `maxentrysize`.

With **N** equal to the number of users, the configuration should be:



FDI deployed in	Portal	Server
<b>Database via JDBC</b> set the <i>Maxentrysize</i>	<b>N/2</b>	with the default value <i>10</i> it is enough as the Server access to the LDAP as an only user.
<b>LDAP</b> set	<i>Maxsize</i> set it with the half of the estimated number of concurrent login/logout: <b>N/2</b>	<i>Maxentrysize</i> with the default value <i>10</i> it is enough as the Server access to the LDAP as an only user. If not, calculate as: 100 % of the automatic threads + 20 % of the max threads. Eg.: if you have automatic.threads=20 and max threads=150, then set maxentrysize=50

## Warehouse Updater Preset Participant

- *directory.default.preset.datawarehouse.participant*
- *directory.default.preset.datawarehouse.participant\_password*

The *directory.properties* file, located under the *\$FUEGO/conf* directory, is used in the service starter program.

The updater uses the information in the lines above, to log in to FuegoBPM FDI and obtain the configuration for the Data Store and BAM services.



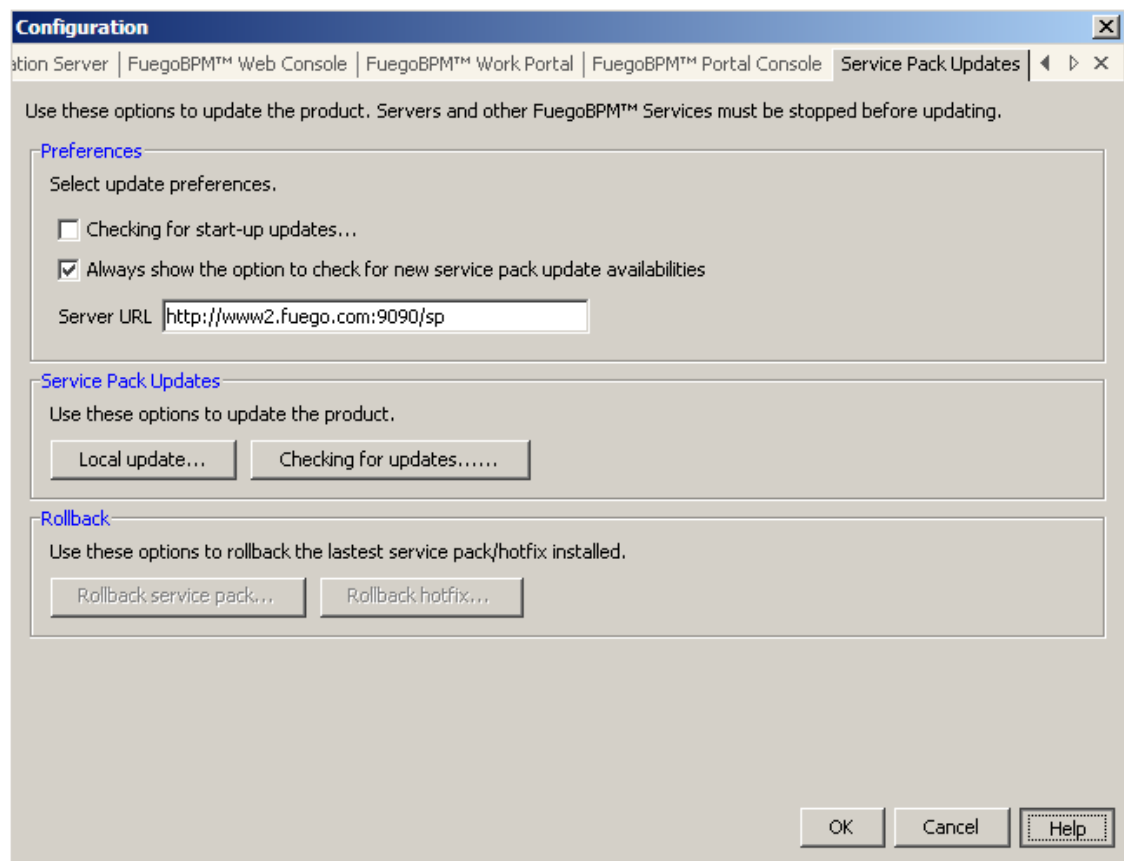
## FuegoBPM Server Preset Participant

- *directory.default.preset.engine.participant*
- *directory.default.preset.engine.participant\_password*

The `directory.properties` file, located under the `$FUEGO/conf` directory, is used in the service starter program.

The updater uses the information in the lines above, to log in to FuegoBPM FDI and obtain its own configuration.

## Performing Service Pack Updates





- **Check for updates on start up** - You can set FuegoBPM Enterprise Administration Center to automatically check for new updates each time you launch it. The updates are downloaded from a Fuego URL. If any problem arises with the URL, a log is posted to *log/AdmCenterStdout.log*.
- **Always show the option of checking for new service pack availability** - If this option is enabled, a dialog box appears when you start the FuegoBPM Enterprise Administration Center. Click **Yes** to check for updates.
- **Server URL** - Indicates the URL from where new updates are downloaded.

After changing any of the values, click **OK** to save them.

If you select **Cancel** a confirmation dialog is displayed asking if you still want to save the changes.

For **Local Update** and **Check for Updates**, refer to sections below.

- Applying a Service Pack to FuegoBPM Enterprise
- Applying a Hotfix to FuegoBPM Enterprise

## Rollback service pack or hotfix

If a Service Pack or a Hotfix has been applied and needs to be rolled-back, run the corresponding option to rollback the action.

# Displaying Log Information

Log information for each FuegoBPM Application can be displayed from the FuegoBPM Enterprise Administration Center main window by clicking on one of the flaps at the bottom of the window:



- **Flap 1: Console** - Shows FuegoBPM web applications and the Web Application Server standard output messages.
- **Flap 2: Web Application Server** - Shows Web Application Server log messages.
- **Flap 3: FuegoBPM Web Console** - Shows Web Console log messages. To configure the Web Console log file preferences, refer to Configuring Preferences for the FuegoBPM Web Console.
- **Flap 4: FuegoBPM Work Portal** - Shows Work Portal log messages. To configure the Work Portal log file preferences, refer to Configuring Preferences for the FuegoBPM Work Portal.
- **Flap 5: FuegoBPM Portal Console** - Shows Portal Admin log messages. To configure the Portal Console log file preferences, refer to Configuring Preferences for the FuegoBPM Portal Console.



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# Chapter 3. FuegoBPM Enterprise Configuration without using Administration Center

## Configuration Files

There is set of files that are used by FuegoBPM Enterprise. In the case of using the Administration Center, these contain all the information entered while configuring the properties in the Administration Center panels.

### Directory Panel

Files that are generated with the properties configured in the Directory panel are:

- **conf/directory.properties**: contains the default directory.
- **conf/\*.dirprop**: contains the list of available directories.

### Web Application Server Panel

Files that are generated with the properties configured in the Web Application Server panel are:

- **tomcat/conf/server.xml**: contains the shutdown and start ports.
- **bin/sdk.properties**: contains the jdk home.
- **conf/enterprisePreferences.xml**: contains the service name.



## FuegoBPM Web Console Panel

Files that are generated with the properties configured in the Web Console panel are:

- **webapps/webconsole/WEB-INF/web.xml:** contains the upload directory
- **webapps/webconsole/WEB-INF/webConsole.properties:** contains the preferences about the log file.

## FuegoBPM Work Portal Panel

Files that are generated with the properties configured in the Work Portal panel are:

- **webapps/portal/WEB-INF/portal.properties:** contains the preferences about the log file.

## FuegoBPM Portal Console Panel

Files that are generated with the properties configured in the Portal Console panel are:

- **webapps/portaladmin/WEB-INF/portalAdmin.properties:** contains the preferences about the log file.

## Service Pack Updates

Files that are generated with the properties configured in the Service Pack Updates panel are:



- **{homeuser.dir}/.fuego/commonPreferences:** contains the update preferences.

## Required Steps to administrate FuegoBPM Enterprise

After installing FuegoBPM Enterprise, you can proceed to configure and manage it through the Administration Center or follow these steps:

1. Customize the configuration files.
2. Configure the Ant libraries
3. Configure the Directory drivers
4. Configure all other properties and declarations that the Ant tasks require. See Ant javadoc.
5. Add the FuegoBPM Directory Interface (Task `fuego:directoryschema`)

Additionally you can start the embedded Web Application Server within the FuegoBPM Enterprise, using the distributed script in the installation directory, "bin/startwebconsole"

For detailed information about how to perform these steps, see the ANT Javadoc distributed in FuegoBPM Enterprise installation directory, in the help/docs directory.



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## Chapter 4. Deploying FuegoBPM J2EE Deployer and FuegoBPM Work Portal on an Application Server

### Installing FuegoBPM J2EE Deployer, FuegoBPM Server and FuegoBPM Work Portal on an Application Server

Once the J2EE resources have been created in the Application Server, FuegoBPM Administrator should provide the EAR (Enterprise Application Files) files to the Application Server Administrator for installation.

The FuegoBPM J2EE Deployer application can be used by FuegoBPM Administrator to deploy server and project applications from FuegoBPM Web Console. That way, manual deployment in the Application Server can be avoided for those applications.

FuegoBPM J2EE Deployer also simplifies the administration (start, stop, uninstall, etc) of server and project applications, by allowing FuegoBPM Administrator to execute those tasks directly from FuegoBPM Web Console.

## FuegoBPM Deployer

The FuegoBPM J2EE Deployer allows the management of Enterprise Applications (.ear files) in a J2EE Application Server.

The FuegoBPM Deployer is an Enterprise Application itself, that must be installed in the application server. There is a particular implementation for each vendor of supported application servers. Every implementation has a property in common: the deployer URL. The URL has the following format:



```
http://server:port/fuego/deployer/servlet/worker
```

where *server* is the host name of the machine where the Application Server is running and the *port* name is the port where the Application Server publish web applications (typically the same port where the web administrative console for the particular Application Server runs).

Here are some example urls:

```
http://localhost:8080/fuego/deployer/servlet/worker  
http://localhost:7001/fuego/deployer/servlet/worker  
http://localhost:9043/fuego/deployer/servlet/worker
```

By sending commands through this URL, the deployer is able to install, uninstall, start, stop, and check the status of installed applications. In the Web Console, it must be configured when creating a J2EE server or updated in the Application Server tab, and it is used when operating with J2EE servers or generating J2EE application server files.

It might be used through ant tasks as well.

## FuegoBPM WebSphere Deployer

### FuegoBPM J2EE Deployer for WebSphere

The EAR file containing the FuegoBPM J2EE Deployer for WebSphere server side implementation must be installed in the Application Server. This ear file is called *wasj2eedeployer.ear* and is in the installation directory *j2ee/j2ee/websphere/deployer*. If it is a single server environment then it must be installed in the unique available server. It can be deploy using the WebSphere Administrative Console. If the deployer is installed in a clustered environment, then the ear must



be installed in the Server of the Deployment Manager Node (typically *dmgr*). The WebSphere Administrative Console does not support deploying ears in the Server of the Deployment Manager Node, so it must be deployed using other mechanism as using the *wsadmin.bat* or command line tools provided by WebSphere.

FuegoBPM WebSphere Deployer configuration parameters includes the standard url parameter and an additional parameter which is the *server/cluster* name. This parameter identifies the name for the server (or cluster for clustered servers) where FuegoBPM Servers and projects are going to be deployed. For example *server1* or *cluster1*.

Both parameters are specified at the FuegoBPM Web Console at the server creation time, or can be accessed in the Application Server properties page for the server.

## FuegoBPM WebLogic Deployer

### FuegoBPM WebLogic Deployer

The ear file containing the FuegoBPM WebLogic Deployer server side implementation must be installed in the Application Server.

This ear file is called *wlj2eedeployer.ear* and can be found in the instalation in *j2ee/weblogic/deployer* directory.

Before installing the ear file, the user *FuegoWebLogicDeployer* must be create in the Weblogic Application Server and it must have administrator permission (typically the user must participate in the *Administrators* group, that has the 'Admin' role assigned).

FuegoBPM WebLogic Deployer configuration properties include the standard URL properties and a *server/cluster* name properties that identify the server (or cluster for clustered environment) where the FuegoBPM Servers and projects are going to be deployed (ex. *server1*).

## FuegoBPM JBoss Deployer



## FuegoBPM JBoss Deployer

Currently, the implementation of the JBoss Deployer is pending. It will be available in next releases.

## FuegoBPM Work Portal Web Application EAR and WAR files

FuegoBPM provides both an EAR file and a WAR file for the FuegoBPM Work Portal Application. The administrator will choose which of them to install in the Application Server.

In J2EE a web application can be package as a WAR (Web Archive) as well as an EAR (Enterprise ARchive) file. FuegoBPM provides Work Portal and Portal Console in both WAR and EAR formats and only one of them needs to be installed. The preferred one is the EAR file, specially because the FuegoBPM J2EE Deployer is capable of managing it.

### Note



having both WAR and EAR files installed may cause conflicts.

To obtain either of these files, open FuegoBPM Web Console and click on **J2EE application server files (EARs, WARs)**, placed inside the server properties link.

If the **EAR file** is the one intended to install in the Application Server, the FuegoBPM Administrator should generate it from the FuegoBPM Web Console Panel and deploy it in the Application server following the indications under the Deploying FuegoBPM Project section. If this file is the one deployed in the application server, it can be managed through the **FuegoBPM Web Console via FuegoBPM Deployer**.

If the **WAR file** is the one intended to install in the Application Server, the FuegoBPM Administrator should first generate the Portal WAR file from the FuegoBPM Web Console Panel. Once the WAR file has been generated, FuegoBPM Administrator should download the



WAR and give it to the Application Server Administrator for its deployment using the Application Server Console. The deployment of this FuegoBPM application should follow WAR deployment taking all the defaults.

Provide the generated files to the Application Server Administrator for deployment.

## Connecting to the Work Portal

After the EAR or WAR file has been successfully deployed in the Application Server and the Work Portal Application is running, the next step is to connect to the Work Portal. It is recommended that the project with its processes is first deployed so you can see them all when connecting to the Portal.

You can connect to the Portal with a URL similar to this one:

**http://host:port/portal**

- **host** : is the host name where the Application Server is deployed (at least one of the nodes on a clustered environment)
- **port**: is the port where the Application Server is listening for incoming HTTP connection.
- **portal**: is the out of the box Web Application name but if you have decided to change its name, you will need to adapt the URL mentioned above.

## Deploying FuegoBPM Portal Console Web Application

FuegoBPM Administrator should follow the same procedure as for the Work Portal for providing the WAR or EAR file for the Portal Console Web Application and its installation.



## Connecting to the Portal Console

After the EAR or WAR file has been successfully deployed in the Application Server and the Portal Console Application is running, the next step is to connect to the Portal Console.

You can connect to the Portal Console with a URL similar to this one:

**http://host:port/portaladmin**

- **host** : is the host name where the Application Server is deployed (at least one of the nodes on a clustered environment)
- **port**: is the port where the Application Server is listening for incoming HTTP connection.
- **portaladmin**: is the out of the box Web Application name but if you have decided to change its name, you will need to adapt the URL mentioned above.



# Chapter 5. FuegoBPM Web Console

## Login into the Web Console

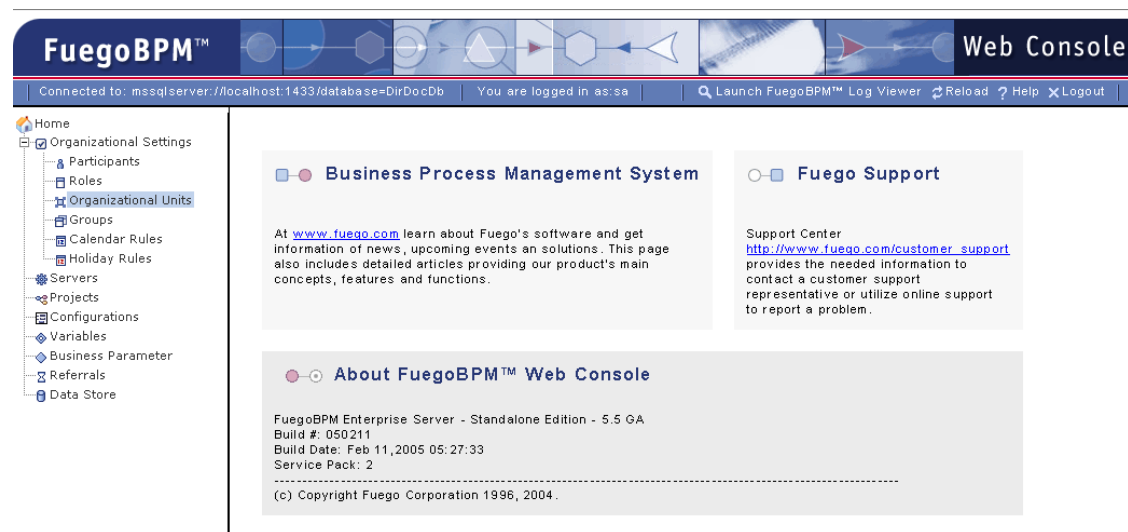
The FuegoBPMo Administrator should use a browser to connect to the FuegoBPM Web Console as illustrated below. The URL to connect to the Web Console is **http://host:port/webconsole**.

- *host* is the machine in which the Web Console Windows Service has been installed and,
- *port* is the TCP/IP port configured for the Web Console.

Complete *User Name* with the *Administrator user ID* provided when creating FuegoBPM Directory Service and its password in the *Password* field to log into FuegoBPM Web Console. Click on the *Login* button to proceed with the login.

## FuegoBPM Web Console Interface

This interface enables FuegoBPM Administrators to create and maintain the proper environment for FuegoBPM Suite applications.





There are some general characteristics and considerations that you should take into account:

- Although the Web Console is mainly accessed through the FuegoBPM Enterprise Administration Center application, you can open the Web Console using any browser with the appropriate network settings. However, the Web Console Server must be running to access the interface using a browser (for more information, refer to the *FuegoBPM Enterprise Administration Center* section of this System Administration Guide).
- The FuegoBPM Web Console has two main panels. The left panel contains the web console tree. Users can click any item listed on the web console tree to display in the right panel information and available tasks associated with the item.
- Users can refresh and exit the application using the **Reload** and **Logout** options, which are in the right upper corner of the browser.
- The elements associated with a specific item (FuegoBPM Server under the **Servers** option, for instance) are displayed in a list. Each element in the list has a check box associated with it. The tasks that allow multiple elements (deleting several participants, for example) are performed for all items with check boxes selected. You can work with either one element or a group of elements. Make sure you make your selections *before* you press the task button.



- Two additional options are present in all those screens of the application where a list of elements appear:
  - **Filter:** Allows a user to set a filter. Only elements that meet the filter criteria will be shown in the list. For example all the participants whose *Display Name* begins with **A** in the **Participants** pane.
  - **Preferences:** Enables the user to configure the maximum amount of rows displayed in each list.
- You can set the web application language by configuring the internet options of your browser.

### Note



Using your browser's *Back* and *Next* buttons to change pages is not recommended. Instead, use the web console tree (from the left panel) to navigate through the application.

## Organizational Settings

These settings enable the administrator to work with all of the required organizational information, including the following:

- Organization properties and import/export features
- Participants
- Roles
- Organizational Units
- Groups



- Calendar rules
- Holiday rules

## Organization

This screen is divided into three tabs:

### Organizational Settings

Enables you to define the calendar rule used by the complete organization. This value can be overwritten by the calendar rule defined in nested Organizational Units.

#### Organization

The screenshot shows a web interface for 'Organizational Settings'. At the top, there are three tabs: 'Organizational Settings' (selected), 'Import', and 'Export'. Below the tabs is a 'Properties' section with a blue header. Inside this section, there is a 'Calendar Rule' label and a dropdown menu currently showing 'CR Buenos Aires'. At the bottom of the 'Properties' section are three buttons: 'Save', 'Cancel', and 'Reset'.

### Import

This tab enables you to import views or organizational data. To do this, an XML file containing the data is required. It's important to check the FDI URL to verify that the destination schema is correct. You can choose the category of objects to be imported, either the Organization, Views, Configurations or the last option that imports the organization, views and the customized properties.



Organization: company

[Organizational Settings](#) [Import](#) [Export](#)

To the URL

mssqlserver://localhost:1433/database=DirDocDb

All of the objects in the selected file will be imported to the schema located in this address. If any of the objects are already in the directory, the definition will be replaced with the one from this file. Verify that the URL is correct before proceeding with the import operation.

Category

☒ Organization  
☐ Views  
☐ Configurations  
☐ This option includes the organization, views, and properties. It is recommended for migrations.

Select the object category to import. When importing views, the process verifies that all of the information referred to by the views (deployed processes, roles, and variables) exists in the destination directory.

From File

[Browse...](#)

[Import](#)

The last option includes the organization, views, and additionally, **customized properties** that you might have defined for the different organization components.

You can add customized information to Human Participants, Organizational Roles or Organizational Groups defining properties that are categorized. These additions are done using the standard components under FDI (DirHumanParticipant, DirOrganizationalRole and DirOrganizationalGroup components). See the FuegoBlocks components documentation within the FuegoBPM Studio for more information.

Any user-defined category or list of them can be imported.

After you import the Organization, the participant's passwords are randomly generated and listed in the file *output.txt*, in the FuegoBPM installation directory, `../enterprise/bin/output.txt` (p.e. `/fuego/enterprise/bin/output.txt`).

## Export



Using the export tab, it's possible to generate XML files with the information of the organization or the views. Check the FDI URL to ensure that the information to export corresponds to the appropriate schema. Organizational information includes participants, roles, organizational units, holiday rules, and calendar rules. You can choose either the Organization, Views, Configurations or the last option that exports the organization, views and the list of categories defined to group the customized properties. See above for details.

Organization: company

[Organizational Settings](#) [Import](#) [Export](#)

**From the URL**

mssqlserver://localhost:1433/database=DirDocDb

All of the objects defined in the schema located in this address that belong to the selected category will be exported to the chosen file.

**Category**

☒ Organization

☐ Views

☐ Configurations

☐ This option includes the organization, views, and properties. It is recommended for migrations.  
[Category properties list for exporting with comma separated values. \(e.g. cat1,cat2\)](#)

[Export](#)

## Creating and Managing Participants

### Adding Participants

#### To add a participant

1. Select the **Participants** option from the tree. A summary of the participants is displayed in the right pane.
2. Click **Add**. A new pane with the participant properties is shown.



[Participants](#) > Add Participant

Properties	
Enable	<input checked="" type="checkbox"/>
User ID	<input type="text" value="jsmith"/>
First Name	<input type="text" value="John"/>
Last Name	<input type="text" value="Smith"/>
Telephone	<input type="text"/>
Fax	<input type="text"/>
Notify by e-mail when new instances arrive	<input checked="" type="checkbox"/>
Mail	<input type="text" value="jsmith@fuego.com"/>
Password	<input type="password" value="****"/>
Confirm password	<input type="password" value="****"/>
Organizational Unit	<input type="text" value="Central"/>
Enable User Administration	<input checked="" type="checkbox"/>
Administrator	<input type="checkbox"/>
<input type="button" value="Save"/> <input type="button" value="Cancel"/> <input type="button" value="Reset"/>	

3. If you want to add this user but not to allow the user to log in to directory services, unselect the **Enabled** check box. As well, it is recommended to **Disable** a participant rather than delete it when it is not longer going to work on any process.
4. Type the **User ID** in the user Id field.
5. Type the participant's **First Name**. For example, if the Participant's name is John Smith, type John.
6. Type the participant's **Last Name**. For example, if the Participant's name is John Smith, type Smith.
7. Optionally, type a phone number in the **Telephone** and **Fax** fields.
8. Optionally, check the **Receive Mail** check box, and type the user's e-mail address in **Mail** field. By checking or not this property, the administrator enables the Work Portal user to receive notifications by mail when new instances arrive. If the




user changes in his/her FuegoBPM Work Portal Options panel the "Notify me by e-mail when new instances arrive" option, the **Receive Mail** property will also change, and vice versa.

9. Enter the participant's initial **Password** and **Confirm** it. The user will be able to change it from the Work Portal.
10. Optionally, select the **Organizational Unit** check box to assign the participant to an organizational unit. Select the organizational unit from the drop-down list. If you do not select an organizational unit, the participant is a member of all of the organizational units.
11. Optionally, **Enable User Administration** so this participant can act as a *Users Administrator*. If enabled, the participant has the permissions to manage the Organization's participants along with the role assignment management to participants and groups.
12. If you are logged in as an Administrator, optionally, you can check the **Administrator** box if you want this participant to act as another Administrator. Each administrator has the same permissions as the root participant (created when the Directory Service was configured). The only difference within them is that administrator users can have roles, be member of groups and participate in any FuegoBPM process. The root participant cannot have the administrator permission removed. If an administrator is connected, and the root user or a different administrator removes this administrator's permission, the administrator's permissions will still be enabled until he/she disconnects from the Webconsole
13. Select the **Save** button to add the new participant.

Once the new participant has been saved, it's possible to assign the necessary roles to him and define absence periods using the Advanced Properties panel.



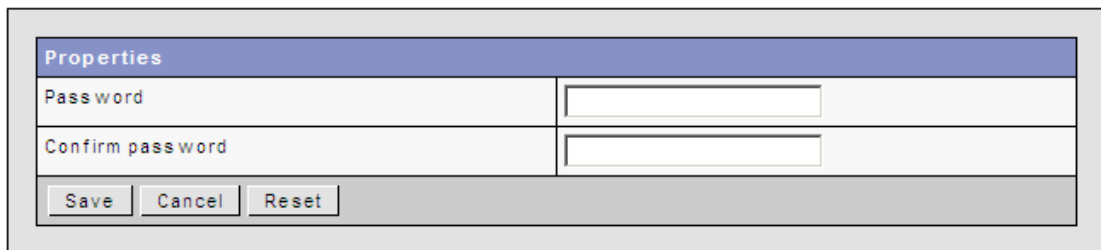
## Note

 If you are using Microsoft Active Directory, you must add participants through the Active Directory console. The Organization Administrator displays every existing participant in the directory as disabled, and you must enable a participant to begin working with that participant. The organizational unit assignment should be done from the MAD console by dragging each participant to their corresponding organizational unit.

## Changing the Password

After adding the participant you can change the participant's password

[Participants](#) > [Edit Participant jsmith.](#) > [Change the password.](#)



Properties	
Pass word	<input type="text"/>
Confirm pass word	<input type="text"/>
<input type="button" value="Save"/> <input type="button" value="Cancel"/> <input type="button" value="Reset"/>	

## Role Assignment

### To assign a role

1. Select the participant by clicking on the ID name from the list.
2. In the **Advanced properties** area, click **Assigned Roles**. The assigned roles list is displayed.
3. Click **Add**, the role assignment pane appears.



[Participants](#) > [Edit Participant ismith](#) > [Assigned roles](#) > **Role Assignment**

Properties	
Role Id	Account Manager
Parameter	No Apply
Category	2
Permissions	<input checked="" type="checkbox"/> eXecute <input checked="" type="checkbox"/> Route <input checked="" type="checkbox"/> Select <input checked="" type="checkbox"/> Abort <input checked="" type="checkbox"/> Delegate <input checked="" type="checkbox"/> Grab <input checked="" type="checkbox"/> Escalate <input checked="" type="checkbox"/> Peer Assignment
<input type="button" value="Save"/> <input type="button" value="Cancel"/> <input type="button" value="Reset"/>	

4. Then select a role from the drop-down box.
5. If the role is parametric, select the **Parameter** value from the drop-down list. See *Defining Parametric Roles* under the Roles topic for more information
6. Select the category of the participant within the role. The category indicates the hierarchical level of the participant. The higher the category, the higher the hierarchy. The list of possible participants to assign an instance is determined depending on the participant category. See Participant's Permissions for Instance assignment for details.
7. Select permissions by selecting the check box next to the permission value, then click OK.
  - a. Select **Execute** to enable a participant to process instances that flow into their queue in the Work Portal.
  - b. Select **Route** to enable a participant to route instances by selecting the **Send To** button in the Work Portal.
  - c. Select **Suspend** to enable a participant to suspend instances, or take them off the clock, in the Work Portal.
  - d. Select **Abort** to give a participant the ability to abort an



instance that cannot be processed in the Work Portal. Note that if an instance is aborted, it cannot be retrieved.

- e. Select **Delegate** to enable the participant to assign instances to participants with a lower category in the Role.
  - f. Select **Escalate** to enable the participant to assign instances to participants with a higher category in the Role.
  - g. Select **Peer Assignment** to enable the participant to assign instances to participants with the same category in the Role.
  - h. Select **Grab** to enable the participant to assign an instance to any participant in the role no matter which category the
8. Click **Save** to finish the role assignment to a participant.

See Participant's Permissions for Instance assignment for details and examples.

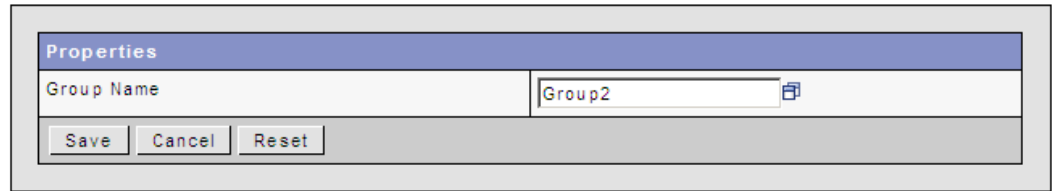
## Group Assignment

### To assign a group

1. Select the participant by clicking on the ID name from the list.
2. In the **Advanced properties** area, click **Assigned Groups**. The assigned groups list is displayed.
3. Click **Add**, the groups assignment pane appears.



[Participants](#) > [Edit Participant johns.](#) > [Assigned Groups](#) > Add Assigned Group



Properties

Group Name

4. Then, search for a group. All available groups for the participant are listed. Select a group.
5. Click **Save** to finish the group assignment to a participant.

## Adding a Photo

After a participant has been added, it's possible to associate an image to them.

### To add a photo

1. Select the participant by clicking on the ID name from the list.
2. In the **Photo** section, select the **Browse** button.
3. Select the image.
4. Press **Upload**.

## Participants Search and display

By default, the filter options is enabled and if no filter is set, the complete list of participants is displayed. You can limit or filter the displayed participants by defining searching conditions. For example all the participants whose *Display Name* begins with **A**.

## FuegoBPM User for Administration



A FuegoBPM User for Administration has the permissions to manage the Organization's participants information. To have permissions to administrate the participant must be enabled as so in the profile.

[Participants](#) > Add Participant

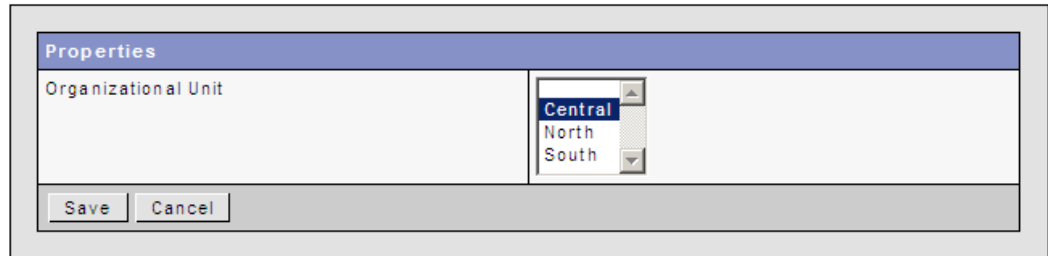
Properties	
Enable	<input checked="" type="checkbox"/>
User ID	<input type="text" value="jsmith"/>
First Name	<input type="text" value="John"/>
Last Name	<input type="text" value="Smith"/>
Telephone	<input type="text"/>
Fax	<input type="text"/>
Notify by e-mail when new instances arrive	<input checked="" type="checkbox"/>
Mail	<input type="text" value="jsmith@fuego.com"/>
Password	<input type="password" value="****"/>
Confirm password	<input type="password" value="****"/>
Organizational Unit	<input type="text" value="Central"/>
Enable User Administration	<input checked="" type="checkbox"/>
Administrator	<input type="checkbox"/>
<input type="button" value="Save"/> <input type="button" value="Cancel"/> <input type="button" value="Reset"/>	

A set of Organizational Units are assigned to the Administrator in order to be allowed to maintain.

1. In the **Advanced properties** area, click **Administered Organizational Units**. The enabled Organizational Units to administer list is displayed.
2. Click **Add**, the organizational units to be administered pane appears.



[Participants](#) > [Edit Participant jsmith.](#) > [Administered Organizational Units](#) > Add an Organizational Unit to be administered



The screenshot shows a 'Properties' dialog box with a title bar. Inside, there is a label 'Organizational Unit' followed by a list box containing three items: 'Central', 'North', and 'South'. The 'Central' item is currently selected. At the bottom of the dialog box, there are two buttons: 'Save' and 'Cancel'.

3. Then select an organizational unit.
4. Click **Save** to finish the organizational units administration assignment to the FuegoBPM User Administrator.

Once the FuegoBPM User Administrator has been created and the Organizational Units to administer assigned, this new FuegoBPM User Administrator can log into the FuegoBPM WebConsole. When the FuegoBPM User Administrator logs in, only the authorized navigational links on the navigation menu will be enabled. Likewise, only the authorized objects in the Participant and Group Panels will be available for modification and maintenance.

### **Available Participants**



## Participants

Page: 1/1 - Total: 4

[Filter](#) [Preferences](#)

**Filter**

To filter the following table, select the column by which to filter, the filtering criterion and enter a value.

Id  Begins With

<input type="checkbox"/>	User ID ▲	Display Name	Organizational Unit	Mail	Enabled
<input type="checkbox"/>	<a href="#">jsmith</a>	John Smith	Central	jsmith@fuego.com	Enabled
<input type="checkbox"/>	<a href="#">marvj</a>	Mary Jones	Central		Enabled
<input type="checkbox"/>	<a href="#">sa</a>	sa			Enabled
<input type="checkbox"/>	<a href="#">test</a>	Test			Enabled

## Available Groups

## Groups

Page: 1/1 - Total: 3

[Filter](#) [Preferences](#)

**Filter**

To filter the following table, select the column by which to filter, the filtering criterion and enter a value.

Id  Begins With

<input type="checkbox"/>	Name ▲	Description	Enabled
<input type="checkbox"/>	<a href="#">Group1</a>		Enabled
<input type="checkbox"/>	<a href="#">Managers</a>	Position: Managers 1st level	Enabled
<input type="checkbox"/>	<a href="#">TestGroup</a>		Enabled

The objects marked with a lock icon are not available for modification but available for context within the Organization. Only the Participants assigned to the FuegoBPM User Administrator assigned Organizational Units, will be available for edition to this Administrator user.

## Note



This type of participant will not have rights to manage the FuegoBPM



Server and other configuration settings needed at runtime by the FuegoBPM Servers.

## Modifying Participants

**To modify a participant**, you must be a Users Administrator and administer the Organizational Unit that the participant belongs to.

1. Select the participant by clicking on the ID name from the list.
2. Change the information you want or add it, if it was empty.
3. Press **Save**.

## Defining Absence Periods

When a participant is going to be out of the office (such as on vacation), you should define the absence period dates and assign one or more replacements for that period.

When an instance is routed to an absent participant, the FuegoBPM Server will automatically reroute the instance to the first replacement found with the needed role according to the next activity.

## Who reassigns the instances to the replacements and when?

The instances reassignment is done by the Server. When the Server starts up for the first time, it creates an automatic task in charge of doing only the instances reassignment. This automatic task runs daily and will run every day at the same time, that is the time the Server started up for the first time.

Therefore, the absent participants are replaced on daily basis. The Server deselects the instances from the participant and reassigns them to the replacement.







Remember that valid replacements must belong to the same organizational unit as the absent participant and share at least one of the absent participant's roles. Participants who do not have the same profile as the absent participant will not appear in the **Replacements** drop-down list. If a unique participant is found, it is automatically added to the replacements list.

5. If you leave the **Search replacement** box blank, the window will show you the complete list of participants in the organization that are able to serve as replacements. This might take a long time to display. It is highly recommended that you enter all or part of a name so that the search is refined to only those participants matching the name. Select one or more participants from the Search Results dialog and click **Ok**.
6. To modify the **Starting Date** and **Finishing Date**, click on the small Calendar icon to the right of the date fields to display a Calendar dialog box.
7. Modify the start and finish absent times of the period of absence in the start and finish boxes. The time format is HH:MM:SS AM/PM (for example, 10:15:00 AM).
8. Click **Save** to finish the operation.

## Deleting Participants

### Warning



It is **NOT** recommended to delete participants, specially in a production environment. Instead, you can disable the participant unchecking the **Enable** checkbox from the participant's properties panel

**To delete a participant**, you must be a Users Administrator and administer the Organizational Unit that the participant belongs to.



1. Select the participants you want to delete by checking their box in the participants list.
2. Click **Delete**.

## Participant's Permissions for Instance assignment delegation, escalation and more...

A participant can be configured to be able to assign an instance in an interactive activity to another participant in the same role.

Assigning an instance is only available for a participant if the interactive activity is defined as **Assignable**, and depending on the participant's permissions.

### Participant category in the role

Participants are assigned to a role with a category. This category, represents the hierarchical level of the participant within the role. Possible category values are from 0-9. The higher the category, the higher the hierarchical level of the participant in the role.


The category is used to determine to which participant the instance can be assigned to. The category is assigned in the Web Console.

[Participants](#) > [Edit Participant jsmith](#) > [Assigned roles](#) > **Role Assignment**

Properties	
Role Id	Account Manager
Parameter	No Apply
Category	2
Permissions	<input checked="" type="checkbox"/> eXecute <input checked="" type="checkbox"/> Route <input checked="" type="checkbox"/> Select <input checked="" type="checkbox"/> Abort <input checked="" type="checkbox"/> Delegate <input checked="" type="checkbox"/> Grab <input checked="" type="checkbox"/> Escalate <input checked="" type="checkbox"/> Peer Assignment
<input type="button" value="Save"/> <input type="button" value="Cancel"/> <input type="button" value="Reset"/>	



## Instance assignment permissions (Delegation, Escalation & Peer Assignment)

The participant will be able to assign an instance, only if he has first selected it to himself. If after that he does not see the  button in the instance line, then, he has not enough permissions to assign an instance to another participant.

1. **Delegate:** this permission enables the participant to assign instances to participants with a lower category in the Role.
2. **Escalate:** this permission enables the participant to assign instances to participants with a higher category in the Role.
3. **Peer Assignment:** this permission enables the participant to assign instances to participants with the same category in the Role.

## Grab permission

Grab permission enables the participant to assign an instance to any participant in the role no matter which category the participants have or if the instance is already assigned to a participant.

If the instance is already assigned to one participant, and another participant that has Grab permissions wants to reassign it, then this operation can be done by performing a search to find the instance and later proceed to reassign it.

## Examples of Assigning Instances permission

Having the role, participants, categories and assigned permissions shown in the table below.

**Role :** Account Manager

Participant Name	Category	Assigned Permissions
John Smith	3	Grab



Participant Name	Category	Assigned Permissions
Peter Drayfus	2	Peer Assignment, Delegate
Tom Ryan	2	Peer Assignment
Dan Austin	1	Peer Assignment, Escalate

### Case 1: Grab permission

John Smith is the participant with higher hierarchy level. Remember that the higher the category, the higher the hierarchical level. This participant has grab permissions. As shown in the image below, he can assign the instance to any participant in the role, without the need of selecting the instance to himself.

**FUEGO Work Portal** Welcome, John Smith Search - Options - Help - Logout

**Inbox** First Showing 1-4 of 4 Last

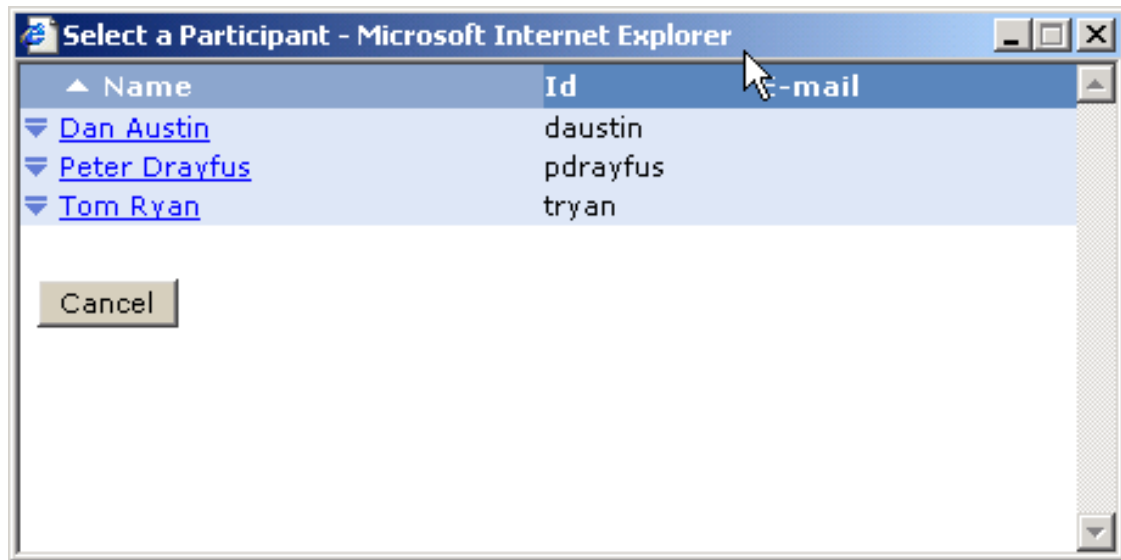
✓	Description	Activity	Priority	State	Received	Deadline	Participant	Order Amount
<input type="checkbox"/>	Diving Supply OrderFill6	Review Order	Normal	Activity completed	Nov 2 02:41:31 PM			80.00
<input type="checkbox"/>	Diving Supply OrderFill7	Review Order	Normal	Activity completed	Nov 2 03:49:04 PM			20.00
<input type="checkbox"/>	Flipper Scuba OrderFill8	Review Order	Normal	Activity completed	Nov 2 03:49:26 PM			9,000
<input type="checkbox"/>	Scubapro Dive Shops OrderFill9	Review Order	Normal	Running	Nov 2 03:49:43 PM			80.00

Fuego™ - Work Portal


**Assigned button enabled, without having the instance selected to the participant. Grab Permission.**

The list of participants to whom J.Smith can assign the instance are all the participants of the role. As he has the higher hierarchy in the role, all the listed participants have an arrow down ▼ beside their name.





## Case 2: Peer Assignment / Delegate

The participant Peter Drayfus has no grab permissions for assigning instances. That is why when he executes his Work Portal, the **Assign Participant** button  does not appear in the first column.

✓	Description	Activity	Priority	State	Received	Deadline	Participant	Order Amount
<input type="checkbox"/>	<a href="#">Diving Supply OrderFill6</a>	Review Order	Normal	Activity completed	Nov 2 02:41:31 PM			80.00
<input type="checkbox"/>	<a href="#">Diving Supply OrderFill7</a>	Review Order	Normal	Activity completed	Nov 2 03:49:04 PM			20.00
<input type="checkbox"/>	<a href="#">Flipper Scuba OrderFill8</a>	Review Order	Normal	Activity completed	Nov 2 03:49:26 PM			9,000
<input type="checkbox"/>	<a href="#">Scubapro Dive Shops OrderFill9</a>	Review Order	Normal	Running	Nov 2 03:49:43 PM			80.00

He can assign a participant after selecting the instance to himself.



	<a href="#">OrderFill7</a>								
<input type="checkbox"/>	<a href="#">Flipper Scuba OrderFill8</a>	Review Order ▶	Normal	Activity completed ▲	Nov 2 03:49:26 PM			<input type="checkbox"/>	9,000
<input type="checkbox"/>	<a href="#">Scubapro Dive Shops OrderFill9</a>	Review Order ▶	Normal	Running	Nov 2 03:49:43 PM			<input type="checkbox"/>	80.00

Assign button enabled after the participant has selected the instance.

As he has **Peer Assignment** and **Delegate** permissions, he can only assign the instance to participants with his same category or a lower one. The hierarchy is indicated with an arrow to the right ▶ and an arrow down ▼ beside the respective participants' name.

**FUEGO Work Portal** Welcome, Pieter Drayfus Search - Options - Help - Logout

Inbox > Scubapro Dive Shops OrderFill9

The instance is currently assigned to you

Reassign to participant

Select a Participant - Microsoft Internet Explorer

▲ Name	Id	E-mail
▼ Dan Austin	daustin	
▶ Tom Ryan	tryan	

Cancel

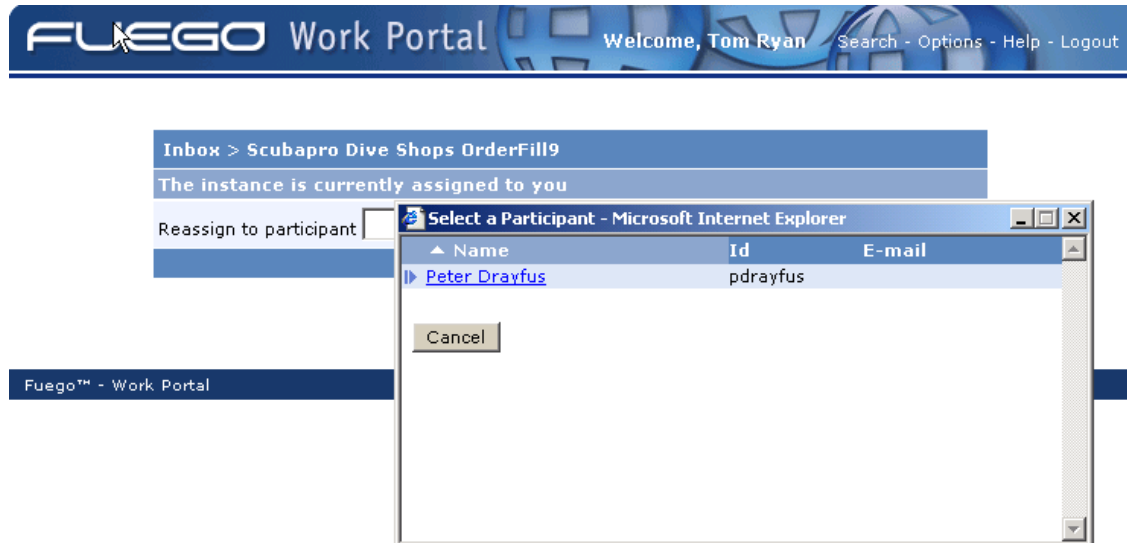
Fuego™ - Work Portal

### Case 3: Peer Assignment


The participant Tom Ryan has only the **Peer Assignment** permission. That is the reason why, after selecting the instance to himself, he only sees *Peter Drayfus* as the possible participant to select, who is the only one with his same category, 2. The hierarchy is indicated with an arrow to the right ▶ beside the participant

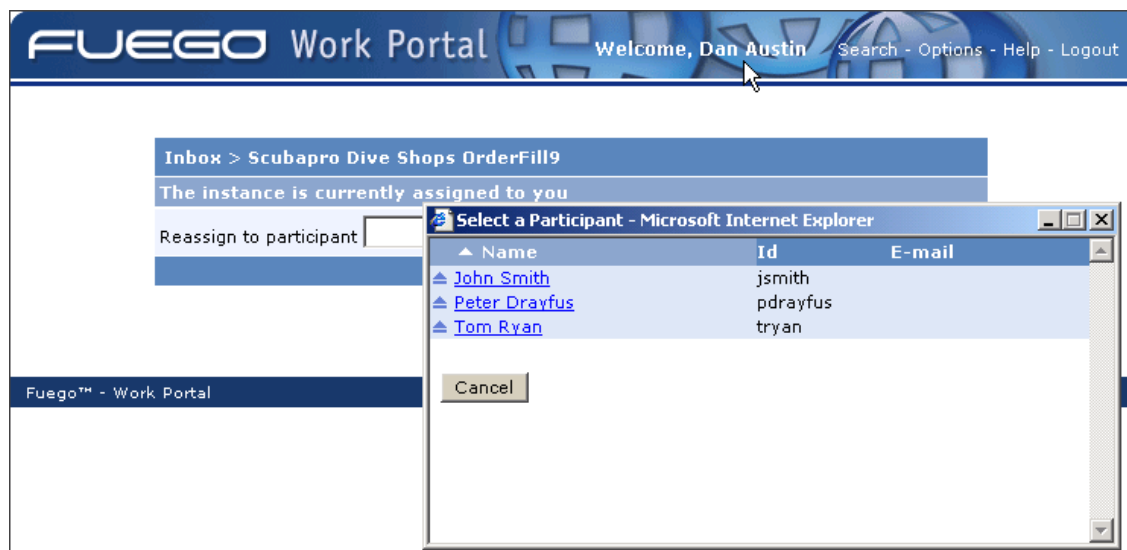


name.




#### Case 4: Peer Assignment / Escalate

The participant Dan Austin has the **Peer Assignment** and **Escalate** permissions. That is the reason why, after selecting the instance to himself, he sees all the other participants, who, in this example have higher categories. The hierarchy is indicated with an arrow up  beside all participants' name.





## Note

 All changes on assigned **Roles** and **Permissions** (add, delete or updates) are effective once the participant connected to the Work Portal, logs out and logs in again.

# Roles

A role is a title that describes the activities performed by a participant. Roles are assigned to participants and this association defines the permissions of the participant. Examples of roles include Account Manager, Sales Clerk, or Customer. Role information can be viewed in the Roles option of the left panel, under the organizational settings entry.

## Adding Roles

### To add a role

1. Select the **Roles** option from the left pane tree. A summary of the existing roles is displayed on the right pane.
2. Press **Add**. A new pane with the role properties is shown.

[Roles](#) > Add Role

Properties	
Name	Finance Clerk
Description	<input type="text"/>
Is Parametric?	<input type="checkbox"/>
<input type="button" value="Save"/> <input type="button" value="Cancel"/> <input type="button" value="Reset"/>	

3. Type the **Role Name** and a **Description**.
4. If this role is parametric, select the **Is Parametric** check box to define this role as parametric. If not, leave this check box



unchecked. See *Defining Parametric Roles* for more information.

5. Click **Save** to confirm the new role configuration or **Reset** to clear the fields.

### Note



The role assignment to participants must be done from the participant properties panel.

## Defining Parametric Roles

Parametric roles accommodate business circumstances requiring different groups of people to perform similar activities. They allow you to map abstract roles to a specific person or group at run time instead of at design time. This eliminates the need for redundant activities that vary only by the person or group that performs the activity.

Parametric roles also eliminate cumbersome conditional statements and splits in the process design. Parametric roles make processes easier to read and understand as well as reduce design effort.

Check the FuegoBPM Studio documentation for more information about this type of roles.

### To define a parametric role

1. If you define the Role as **Is Parametric** (check box is checked), you have to add all the parametric values in the corresponding area.



Roles > Add Role

Properties	
Name	ParametricRole
Description	
Is Parametric?	<input checked="" type="checkbox"/>
Parametric Values	
Add Parametric Value	Normal <span>+</span>
Value	
VIP	<span>-</span>

2. Enter the new value.
3. Click the "+" sign to add it.

## Assigning Calendar Rules

FuegoBPM Server calculates deadlines by making use of calendar rules, if any have been defined.

Once you have defined all the calendar rules needed in the organization, you can assign each Organizational Unit a different calendar rule.

FuegoBPM Enterprise version allows for setting calendar rules at role level. If FuegoBPM Enterprise is installed, the Server will take into account the calendar rule set for the organizational unit where the process is deployed and the activity role where the instance is running. The calendar rule set at role level is first evaluated by the Server and overrides the one defined for the organizational unit, if defined.

### Note





For more information, see the **Calendar Rules** topic.

## To redefine calendar rules at role level

1. Select the role you want to assign to a calendar rule. Open the specific role properties pane.
2. Select the **Calendar Rules** option from the advanced properties area. Click **Add**. A new pane appears.

[Roles](#) > [Edit Role Finance Clerk](#) > [Calendar Rules](#) > **Add Calendar Rule Assignment**

Properties	
Organizational Unit	Dallas ▼
Calendar Rule	Dallas ▼
<input type="button" value="Save"/> <input type="button" value="Cancel"/> <input type="button" value="Reset"/>	

3. Select an **Organizational Unit** from the drop-down list.
4. Select a **Calendar Rule** from the drop-down list.
5. Click **Save**.

## Deleting Roles

### To delete a role

1. Select the roles you want to delete by checking their boxes in the roles list.
2. Click the **Delete** button.

## Organizational Units



Organizational units (ou) are typically departments or divisions within an organization. Organizational units can also be organized in a hierarchy.

#### Organizational Units

Page: 1 / 1 - Total: 2				<a href="#">Filter</a>
<a href="#">Add</a> <a href="#">Delete</a>				
<input type="checkbox"/>	▲ Name	Description	Calendar Rule	
<input type="checkbox"/>	<a href="#">Dallas</a>	Dallas - US	Dallas	
<input type="checkbox"/>	<a href="#">Dallas/Sales</a>	Sales	None	

## Adding an Organizational Unit

### To add an organization unit

1. Select the **Organizational Units** option from the tree. A summary is displayed in the right pane.
2. Click the **Add** button. A new pane with the organizational unit properties is shown.
3. If the ou is a child of another ou (hierarchy), the parent must be selected from the parent ID drop-down box.
4. Enter the new ou **Name** and **Description**.
5. Optionally, select the rule from the drop-down list if you want to add a calendar rule to this organizational unit.
6. Click **Save**.



[Organizational Units](#) > Add Organizational Unit

Properties	
Parent Id	<input type="button" value="v"/>
Name	<input type="text" value="Dallas"/>
Description	<input type="text" value="Dallas - US"/> <input type="button" value="v"/>
Calendar Rule	<input type="button" value="Dallas v"/>
<input type="button" value="Save"/> <input type="button" value="Cancel"/> <input type="button" value="Reset"/>	

## Deleting an Organizational Unit

### To delete an organizational unit

1. Select the organizational units you want to delete by checking their boxes in the organizational units list.
2. Click the **Delete** button.

## Adding Groups

A group consists of participants and roles. A set of roles is assigned to a group. When you assign participants to a group, you are assigning this set of roles to them as well.

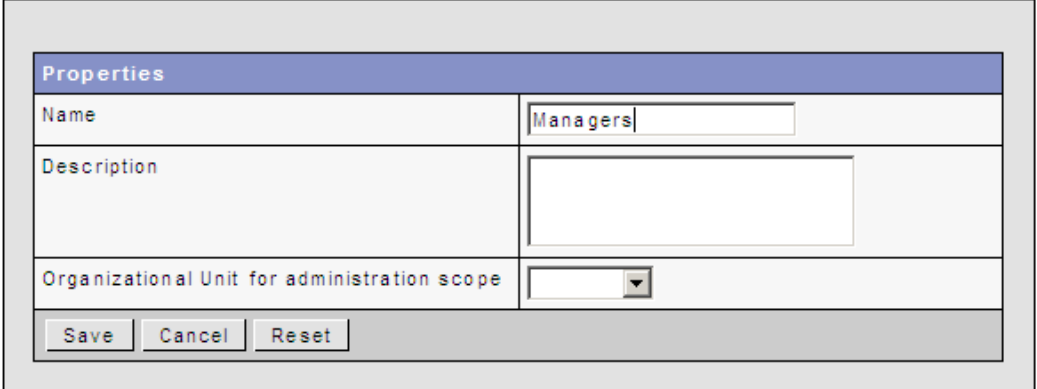
When participants log on to Work Portal, the groups to which they belong are checked to determine the roles assigned to them. This means that the participant inherits all of the roles defined for the groups to which they belong.

### To add a new group



1. Select the groups option from the tree in the left pane of the Web Console workspace. A summary of the existing groups is displayed in the right pane.
2. Click **Add**. The group pane appears.

[Groups](#) > Add Group



Properties	
Name	<input type="text" value="Managers"/>
Description	<input type="text"/>
Organizational Unit for administration scope	<input type="text" value=""/>
<input type="button" value="Save"/> <input type="button" value="Cancel"/> <input type="button" value="Reset"/>	

3. Type the **Name** and **Description** of the group.
4. Define the **Organizational Unit for administration scope**. Only the Participants defined as a FuegoBPM User Administrator that can administer this Organizational Unit are able to modify the group.
5. Click **Save**. The Advanced properties area appears




[Groups](#) > [Edit Group Managers](#).

Properties	
Name	Managers
Description	Position: Managers 1st level
Organizational Unit for administration scope	Central ▼
<input type="button" value="Save"/> <input type="button" value="Cancel"/> <input type="button" value="Reset"/>	
Advanced Properties	
<a href="#">Assigned Participants</a>	
<a href="#">Assigned Roles</a>	
<a href="#">Assigned Groups</a>	

6. Add the necessary participants, roles, and groups by clicking the appropriate link in the **Advanced Properties** area.

### Note

 All the updates to the groups are effective once the participant connected to the Work Portal, logs out and logs in again.

## Administrating Groups

To update or modify groups the participant has to have the User Administration property enabled and defined for the same Organizational Unit of the group. Groups marked with a lock icon are not available for modification.



Groups

Page: 1/1 - Total: 3

[Filter](#) [Preferences](#)

**Filter**

To filter the following table, select the column by which to filter, the filtering criterion and enter a value.

<input type="checkbox"/>	Name ▲	Description	Enabled
<input type="checkbox"/>	<a href="#">Group1</a>		Enabled
<input type="checkbox"/>	<a href="#">Managers</a>	Position: Managers 1st level	Enabled
<input type="checkbox"/>	<a href="#">TestGroup</a>		Enabled

## Groups Search and display

By default, the filter options is enabled and if no filter is set, the complete list of groups is displayed. You can limit or filter the displayed groups by defining searching conditions. For example all the groups whose *Display Name* begins with **Admin**.

## Calendar Rules

See the FuegoBPM Studio documentation for details related to calendar rules.

### Defining a Calendar Rule

You can define different calendar rules depending on your business structure and needs.



Properties						
Name	New York					
Time Zone	[(GMT-5:00) America/New_York]					
Holiday Rule	United States					
Work Schedule						
		Starting Time	Finishing time		Starting Time	Finishing time
Monday	<input checked="" type="checkbox"/>	08:00 AM	12:00 PM	<input checked="" type="checkbox"/>	01:00 PM	05:00 PM
Tuesday	<input checked="" type="checkbox"/>	08:00 AM	12:00 PM	<input checked="" type="checkbox"/>	01:00 PM	05:00 PM
Wednesday	<input checked="" type="checkbox"/>	08:00 AM	12:00 PM	<input checked="" type="checkbox"/>	01:00 PM	05:00 PM
Thursday	<input checked="" type="checkbox"/>	08:00 AM	12:00 PM	<input checked="" type="checkbox"/>	01:00 PM	05:00 PM
Friday	<input checked="" type="checkbox"/>	08:00 AM	12:00 PM	<input checked="" type="checkbox"/>	01:00 PM	05:00 PM
Saturday	<input type="checkbox"/>	08:00 AM	12:00 PM	<input type="checkbox"/>	01:00 PM	05:00 PM
Sunday	<input type="checkbox"/>	08:00 AM	12:00 PM	<input type="checkbox"/>	01:00 PM	05:00 PM
<input type="button" value="Save"/> <input type="button" value="Cancel"/> <input type="button" value="Reset"/>						

## To define a calendar rule

1. Select the **Calendar Rules** option from the tree. A summary of the calendar rules is displayed in the right pane.
2. Click **Add**. A new pane with the calendar rules properties is shown.
3. Enter a name for the Calendar Rule in the **Name** field.
4. Select the time zone from the **Time Zone** drop-down menu. Select the time zone based on your current time zone. The time zone translation is done by the FuegoBPM Server.
5. Select a **Holiday Rule** from the drop-down menu, if any apply.
6. In the Working Days area of the window, enter the **Starting Time** and **Finishing Time** for the days that apply to the rule. Times should be entered in military format to indicate the time of day. For example, 1:00 P.M. is 13:00 in military time. If there is a standard work break on any given day, enter the Starting and Finishing Times for the break.
7. Click **Save** to save the new rule.



## Assigning Calendar Rules to Organizational Units and Roles

You can assign a calendar rule to an organizational unit (ou) from the organizational unit option. An ou must be selected and the calendar rule should be assigned there. See the organizational unit section for more information.

In a very similar way, it's possible to assign calendar rules to a role. Check the roles section for more information.

### Note



A calendar rule set at a lower level supersedes one set at a higher level. For example, if a different rule is set at the role/unit level, rather than at the organization level, the rule set at the role/unit level applies.

## Holiday Rules

Holiday rules consist of a set of non-working days. Holidays rules can be associated with calendar rules.

FuegoBPM Server takes note of the holidays defined in the holiday rule when calculating activity deadlines. It considers them as exceptions to the normal calendar rules on certain days of the year.

### Holiday Types

You can define several types of holidays:

- taking place the same date every year
- taking place a particular date of a particular year
- taking place in a given week day of a certain month
- relative to Easter
- mobile to the nearest Monday



## Same Date Every Year

For example:

- **July 4**
- **May 1**

## A Date Applicable only for the Given Year

Use this type when you need to configure a holiday only for a specific year. For example: **Oct 4, 2005**

## N-th Weekday of the Month:

The holiday is build selecting three values from the option combos:

### Number of the Day + Name of the Week + Name of the Month

- Number of the Day: "First, Second, Third, Fourth, Last",
- Name of the Week: "Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, Saturday",
- Name of the Month: "January, February, March, April, May, June, July, August, September, October, November, December".

For example:

- **First Monday May**, this holiday will take place "The first Monday of May of every year", and you will read the its description as "First Sunday of January".
- **Fourth Thrusday June**, this holiday will take place "The fourth Thursday of June of every year", and you will read its description as "Fourth Thursday of June".



## Relative to Easter

Different is the way in which Easter is celebrated around the world. The days before Easter are declared as holiday in some countries and in another they are not. The last three days before Easter are *Maundy Thursday* or *Holy Thursday*, *Good Friday* and *Holy Saturday* (sometimes referred too as *Silent Saturday*). In some countries, Easter lasts two days, with the second called *Easter Monday*.

So based on what days your country declares as holiday you could configure them with this holiday type *Relative to Easter*.

Let's see some examples:

- Maundy Thursday, set a 3 Days "**Before Easter**" in the *Date* field,
- Good Friday, set a 2 Days "**Before Easter**" in the *Date* field
- Holy Saturday, set a 1 Days "**Before Easter**" in the *Date* field
- Easter Monday, set a 1 Days "**After Easter**" in the *Date* field.

## Mobile to the nearest Monday

In some countries, as in Argentina, the holiday is moved to the closest Monday.

For example, if you have to define the holiday for **October, 12th** the holiday will take place:

- in 2005, on Oct, 10th,
- in 2006, on Oct, 9th,
- in 2007, on Oct, 15.



## Defining a Holiday Rule

### To add a holiday rule

1. Select the **Holiday Rules** option from the tree. A summary of the holiday rules is displayed in the right pane.
2. Click the **Add** button. A new pane appears.

[Holiday Rules](#) > [Edit Holiday Rule USA Holidays](#)

Properties	
Name	USA Holidays
<input type="button" value="Cancel"/> <input type="button" value="Reset"/>	

Advanced Properties	
<a href="#">Holidays</a>	

3. Enter a **Name** for the holiday rule.
4. Click the **Save** button. Now the holiday rule has been created but doesn't have any holidays assigned.
5. Select the **Holidays** option from the advanced properties area.
6. Click the **Add** button. A new pane appears.

[Holiday Rules](#) > [Add Holiday Rule](#) > [Add Holiday](#)

Properties	
Description	Independence Day
Type	Same Date every Year
Date	Jul 4
<input type="button" value="Save"/> <input type="button" value="Cancel"/> <input type="button" value="Reset"/>	

7. Enter a **Description**, the **Type** from the drop-down menu, and enter the **Date** of the holiday in the specified format that depends on the selected **Type**.



- a. If it is an "Easter Relative" type, the screen will look like the following:

[Holiday Rules](#) > [Add Holiday Rule](#) > [Add Holiday](#)

Properties	
Description	Maundy Thursday
Type	Easter Relative
Date	3 Days Before Easter
<input type="button" value="Save"/> <input type="button" value="Cancel"/> <input type="button" value="Reset"/>	

- b. If it is an "N-th Weekday of the Month" type, the screen will look like the following:

[Holiday Rules](#) > [Add Holiday Rule](#) > [Add Holiday](#)

Properties	
Description	4th Monday of June
Type	N-th Weekday of the Month
Date	Fourth Monday June
<input type="button" value="Save"/> <input type="button" value="Cancel"/> <input type="button" value="Reset"/>	

8. Click **Save**.

You can add several holidays, repeating steps 6 to 8. Or, you can repeat the entire procedure to add multiple holiday rules.

## Adding Holiday Rules to Calendar Rules

After you define a holiday rule, you can assign it to a calendar rule. This procedure assumes a holiday rule is already defined.

### To add a holiday rule to a calendar rule

1. From the **Calendar Rule** panel, select a rule. The profile information displays in the right pane.
2. Click on the **Holiday Rule** drop-down list and select a holiday rule.



3. Click **Save**.

## Server

If you select the servers option in the left pane, a new window appears on the right side of the browser with a list of all existing FuegoBPM Servers. From this pane, users can administer the Servers. It is possible to start and stop Servers as well as to view the startup log when an error occurs during the startup process.

Servers

Page: 1/1 - Total: 5

[Filter](#) [Preferences](#)

[Add](#) [Delete](#) [Refresh Status](#) [Re-load Information from the Directory](#) [Import](#)

<input type="checkbox"/>	Name ▲	Status	Type	Engine Actions
<input type="checkbox"/>	<a href="#">FuegoWASServer</a>		websphere	
<input type="checkbox"/>	<a href="#">J2EEServer</a>		websphere	
<input type="checkbox"/>	<a href="#">J2EEServerWL</a>		weblogic	
<input type="checkbox"/>	<a href="#">ServerDoc</a>	Not running	enterprise	
<input type="checkbox"/>	<a href="#">ServerDoc1</a>	Not running	enterprise	

The icons that appear next to each server included in the list allow you to start/stop the server, to launch a thread dump and to view the startup log.

When you operate with a J2EE Server, the start/stop buttons use the FuegoBPM Deployer in order to start and stop the application. The status of the server is also obtained from the deployer. There are three possible states: **application not installed** (in this case, you have to install the application from the J2EE application server files generation page before being able to start or stop the server), **application stopped** (if it's not running), or **application started**.

If the Deployer is not configured nor running, these operation cannot be performed and consequently the status is not displayed.



## Actions on a Server

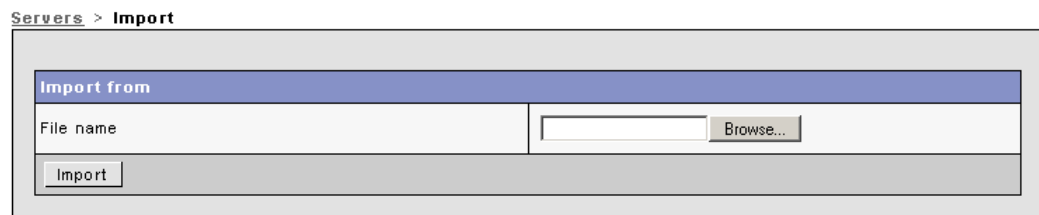
Use the buttons above the servers list to add a new server as well as to remove, refresh the server status and reload information for the server(s) selected.

### Import a Server

Having an exported server file it can be imported. As the exported server file is selfcontained, once it is imported, no additional actions or configurations are required. The server is ready to begin with database creation step.

**To import a server,**

1. Click the **Import** button above the servers list. The **Import** dialog opens.



2. Browse to select the server file. This file will appear with an *.exp* file extension (for example, myServer.exp). Click the **Import** button to begin.
3. Once the import ends the server appears in the server list.

See Maintaining an Server for information on how to **Export** a server.

### How to visualize the Server Log - Launch the Log Viewer

In order to launch **Log Viewer** application, which allows you to open



and analyze the Server log messages, use the link **Launch Log Viewer** that appears on the Web Console's header. See the *Log Viewer* topic for more information.



## Creating a Server

You must create at least one FuegoBPM Server to run and manage processes you plan to publish and deploy. The FuegoBPM Server is responsible for the following:

- Accepting requests generated, for example, from the Work Portal
- Executing required tasks
- Maintaining the state of all instances flowing through the deployed processes

Typically, Servers are created by the FuegoBPM system administrator who is familiar with network connections, proxies, ports, and so on. Some of the things you must know to create a Server include the following:

- The relational database type and connection information
- Familiarity with process design and the number of instances that will flow through a process in a period of time
- The amount of concurrent users that are going to be connected to the application



To create a Server a wizard guides you through the required steps depending on the FuegoBPM Server type, or J2EE based type.

If the server is J2EE based, the wizard creates the configurations to access the server database and to access the FDI database. However, these configurations are not visible in the **Configurations** category of the Web Console.

The Server database access configuration can be edited through the **Basic Configuration** tab, clicking the *Edit server database configuration* link.

The remote configurations to access the server runtime database and the FDI database through the Application server can be visualized and changed if required in the **Application Server** tab.

## Creating a FuegoBPM Enterprise Server

### To create a Server

1. Click on Servers entry in the menu tree. The list of existing servers appears.
2. Click **Add**. The first step of the creation wizard *Choose Server Type* is displayed.

Servers > Choose Server type

Server name	DocServer
Server type	enterprise
Server database type	MsSQL JDBC (i-net Driver)
<input type="button" value="Next"/> <input type="button" value="Cancel"/> <input type="button" value="Reset"/>	

3. Enter the **Name** of the Server.
4. Select the **Server Type** as *enterprise*.
5. Select the **Server database type**, and click **Next**.



6. The *Edit Configuration* screen displays. Configure the data for the enterprise server database configuration access. For details, see Configurations-SQL Database. Click **Next** to continue.

Servers > Choose Server type > Edit Configuration Server 'DocServer' database configuration

Type	
Name	Server 'DocServer' database configuration
Type	SQL Database
Subtype	MsSQL JDBC (i-net Driver)

Properties	
Host	testserver
Port	1433
Database	DocServDb
User	Administrator
Password	1

Runtime	
Maximum Pool size	10
Connection Idle time (Mins)	5
Maximum opened cursors	50

Next Cancel Reset

See Server Database Considerations for further information.

7. Runtime Configuration You can configure the Database connections through the web console. The Server's database configuration has a huge impact on the overall performance of the Server. Each Server needs to persist information to the database each time a BP-Method is executed or when an instance needs to be routed to the next activity so the state of any process instance can be recovered at any point in time. In order to ensure a minimum level of performance, configure the connection pool of the server accordingly so that connections are available when needed.
- a. **Maximum Pool Size:** This is the maximum number of connections that the server can allocate to perform



transactions against the server's database. If for some reason the server needs more connections it will be able to increase the connection pool up to the number indicated in this field. If more connections are needed, the requests are queued until the first transaction finishes, the connection is freed for another transaction in the queue to start. This parameter should reflect the number of concurrent interactive users. This is the determining factor. Make sure the database has that many client connections configured to be consumed by FuegoBPM. This is a combined value from the interactives thread + automatic execution threads that can be concurrently active. Do not define a huge value (i.e.: 400) for this parameter since this will create also contingency in the RDBMS used by the FuegoBPM Server. It is preferable to wait for a connection to be released after a transaction is finished than generate a big concurrency of transaction in the target RDBMS. There must be a balance between how soon the transactions can be finished without generating a bottleneck and contingency in the database. This will also depend on the hardware where your RDBMS is deployed and the dimensioning of the RDBMS used by the FuegoBPM Server. Make sure that the database is configured so that there are enough sessions to handle the number of maximum connections that the FuegoBPM Server may use. Some Oracle RDBMS recommendations:

- i. Make sure you have enough sessions. Check Oracles SESSIONS parameter. For no contingency, you should have a session for each Server connection that the FuegoBPM; Server may use for a transaction.
- ii. Make sure there are enough processes on the Oracle side. Check Oracles PROCESSES parameters. This parameter depends also on the values assigned to SESSIONS and TRANSACTIONS. For no contingency, you should have a process for each FuegoBPM Server



connection that can be executing a transaction at the same time.

- iii. Make sure the Oracle memory is properly configured for the number of concurrent transactions to be executed by a FuegoBPM Server. The dimensioning of the memory in Oracle is related to the configuration of the SGA. FuegoBPM only uses from the SGA the following sections: BUFFER CACHE, LARGE POOL, SHARED POOL

- b. **Connection Idle Time:** This value ensures that a connection does not remain open idle more than the amount of time specified by this parameter. Usually, if the connections are not closed, the associated resources (such as cursors or statements) are not released by the JDBC Driver. This is why if the concurrency is not too high this value should not be too big.
- c. **Maximum Opened Cursors:** This parameter specifies the maximum number of cursors that a session can open at a time. This value should be greater than the number of cursors that may be opened by a Fuego Business Method triggered from any activity task.

8. The next step asks for the **Basic Configuration**.




[Servers](#) > [Choose Server type](#) > [Edit Configuration Server 'DocServer' database configuration](#)  
> **Add Server**

Basic configuration	<a href="#">Log</a>	<a href="#">Execution</a>	<a href="#">Services</a>	<a href="#">Networking</a>	<a href="#">Others</a>
---------------------	---------------------	---------------------------	--------------------------	----------------------------	------------------------

Basic configuration	
Name	DocServer
Type	enterprise
Host	<input type="text" value="testServer"/>
Home Directory	<input type="text" value="C:\fuego5.5\enterprise\server\DocServer"/>
Log Directory	<input type="text" value="C:\fuego5.5\enterprise\log"/>
<input type="button" value="Save"/> <input type="button" value="Cancel"/> <input type="button" value="Reset"/>	

9. Enter the **Host** name where the Server will run.
10. Enter the **Home directory** path for the Server. By defining a home directory, an administrator can determine where to place resources that are generated exclusively for this Server.
11. Enter the path for the directory where the log is stored in the **Log directory**. The log keeps track of the events defined in the Log settings tab. By default, the FuegoBPM Studio installation creates a log directory under the enterprise entry that is the most frequently configured path.
12. Click **Save**.

### Note

 In almost all FuegoBPM Studio projects, you must configure other Server parameters. See the *Maintaining an Server* topic for more information.

## Creating a FuegoBPM JBOSS Application Server Edition

### To create an FuegoBPM Application Server Edition

1. Click on Servers entry in the menu tree. The list of existing servers appears.



2. Click **Add**. The first step of the creation wizard *Choose Server Type* is displayed.

[Servers](#) > **Choose Server type**

Server name	DocServJBoss
Server type	jboss <input type="checkbox"/> Cluster
Server database type	MySQL JDBC (i-net Driver)
<input type="button" value="Next"/> <input type="button" value="Cancel"/> <input type="button" value="Reset"/>	

3. Enter the **Name** of the Server.
4. Select the **Server Type** according to the application server you are creating the server in. Depending on your license the option will be set to *jboss*, *weblogic* or *websphere*.
5. The **cluster** check box is available when you license includes clustering. If you do not select it, the **Cluster** tab will not be shown laterly.
6. Select the **Server database type**, and click **Next**.
7. The *Edit Configuration* screen displays. Configure the data for the enterprise server database configuration access. For details, see Configurations-SQL Database. Click **Next** to continue.



Servers > Choose Server type > Edit Configuration Server 'DocServJBoss' database configuration

Type	
Name	Server 'DocServJBoss' database configuration
Type	SQL Database
Subtype	MsSQL JDBC (i-net Driver)

Properties	
Host	testserver
Port	1433
Database	DocJBOSDb
User	Administrator
Password	*

Next Cancel Reset

See Server Database Considerations for further information.

- The **J2EE Info** screen displays to visualize the configuration for the Application Server, and the FuegoBPM Deployer.

Servers > Choose Server type > Edit Configuration Server 'DocServJBoss' database configuration > J2EE Info

Summary of the configuration needed in your jboss application server	
Server runtime datasource lookup name	java:/XADocServJBOSSDS
Server FDI datasource lookup name	java:/XAFDIDS
JMS Queue name	queue/ToDoQueue
JMS Queue connection factory	java:/XAConnectionFactory
JMS Topic name for Server news	topic/EngineNews
JMS Topic connection factory	java:/XAConnectionFactory

FuegoBPM™ Deployer for JBoss configuration	
FuegoBPM™ Deployer URL	http://<server>:<port>/fuego/deployer/servlet/worker

Next Cancel Reset

If the application server is WebSphere, the **Listener port** has to be configured in this step of the server creation, and the server or cluster name is added to the FuegoBPM Deployer configuration.



Servers > Choose Server type > Edit Configuration Server 'DocServWebs' database configuration > J2EE Info

Summary of the configuration needed in your websphere application server	
Server runtime datasource lookup name	XADocServWebsDS
Server FDI datasource lookup name	XAFDIDS
JMS Queue name	queue/ToDoQueue
JMS Queue connection factory	XAConnectionFactory
JMS Topic name for Server news	topic/EngineNews
JMS Topic connection factory	XATopicConnectionFactory
Listener port	

FuegoBPM™ Deployer for WebSphere configuration	
FuegoBPM™ Deployer URL	http://<server>:<port>/fuego/deployer/servlet/worker
WebSphere server/cluster name	

Next Cancel Reset

9. The next step asks for the **Basic Configuration**.

Servers > Choose Server type > Edit Configuration Server 'DocServJBoss' database configuration > J2EE Info > Add Server

Basic configuration	Log	Execution	Services	Networking	Others	Application Server	Cluster
<b>Properties</b>							
Name		DocServJBoss					
Type		jboss <input checked="" type="checkbox"/> Cluster					
Home Directory		C:\fuego5.5\enterprise\server\DocServJBoss					
Log Directory		C:\fuego5.5\enterprise\log					
Save Cancel Reset							

10. Enter the **Host** name where the Server will run.

11. Enter the **Home directory** path for the Server. By defining a home directory, an administrator can determine where to place resources that are generated exclusively for this Server.

12. Enter the path for the directory where the log is stored in the **Log directory**. The log keeps track of the events defined in the Log settings tab. By default, the FuegoBPM Studio installation creates a log directory under the enterprise entry that is the most frequently configured path.



13. Click **Save**.

### Note



In almost all FuegoBPM Studio projects, you must configure other Server parameters. See the *Maintaining a Server* topic for more information.

## FuegoBPM Application Server Edition Database Important consideration

**The clock of the J2EE Application Server that contains where the FuegoBPM Application Server edition is deployed and the clock of the database manager of the FuegoBPM Application Server MUST be synchronized. This applies also to cluster application servers. Each node clock of the Application Server must be synchronizd with the one of the database.**

If these applications were not synchronized the automatic execution items or the due execution items may be executed after the time they should. Besides, in a cluster Application Server, the audit trail of an instance may show the events in a wrong order, for example: "Arrive to New York" before "Started the car engine to go to New York".

Each time that the FuegoBPM Server starts, it verifies that synchronization to be correct. If it weren't, a SEVERE log item would be logged with the following description: **The host clock is not synchronized with the db host clock.**

## Creating a FuegoBPM WebSphere Application Server Edition

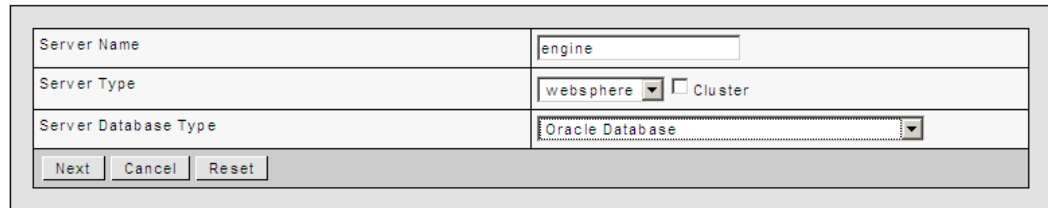
### To create a FuegoBPM Server for WebSphere

1. Click on Servers entry in the menu tree. The list of existing servers appears.



2. Click **Add**. The first step of the creation wizard *Choose Server Type* is displayed.

[Servers](#) > Choose a Server type.



The screenshot shows a web form titled "Choose a Server type" with the following fields and controls:

Server Name	<input type="text" value="engine"/>
Server Type	<input type="text" value="websphere"/> <input type="checkbox"/> Cluster
Server Database Type	<input type="text" value="Oracle Database"/>
<input type="button" value="Next"/> <input type="button" value="Cancel"/> <input type="button" value="Reset"/>	

3. Enter the **Name** of the Server.
4. Select the **Server Type** accordingly. In this case as "websphere".
5. The **cluster** check box is available when your license includes clustering. If you do not select it, the cluster specific options are not shown later.
6. Select the **Server database type**. In this case Oracle is used as the target backend RDBMS for business process instance persistence.
7. Click **Next** to continue.
8. The *Edit Configuration* screen displays. Configure the data for the enterprise server database configuration access. For details, see Server Database Considerations. Click **Next** to continue.



[Servers](#) > [Choose a Server type.](#) > [Edit Configuration Server 'engine' database configuration .](#)

Type	
Name	Server 'engine' database configuration
Type	SQL Database
Subtype	Oracle Database

Properties	
Host	<input type="text" value="sputnik"/>
Port	<input type="text" value="1521"/>
SID	<input type="text" value="sputnik"/>
User	<input type="text" value="engineDB"/>
Password	<input type="password" value="*****"/>
Confirm Password	<input type="password" value="*****"/>
Schema	<input type="text" value="engineDB"/>
Driver Type	<input type="text" value="thin"/>
<input type="checkbox"/> Database String	<input type="text"/>

Advanced	
Tablespace	<input type="text"/>
Temporary Tablespace	<input type="text"/>
Profile	<input type="text"/>

9. The **J2EE Info** screen displays to visualize the configuration for the Application Server, and the FuegoBPM Deployer. The following panel shows the names for IBM's WebSphere resources used internally by the FuegoBPM Server deployed on WebSphere. These resources may be modified if IBM's WebSphere Administrator already has naming conventions. IBM's Administrator will be in charge of creating these resources after successfully completing the FuegoBPM Server creation. In the **Listener bindings for message-driven beans** property, you can select *Listener Port* or *Activation specification JNDI name*. The first option should be used for WebSphere 5.x version (the proposed name for the Listener Port is *ToDoQueueListenerPort*). If WebSphere 6.x version is used, FuegoBPM can use activation specification (as WS 6.x supports J2EE 1.4 specification) for Message Driven Beans communication. In that case, select this option in the




Listener combo. Change the default name for the activation specification

[Servers](#) > [Choose a Server type.](#) > [Edit Configuration Server 'engine' database configuration.](#) > J2EE Info

Summary of the configuration needed in your websphere application Server	
Server Runtime Datasource Lookup Name	<input type="text" value="XAengineDS"/>
Server FDI Datasource Lookup Name	<input type="text" value="XAFDIDS"/>
JMS Queue Name	<input type="text" value="queue/ToDoQueue"/>
JMS Queue Connection Factory	<input type="text" value="XAConnectionFactory"/>
JMS Topic Name for Server News	<input type="text" value="topic/EngineNews"/>
JMS Topic Connection Factory	<input type="text" value="XATopicConnectionFactory"/>
Listener bindings for message-driven beans	<div>           Activation Specification JNDI Name <input type="button" value="v"/> </div> <input type="text" value="EngineActivSpec"/>

## Note

 The values given to these attributes **must** exactly map the Websphere's Resources naming.

The following box shows properties for FuegoBPM Deployer application that should also be configured. It is important to replace the `< server >` tag in the Fuego Deployer URL Text Field with the name of the host where the IBM's WebSphere Application Server is deployed. The same applies for the `< port >` tag that represents WebSphere's default http incoming port. By default in WebSphere, it is 9080.

FuegoBPM™ deployer for WebSphere configuration	
FuegoBPM™ Deployer URL	<input type="text" value="http://apolo 9080/fuego/deployer/servlet/worker"/>
WebSphere Server/Cluster Name (Ex.: server1)	<input type="text" value="server1"/>
Use FuegoBPM™ libraries smart detection	<input checked="" type="checkbox"/>
FuegoBPM™ libraries are present at WebSphere lib/ext directory	<input checked="" type="checkbox"/>
Use default server path for FuegoBPM™ libraries	<input checked="" type="checkbox"/>
Server Path for FuegoBPM™ Libraries	<input type="text"/>
<input type="button" value="Save"/> <input type="button" value="Cancel"/> <input type="button" value="Reset"/>	

- a. **WebSphere server/cluster name:** the name of the WS server (the default name is *server1*) or cluster.



- b. **Use FuegoBPM™ libraries smart detection:** Check this option if you want to rely on Fuego libraries detection. The recommend action is to leave this option checked.
- c. **FuegoBPM™ libraries are present at WebSphere lib/ext directory:** If smart detection is not selected, this property sets the websphere lib/ext as source directories for Fuego libraries.
- d. **Use default server path for FuegoBPM™ libraries:** Check this option if default path for Fuego libraries will be used (generally *WAS\_HOME/Fuego-Websphere-Deployer*). Only available when previous option is not selected.
- e. **Server path for FuegoBPM™ libraries:** If the previous options are not selected, you can set the path for Fuego libraries. If selected, the recommendation is to use absolute path.

10. The next step sets the **Basic Configuration**.

11. Enter the **Home directory** path for the Server. By defining a home directory, an administrator can determine where to place resources that are generated exclusively for this Server.

12. Enter the path for the directory where the log is stored in the **Log directory**. The log keeps track of the events defined in the Log settings tab. By default, the FuegoBPM Studio installation creates a log directory under the enterprise entry that is the most frequently configured path. It is important to make the Log directories to point to valid and existing paths in the WebSphere file system host.

13. Click **Save**.

## FuegoBPM Application Server Edition Database



## Important consideration

*The clock of the J2EE Application Server where the FuegoBPM Application Server edition is deployed and the clock of the database manager of the FuegoBPM Application Server MUST be synchronized. This applies also to cluster application servers. Each node clock of the Application Server must be synchronized with the one of the database.*

If these applications were not synchronized the automatic execution items or the due execution items may be executed after the time they should. Besides, in a cluster Application Server, the audit trail of an instance may show the events in a wrong order, for example: "Arrive to New York" before "Started the car engine to go to New York".

Each time that the FuegoBPM Server starts, it verifies that synchronization to be correct. If it weren't, a SEVERE log item would be logged with the following description: **The host clock is not synchronized with the db host clock.**

## Creating a FuegoBPM WebLogic Application Server Edition

### To create a FuegoBPM Web Logic Application Server

1. Click on Servers entry in the menu tree. The list of existing servers appears.
2. Click **Add**. The first step of the creation wizard *Choose Server Type* is displayed.



[Servers](#) > Choose a Server type.

Server Name	BEA_ENGINE
Server Type	weblogic <input type="checkbox"/> Cluster
Server Database Type	Oracle Database
<input type="button" value="Next"/> <input type="button" value="Cancel"/> <input type="button" value="Reset"/>	

3. Enter the **Name** of the Server.
4. Select the **Server Type** accordingly. In this case as "weblogic".
5. The **cluster** check box is available when your license includes clustering. If you do not select it, the **Cluster** tab will not be shown later.
6. Select the **Server database type**. In this case Oracle is used as the target backend RDBMS for business process instance persistence.
7. Click **Next** to continue.
8. The *Edit Configuration* screen displays. Configure the data for the enterprise server database configuration access. For details, see Server Database Considerations. Click **Next** to continue.



[Servers](#) > [Choose a Server type.](#) > Edit Configuration Server 'BEA\_ENGINE' database configuration .

Type	
Name	Server 'BEA_ENGINE' database configuration
Type	SQL Database
Subtype	Oracle Database

Properties	
Host	<input type="text" value="192.168.0.26"/>
Port	<input type="text" value="1521"/>
SID	<input type="text" value="DOCULABS"/>
User	<input type="text" value="BEA_ENGINE"/>
Password	<input type="password" value="*****"/>
Confirm Password	<input type="password" value="*****"/>
Schema	<input type="text" value="BEA_ENGINE"/>
Driver Type	<input type="text" value="thin"/>
<input type="checkbox"/> Database String	<input type="text"/>

Advanced	
Tablespace	<input type="text"/>
Temporary Tablespace	<input type="text"/>
Profile	<input type="text"/>

9. The **J2EE Info** screen displays to visualize the configuration for the Application Server, and the FuegoBPM Deployer. The following panel shows the names for BEA Web Logic resources used internally by the FuegoBPMServer deployed on Web Logic. These resources may be modified if BEA Web Logic's Administrator already has naming conventions. WebLogic's Administrator will be in charge of creating these resources after successfully completing the FuegoBPM Server creation.



[Servers](#) > [Choose a Server type.](#) > [Edit Configuration Server 'BEA\\_ENGINE' database configuration.](#) > [J2EE Info](#)

Summary of the configuration needed in your weblogic application Server	
Server Runtime Datasource Lookup Name	BEA_XABEA_ENGINES
Server FDI Datasource Lookup Name	BEA_XAFDIDS
JMS Queue Name	BEA_ToDoQueue
JMS Queue Connection Factory	BEA_XAConnectionFactory
JMS Topic Name for Server News	BEA_EngineNews
JMS Topic Connection Factory	BEA_XATopicConnectionFactory

FuegoBPM™ deployer for WebLogic configuration	
FuegoBPM™ Deployer URL	http://192.68.0.91:7001/fuego/deployer/servlet/worker
WebLogic Server or Cluster Name	

The last section shows properties for Fuego Deployer application that should also be configured. It is important to replace the `< server >` tag in the Fuego Deployer URL Text Field with the name of the host where the BEA Web Logic's Application Server is deployed. The same applies for the `< port >` tag that represents WebLogic's default incoming port. By default in Web Logic, it is 7001.

#### 10. The next step sets the **Basic Configuration**.

[Servers](#) > [Choose a Server type.](#) > [Edit Configuration Server 'BEA\\_ENGINE' database configuration.](#) > [J2EE Info](#) > [Add Server](#)

Basic Configuration

Properties	
Name	BEA_ENGINE
Type	weblogic <input type="checkbox"/> Cluster
Home Directory	C:\fuego5.5\j2eeWL\server\BEA_ENGINE
Log Directory	C:\fuego5.5\j2eeWL\log

#### 11. Enter the **Home directory** path for the Server. By defining a home directory, an administrator can determine where to place resources that are generated exclusively for this Server.



12. Enter the path for the directory where the log is stored in the **Log directory**. The log keeps track of the events defined in the Log settings tab. By default, the FuegoBPM Studio installation creates a log directory under the enterprise entry that is the most frequently configured path. It is important to make the Log directories to point to valid and existing paths in the WebLogic file system host.
13. Click **Save**.

### Note



In almost all FuegoBPM Studio projects, you must configure other Server parameters. See the *Maintaining a Server* topic for more information.

## FuegoBPM Application Server Edition Database

### Important consideration

*The clock of the J2EE Application Server that contains where the FuegoBPM Application Server edition is deployed and the clock of the database manager of the FuegoBPM Application Server MUST be synchronized. This applies also to cluster application servers. Each node clock of the Application Server must be synchronizied with the one of the database.*

If these applications were not synchronized the automatic execution items or the due execution items may be executed after the time they should. Besides, in a cluster Application Server, the audit trail of an instance may show the events in a wrong order, for example: "Arrive to New York" before "Started the car engine to go to New York".

Each time that the FuegoBPM Server starts, it verifies that synchronization to be correct. If it weren't, a SEVERE log item would be logged with the following description: **The host clock is not synchronized with the db host clock.**



## Starting BEA WebLogic Application Server

### Troubleshooting

In Weblogic when trying to use Process Web Services a `ClassCastException` exception might be thrown.

To avoid this exception the property **`javax.xml.soap.MessageFactory`** has to be re-defined as you start the WebLogic Application Server.

Run the start shell script, **`starWebLogic.cmd`** (windows) or **`starWebLogic.sh`** under your defined domain re-defining the system property as follows:

**`javax.xml.soap.MessageFactory=org.apache.axis.soap.MessageFactoryImpl`**

## Maintaining a Server

Once the FuegoBPM Server has been created, some advanced properties options can be seen at the bottom of the Server **Basic configuration** tab:

### Common Properties

- Edit Server database Configuration
- Manage database
- Log Viewer
- Export

### Properties for a FuegoBPM Enterprise Server Server:

- Locations
- Runtime information



Servers &gt; Edit Server DocServer

Basic configuration		<a href="#">Log</a>	<a href="#">Execution</a>	<a href="#">Services</a>	<a href="#">Networking</a>	<a href="#">Others</a>
<b>Basic configuration</b>						
Name	DocServer					
Type	enterprise					
Host	testServer					
Home Directory	C:\fuego5.5\enterprise\server\DocServer					
Log Directory	C:\fuego5.5\enterprise\log					
<input type="button" value="Save"/> <input type="button" value="Cancel"/> <input type="button" value="Reset"/>						
<b>Advanced Properties</b>						
<a href="#">Locations</a>	<a href="#">Edit Server database configuration</a>					
<a href="#">Manage database</a>	<a href="#">Log Viewer</a>					
<a href="#">Runtime Info</a>	<a href="#">Export</a>					

### Properties for a FuegoBPM Application Server Edition:

- J2EE application server files (EARs, WARs)

Servers &gt; Edit Server DocServJBoss

Basic configuration		<a href="#">Log</a>	<a href="#">Execution</a>	<a href="#">Services</a>	<a href="#">Networking</a>	<a href="#">Others</a>	<a href="#">Application Server</a>	<a href="#">Cluster</a>
<b>Properties</b>								
Name	DocServJBoss							
Type	jboss <input checked="" type="checkbox"/> Cluster							
Home Directory	C:\fuego5.5\enterprise\server\DocServJBoss							
Log Directory	C:\fuego5.5\enterprise\log							
<input type="button" value="Save"/> <input type="button" value="Cancel"/> <input type="button" value="Reset"/>								
<b>Advanced Properties</b>								
<a href="#">Edit Server database configuration</a>				<a href="#">Manage database</a>				
<a href="#">J2EE application server files (EARs, WARs)</a>				<a href="#">Log Viewer</a>				
<a href="#">Export</a>								

There are also other tabs with more parameters related to the Server configuration:



- Log
- Execution
- Services
- Networking
- Others
- Application Server, if the server is EJB based
- Cluster, if the server is EJB based and it is cluster enabled

## Edit Server database configuration

Select this property if you need to change any data in the access configuration to the Server database. Remember that this configuration does not appear listed in the **Configurations** category of the Web Console.

## Creating a Server Database

After creating the FuegoBPM Server settings, the FuegoBPM Administrator should proceed to create the backend RDBMS for business process persistence. This is achieved by clicking on the **Manage database** link on the bottom of the Server Basic Configurations panel.

### To create the Server database

1. Select the **Manage Database** option. The Database management pane appears.



[Servers](#) > [Edit Server engine.](#) > [Manage Database](#)

Database Creation	
Drop the database.	<input type="checkbox"/>
Create the database.	<input checked="" type="checkbox"/>
Create the data structure.	<input checked="" type="checkbox"/>
User Name	<input type="text" value="system"/>
User Password	<input type="password" value="*****"/>
<input type="button" value="OK"/> <input type="button" value="Cancel"/> <input type="button" value="Show SQL Statements"/>	

2. Select the **Create database** and **Create data structure** check boxes.
3. Type a **User Name** with sufficient privileges (usually an administrator user like *system*), type the **User Password**, and click **OK**.

A message appears indicating that the database and the structure data have been properly generated.

By clicking the button **Show SQL Statements**, it is possible to download a script with the SQL statements that are executed during the database creation. Some database administrators might prefer executing them manually.

## Creating a Server Database using an SQL script

### To generate the script to create the Server database

1. Select the **Manage Database** option. The Database management pane appears.



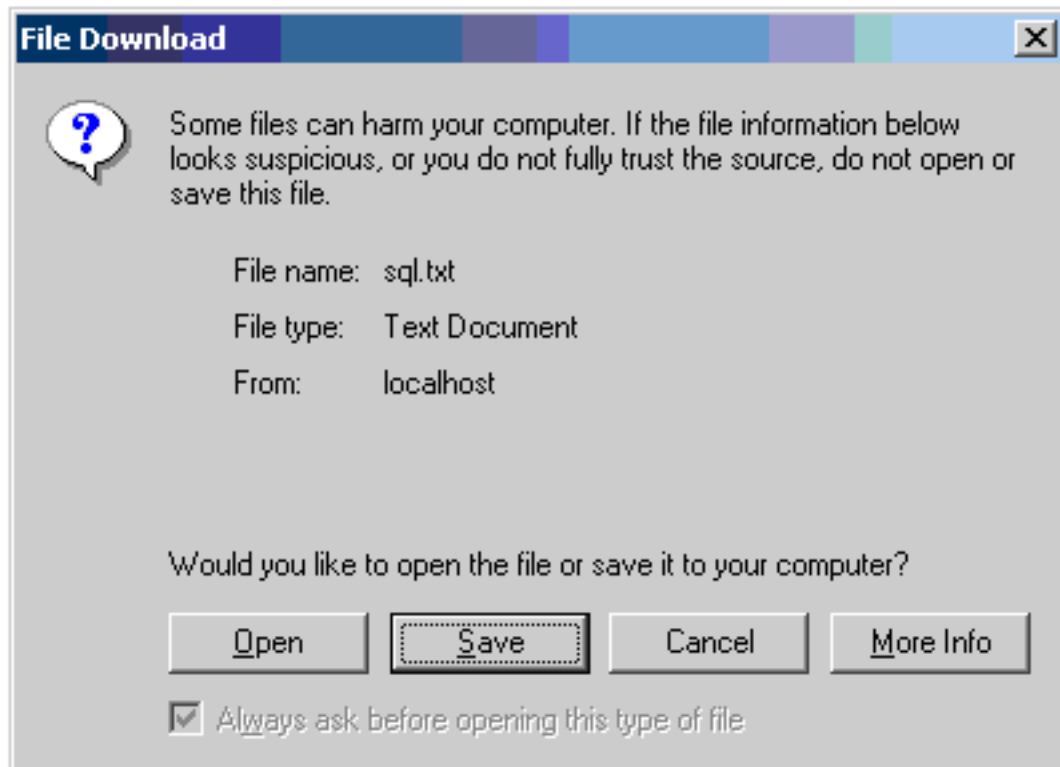
[Servers](#) > [Edit Server ServerDoc.](#) > [Manage Database](#)

Database Creation	
Drop the database.	<input type="checkbox"/>
Create the database.	<input checked="" type="checkbox"/>
Create the data structure.	<input checked="" type="checkbox"/>
User Name	<input type="text"/>
User Password	<input type="text"/>
<input type="button" value="OK"/> <input type="button" value="Cancel"/> <input type="button" value="Show SQL Statements"/>	

2. Select the **Create database** and **Create data structure** check boxes for the SQL Script to include the right information.

Click on the *Show SQL Statements* button. The following dialog will pop up asking to save the SQL Script with the Server Database SQL creation statements.





Next, you should provide the SQL Script to the Database's Administrator so the statements are executed.

## Deleting a Server Database

This option is sometimes used before creating the Server database. However, before you delete the server database, pay heed to the following warning.

### Warning



If the Server database is deleted, all the instances will be lost. You must be completely sure that you have done the necessary backups, and ensure that you no longer need the instances information. You must also check for consistency issues if your projects save instance data in other storage areas, such as database tables, text files, and so on (for instance, a table where instance IDs are saved).

### To delete the Server database



1. Select the **Manage Database** option. The Database management pane appears.
2. Click the **Drop database** check box.
3. Type a user with sufficient privileges (usually an administrator user), type the user's password, and click OK.

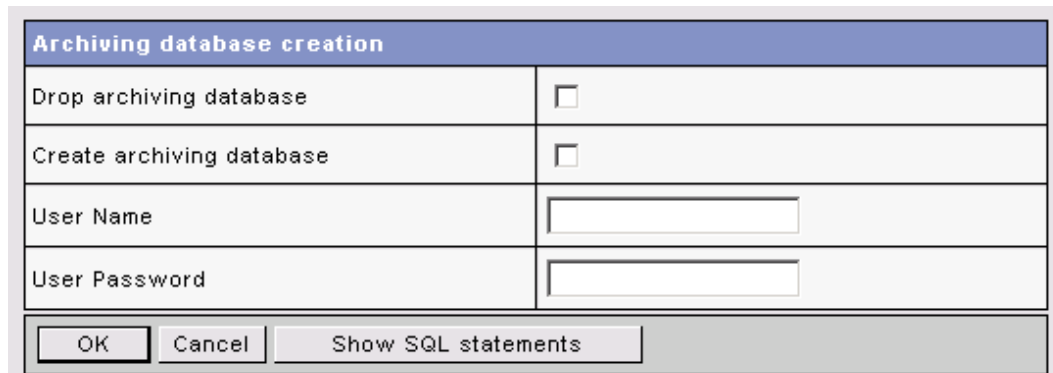
## Creating and Deleting the Archiving Database

### Creating the Archiving Database

When the archiving is enabled for the server, see Services, the **Archiving database creation** section is enabled in the **Manage database pane**.

#### To create the Archiving database

1. Select the **Manage Database** option. In the lower portion of the Database management pane appears the **Archiving database creation**.



Archiving database creation	
Drop archiving database	<input type="checkbox"/>
Create archiving database	<input type="checkbox"/>
User Name	<input type="text"/>
User Password	<input type="password"/>
<input type="button" value="OK"/> <input type="button" value="Cancel"/> <input type="button" value="Show SQL statements"/>	

2. Select the **Create database** and **Create data structure** check boxes.
3. Type a **User Name** with sufficient privileges (usually an administrator user), type the **User Password**, and click **OK**.



A message appears indicating that the database and the structure data have been properly generated.

### Deleting the Archiving Database

In case you need to delete the archiving database, be sure to backup it in case you may need it in a future.

#### To delete the archiving database

1. Select the **Manage Database** option. Select the **Drop archiving database** check box. Type a **User Name** with sufficient privileges (usually an administrator user), type the **User Password**, and click **OK**.


## Executing the Logviewer

The Log Viewer opens a new pane with the last 50 messages logged during Server execution. You can use the Next and Prev icons to navigate through the log pages. This provides a quick way to see the last messages logged. To better analyze a complete log file, use the Log Viewer link that appears on the Web Console header, which launches the Log Viewer application. See the *Log Viewer* topic in this section for more information.

## Runtime Information



Servers &gt; Edit Server DocServer &gt; Runtime Info

Client name	Connected since	Last operation time	Connected from
 sa	Feb 18, 2005 1:32:56 PM	Feb 18, 2005 1:32:56 PM	

There are no active sessions.

Debugger	
Status	<a href="#">Running</a>
Last login from	
Port	8080

Through the runtime information panel, administrators can monitor Server usage values at any time. Available tools are:


- **Connected users:** There may be times when you need to see who is connected to a process. For example, if you need to restart the Server, you may need to notify connected users that they will not be able to use the Work Portal until the Server is restarted. Or, you may detect a bad performance and you want to know how many participants are connected.
- **Sessions:** Shows the active sessions of an Server. If there are no active sessions, only a message will be shown.
- **HTTP debugger:** The HTTP debugger gives technical information about the Server status at runtime. Access this information using a browser and connecting to the port where this service is running. It is useful when a problem is detected, or if the user wants to do some performance tuning. By default, the service is down. To start the HTTP debugger service, type the port number where the service should run and press the Start HTTP service button. Launch your browser and type in the following URL address:  
*http://hostWhereTheServerIsRunning:portWhereTheHTTPDebuggerIsListening,*  
or click on the "Running" link, in the Status row.




The HTTP Debugger window appears.



## Note

 **Note** Because the HTTP debugger service consumes resources when it is running, the service is turned off by default. If you want to use the service, you must start it manually.

## Note

 **Note** : HTTP debugger is not available if it is a J2EE Server

## Locations



The Server **location** is the **host** where the server may run. An Server can run in multiple locations, basically in a backup scenario.

You start the server in all the locations you have defined for it. One of them is the **primary location**, where the server is really running. The other ones are kept running but in a kind of *Stand by* status. They are permanently monitoring the primary server and as soon as one of them detects that the primary server is not responding, it *takes control* and changes itself to a *Ready* status.

To define a location you need another Web Console running in that host in the appropriate port, and connected to the same Directory.

The **Location properties** allow the administrator to change the following information:

### Basic Configuration

Servers > Edit Server DocServer > Server locations > Edit Server location

Location configuration	
Host	testServer
Home Directory	C:\fuego5.5\enterprise\server\DocServer
Log Directory	C:\fuego5.5\enterprise\log
Protocol	ssl
Port	10099
Web Console Protocol	http
Web Console Port	8585

Save Cancel Reset

- **Host:** The host where the Server runs.
- **Home Directory:** By defining a path as home directory, the administrator can determine where to place resources that are generated for exclusive use by this Server. For example, this is



often used when you want to reserve a library for exclusive use by a specific Server.

- **Log Directory:** The log keeps track of events that you define in the Log folder.
- **Protocol:** You can select the protocol to use between: ssl, tcp, mmp, local.
- **Port:** Fuego Remote Method Invocation (RMI) port. Fuego RMI is the framework layer implemented by FuegoBPM Studio to use different transport layers, enabling communication between a FuegoBPM client application and the Server.
- **Web Console Protocol:** select if you use http or https
- **Web Console Port:** by default 8585.

With all the above information, the Web Console URL is built.

By default, when you start the server from the Web Console / Servers page, the server will be started in the host where the WebConsole is running, and that will be the primary location until another location *takes control* and thus is set as primary.

When you start the server from the Locations page, you are starting it in this particular location, and therefore, if it was already running, it will start as a Backup Server in the selected host.

### **Advanced Properties**



[Servers](#) > [Edit Server fuego5ENG.](#) > [Server Locations](#) > [Edit Server Location](#) .

<a href="#">Basic Configuration</a> <a href="#">Advanced Properties</a>	
<b>Properties</b>	
Maximum number of connections per server	<input type="text" value="50"/>
Maximum number of connections per external agent	<input type="text" value="5"/>
Handshake Timeout	<input type="text" value="60"/> Seconds
Additional Protocol Parameters	<input type="text"/>
<input type="button" value="Save"/> <input type="button" value="Cancel"/> <input type="button" value="Reset"/>	

These parameters should be modified after a deep analysis and only if necessary.

- **Maximum number of connections per engine:** the total number of connections that the server will accept.
- **Maximum number of connections per external agent:** maximum number of connections that the server will provide to a single PAPI (e.g. a portal).
- **Handshake timeout Seconds :** maximum time, once the connection was accepted, that the server will wait until the client identifies itself as a Fuego RMI client. If this does not happen, the connection is closed.
- **Protocol additional parameters :** parameters to be passed to the protocol that implements the transport layer.

## Exporting a Server

### Exporting a Server

A server can be exported, creating a selfcontained file that once it is imported, no extra actions or additional configuration are required on the server. It will be ready to begin with the database creation.


**To export an server,**



1. Click the link **Export** in the Basic Configuration tab. The *File Download* dialog opens.
2. Click the **Save** button and browse the location to save the server.

## J2EE application server files

Both, the FuegoBPM Library JAR and the Cluster libraries, can be downloaded by clicking the file name. These libraries are not required to be generated as they are distributed with the installation of the product. Click the file name and browse the location to store it.

To generate the Server EAR, Portal EAR/WAR, Portal Administrator EAR/WAR and deployed projects EARs, click the  file generation icon that is next to these applications.

The Project EARs option, generates an EAR file per each project version, including the deployed processes in the current server.

If the FuegoBPM Deployer is not installed, or if it's not properly configured, a warning will be issued stating that there is no additional information to be shown, and the page will only display the icons to generate the files, and the links to download them. In this case, the installation of the EARs must be done manually.



[Servers](#) > [Edit Server engine.](#) > J2EE Application Server Files (EARs, WARs)

FuegoBPM™ Application Libraries

**FuegoBPM™ Library JAR**

This JAR file includes all FuegoBPM™ helper classes needed to run FuegoBPM™ project EARs in your application Server. It should be installed as a shared library.

[fuegoj2ee-lib-all.jar](#) 28.23 Mb May 2, 2006 7:19:08 PM

**FuegoBPM™ Server EAR** ☐\*

The FuegoBPM™ Server EAR contains all the Server related classes to manage and execute the business services according to rules defined on the published business processes.

[01-eng-engine.ear](#) 9.15 Kb May 11, 2006 5:11:53 PM

**FuegoBPM™ Work Portal WAR** ☐\*

These files contain the FuegoBPM™ Work Portal Web Application. This Web Application enables end users to participate in deployed business processes according to their assigned roles. It can be deployed in your application Server or on any Java Servlet compliant engine. The Web Application URI can be edited before creating the deployment file. The Web Application is available in WAR (Web ARchive) and EAR (Enterprise ARchive) file formats. Both archives are equivalent and only one of them needs to be installed.

[05-portal-XAFDIDS-websphere.war](#) 6.79 Mb May 11, 2006 5:12:29 PM

[05-portal-XAFDIDS-websphere.ear](#) 6.47 Mb May 11, 2006 5:12:35 PM

**FuegoBPM™ Portal Console WAR** ☐\*

These files contain the Web Application designed to give process developers and FuegoBPM™ system administrators the ability to customize FuegoBPM™ Work Portal views and functionality. It can be deployed in your application Server or on any Java Servlet compliant engine. The Web Application URI can be edited before creating the deployment file. The Web Application is available in WAR (Web ARchive) and EAR (Enterprise ARchive) file formats. Both archives are equivalent and only one of them needs to be installed.

[06-portaladmin-XAFDIDS-websphere.war](#) 15.56 Mb May 11, 2006 5:12:53 PM

[06-portaladmin-XAFDIDS-websphere.ear](#) 15.55 Mb May 11, 2006 5:13:03 PM

Project EARs ☐\*

The FuegoBPM™ Deployer is not available. The functionality of the FuegoBPM™ Deployer includes the ability to install the J2EE Server and projects in your J2EE Application Server as well as to monitor the state of those applications.

On the other hand, if the FuegoBPM Deployer is installed and properly configured, this page will show more information, and will allow the user to install, uninstall, start and stop the applications.

## Fuego Library JAR and Cluster libraries

### Fuego Library JAR and Cluster libraries

Besides the Fuego Library JAR and Cluster libraries, an icon indicates whether they are already installed (🟢) or not (🟡).



Fuego Application Libraries	
<b>Fuego Library JAR</b>	
This jar file includes all Fuego helper classes needed to run Fuego project EARs in your Application Server. It should be installed as a shared library.	
<a href="#">fuego2ee-lib-all.jar</a>	26.62 Mb Nov 29, 2004
<b>Cluster Libraries</b>	
These JAR files are needed to configure clustering in your Application Server. They should also be installed as shared libraries.	
<a href="#">jgroups-core.jar</a>	953.97 Kb Nov 29, 2004
<a href="#">fuego2ee-engine-cluster.jar</a>	27.78 Kb Nov 29, 2004

## FuegoBPM Server EAR

### FuegoBPM Server EAR

The FuegoBPM J2EE Server is a collection of Services common to all FuegoBPM deployed projects. These services come in the form of an EAR file that is created within FuegoBPM Web Console by FuegoBPM Administrator. This EAR file can then in turn be deployed by the Application Server's Administrator in the Application Server (if you choose to do it manually) or you can automate the deploy using FuegoBPM Deployer, which is the procedure described below.

Click on the **Server** node on the left navigational tree of the Web Console. Click on the Server name to proceed.

Once in the FuegoBPM Server *Basic Configuration* Tab, click on the *J2EE Application Server files (EARs, WARs)*. A panel is opened where the FuegoBPM J2EE Applications can be assembled to be given to the Application Server's Administrator for deployment.

### Generate the EAR file

If the Server EAR file has not been generated, you only see the icon to generate the file.

<a href="#">FuegoBPM™ Server EAR</a> 
The FuegoBPM™ Server EAR contains all the Server related classes to manage and execute the business services according to rules defined on the published business processes.

### Install the Server

Once you click on the  file generation icon, the link to the file is



shown, as uninstalled (🟡 - in yellow), and the icon to install the EAR file in the application server will be provided.

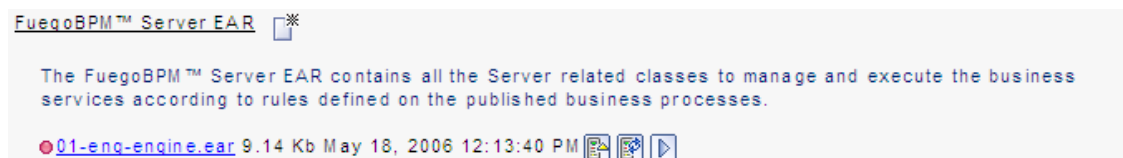


If FuegoBPM Deployer has already been installed, FuegoBPM Administrator can add the Server application directly from FuegoBPM web console.

If the FuegoBPM Server's status does not display, you need to check that the FuegoBPM Deployer is running on the Application Server and the **FuegoBPM Deployer URL** is correctly defined in FuegoBPM Web Console(host and port at *Servers -> Application Server (tab)* ).

If you click on the 📄 file installation icon, a message is sent to the FuegoBPM Deployer in order to install the application. This process might take some time. The status will be changed if the installation succeeds, it is set to **stopped** (🔴 - in red). Besides, a series of possible new operations will be displayed on the side.

### Start the Server







Click on the ▶ start icon in order to start the application. If the start succeeds, the status is update to 'running' (🟢 - in green), and the available operations are updated as well. Click on the □ stop icon in order to stop the application.





#### FuegoBPM™ Server EAR

The FuegoBPM™ Server EAR contains all the Server related classes to manage and execute the business services according to rules defined on the published business processes.

 01-eng-engine.ear 9.14 Kb May 18, 2006 12:13:40 PM   

### Other Operations

- Click on the  uninstall icon in order to uninstall the application
- Click on the  reinstall icon in order to uninstall and install again the application

## FuegoBPM Project EAR

### FuegoBPM Project EAR files


After successfully publishing and deploying the FuegoBPM Project into the FuegoBPM Directory Service, it is necessary to deploy the FuegoBPM Project into the Application Server.



Click on the **Server** node on the left navigational tree of the Web Console. Click on the Server name where the FuegoBPM Project has been deployed.

Click on the *J2EE Application Server files (EARs, WARs)*. A panel is opened where the FuegoBPM J2EE Applications can be assembled to be given to the Application Server's Administrator for deployment.

If the Project EAR files have not been generated, you will only see the icon to generate them.

#### Project EARs



 IPCTests-1.0.0

Once you click on the  file generation icon, the link to the file will be shown, as uninstalled () , and the icon to install the EAR file in the application server will be provided.










If FuegoBPM Deployer has already been installed, FuegoBPM Administrator can add the FuegoBPM project directly from FuegoBPM web console.

If you click on the  file installation icon, a message is sent to the FuegoBPM Deployer in order to install the application. The status will be changed if the installation succeeds, set as 'stopped' () . Besides, a series of possible new operations will be displayed on the side.



- Click on the  uninstall icon in order to uninstall the application
- Click on the  reinstall icon in order to uninstall and install again the application
- Click on the  start icon in order to start the application. If the start succeeds, the status is update to 'running' () , and the available operations are updated as well. Click on the  stop icon in order to stop the application.



## Log Tab

The Log tab on the Server Properties pane is where you specify the type of events that the FuegoBPM Server should log. Log files can be read with a text editor, such as Notepad or WordPad. However, it is recommended that log content be read with the FuegoBPM Log



Viewer.

[Servers](#) > **Edit Server DocServer**

<a href="#">Basic configuration</a>	<a href="#">Log</a>	<a href="#">Execution</a>	<a href="#">Services</a>	<a href="#">Networking</a>	<a href="#">Others</a>
<b>Properties</b>					
Messages logged from Server		Warning ▾			
Messages logged from BP-Methods		Info ▾			
Messages sent by mail		None ▾			
Log detail level		1 (min=1)			
Maximum size of log file		2000 Kb			
Maximum number of log files		5			
<input type="button" value="Save"/> <input type="button" value="Cancel"/> <input type="button" value="Reset"/>					

## To configure the log

1. Select a message severity from the **Messages logged from Server** drop-down list. These are the messages that are sent to the log from the Server. The message types, in severity order from greatest to least severe, are: Fatal, Severe, Warning, Info, and Debug. This field lets you select the lowest level of message that you want to appear in the log. For example, if you select the Warning severity, only messages with that severity or higher will appear in the log.
2. Select a method message severity from the **Messages logged from BP-Methods** drop-down list. These are messages that are sent to the log when events are encountered in BP-Methods. The message types, in severity order from greatest to least severe, are: Fatal, Severe, Warning, Info, and Debug. This field lets you select the lowest level of message that you want to appear in the log. For example, if you select the Warning severity, only messages with that severity or higher will appear in the log.
3. Select a message severity from the **Messages sent by mail** drop-down list. With this option, you can send any error



message of a specified level of severity to the system administrator. The administrator's email address is defined on the Networking tab view. Valid options include None, Warning, or Severe. When you select a severity, only messages with that severity or higher will be emailed.

4. Type a number representing the **Log Detail Level**. The highest level of detail is 10 and the lowest is 1. All messages have a detail number assigned. Only the ones with the defined level or lower will be included in the log.
5. Type a number representing the maximum size for each log file in the **Maximum size of log file** field. This option indicates the maximum disk space that will be used for each file. Log files will grow until they reach this maximum disk space size. Also, if your process handles more than 2,000 instances per day, the log file will likely be large.
6. Type the **Maximum number of logs** to generate from the maximum amount of log files field. This option indicates the maximum number of log files stored at a given time. The Server log files will move in a round-robin fashion.

## Execution Tab



Basic Configuration	Log	Execution	Services	Networking	Others
<b>Startup</b>					
Start automatically during Web Console initialization	<input type="checkbox"/>				
Additional arguments used in startup	<input type="text"/>				
Additional java arguments used in startup	<input type="text" value="-ea"/>				
<b>Memory</b>					
Maximum JVM Heap Size	<input type="text" value="256"/> MB				
Maximum Instance Size	<input type="text" value="16"/> KB				
Instances Cache	<input type="text" value="5000"/>				
<b>Execution Threads</b>					
Maximum number of execution threads used for interactive executions	<input type="text" value="50"/>				
Maximum number of execution threads used for automatic tasks	<input type="text" value="5"/>				
Priority of Automatic Execution Threads	<input type="text" value="5"/>				
Automatic Items Queue Size	<input type="text" value="1000"/>				
Retry Times	<input type="text" value="5"/>				
Retry Interval	<input type="text" value="1800"/> Seconds				
Request Queue Size	<input type="text" value="300"/>				
Request Queue Timeout	<input type="text" value="5"/> Minutes				
<b>Timeouts</b>					
Maximum BP-Methods Timeout	<input type="text" value="1800"/> Seconds				
Interactive Component Timeout	<input type="text" value="720"/> Minutes				
Maximum Process Web Service Session Timeout	<input type="text" value="300"/> Seconds				
<b>Debugger</b>					
Trace Components	<input type="checkbox"/>				
<input type="button" value="Save"/> <input type="button" value="Cancel"/> <input type="button" value="Reset"/>					
Changes to these field values will be ignored while the Server is running. They will take effect only after restarting the Server.					

## Startup Settings

- **Start automatically during Web Console initialization:** Starts



the FuegoBPM Server automatically during the Web Console initialization. Because the Web Console can be installed as an operating system service, administrators can also configure several Servers to be started with the host.

- **Additional arguments used in startup:** Enter additional parameters to the invocation of the Server. It may be necessary to execute the start command with additional arguments, such as the flag to rebuild counters '-c'.
- **Additional java arguments used in startup:** Additional arguments for the Java Virtual Machine can be added.


## Memory Settings

- **Maximum JVM heap size** (Mbytes): The default value is 256MB. This is the maximum memory size for the Server. The value associated with this field depends on how many processes are deployed in this Server and how much memory each process consumes. It's also related to the instance cache and the maximum size of them.
- **Maximum instance size** (Kbytes): The default value is 16KB. This is the maximum amount of memory an instance can consume. Attachments and notes added to an instance in the Work Portal are not included in this size limit. This value is used to control the size of process instances. Instance variables defined at design time are the objects that mainly affect this parameter.
- **Instances cache:** This is the maximum amount of instances that the engine can handle at an the same time. When the cache is almost full, the engine will log a warning message like this : "98.07% of instances cache is currently in use. It may be convenient to increase the cache size (in the engine preferences)." In that case increase the instance cache through the web console, or review your processes logic trying to find the "leak". The instance cache is populated with:



- interactive users executing tasks,
- automatic activities,
- scheduled automatic activities and
- split N activities being executed.

### Note

 These parameters are related. The amount of memory used to store instances in memory (Instance max size x cache size) must be less than half the maximum JVM Heap Size. If not, the properties will not be saved and an error message will be displayed on the Web Console.

## Execution Threads Settings

- **Maximum number of execution threads used for interactive executions:** The default value is 50. This parameter sets the limit of threads for interactive executions that the Server will allow. This value depends on your process size, the number of users that are connected, and the amount of interactive tasks that must be processed. In most cases, the default value is sufficient.
- **Maximum number of execution threads used for automatic activities:** The amount of threads that will process items. These threads are responsible for the execution of automatic tasks (requires no end user intervention). The higher the thread count number, the more automatic tasks can be processed. This number **MUST** be lower than the value in the Maximum Database Connections field. That way, each thread will have an available connection to work with the Server data. Check your database configuration for restrictions related to the amount of connections. See the configurations option for more information.



- **Priority of automatic execution threads:** The priority of the automatic threads. These threads are associated with automatic tools that need to be executed. In order to execute automatic tasks, they are put in a queue and checked using these threads.
- **Automatic Items queue size:** The size of the automatic items queue in memory. This is needed to avoid fetching To Do items to execute from the Server database where they are persisted.
- **Retry times:** This number indicates the number of times that the Server will retry an automatic operation that is not initially successful.
- **Retry interval:** This is the interval between each attempt or retry (seconds).
- **Request Queue Size:** size of the queue that will temporarily hold external requests until they are executed. Most external requests are sent by PAPI clients, although some are sent internally by the server itself.
- **Request Queue Timeout:** how long an external request will be queued waiting for a thread. After this period, an exception occurs (ServerBusyException).

## Timeouts Settings

- **Maximum BP-Methods timeout** (seconds): this property defines the **limit** of time a BP-Method will run before the task times out. See Execution timeout for detailed information.
- **Interactive component timeout** (minutes): This value is the time limit that the Server will wait for a component that runs on the client to be completed. See Execution timeout for detailed information.
- **Maximun Process Web Service Session timeout** (seconds): when using a process as a Web Service, the first step is to



request for a session and a token is delivered to be used in each call. The maximum Process Web Service session timeout is the period of time that token will remain valid while it is not used.

## Debugger

- **Trace Component:** this property enables the generation of the FBL (BP-Method) log into the server log. Selecting this field will affect the Server performance.

The component trace feature allows you to control and follow up on the execution of a FBL. This can be accomplished by either:

1. Viewing the online execution and stats through the HTTP Debugger.
2. Logging the FBL execution into the server log. This trace is limited to FBL start-end and some components.

## HTTP Debugger

In the HTTP Debugger two entries appear in the **Component** section:

- Current invocation

`/current_invocations` - Current Invocations

- Stats



## /stats - Invocations Stats

### Note



If the Component Trace was not set to trace then these entries will not appear.

### Current invocation

It shows the online run of the FBLs. If any invocation is performed at that time it will be shown in this panel. While a FBL is running, you can view the current invocation it is making through the HTTP Debug

### Stats

You can refer to the stats of execution at any time. These stats are calculated since tracing is enabled, if you stop tracing the stats are lost. Stats are recalculated each time you start the engine.

## FBL Logs in th Server

The **information** that is logged is: start time, end time, and duration. Within the **Server Log** the following options should be set:

- Module= *Trace*
- Severity= *Info*

As a result of setting these options, different **types of events** will be logged.

#### 1. **FBL or Method log**

2. **Components:** All components are logged as well except for those Java ones running on client

#### 3. **Blocks within a CIL**




Each time a block starts and ends within a FBL

For example:

```
block1 do                                     <===   StartTime
  sentence1
  ...
  sentence n.                                <===   EndTime
end block1
```


### Tip

 As a Java component running on client cannot be logged, a way to keep track of it, is to define it within a block as the start / end time for the block will be logged.

### Example:

```
block2 do
  JavaComponent ( )
end block2
```

### Note

 FuegoObjects are not currently traced. SQL objects, queries and xml objects are.

## Screenflow and timeout behavior

See Execution timeout for detailed information.

## directory.properties

The entry **fuego.cache.maxentrysize** in the *directory.properties* file is related to the Execution Threads Setting.

To avoid the following message:



*Configuration Problem!! Not enough entries in the cache. You should increase the number of entries in the cache or decrease the number of concurrent threads. (fuego.cache.maxentrysize property)*

You need to increase the *fuego.cache.maxentrysize* property in the *enterprise/conf/directory.properties* file.

For a complete information about this property and others related to it, refer to *directory.properties* Configuration file.

## Services Tab



Servers &gt; Edit Server ServerDoc.

Basic Configuration		Log	Execution	Services	Networking	Others
<b>Disposer</b>						
Disposer Latency	2 Days					
Instance Caducity	15 Days					
Disposer Starting Time	October 24, 2005 1:48 PM					
Dispose Disabled Participants	<input checked="" type="checkbox"/> Enabled Participant Caducity: 30 Days					
Archiving	<input type="checkbox"/> Enable Archiving					
<b>IPC</b>						
Enable IPC Service	<input type="checkbox"/>					
IPC Service Port	54350					
Maximum Incoming Connections	5					
<b>Socket Factory</b>						
Enable Socket Factory Service	<input checked="" type="checkbox"/>					
<b>Web Services</b>						
Web Services Listener Port	9000					
Max Incoming Connections	20					
<b>JMX Service</b>						
JRMP Adaptor Enabled	<input type="checkbox"/>					
JRMP Adaptor Port	1099					
HTTP Adaptor Enabled	<input type="checkbox"/>					
HTTP Adaptor Port	9090					
<b>SNMP</b>						
Enable SNMP Service	<input type="checkbox"/>					
SNMP Agent Port	161					
SNMP Manager Host	testServer					
SNMP Manager Port	162					
SNMP Log Level	3					
SNMP READ Community	<input type="checkbox"/> <input type="text"/> (Check to override snmp default)					
SNMP WRITE Community	<input type="checkbox"/> <input type="text"/> (Check to override snmp default)					
<input type="button" value="Save"/> <input type="button" value="Cancel"/> <input type="button" value="Reset"/>						
Changes to these field values will be ignored while the Server is running. They will take effect only after restarting the Server.						

## Disposer Settings

The disposer is in charged of deleting all completed or aborted instances based on the disposer settings.

- **Disposer latency:** This field indicates the frequency (number of days) of the disposer execution. For example, if this field is set to



2 days, then every 2 days the server executes the Disposer. The Disposer deletes all the process instances that are suitable for deletion depending on the *Instance caducity* indicated below.

- **Instance caducity:** Indicates how long ago the instance was aborted or completed in order to be deleted when the Disposer is executed.
- **Disposer starting time:** The time of start for the Disposer process.
- **Enable archiving:** If checked, this property activates the execution of the archiving process.
- **Dispose Participants:** You can select to remove all disabled *Participants* from the Directory Service when the disposer is run. Participants that were disabled from the Web Console more than the defined **number of days** ago, are removed from the Directory.
- **Archiving configuration:** The configuration of the archiving database. Archiving provides a way to store Instance information for auditing purposes. This process is run in coordination with the Disposer.

For example, if the **Disposer latency is 2 days** and **Instance caducity is 10 days**, the **Disposer** will be executed once every 2 days and will delete completed or aborted instances passed to that status at least 10 days before. Therefore, if today is Jan 20 and the last time the Disposer ran was Jan 18, the Disposer will run today, deleting those completed or aborted instances that were passed to that status on Jan 10 and before.

If the disposer settings are changed without stopping the server the behavior is:

1. The start-time is applicable immediately,



2. The latency and the caducity will be applicable in the next run of the disposer.

## IPC Settings

Inter-process Communication (IPC) is the exchange of data between one process and another, either within the same computer or over a network.

- **Enable IPC service:** Enables IPC.
- **IPC service Port:** IPC service port number.
- **Maximum incoming connections:** The maximum number of external connections that a FuegoBPM Server will accept at the same time. Any connection request received after this maximum number is denied. The default value is 5.

## Socket Factory

It is highly recommended to keep "Enable socket factory service" checkbox selected.

FuegoBPM activity's **tasks** have a **timeout**. See Timeout for further information.

When the task is executing, and such timeout expires, the task has to be interrupted by the Server. Furthermore, all the resources that are locked by this task, are released by the Server.

On the other hand, **FuegoBPM socket factory** creates sockets that are set with a **timeout**.

The relation between both of the above features is that when the task is executing, any **socket** created by the components used in such task, is set with the **task timeout**. Consequently, the Server is able to interrupt tasks when required.



If **FuegoBPM socket factory** is not used (checkbox not selected), it may be impossible for the Server to

interrupt a task that is using a component that is reading a socket. If so, some specific resources used by such component might be not released.

However, the FuegoBPM Administrator may prefer to use the default Java Socket factory or anyone else that was set to the JVM somehow but the above describes some consequences that might occur.

## Web Services

- **Web Services Listener Port:** if any FuegoBPM process is exposed as a web service, requests are attended at this port.
- **Max Incoming Connections :** maximum number of requests that can be attended at the port simultaneously.

## JMX Services:

- **JRMP Adaptor Enabled:** enable if you need to connect to the JMX Console using the JRMP Adaptor.
- **JRMP Adaptor Port:** define the port to connect to.
- **HTTP Adaptor Enabled:** enable if you need to connect to the JMX Console from a browser
- **HTTP Adaptor Port:** define the port to connect to for browsing.


## SNMP Settings

These settings are available with appropriate FuegoBPM licences only.



- **Enable SNMP service:** Enables SNMP.
- **SNMP agent port:** Defines the port in which the SNMP agent will be started.
- **SNMP manager host:** Host of the remote console that will receive the SNMP information.
- **SNMP manager port:** Port of the remote console that will receive the SNMP information.
- **SNMP Log Level:** define the SNMP log level and these type of logs will be posted into the FuegoBPM Server log.
- **SNMP READ Community:** if enabled, you have to redefine the READ password. This will override the default one as you log in.
- **SNMP WRITE Community:** if enabled, you have to redefine the WRITE password. This will override the default one as you log in.

## Note

 To control the services start up, you can check the FuegoBPM Server Log. Check the INFO log messages .

## Networking Tab

[Servers](#) > **Edit Server DocServer**

[Basic configuration](#) | [Log](#) | [Execution](#) | [Services](#) | **Networking** | [Others](#)

Properties	
Mail server name	smtp
Administrator mail	admin@example.com
Work Portal URL	http://testServer:8585/portal

The properties are as follows:



- **Mail server name:** The mail server that the FuegoBPM Server will use when sending e-mail. If your smtp server is configured using simple authentication, you can set this field using the url format *user:password@host*. If not you can set the server name and it will be enough.
- **Administrator mail:** The Administrator's e-mail address. Replies to the e-mail that are sent by the Server will go to this account. This is also the account that will receive any messages from the log that are selected in the Log tab.
- **Web Work Portal URL:** URL address for logging into the Work Portal in the Web Work Portal URL field. This location is where the Work Portal application is running. The URL for the Work Portal is generally *http://host:port/WorkPortal/*. For example, when the Server notifies users who have new instances by e-mail, this URL is part of the message. That way, they can open the application directly.

## Others Tab

[Servers](#) > **Edit Server DocServer**

<a href="#">Basic configuration</a>	<a href="#">Log</a>	<a href="#">Execution</a>	<a href="#">Services</a>	<a href="#">Networking</a>	<b>Others</b>
-------------------------------------	---------------------	---------------------------	--------------------------	----------------------------	---------------

Runtime

Runtime Database Configuration

☒ Use creation configuration

Directory

Directory polling interval

1 Minutes

Events

Store Events

Depends on Process

PAPI

Instance retrieval size

1000

Notify thread priority

1 (min=1)


Latency between notifications

15 Seconds

Save

Cancel

Reset

 Changes to the value of these fields will be ignored while the Server is running. They will take effect only after restarting the Server.



## Runtime Setting

- **Runtime Database Configuration:** The configuration ID of the database that will be used at runtime. By default, this is the same ID that is defined in the basic properties of the FuegoBPM Server (that is, the one to be used in the database management tasks). Despite this, at runtime, it is possible to configure another configuration for the Server database.

## Directory Setting

- **Directory polling interval:** Allows you to specify how often the information stored in the directory service will be re-read by the Server.

## Events Setting

- **Store events:** The frequency the server should store events. You can select it from the pull-down list.

## PAPI Settings

**Notification from the Server to PAPI** is the way PAPI is alerted about any change that has occurred in the Server.

Applications that use PAPI are, for example, Work Portal or a particular java program that uses these APIs directly.

PAPI requests the Server to execute or perform different transactions.

When instance or process data changes, the Server *notifies* all the PAPI clients about this update.



Therefore, PAPI maintains **instance and process data** in its own **cache** that is updated through **notifications** received from the Server. For example, updates to the instances such as a status change, if an instance has been selected by a participant or if the instance was moved to a new activity. Or process updates such as, a process was deployed or deprecated.

- **Instance retrieval size:** The maximum number of instances to retrieve at a time. Every time PAPI needs to retrieve instances from the Server, the number of instances is limited to this maximum. PAPI retrieves instances from the Server when:
  - PAPI needs to retrieve information about completed or aborted instances as these instance are not kept in the PAPI cache. The number of aborted and completed instances to retrieve is limited by the **Instance retrieval size** , or
  - The number of instances that PAPI needs to keep in its cache exceeds the cache length. In this case, PAPI will retrieve all instances information from the Server instead of from its own cache. In this last case, the **Instance retrieval size** is important because it determines the number of instances that PAPI has access to.
- **Notify thread priority:** The priority of the threads that notify the clients about modifications in the Servers. All the notifications to PAPI are prioritized with the same level and the priority goes from *1* to *10* (*1* is the highest priority and *10* the lowest one). This priority determines the execution of these notifying threads waiting to be executed by the server. Priorization only applies for Enterprise standalone Server. In a J2EE environment priorization is handled by the messaging queue (JMS).
- **Latency between notifications:** The interval between each notification from the Server to PAPI. Defined in seconds. The instance's cache is updated with each notification, therefore the




frequency for updates has a dependency with the latency interval. Latency only applies for Enterprise standalone Server. In a J2EE environment the time between notifications is handled by the messaging queue (JMS).

## Application Server Tab

After the server creation, you must match in this tab the lookup names defined in the application server for specified elements. You can also edit the FuegoBPM Deployer configuration. Remember that if you change something in the application server configuration, you will have to regenerate the EAR files of the Server and the deployed projects.



Servers &gt; Edit Server DocWebSphereServer

Basic configuration	Log	Execution	Services	Networking	Others	Application Server	Cluster
<b>Summary of the configuration needed in your websphere application server</b>							
Server runtime datasource lookup name		XADocWebSphereDS					
Server FDI datasource lookup name		XAIDS					
JMS Queue name		queue/ToDoQueue					
JMS Queue connection factory		XAConnectionFactory					
JMS Topic name for Server news		topic/EngineNews					
JMS Topic connection factory		XATopicConnectionFactory					
Listener port		ToDoQueueListenerPort					
 After changing any of these values, it is necessary to regenerate the ear for this Server, in order to make them effective. Otherwise, the changes will not be taken into account.							
<b>FuegoBPM™ Deployer for WebSphere configuration</b>							
FuegoBPM™ Deployer URL		http://<server>:9080/fuego/deployer/servlet/worker					
WebSphere server/cluster name (Ex.: server1)		server1					
Use FuegoBPM™ libraries smart detection		<input checked="" type="checkbox"/>					
FuegoBPM™ libraries are present at WebSphere lib/ext directory		<input checked="" type="checkbox"/>					
Use default server path for FuegoBPM™ libraries		<input checked="" type="checkbox"/>					
Server path for FuegoBPM™ libraries							
<input type="button" value="Save"/> <input type="button" value="Cancel"/> <input type="button" value="Reset"/>							

If the application server is not WebSphere the *listener port* property is not present.

## Note



Tab only present if it is a FuegoBPM Application Server Edition.

See the FuegoBPM Application Server architecture, in the Introduction section to understand each element you must define in this tab.

## Cluster Tab

This tab shows the properties set to administrate clustering. It is



**highly** recommended **not** to modify these properties.

You may need to change the **multicast address** or the **port** properties to avoid conflicts with other applications in the same net.

If you should need to change any other configuration, please refer to the documentation provided by [www.jgroups.org](http://www.jgroups.org).

## Note



Tab only present if it is a FuegoBPM EJB based Server, and the cluster option is enabled.

## Operating a Server

From the list of FuegoBPM Servers, you can see several icons that allow administrators to perform tasks for the Servers.

Servers


<div> </div> <div>Page: 1/1 - Total: 5</div> <div> <a href="#">Filter</a> <a href="#">Preferences</a> </div>				
<div> <a href="#">Add</a> <a href="#">Delete</a> <a href="#">Refresh Status</a> <a href="#">Re-load Information from the Directory</a> <a href="#">Import</a> </div>				
<input type="checkbox"/>	Name ▲	Status	Type	Engine Actions
<input type="checkbox"/>	<a href="#">FuegoWASServer</a>		websphere	
<input type="checkbox"/>	<a href="#">J2EEServer</a>		websphere	
<input type="checkbox"/>	<a href="#">J2EEServerWL</a>		weblogic	
<input type="checkbox"/>	<a href="#">ServerDoc</a>	Not running	enterprise	
<input type="checkbox"/>	<a href="#">ServerDoc1</a>	Not running	enterprise	

Click on the desired icon of a given server in order to perform one of the following tasks:

- Start:** Starts the desired Server.
- Stop:** Stops the desired Server.
- Thread Dump:** Shows you a list of the latest transactions running on the server. This feature should be just used when the Servers appears to be frozen or locked. When a thread dump is



requested, the virtual machine pauses the current job being processed. **WARNING: This option is ONLY to be used in extreme situations, as requested by the Fuego support team, to detect severe problems.**

-  **View last startup log:** Shows the log of the last startup of the selected Server.

It's very important to note that every FuegoBPM Server must be administered by a local Web Console. This means that if you want to run a Server on a specific host, you will need a Web Console installed in the same machine. This is because the Web Console controls communication with a Server to perform the basic operations (start, stop, and so on).

To add a remote Server in your Web Console, you will need another Web Console in the remote host that will be the one that, for instance, will start or stop the Server. The console URL that will perform that job is configured in the Server location parameters (Web Console URL).

## Log Viewer

The FuegoBPM Log Viewer is a tool that allows you to view system log files and messages. It contains several features that allow administrators to browse through FuegoBPM Server messages. The Log Viewer is also a useful tool when performing maintenance tasks.

Check the Log Viewer documentation for details about this application.

### To start the Log Viewer

1. Select the **Launch Log Viewer** link that appears in the Web Console header.





2. An application called Java Web Start opens the Log Viewer application.
3. The first time Java Web Start is run, it asks for approval to install it. If necessary, install Java Web Start. The Log Viewer application then appears.
4. By default, a window is displayed that allows you to generate a remote log connection. If necessary, configure the host and port where a Web Console is running. This allows you to obtain available Servers and obtain their log info.
5. Enter a **user/password** to connect to the selected Web Console.
6. Select the Server with the related log that you want to analyze.
7. Click **Ok**.

In the log configuration properties of each Server, the log is saved in a number of files under a specific directory.

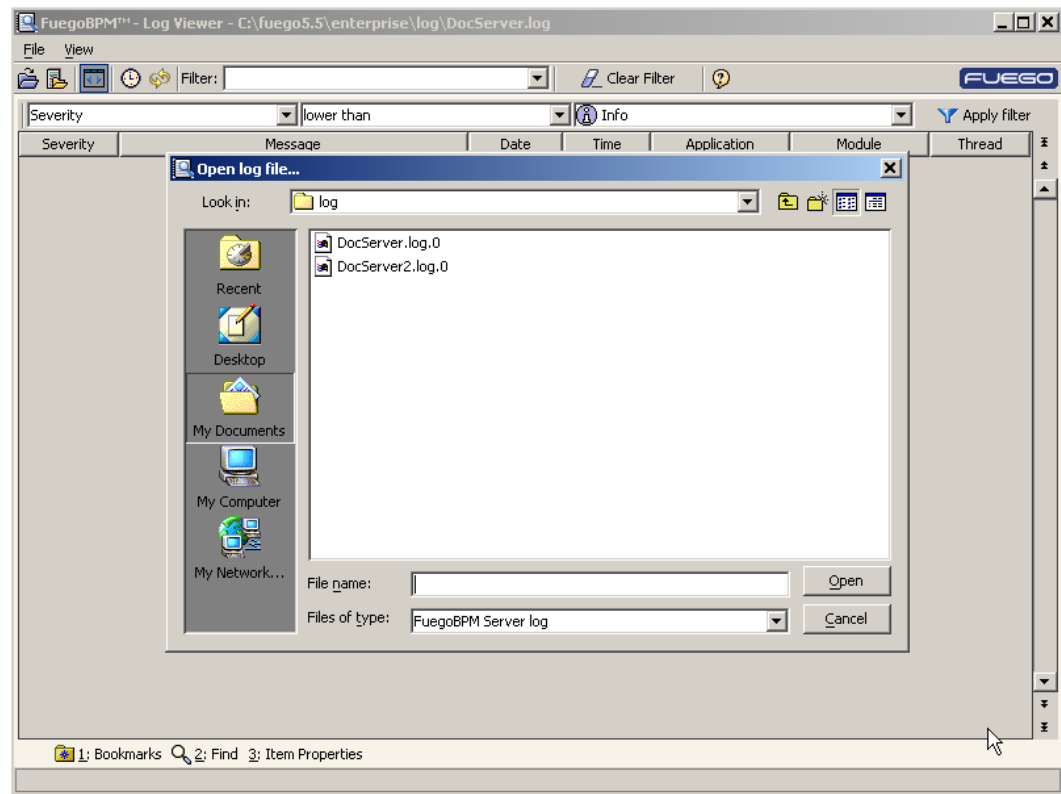
Another way to see an Server log is to open those files from the Log Viewer application.

### To open a file in the Log Viewer

1. Select the **Open** option from the **File** menu (or press the **Open** button on the toolbar).



2. Select the log directory and choose the log file.



## Publishing and Deploying Projects

**Publish and Deploy** activates the process design into a real-time situation where the activities and roles can be fulfilled automatically or by human users.

When you are satisfied with the project design meeting your business's requirements, you can proceed to **Publish & Deploy** it.

### Publishing a project

Allows to publish FuegoBPM projects in a directory service. Projects need role values mapping, external variables mapping and other mappings

All processes are grouped in a project when stored to the FDI managed repository and the project has a version number.



## Deploying a project

During deployment:

- The processes are associated to a certain Organizational Unit
- The Server is notified that a new process (or a new version of an already deployed process) is available to users associated to that Organizational Unit, so that they can begin working with it. If the end users are currently working with an older copy of the business process in the Work Portal, they will not lose any of the instances in their queues.

## Project Versioning

The project has a version ID that allows FuegoBPM Studio and users to identify it.

This notion of business process versioning enables the ability to introduce changes to existing business processes without disrupting the normal flow of existing process instances in already published and deployed business processes.

A version ID consists of 'major.minor.revision' fields. The processes make reference to this number, but the process definition is only stored when changed, thus optimizing storage. This means that several versions of a project might be using the same process definition.

General Project major-minor versioning rules apply as follows:

- Major values can be modified by the user at publishing time.
- If at least one process is not compatible with the current one, the publish tool forces a new project minor version ID number.
- If any of the modified processes is compatible, only the revision is



updated.

- if only the catalog changes, the project remains compatible

Depending on the nature of the changes, FuegoBPM allows different levels of versioning for Projects. FuegoBPM enables revision changes as well as minor and major version increments to define breaks in process compatibility.

**Revision Versioning:** Revision changes are the most common changes that take place to project elements. The changes done in a revision change applies to all existing on fly instances.

**Minor and Major Versioning:** Minor and Major changes are usually done when business process or component compatibility is broken or when there is a need for an explicit break point in versioning as the project evolves in time.

Major and Minor versioning as well as Revisions apply if changes happen within:

1. Business Processes
2. Project Catalog Components

### **Revision changes allowed for Business Processes**

This section outlines the changes allowed in Business Processes that enable **revision** versioning. These changes do not force a leap to a minor or major version change.

- Add a Role to a business process in a project.
- Delete an empty Role (no activities in it) from a business process in a project.



- Move an activity from a role to a different one in a project: Although this is allowed, it is very important to remark that certain considerations should be taken when this happens. All instances in the activity being moved should not have any instance selected by any participant. It is responsibility of the process owner to enforce that all instances are properly assigned to the right participants. The recommended action is that the role to which the activity is moved, is assigned to all participants having selected instances in the moved activity.
- Add an activity to a business process in a project.
- Add a Global or Grab activity to a role in a business process for a project.
- Delete a Global or Grab activity from a role in a business process for a project.
- Change Business Rules in a business process activity in a project.
- Change Condition or Due interval for an existing business process transition in a project.
- Add a transition to a business process in a project.
- Delete transition from a business process in a project.
- Add an instance variable to a business process in a project.
- Delete an instance variable to a business process in a project.
- Add a variable to an argument mapping for a business process in a project.
- Delete a variable from an argument mapping for a business process in a project.
- Change the implementation type for a business process activity in a project.



- Modify a FuegoBPM Screenflow (Add, Delete or Modify its flow or activities).
- Modify a FuegoBPM Procedures (Add, Delete or Modify its flow or activities).

### **Minor and Major Versioning for Project Business Processes**

This section defines the reasons for which **minor** or **major** versioning is needed or desired.

- Delete an activity from a business process in a project: The reason behind this incompatibility is that the removed activity may have instances waiting for execution in it. If this activity is removed, all the instances in this activity will be lost as well. This excludes the Global activities (automatic, creation or Global activities).
- Change the type of an instance variable in a business process in a project: The reason behind this incompatibility is that a change in the type may make existing values for business process instances incompatible with the current type.
- Change business process activity types: For example, it is not allowed to change from an interactive to an automatic activity type since the execution models for these activity types are very different.

### **Revision changes allowed for Project Catalog Components**

The following changes are allowed to components catalogued in the FuegoBPM Project Catalog. When this kind of changes take place (after publishing and deploying the project with these changes), already created instances will start using the changes implemented in this new project revision at the component level.



- Add Fuego Objects to the project's catalogue.
- Delete or Remove a Fuego Object from the project's catalogue.
- Modify a Fuego Object in the project's catalogue.
- Modify a Fuego Object presentation for a Fuego Object in the project's catalogue.
- Add a new introspected component.

### **Minor and Major Versioning for Project Catalog Components**

There are no reasons to force a project minor or major versioning due to changes in the Project Catalog unless explicitly required by the project owner. In some cases, it may be reasonable to create a minor or major project version when there is a major change in an introspected API.

### **Integrated external resources**

Versioning can be controlled for elements managed within FuegoBPM's Project boundaries. There are resources outside the project boundaries that cannot be controlled within the versioning cycle proposed by FuegoBPM. It is very important to have a close synchronization for these external resources integrated from FuegoBPM to avoid inconsistencies and failures when invoking them. Among these resources you have to consider:

- JSPs, HTML, etc: It is important to define some synchronization cycles since modifications in the JSP or any other HTML rendering technology may also require changes in the way this UI is invoked or launched for it to work correctly.
- RDBMS table and stored procedure changes: If changes are done to a table accessed from within FuegoBPM without refreshing its definition, it may cause runtime problems when manipulating data



with these RDBMS tables.

- **Client/Server components:** If the interface to access a server component changes, the client side part will also need to change as well. For this reason, it is very important to define a close synchronization process so that when changes are done to the server side components, the same changes to the client invoking side are done at the same time to avoid inconsistency and runtime problems when the process invokes these components.

### **Project consistency check**

Before publishing and deploying a project, FuegoBPM does a consistency check before running the internal compatibility algorithm. The reason for this consistency check is to enforce that the business processes, components and business rules are all in place after the changes implemented in the different project areas.

The consistency check should be done periodically from the FuegoBPM Studio so that consistency check errors are not found at project publish time.

The revision, minor and major versioning is decided at publish time. When publishing a project, FuegoBPM always tries to do project revisioning. If the project compatibility is lost due to some of the reasons outlined before, minor or major project revision may be chosen by the FuegoBPM Administrator.

If an explicit minor or major project revision is desired, this can be explicitly done by selecting the minor/major version increment.

## **Publishing a Project**

Before publishing the project from the FuegoBPM Web Console:

1. Export the project from FuegoBPM Studio. Select the *Include versionable libraries only* option.



2. Copy the non-versionable libraries (like database drivers) to:
  - a. ...\**webapps\webconsole\WEB-INF\lib**
  - b. ...\**ext**
  - c. ...\**webapps\portal\WEB-INF\lib** for the built in portal
  - d. If the portal is deployed in a third-party application server, re-create the ear or war file from the FuegoBPM Administration Center and re-deploy it. Alternatively, the non-versionable jars can be copied directly into the **WEB-INF\lib** folder under the portal's deployment folder. Just remember to copy them over again if you ever re-deploy the original *ear* or *war* file.
3. Publish and deploy the project from the FuegoBPM Web Console

Learn more about Versionables and Non-Versionables libraries in the Administrating Java Class Libraries - JCLs section in the System Administrator Guide.

### **To publish a project**

1. Select the **Published Project** option. A new panel appears with a list of all published projects.
2. Click the **Publish** button. The publish panel appears.



Published projects > Publication source

Publication source

☐ Remote Project

☒ Exported Project  
F:\FuegoProjects\DocEx Browse...

☐ Vcs  
Provider ClearCase

Publication Properties

☒ Smart publish  
When this option is selected, all data defined in the project will be imported to the directory (including organizational units, roles, calendar rules, holiday rules, configurations, variables and views). The needed mappings for roles, configurations and variables will also be resolved automatically.

☐ Increment project version  
The version of the project will be incremented to a major version number .

☐ Republish a previous version  
You will be able to select the version for which you want to create a new revision. The project must be compatible with the last published revision of the selected version.

☐ Keep generated files  
If you select this option, the java files generated during publication won't be deleted from the build directory of the project. This option is useful when debugging.

Deploy Properties

☒ Deploy processes after having published them  
You will be able to configure where to deploy each process of this project, and then deploy them.

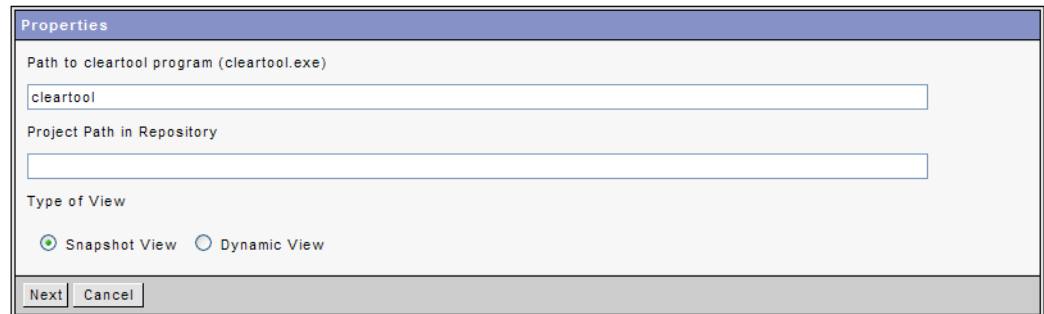
☐ Import Project's custom Views and Presentations after Deploy  
Custom views and custom presentations will be imported to the directory service using the role and variable mappings defined in the next step. This operation only takes place when previous Deploy option is selected.

OK Cancel

- Specify in **Remote project** , the project with its complete path to the directory in which it resides in the server where the Web Console is installed; or Specify in the **Exported project file** a path to the exported file of the project. The file should reside in any directory visible from the client computer from where the Web Console is being accessed; or Specify the connection data to a VCS repository in which the project has been previously committed in the **VCS** field. If you are publishing a project from ClearCase, you need to specify some extra properties:



[Published Projects](#) > [Publication Source](#) > ClearCase Properties



Properties

Path to cleartool program (cleartool.exe)

cleartool

Project Path in Repository

Type of View

☒ Snapshot View ☐ Dynamic View

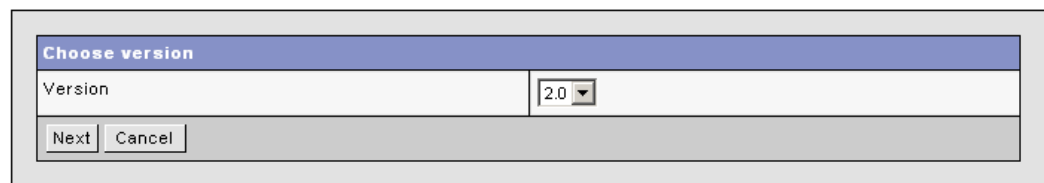
Next Cancel

- a. **Path to cleartool program (cleartool.exe)** : cleartool.exe command path.
  - b. **Project Path in Repository**: Directory path in the repository where the view that contains the project to be published has been created. *view\_directory/sources/fuego/Project.fpr*
  - c. **Type of View**: Select if it is a snapshot view or a dynamic view.
4. Select the **Smart publish** option if you want to automatically add the organizational info of the project. All the configurations and variables will also be imported to the directory service. It is recommended that you use this option at least for the first time you deploy the project. The published project not only imports all the information defined in the project during development stage, but it also automatically performs all the mappings needed to complete the publication successfully. Once these objects are created in the directory service the **Smart Publish** option will not update the data if anything is changed in the Studio for these objects.
  5. Select the **Increment versions** check box if you want to force an increment of the major version number of all the processes in the project. If not, the publishing task will automatically manage the version numbers.



6. Select the **Republish a previous version** check box if you want to create a new **revision** for any of the published versions of that project. This is mainly applicable if you need to modify a deployed project version that is not the latest one, for example, if you need to introduce a minor change to a deprecated project version (deprecated because a newer version was deployed) so the existing instances can flow according to the new rule you need to introduce. This is valid only if it is a minor change. A new panel appears where you can select the version.

[Published projects](#) > [Publication source](#) > **Choose version**



The project to publish has to be compatible with the latest revision for the selected version. For example if the latest version is 2.0.1, the new revision 2.0.2 is created.

7. Select the **Keep generated files** check box if you want to keep the Java files generated during publication. This is useful when debugging.
8. Select the **Deploy processes after having published them** check box if you want the deploy pane to appear immediately after the publish operation ends.
9. Select the **Import Project's custom Views and Presentations after Deploy** check box if you want custom views and custom presentations imported to the directory service using the role and variable mappings defined in the next step. This operation only takes place if the previous **Deploy** option is selected.
10. Click **Ok**.

A new panel appears with all processes included in the project.



[Published projects](#) > [Publication source](#) > [Confirm](#) > **Publish process**

**Publication Info**

Will publish version: 1.0.0

☐ [Processes](#)

Name	Variation	Version
NonParametricRoles	Default	Added
OrderFill	Default	Added
UsingParametricRoles	Default	Added

The files generated during publication will be stored in host 'marvin' under the directory: /home/wc/mt/local/dist/enterprise/tomcat/temp/OrderFillMarine.fpr/build/output--17235121291596329412

☐ [Remarks](#)

☐ [Role mapping](#)

☐ [Variable mapping](#)

☐ [Configuration mapping](#)

1. If necessary, type a comment in the **Remarks** area.
2. Perform the required mappings as necessary: **Roles** defined at design time in the project, and roles that exist in the organizational settings. **Variables** defined as external in the project, and variables defined from the Web Console. **Configurations** defined as external resources to the project, and configurations created in the Web Console. **Business Parameters** defined at design time in the project, and business parameters created in the Web Console.



Published projects &gt; Publication source &gt; Publish process

Publication Info

Will publish version: 1.0.0

Processes

Name	Variation	Version
NonParametricRoles	Default	Added
OrderFill	Default	Added
UsingParametricRoles	Default	Added

The files generated during publication will be stored in host 'marvin' under the directory: /home/wc/mt/local/dist/enterprise/tomcat/temp/OrderFillMarine.fpr/build/output--17235121291596329412

Remarks

Role mapping

Abstract role	Real role
Account Manager	Account Manager
Corporation Commercial Manager	Corporation Commercial Manager
Corporation Individual Manager	Corporation Individual Manager
Corporation Manager	Corporation Manager
Customer	Customer
Finance Clerk	Finance Clerk
Shipping Clerk	Shipping Clerk

Variable mapping

Process variable	Real variable
approved	approved
discount	discount
orderAmount	orderAmount
payment	payment

Configuration mapping

Process configuration	Real configuration
J2EE	J2EE
OrdersDB	OrdersDB

Publish

Cancel

## Note


 If you are publishing a new **revision** of the project, you cannot change the associated role mapping.

- Before clicking the **Publish** button, ensure that there is a green



flag next to the **Role**, **Variable**, Business Parameters and **Configuration** mappings.


### Note

 If the mappings cannot be resolved automatically, a red flag indicates that there are mappings that need to be manually defined before project publication. You can create all of the missing elements, or only part of them and map the rest manually. After all the flags appear green, click the **Publish** button.

Once the publication is completed, the project is compiled and the processes are included in the definitions list.

The mappings (roles, external variables, business parameters and configurations) and remarks are stored in the published project.

### Warning

 Mappings are applicable and will work only if the **Smart Publish** was enabled and these objects HAVE NOT BEEN created previously.

When a project is published, it is compiled into a Java class, which has all the necessary code to implement the functionality defined during design.

If the **Deploy processes after having published them** option was checked in the first step, the Deploy panel appears. Choose the Server, organizational unit, views and archiving settings.



[Published projects](#) > [Publication source](#) > [Confirm](#) > [Publish process](#) > **Deploy**

**Deployment topology**

Show deployment grouped by: Server

**Server: DocServer**

**Version: 1.0 Revision: 0**

Name	Variation	OU	Views Generation	Archiving	Status	Action
NonParametricRoles	Default		Unified Inbox	<input type="checkbox"/> Enable archiving		<span>Deploy</span>
OrderFill	Default		Unified Inbox	<input type="checkbox"/> Enable archiving		<span>Deploy</span>
UsingParametricRoles	Default		Unified Inbox	<input type="checkbox"/> Enable archiving		<span>Deploy</span>

OK Cancel

All the projects that are published are listed by name, with a link to the **history** of each project and another link to view/edit the **deployment** state.

The history shows the list or **versions**, in descendent order. It shows, as well, the **number of processes** and **number of published revisions**.



**Published projects**

Page: 1/1 - Total: 1

[Filter](#) [Preferences](#)

[Publish](#) [Unpublish](#)

	▲ Name	History	Deployment
<input type="checkbox"/>	OrderFill	<a href="#">1.0.0</a>	<a href="#">Not deployed</a>

Click here to see the project's history

[Published projects](#) > **OrderFill**

Page: 1/1 - Total: 1

[Filter](#) [Preferences](#)

[Unpublish](#) [Deploy](#)

	▲ Version	Processes	Revisions
<input type="checkbox"/>	1.0	<a href="#">3</a>	<a href="#">1</a>

If you select the **number of processes**, a new list is displayed, showing the publication info by process name.



Published projects &gt; OrderFill

Page: 1/1 - Total: 1

Unpublish Deploy

	Version	Processes	Revisions
<input type="checkbox"/>	1.0	3	1

Click here to see the project content

Published projects &gt; OrderFill &gt; 1.0.0

Process	Variation	Author	Creation time
NonParametricRoles	Default	carolina	2004-07-30 15:56:29-03
OrderFill	Default	Administrator	2004-07-30 15:56:35-03
UsingParametricRoles	Default	carolina	2004-07-30 15:56:38-03

Abstract role	Real role
Finance Clerk	Finance Clerk
Corporation Individual Manager	Corporation Individual Manager
Shipping Clerk	Shipping Clerk
Corporation Commercial Manager	Corporation Commercial Manager
Customer	Customer
Account Manager	Account Manager
Corporation Manager	Corporation Manager

Process variable	Real variable
approved	approved
discount	discount
orderAmount	orderAmount
payment	payment

Process configuration	Real configuration
J2EE	J2EE
OrdersDB	OrdersDB

If you select the number of **published revisions**, a list of revisions in descendent order is shown, with the number of processes, from where you are able to see the previous view.

## Unpublishing a Project

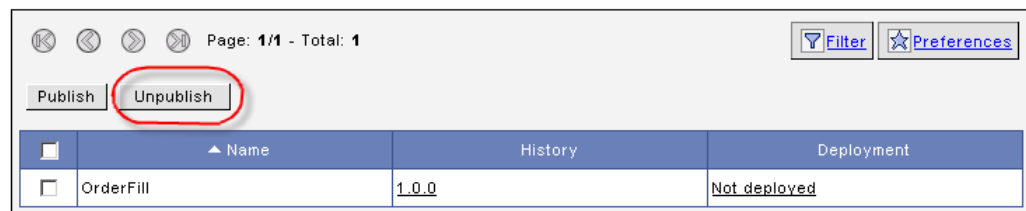
Unpublishing deletes a project from the directory service.



## To unpublish a project


1. Ensure that the project has been completely undeployed.
2. Select the projects you want to unpublish by selecting their check boxes from the list.
3. Click the **Unpublish** button.

### Published projects



Page: 1/1 - Total: 1				<a href="#">Filter</a>	<a href="#">Preferences</a>
<input type="button" value="Publish"/> <input type="button" value="Unpublish"/>					
<input type="checkbox"/>	Name	History	Deployment		
<input type="checkbox"/>	OrderFill	1.0.0	Not deployed		

## Note

 After a project is unpublished, it is no longer available from the Web Console. You must undeploy a project before you can unpublish it.

## Re-publishing a Project

Changing a published process generates a new version or revision of the process in the directory service.

### To re-publish a process

1. Change the process design using FuegoBPM Studio
2. Export the process or check it into the VCS.
3. Proceed to publish the process as explained in the *Publishing a process* section above.

When you re-publish a project, it is assumed that it applies to the



latest project version, therefore a new version/revision is generated following the publishing rules.

If the introduced changes are not relevant, then a new revision is generated and if the process is already deployed, you can change the revision number from the Deployment screen.

If the changes make the process version incompatible, then a new minor version is generated and you need to deploy that new version.

Refer to the Project major-minor versioning rules that apply to determine if the process is compatible or not, at the beginning of this page.

If you need to republish a version that does not correspond to the latest one, then you need to generate a new revision by selecting the **Republish a previous version** checkbox.

## Deploying a Project

To enable users and FuegoBPM Servers to run processes from a project, the processes must be deployed in a specific Server. Before this is done, process definitions are available and stored in a repository that can be seen only from the Web Console connected to it. After the deployment, users with permission can see the processes as available applications, and Servers can start running instances on them.

### To deploy a project

1. Click on the **Deployment column** for the project you want to deploy.



## Published projects

Page: 1/1 - Total: 1

[Filter](#) [Preferences](#)

[Publish](#) [Unpublish](#)

	Name	History	Deployment
<input type="checkbox"/>	OrderFill	1.0.0	Not deployed

- Click the **Deploy** button. The deploy panel displays.

Published projects > Publication source > Confirm > Publish process > Deploy

**Deployment topology**

Show deployment grouped by:

**Server: DocServer**

Version: 1.0 Revision: 0


Name	Variation	OU	Views Generation	Archiving	Status	Action
NonParametricRoles	Default	<input type="text"/>	<input type="text" value="Unified Inbox"/>	<input type="checkbox"/> Enable archiving	Deploy	<input type="button" value="Deploy"/>
OrderFill	Default	<input type="text"/>	<input type="text" value="Unified Inbox"/>	<input type="checkbox"/> Enable archiving	Deploy	<input type="button" value="Deploy"/>
UsingParametricRoles	Default	<input type="text"/>	<input type="text" value="Unified Inbox"/>	<input type="checkbox"/> Enable archiving	Deploy	<input type="button" value="Deploy"/>

- Choose the organizational unit (to deploy for all organization leave it empty)
- Choose between basic view configurations: **Unified Inbox** shows all instances to the user in a folder called Inbox. The instance information will allow users to identify in which process it is running. **By process** distributes the instances to their corresponding processes. **By process and activity** includes not only the instances under each process entry but also inside the activities that contains them. If the process have grab activities, the user will only see the grab activity view, if views are created **By process and activity**. Otherwise, the user will only be able to grab instances, from the Search results panel or if you manually create a custom view for the grab activity of type *Activity Instances*.



5. Choose the archiving settings. If you enable archiving for this particular process, you will be able to decide as well whether you want to archive attachments and notes.
6. Click the **OK** button.

## Note




 If you have more than one Server, you have to select in which Server you want to deploy your project.

All deployed processes are shown, as well as their status.

Published projects > Deploy

**Deployment topology**

Show deployment grouped by: Server


Server: DocServer						
Version: 1.0 Revision: 0						
Name	Variation	OU	Views	Generation	Archiving	Status
NonParametricRoles	Default	Organization	Unified Inbox		<input type="checkbox"/> Enable archiving	Active 
OrderFill	Default	Organization	Unified Inbox		<input type="checkbox"/> Enable archiving	Active 
UsingParametricRoles	Default	Organization	Unified Inbox		<input type="checkbox"/> Enable archiving	Active 

It is possible to group the deployment information by Server or by Organizational Unit.

If you are deploying the processes into an EJB based Server , you must generate the EARs files.

See Maintaining a Server for further information.

## Note

 If your project has non-versionable Java Class Libraries (JCLs), you will need to copy them to FuegoBPM's installation directory. Please refer to the System Administration Guide - Java Class Libraries for the detailed



information.

## Undeploying a Project

### Warning



Undeploying a process is not part of the regular procedure as all instances in the process are deleted. In a production environment it is highly discouraged.

To undeploy a project you first have to undeploy all the processes.

Undeploy a process whenever a process is no longer needed. After you undeploy a process, end users can no longer see it in the Work Portal.

### Instances and Undeployment

There may be unprocessed instances. If this is the case, you need to determine if there will be any impact on your business resulting from a loss of the instances.

When you undeploy a process, instances are deleted. If you do not want to lose these instances, the correct procedure is to deprecate the process. In this way no new instances are created and the existing ones can be processed and completed in the deprecated process.

Once all instances are completed in the deprecated process, this process changes its status to undeployed.

### To undeploy a project

1. Click on the **Deployment status** column of a project and you get the list of processes and their status.
2. Click the **Undeploy** button. The deploy panel displays, automatically setting the action 'Undeploy' for each process in the project.



Published projects > Deploy

Deployment topology

Show deployment grouped by: Server

Server: DocServer

Version: 1.0 Revision: 0

Name	Variation	OU	Views	Generation	Archiving	Status	Action
NonParametricRoles	Default	Organization	Unified Inbox		<input type="checkbox"/> Enable archiving	Active	Undeploy
OrderFill	Default	Organization	Unified Inbox		<input type="checkbox"/> Enable archiving	Active	Undeploy
UsingParametricRoles	Default	Organization	Unified Inbox		<input type="checkbox"/> Enable archiving	Active	Undeploy

OK Cancel

3. Click the **OK** button.

Or, if you want to undeploy only some of the processes:

1. Click on the **Deployment status** column of a project and you get the list of processes and their status.
2. Click the **Update** button. The deploy panel displays.

Published projects > Deploy

Deployment topology

Show deployment grouped by: Server

Server: DocServer

Version: 1.0 Revision: 0

Name	Variation	OU	Views	Generation	Archiving	Status	Action
NonParametricRoles	Default	Organization	Unified Inbox		<input type="checkbox"/> Enable archiving	Active	Undeploy
OrderFill	Default	Organization	Unified Inbox		<input type="checkbox"/> Enable archiving	Active	Keep active
UsingParametricRoles	Default	Organization	Unified Inbox		<input type="checkbox"/> Enable archiving	Active	Keep active

OK Cancel

3. Select the **Action** you want to take for each process (in this case, 'Undeploy').
4. Click the **OK** button.



As the undeployment deletes all related instances, its execution may take a few minutes.

## Undeploying a Project for J2EE

### Warning



Undeploying a process is not part of the regular procedure as all instances in the process are deleted. In a production environment is it highly discouraged.

To **undeploy** a project:

- 1) Undeploy the project from the webConsole (from the *Projects* panel)
- 2) Stop the project application from the Application server console.
- 3) Wait for complete undeployment in FuegoBPM WebConsole. Press the 'reload' button to check the status.
- 4) Uninstall the project from the Application Server console.

To **redeploy** a project that was once deployed but recently undeployed:

- 1) Deploy the project from the *Projects* panel.
- 2) Go to *J2EE Application Server files* and **regenerate** the ear file.
- 3) Deploy the project ear from the same panel.

To **deploy a new release** of a project (an updated project)

- 1) Publish and deploy it from FuegoBPM WebConsole in the *Projects* panel.
- 2) Go to *J2EE Application Server files* and regenerate the ear file.
- 3) Press the re-install button.
- 4) Start the project ear.



## Deprecating a Project

When you deploy a new version of a project, the previously active version is deprecated. This means that users won't be able of creating new instances in the deprecated version, but existing instances will be executed with the definition of the process in which they were originally created. After the execution of the last instance, the process is automatically undeployed by the Server.

A project can be manually deprecated. Deprecating a project is a measure less drastic than undeploying it, since existing instances are not lost.

### To deprecate a project

1. Click on the **Deployment status** column of a project and you get the list of processes and their status.
2. Click the **Deprecate** button. The deploy panel displays, automatically setting the action 'Deprecate' for each process in the project.

Published projects > Deploy

**Deployment topology**

Show deployment grouped by: Server

**Server: DocServer**

Version: 1.0 Revision: 0

Name	Variation	OU	Views	Generation	Archiving	Status	Action
NonParametricRoles	Default	Organization	Unified Inbox		<input type="checkbox"/> Enable archiving	Active	Deprecate
OrderFill	Default	Organization	Unified Inbox		<input type="checkbox"/> Enable archiving	Active	Deprecate
UsingParametricRoles	Default	Organization	Unified Inbox		<input type="checkbox"/> Enable archiving	Active	Deprecate

OK Cancel

3. Click the **OK** button.

Or, if you want to deprecate only some of the processes:



1. Click on the **Deployment status** column of a project and you get the list of processes and their status.
2. Click the **Update** button. The deploy panel displays.

Published projects > Deploy

Deployment topology

Show deployment grouped by: Server

Server: DocServer

Version: 1.0 Revision: 0

Name	Variation	OU	Views Generation	Archiving	Status	Action
NonParametricRoles	Default	Organization	Unified Inbox	<input type="checkbox"/> Enable archiving	Active	Deprecate
OrderFill	Default	Organization	Unified Inbox	<input type="checkbox"/> Enable archiving	Active	Keep active
UsingParametricRoles	Default	Organization	Unified Inbox	<input type="checkbox"/> Enable archiving	Active	Keep active

OK Cancel

3. Select the **Action** you want to take for each process (in this case, 'Deprecate').
4. Click the **OK** button.

## Deployment Rules

- If a process is deployed for one organizational unit, it cannot be deployed for the whole organization, or vice versa, regardless of the variation or version of the process.
- A process can be simultaneously deployed for one or more organizational units within an organization, regardless of the variation or version of the process.
- A different version of a process can be deployed where it was already deployed. The former deployment will be deprecated. Different versions of a process can be deployed within the same organizational unit if the process version is deprecated.
- The interface for each variation of a process must be compatible



with every variation of that process.

- Participants may access a deployed process where:
  - they have an assigned role for it, and
  - the process is deployed for the whole organization, or
  - the organizational unit of which the participant is a member,
  - or they do not belong to a specific organizational unit.

## Configurations

The Configurations option enables you to manage the FuegoBPM Studio configurations. Through these objects, FuegoBPM Studio can connect and/or interact with different types of applications and objects.

If you select the configurations option from the left pane, a new window will appear on the right side of the browser. It displays a list of all existing configurations. The information needed to create a configuration varies according to the configuration type that has been selected.



**Configurations**

Pagina: 1/1 - Total: 7				<a href="#">Filtro</a>	<a href="#">Preferencias</a>
<a href="#">Add</a> <a href="#">Delete</a>					
<input type="checkbox"/>	▲ Name	Type	Subtype		
<input type="checkbox"/>	<a href="#">AchivingDB</a>	SQL database	Oracle JDBC		
<input type="checkbox"/>	<a href="#">BAM Data Base</a>	SQL database	Oracle JDBC		
<input type="checkbox"/>	<a href="#">J2EE</a>	J2EE Application Server	J2EE Application Server		
<input type="checkbox"/>	<a href="#">OLAPDW</a>	SQL database	Oracle JDBC		
<input type="checkbox"/>	<a href="#">OrdersDB</a>	SQL database	Cloudscape JDBC		
<input type="checkbox"/>	<a href="#">engine</a>	SQL database	Oracle JDBC		
<input type="checkbox"/>	<a href="#">testEngine</a>	SQL database	Cloudscape JDBC		

At FuegoBPM Studio project design time, you should generate external components. Typically, external components connect the application that is being developed to a group of componets from a test environment. When the development and testing phases are finished, the necessary configurations should be added from the Web Console. This allows you to match configurations, which is required when you publish a project with external components.

The following steps provide an example of generating an Oracle connection configuration:

1. Click the **Add** button. A new pane appears.



**Configurations > Add Configuration**

Type	
Name	<input type="text"/>
Type	SQL Database ▼
Subtype	IBM DB2 JDBC (Type 2) ▼
<input type="button" value="Next"/> <input type="button" value="Cancel"/> <input type="button" value="Reset"/>	

2. Enter a name for the new configuration.
3. Open the **Type** drop-down list and select the SQL database option.
4. In the **Subtype** list, select Oracle Database.
5. Click **Next**. A new pane appears.



 [Configurations](#) > [Add Configuration](#) > **Edit Configuration ArchivingDB**

Type	
Name	ArchivingDB
Type	SQL Database
Subtype	Oracle DataBase

Properties	
Host	<input type="text"/>
Port	<input type="text" value="1521"/>
SID	<input type="text"/>
User	<input type="text"/>
Password	<input type="text"/>
Schema	<input type="text"/>
Driver Type	<input type="text" value="thin"/> ▼
<input type="checkbox"/> Database String	<input type="text"/>

Advanced	
Tablespace	<input type="text"/>
Temporary Tablespace	<input type="text"/>
Profile	<input type="text"/>

Runtime	
Maximum Pool size	<input type="text" value="10"/>
Connection Idle time (Mins)	<input type="text" value="5"/>
Maximum opened cursors	<input type="text" value="50"/>

6. Enter the **Host** and **Port** where Oracle is running.



7. Enter the **SID** and a **user/password** that will be used by this configuration.
8. Select the **Driver type**.
9. Enter the **Database String**, if necessary.
10. In the **Advanced properties**, set the **Tablespace** for the data, the **Temporary** tablespace, and the **Profile**. If these values are not entered, FuegoBPM Studio will try to use the database defaults.
11. In the **Runtime** area, configure the maximum amount of connections to the database for this configuration, as well as the timeout for idle connections and the maximum amount of opened cursors.
12. Click the **Save** button.

## Available Configurations

- **COMBridge**
- **CORBA**
- **Enterprise Java Bean**
- **J2EE Application Server**
- **Java Class Libraries**
- **Naming and Directory Service**
- **SQL Database**
- **Server**
- **Web Service**



- **JMS Messaging Service**

To see more information about this components, check the FuegoBPM Studio documentation, under the Cataloging External Components section.

## Required Parameters

### COMBridge

#### Microsoft COM Service

The following settings are available:

- **Host:** Indicates the host where the COMBridge has been installed.
- **Port:** The port where COMBridge is located.

### CORBA

#### CORBA

On the **Naming Service** tab, you must configure the values for the Naming Service. There are several options:

- **Read Input/Output Redirection (IOR) from URL:** If you have the IOR exported to some service (for example, a web server) and a URL exists that can be used to fetch it, select this option.
- **Use this IOR:** Specify the IOR directly (recommended).
- **Resolve Initial Reference:** Enables you to request the Object Request Broker (ORB) to get the reference of this service trying to resolve its reference.



## Note



This option is not recommended because it has interoperability problems when using different ORBs.

- **Don't use a Naming Service:** Select this option if you don't need this service. Remember that objects used in methods are referenced using the Naming Service. Hence, you must use the IOR for that object, passing it as a parameter in its constructor.

On the **Interface Repository** tab, set the interface repository IOR. The options are as follows:

- **Read IOR from URL:** If you have the IOR exported to some service (for example, a web server) and a URL exists that can be used to fetch it, select this option.
- **Use this IOR:** Specify the IOR directly (recommended).
- **Resolve Initial Reference:** Enables you to request the ORB to get the reference of this service trying to resolve its reference. Note that this option is not recommended because it has interop problems when using different ORBs.
- **Use Fuego's Interface Repository:** Use this service when an ORB does not have an implementation of the Interface Repository service.

## Note



This service must be launched separately.

## Enterprise Java Bean

The options are as follows:



- **J2EE Connector:** The configuration to connect to the Application Server.
- **Lookup Name:** The name of the EJB.

## J2EE Application Server

### Properties

- **Initial Context Factory:** The class name of the JNDI initial context factory used to access the naming service where the home objects are deployed.
- **URL:** The URL of the naming service provider.
- **Principal & Credentials:** The user and password that will be used at connection time.
- **User Transaction lookup name**

## Naming and Directory Service

The settings are as follows:

- **Initial Context Factory:** The initial context factory can be `com.sun.jndi.LdapCtxFactory` or your own Context factory.
- **URL:** The URL you use to connect to the directory service. For Netscape iPlanet directory services, the format is generally `ldap://host:port/o=company,c=country`. For Microsoft Active Directory, the format is generally `ldap://host:port/dc=subdomain,dc=domain,dc=com`.
- **Principal:** The root distinguished name for the directory service. For example, Netscape iPlanet directory services usually use



cn=root. Microsoft Active Directory users usually simply enter root.

- **Credentials:** Your password for the directory service.
- **Referrals:** Either to follow, ignore or throw.

## SQL Database

The required fields change based on the **Supported Type** selected. The following fields are common to most databases. However, some of the databases might not require all of them to be filled in.

The FuegoBPM Studio platform supports the following databases:

- Cloudscape
- Generic JDBC Version 1
- IBM DB2 AS/400 JDBC
- IBM DB2 JDBC
- IBM DB2 JDBC (Type 2)
- IBM DB2 OS/390 JDBC
- Informix JDBC
- MsSQL JDBC (Microsoft Driver)
- MsSQL JDBC (i-net Driver)
- MySQL JDBC
- Oracle JDBC
- PointBase JDBC



- Postgresql JDBC
- Remote JDBC
- Sybase JDBC
- Sybase SA JDBC

If you are configuring an access to a Server database, please refer to Appendix A - Server database considerations in the System Administration Guide for details.

## Cloudscape

FuegoBPM Studio supports Informix Cloudscape, version 3 or higher. Cloudscape is a pure Java RDBMS, so it has built-in JDBC support.

The Cloudscape database settings are as follows:

- **Schema** - The schema of the database is created automatically. The name cannot be changed.
- **Host** - This field cannot be modified. The default is that of the local host.
- **Database** - The full name of the database and the directory where it will be created.
- **Administrator User** - The user name to access the database.
- **AdminPassword** - The administrator password to access the database.

## IBM DB2

The IBM DB2 JDBC Driver is available from IBM Corporation as part of the IBM DB2 database.



When creating a configuration to access this database type you must specify the following:

- The database host.
- The port where the database server is listening.
- The database name.
- The database user and password. This user should exist in DB2 and have sufficient rights to create schema and tables, which are used to store information.

### IBM DB2 AS/400 JDBC and IBM DB2 JDBC

The IBM DB2 database settings are as follows:

- **Host** - The host name of the machine or server where the database resides.
- **Port** - The port number where the database resides.
- **Schema** - The schema of the database is created automatically. The name cannot be changed.
- **User** - The user name to access the database.
- **Password** - The user's password to access the database.
- **Database** - The name of the database.
- **Administrator user** - The administrator user name to modify the database.

#### Note



The user and password must exist in the DB2 database. DB2 does not



permit you to create users externally.

## **IBM DB2 JDBC (Type 2) and IBM DB2 OS/390 JDBC**

The IBM DB2 database settings are as follows:

- **Schema** - The schema of the database is created automatically. The name cannot be changed.
- **User** - The user name to access the database.
- **Password** - The user's password to access the database.
- **Database** - The name of the database.
- **Administrator user** - The administrator user name to modify the database.

## **Informix**

The Informix database settings are as follows:

### **On the Basic tab**

- **Host** - The host name of the machine or server where the database resides.
- **Port** - The port number where the database resides.
- **Database** - The name of the database.
- **Server** - The server name.
- **User** - The user name to access the database.
- **Password** - The user's password to access the database.

### **On the Advanced tab**



- **Root dbspace name** - The Root database space name.

### Microsoft SQL Database)

The MS SQL database settings are as follows. Using a JDBC driver is optional.

- **Schema** - The schema of the database is created automatically. This field cannot be modified.
- **Host** - The host name of the machine or the server where MS SQL resides.
- **Port** - The port number where database resides.
- **User** - The user name to access the database. This field cannot be modified.
- **Password** - The administrator password to access the database.
- **Administrator user** - The administrator user name for the database.

### MS SQL (i-net Driver)

The MS SQL database settings are as follows. Using a JDBC driver is optional.

- **Host** - The host name of the machine or the server where MS SQL resides.
- **Port** - The port number where database resides.
- **Database** - Database to be accessed.



- **User** - The user name to access the database.
- **Password** - The administrator password to access the database.
- **Use sql7 & Use cursors always** - check this options if you want to enable the *sql7* and/or *useCursorsAlways* properties of the driver.

### Troubleshooting the driver

If you are having any of the problems below, see how the *sql7* and *useCursorsAlways* properties have to be set.

**Temporary tables:** usage of temporary tables, such as *#table-name*, is broken with the *sql7* property. You may get an exception like:

```
[DBS90011]Invalid object name '#table-name'.  
NextException:  
[DBS90011]Statement(s) could not be prepared.  
  
fuego.components.SQLException:  
[DBS90011]Invalid object name '#table-name'.  
NextException:  
[DBS90011]Statement(s) could not be prepared.  
.....
```

To avoid this problem, set the **Use sql7** property to **false**.

**Introspecting a table:** if you get the following message when you are introspecting a table:

```
Unicode data in a Unicode-only collation or ntext data  
cannot be sent to clients using DB Library (such as ISQL)  
or ODBC version 3.7 or earlier
```

It may be cause because the table has fields typify as:



- tinyint,
- smallint
- bigint
- money
- smallmoney
- bit
- cursor
- sql\_variant
- table
- timestamp
- uniqueidentifier
- text
- ntext
- image
- nchar[(n)]
- nvarchar[(n)]

In that case, the driver provider recommends to set the *sql7* property of the driver to true. To do so, check the *Use sql7* property when defining the access configuration.

**ClassCastException and SQLException: No result sets were produced by 'SELECT...':** if you get any of these exceptions, set the *Use Cursors Always* to false.

## MySql JDBC



The MySQL database settings are as follows:

- **Host** - The host name of the machine or server where the database resides.
- **Port** - The port number where the database resides.
- **Database** - The name of the database.
- **User** - The user name to access the database.
- **Password** - The user's password to access the database.

## Oracle

The Oracle database settings are as follows:

- **Host** - The host name of the machine or server where Oracle resides.
- **Port** - Default port number for Oracle.
- **User** - The user name set up by the Oracle system administrator. (Automatically created when the Server is created.) Each Server is related to an Oracle user. The user name in the Oracle instance is preceded by the prefix *fdb\_* and ends with the name of the Server. The user name is defined in the Execution Console when the Server is created. Once defined, the name cannot be changed because other FuegoBPM Suite applications reference it.
- **Password** - The administrative password for the Oracle database.
- **SID** - System identification for database; also used to connect to database. Sometimes called Oracle ID.
- **Schema** - if you give a name of a schema, the configuration and



introspection will only work on tables of that schema. If you don't give a schema name the schema could be changed in runtime. That is for example a table referenced like devel.invoice in your development environment. If in production you had a different schema name, suppose production references to devel.invoice would work only if you didn't give a name to the schema.

- **Driver type** - The type of drive that Oracle uses (thin or oci8).
- **Advanced** - See below.

### On the Advanced tab

- **Tablespace** - Some database administrators divide databases into tablespaces to control and maintain table sizes. If your company uses tablespace names, enter the appropriate name here. Leave the field blank if there are no tablespaces and a default tablespace will be created. When the user name is created in the Execution Console, the user creation statement reference tablespaces. Consequently, it is necessary to define the tablespaces.
- **Temporary Tablespace** - Enter the appropriate temporary tablespace name here. This field is going to be used by FuegoBPM Server's database to perform temporary indexing for some access. TEMP of type TEMPORARY. This tablespace performs temporary operations for the Server.
- **Administrator user** - Enter the administrator user name for the Oracle database. This is the user name that will be used to create the Server's database user in the Oracle instance. The password will be required at user creation time.
- **Profile** - A profile is a set of limits on database resources. If you assign the profile to a user, that user cannot exceed the established limits in the profile. This allows the administrator to



limit the actions of a particular Oracle user. The Oracle administrator may have different profiles set for different groups of users so that there is control over what each group is authorized to use and over which resources from the database a particular group will have.

- **Use Timestamp for Date columns** - When you select this property it makes the DATE fields work like TIMESTAMP. If the property is not selected, the DATE SQL fields type store only the day and the TIMESTAMP field type store both, day and time.

## PointBase JDBC

The PointBase database settings are as follows:

- **Host** - The host name of the machine or server where the database resides.
- **Port** - The port number where the database resides.
- **Database** - The name of the database.
- **User** - The user name to access the database.
- **Password** - The user's password to access the database.

## Postgresql JDBC

The MySQL database settings are as follows:

- **Host** - The host name of the machine or server where the database resides.
- **Port** - The port number where the database resides.
- **Database String** - The name of the database.



- **User** - The user name to access the database.
- **Password** - The user's password to access the database.

## Remote JDBC

If you need to configure XA compliant SQL components you have to integrate a Remote JDBC external resource.

This is implemented when you want your J2EE application server to handle and administrate the database connections. If this is the case, configure first the J2EE external resource to access to the Application Server, see J2EE Application Server. And then a Remote JDBC external resources giving:

- **Database Type** - The database sub-type, which type of database you will be connecting to.
- **J2EE Configuration** - The J2EE configuration previously defined, to access to the Application Server that will manage the connections to the databases.
- **Lookup Name** - The JNDI lookup name that the connection to the database was given in the Application Server.

## Note



if you are in FuegoBPM Studio environment, define the J2EE configuration as a GENERIC J2EE, as it is external to the FuegoBPM Studio. If you are working in a FuegoBPM Enterprise J2EE, that is deployed in the same J2EE application server that handles the connections to the database, remember to redefine the external resource to access to it into LOCAL, as it is the same application server.

## Sybase

The Sybase database settings are as follows:



- **Schema** - The schema of the database is created automatically. This field cannot be modified.
- **Host** - The host name of the machine or the server where Sybase resides.
- **Port** - The port number where database resides.
- **User** - The user name to access the database. This field cannot be modified.
- **Password** - The administrator password to access the database.
- **Administrator user** - The administrator user name for the database.

### Generic JDBC Version 1

It is possible, for those database not directly supported, to use a generic JDBC if the corresponding drivers are available.

The Generic JDBC Version 1 database settings are as follows:

- **JDBC Driver** - Java class that registers the JDBC driver.
- **URL** - The JDBC connection URL.
- **User** - The user name to access the database.
- **Password** - The administrator password to access the database.

For example, if you want to access to a Cloudscape 5.0 database, enter the following information :

**JDBC Driver**=com.ibm.db2j.jdbc.DB2jDriver

**URL**=jdbc:db2j:PATH



In addition to that, you will need to catalog the corresponding JDBC drive: *db2j.jar*

## Runtime Configuration

Additionally, you can configure runtime properties.

In FuegoBPM Studio, select the runtime tab:

**Edit External Resource**  
Modify the values of the External Resource

Name: OrdersDB

Type: SQL Database

Supported types: MySQL DataBase

Details

Maximum Pool size: 10

Connection Idle time (Mins): 5

Maximum opened cursors: 50

Basic Runtime

Delete OK Cancel Help

In the FuegoBPM Web Console, refer to the runtime section:

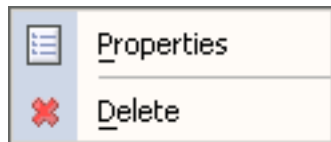


Runtime	
Maximum Pool size	<input type="text" value="10"/>
Connection Idle time (Mins)	<input type="text" value="5"/>
Maximum opened cursors	<input type="text" value="50"/>

- **Maximum pool size:** define the maximum pool size for the SQL configurations.
- **Connection idle time (mins):** The connection is closed after the defined time.
- **Maximum opened cursors:** define the maximum number of opened cursors specified in the data base. This value is related to the maximum pool size. The number of cursors is divided in between the number of maximum pool size and each connection will manage that number of cursors. For example if you have 500 maximum opened cursors and the maximum pool size is 50, therefore each connection can have maximum 10 opened cursors.

## Actions on SQL External Resources

By right-clicking on the external resource a menu is displayed:

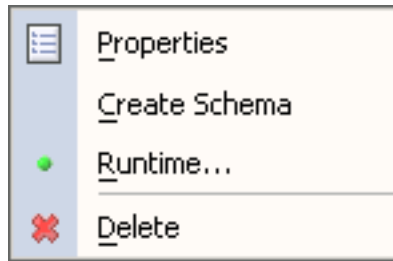


- **Properties:** To open the external resource definition dialog
- **Delete :** To delete the external resource.

When the database type of the SQL External Resource is *Cloudscape*



two other options:



These two options provide an easy way to build a project with a database environment to test, for example when you don't have connectivity.

- **Create Schema:** To create a cloudscape database in the specified path.
- **Runtime ...:** To browse and select a file ".sql" with sql sentences to execute on a database, as *create schema...*, "insert into...", etc.

## Server

### Server

Enter the URL of web service provider, including port if you like.

## Web Service

### Web Service

The settings are as follows:

- **Server Configuration:** Server configuration to access the web service provider.
- **Path:** Path where the Web Service Description Language (WSDL) file is located.



## JMS Messaging Service

**To catalog a JMS Messaging Service configuration,**

1. Type the configuration name, select the type *JMS Messaging Service* and click **Next** to complete the configuration properties.
2. You must indicate the following properties
  - a. *J2EE*: JMS Messaging service runs on an application server, indicate here the configuration to access it. If the case is that the FuegoBPM Server is an EJB based, and the JMS will run in the same application server that the server, indicate here the already existing configuration defined for the server, as shown in the example picture below.
  - b. *Destination Type*: Indicate the type of JMS Service, **Topic** or **Queue**.
  - c. *Lookup Name*: The lookup name of the service in the application service.
  - d. *Connection Factory Lookup Name*: the connection factory for the JMS service.
  - e. *JMS Listener Port* the JMS listener port, configurable only for WebSphere



[Configurations](#) > [Add Configuration](#) > [Edit Configuration jmsQueue](#)

Type	
Name	jmsQueue
Type	JMS Messaging Service
Subtype	JMS Messaging Service

Properties	
J2EE	<input type="text" value="J2EE"/>
Destination Type	<input type="text" value="QUEUE"/>
Lookup Name	<input type="text" value="QUEUE_JMS_EX"/>
Connection Factory Lookup Name	<input type="text" value="QUEUE_JMS_EX_FAC"/>
JMS Listener Port	<input type="text"/> (only for WebSphere)

## Variables

From the FuegoBPM Web Console, you can add external variables.

When you design a project from the FuegoBPM Studio, external or project variables can be defined when needed. Then, at publishing time, you should match the variables that were defined in the project with those that were added from the Web Console.

The external variable is used to save the information across processes. For example, when working in the Work Portal, you can search for all instances in any process corresponding to an invoice number. See the Studio documentation for more information about this type of variables.

### To add an external variable



1. Select the **Variables** option. A new panel appears showing the list of all the defined variables.

**Variables**

Page: 1/1 - Total: 4				<a href="#">Filter</a>	<a href="#">Preferences</a>
<a href="#">Add</a> <a href="#">Delete</a>					
<input type="checkbox"/>	▲ Name	Type	Business variable		
<input type="checkbox"/>	<u>approved</u>	Bool			
<input type="checkbox"/>	<u>discount</u>	Decimal	Measure		
<input type="checkbox"/>	<u>orderAmount</u>	Decimal	Dimension		
<input type="checkbox"/>	<u>payment</u>	String			

2. Click **Add**. A new panel appears.



**Variables > Add Variable**

Properties

Name	<input type="text" value="taxes"/>
Type	<input type="text" value="Decimal"/>
Size	<input type="text" value="18"/> <input type="text" value="3"/>
Business variable	<input checked="" type="checkbox"/>
Object	<input type="text" value="Dimension"/>

Range

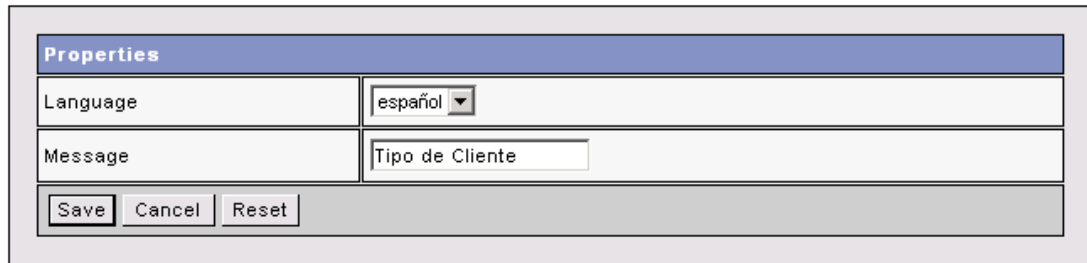
Name	Start	Finish
<input type="text" value="Level1"/>	<input type="text" value="0"/>	<input type="text" value="50"/>
<input type="text" value="Level2"/>	<input type="text" value="50"/>	<input type="text" value="100"/>

3. Enter the **Name**, **Type**, and **Size** of this variable. You can define any of these variables as a **Business variable**. These variables are defined to contain information that can be used to define a measurement or dimension in the Data Store. They represent business indicators considered by the business analyst.
4. Click the **Save** button.



Variables can also be internationalized so that the appropriate name are shown under different languages. To configure this, select the desired variable and enter in the internationalization link. From there, you can add all necessary languages.

[Variables](#) > [Edit Variable customerType](#) > [Internationalization](#) > **Add Message**



Properties	
Language	español ▼
Message	Tipo de Cliente
<input type="button" value="Save"/> <input type="button" value="Cancel"/> <input type="button" value="Reset"/>	

## Business Parameters

From the FuegoBPM Web Console, you can add business parameters.

The **business parameter** is used to save information defined at the organization level. These parameters are visible for all processes across all the projects in an Organization.

When you design a project from the FuegoBPM Studio, business parameters can be defined when needed. Then, at publishing time, you should match the parameters that were defined in the project with those that were added from the Web Console.

### To add an external variable

1. Select the **Business parameters** option. A new panel appears showing the list of all the defined business parameters.



**Business Parameters**

Page: 1/1 - Total: 2

[Filter](#) [Preferences](#)

[Add](#) [Delete](#)

<input type="checkbox"/>	Name	Type	Organization value
<input type="checkbox"/>	ORGADDRESS	String	Von Wernick 1234
<input type="checkbox"/>	ORGANIZATION	String	Fuego Inc

- Click **Add**. A new panel appears.

**Business Parameters > Add Business Parameter**

**Properties**

Name: MAXTIME

Type: Int

Organization value: 10

**Values for Organizational Unit**

Organizational Unit: Buenos Aires

Organizational Unit	Value
Dallas	8

[Save](#) [Cancel](#) [Reset](#)

- Enter the **Name** and **Type** of this parameter. Define the value of the parameter applicable for the whole organization.
- If the parameter has a different value for any of the organizational units, you have to define it adding lines and selecting the corresponding Organizational Unit. For example if a due time to attend certain requests from the customer is the same for all the organization sales except for Dallas, then you need to specify it.
- Click the **Save** button.



## Business parameters characteristics

It is strongly recommended **NOT** to change the value of a Business parameter as they should contain constant values.

### Notes:

- If you change a Business parameter you must be aware that the new value is not immediately available for all instances. Even more, if this value is changed from a BP-Method, the result may not always be the expected one and not available at the same time across the all participants.
- If the business parameter is used in a due transition expression of an activity, the business parameter value that applies is the one defined at the time the instance enters the activity. For example, the business parameter **"MAXTIME"** is used in the due transition expression of the activity **"Reply to customer"**. When the instance **"Request Customer 1"** arrives, the due time is calculated using the value that the **MAXTIME** has at that moment. If you later change the value, the new value does not apply for the due time of the instance **"Request Customer 1"** for the activity **"Reply to customer"**. It will apply for all instances that arrive to that activity after the business parameter was changed.

## Referrals

Creating a referral is a step that you must perform to enable process-to-process communication.

Process referrals are used by FuegoBPM Server when one process needs to call a sub-process that resides in a different Server. For example, a warehouse company may have a process that calls a sub-process that resides in a shipping company. Both processes are published and deployed to different directory servers in different networks, which are typically behind firewalls. The warehouse




process must be able to find a referral to the shipping process to send the instance to the shipping process. This scenario could also include internal processes that are published and deployed on different directory servers.

## When the Server Needs to Use Process Referrals

When business analysts design a process that has to communicate to another process, the target process information is included in the model. The name of the process should always be provided. The organization might also be present, but this is optional. If no organization is available, the Server assumes that the target process is deployed in the same organization where the process being executed is deployed. The same is valid when the Organizational Unit is not present.

With this information, the Server tries to find the target process. If the target process organization is different from the organization where the process being executed is deployed, or if it is the same organization but the process is not found in any of the organization Servers, the Server uses **Process Referrals** to reach the target process.

### Note

 Creating a referral in the Web Console is only one step that must be performed to enable process to process communication. The FuegoBPM System Administration Guide contains complete information on setting up a process to process or B2B scenario.

## Adding a Process Referral

### To add a process referral

1. Select the **Referrals** option in the left pane of the Web Console workspace.



- Click the **Add** button.
- Enter the **Organization** name. This name will identify the new referral.

[Referrals](#) > **Add Referral**

Properties	
Organization	<input type="text" value="Fuego"/>
<input type="button" value="Next"/> <input type="button" value="Cancel"/> <input type="button" value="Reset"/>	

- Click on **Next** button. The pane showing the list of referrals appears.
- Click the **Add** button.

[Referrals](#) > **Edit Referral Fuego**

Properties	
Organizational Unit	<input type="text"/>
Process	<input type="text" value="RemoteProcess"/>
URL	<input type="text" value="http://testServer:5435"/>
User	<input type="text" value="Administrator"/>
Password	<input type="password" value="*"/>
<input type="button" value="Save"/> <input type="button" value="Cancel"/> <input type="button" value="Reset"/>	

- In the **Organizational Unit** field, enter the name of the organizational unit to which the referral process has been deployed. You can leave this field empty if you need to communicate with a process in this organization. No matter where the organizational unit is deployed, the URL defined in the **URL** field will reach the process.



7. In the **Process** field, enter the name of the process to which you are referring. If you leave this field blank, it means that all processes deployed in the organizational unit, no matter their name, will be found using the URL defined in the **URL** field.
8. In the **URL** field, enter the complete URL address for the Server where the process has been deployed. Include any servlet-mapping information here as well. (Servlet creation and mapping is described in the System Administration Guide.). The URL is composed as: **http://host:port/fuego**; where *host* is the name of the host where the *remote process* is running and *port* is the IPC port number defined as part of the Location information for the remote server. The URL must end with the word *fuego*.
9. In the **User** field, enter a user name that the company you are trying to connect to has authorized for use to connect to the remote web server.
10. In the **Password** field, enter a password.
11. Click **Save**. The referral is added to the Referrals list.

You must now restart both servers so that the referrals can be seen by the Servers.

### Note



If the remote process must reconnect to your process after it is finished processing, such as through Subflow, Termination Wait, or Process Notification activities, the remote company must also add a referral. Repeat the steps for the remote company project.

## How the Server Selects the Referral

When the Server finds it necessary to communicate with a process located in an organization other than the one where the process is deployed, it starts looking for a referral to establish the connection and reach the process.



The referrals defined in the **Referrals List** for the remote organization are evaluated in descending order until a referral matching the process information is found.

The Server evaluates the first referral of the list. The selected referral will be the one that:

- is exactly defined for the organizational unit and process name of the target process, or
- is not defined for a specific process name but the information of the organizational unit matches the organizational unit of the target process, or
- is not defined for a specific process name but it is defined for an organizational unit in the upper levels of the organizational unit of the target process in the organization hierarchy, or
- does not specify any organizational unit nor process name.

If any of these conditions is true, the Server takes the URL set for that referral to establish the connection. Otherwise, it continues to evaluate the next referral item of the list with the same criteria.

## Deleting a Process Referral

### To delete a referral

1. Select the **Referrals** option in the left pane.
2. Select the referral you want to delete.
3. Click the **Delete** button.

You can also delete the organizational unit references in one referral. To do that, select a referral by clicking on the organization name,



then mark the organizational unit and process references you want to delete.

## **Configuration when working with FuegoBPM Application Server**

There are different possible escenarios when working with FuegoBPM Application Server:

- A process deployed in a FuegoBPM Application Server can communicate with any process:
  - deployed in the same FuegoBPM Application Server. This communication will be resolved internally by the Server.
  - deployed in a different FuegoBPM Application Server created in the same Organization. This communication is performed by using EJB
  - deployed in a FuegoBPM Server created in the same Organization. This communication is performed by using Fuego RMI
- A process deployed in a FuegoBPM Server can communicate with any process deployed in a FuegoBPM Application Server created in the same Organization. This communication is performed by using EJB.
- A process deployed in a FuegoBPM Application Server can communicate with any process deployed in any FuegoBPM Application Server created in a different Organization using Fuego SOAP regardless of the second Server type.

## **Configuring Mixed IPC for JBoss**



When the referrals are properly configured, a Server created for a certain Organization, and running in a certain instance of JBoss can communicate with other Server of the same Organization, running in another instance of JBoss without further configuration or installation issues.

On the other hand, for a FuegoBPM Server to communicate with another Server running in a JBoss instance, the file *jbossall-client.jar* (or files *ejb.jar*, *jboss-client.jar* and *jnp-client.jar*) must be copied to subdirectory *ext* of the FuegoBPM Server home directory.

## Configuring Mixed IPC for WebLogic

If there is a FuegoBPM Server trying to communicate with an Server running in a WebLogic, the following steps must be followed:

1. Copy *weblogic.jar* to the *ext* directory of the FuegoBPM Server
2. Once the processes are deployed, create a new referral organization. The organization name **must** be the same than the current organization
3. Add to this organization a referral to each of the processes that have been deployed in the FuegoBPM Application Server, that will be accessed from the FuegoBPM Server.

Suppose that you have two processes:

```
//Deployed in a FuegoBPM EJB Based Server  
MyOu/Parent#Default-1.0@MyOrganization
```

```
//Deployed in a FuegoBPM Server  
MyOu/Child#Default-1.0@MyOrganization
```


You must create a new referral organization named *MyOrganization* and add a referral to *Parent* as follows:



```
Organizational Unit: MyOu  
Process: Parent  
URL: t3://example.com:7001  
User: root  
Password: *****
```

Note that the user and password chosen must have permissions to execute FuegoBPM applications in the application server, and that the process name must not include variation information.

### Note

 Passing Fuego Objects as arguments from a FuegoBPM Application Server to a FuegoBPM Server is not supported and will fail with a `ClassNotFoundException`; WebLogic's RMI deserializes requests in its own thread and its own `ClassLoader`, which doesn't have access to the catalog.



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# Chapter 6. FuegoBPM Server Management using JMX

## FuegoBPM Server Management using JMX

### FuegoBPM Server MBeans

#### Engine MBean

##### *Attributes*

- **Name (java.lang.String):** The name of the Server
- **Host (java.lang.String):** The hostname where the Server is running
- **Status (java.lang.String):** The current status of the Server
- **RunLevel (int) EDITABLE:** The current runLevel of the Server. The Server RunLevel can be changed through this attribute
- **TotalMemory (long):** Total Megas of memory used by the Server
- **FreeMemory (long):** Free Megas in the Server memory
- **UsedMemory (long):** Used Megas in the Server memory
- **CommittedTransactions (int):** Total number of committed transactions
- **RollbackedTransactions (int):** Total number of rollbacked transactions
- **RunningTransactions (int):** Number of currently running



transactions

- **EngineExecutedStatements (java.util.Map):** A map containing all Server executed statements (key) and the corresponding number of executions (value)
- **FDIExecutedStatements (java.util.Map):** A map containing all FDI executed statements (key) and the corresponding number of executions (value)
- **EngineMostExecutedStatements (java.util.List):** A sorted list containing the most Server executed statements at the beginning
- **FDIMostExecutedStatements (java.util.List):** A sorted list containing the most FDI executed statements at the beginning

### *Operations*

- **shutdownIn(int seconds):** Schedules the Server for shutdown in the given seconds
- **shutdown():** Shutdown the Server immediately
- **gc():** Runs the Garbage Collector in the Server JVM

## Active Processes MBean

### *Attributes*

- **Count (int):** Number of active processes in the Server

## Active Process MBean



### *Attributes*

- **Id (java.lang.String):** The process Id
- **In (int):** The process In
- **CatalogIn (int):** The IN of the associated catalog for this process
- **Organization (java.lang.String):** The name of the organization where this process is deployed
- **OrganizationalUnit (java.lang.String):** The name of the organization unit where this process is deployed
- **IsDeprecated (boolean):** Indicated wether of not this process is deprecated
- **IsArchiving (boolean):** Indicates wether or not the server is archiving instances
- **CommittedTransactions (int):** Total number of committed transactions by this process
- **RollbackedTransactions (int):** Total number of tollbacked transactions by this process
- **RunningTransactions (int):** Number of currently running transactions in this process
- **EventsCount (int):** Total number of events generated by this process
- **SentMailsCount (int):** Total number of mails sent by this process
- **SentNewsCount (int):** Total number of news sent by this process
- **LastNewsTimeStamp (java.lang.String):** The Time when the last news was sent. Returns an ISO standard string



representation of a time value

- **PendingNewsCount (int):** Number of pending news to be sent

#### *Operations*

- **resetCounters():** Resets the transactions counters for this process (CommittedTransactions, RollbackedTransactions, RunningTransactions, SentMailsCount, SentNewsCount, EventsCount)

## Connection Pools MBean (Configurations)

#### *Attributes*

- **Count (int):** Number of configurations in the Server

## Connection Pool MBean (Configuration)

#### *Attributes*

- **ConfigurationName (java.lang.String):** The name of the configuration
- **Size (int):** The size of this configuration
- **IdleTime (int):** TimeToLive used for a connection inside this configuration
- **LockedConnections (int):** Number of currently locked connections for this configuration



- **NotLockedConnections (int):** Number of currently not locked connections for this configuration
- **TotalLocked (int):** Total number of locked connections for this configuration
- **TotalUnLocked (int):** Total number of unlocked connections for this configuration
- **EmptySlots (int):** Number of empty slots in this configuration
- **MinNonDisposable (int):** Minimum number of non disposable entries for this configuration
- **MissCount (int):** Number of misses for this configuration. A miss is when someone needed a connection and there was none available

## Execution Pool MBean

### *Attributes*

- **Size (int):** Size of the threads pool
- **Busy (int):** Number of busy threads in this pool
- **Free (int):** Number of free threads in this pool
- **Unused (int):** Number of unused threads
- **AutomaticPoolSize (int):** Size of the threads pool for automatic executions
- **FblPoolSize (int):** Size of the threads pool for FBL executions
- **HttpPoolSize (int):** Size of the threads pool for HTTP executions
- **InteractivePoolSize (int):** Size of the threads pool for



Interactive executions

- **AutomaticCount (int):** Number of current automatic execution
- **FblCount (int):** Number of current FBL execution
- **InteractiveCount (int):** Number of current interactive execution
- **HttpCount (int):** Number of current HTTP execution
- **MaxRequestLatency (long):** Max time in millis a request can be executed
- **RequestQueueSize (int):** Size of the request queue
- **RogueCounter (int):** Number of rogue threads in the pool
- **RogueLimit (int):** Max number of rogue threads allowed
- **TimeStamp (java.lang.String):** Time when this pool was created

## FDI Connection Pool MBean (FDI Configuration)

*Attributes*

- **Capacity (int):** Maximum number of FDI connections
- **Empty (int):** Number of empty slots
- **EntryCapacity (int):** Maximum number of entries
- **Locked (int):** Number of FDI locked connections
- **NotLocked (int):** Number of not locked FDI connections
- **TotalLocked (int):** Total number of locked FDI connections



- **TotaUnLocked (int):** Total number of unlocked FDI connections
- **MinNoDisposable (int):** Min no disposable entries
- **MissCount (int):** Number of misses for this pool
- **TTL (int):** TimeToLive used for FDI connections

## Server Sessions MBean (Connected Clients)

### *Attributes*

- **Count (int):** Number of connected clients

## Server Sessions MBean (Connected Clients)

### *Attributes*

- **Count (int):** Number of connected clients

### *Operations*

- **killSession(int serverSessionIn):** Disconnects the given ServerSession from the Server

## Server Session MBean (Connected Client)



### *Attributes*

- **Participant (java.lang.String):** The Participant name
- **Id (int):** The ServerSession IN
- **CreationTime (java.lang.String):** TimeStamp when the ServerSession was created
- **IsExclusive (boolean):** Indicates whether or not this session is exclusive
- **Host (java.lang.String):** The name of the host where the client is connected from
- **LastOperationTime (java.lang.String):** TimeStamp of the last operation for this ServerSession

## Configuration

To learn how to configure the required Protocol Adaptors, please, refer to the subsection **Services Tab** under the chapter **FuegoBPM Web Console**, section **Server** .



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# Chapter 7. Data Store and Business Activity Monitoring

## Data Store and Business Activity Monitoring

FuegoBPM Data Store and FuegoBPM Business Activity Monitoring contain information about instances processing performance and processes workload.

Using them you can obtain information about:

- Instances processing performance for processes: The time in which an instance reached the "End" activity of the process.
- Instances processing performance for activities. The time in which an instance was processed in the activity and flew to the next activity. Total processing time for the instance in the activity.
- Quantity of instances and their average time since they were created and their average time to be processed per activity.

Although both, Data Store and BAM, have the same database structure the data they contain is different.

FuegoBPM Data Store database archives the information. It is stored on daily basis and its granularity may be hourly or daily depending on how it is configured. On the other hand, data contained in FuegoBPM BAM, is not historical. It is updated several times during the day and the information has a caducity time. BAM database can be configured to be updated between short intervals of time. This makes the information contained in the BAM to be almost online.

Usually, BAM information should be access from FuegoBPM Dashboard and Data Store information should be access using OLAP. FuegoBPM Data Store and FuegoBPM BAM can be used both,



separately or together, it is something that would be implemented depending on the business needs.

## FuegoBPM BAM Benefits

- **Visibility of Real-Time and Recent Trends** - FuegoBPM's Business Activity Monitoring (BAM) gives line of business managers and IT system administrators visibility and analysis of strategic process information.
- **Key Performance Indicators**, immediate, actionable business insight that previously might have taken days, weeks or months to compile and analyze.
- **Control and manage ongoing business operations.** Issues impacting the business are quickly identified and dealt with promptly and efficiently.
- **Respond quickly** to change based on business events as they occur and head off the bad things before they occur.
- **Capture** the big picture.
- **Zoom** in on cross-process metrics with real-time analysis to determine which processes are creating bottlenecks or which customer is most profitable.
- **Drill down** on a single object to understand complete status of a particular item, such as an order or claim.
- **Measure and Monitor** service-level agreements.
- **Business Agility** – change faster than the business changes. BAM improves decision making by providing easy to understand information graphical views that monitor business rule events and anomalies. BAM can proactively identify situations that will likely require action to be taken - before the action is required.
- **Executive Dashboard** - One of the benefits of FuegoBPM is the



potential to measure and monitor each activity of a process. In many cases, valuable strategic measurements can be derived directly from data collected during the execution of an activity, accumulating direct costs and the number of times it executes. The information in this "Executive Dashboard" provides a real-time view of the performance of the business, becoming the eyes and ears for those responsible for business processes.

## Business variables

Instances Variables can be seen in the BAM structure, as well as in the Data Store, only if they are defined as *Business Variables*. They can be defined to be shown as a *dimension* or a *measure* in the BAM and Data Store.

Business variables defined as *dimension* are reflected in the:

- *TaskPerformance*,
- *ProcessPerformance*, and
- *Workload* tables of the BAM database structure.

Those defined as *measure* are only reflected in the *Workload* table of the BAM database. See BAM database structure in section below.

To learn more about *Business Variables*, please refer to the section *Using Variables-Business Variables* below **Defining a Process** in the *FuegoBPM Studio* documentation.

## Measurement Marks

The Business Analyst designs in the process where to measure times or persist business variables values. These checkpoints or measurement marks are represented in the process by *Measurement Mark widgets* related to process transitions. When the server routes the



instance through a transition with a Measurement Mark, it performs all the checkpoints associated with the transition including the list of business variables which values the user wants to persist.

To learn detailed properties of Measurement Marks and how to include them into a process, refer to the section *Activities / Other Activities / Measurement Marks* in FuegoBPM Studio Documentation.

### **Where is the measurement stored in the BAM or Data Store?**

This depends on the Measurement mark type, as follows:

- Measurement Mark type **Snapshot Start**: it is stored in the Workload.
- Measurement Mark type **Snapshot Stop**: it is stored in the Task Performance.
- Measurement Mark type **Snapshot Start & Stop**: it is stored in the Task Performance.

### **Where can I see measurement marks?**

Measurement Marks can be seen in the audit trail from the FuegoBPM Work Portal as shown in the picture below. The elapsed time is shown only in the stop mark type. And business variables included in the measurement mark definition are shown in both the start and stop mark type. Of course, whether or not, the measurement mark are shown as start and stop separately will depend on the process design.



Audit trail					Help
Marine Supply Order Fill > End > Diving Supply OrderFill4					
Activity	Event	Responsible	Date	Copy	
Create Order	Completed		Nov 16, 2004 7:30:44 PM	0	
Review Order	Completed		Nov 16, 2004 7:30:44 PM	0	
Check Freight	Completed		Nov 16, 2004 7:31:23 PM	0	
ShippingStartMeasure	Processing		Nov 16, 2004 7:50:35 PM	0	
Measurement Start	Measurement Start	John Smith	Nov 16, 2004 7:50:35 PM	0	
	'orderAmount' = 630.00		Nov 16, 2004 7:50:35 PM	0	
Ship Product	Completed		Nov 16, 2004 7:50:35 PM	0	
ShippingStopMeasurement	Processing		Nov 16, 2004 7:50:52 PM	0	
Measurement Stop	Measurement Stop	John Smith	Nov 16, 2004 7:50:52 PM	0	
	'Elapsed Time' = 17s		Nov 16, 2004 7:50:52 PM	0	
	'orderAmount' = 630.00		Nov 16, 2004 7:50:52 PM	0	
End	Completed		Nov 16, 2004 7:50:53 PM	0	

Measurement Mark Started

Measurement Mark Stopped

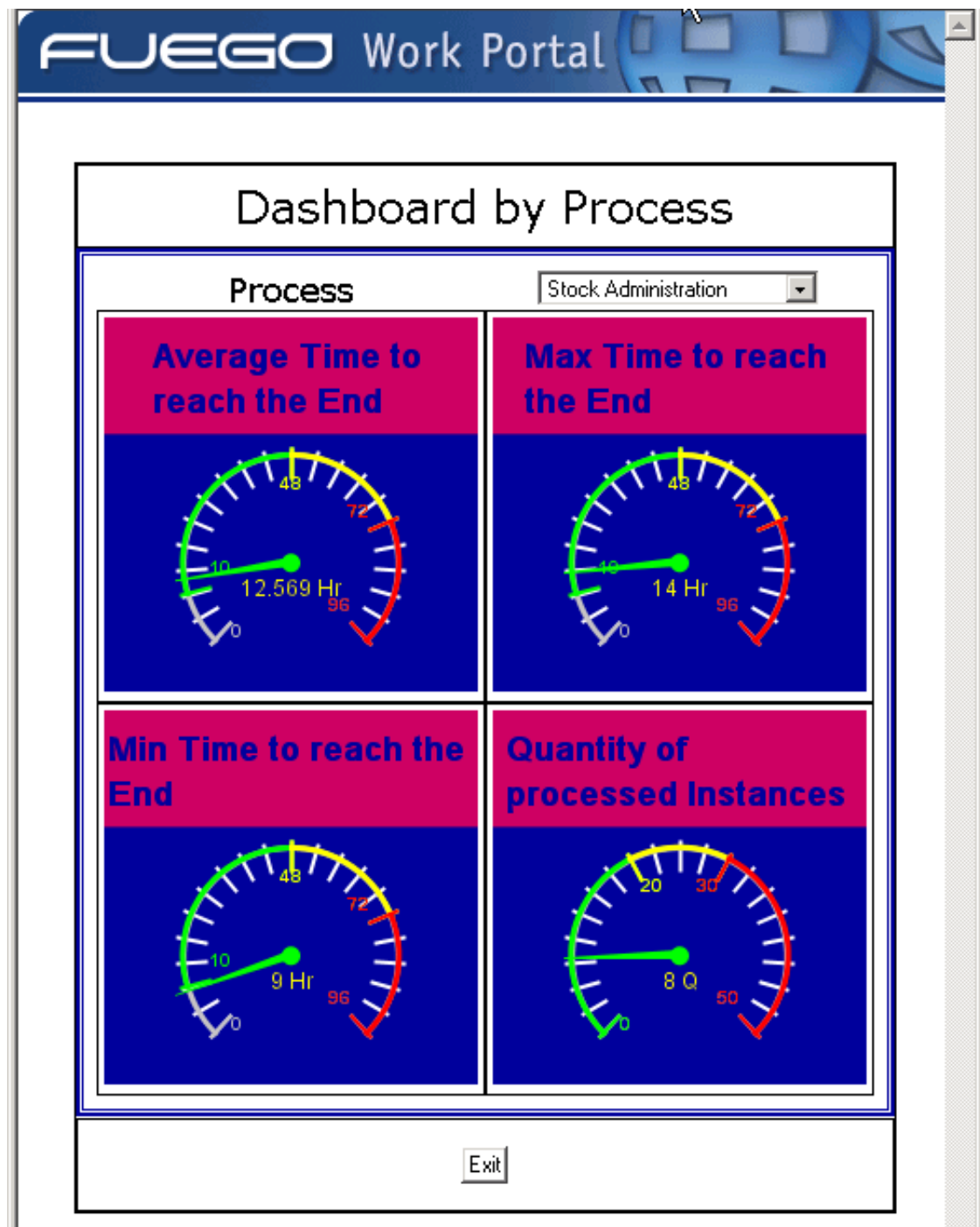
## Using the BAM and FuegoBPM Dashboard

BAM reduces this flood of data and creates meaningful graphical views of real-time information. It consists of a set of graphical charts designed in the FuegoBPM Studio that take measurements of Key Performance Indicators (KPI) during the execution of a process.

The company's processes are controlled by a FuegoBPM Server that automates the integration of the company's applications, databases and people. Each step through the company's processes is automatically measured and monitored. This measurements can be graphically shown using FuegoBPM Dashboards. Some examples are shown below:

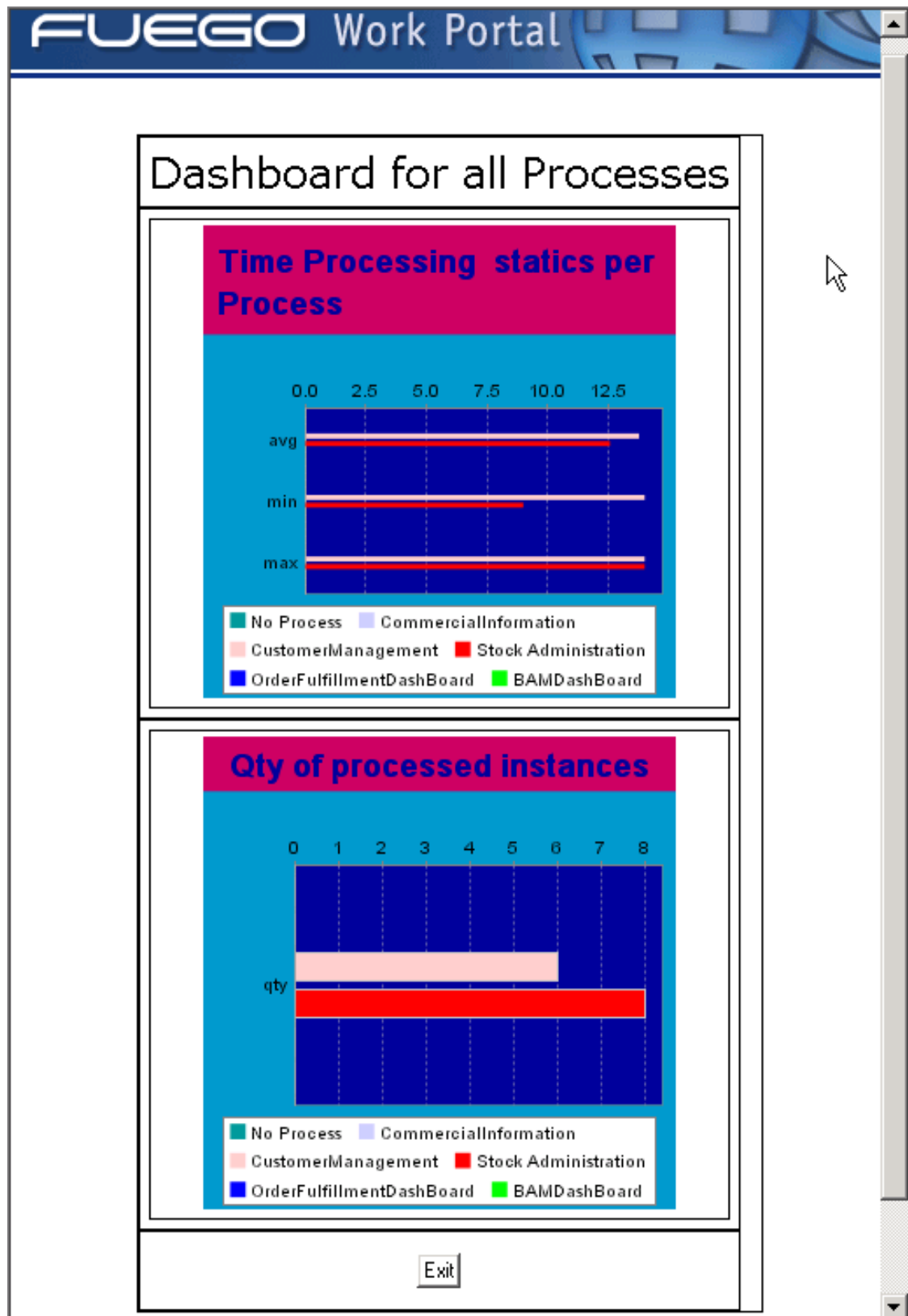
### Example I: showing KPI per process





**Example II: showing KPI for all processes**

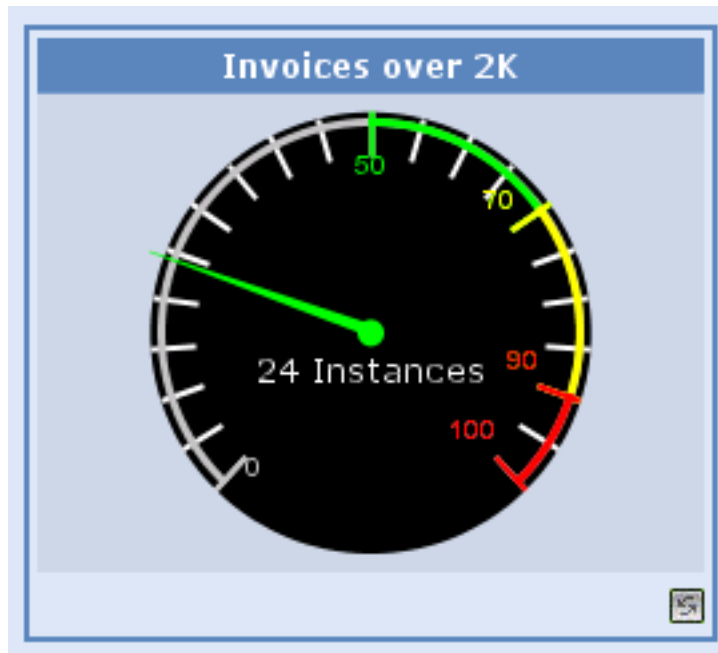






## Example III: invoices over 2K

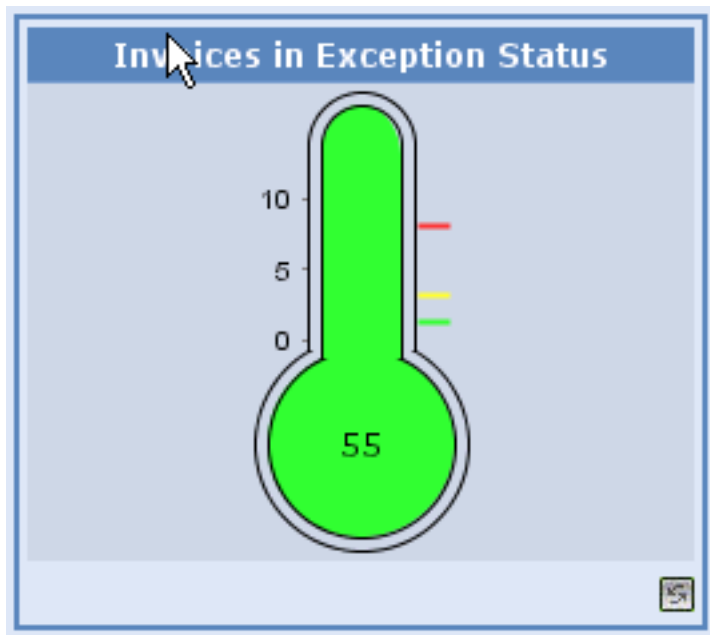
This example was built using instances variables



## Example IV: instances in exception status

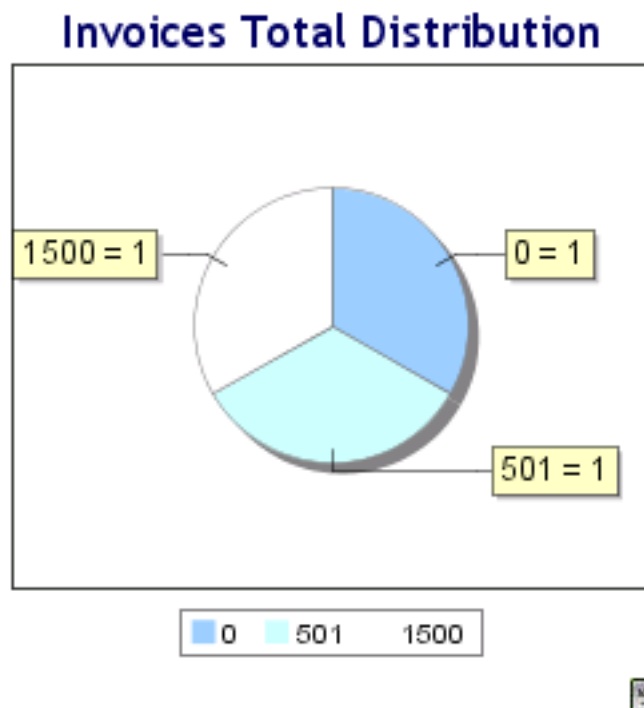
Shows the quantity of instances in the process in exception status.





## Example V: Invoices total distribution

Example built on a business instance variable containing the invoice amount





## Example VI: Orders in process

Quantity of orders (instances) being processed.



Please refer to FuegoBPM Dashboard, section *Building a FuegoBPM Dashboard using FuegoBPM BAM* in the FuegoBPM Studio to find an example using the BAM database.

## Databases structure

Both databases, BAM and Data Store, have the exactly same structure.

## OUs

- **ouIn**, DECIMAL(10), not null
- **parentIn**, DECIMAL(10), not null
- **name**, STRING(255, not null



**primary key**(ouIn)

## Roles

- **roleIn**, DECIMAL(10), not null
- **roleId**, STRING(255) not null

**primary key**(roleIn)

## Participants

- **participantIn**, DECIMAL(10), not null
- **participantId**, STRING(255), not null
- **ouIn**, DECIMAL(10), not null
- **displayName**, STRING(255)

**primary key**(participantIn)

**foreign key**(ouIn, referencedTable="OUs")

## Processes

- **ouIn**, DECIMAL(10), not null
- **processIn**, DECIMAL(10), not null
- **processId**, STRING(255), not null
- **label**, STRING(255), not null

**primary key**(processIn)



**foreign key**(ouIn, referencedTable="OUs")

## Activities

- **activityIn**, DECIMAL(10), not null
- **activityId**, STRING(255), not null
- **processIn**, DECIMAL(10), not null
- **label**, STRING(255)

**primary key**(activityIn)

**foreign key**(processIn referencedTable="Processes")

## Workload

This table contains a record showing the quantity of instances, their average time since they were created and their average time waiting in the *activityIn* to be processed. This information is shown for an activity, role, participant, and if it is the case, the activity in a subprocess where the "child" instances created by the *activityIn* are.

- **snapshotTime**, TIMESTAMP, not null
- **activityIn**, DECIMAL(10), not null
- **roleIn**, DECIMAL(10), not null
- **participantIn**, DECIMAL(10), not null
- **origActivityIn**, DECIMAL(10), not null It is the activity in a subprocess,in which the "child" instances created by the *activityIn* are, when the snapshot is done. See example below.
- **waitActivityIn**, DECIMAL(10), not null. In a subprocess case,



this activity is the *subflow* or *process creation* activity that create the instances taken into account in the current record. See example below.

- **quantity**, DECIMAL(10), not null Quantity of instances in the activity waiting to be processed at snapshot time.
- **avgTimeTask**, DECIMAL(10), not null. Average time, in seconds, of the instances waiting in the activity to be processed.
- **avgTimeProcess**, DECIMAL(10) not null. Average time, in seconds, of the instances since they were created.

### foreign keys

- activityIn, referencedTable="Activities"
- waitActivityIn, referencedTable="Activities"
- origActivityIn, referencedTable="Activities"
- roleIn, referencedTable="Roles"
- participantIn, referencedTable="Participants"

### An example showing the origActivityIn and waitActivityIn

Suppose there are three processes.

- **Process A** with a *Process Creation 1* activity, that initiates instances in the **Process C**.
- **Process B** with a *Process Creation 20* activity, that initiates instances in the **Process C**, and,
- **Process C** with the activity *Interactive 100*, that has 20 instances



waiting to be processed in the moment the snapshot is done. 15 of these instances have been created from *Process A - Process Creation 1* and 5 have been created from *Process B - Process Creation 20*.

The content of the *workload* table would be:

activityIn= *Interactive 100*, waitActivityIn= *Process Creation 1*, quantity 15

activityIn= *Interactive 100*, waitActivityIn= *Process Creation 20*, quantity 5

and

activityIn= *Process Creation 1*, origActivityIn= *Interactive 100*, quantity *N*

activityIn= *Process Creation 20*, origActivityIn= *Interactive 100*, quantity *M*

(where *N* and *M* are the quantity of instances that there are in processes *A* and *B* respectively).

### Note

 If there is a waitActivityIn record, there is an origActivityIn record, and vice-versa.

There is a case in which a record in the *workload* table may have information in both fields *origActivityIn* and *waitActivityIn*. When a process is a subprocess of another and it has a subprocess as well.

For example, suppose there are 3 processes. *A*, *B* and *C*, where *B* is a subprocess of *A* and *C* is a subprocess of *B*. In this case, workload records of the activities in process *B*, might have *waitActivityIn* information of process *A*, and *origActivityIn* information of process *C*.

## TaskPerformance

This table contains a record for each instance that was processed in the *activityIn*, in the *roleIn* by the *participantIn*.



- **activityIn**, DECIMAL(10), not null
- **roleIn**, DECIMAL(10), not null
- **participantIn**, DECIMAL(10), not null
- **completionDate**, DECIMAL(10), not null. Date in which the instance was processed in the activity and flew to the next activity. To maintain the coherence between the data, the *completionDate* is stored in *GMT-0*, as there might be different servers running with different hours.
- **taskTime**, DECIMAL(10), not null. Total processing time, in seconds, for the instance in the activity.

#### foreign keys

- activityIn, referencedTable="Activities"
- roleIn, referencedTable="Roles"
- participantIn, referencedTable="Participants"

## ProcessPerformance

- **processIn**, DECIMAL(10), not null
- **completionDate**, TIMESTAMP, not null Date in which the instance reached the *End* activity of the process. To maintain the coherence between the data, the *completionDate* is stored in *GMT-0*, as there might be different servers running with different hours.
- **taskTime**, DECIMAL(10), not null. The *taskTime* field is the time, in seconds, in which the instance was processed



**foreign key**(processIn, referencedTable="Processes")

## LastSnapShot

This is a view of the *workload* table. And contains the time in which the BAM updater was executed for the last time.

- **lastsnapshot**, TIMESTAMP, not null

## Processes used to update the BAM and Data Store database

Not all the deployed processes are used to update the BAM and Data Store database. Only those processes that have been define as *Generate Events for all activities* are taken into account when the BAM or Data Store updater is run.

If you don't want to register events for all the activities, remember to set as generate events those activities you are interested in storing information about activities and tasks in the *workload* and *taskperformance* tables. If it is the case, remember to set the *Begin* and "End" activities to load information on performance. And be careful with split-joins circuits, as if you don't set both as generate events, the information loaded will not be accurate.

See **Generate Events** in the FuegoBPM Studio documentation under the **Designing a Process** chapter for more details.

# Data Store and BAM Configuration

## Configuring the Data Store Properties

When you select the Data Store option, a new pane appears.



Data Warehouse

Data Warehouse		BAM	O3
<b>Properties</b>			
Enable automatic update	<input type="checkbox"/>		
Runtime Database Configuration	<input type="text"/>		
Data detail level	Daily <input type="text"/>		
Snapshot Time	<input type="text" value="00:00"/>		
Update daily at time	<input type="text" value="00:00"/>		
Log Directory	<input type="text"/>		
Messages logged from DataWarehouse Updater	Warning <input type="text"/>		
Language	English <input type="text"/>		
Generate performance metrics	<input checked="" type="checkbox"/>		
Generate workload metrics	<input checked="" type="checkbox"/>		
Generate O3 cubes	<input checked="" type="checkbox"/>		
<input type="button" value="Save"/> <input type="button" value="Reset"/>			

The options are as follows:

- **Enable automatic update:** Enables the updater process to run automatically. If you don't check it, you must perform a manual procedure if you want to update the data.
- **Runtime database configuration:** An SQL configuration with the connection information to the database that will contain the data store data.
- **Data detail level:** Allows you to select the detail level from the drop-down menu. This field specifies the granularity of the data that is transferred from the FuegoBPM Servers to the Data Store . This data granularity can be by day or hour.



- **Hourly:** You will be able to view and analyze data by the hour. This means that you will be able to check the instances in a day for a particular hour.
- **Daily:** The analysis information will be available by the day.
- **Snapshot Time:** The hour and minute the Workload snapshots are taken. If the "detail level" is set to "hourly", there would be 24 snapshots, one for each hour/minute of the day. If the "detail level" is set to "daily", only one snapshot is taken; it corresponds to the hour/minute indicated in the snapshot time.
- **Update daily at time:** The hour and minute the update will be performed each day. This is the time of the day in which the updater service runs.
- **Log directory:** The path to the data store updater log.
- **Messages logged from Data Store Updater:** The minimum severity that will be included in the log.
- **Language:** The language of the localized labels and descriptions for Processes and Activities.
- **Generate Performance Metrics:** Updates the process performance data when the updater process is run.
- **Generate Workload Metrics:** Updates the workload data when the updater process is run.
- **Generate O3 cubes:** Generates the cubes after the updater process is run.

## Times setting and Data detail level relationship example

Suppose the following configuration:



*Update daily at time:* 3:10 AM. This is the time in which the updater service runs every day to load the information in the datawarehouse.

*Snapshot time:* 18:30.

### Case 1:

*Data Detail level:* Hourly.

In this case, the updater service runs at 3:10 AM. It takes **24** snapshots of the data. One for each hour at the minute **30**, from 3:30 AM of the day before up to 2:30 AM of the day the service runs. If for any reason the service did not run, the first time the updater is executed it completes "all" the information up to "now", in our example 2:30 AM.

### Case 2:

*Data Detail level:* Daily.

In this case, the updater service runs at 3:10 AM. It takes **1** snapshot of the data at **18:30**.

## Database Management

The data store database should be managed in a similar way to the Servers database.

## Creating the Database

Database creation	
Drop database	<input type="checkbox"/>
Create database	<input checked="" type="checkbox"/>
Create data structure	<input checked="" type="checkbox"/>
User Name	<input type="text" value="system"/>
User Password	<input type="password" value="*****"/>
<input type="button" value="OK"/> <input type="button" value="Cancel"/>	



### To create a database

1. Select **Manage Database** option. The Database management pane appears.
2. Check the **Create database** and **Create data structure** check boxes.
3. Type a **user** with sufficient privileges (usually an administrator user) and enter the **password**, then click **OK**.

A message is displayed indicating that the database and the structure data have been properly generated.

## Deleting the Database

### To delete a database

1. Select the **Manage Database option**. The Database management pane appears.
2. Check the **Drop database** check box.
3. Type a **user** with sufficient privileges (usually an administrator user) and enter the **password**, then click **OK**.

### Warning



If the database is dropped, all of the Data Store information will be lost. Be sure to create database backups before deleting the database.

## Configuring BAM Properties



Data Store

<b>Properties</b>	
Enable Automatic Update	<input type="checkbox"/>
Updater Database Configuration	<input type="text"/> <span style="color: red;">Only available in FuegoBPM Application Server Edition</span>
Runtime Database Configuration	<input type="text"/>
Update Frequency (in minutes)	<input type="text" value="30"/>
Data Caducity Time (in hours)	<input type="text" value="24"/>
<input type="button" value="Save"/> <input type="button" value="Reset"/>	

The options are as follows:

- **Enable automatic update:** The BAM updater process will run automatically if selected.
- **Runtime database configuration:** The SQL configuration with the connection information to the database that will contain the BAM data.
- **Update Frequency (in minutes):** The amount of time allowed to update the BAM data.
- **Data caducity time (in hours):** The period of time that the BAM information will remain active. After that time, the next update process execution will delete it.

Only when the FuegoBPM Enterprise is J2EE:

- **Updater Database Configuration :** The SQL configuration used by the updater when it is a FuegoBPM Enterprise J2EE installation. In this case, the *Runtime database configuration* is used only by the



FuegoBPM Server to access the BAM data. When running FuegoBPM within an Application Server the datawarehouse updater, needs to update the database using JDBC, and the server itself needs a Remote JDBC configuraton type. That is why the same configuration cannot be shared in between them. Of course, the connection information is the same in the both configurations, they only differ in their type.

## Configuring O3 Properties

Properties	
Enable O3 cubes generation	<input checked="" type="checkbox"/>
Generate cubes daily at	02:00
Host	localhost
Port	8787

Save Reset

The options are as follows:

- **Enable O3 cubes generation:** When selected, the O3 cubes updater process will run.
- **Generate cubes daily at:** When the cubes generation will be performed daily.
- **Host:** The host where the O3 is running.
- **Port:** The port on which the O3 is running.

## Data Store and BAM updater



The Data Store and BAM updater service schedules when the update execution has to be done. The update is done depending on the property *Enable automatic update* present for both the Data Store and BAM configuration panel.

The update will be execute only for those with this property checked.

## How to configure the Data Store and BAM updater

To configure the Data Store and BAM updater two configuration files are used. The service configuration file and the directory properties file.

### ***WarehouseService.conf***

The Data Store and BAM updater service is configure in the file *WarehouseService.conf*, under the *\$FUEGO/conf* directory.

This file has a default configuration of the service. You can edit it to modify according to your preferences. This file contains definitions about, the service log location, the log level, service name and mode.

```
...
# Log Level for log file output.
wrapper.logfile.loglevel=INFO
...
# Log file to use for wrapper output logging.
wrapper.logfile=../log/dwupdater-service.log
...
# Mode in which the service is installed.
# AUTO_START or DEMAND_START
wrapper.ntservice.starttype=AUTO_START
```

### ***directory.properties***

The *directory.properties* file, located under the *\$FUEGO/conf* directory,



is used in the service starter program.

The updater uses the information in the lines below, to log in to FuegoBPM FDI and obtain the configuration for the Data Store and BAM services.

```
directory.default.preset.datawarehouse.participant  
directory.default.preset.datawarehouse.participant_password
```

The directory ID, and preset are used to set environment variables used by the service starter program. See next section.

## Updater information

The updater script *fuegowarehouse* is located under the *\$FUEGO/bin* directory. A *.bat* or *.sh* script depending on the operative system.

### ***fuegowarehouse* options: Windows environment**

The *fuegowarehouse* script runs with two options:

```
fuegowarehouse install
```

to install the updater as a service, and

```
fuegowarehouse remove
```

to remove the updater as a service.

### ***fuegowarehouse* options: Unix**



## environment

The *fuegowarehouse* script is a daemon running in background mode. Its options are:

```
fuegowarehouse.sh start | stop
```

### Note



Any changes in the configuration for the BAM or Data Store will only take effect if you stop the fuegowarehouse service and restart it.

## Logs - Troubleshooting the updater and the service

To troubleshoot the updater process go to Log files. The directory where the logs are generated is configured in the DataStore tab of the FuegoBPM Server tab.

Their names are:

- BAM: *bam-dwupdater.log*.
- Data Store: *dwupdater.log*.

To troubleshoot the service go its log file. It is located in the same directory that the BAM and Data Store, its name is: *dwupdater-service.log*.



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# Chapter 8. Administrating Java Class Libraries - JCLs

## Java Class Libraries

### Java Class Libraries Types - Versionables and Non-versionables

**Versionable libraries** are those that may change as processes evolve. Consequently, it is required that each version of the process be tied to a specific version of the library.

Libraries should be tagged as versionable when the goal is to prevent an update to the library from affecting the behavior of an old version of the process or of a different process that depends on the same components. They could be thought of as integral pieces of a project in the same way the component catalog or processes are.

**Non-versionable libraries**, on the other hand, are those that don't typically change over time. Or, if they do, the intention is for them to affect all versions of all processes deployed in the server. In contrast with versionable libraries, these can be thought of as infrastructure components or extensions to FuegoBPM needed to support the execution of processes.

For example, **JDBC drivers**: Have to be catalogued as Non-versionable libraries.

### How to administrate JCLs when deploying a project in FuegoBPM Enterprise

1. Export the project from FuegoBPM Studio. Select the "Include only versionable libraries" option.



2. Copy the non-versionable libraries to:
  - a. **enterprise\webapps\webconsole\WEB-INF\lib**
  - b. **enterprise\ext**
  - c. **enterprise\webapps\portal\WEB-INF\lib** for the built in portal
  - d. If the portal is deployed in an third-party application server, re-create the war file from the FuegoBPM Enterprise Administration Center and re-deploy it. Alternatively, the non-versionable jars can be copied directly into the **WEB-INF\lib** folder under the portal's deployment folder. Just remember to copy them over again if you ever re-deploy the original *war* file.
3. Publish and deploy the project from the FuegoBPM Web Console

## Implement Endorsed Standards Override Mechanism in Fuego

An endorsed standard is a Java API defined through a standards process other than the Java Community Process (JCP).

In order to take advantage of new revisions to endorsed standards, developers and software vendors may use the *Endorsed Standards Override Mechanism* to provide newer versions of an endorsed standard than those included in the java Platform.

Classes implementing newer versions of endorsed standards should be placed in JAR files.

According to the override mechanism implementation, you could set the system property *java.endorsed.dirs*, that specifies one or more directories that the Java runtime environment will search for such



JAR files. If no value is set for *java.endorsed.dirs*, then JAR files are looked in a default standard location:

- java-home\\lib\\endorsed [Microsoft Windows]
- java-home/lib/endorsed [Unix]

Here "java-home" refers to the directory where the runtime software is installed.

## FuegoBPM Enterprise environment

To implement the override mechanism in FuegoBPM Server you can either:

- use the general implementation mechanism explained above or ,
- use the startup argument *Additional java arguments used in the FuegoBPM Server startup*.

The startup argument *Additional java arguments used in the startup* is located in the **Server Execution** tab of the FuegoBPM Web Console.

These arguments are used when the FuegoBPM Server Java Virtual Machine is started.

An example of setting this argument to include redefined CORBA classes by the *visibroker.jar* is:

- copy the *visibroker.jar* file to an specific directory: */usr/redefinedCORBA*
- set the *Additional java arguments used in the startup* argument as:  
-Djava.endorsed.dirs=/usr/redefinedCORBA



## FuegoBPM Studio environment

In FuegoBPM Studio copy the redefined classes (eg visibroker.jar) to the *studio\_home/jre/lib/endorsed* directory, where *studio\_home* is the top-level directory where FuegoBPM Studio is installed.



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## Chapter 9. FuegoBPM Failover

# FuegoBPM Failover

### Overview

The purpose of this appendix is to outline "FuegoBPM's failover capabilities" as well as establishing the basis of a FuegoBPM Enterprise environment for failover. It will address the failover capabilities purely within FuegoBPM's Server jurisdiction. To provide a complete failover architecture for any solution implemented using FuegoBPM, it is required to consider other components that participate in the architecture and how to achieve failover for these.

### FuegoBPM's failover philosophy

The idea behind FuegoBPM's failover is the one of a FuegoBPM Servers federation configured to serve critical business process orchestration in a fail-safe manner. One of the servers in this federation is marked as **PRIMARY** and the others assume to be backup for the main server. Multiple servers can be configured to serve as backups. Any of these backup servers will take the role of the primary if the designated primary fails. When the server that has failed comes back to life, it will join as a backup to the one acting as primary.

Have in mind that if processes deployed in the primary server require extra resources as *components jars*, you must copy them as well, in all the backup servers installation under the failover schema.

A backup server "pings" the PRIMARY FuegoBPM Server every 5 seconds. The backup FuegoBPM Server **DOES NOT take over** while:

- The PRIMARY server is running, *isAlive*,
- The PRIMARY server is not responding because it is very busy, the



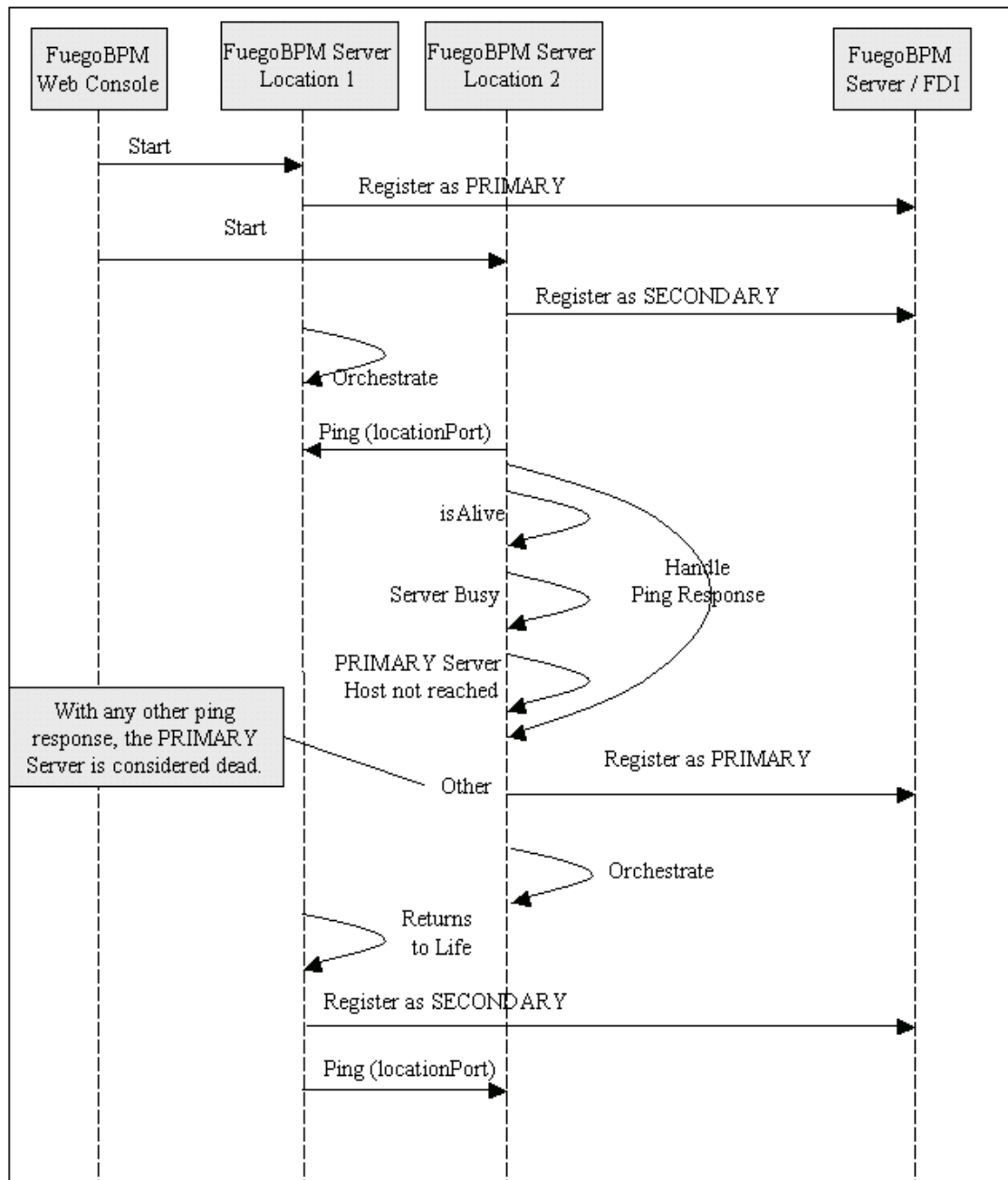
ping receives as response the *EngineBusyException* exception

- The PRIMARY server status could not be obtained because the host where it is running cannot be reached.
  - Server configuration problem,
  - java.net.UnknownHostException,
  - java.net.MalformedURLException,
  - java.net.NoRouteToHostException.

A backup server takes over under any other ping response.

Here is a typical events sequence, that ofently happen well apart in a time line.





FuegoBPM Server, either PRIMARY or those configured as Failover, do not run while any of required databases are not available. These databases are, the FuegoBPM Server database where the instances data is stored and the FDI database, where all the organization and processes information is stored. Nevertheless, the FuegoBPM Server will restart running when the missing database is available again.



# Configuration Instructions

## Prerequisites

The following are required before attempting failover configuration.

1. There should be at least two fully configured servers running. Each one of these servers should have its own FuegoBPM Server installation with all the necessary service packs applied.
2. One fully configured server with the ability to start; stop FuegoBPM services. It should also have the ability to publish/deploy business processes. Follow the necessary FuegoBPM documentation to achieve this. Both installations should have all the necessary drivers and should use the same FDI instance.
3. Host names used in all configurations should be actual machine names not localhost. Using localhost or loop back IP does not work in a failover scenario. You may also use the IP address of the hosts.
4. Access to the FuegoBPM Web console.
5. A port is required to be open to reach the SECONDARY FuegoBPM Server. Default port is 10099, as configured in *Locations*.

## Steps

1. Login to FuegoBPM Web Console as FuegoBPM administrator.
2. Click on the *Servers* link and drill-down to the server properties page by clicking on the appropriate server.
3. Click on the *Locations* link from the group of links presented at the



bottom of the screen.

- It lists the default location where it has been added during the server creation.

#### Servers

Page: 1/1 - Total: 1

Filter Preferences

Add Delete Refresh Status Reload info from directory Import

<input type="checkbox"/>	Name	Status	Type	
<input type="checkbox"/>	eng55	Not running	enterprise	011 101

- Select the *location* to see the details of the location.

Servers > Edit Server engGG > Server locations > Edit Server location

Basic configuration Advanced Properties

Location configuration

Host	fgc-piv24
Home Directory	C:\fuego5.5\enterprise\server\engGG
Log Directory	C:\fuego5.5\enterprise\log
Protocol	ssl
Port	10099
Web Console Protocol	http
Web Console Port	8585

Save Cancel Reset

- Pay attention to the port number. This port should be open for communication from other servers that would participate in failover.
- Make sure that all the server names used are names. DO NOT use localhost.



8. From the Server Locations tab click **Add** and enter the properties of the server meant to be the secondary server.
9. Once that the two locations are added to the Server configurations, now both machines are ready to run as *active-standby*.
10. The active and standby role is assigned depending on the order in which they are started.
11. Click on the location of the server which is supposed to be **PRIMARY** and click on **start**. That server would be started and the state would appear as *Ready*.
12. Click on the **SECONDARY** location and click on **start**. The secondary server would be started and the status is marked as *Primary backup*.
13. At this point both servers are up and running, one serving as a **PRIMARY** and the other checking on the life of the **PRIMARY**.



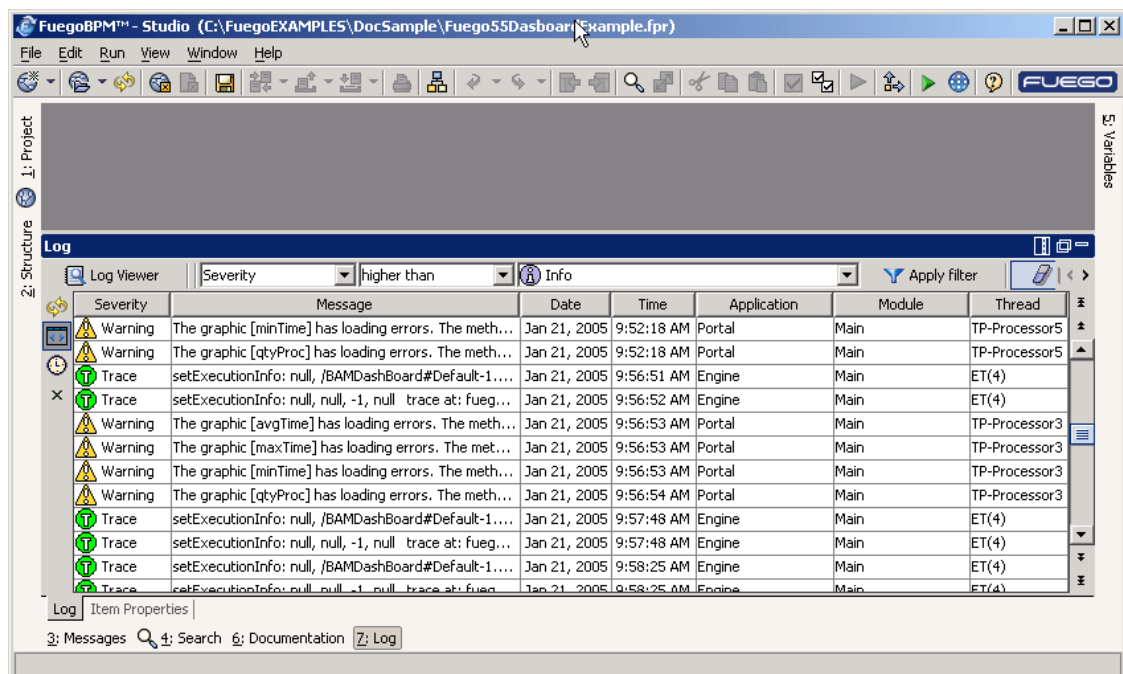
# Chapter 10. FuegoBPM Logviewer

## FuegoBPM Log Viewer

The FuegoBPM Log Viewer enables you to read information logged by the FuegoBPM Server. A set of log files is created for each project you define. FuegoBPM Log Viewer reads the files and displays them to help you monitor and trace Server execution.

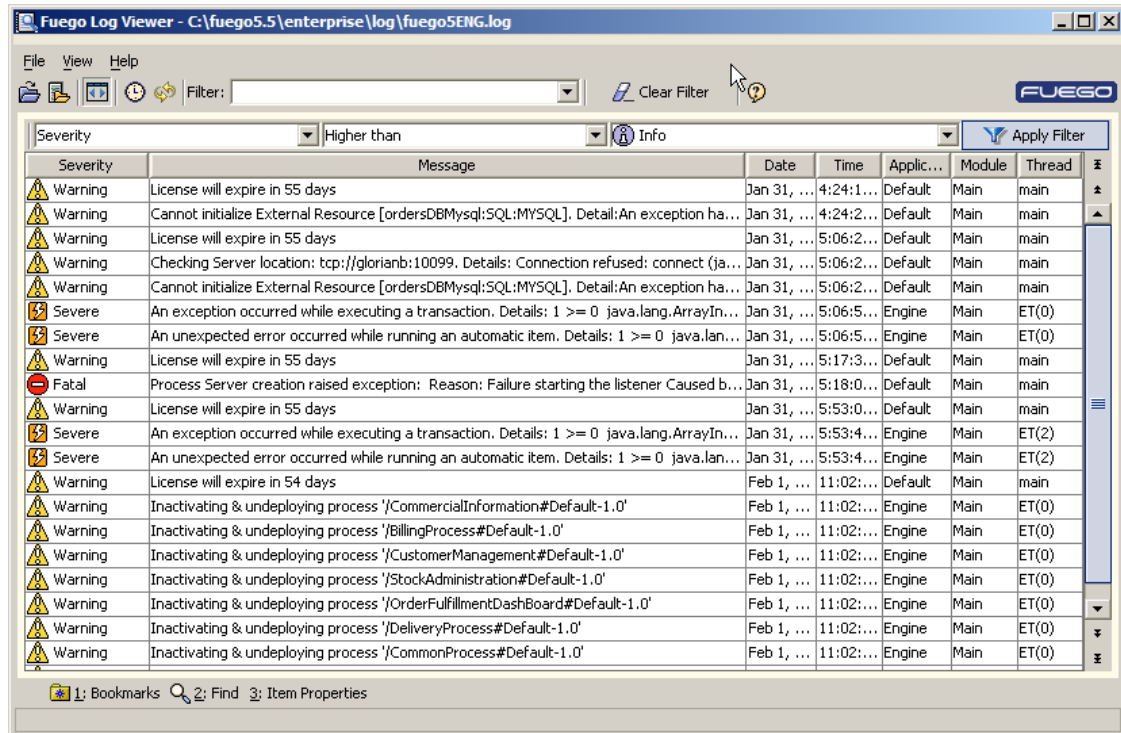
### To view the log

Click the Log option at the bottom of FuegoBPM Studio. A new panel appears and displays a log viewer with restricted functionality.




Click the **FuegoBPM Log Viewer** button on the top-left corner of the Log Viewer panel to enable complete functionality of the Log Viewer.






## Note

 Log files are not generated and, therefore, cannot be read by **Log Viewer** until the project is published or the Server is started for the first time.

# The Work Environment

Click **Log** at the bottom of **FuegoBPM Studio** or launch the **FuegoBPM Logviewer stand alone (Enterprise version)** to open the Log Viewer panel. This panel enables you to view the messages logged by the FuegoBPM Server. In FuegoBPM Studio, the panel is a limited version of the Log Viewer.

If you are working with FuegoBPM Studio, click the **FuegoBPM Log Viewer** button  within the Log panel to launch the Log Viewer in a new window.

The work environment changes a little from one version to another. The description of all the functions of **FuegoBPM Studio Log**



**Viewer Panel** or the **Log Viewer window** are provided below.

## Log Viewer Menus

The **File**, **View**, and **Help** menus are only available from the **Log Viewer** window. However, some of the functions included in these menus are available from toolbar icons in the **Process Studio Log Viewer Panel**.

### File Menu

The following table describes the options available from the **File** menu.

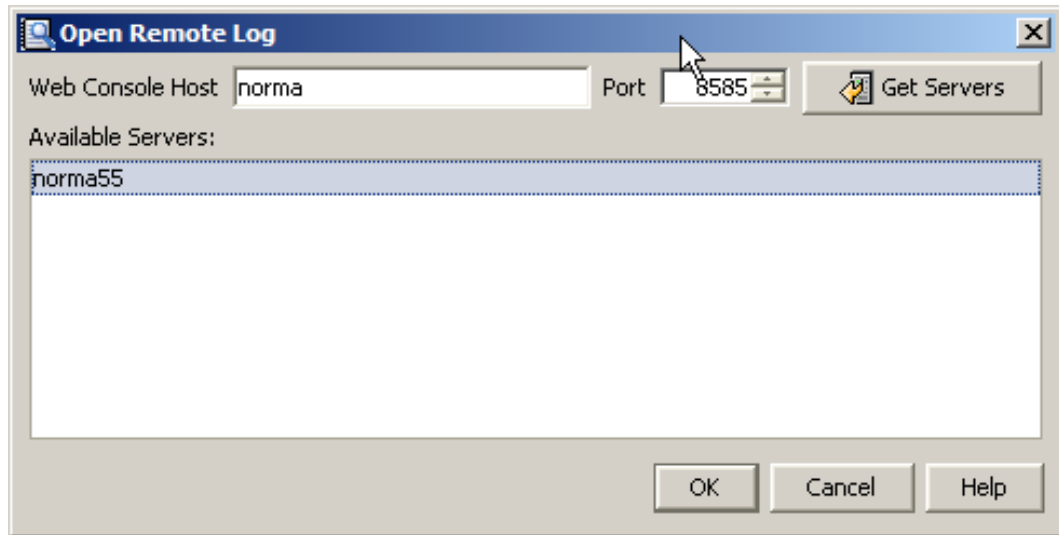
Option	Description
Open	Opens a local log file
Open remote log ...	Opens a remote log file. Valid for the FuegoBPM Logviewer Standalone (FuegoBPM Enterprise edition)
Save As	Saves a log file as a .txt file.
Close	Exits the Log Viewer.
Preferences	You can define some preferences when executing the logviewer

#### Open remote log ...

This option is present when you are working with the FuegoBPM Logviewer Standalone version. It allows to open a log localized in a remote host.

1. When you select this option, the *Open remote log* dialog opens.





2. Write the host name where the FuegoBPM Web Console runs and its port. Then select the **Get Servers** button and type the Fuego Administrator credentials in the *Username* and *Password* of the dialog opened. The list of FuegoBPM Servers is displayed in the *Available Servers* low portion of the dialog.
3. Double click in the server you are interested, and its log will be displayed in the FuegoBPM Logviewer main pane.

## PREFERENCES

### General:

- **LogViewer Size:** Indicates the number of items to display by page.
- **Update Frequency:** period of time (seconds) to refresh the Lowviewer with new log information.

### Time Zone:

The time within each log message from the log file, is represented as



GMT 0. Therefore if you want to view the logs and you belong to a different GMT then you can see the time of each log message in real time by setting the logviewer time zone based on the server that generated that log file.

- **Time Zone:** select the time zone in which the log file was generated
- **Engine Time zone:** it indicates the server's time zone. The server that generated this log file. It will indicate *not available* if there is no opened log file or the log file corresponds to an old version of FuegoBPM.
- **Select the Engine time zone:** the logviewer timezone is set automatically with the server's time zone (the server that created that log file). It is enabled once you have opened a log file .

## View menu

The following table describes the options available from the **View** menu.

Option	Description
Language	Set the language to see the FuegoBPM LogViewer
Clear Filter	Clears the currently applied filter.
Automatic adjustment to window	Sets the table to auto-resize mode when a column is resized. This option allows you to see all the columns in the window or panel with no need to scroll through them. If you disable this option, you will need to use the scroll bars to see all the columns. The Log Viewer window



Option	Description
	becomes scrollable from right to left.
Automatic Refresh	Automatically refreshes the Log Viewer main workspace based on the setting of the Update frequency seconds, as defined in the Log Viewer preferences. Every n seconds, the Log Viewer changes focus to the end of the file to show the latest logged items.
Refresh	Shows the latest logged items.

## Help Menu





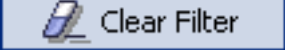



The following table describes the options available from the **Help** menu.

Option	Description
Contents	Launches the Log Viewer online help.
About	Displays information about the Log Viewer version and virtual machine information.

## Log Viewer Toolbars

The Log Viewer toolbars display shortcuts for the most frequently used menu options. The following table lists the tools and their functions. The tools are listed in the order they appear on the toolbar from left to right.





Icon	Description	Where It Is Available
	Opens remote log	<b>Log Viewer</b>
	Shows the latest logged items.	<b>FuegoBPM Studio Log Viewer Panel &amp; Log Viewer Window</b>
	Drop-down list containing saved filters.	<b>Log Viewer window</b>
	Applies the defined filter.	<b>FuegoBPM Studio Log Viewer Panel &amp; Log Viewer Window</b>
	Clears currently applied filter.	<b>FuegoBPM Studio Log Viewer Panel &amp; Log Viewer Window</b>
	Sets the logs table to auto-resize mode when a column is resized.	<b>FuegoBPM Studio Log Viewer Panel</b>
	Automatically refreshes the Log Viewer based on the setting of the Update frequency seconds, as defined in the Log Viewer preferences.	<b>FuegoBPM Studio Log Viewer Panel</b>
	Launches the Log Viewer online help.	<b>Log Viewer window</b>

## Log Viewer Tabs

The Log Viewer has three tabs that control additional functionality. Tabs can be located on the top, right, bottom, or left of the window depending on your selections.



Tab	Description
 2: Find...	Opens the find panel and creates a log file filter or selects a log file filter.
 1: Bookmarks	Opens the Bookmarks panel.
3: Item Properties	Displays complete information for a logged item. Opens a window with the entire logged message and the properties of the log item, such as Severity, Time, Application, and so on.

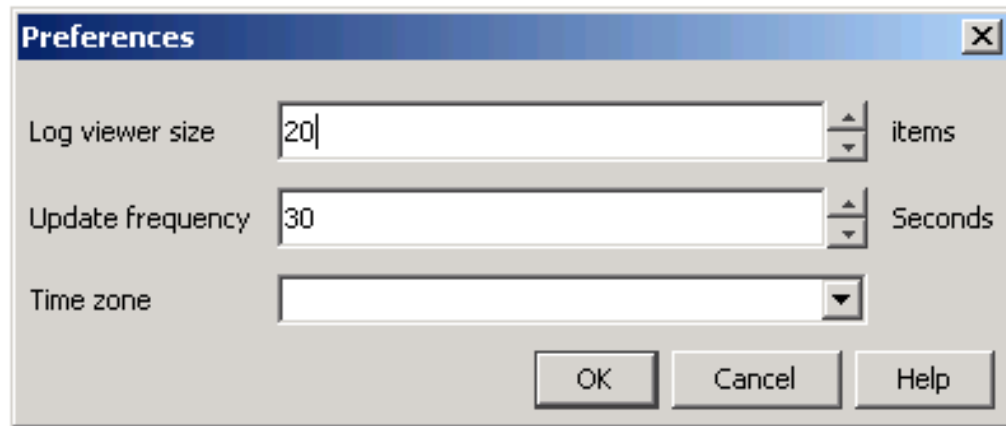
## Setting Preferences

Some preferences can be set when using the **Log Viewer** window.

### To set the Log Viewer preferences

1. If the Log Viewer window version is in use, select **File** then **Preferences** from the menu options. If you are using the Log Viewer panel from FuegoBPM Studio, select the FuegoBPM Studio **File** menu option, the **Preferences**, then **Log** in the preferences window. In either case, the following preferences can be configured:





2. In the **Log viewer size** field, type the number of items in the log viewer size field. This indicates the number of items or rows that are displayed in the viewer.
3. Type the **Update frequency** rate. This number indicates the time that must pass before the viewer is updated. The Server is constantly writing information to the log file. The viewer is updated automatically at the interval that is specified in this field.
4. In the **Time zone** field, choose the time zone where you will view the log files. Time zone impacts how you see the date and time of log items. If you don't specify a time zone, Log Viewer gets the default time zone for the host where FuegoBPM Studio is running.

## The Logged Information

When the Log Viewer panel is displayed, log items (or log messages) are displayed in date and time order from oldest to newest. The following information is displayed:



Columns	Description
Severity	Indicates the kind of message (FATAL, SEVERE, WARNING, INFO, DEBUG).
Messages	The message that the Server sends to the log.
Time	The time that the message was logged.
Date	The date the message was logged.
Application	Application that sent the message. All FuegoBPM Suite applications can send log messages to the log files.
Module	Module that sent the message.
Thread	Thread that sent the message.

### Note



Each column can be resized as needed.

### Severity

The severity of the logged messages depends on the FuegoBPM Server properties.

### Time and Date

When applying filters to time and date attributes, the time can be matched as *absolute* or as *relative*.

- **Absolute** means a fixed time.
- **Relative** has a value made up of the current date and time plus a value you can set. Relative times are calculated each time the




search is performed and are based on the actual date/time (now). The value for this field is a number of minutes, hours, days, weeks, months, and years to be added to the current date and time. To define a past date or time, select a negative number as the value.

## **Date Format**

The date is saved in the GMT+0 format.

### **Note**

 If the log is generated in a country where GMT+6 format is used and the log is read in a country using the GMT+0 format, the time stamp within the file will not match the actual time the log was saved. For example, if a log item was registered at 8:00 A.M. in Mexico GMT+6, it will be displayed as 2:00 P.M. in a country located at GMT+0.

The date is converted to the local time zone of the computer where the Log Viewer is running.

## **Selecting the Columns to be Displayed**

You can choose to display or hide specific columns in the Log Viewer.

### **To select columns to display**

1. Right-click on a column heading in the Log Viewer. The complete list of columns appears in a menu.
2. Select the check box next to the column headings you wish to see in the Log Viewer. Clear the check boxes next to the column headings that you want to leave out.



Message	Severity	Date
No efect with the new runLe	✓	c 2, 2003
Executing item: IMMEDIATE	✓	c 2, 2003
Executing item: IMMEDIATE	✓	c 2, 2003
- ToDoService switching to ru	✓	c 2, 2003
Executing item: IMMEDIATE	✓	c 2, 2003
- NewsDispatcher switching b	✓	c 2, 2003
Executing item: IMMEDIATE	✓	c 2, 2003
Executing item: IMMEDIATE	✓	c 2, 2003
Executing item: IMMEDIATE	✓	c 2, 2003




## Changing the Column Order

You can change the columns' order using drag and drop. Click on a column heading and while holding the mouse button, drag the column to the new location.

### Scroll Bar Functions

The number of lines displayed in the Log Viewer window is determined by the number of lines defined in the Log Viewer preferences dialog box. Use the extended scroll bar functions to view all of the logged items.

The extended scroll bar functions are as follows:

-  *Up/down arrow* - moves the page one log item up or down while keeping your selected item highlighted.
-  *Previous/Next page arrow* - moves the main panel to the previous or next page. The page size is defined in the Log Viewer preferences.
-  *Begin/End arrow* - moves to the first or last log item within the log file.



For example, assume that the number of lines defined in the Preferences dialog box is 1,000. The complete log file has 5,000 log items divided into 5 logs. You have selected items from 1001 to 2000.

- Item up arrow shows item 1000 (window contains items 1000 to 1999)
- Item down arrow shows item 2001 (window contains items 1002 to 2001)
- Page up/down arrows show items 1 to 1000 or 2001-3000
- Begin/End log arrows show the first log item (1) or the last log item (5000)

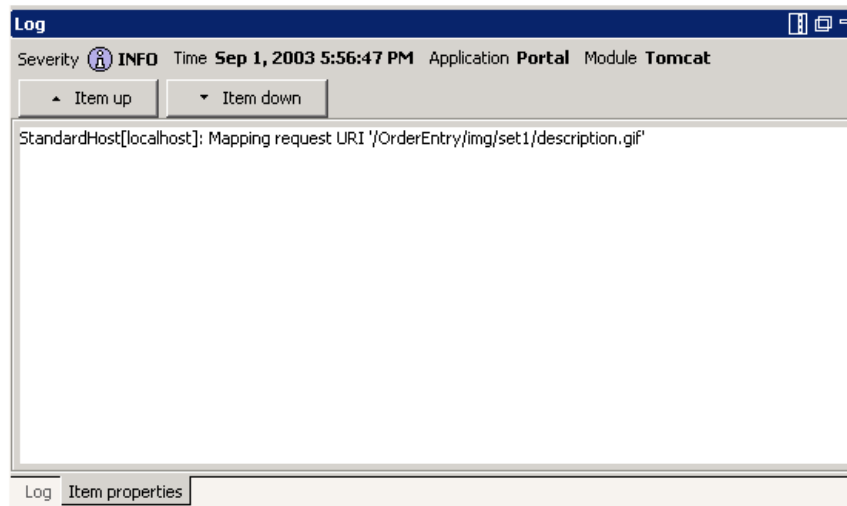
## Auto-resizing the Log Viewer Window

You can automatically adjust the Log Viewer window to set the table to auto-resize mode when a column is resized. This option enables you to see all of the columns in the main panel with no need to scroll to see columns that do not fit in the window. If you disable this option, you must use the scroll bars in order to see all the columns.

### Log Items Window

Double-click on a log item and the item properties window is displayed:

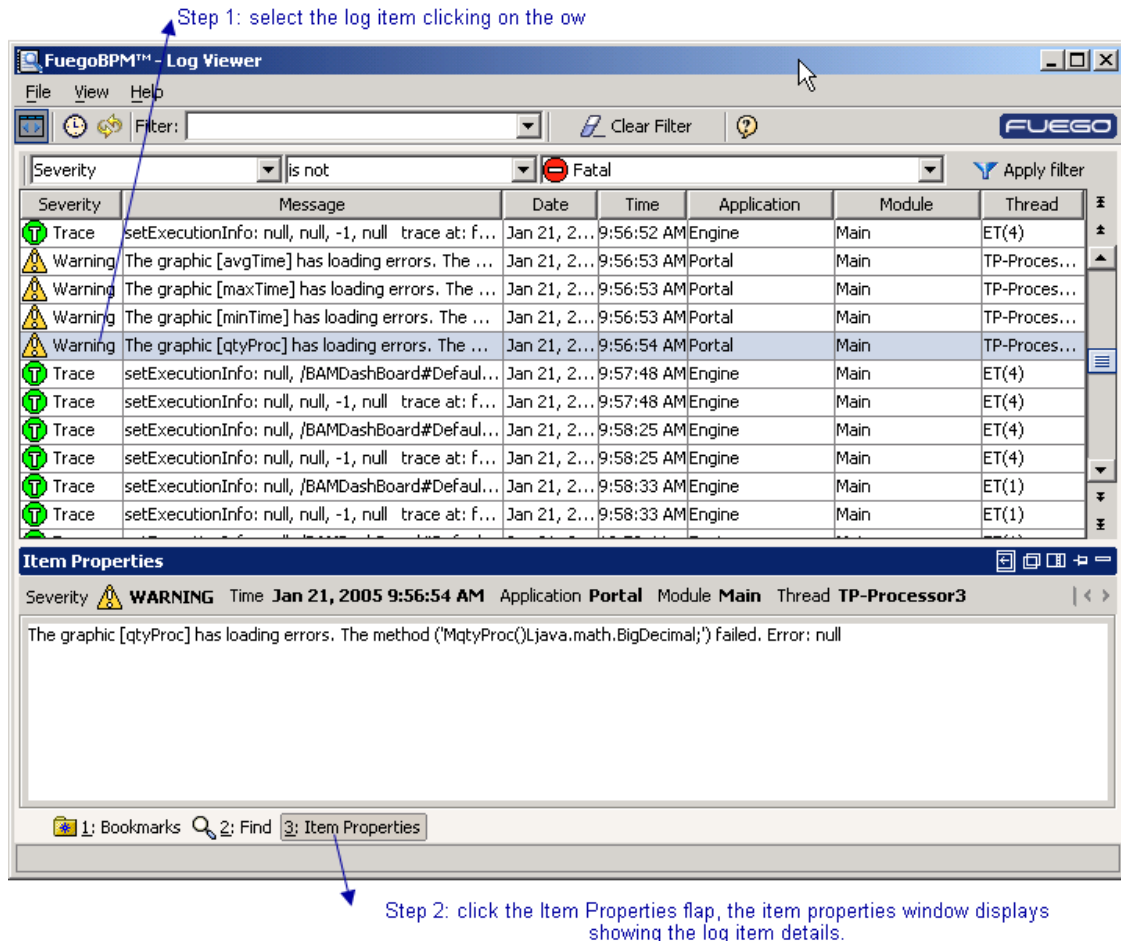




Use the **Item up** and/or **Item down** buttons to see the previous or next item details. Click the **Log** tab at the bottom of the panel to return to the complete list of log items.

From the **Log Viewer** window, select the log item row, then click the **Item Properties** tab. The **Item Properties** panel is displayed:





## Automatically Refreshing the Log Viewer

If configured, the Log Viewer will change focus to the end of the log file every *n* seconds to show the latest log items. Disable the auto-refresh option when you are applying filters or watching bookmarked items because the refresh operation changes the view to the end of the log file.

## Filters

**Log Viewer** provides several ways to find log messages in a log file. You can use the **Quick filter toolbar** to filter the log messages matching a single filter condition. This option is available from both the **Process Studio Log Viewer Panel** and the **Log Viewer**



## window.

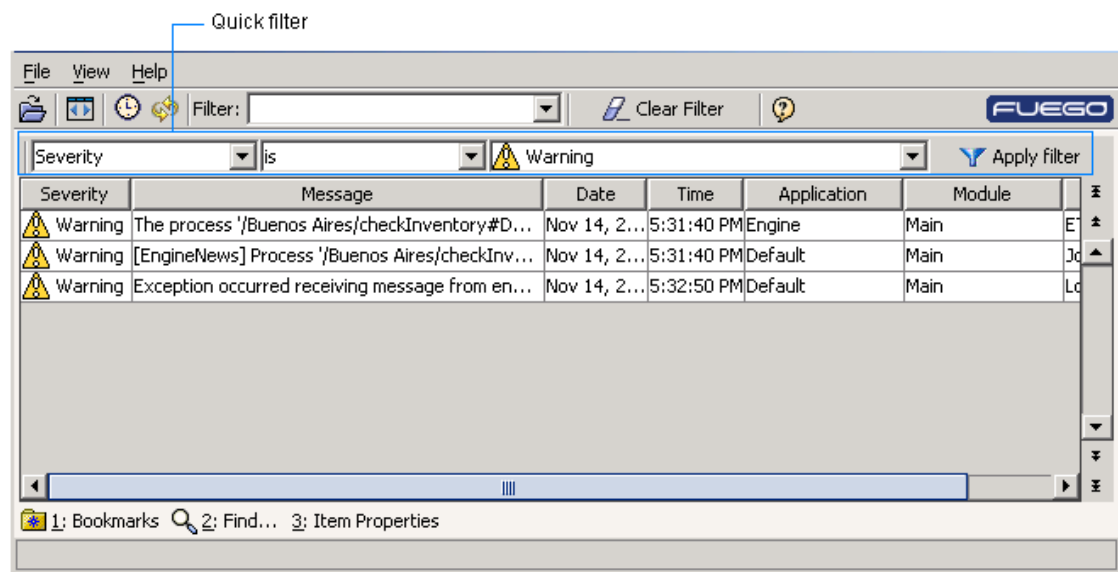
You can also define multi-condition filters to find a specific set of log items. These filters can be saved for use at a later time. There is no limit to the number of filters you can define. Filters are only available from the **Log Viewer window**.

## Finding Log Items

If a single condition provides enough information to find the log items, you can use the quick filter toolbar. For example, if you choose the filter condition "Severity is Warning," the Log Viewer displays all logged items with the severity level of *Warning*.


## Applying Quick Filters

The **Quick filter** option is available in the **Process Studio Log Viewer** panel and in the Log Viewer window. To apply a quick filter, select the filter condition and click the **Apply filter** button. The results are displayed in the Log Viewer main window:



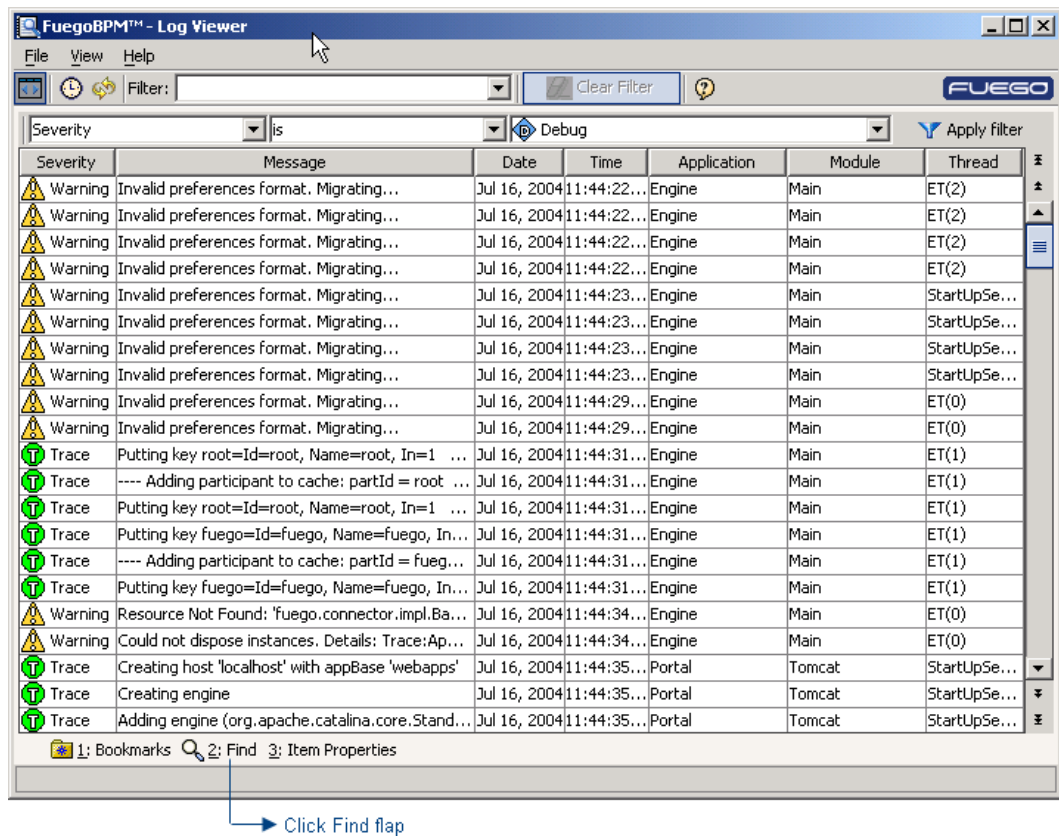
## Note



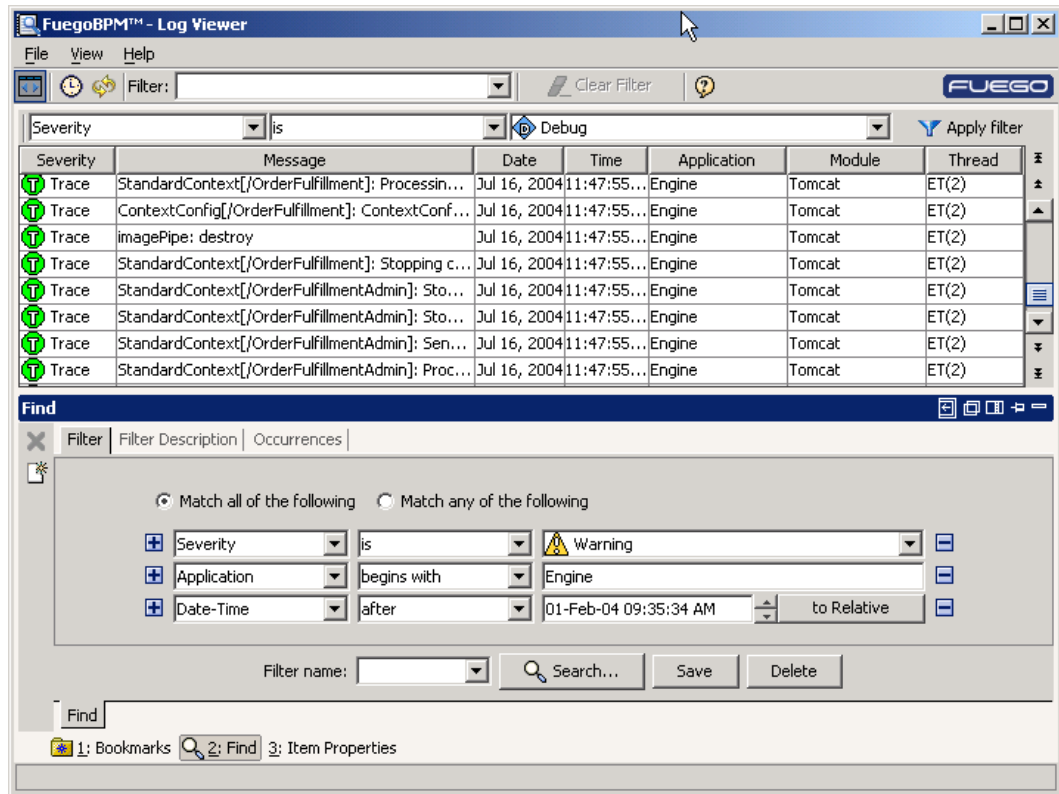
 When using the quick filter, you can apply only one filter condition at a time. If you search for items using a more complex search condition, you need to use the **Filter** button.

## Using Multi-condition Filters

1. Click the **Find** tab in the Log Viewer window. The **Find** panel is displayed in the bottom section of the Log Viewer:







- On the Filter tab of the **Find** panel, enter all of the conditions that the logged items should match using the **plus** sign icon. The **Match all of the following** check box indicates that the log items to recover must match all the defined conditions. The **Match any of the following** check box indicates that the log item to recover must match at least one of the conditions. For further information on how to combine conditions, see Connector Rules. Take into account the following options:

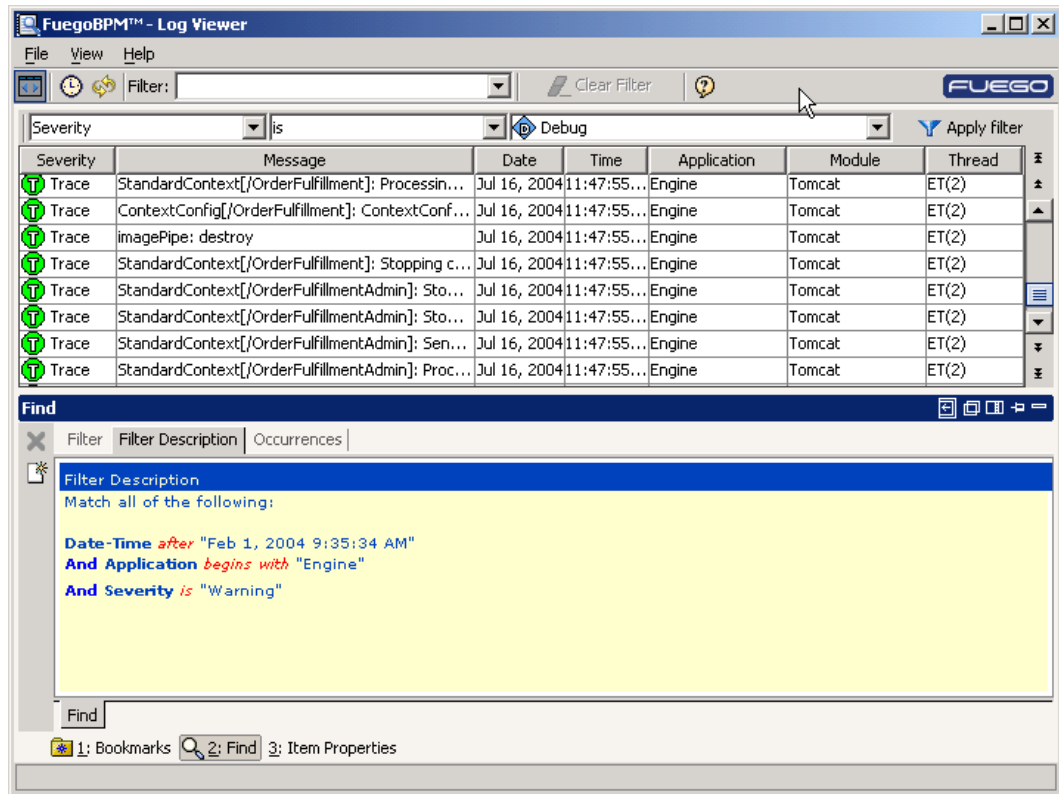
Condition	Connector	Options
Severity	is, is not, higher than, lower than	Debug, Info, Warning, Severe, Fatal
Message	begins with, ends with, is, is not, contains, not contains	Type a search string.



Condition	Connector	Options
Date-Time	is, is not, before, after	Absolute- a fixed date, such as 3/3/2001 23:43:56.Relative- the date is calculated each time the search is performed and is based on the current date and time. The result of the query is a point in time before or after the specified value.
Application	begins with, ends with, is, is not, contains, not contains	Type in a search string.
Module	begins with, ends with, is, is not, contains, not contains	Type in a search string.
Thread	begins with, ends with, is, is not, contains, not contains	Type in a search string.
Level	is, is not, higher than, lower than	Select the level from drop-down list.

The Filter Description tab displays a detailed description of the search filter and all applicable conditions.





3. Click **Search** to search the log for all messages matching your filter conditions. The items matching the criteria are listed in the Occurrences tab on the Find panel.



The screenshot shows the FuegoBPM Log Viewer interface. The main log table displays several 'Trace' level messages from the 'Engine' application running on 'Tomcat' threads. The 'Find' panel below shows a filtered list of 'Warning' messages regarding 'Invalid preferences format. Migrating...'. The status bar at the bottom indicates that there are more log items than can be displayed on the screen.

Severity	Message	Date	Time	Application	Module	Thread
Trace	StandardContext[/OrderFulfillment]: Processin...	Jul 16, 2004	11:47:55...	Engine	Tomcat	ET(2)
Trace	ContextConfig[/OrderFulfillment]: ContextConf...	Jul 16, 2004	11:47:55...	Engine	Tomcat	ET(2)
Trace	imagePipe: destroy	Jul 16, 2004	11:47:55...	Engine	Tomcat	ET(2)
Trace	StandardContext[/OrderFulfillment]: Stopping c...	Jul 16, 2004	11:47:55...	Engine	Tomcat	ET(2)
Trace	StandardContext[/OrderFulfillmentAdmin]: Sto...	Jul 16, 2004	11:47:55...	Engine	Tomcat	ET(2)
Trace	StandardContext[/OrderFulfillmentAdmin]: Sen...	Jul 16, 2004	11:47:55...	Engine	Tomcat	ET(2)
Trace	StandardContext[/OrderFulfillmentAdmin]: Proc...	Jul 16, 2004	11:47:55...	Engine	Tomcat	ET(2)

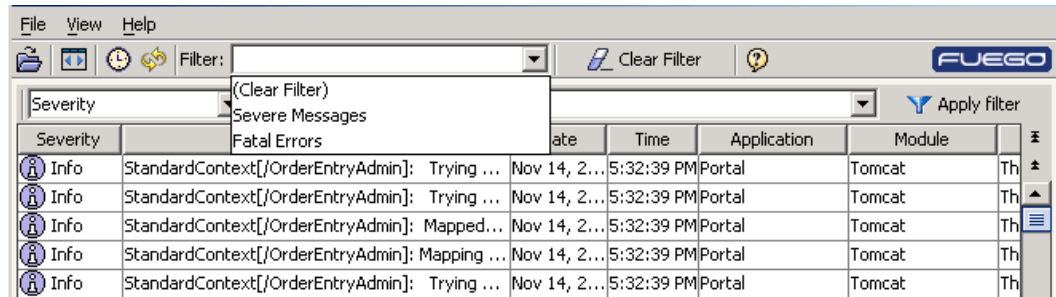
Severity	Message	Date	Time	Application	Module	Thread
Warning	Invalid preferences format. Migrating...	Jul 16, 2004	11:44:2...	Engine	Main	ET(2)
Warning	Invalid preferences format. Migrating...	Jul 16, 2004	11:44:2...	Engine	Main	ET(2)
Warning	Invalid preferences format. Migrating...	Jul 16, 2004	11:44:2...	Engine	Main	ET(2)
Warning	Invalid preferences format. Migrating...	Jul 16, 2004	11:44:2...	Engine	Main	ET(2)
Warning	Invalid preferences format. Migrating...	Jul 16, 2004	11:44:2...	Engine	Main	StartUpSe...
Warning	Invalid preferences format. Migrating...	Jul 16, 2004	11:44:2...	Engine	Main	StartUpSe...
Warning	Invalid preferences format. Migrating...	Jul 16, 2004	11:44:2...	Engine	Main	StartUpSe...

1: Bookmarks 2: Find 3: Item Properties


There are more log items. You can use the extended scrollbar to see them. Monday, September 1, 2003 6:08 PM

- To save the filter, type a name in the **Filter name** field (using any combination of alpha or numeric characters) and click **Save**. Once the filter is saved, it is included in the filters drop-down menu in the Log Viewer toolbar. You can select one of the stored filters to find the log items matching the filter conditions at any time while using the Log Viewer.





## Note

 When the Find panel is open, you can create new filters by clicking the **New** button. You can have multiple filters open at the same time. Each filter is displayed in a separate Find panel. Also, if you double-click on a log item in the Occurrences tab of the Find panel, it is highlighted and displayed within its context in the main Log Viewer panel.

## Deleting Multi-condition Filters

### To delete a filter

1. From the Log Viewer menu **Find** tab, select the filter name from the drop-down list.
2. Click **Delete** to delete the filter.

## Clearing Filters

After applying a quick filter, the Log Viewer main panel displays only those log items that match the condition of the filter.

### To clear the filter from the currently viewed log

- From the Log Viewer Menu, select **View** then **Clear Filter**.



or

- From the **Process Studio Log Viewer Panel**, click the **Clear filter** button.

After clearing the filter, the Log Viewer displays the complete list of all log messages.

## Connector Rules

If more than a condition for the same attribute (for example, Severity) is defined within a Filter, they will be connected to resolve the complete condition. This is accomplished using the logical operators OR and AND. Each connector is classified into a type and based on the combination of the same or different type, the **OR** or **AND** applies.

## Classification I

Description	Connector
Is	+
Is not	-
Contains	+
Not contains	-

Using the above connectors, the following rules apply:

Connector	Connector	Operator	Description
+	+	OR	The combination of two types of + will be connected by an OR
+	-	AND	The combination



Connector	Connector	Operator	Description
			of one type + and another type - will be connected by an AND
-	+	AND	The combination of one type "-" and another type + will be connected by an AND
-	-	AND	The combination of two types of "-" will be connected by an AND

## Examples

Conditions	explanation
Severity is Debug / Severity is Info	Both conditions use the "is" connector, therefore results displayed in the Log Viewer will contain a severity of DebugORInfo
Severity is not Debug/ Severity is not Info	Both conditions use the "is not" connector, therefore results displayed in the Log Viewer will contain a severity of DebugANDInfo

## Classification II

- Begin with: B



- End with: **E**
- Before: *lower than* sign.
- After: *greater than* sign.
- Lower than: *lower than* sign.
- Higher than: *greater than* sign.

Using the above connectors, the following rules apply:

- **B, B: OR** - The combination of two types of **B** will be connected by an OR
- **B, E: AND** - The combination of one type **B** and another type **E** will be connected by an AND
- **E, B: AND** - The combination of one type **E** and another type **B** will be connected by an AND
- **E, E: OR** - The combination of two types of **E** will be connected by an OR
- *lower than, lower than: AND* - The combination of two types of *lower than* will be connected by an AND
- *lower than, greater than: OR (OI)* - The combination of one type *lower than* and another type *greater than* will be connected by an OR
- *greater than, lower than: AND (CI)* - The combination of one type *greater than* and another type *lower than* will be connected by an AND
- *greater than, greater than: AND* - The combination of two types of *greater than* will be connected by an AND



## Examples

Conditions	explanation
Message Begins with "The server" / Message Ends with "successfully"	The conditions will be combined using AND.
Level Higher than 2 / Level Lower than 5	The conditions will be combined using AND (CI).

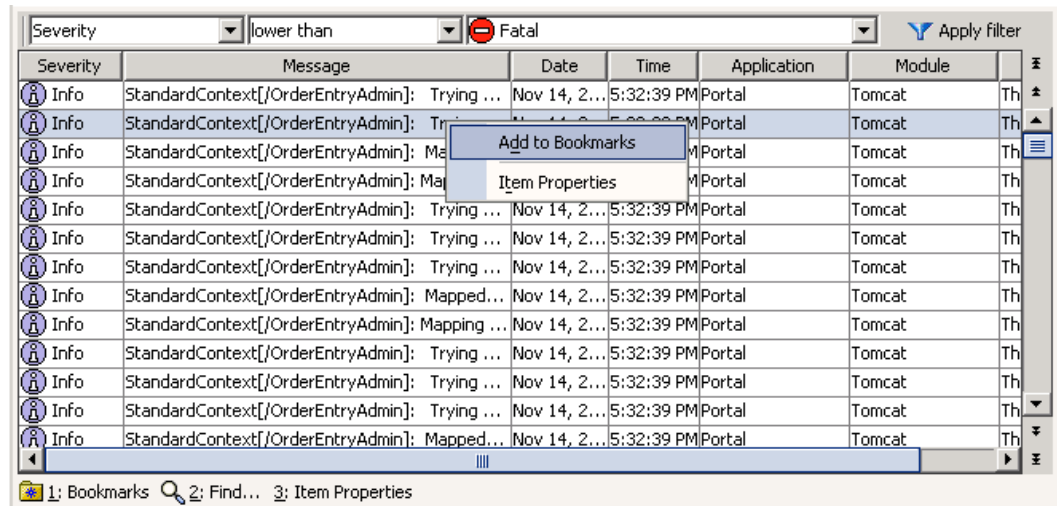
## Bookmarks

**Log Viewer** enables you to bookmark a log item so that you can easily find it among all of your logged messages. More than one item can be bookmarked at the same time. In the current Log Viewer session, you can double-click on a bookmarked item to view it within the context in which the logged event occurred. This function is only available in the **Log Viewer window**.

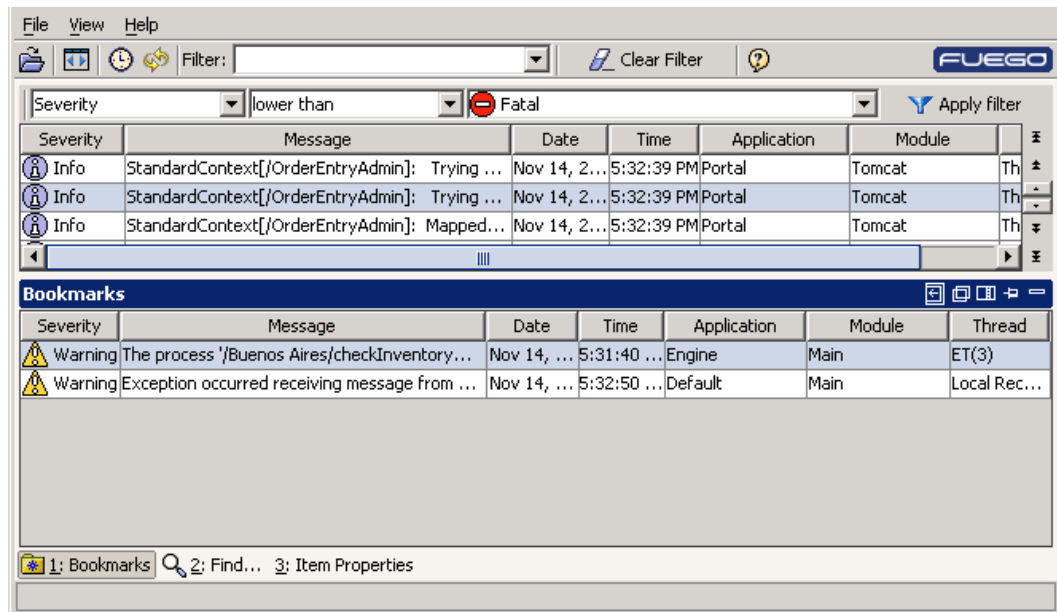
### To bookmark a log item

1. Open a log file in the main Log Viewer window.
2. Right-click on a log file item and select **Add Bookmark** from the pop-up menu. The selected item is added to the Bookmarks panel.





3. Optionally, click the **Bookmarks** tab to view all your bookmarked items in the **Bookmark panel** at the bottom of the Log Viewer window.



If you double-click a log item in the Bookmark panel, it is displayed in the top panel of the Log Viewer window. Furthermore, if you have applied a quick filter so that the main (top) panel contains ONLY the log items that match the unique condition, then you double-click a log item that you saved as a bookmark, the filter is cleaned and the



bookmarked item is displayed in the main panel.

### Warning



Bookmarks are preserved even when the Bookmarks panel is not visible; however, remember that Bookmarks are **temporary** and will disappear when you close the Log Viewer session.

## Working with Log Files

When you create a project in FuegoBPM Studio, a directory named for your project is created. The log files are saved in this directory under the sub-directory called *system*. For example, log files for the *YourProject* project are stored in the *YourProject.fpr/system* directory.

You will find up to five log files named **YourProject.log.x**, where x is 0-4.

These log files work in a rotating fashion. When the first file reaches maximum capacity, a new file is created. This continues until all five files reach capacity. Then, the data in the first file is overwritten and the file is reused. The files continue to be reused in a circular manner until the FuegoBPM Server is stopped and no other actions are taken that result in log generation.

Logs are used by all components of FuegoBPM Studio to record actions.




---

# Chapter 11. Configuring the FuegoBPM Work Portal

## Configuring the Work Portal

For Work Portal to run properly with the other FuegoBPM Suite applications, a Java Server Pages (JSP) or Java Servlet (JS) server is required. There are several JSP servlet products on the market and FuegoBPM supports many of them.

### Note

 Testing is underway for Resin, BEA, BEA WebLogic Application Server, Tomcat, JRun, IBM WebSphere, and iPlanet Application Server. Contact Fuego Customer Support if you would like to use one of these products.

## Work Portal Web Directory Structure

The Work Portal is deployed in a JSP or JS server. End users can connect to the Work Portal remotely to get the list of tasks to be executed based on the roles assigned to them. The Work Portal is, in essence, the middle tier between an end user and the FuegoBPM Server, where the processes with which the end user is involved are deployed. You must configure the Work Portal to allow for proper flow of data between Work Portal's web application, the Server, and the end user working in the Work Portal.

The Work Portal was designed using model 2 architecture. Its presentation is implemented with JSPs, and the logic is implemented with servlets. All of these resources are packaged and bundled within the same web application that, in turn, follows a web application directory structure.

By default, the Work Portal is installed in the *webapps/portal* directory in the FuegoBPM Studio installation directory. In the *webapps/portal* directory, you will find other subdirectories containing different information for the Work Portal Web application.



The *webapps/portal* directory contains the following directories:

- *Css*: Contains different Cascading Style Sheets (CSS) for the Work Portal presentation.
- *Customjsp*: Contains examples related to the JSP standard component.
- *Help*: Contains Work Portal's HTML online help.
- *Img*: Contains images used in Work Portal's presentation.
- *Jsp*: Contains all JSPs used for the presentation layer of Work Portal.
- *Lib*: Contains the *ja* files needed to run Work Portal and Fuego Objects.
- *Process Images*: Contains any images needed by the Work Portal. For example, if you configured the Work Portal to display any instance creation applications in the toolbar, the images for these are contained in the Process Images directory.
- *Wapi*: Contains WAPI Javadoc documentation.
- *WEB-INF*: Contains web application configuration files and servlets.

## Configuring the Work Portal Files

Like most web applications, the Work Portal contains the **directory.properties** and **portal.properties** configuration files, which provide most of the configuration parameters and servlet mappings. These files are located in the *webapps/portal/WEB-INF* directory.

The configuration files work together and contain configuration information for the directory service to which the Work Portal



connects to obtain process definitions and to authenticate users, Plugin directories, and so on. Described below are the sections that need to be configured for your environment.

## The portal.properties File

The portal.properties file is where you define the parameters by which the Work Portal runs. You can define what stage of implementation you are entering, whether you want to allow anonymous log ins, whether to capture information for debugging purposes, and so on. The following sections break the portal.properties file down into logical groups.

## Remote Configuration

The first portion of the portal.properties file is the remote configuration. To share a centrally located directory.properties file (the settings for directory services), uncomment the last line and enter the URL for the shared file.

```
#
# $Id: portal.properties,v 1.1.1.1.2.1 2002/10/29 17:29:00
# mariana Exp $
#
# Remote configuration URL
#
# this property is used to define a remote configuration,
# if defined, all the properties will be taken from this
# location uncomment this line and change the value
# for the proper URL
# remote.config.url=
# http://forums/remoteConfig/directory.properties
```

If you decide to use a shared directory.properties file, comment out the following line from the Directory setup portion of the portal.properties file.



```
# the directory ID the portal will use
fuego.portal.DIRECTORY_ID=development
```

## Directory Setup

The next portion of the portal.properties file is the directory setup. This is where you define the stage of implementation. Stages include **development**, **test**, and **production**.

```
#
# Directory Setup
# This section defines the directory the portal is
# connecting to and the properties used for the different
# connections to the portal the directory ID the portal
# will use
fuego.portal.DIRECTORY_ID=development
# optionally, instead of using the ID, the URL can be used
# instead
#fuego.portal.DIRECTORY_URL=<directory_url>
# The directory preset used to retrieve the XObjects from
# the catalog
fuego.portal.xobject.directory.preset=xobjects
# The directory preset for container authentication login
fuego.portal.container-auth.directory.preset=container-auth
# The directory preset used for anonymous connections to
# the portal
fuego.portal.anonymous.directory.preset=portal-anonymous
#
# CAUTION: use ONLY if using resin and with the web.xml
# with classpath!!!!
# fuego.portal.INTEGRATED_WEBAPP=any value
```

Instead of using an ID for the stage of implementation, comment the *fuego.portal.DIRECTORY\_ID* line, uncomment the *fuego.portal.DIRECTORY\_URL* line, and hard code the URL for the directory service.

## General Configurations



The general section of `portal.properties` deals with general features of the Work Portal:

- **fuego.portal.DEBUG**: Set to **true** if you want to generate debugging information, which provides information that may help you solve any problem that might appear while running the Work Portal. The debug includes current sessions, memory used, pool, and cache information.
- **fuego.portal.debuggerPort** : Set to 9007 by default. It represents the port number where the debug information is sent.

### Note



You must set this flag to false in production environments.

- **fuego.autoRefreshMenuOptions**: Set to **true** if you want to include the **Refresh** selection in Work Portals Options. A new entry appears in the Work Portal options that allows Work Portal to refresh every X minutes. The number of minutes depends on the number entered in the **fuego.portal.refreshTimeMin** entry. True displays a popup box that shows the minimum available value as the value of the **refreshTimeMin** property.

For example, if you have the following settings, the Work Portal Options appear as shown in the image.

```
fuego.portal.autoRefreshMenuOptions=true  
fuego.portal.refreshTimeMin=5
```

- **fuego.changePasswordSupported**: Set to **true** if the Work Portal end users can set their own Work Portal password using the



## Options link.

```
# General
#####
# This flag must be false in production deployments
fuego.portal.DEBUG=true
# Set autoRefreshMenuOption=true for visualize the refresh
# option in menu option.
fuego.portal.autoRefreshMenuOption=false
# refreshTimeMin indicate the minimum minutes between a
# refresh and other refresh.
fuego.portal.refreshTimeMin=1
# changePasswordSupported enables or disables password
# changing from user options.
# fuego.changePasswordSupported=true
```

## Logo

You can reset the Logo settings in the Logo section. There are two property files in the **portal/img** directory: `ImageBundleSet1.properties` and `ImageBundleSet2.properties`. These property files contain the links to the images used in the Work Portal user interface.

There are two options to change the logo:

- Leave the Logo settings as they appear in the `portal.properties` file. Save your logo as **logo.gif** and copy it over the existing `logo.gif` file, located in **portal/img/set1** or **portal/img/set2**. The location of the image file depends on the `ImageBundleSet` you choose. (This entry appears later in the `portal.properties` file.)
- Open `ImageBundleSet1.properties` or `ImageBundleSet2.properties` (depending on which bundle set you are using, which is defined later in the `portal.properties` file). Add a new entry for your logo file. For example, **XYZLOGO**.



## Note



Make sure you save a backup copy of the portal directory if you choose the first option.

```
XYZLOGO= ../img/set1/xyzlogo.gif
```

Change the value for **fuego.portal.apptitle.value** to the value of the new entry in the ImagesBundleSet1 (or 2).properties file. For example,

```
fuego.portal.apptitle.value=XYZLOGO
```

```
# LOGO #####
#The apptitle.type is the type of logo.
#It can be "image" or "text"
#In case of image the value is the key in the
# ImagesBundle.properties
# In case of text the value is a title to be printed.
#####

fuego.portal.apptitle.value=LOGO
fuego.portal.apptitle.type=image
fuego.portal.language=en
fuego.portal.country=us
```

## CSS

Cascading Style Sheets (CSS) are used to control the layout and style of the Work Portal user interface. FuegoBPM Studio installs six different CSS options for you to choose from (style.css, style1.css, style2.css, style3.css, style4.css, and style5.css). style5.css is the default CSS.

The CSS files are located in the **portal/css** directory. To create a



custom CSS for use with the Work Portal, the CSS must be copied to this directory and you must change the **fuego.portal.stylesheet** entry to reflect the name of your custom CSS.

```
# Css #####
# The name of the cascade style sheet file
# This file must be in portal/css directory
# The default options are: # style.css, style1.css,
# style2.css, style3.css, style4.css
#####

fuego.portal.stylesheet=style5.css
```

## Process Image Theme

The process image, for example, in the audit trail or workload images can be set to different themes.

Check the property below:

```
# Process Image Theme #####
# Used to display process images and activity icons.
# Available values are Classic, BPMN, ColorBPMN,
# BusinessAnalyst and UML
#####

fuego.portal.processImageTheme=BPMN
```

## Session Timeout

The Work Portal includes the security functionality to close a session if the end user has not made a request in a certain period of time. If an end user forgets to log off the Work Portal, he or she is automatically logged off after the amount of time in the **fuego.portal.sessionTimeout** entry passes. The default is **1800** seconds (30 minutes).



```
# Session Time out #####
# Specifies the time, in seconds, between client requests
# before the servlet container will invalidate this session.
# Default 30 minutes.
#####
fuego.portal.sessionTimeout=1800
```

## Bundle Files

The bundle files are the settings for the bundles that store the images that Work Portal uses in its user interface. They also store the Java Server Pages (JSP) used for the presentation of the Work Portal. FuegoBPM Studio is installed with two image bundles: ImageBundleSet1 and ImageBundleSet2. The ImageBundleSet1.properties and ImageBundleSet2.properties files are located in **portal/img** and contain the location of every image needed in Work Portal.

The JSPBundle's properties are located in **portal/jsp** (JSPBundle.properties). JSPBundle.properties contains the location of every JSP needed by Work Portal.

```
# Bundle Files #####
fuego.portal.imageBundleFile=ImagesBundleSet1
fuego.portal.jspBundleFile=JSPBundle
```

## JAAS and Windows Domain Authentication

```
#####
# JAAS Authentication
#####
#
```



```
# auth configuration file (defaults to WEB-INF/jaas.config)
# fuego.portal.auth.jaas.config.url=
#           http://host/config/jaas.config
#
# login context name
fuego.portal.auth.jaas.login.context=Default
#
# callback handler class (default value is
# fuego.portal.servlet.deploy.DefaultCallbackHandler)
# fuego.portal.auth.jaas.callback.handler.class=
#           fuego.portal.servlet.deploy.DefaultCallbackHandler
#
# login include page
fuego.portal.loginIncludePage=/jsp/basicLogin.jsp
#####
# Windows Domain Authentication
#####
#
# Valid domain name for mapping
# fuego.portal.auth.windows.domain=YOURDOMAIN
```

## Keystore Configuration

```
#####
# keystore configuration
#####
fuego.portal.useKeystore=false
fuego.portal.keystoreInteractive=false
fuego.portal.keystoreDescription=Web Task Manager
fuego.portal.keystorefile=D:\fuego5.0\tmp\server.keystore
fuego.portal.keystoreprovider=ETP
fuego.portal.keystoreimplementation=SCPT
fuego.portal.keystorepersistencerate=100000
```

## Logging

During the development phase of your processes, you may want to log errors that are captured in the Work Portal as you process instances. The Logging section of portal.properties is where you define the location of the log file and the properties of the logging.



In this section, you can change the level of severity being logged.

You can also change the following:

```
#####  
# Logging  
#####  
fuego.log.workPortal.severities=all  
fuego.log.workPortal.detailLevel=10  
fuego.log.workPortal.file=D:\fuego5.0\log\portal.log  
fuego.log.workPortal.format='[<{SEV}> 'MMdd HH:mm:ss.SSS']  
      {MOD} ({THR}): {INDENT}{MSG}'  
fuego.log.workPortal.continuationFormat=  
      '[ (cont) ] {MOD}: {INDENT}{MSG} Attachments'
```

## Attachments

You can attach any type of file to an instance as it flows through the process. The Attachments section allows you to configure the settings for the attachments.

- `fuego.portal.servlet.Attachment.MAX_ATTACHMENT_SIZE` — The maximum size of an attachment.
- `fuego.portal.servlet.Attachment.UPLOAD_DIR` — The default directory to store attachments ready to be attached to an instance.
- `fuego.portal.servlet.Attachment.DEFAULT_USER_LOCAL_DIRECTORY` — The directory where attachments are stored when they are downloaded from the Work Portal.

### Note




Ensure that the `UPLOAD` and `LOCAL_DIRECTORY` entries have values that are valid paths on your system. For example, the temporary placeholder directory `fuego5.0\tmp` does not exist after installation. You



can create this directory or change the value to a valid directory on your system.

```
#####  
# Attachments  
#####  
fuego.portal.servlet.Attachment.MAX_ATTACHMENT_SIZE=5242880  
  
# webBUI Server side upload directory.  
fuego.portal.servlet.Attachment.UPLOAD_DIR=D:\\fuego5.0\\tmp  
  
# Client side download directory.  
fuego.portal.servlet.Attachment.  
    DEFAULT_USER_LOCAL_DIRECTORY=D:\\fuego5.0\\tmp
```

## Tip

 Viewing an attachment that is locked locally may not work if the browser is Netscape version 6 or higher. Accessing the directory path indicated in the **User Working Directory** in the *Options Window* of the *Work Portal* is not allowed in this browser. The solution is to change a security setting in a Mozilla configuration file: The file is: \$DIR/mozilla/defaults/pref/all.js Changing the configuration:

```
("security.checkloaduri", true);
```

to false :

```
("security.checkloaduri", false);
```

This enables it to accept local links.

## Fuego Object Preferences

Fuego Object presentations can be displayed in different ways in the Work Portal. The Fuego Object Preferences section allows you to change some of these settings.



- **fuego.portal.XObjects.showHeader** — True if you want to display the header information of the Fuego Object during execution.
- **fuego.portal.XObjects.showFooter** — True if you want to display the footer information of the Fuego Object during execution.
- **fuego.portal.XObjects.showMenu** — True if you want to display a menu on the Fuego Object during execution.
- **fuego.portal.XObjects.showMsgInBottom** — True if you want to display error messages at the bottom of the Fuego Object, *false* if you want to display error messages at the top of the Fuego Object during execution.

```
#####  
# XObjects Preferences. (Runtime framework settings)  
#####  
# Show header during execution.  
fuego.portal.XObjects.showHeader=true  
# Show footer during execution.  
fuego.portal.XObjects.showFooter =true  
# Show menu with processes and filters during execution.  
fuego.portal.XObjects.showMenu=false  
# Show presentation error messages top or bottom  
fuego.portal.XObjects.showMsgInBottom=true
```

## Item Execution Preferences

Work Portal is affected by some settings in the Process Designer. Global Creation and Interactive activities have an option called **Autocomplete** on the Activity Properties dialog box. If Autocomplete is selected, instances will automatically complete an activity as soon as the last required Fuego Business Language (FBL) task is completed for the activity. When the Autocomplete preference is combined with the property `performNextTask`, the Work Portal end



user does not have to click the **Send** or **Send to** button to move the instance to the next activity. When the same user is responsible for completing the next activity, the display of the Work Portal changes automatically to show information for the next activities FBL tasks.

- **fuego.portal.Execution.performNextTask** — Set to *true* if the same user performs two or more consecutive activities and he or she wants to complete all tasks in all activities for an instance at one time. If the value is *true*, the Work Portal simulates a screen flow. If *false*, instances are processed in the normal way, one activity at a time.
- **fuego.portal.Execution.waitForAutomatics** — There can be Automatic activities defined between Interactive activities. If something causes the Automatic FBL to take a long time to execute, the screen flow will be interrupted. Set this property to the maximum time the end user wants to wait for the Automatic to complete and move the Instance on to the next activity. The value is in seconds.
- **fuego.portal.Execution.external.newWindow** — Set to *true* if the external activities need to be displayed in a new window. External activities refer to one of the possible interactive activity implementations.

```
#####  
# Item Execution Preferences:  
# If Activity is Autocomplete, after executing last  
# mandatory item, automatically execute next Activity  
# Item if there is only one mandatory item defined for  
# this activity and if user has Role to perform the task.  
#####  
# Perform or not next task.  
fuego.portal.Execution.performNextTask=false  
# Waiting time (milisecs) for Automatic activities defined  
# in the middle of the screen flow.  
fuego.portal.Execution.waitForAutomatics=3000  
# Perform external executions in a new window (window.open)  
fuego.portal.Execution.external.newWindow=true
```



## Servlet Engine-specific Behavior

```
#####  
# Servlet Engine specific behavior:  
#####  
# Property  
# name: servletengine.forward_inherits_original_parameters  
# description: Request inherits original parameters  
# after forward. Defaults to true.  
#servletengine.forward_inherits_original_parameters=true
```

## Application Layout

The Work Portal is very versatile in its layout. You can set the way global activities, such as the global creation or the global activity, appear in the Work Portal. You can also allow users change the default layout.

- **fuego.portal.globalActivitiesLayout.default** — Defines the way global type activities appear in the Work Portal. The following table defines the valid choices.

Value...	Means
SHOW_AS_FOLDER	All global activities for the selected process are placed in the Applications views that will appear on the left pane of the Work Portal.
SHOW_AS_TOOLBAR	All global activity icons for the selected view appear in the Work Portal toolbar in the right pane. All the global activities defined in those processes that the view references will be shown in the toolbar.



Value...	Means
SHOW_ALL_AS_TOOLBAR	All global activity icons from all available processes appear in the Work Portal toolbar in the right pane.
SHOW_AS_MENU	All global activities for the selected view appear in a list at the bottom of the view tree in the left pane of Work Portal. The icon and the name of the activity are displayed.
SHOW_ALL_AS_MENU	All global activity icons from all processes appear at the end of the list of available views in the left pane of Work Portal.

- **fuego.portal.globalActivitiesLayout.editable** — The end user has the ability to change the default layout of the global activities using the Work Portal Options if you set this value to *true*. If set to *false*, whatever choice is selected for the **fuego.portal.globalActivitiesLayout.default** entry is the default.

```
#####  
# Application Layout  
# Set fuego.portal.toolbar.default either  
# SHOW_AS_FOLDER,  
# SHOW_AS_TOOLBAR, SHOW_ALL_AS_TOOLBAR,  
# SHOW_AS_MENU or SHOW_ALL_AS_MENU  
#####  
# Set the default application layout.  
fuego.portal.globalActivitiesLayout.default = SHOW_AS_FOLDER  
# Enable the user to change his application layout.  
fuego.portal.globalActivitiesLayout.editable = true
```



## Execution Properties

- **fuego.portal.execution.showToolBar** — Set to *true* if you want the toolbar to be shown while execution.
- **fuego.portal.execution.runMainTaskByDefault** — Set to *true* if you prefer to have the activity's main task executed when selecting the *process icon* (the arrow) for an instance directly from the list of instances to process.

```
#####  
# Execution Properties  
#####  
fuego.portal.execution.showToolBar=true  
fuego.portal.execution.runMainTaskByDefault=true
```

## Menu options

The Work Portal options allow you to customize user information, settings and display options. This customization can be achieved by changing the settings in the Options window.

The Work Portal Menu appearance (left panel navigation menu ) can be set in advance using the following properties:

- **fuego.portal.menu.default** — Set to *html* if the menu is shown as HTML or to *flash* if it needs to be displayed as Macromedia Flash version.
- **fuego.portal.menu.editable** — Set to *true* if you allow the participant (Work Portal user) to change the menu appearance through the Work Portal options window.



```
#####  
# Menu options  
#####  
  
# Set the default menu. You can either 'html' or 'flash'  
fuego.portal.menu.default=html  
  
# Enable the user to change the default menu.  
fuego.portal.menu.editable=true
```

## Instance Date Format

The Work Portal option *Instance Date Format* allows you to define the date format to visualize the instances dates.

The instance date format can be set in advance using the following properties:

- **fuego.portal.options.instance.DateFormat.default** — Set to either of the following formats:
  - *DATE\_TIME\_ALWAYS* - Format 0: This format always includes, hour, minutes, seconds, day, month and year, i.e.: *8 Oct 10:45:35 AM 1980*.
  - *LEAST\_FRIENDLY* - Format I: This format includes, hour, minutes, seconds, day, month and year.
    - Within the day: Only shows the hour, i.e.: *10:45:35 AM*.
    - Within the year: Shows day, month and hour, i.e.: *8 Oct 10:45:35 AM*.
    - More than a year: Shows day, month and hour, i.e.: *8 Oct 10:45:35 AM 1980*.



- *FRIENDLY* - Format II: This format includes, hour and minutes, or day and month, or day, month and year.
  - Within the day: Only shows the hour, i.e: *10:45 AM*.
  - Within the year: Shows day, month and hour, i.e.: *8 Oct*.
  - More than a year: Shows day, month and hour, i.e.: *8 Oct 1980*.
- *FRIENDLY2* - Format III: This format is like format II but also includes the time in letters, like 2 days ago.
  - Within the day: Only shows the hour, i.e: *10:45 AM (3 hours ago)*, instance time 10:45 AM, showing time 13:45 AM.
  - Within the year: Shows day, month and hour, i.e.: *8 Oct (1 day ago)*, supposing today is *9 Oct*.
  - More than a year: Shows day, month and hour, i.e.: *8 Oct 1980 (24 years ago)*, supposing today is *8 Oct 2004*.
- *FRIENDLIEST* - Format IV: This format shows the time only in letters, like 2 days ago.
  - Within the day, i.e: *3 hours ago*, instance time 10:45 AM, showing time 13:45 AM.
  - Within the year, i.e.: *1 day ago*, supposing today is *9 Oct*.
  - More than a year, i.e.: *24 years ago*, supposing instance date as 8 Oct 1980 and today is *8 Oct 2004*.
- *FRIENDLIEST2* - Format V: This format shows the time only in



letters but more friendly for the same day, the day before and the following day.

- Within the day: shows *Today*, ie: instance time 10:45 AM, showing time 13:45 AM of the same date.
  - The day before: shows *Yesterday*, ie: instance date 10:45 AM 8 Oct 2004, showing date 13:45 AM 9 Oct 2004.
  - The following day: shows *Tomorrow*, ie: instance due date 10:45 AM 10 Oct 2004, showing date 13:45 AM 9 Oct 2004.
  - Within the year in the past: shows the time in letters, i.e: 2 days ago, supposing instance date 10:45 AM 7 Oct 2004, showing date 13:45 AM 9 Oct 2004.
  - In the future but the following day: shows the time in letters, i.e.: In 2 days, supposing instance due date 10:45 AM 11 Oct 2004, showing date 13:45 AM 9 Oct 2004.
  - More than a year in the past, i.e.: 24 years ago, supposing instance date as 8 Oct 1980 and today is 8 Oct 2004.
- 
- **fuego.portal.options.instance.DateFormat.editable** — Set to *true* if you allow the participant (Work Portal user) to change the instance date format through the Work Portal options window.

```
#####  
# Instance Date Format  
# Set fuego.portal.options.instance.DateFormat.default  
# either DATE_TIME_ALWAYS , LEAST_FRIENDLY,  
# FRIENDLY,FRIENDLY2, FRIENDLIEST, FRIENDLIEST2  
#####
```



```
# Set the default application layout.
fuego.portal.options.instance.DateFormat.default=FRIENDLY

# Enable the user to change his application layout.
fuego.portal.options.instance.DateFormat.editable=true
```

## Numbering Format

By default, numbers shown in the Portal's views (columns) are formatted as *1,000.00* or *1,000,000.00*.

To avoid this grouping, set this property to false and these numbers will be displayed as *1000.00* or *1000000.00*.

```
#####
# Instance Number Format
#####
# Set whether or not grouping will be used in this format.
fuego.portal.options.instance.NumberFormat.groupingUsed
= true
```

## View Options

The Work Portal includes the functionality, called Views, to edit the way in which information is presented to the end user. If you set **fuego.portal.views.editable** to *false*, the end user cannot alter his or her View from the default view. If you set the value to *true*, an icon appears in the Work Portal to edit and delete views.

```
#####
# View Options
#####
# Set to false to prevent users from
# edit/delete/create views.
fuego.portal.views.editable = false
```



## New Instances View

To identify that a view has new received instances, the Work Portal can show the view in *Italics*.

```
#####  
# Enable showing views in Italic if they have new instances  
fuego.portal.updateSessionViewsForNewInstances = true
```

## X Server Available

If ActiveX is available on the machine where Work Portal is installed, the **fuego.portal.xServerAvailable** option is set to **true**. When the Work Portal is running on UNIX or Linux systems that do not support ActiveX controls, this value should be set to **false**.

```
#####  
# X Server Available:  
#####  
# If the Servlet Engine is running in Unix/Linux Os without  
# X support, that property must be set to false.  
#####  
fuego.portal.xServerAvailable=true
```

## PAPI Options

The PAPI instance cache is used to save the instances locally and reduce the number of requests to the Server.

If there is an operation on an instance different than an update (the Server intervention is not required), PAPI will provide the instance information from the instance cache.

The size of the cache can be defined based on the FuegoBPM Studio



implementation (by default, set to 200 during installation).

The **PAPI instance cache size** is a Portal property and represents **the number of instances per process** that will be kept in the cache. If this number is exceeded, the instance information will be retrieved from the Server.

```
#####  
# PAPI Options:  
#####  
# The max instances size per process  
#####  
fuego.portal.papi.instancesCacheSize=200
```

You must keep the following in mind:

- If this value is too low, the instances will need to be retrieved from the Server, causing overhead in the server's performance.
- If the value is too high, you will be allocating a lot of memory to keep the instances.

So, you must analyze your needs and available resources in detail.

As the cache size is defined per process, one criteria to consider may be the maximum number of instances for the most critical process in the company. This may enable you to improve performance, but you must analyze the impact on the other processes and the available memory.

To calculate the memory to be allocated for the cache, you must keep the following in mind:

- Maximum size for an instance (defined in the Execution Console, in the Others tab)



- Number of Servers
- Number of processes per Server

The following example gives you an idea how to determine the memory to be allocated:

Server 1

Max size for an instance: **1 Kb**

Number of processes: **5**

Server 2

Max size for an instance: **2Kb**

Number of processes: **3**

**InstancesCacheSize = 200**

The final calculation is **200 \* (5 \* 1 Kb)+200 \* (3 \* 2Kb),**

## Exclusive User Sessions

```
#####  
# This property is used for the portal to manage user  
# sessions.  
# Basically, it allows you limit the number of connections  
# for the same user to # only one.  
# IMPORTANT NOTE:  
# By default, this property is set to false because server  
# allows same user to be connected from different  
# locations at the same time.  
# Setting this property to true means Portal will  
# invalidate any other user sessions at login time.  
#  
# default: false  
#####  
fuego.portal.exclusiveSessions=false
```



## The `directory.properties` File

The `directory.properties` file defines the directory service used by the Work Portal to obtain process definitions and to authenticate users, plug-ins, and so on.

For more information about this configuration file refer to `directory.properties` Configuration file

## Configuring Custom Cascading Style Sheets

Work Portal supports Cascading Style Sheets (CSSs). If you want to change the configuration to reflect your business' look and feel, you can modify an existing CSS or create a custom CSS. CSS allows better control over the appearance and positioning of elements on a web page.

Six sample CSSs come with the FuegoBPM Studio installation. The files are located in the **`/webapps/portal/css`** folder under the FuegoBPM Studio installation directory. The default style sheet is *style5.css* and uses a blue-on-blue color scheme. The *style.css*, *style1.css*, *style2.css*, *style3.css*, and *style4.css* style sheets use variations on the default color scheme.

## Changing the Default CSS

The following procedure illustrates how to change the default CSS to an alternate CSS. Remember that any CSS you want to use must exist in the **`webapps/portal/css`** directory.

### To change the default cascading style sheet

1. Navigate to the `/webapps/portal/WEB-INF` directory in the FuegoBPM Studio installation directory (for example, `C:/fuego50/webapps/porta/WEB-INF`).



2. Find the **portal.properties** file and open it in a text editor, such as Wordpad or Notepad. Search for the following line:  
**ft.portal.stylesheet=style5.css.**
3. Change **style5.css** to the style sheet you wish to use.
4. Ensure that the style sheet you choose exists in the **webapps/portal/css** directory.
5. Preview the changes by opening the Work Portal in an Internet browser. The URL is in the form of **http://host:port/workPortal.**

### Note



You may have to restart your web server to see the changes.

## Creating a New CSS

The simplest way to create a new CSS is to copy one of the FuegoBPM Studio default CSS and make changes as needed.

### To create a new CSS

1. Navigate to the **webapps/portal/css** folder in the FuegoBPM Studio installation folder.
2. Copy any of the cascading style sheets, for example *style5.css*, and save it with a new name (for example, *myCompany.css*).
3. Make all changes to the copied file.
4. Change images according to your company's look and feel, if needed. Use the same transparent color between the image and its background.
5. Save the new CSS, making sure it is in the



**webapps/portal/css** directory.

6. Follow the steps in *Changing the Default CSS* to enable your new CSS for use with the Work Portal.

### Warning



Do not edit the original file. Open the `style5.css` file in a text editor and save it with a different name using the Save As function.

## Changing Images in the CSS

### Note



New images should have the same background as the style sheet or a transparent background color.

CSS does not manage images. Because of this, changing images requires file replacement. For example, if you want to change the company logo, replace the *logo.gif* file with the new file.

### Warning



Make a backup copy of the original files before you replace any files.

## Image Directory Structure

There are other directories inside the **/webapps/portal/img** directory that contain references to items in the style sheet. The following table outlines the directory structure:

Directories:

- `img/flash`



- `img/set1`, `img/set2`: Contains icons and images pertaining to attachments, icons, messages, and status. Although the `/set1` and `/set2` directories contain similar images, there is some variation in the color and appearance of many of the images.
- `img/xo`

## Choosing a Different Image Set

FuegoBPM Studio installs two default image sets: `ImageBundleSet1` and `ImageBundleSet2`. You can choose which image set to use.

### To choose a different image set

1. Open the **`portal.properties`** file located in the **`portal`** directory in the FuegoBPM Studio installation directory (for example, **`/fuego50/webapps/portal`** ).
2. Search for the following line:  
**`fuego.portal.imageBundleFile=ImagesBundleSet1.`**
3. If you want to use set 2, change **`ImagesBundleSet1`** to **`ImagesBundleSet2`**. If you want to use set 1, change **`ImagesBundleSet2`** to **`ImagesBundleSet1`**.

## Invoking a Global Creation Activity from a Web Page

FuegoBPM Studio offers the option of invoking a Global Creation activity through a registered web application (**`fuegotechApplication`**) provided by FuegoBPM Studio. The purpose of this feature is to call a Global Creation activity without physically logging into the Work Portal.



## The Web Application

**fuegotechApplication** can be called from an HTML form, a JSP, or a Java application interfacing with a servlet. The web application definition is inside the web.xml file, which can be found in the **webapps/portal/WEB-INF** directory in the FuegoBPM Studio installation directory. The definition is as follows:

```
<servlet-mapping>
  <servlet-name>fuegotechApplication</servlet-name>
  <url-pattern>/servlet/fuegotechApplication</url-pattern>
</servlet-mapping>
<servlet>
  <servlet-name>
    fuegotechApplication
  </servlet-name>
  <servlet-class>
    fuego.portal.servlet.ExecutionDispatcher
  </servlet-class>
</servlet>
```

## Setting the Parameters

The following parameters must be set in two directory.properties files. One directory.properties file is located in the **webapps/portal/WEB-INF** directory and the other is located in the **conf** directory. Both directories are in the FuegoBPM Studio installation directory.

- **directory.development.preset.portal-anonymous.participant**  
— The user name of the user that is used to connect to the FuegoBPM Server. This name is an anonymous user that is created in the Organization Administrator. Note that the user must have permission to access the role where the Global Creation activity exists. Also, this user must support concurrent logins.



- **directory.development.preset.portal-anonymous.password**  
— The password for the anonymous user.

### Note



If you do not see these entries in the `directory.properties` file located in the **conf** directory, add the entries manually before the end of the file.

For more information, refer to `directory.properties` Configuration file.

## JSP Support

Java Server Pages (JSPs) can interact with the Work Portal application. The JSP standard component allows you to call custom JSPs or servlets from a FuegoBPM Business Process (BP) Method, send objects as attributes, and receive a response from the JSP.

In addition to this documentation, there are additional examples and notes available in the **customjsp** directory, which is in the **fuego50/webapps/wam** directory.

## Coding BP Methods to Support JSP Interaction

Before you call JSPs from a BP Method, you must copy the JSP in FuegoBPM Studio's **customjsp** directory, which resides in **fuego50/webapps/wam/**. After you copied the JSPs to **customjsp**, they can be called from any Method task within your processes.

The JSP component has one method, **show**, which receives the following arguments:

- **page** — The JSP file to be displayed.



- **attributes** — An array defined as `Object[String]` that contains all the objects to be sent to the JSP.
- **attributesInResponse** — An array with the names of the attributes whose values are required to be returned in the response from the JSP. This optional argument helps the developer restrict the information received in the response to only those arguments that are strictly necessary. If this argument is not sent, the response will return the complete list of session and request attributes.

The **show** method returns the following arguments:

- **parameters** — An array of type `String[String]` containing all of the form parameters posted by the JSP.
- **attributesInSession** — An array of type `Any[String]` containing the values of those attributes specified in the argument **attributesInResponse**. If the **attributesInResponse** argument is not sent, **attributesInSession** contains the complete list of attributes in the session.
- **attributesInRequest** — An array of type `Any[String]` containing the values of those attributes specified in the argument **attributesInResponse**. If the **attributesInResponse** argument is not sent, **attributesInRequest** contains the complete list of the request attributes.
- **attachments** — An array of type `Any[String]` containing the attachments.

Following is an example of a FuegoBPM Method invoking the **show** method:

```
show JSP using
```



```
page = "CustomerList.jsp",
attributes = jspAttributes
attributesInResponse = ["name", "currentView"]
returning jspParameters = parameters,
        jspSessionAttributes = attributesInSession,
        jspRequestAttributes = attributesInRequest,
        jspAttachments = attachments
```

where **jspAttributes** contains information that is available in the JSP. **jspParameters**, **jspSessionAttributes**, **jspRequestAttributes**, and **jspAttachments** are variables defined in the Method Editor.

## Sending Data to the JSP

The argument **attributes** must be set with all objects you want to make available as request attributes in the JSP. **attributes** must be initialized as follows with a variable of type `Object[String]` before sending it through the **show** method.

```
type Object[String] before sending it through the show
method.
// set attributes
jspAttributes = ["textfield":"textfieldvalue",
                "textarea":"textareaValue", "..."]
```

## Retrieving Data from the JSP

Depending on the information required in the BP Method, one or more of the returned arrays may be specified in the **returning** portion of the **show** method. Once the response is retrieved, the syntax used to get the data is the same for all of the different arrays of the response. The following are some examples:



```
name = jspParameters["name"]
lastName = jspParameters["lastname"]
currentView = jspRequestAttributes["currentView"]
```

## Note



In the previous versions of FuegoBPM Studio, only one array called `response` was returned and it contained all of the information. The `response` array is still available for compatibility reasons; however, its use is deprecated and should be avoided in future processes.

## Coding JSPs

As mentioned previously, the first step of JSP integration is to copy the JSPs to the **customjsp** directory, which resides in **[fuegoInstallDirectory]/webapps/wam/**.

## Importing Packages

When using Fuego Object components, the following packages must be imported in the JSP:

*xobject.[name of the module]. \**

or

*xobject.[name of the module].[name of the Fuego Object]*

If the Fuego Object method runs on server side, in addition to the imports mentioned above, it is necessary to import the `fuego.xobject.util.XOContext` class and set the Fuego Object execution context as follows:

```
XOContext.setJSPContext(request.getParameter("xoContextKey"));
```

If Java components are used, the packages to be imported are as follows:



*[name of the Java package].\**

or

*[name of the Java package].[name of the Java class]*

## Getting Data from the BP Method

As in any Java web application, you can access any object inside the session or request. All objects sent in the **attributes** argument through the JSP component's **show** method can be retrieved as any other request attribute in the JSP. So, if the argument has been initialized in the Method as follows:

```
attributes = [ "name" : "Customer name" ]
```

then the JSP can get the attributes as follows:

```
request.getAttribute( "name" );
```

## Posting Data to the BP Method

To simplify the coding of the JSP, FuegoBPM Studio provides a BP Method called **URLForAction.postJSPResults( )** that can be used as the action of a form within the JSP. All the parameters of the form are posted in the **parameters** array returned in the response of the **show** method.

The following is an example of the BP Method using the JSP component:

```
show JSP using
```



```
page = "example.jsp",
attributes = ["textfield" :
    "Initial Method Textfield Value"]
returning parameters = parameters

while parameters["Submit"] == "Reload"
do
    show JSP using
        page = "example.jsp",
        attributes = parameters
        returning parameters = parameters
end

display parameters using title = "Page Response"
```

The following is the code for example JSP:

```
<%@ page
    session = "true"
    import="java.util.*, javax.swing.*,
        fuegotech.wam.*,%>

<%
    //Method objects initialization
    String textfield = " ";
    if (request.getAttribute("textfield") != null) {
        textfield = (String)request.getAttribbute("textfield");
    }
    String textarea = " ";
    if (request.getAttribute("textarea") != null) {
        textarea = (String)request.getAttribute("textarea");
    }
%>

<html>
<head>
<title> Custom JSP example: </title>
</head>
<body>
<h1> Custom JSP example: </h1>
<h3> Parameters to be returned in FBL:</h3>

<form method="post" name = "multipartForm"
    action="<%= URLForAction.postJSPResults(request)%>">
<p>TextField:
    <input type="text" name="textfield"
        value="<%=textfield%>">
</p>
```



```
<p>TextArea:</p>
<p>
    <textarea name="textarea">
        <%= textarea%></textarea>
</p>
<p> Checkbox:
    <input type="checkbox" name="checkbox"
        value="checkbox">
</p>
<p> Radio:
    <input type="radio" name="radiobutton"
        value="radiobutton">
</p>
<p> List: </p>
<p>
    <select name="select" size="4" multiple>
        <option value="Item 1">Item 1</option>
        <option value="Item 2">Item 2</option>
        <option value="Item 3">Item 3</option>
    </select>
</p>
<p>
    <input type="submit" name="Submit" value="Ok">
    <input type="submit" name="Submit" value="Cancel">
    <input type="submit" name="Submit" value="Reload">
</p>
<p>&nbsp;</p>
</form>
</body>
</html>
```

## Using Fuego Objects from JSP pages

If you are using Fuego Objects from JSP pages you must:

1. Copy the *catalog.jar* file to the *\$INST\_DIR/webapps/portal/WEB-INF/lib* directory.
2. Copy the *jsp* file to the *\$INST\_DIR/webapps/portal/customjsp* directory.

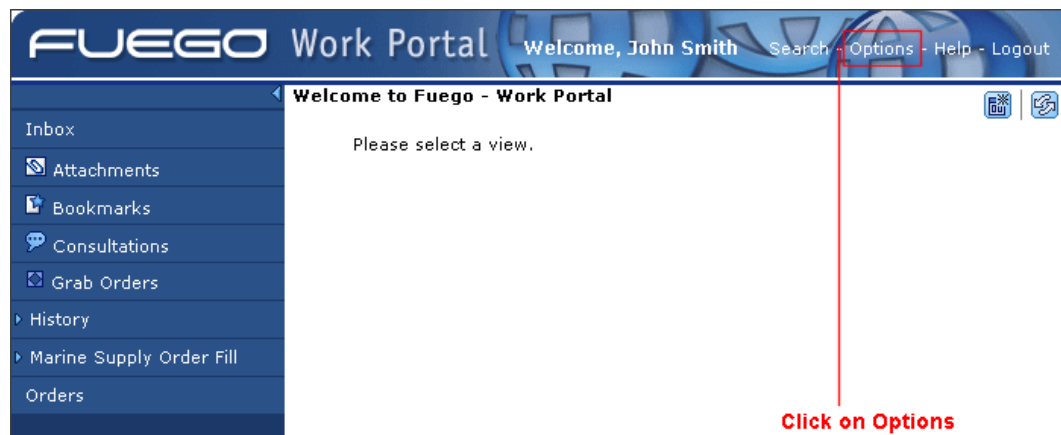
## Customizing the e-mail notification



You can customize the e-mail that is sent out when an instance is received.

To receive an e-mail each time an instance arrives at your Work Portal

1. Click the **Options** link on the top of your Work Portal window.  
The **Options** window opens:



2. Select the **Notify me by e-mail when new instances arrive** check box.



## Configuring the FuegoBPM Work Portal

---

Options		Help
<b>User Information</b>		
Full Name:	John Smith	
Login Name:	John Smith	
E-mail:		
PASSWORD:	<a href="#">Change Password</a>	
<b>Browser settings</b>		
Enable Flash version menu:	<input type="checkbox"/>	
Enable DHTML support:	<input checked="" type="checkbox"/>	
<b>Settings</b>		
Sort instances by:	Received	
Instances order:	Ascending	
Show hidden views:	<input type="checkbox"/>	
Follow the Instance:	<input type="checkbox"/>	
Notify me by e-mail when new instances arrive:	<input checked="" type="checkbox"/>	Enable checkbox
Keep instance view:	<input type="checkbox"/>	
Enable applet for attachment management:	<input type="checkbox"/>	
Enable applet for FuegoObject rendering:	<input checked="" type="checkbox"/>	
Show applications:	In a folder	
User Working Directory:	/temp/	
	(Including last path separator, ie.: 'c:\temp\').	
Maximum number of searches in history:	10	
<b>Display options</b>		
Number of instances:	10	
Language:	English	
Country:	United States	
TimeZone:	GMT-03:00	
<input type="button" value="Save"/> <input type="button" value="Close"/>		

- Click **Save**, then **Close** . Next time an instance arrives at your Work Portal and you are not logged-in, you will be notified by an e-mail.

### Note



For this option to work, your e-mail address must be displayed in the e-mail box in the User Settings section of the Options window. If this box is blank or if the e-mail address is incorrect, contact your system administrator.

The e-mail that you receive has a default format. To customize it you



have to edit the **activityNotification.mail** file located in the **conf** directory in the FuegoBPM installation directory (p.e. /fuego/studio/conf or /fuego/enterprise/conf).

Copy this file to the Server Home directory. If it is not copied the customization does not take effect and the default mail is sent.

You can define a dynamic mail content editing this XML file. The FuegoBPM Server generates the e-mail notifications (when enabled) for each process activity using this file.

The text to be sent in the e-mail can be defined:

- by process-activity, or
- by process, or
- a default mail.

The search to find the text is by tag.

First, it looks for the process tag. If found, it searches for the activity tag.

If the activity tag is not found, it searches for the default tag within the process tag.

If the process tag is not found then it searches for the default mail tag.

The XML is structured to conform to the following tags:

- *process id*: The id of the process that owns the activity for which you define the custom email notifications.
- *activity id*: The id of the activity for which a custom mail needs to be sent.



- *title* : In between this tag, provide the title for the email sent in the specified activity.
- *message* : In between this tag, enter the message to be sent in the selected business process activity.

```
<mail>
<process id='processId'>
<activity id= 'activityId'>
<title>
The Instance :INSTANCE_ID/ has reached :ACTIVITY/ ...
</title>
<message>
    The Instance is :INSTANCE_LINK"here"/
    .
</message>
</activity>
<activity id='activityId2'>
    .
    .
    .
< /activity>
    ....
<Default>
<title>
The Instance :INSTANCE_ID/ has reached :ACTIVITY/ ...
</title>
<message>
    Link :INSTANCE_LINK/
    .
</message>
</Default>
</process>

<process id='processId2'>
    ...
</process>
</mail>
```

When a message contains a place holder like:

- **:INSTANCELINK/** (a link to the instance), or



- **:INSTANCELINK"LINKNAME"/** (a link to the instance with the name of LinkName), or
- **:ACTIVITY/** (name of the activity that has been reached), or
- **:VAR/** (where VAR is the id for a process instance variable or the id of an external variable);

these place holders are replaced at runtime by the proper value accordingly to the defined mappings at development time.

If within the **message tag** you set **headers="true"**

```
<message html="true" headers="true">
```

therefore, in the mail **subject** you will receive the **"ActivityName"**, **"InstanceId"** and **"ProcessName"**.

### Note



If for some reason the xml file does not exist, a non modifiable mail is sent and an exception is logged.



---

## Chapter 12. FuegoBPM Portlets

### What is a Portlet

A portlet is a Java technology based web component, managed by a portlet container that processes requests and generates dynamic content. Portlets are used by portals as pluggable user interface components that provide a presentation layer to Information Systems.

The content generated by a portlet is also called a fragment. A fragment is a piece of markup (e.g. HTML, XHTML, WML) adhering to certain rules and can be aggregated with other fragments to form a complete document. The content of a portlet is normally aggregated with the content of other portlets to form the portal page. The lifecycle of a portlet is managed by the portlet container.

Normally, users interact with content produced by portlets, for example by following links or submitting forms, resulting in portlet actions being received by the portal, which are forwarded by it to the portlets targeted by the user's interactions.

### FuegoBPM JSR-168 compliant Portlet

#### What is a JSR-168 compliant Portlet?

JSR-168 is the Java Portlet Specification from the Java Community Process. This specification enables standard portlets to be developed, which can be deployed on different portals which adhere to it.

#### What does FuegoBPM provide?

FuegoBPM provides a custom set of JSR-168 portlets which can be deployed on Portals from different vendors such as IBM, BEA and Apache.

These FuegoBPM *out-of-the-box* Portlets provides a way of interacting



with a process in connection to your assigned role or roles within your company and effectively and efficiently manage your tasks with minimal extra training.

FuegoBPM Portlets allows you to:

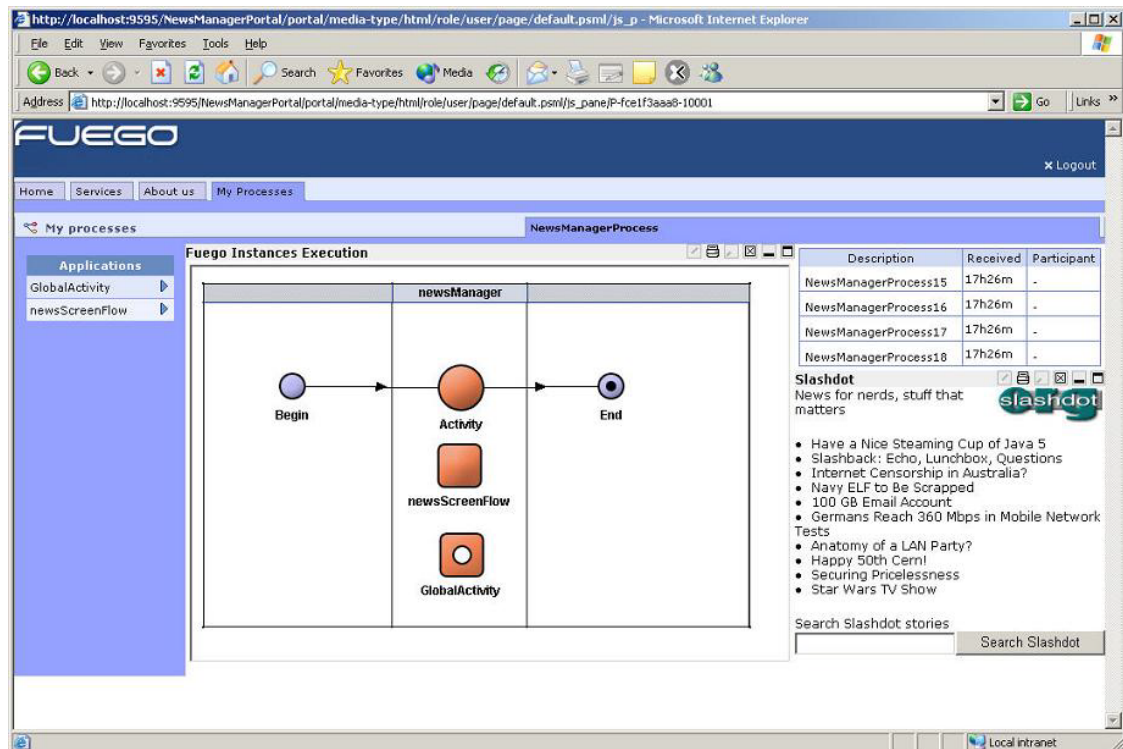
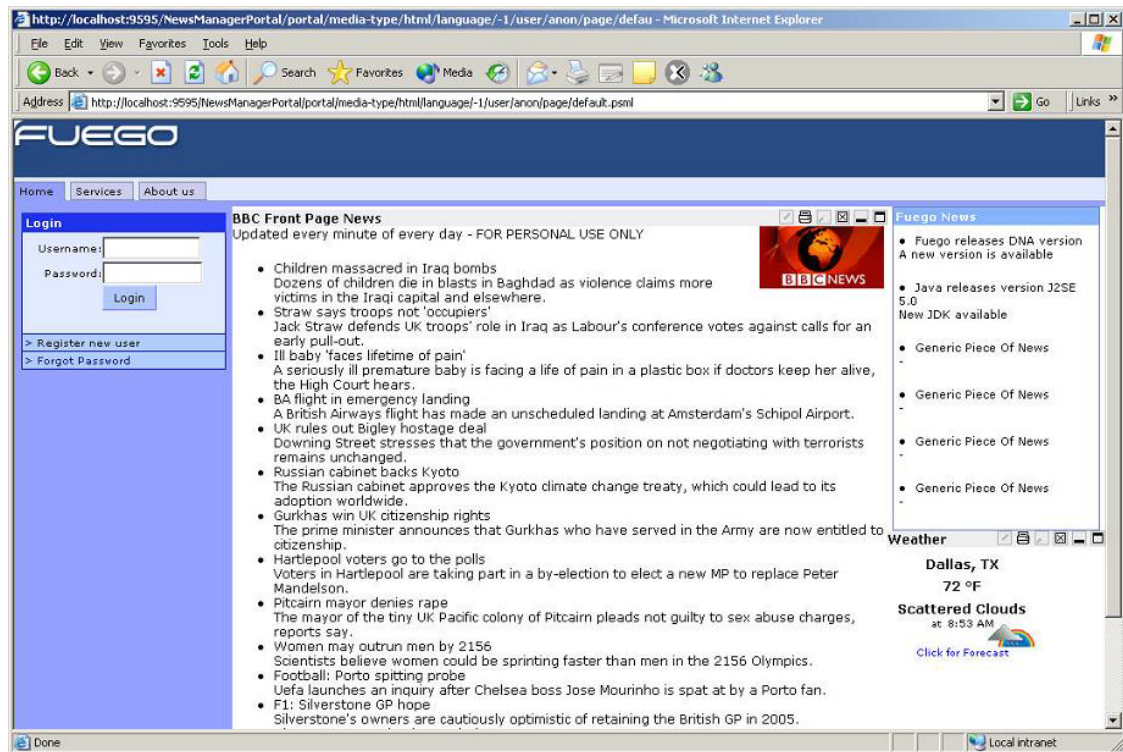
- Process activities and tasks in current instances.
- Customize how your instances are organized using the portlet edition mode.
- Perform operations to a group of instances.
- Add notes and attachments to an instance.
- View detailed task descriptions, notes, attachments and audit information.

## Examples

The following images show some FuegoBPM Portlets deployed on the *Jetspeed JSR-168* compliant portal:



## FuegoBPM Portlets



The following image shows some FuegoBPM Portlets deployed on the



*eXo JSR-168* compliant portal:

Copyright © 2000-2004 The eXo Platform SARL

Descripción	Actividad	Prioridad	Estado	Recibida	Vencimiento	Participante	Contiene archivos adjuntos
<a href="#">TestDNA2118</a>	test	Normal	Ejecución	20h10m	-	-	FALSE
<a href="#">Process119</a>	Interactive	Normal	Ejecución	20h10m	-	-	FALSE
<a href="#">TestDNA2120</a>	test	Normal	Ejecución	20h10m	-	-	FALSE
<a href="#">Process121</a>	Interactive	Normal	Ejecución	20h2m	-	-	FALSE
<a href="#">Process122</a>	Interactive	Normal	Ejecución	20h2m	-	-	FALSE
<a href="#">TestDNA2123</a>	test	Normal	Ejecución	20h2m	-	-	FALSE
<a href="#">TestDNA2124</a>	test	Normal	Ejecución	20h2m	-	-	FALSE
<a href="#">TestDNA2125</a>	test	Normal	Ejecución	19h53m	-	-	FALSE
<a href="#">TestDNA2126</a>	test	Normal	Ejecución	19h53m	-	-	FALSE



---

# Chapter 13. FuegoBPM Portal Console

## FuegoBPM Portal Console

FuegoBPM Portal Console (also known as FuegoBPM Portal Administrator), a Web application that works independently of Work Portal, is designed to give process developers and FuegoBPM system administrators the ability to customize FuegoBPM Work Portal views and functionality.

You can use the Portal Console to define preset views that determine how end users see instance, application, and attachment information. The Portal Console also allows you to customize the Work Portal actions toolbar to provide only the functionality needed by end users.

Although FuegoBPM Studio provides end users an option to generate a set of default views for each business process so that end users can individually choose how they display instances in their Work Portals, in some cases process developers and Fuego system administrators may choose to use Portal Administrator to design a predetermined custom view or set of custom views. These views can be set in Portal Administrator to override the FuegoBPM Work Portal default views.

Developing custom views and presentations not only provides a more productive way to organize the work of Work Portal end users, but also allows the display of particular project and external data variable information.

## Launching FuegoBPM Portal Console

The Web Application Server must be configured to start the web application on its start up. It has to be configured in the *Web Application Server* tab of the **Configuration** option of the FuegoBPM Enterprise Administration Center. For detailed information, refer to the System Administrator Guide, chapter **Configuring FuegoBPM**



## Enterprise/Configuring the Web Application Server.

1. When the Web Application Server is properly configured, once it has been started from the FuegoBPM Enterprise Administrator, the option **Launch FuegoBPM Portal Console** is enabled. Click this option.
2. An Internet browser opens and the login dialog is opened.

The image shows a web browser window displaying the FuegoBPM Portal Console login interface. At the top, there is a dark blue header bar with the 'FUEGO' logo on the left and a 'Help' link on the right. Below the header, the main content area has a light blue background. It contains the text 'Please enter required credentials' centered. Underneath, there are two labels: 'USERNAME:' and 'PASSWORD:', each followed by a white text input field. Below these fields is a 'Login' button with a grey gradient. At the bottom of the window, there is a dark blue footer bar with the text 'FuegoBPM™ - Portal Console'.

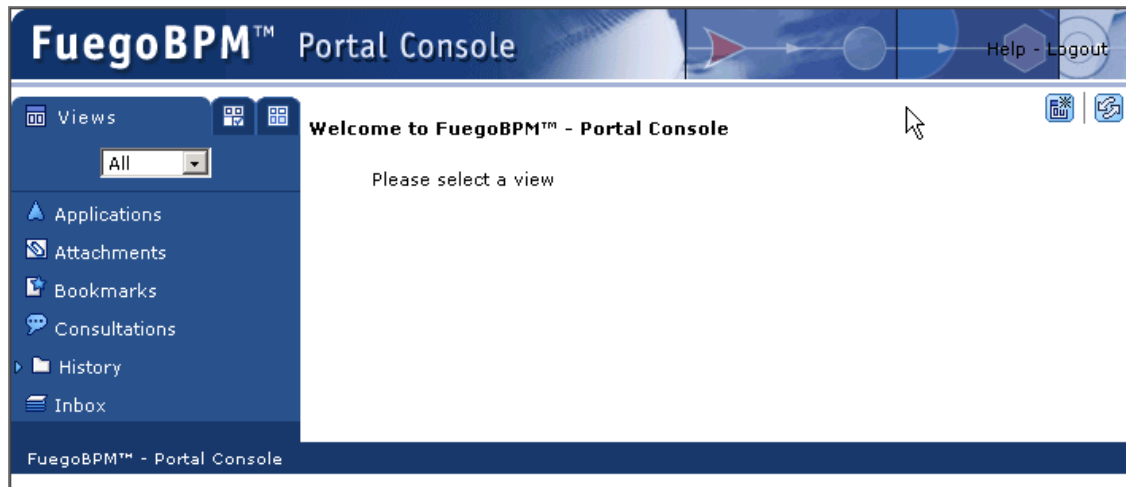
3. Write the FuegoBPM Administrator user and password and click the **Login** button.

The URL where the application resides consists of the following:

- The host name of the system where Web Application Server runs.
- The port number.
- The web application name, by default *portaladmin*.

An example of a valid URL is **`http://localhost:8585/portaladmin/servlet/controller`**.



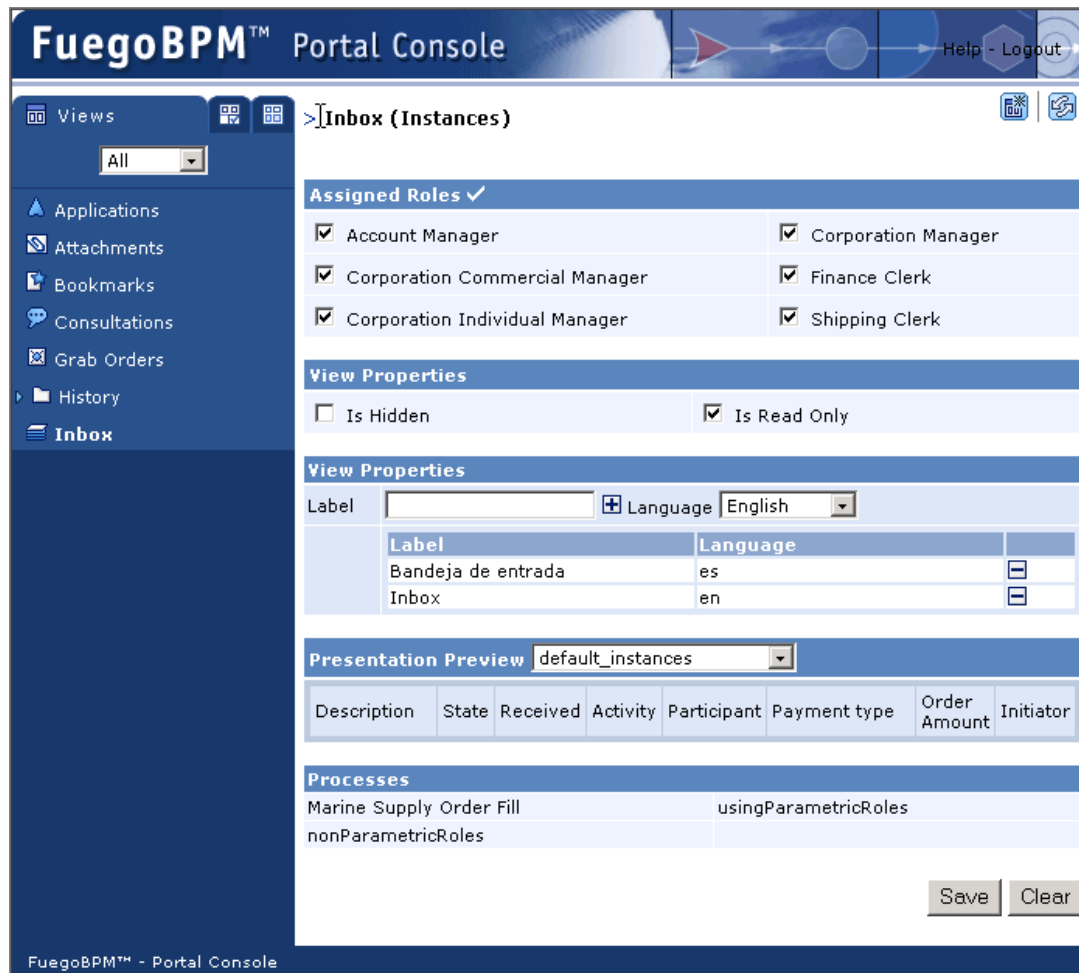


## Application Layout

The Portal Administrator workspace displays the following tabs:

- **Views:** Click this tab to assign views to roles, to determine if a view is hidden from end users or is read-only, and to internationalize the labels of the views, choosing different descriptions for different languages. This tab also allows you to create new views.

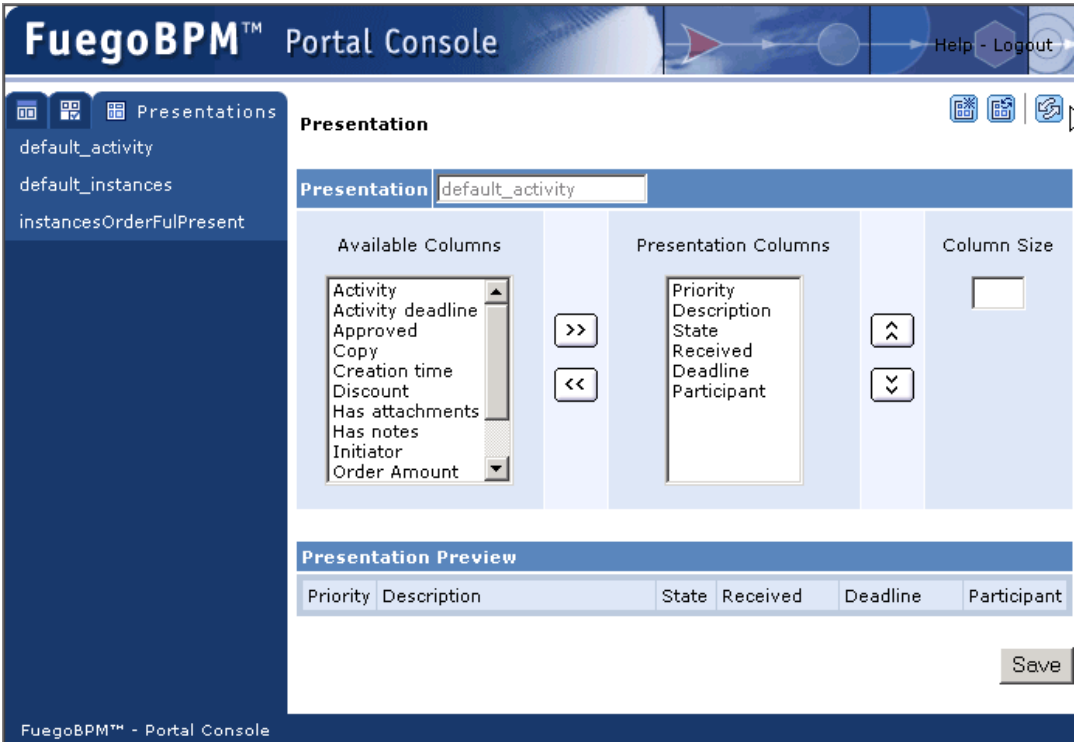




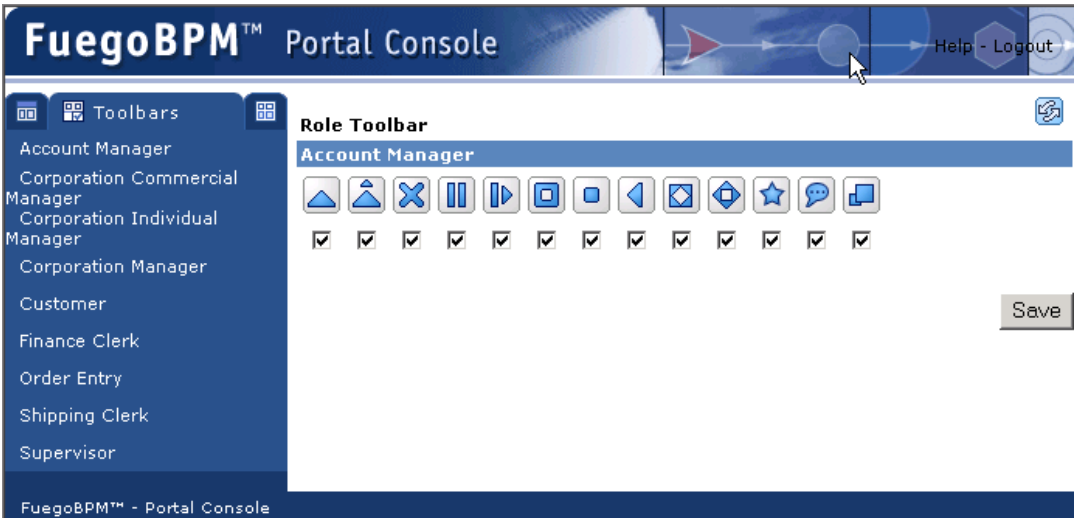
When the **Views** tab is selected, a drop-down list with three options appears. Select **Custom** when you are working on custom views. The **Default** option shows the views that FuegoBPM provides by default for each deployed process only. Select **All** if you want to see all custom and default views at the same time.

- Presentations:** Click this tab to define or modify different sets of columns that determine the layout assigned to one or more views in Portal Administrator. Every presentation determines the data that displays in Work Portal for each view.





- Toolbars:** Click this tab to customize the actions toolbar that best fits the processing requirements of every Organizational role. This is particularly useful to limit the actions toolbar to just those actions permitted for each role.





# Views

Portal Views Administrator allows administrators to design the set of **Views** that users see in their Work Portal sessions.

A view can be designed to show information on instances, attachments, or activities corresponding to global applications.

Views are shown as a tree in both Work Portals and in Portal Views Administrator. The hierarchy of this tree can also be determined by administrators when designing views.

FuegoBPM **always** generates a set of **Default Views** for every deployed process. However, administrators can change the way users organize their work by disabling the provided default set of views and designing a new set of custom views.

## View Attributes

The following table lists the attributes available in views:

Attribute	Description	View Type
Assigned Roles	The organizational roles assigned to the view. Users with roles assigned to a view can see this view in their Work Portals. The list of available roles is made up of all those included in the process or processes selected for the view in the <b>Processes</b> property.	All



Attribute	Description	View Type
Is Hidden	Defines if the view will be visible in Work Portals. Users can see hidden views by selecting the <b>Show hidden views</b> option in the <b>Options</b> dialog of Work Portal.	All
Is Read Only	When the view is defined as read only, the end user is not able to modify the view in Work Portal.	All
Enable Children Views	If this check box is selected when the view is saved, all of its child views are updated with the same roles assigned to the parent view.	Instances
Label	Labels may be defined for the view corresponding to the supported languages (English, Spanish, German, and Portuguese).	All
Presentation Preview	Presentation selected for the view.	Instances-Activity Instances
Processes	Processes included in the view.	All, except Folder
Activity	Activity included in the view.	Activity Instances

By combining the attributes *Is Hidden* and *Is Read Only*, the end user



has the following options:

<b>Is Hidden</b>	<b>Is Read Only</b>	<b>End User Actions</b>
True	True	May be visible by selecting the <b>Show hidden views</b> option in Work Portal <b>Options</b> dialog box, but the view cannot be modified.
True	False	May be visible by selecting the <b>Show hidden views</b> option in Work Portal <b>Options</b> dialog box and the view can be modified.
False	True	The view is always visible to the end user, but it cannot be modified.
False	False	The view is always visible to the end user and it can be modified.

### Note



Work Portal users are not allowed to edit Activity Instances Views, whether the *Is Read Only* attribute is checked or not.

## Editing a View

Default or custom views can be easily edited.

### To edit a view

1. Open the Portal Administrator and select the **Views** tab.



2. Select the view to modify. Its properties appear in the right panel of Portal Administrator.
3. Make the required changes (assign a new role, add a label, change presentation, and so on). The properties to be edited depend on the type of view.
4. Click the **Save** button to save the changes.

The screenshot displays the FuegoBPM Portal Console interface. On the left is a navigation menu with options: Views, Applications, Attachments, Bookmarks, Consultations, Grab Orders, History, and Inbox. The main area is titled '>Inbox (Instances)'. It contains several sections for configuring the view:

- Assigned Roles**: A list of roles with checkboxes, including Account Manager, Corporation Manager, Corporation Commercial Manager, Finance Clerk, Corporation Individual Manager, and Shipping Clerk.
- View Properties**: Options for 'Is Hidden' (unchecked) and 'Is Read Only' (checked).
- View Properties**: A section for adding labels and languages. It shows a table with columns 'Label' and 'Language'. The table contains two entries: 'Bandeja de entrada' with language 'es' and 'Inbox' with language 'en'.
- Presentation Preview**: A dropdown menu set to 'default\_instances' and a table with columns: Description, State, Received, Activity, Participant, Payment type, Order Amount, and Initiator.
- Processes**: A section showing 'Marine Supply Order Fill' with sub-items 'usingParametricRoles' and 'nonParametricRoles'.

At the bottom right, there are 'Save' and 'Clear' buttons. The footer of the console reads 'FuegoBPM™ - Portal Console'.


## Deleting a View

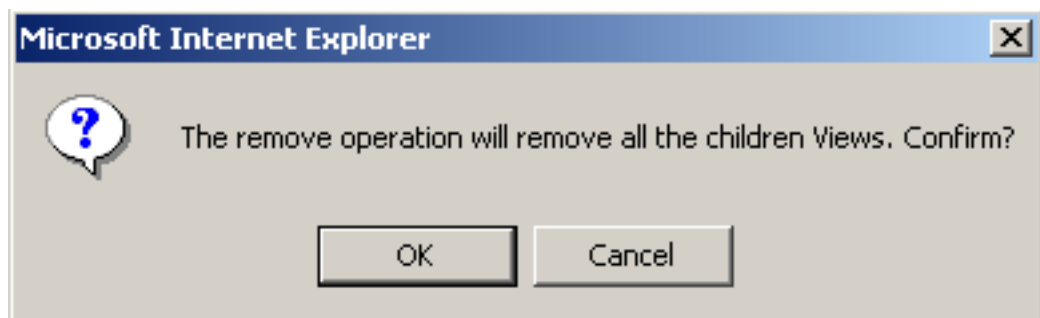
Only custom views can be deleted from Portal Views Administrator. Default views cannot be deleted. When a process is undeployed, the default views for that process are automatically removed. If you are



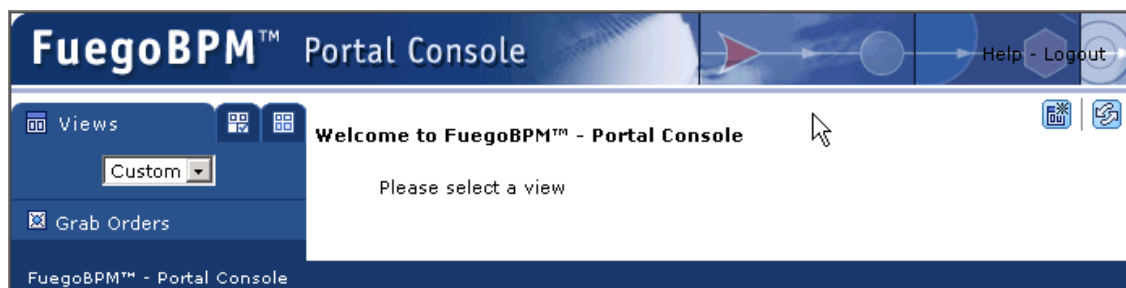
deploying your project without undeploying, then remove the view from the present application. If you need to remove a default view from Work Portals, edit the view and uncheck all the roles in the **Assigned Roles** list.

### To delete a view

1. Open the Portal Administrator and select the **Views** tab.
2. To quickly find the view you want to delete, select the **Custom** option in the drop-down list at the top left of the page. Remember that default views cannot be deleted.
3. Select the view you want to delete by clicking on it in the tree.
4. Click on the delete  icon.
5. If the view has child views, a confirmation message will appear. Click **OK** to delete all of the view hierarchy.




The deleted views are removed from the custom views list.





## Note

 **Important** Remember that custom views might be edited in end users' Work Portals if the **is Read Only** property is set to false. When a user changes a view defined in Portal Administrator, a copy of that view is created to make those changes available only for that user. The copied view replaces the view designed by the administrator. If the view is later deleted from Portal Administrator, the user's view will remain visible, but only for the user that created the copy.

## Default Views

By configuring the **Default Views generation preferences** in the **Server Preferences** window, process designers and administrators can indicate if and when default views must be generated. They can also specify the view format.

Depending on preferences values, there are different sets of Default views.

If the **Unified Inbox** option is selected, the set will consist of the following:

- The **Inbox** view: Through this view, Work Portal users can see all of the instances they have permission to access. No matter what process the instances belong to, instances are displayed under the Inbox view.
- The **Attachments** view: This view enables users with the appropriate permissions to see the attachments of all the instances for every process permitted.
- The **Applications** view: Shows all the global applications corresponding to all of the processes that the user can execute.

If the **By process** option is selected, the set of views consists of the following:



- The **Attachments** view: This view enables users to see the attachments of all the instances for every process the user has permission to access.
- For every process in the project, Work Portal generates a view named after the process ID. The generated view displays instances corresponding to that process if the process has no interactive activities.
- It also generates, under the process view, an **Applications** view for users to see the global applications of that process.

If the **By process and activity** option is selected, the following is provided:

- Work Portal generates an instances view named after the process ID for every process. Under that view, it also generates an instances view for each Interactive activity in the process, which is named after the activity ID. Each view displays only the instances located in that activity.
- An **Applications** view: This view is also generated under each process view.
- The **Attachments** view: This view enables users to see the attachments of all the instances for every process the user has permission to access.

If the **Generate Default Views** option is selected, the following is provided:

- No additional view administration is needed. Users have all the necessary views to perform the work assigned to their roles.
- The **Bookmarks** and **Consultation** default views and the



**History** set of default views are generated.

## Bookmarks

Work Portal users can set bookmarks on instances and can see their bookmarked instances under the *Bookmarks* view, only if these instances have not reached the *End* activity. Work Portal users are not allowed to edit this view.

## Consultation

When working with an instance, Work Portal users are able to make a *consultation* with other participants. All consultations received by the user are displayed in this view, and they are stored as *Notes* instances. Work Portal users are not allowed to edit this view.

## History

The *History* view is a set of views that shows all instances on which the user has been working. Depending on the date and time they are processed, they are included in one of the views that are part of the set.

The *History* view set is based on *weeks*. Users always see instances they are working on from the current week back to three weeks ago (that is, the last 4 weeks). A default view is generated for each past week, and the current week is split in one view per day from the beginning of the week to the current day.

The *History* view set consists of the following:

- Today
- A view per each day that completes the current week
  - Yesterday, if the day before is included



- The name of the day for those days before yesterday
- Last week
- Two weeks ago
- Three weeks ago

The instances are included in each week view (last, two, or three weeks ago) and the views are built for each day to complete the present week according to the week definition. Week definitions depend on the set country, and its definition may be one of the following:

- From Sunday to Saturday
- From Monday to Sunday

The instances included in the History view set are the *In process* ones by default. If required, you may change this and add the *Completed* and/or *Aborted* instances by clicking their corresponding check boxes in the lower **Include Instances** section of the default History view configuration. However, it is strongly recommended that you do NOT include these two instances' status, as access to the database server must be performed in order to retrieve these instances.

The set of History views is default. They are only generated if, at deployment time, the **Generate Default Views** options is selected. Work Portal users are not allowed to edit any of these views.

## Deploying Default Views

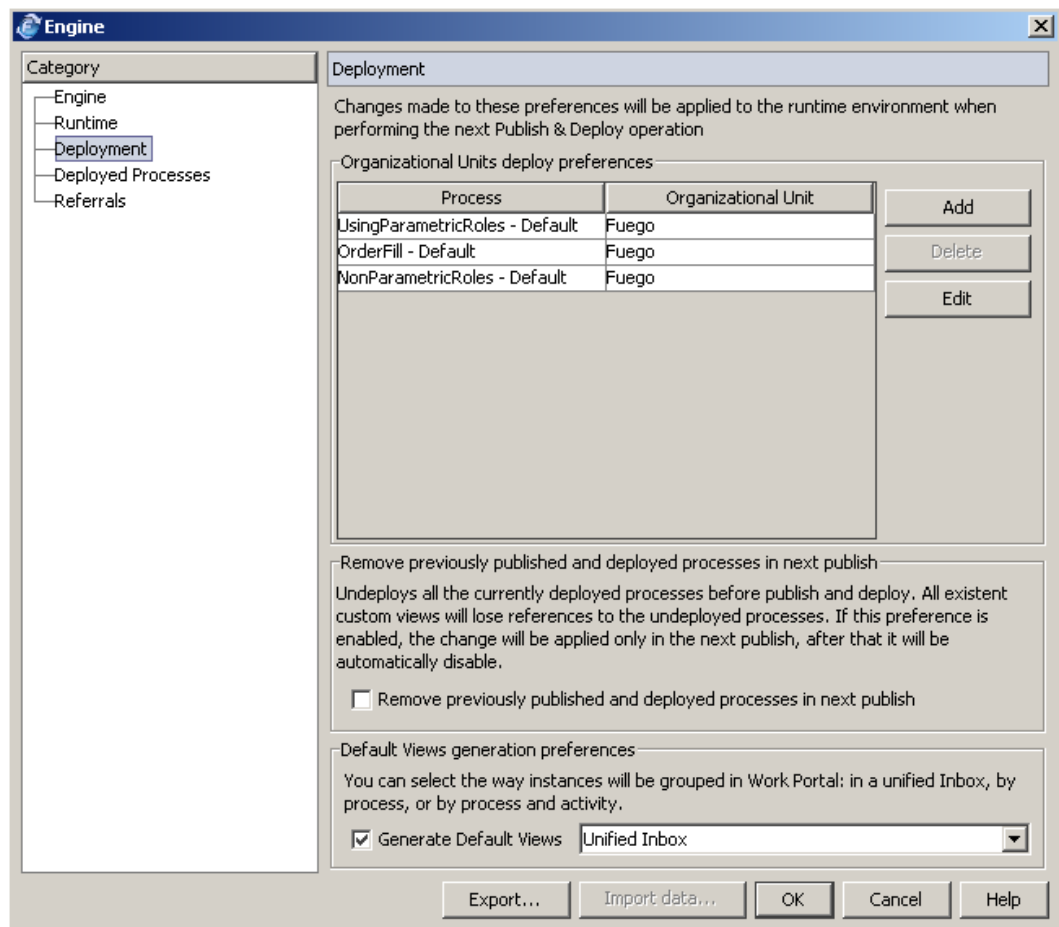
If more than one version of the process is deployed, Portal Administrator consolidates the versions.



When a process is undeployed, the default views associated to it are automatically removed.

### To make views available from FuegoBPM Studio

1. Go to **Run->Server Preferences** in FuegoBPM Studio. The Server preferences window appears.
2. Select the **Deployment** category.



3. Check the check box **Generate default views** at the bottom of the panel to generate default views.
4. Select one of the options that determine how the set of default views is composed. The next **Publish & Deploy** operation will apply changes to this property.



## To make views available from FuegoBPM Enterprise

Choose between basic view configurations when deploying the project from the FuegoBPM Web Console.

The set of **Default Views** ensures that participants have all the needed views to perform the tasks defined for the roles that they are assigned.

### Note



Default views contain instances assigned to the **Participant Roles** without including those assigned to other participants.

## Custom Views

If the default views do not meet your current needs, you can create a new view.

The complete set of available views is displayed in Work Portal and Portal Console as a tree in the application's left panel. The tree structure allows a better way to organize the views. It is possible to nest views in any number of levels. When you are creating a view, you can indicate the Parent View under which the new view will be nested.

When you are creating a new nested view, take into account that the view does not inherit properties from the parent view. There are no restrictions to relate views with different configurations. If you want to create a group of views under a compatible definition (process, conditions, external variables values, and so on), you must do so manually.

You can create views to display instances. You can also create them to display attachments or global applications of one specific process or a set of processes. Depending on the selected processes, the view has to be enabled for all the roles or for a subset of the roles included in those processes. Assigning roles to a view is how a view becomes visible for Work Portal end users with those roles.



If you need to group views with a certain criteria, or to better organize the set of views presented to Work Portal users, you can create a Folder view.

When creating instances views, even though a default presentation is provided, you can set the presentation as you like. This means that it is possible to change the set of columns or information that is presented for Work Portal users.

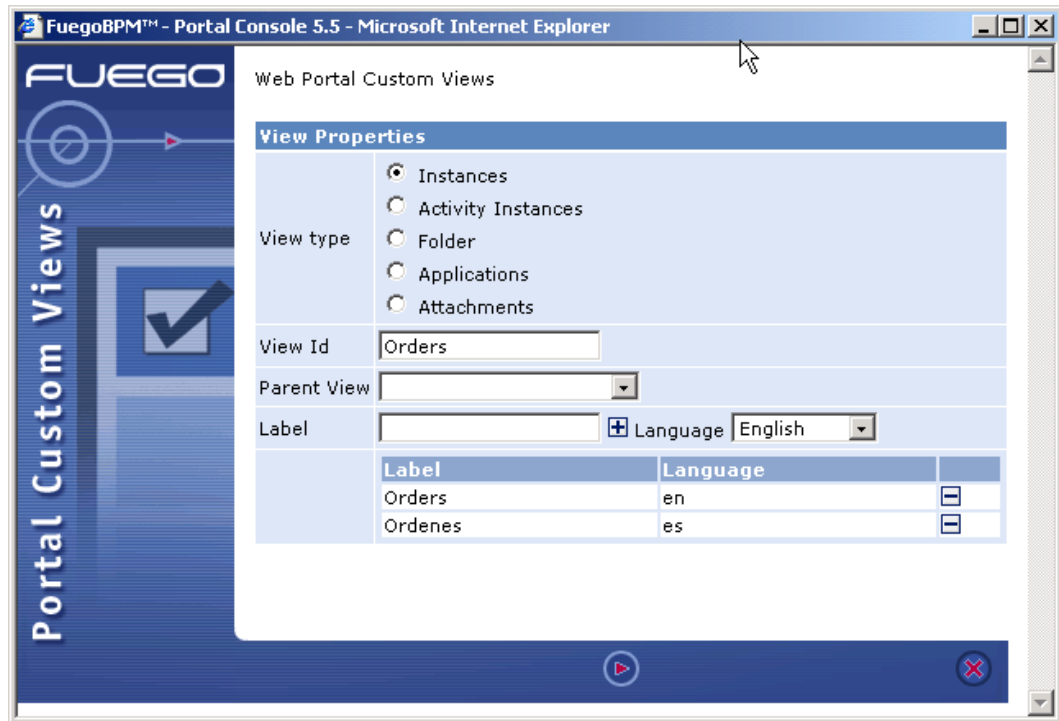
Finally, you can add a set of conditions to filter the instances displayed in a view according to rules. The conditions can be set not only over default information kept for instances of any process, such as deadline or the instance priority, but also over data defined as external variables when the process was designed. For example, an Order Fulfillment process might have defined the order amount as an external variable. It is possible to create a custom view that only displays instances where the order amount is greater than a certain value.

## Creating a view

### To create a view

1. Click the **Create View** icon  in the upper-right of the views workspace. The Work Portal Custom View generator wizard appears.

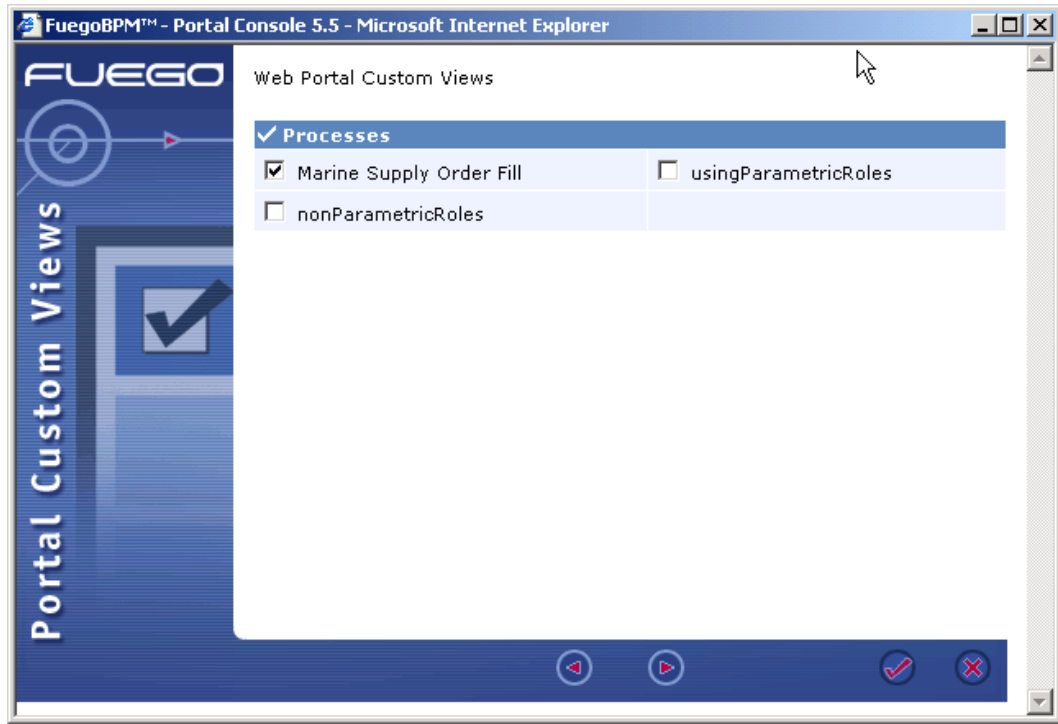




2. Select a View type.
3. Type a name for the view in the **View Id** field. Remember that some non-alphanumeric characters are not allowed ( / , \$ ; + ' " . ).
4. Select a parent view from the **Parent View** drop-down menu. Your new view is nested under this parent view.
5. Type a name in the **Label** field for a language selection. Choose a language from the Language drop-down menu. At least one language must be defined. Once the label is entered and the language is selected, click the **Plus** icon next to the Label field. The label is added. You can repeat this step to localize the label for all the languages in the list. The label is later displayed in Work Portal in the language each user selects in his/her Work Portal options.
6. Click the **Next** icon when you are finished. The dialog box that next appears depends on your **View Type** selection. For all

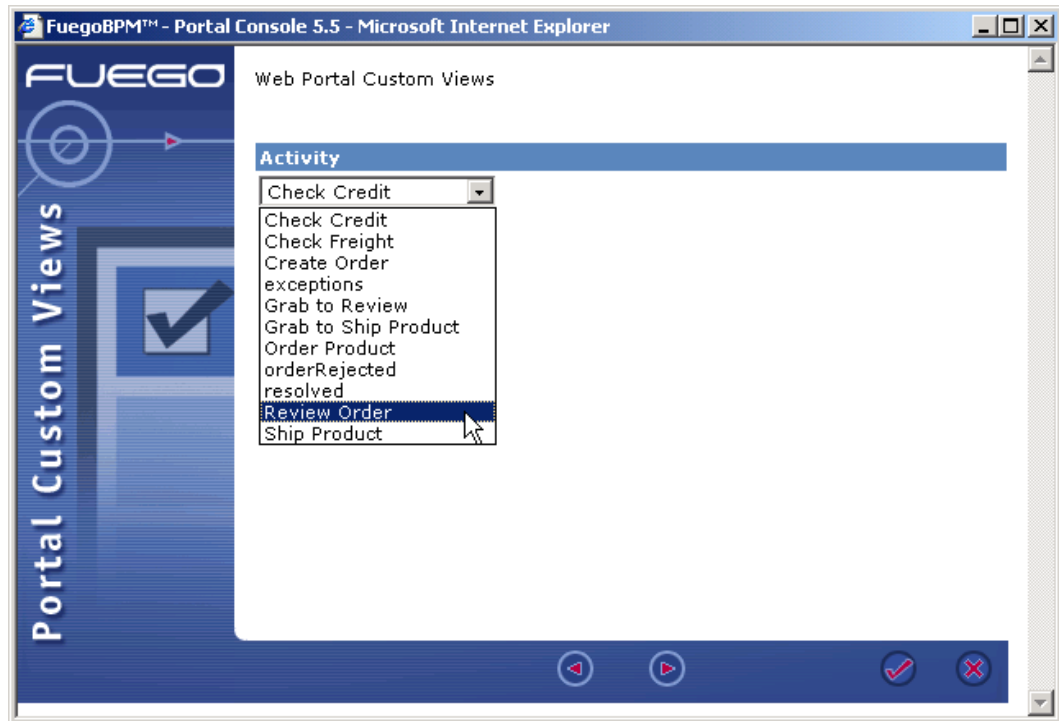


views but **Folders**, the Processes dialog box appears.



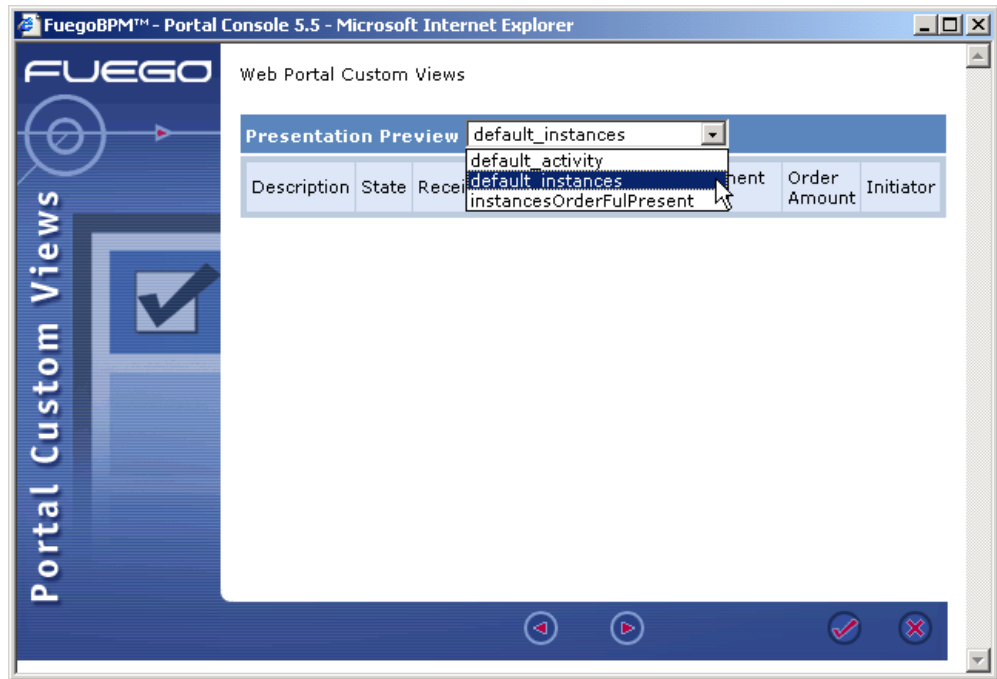
7. Select the processes that will include the new view. All deployed processes are displayed. You may only select one process if you have selected **Activity Instances** on the previous dialog box.
8. If the **Activity Instances** view type is selected, enter the activity next.



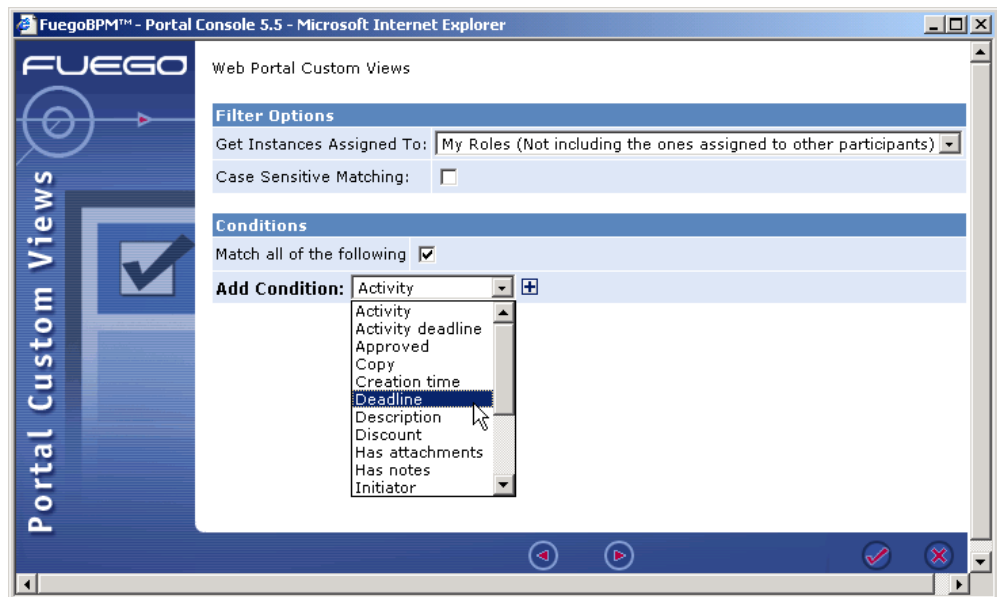


9. If the **Instances** or **Activity Instances** view type is selected, perform the appropriate step:
  - a. If the Presentation Preview dialog box is displayed, the default\_activity is displayed by default because it is an Activity Instance view type. You can select an alternate choice from the Presentation Preview drop-down menu. Click the Next icon.



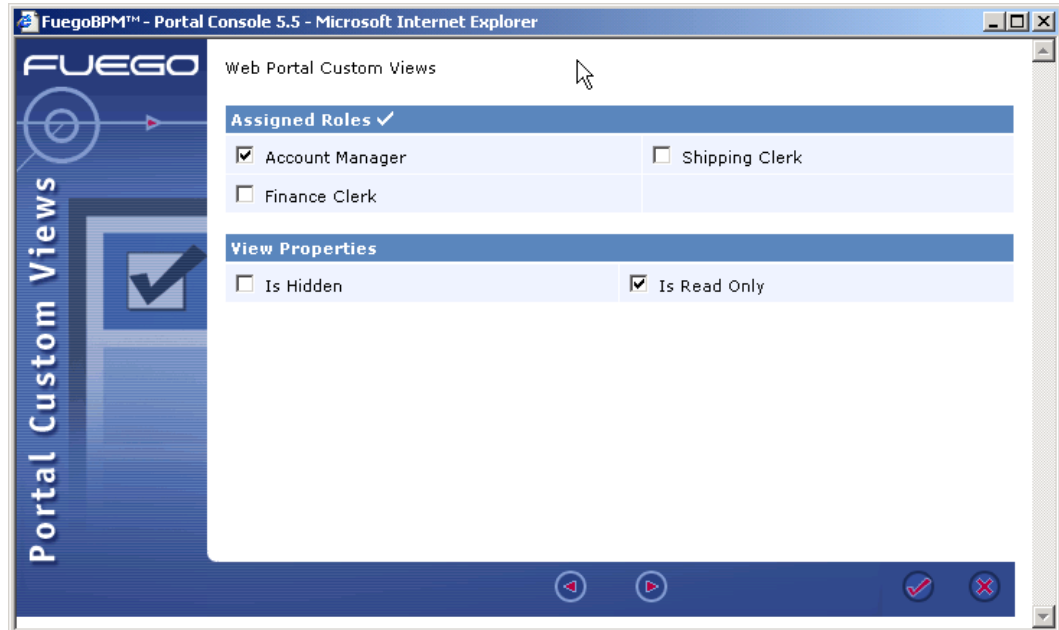


- b. If the Filter Options & Conditions dialog box is displayed, see Filter options for information on setting filters and conditions. The Filter Options and Conditions dialog box allows you to filter the instances that are shown in the view.



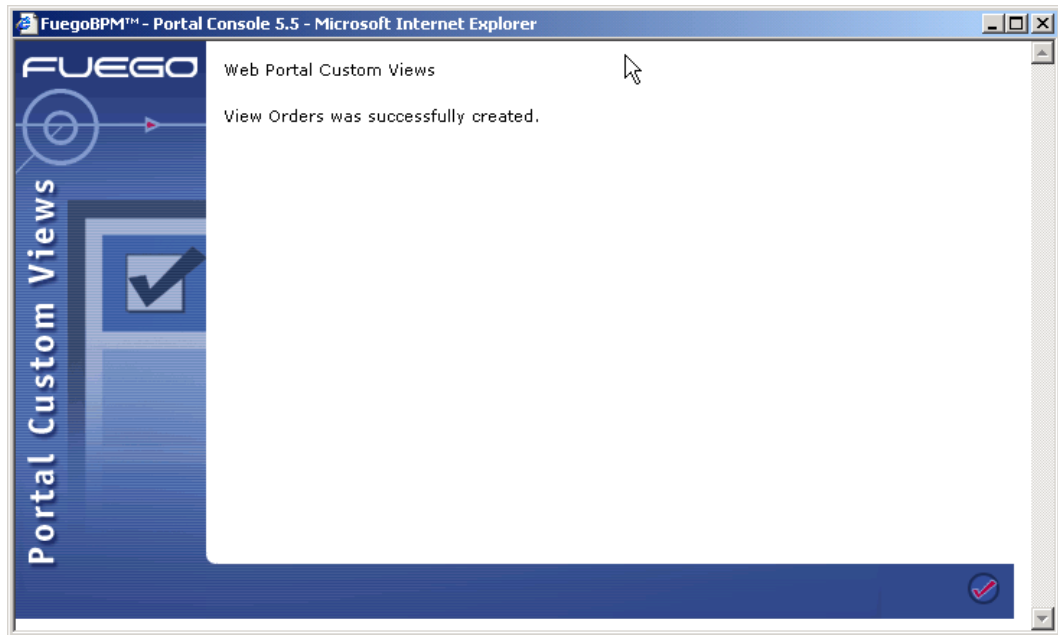


10. For all view types, the **Assigned Roles and View Properties** dialog box is displayed. The available roles correspond to the processes you selected on a previous dialog box. Select **Is hidden** to hide the view. Select **Is Read Only** to disable the ability to modify the view from the Work Portal. Click the **Next** icon.



11. After you finish creating a view, the following screen is displayed to indicate that the view has been successfully created.





## Creating a Grab view




If you want the users to have a view for grab activities of the process. You must create a view of type *Activity Instances* for the grab activity. Custom views always appear in the Work Portal, no matter how you deployed the process views (unified box, by process, by process/activity).

## Filter Options and Conditions

The Work Portal Custom Views dialog box enables you to filter the instances included in the view according to whom they are assigned.



## Web Portal Custom Views

Filter Options	
Get Instances Assigned To:	All 
Case Sensitive Matching:	<div> <div>All</div> <div>Anyone in my roles</div> <div>My Roles (Not including the ones assigned to other participants)</div> <div>Me</div> </div>
Conditions	
Match all of the following	<input checked="" type="checkbox"/>
Add Condition:	Activity deadline  

Possible values for the **Get Instances Assigned To** filter are displayed in the following table:

Filter Value	Action
All	All existing instances are shown, regardless if they are assigned to any participant.
Anyone in my roles	Shows the instances assigned to participants that belong to any of the same roles of the participant logged in the Work Portal.
Me or not one person in my roles	Shows instances assigned to the participant, and in any of the participant's roles, if they are not assigned to another participant.
Me	Shows only instances assigned to the participant.

## Conditions

If the **Match all of the following** check box is selected, all the conditions must be true. Otherwise, the instance is included if at least one condition is true.



The possible conditions are as follows:

- **Activity deadline:** the deadline by which the instance must complete an activity.
- **Copy:** the instance is a copy of an original instance (such as in a Split/Join circuit).
- **Deadline:** the deadline by which the activity must be completed.
- **Description:** the description of the instance. This is a predefined variable set in FuegoBPM Business Language (FBL). This field is case-sensitive if you selected the Case sensitive option.
- **Initiator:** the participant who initiates an instance. This field is case-sensitive if you selected the Case sensitive option.
- **Participant:** the participant who selects an instance. This field is case-sensitive if you selected the Case sensitive option.
- **Process Deadline:** the deadline by which the instance must finish the entire process through the End activity.
- **Priority:** the priority of the instance. This is a predefined variable set in FBL. The possible values are as follows:



The image shows a user interface for selecting a priority. It consists of a label 'Priority' followed by a text input field containing the word 'is'. To the right of the input field is a small green dropdown arrow. Further right is a button with a blue square icon. Below the input field, a dropdown menu is open, displaying a list of priority levels: 'Lowest' (highlighted), 'Low', 'Normal', 'High', and 'Highest'.

- **Received:** the time the instance is received in the activity.



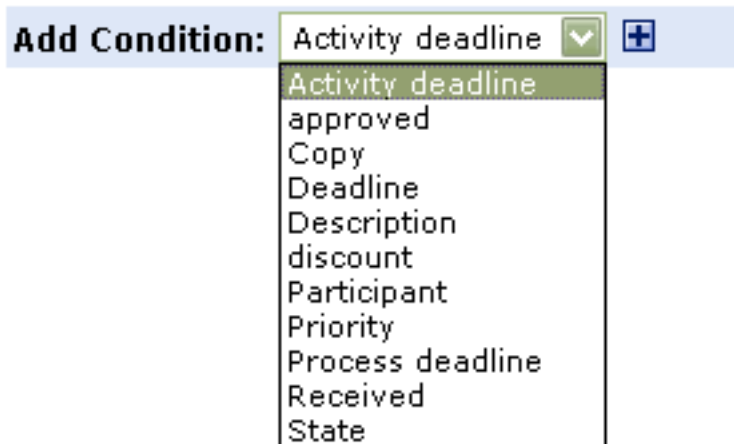
- **State:** the current state of the instance. State is a predefined variable set by the FuegoBPM Server as instances are running through a process. Possible values are as follows:



The screenshot shows a user interface element for selecting a state. It consists of a label 'State' followed by a dropdown menu. The dropdown menu is currently open, showing a list of options: 'Aborted', 'Activity completed', 'Completed', 'Exception', 'Grabbed', 'Running', and 'Suspended'. The 'Aborted' option is currently selected and highlighted. To the right of the dropdown menu is a small blue button with a minus sign.

- **Activity:** the activity where the instance is. This attribute appears for use as a condition only if one process was selected in the Process step of the wizard. When this attribute is selected, the list of activities of the process appears as a list of options.
- **External Variables:** conditions can also be defined over the external variables the process designer created in the deployed processes. If case external variables exist, the **Add Condition** drop-down list includes them. In this case, approved and discount are external variables.



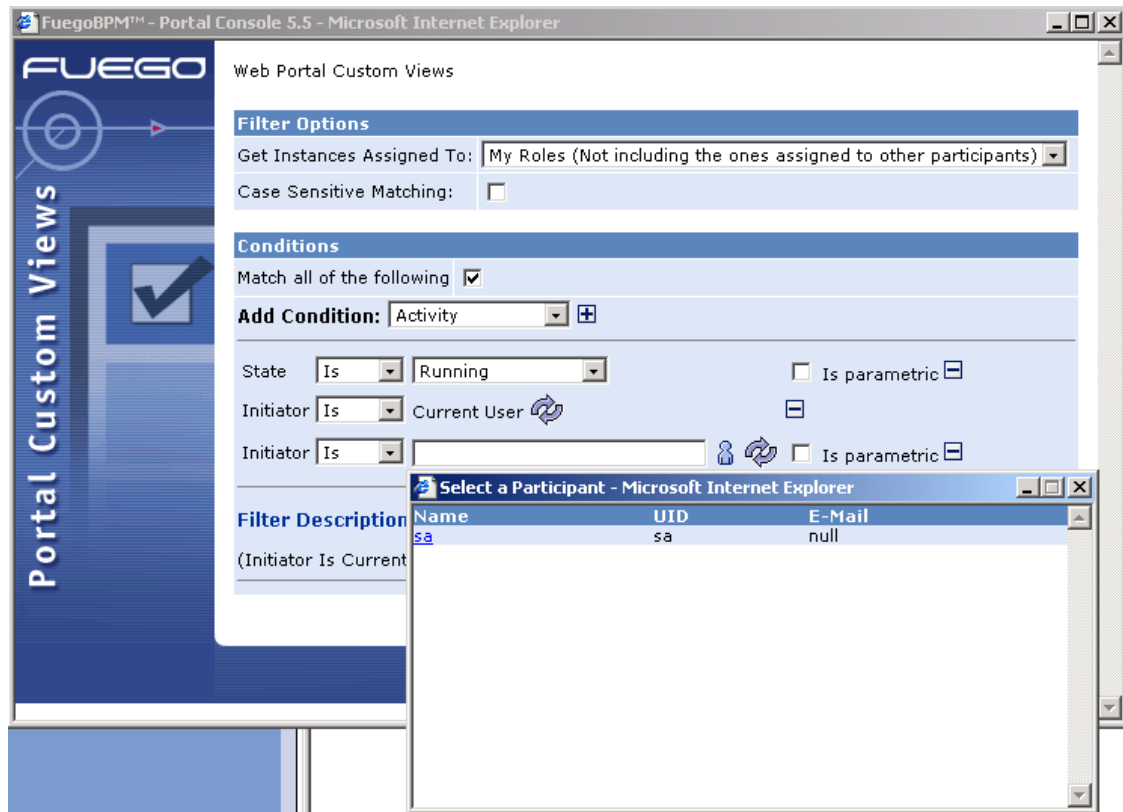


## Parametric Conditions

When a condition on an attribute is defined, it can be set as parametric. If this is the case, Work Portal users can select the value of the attribute and, therefore, instances are included in the view.

The *Initiator* attribute is special because you can set it as the *Current User* by clicking the *Change to select User mode* icon. Therefore, it makes this condition partial parametric because you do not make the Portal user select the participant. This view will vary from user to user.






## Wizard Controls

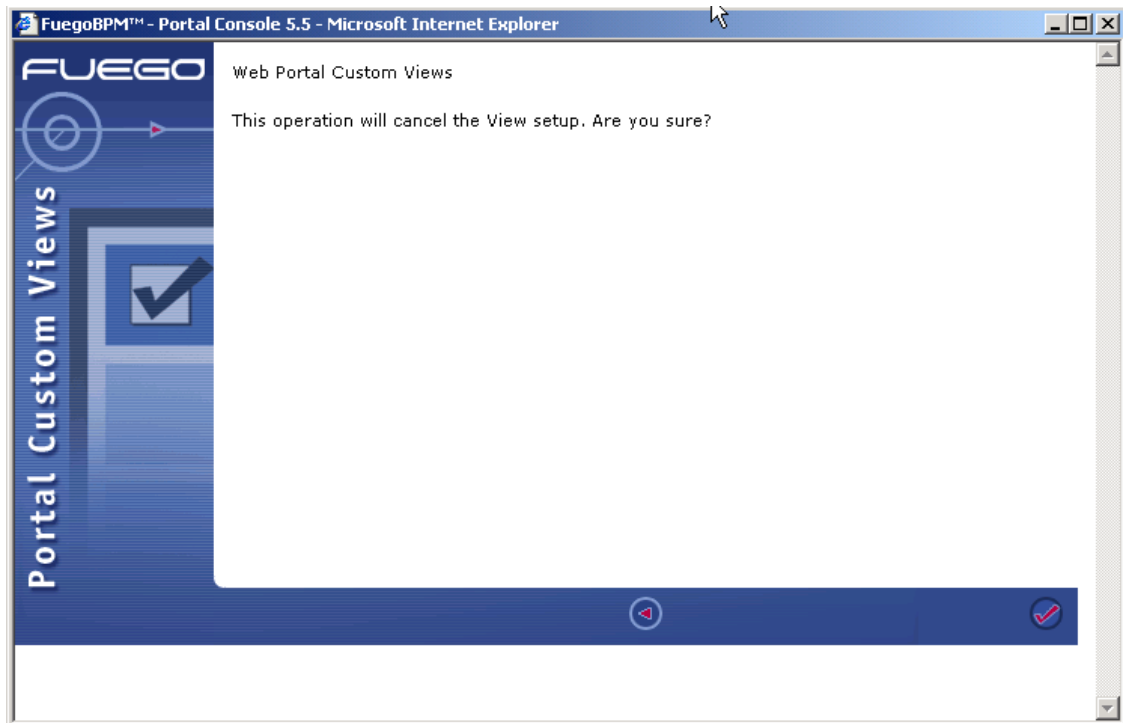
The following table lists the control buttons available during wizard use:

Action	Icon	Description
Previous		Displays the previous step in view creation.
Next		Displays the next step in view creation.
Finish		If the view type, ID, and label are defined, the view is created with default values for those attributes that have not been defined. You can



Action	Icon	Description
		click <b>Finish</b> at any time during view creation.
Cancel		If you cancel the wizard, the view is not created. The confirmation screen shown below this table is displayed.

The confirmation screen that is displayed when canceling the wizard is shown below:



## Presentations

A presentation is the layout that displays an instance view. Instance views are used by Work Portal to show FuegoBPM Process Instances information. A presentation consists of a set of columns and the size of the columns.



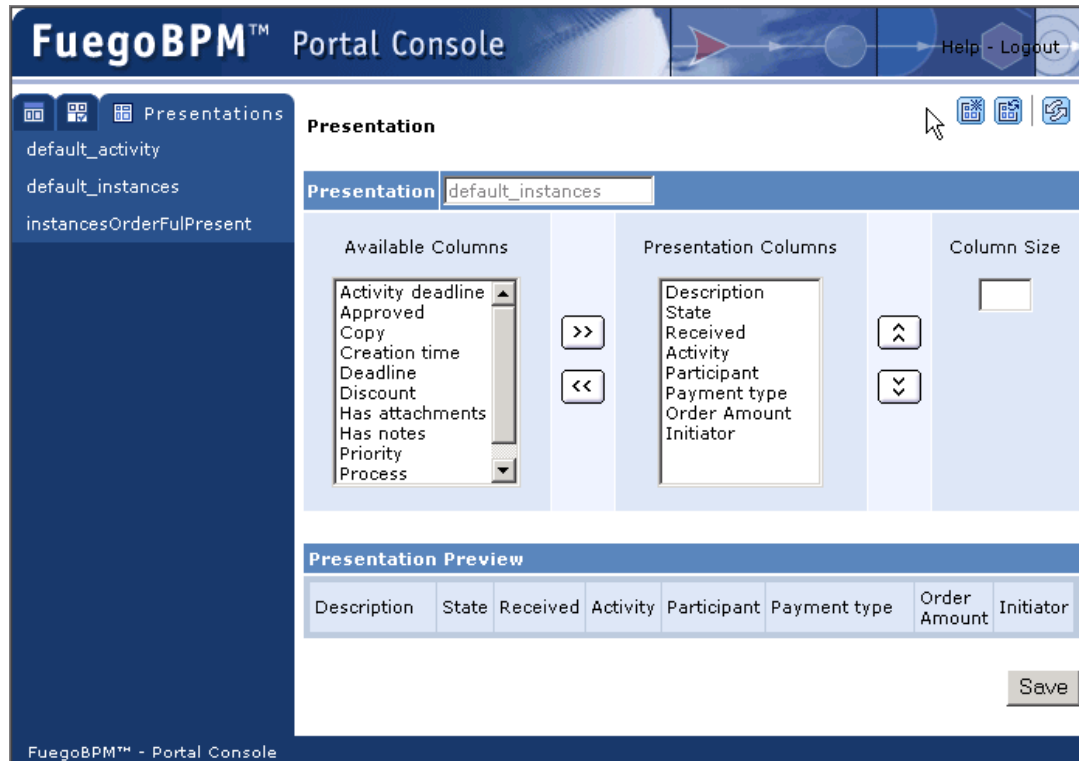
Every column represents FuegoBPM Studio instance data needed by Work Portal users when processing instances. You can create presentations and assign them to views to vary the way instance information is displayed in a view.

FuegoBPM Studio provides a fixed set of data that can be included in a presentation. However, the set of information can be extended by Process Designers. They can decide if other meaningful data or information needs to be made visible for Work Portal users.

FuegoBPM Portal Console provides you with two default presentations. These presentations are assigned to the default views that are automatically created when deploying a process:

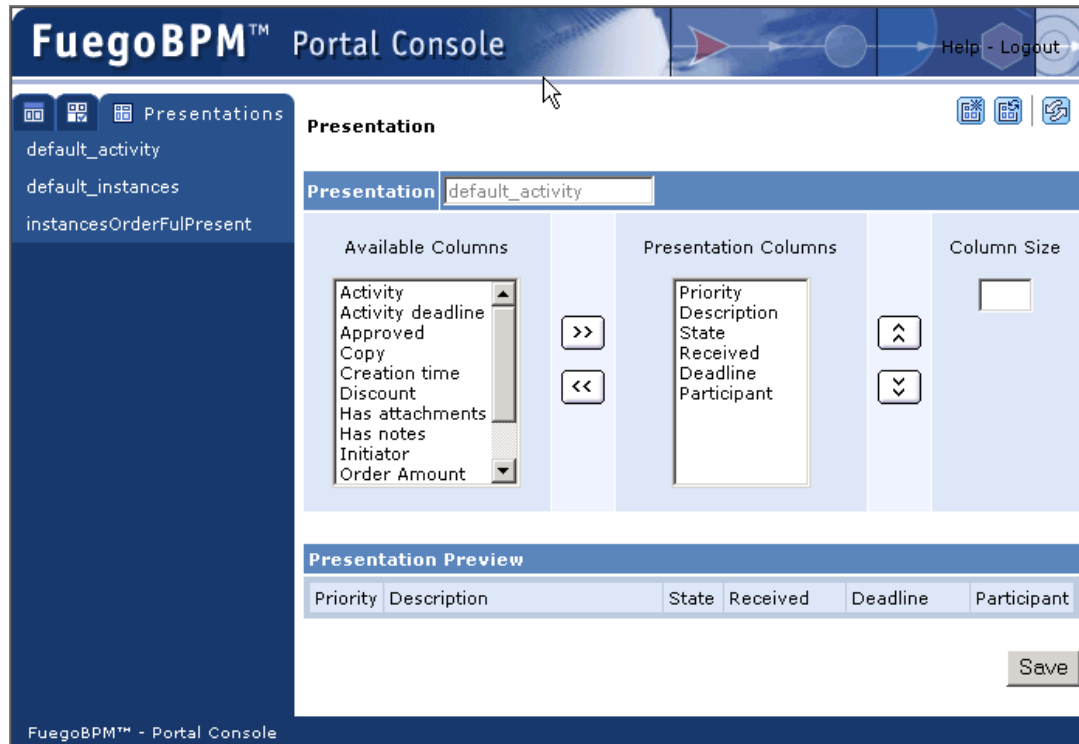
- **default\_instances** : Automatically applied to views that correspond to a process level. No matter the activity, all of the instances in the process are displayed in this kind of view. This is why **default\_instances** presentation columns include the default column **Activity**, which provides users with the information about where an instance is currently located. The following image shows the **default\_instances** presentation columns and additional available columns. An external variable *Order Amount* has been added to the default columns:






- **default\_activity** : Applies to views that correspond to an activity level. The following image shows the **default\_activity** presentation columns and additional available columns. The three external variables, *Order Amount*, *Payment Type* and *Discount*, have been added to the default columns:






Although these presentations have a default set of columns, you can change which columns are displayed. You can also vary the size of each column.

### Note

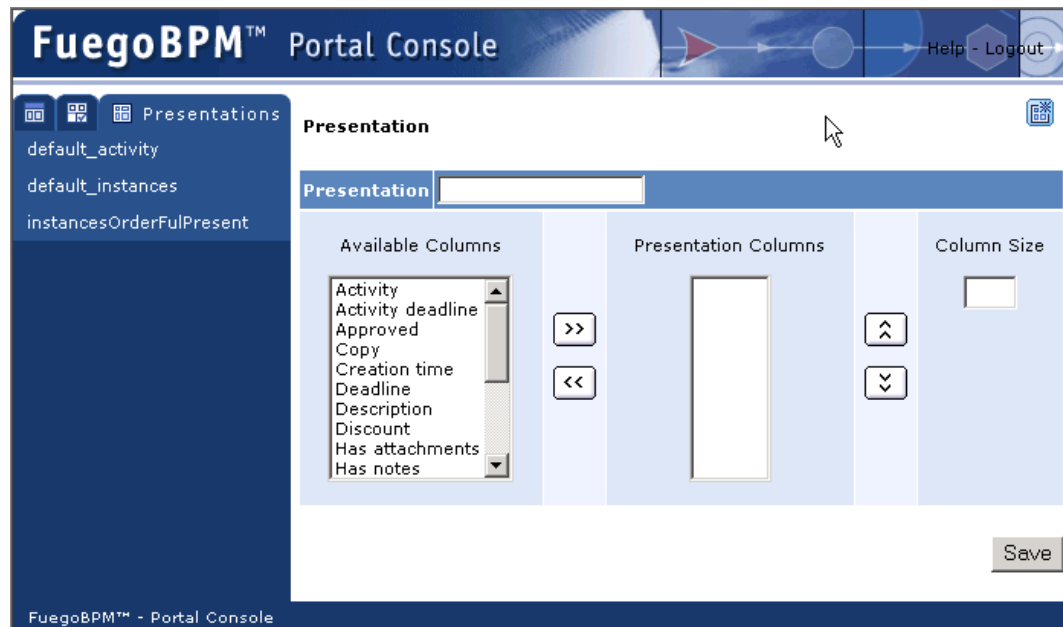
 Any change made to a default presentation in the Portal Administrator applies to every view that uses the default presentation.

## Creating a New Presentation

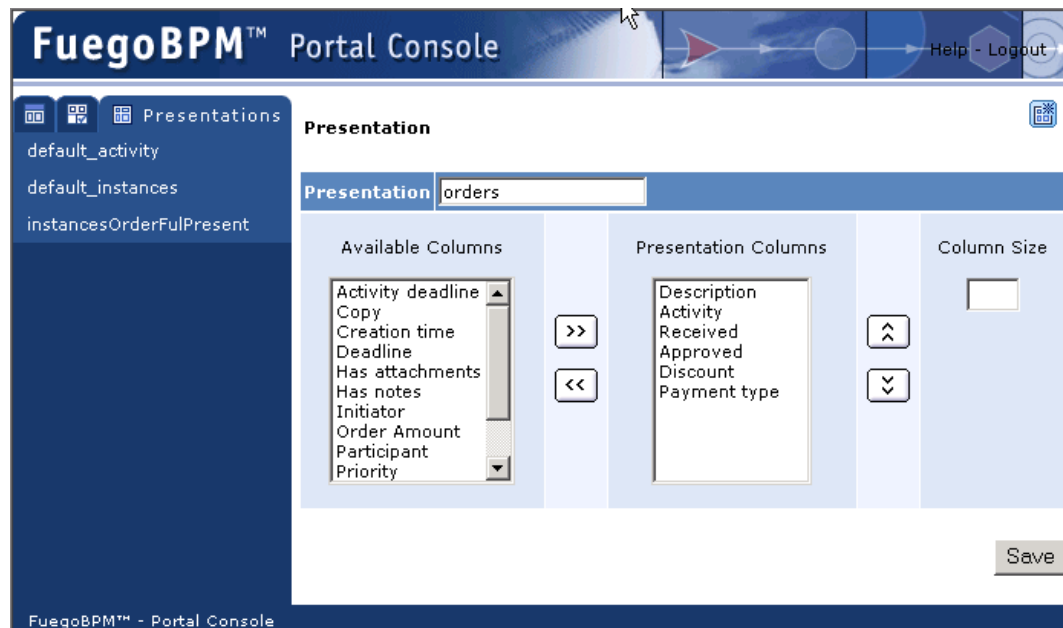
**To create a new presentation**

1. Click the **Create Presentation** icon  in the upper-right corner of the Presentation workspace. The presentation creation workspace appears:



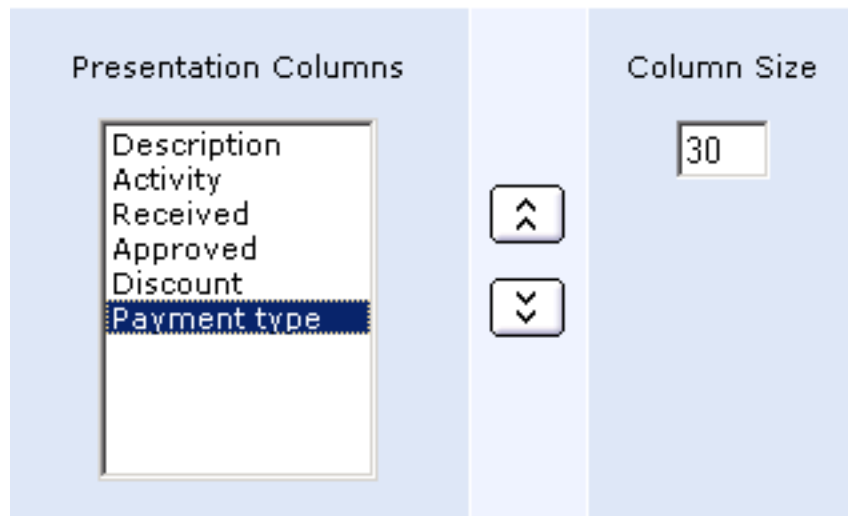


2. Type the presentation name in the **Presentation** field.
3. Select the columns you want to include in your presentation from the **Available Columns** list box. Add or remove options by clicking the column name and then the right or left arrow buttons.





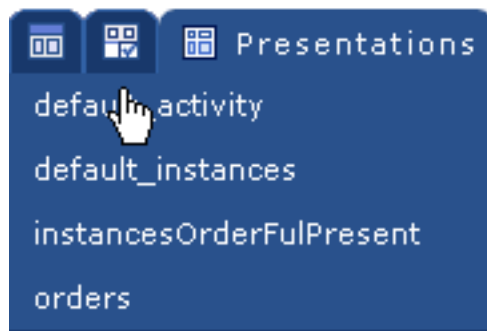
4. Select the order in which the columns should be displayed by clicking the column name in the **Presentation Columns** list box and then the up or down arrows.
5. Select a column from the **Presentation Columns** list box and enter a size for the column in the Column Size field. Repeat this for each column.



The screenshot shows a configuration interface with two main sections: 'Presentation Columns' and 'Column Size'. The 'Presentation Columns' section contains a list box with the following items: Description, Activity, Received, Approved, Discount, and Payment type. The 'Payment type' item is currently selected and highlighted. To the right of the list box are two buttons with up and down arrows for reordering. The 'Column Size' section contains a text input field with the value '30'.

6. Click the **Save** button to save the presentation.

After saving, the new presentation appears on the left side of the Presentation workspace.



The **Presentation Preview** appears at the bottom of the page.



Presentation Preview					
Description	Activity	Received	Approved	Discount	Payment type

## Editing a Presentation

Presentations can be edited easily.


### To edit a presentation

1. Open the Portal Administrator and select the **Presentations** tab.
2. Double-click the presentation to be edited. The presentation properties appear in the right panel of the workspace.
3. Make changes to the columns and column sizes as appropriate.
4. Click the **Save** button.



## Deleting a Presentation

When a presentation is no longer needed, you can delete it.

### To delete a presentation

1. Open the Portal Administrator and select the **Presentations** tab.
2. Select the presentation to be deleted and click the trash can icon  in the upper-right corner of the panel.


### Note

 Default presentations cannot be deleted. The Recover Presentation  icon enables a recovery action. The presentation is restored to its default



values.

## Recovering a Default Presentation









If you wish to revert to the original settings of one of the default presentations, select the default presentation and click the .

**Recover default presentation** icon.







## Toolbars

FuegoBPM Work Portal displays an actions toolbar on top of the instance lists to enable users to easily perform operations such as send, abort, select, and so on for one or more instances. The appearance of toolbar can be customized and limited to contain only the actions that are needed for each role in an organization.

The default toolbar for every role includes the complete set of actions:

 <b>Send</b>	<b>Sends the instance to next activity in the process.</b>
 <b>Send To</b>	Sends the instance to next activity and assigns it to a certain person.
 <b>Abort</b>	Aborts the instance execution.
 <b>Suspend</b>	Suspends the instance execution.
 <b>Resume</b>	Resumes the instance execution.
 <b>Select</b>	Selects the instance so that only the participant who selected it can process it.
 <b>Unselect</b>	Unselects a previously selected instance.
 <b>Back</b>	Returns the instance in exception status to the original activity.



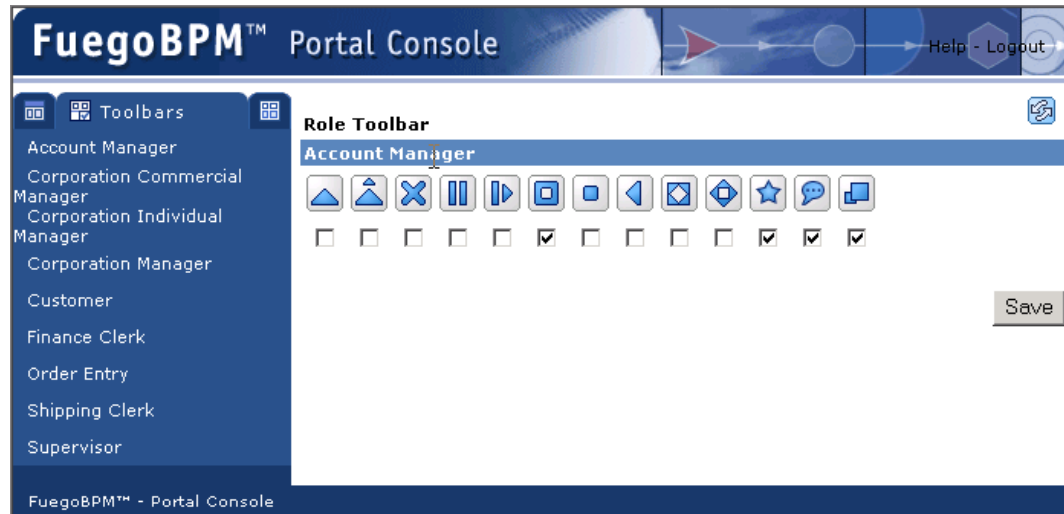
 <b>Send</b>	<b>Sends the instance to next activity in the process.</b>
 <b>Grab</b>	Grabs an instance to modify the execution path.
 <b>Ungrab</b>	Ungrabs a previously grabbed instance.
 <b>Bookmark</b>	Bookmarks instances in the Bookmark view. Bookmarked instances are set by participant; they are not shared between participants.
 <b>Consultations</b>	Enables Work Portal users to ask other participants about an instance with which they are currently working.
 <b>View detail</b>	Displays detailed information for the selected instance.

Administrator users can change the set of actions enabled for each role by using the **Toolbars** tab in Portal Administrator application.

### **To customize role actions toolbars**

1. Launch Portal Administrator.
2. Select the **Toolbars** tab. A list including all of the roles in the organization appears on the left:





3. Click on the role for which you want to customize the actions toolbar. On the right, the complete set of actions appears as a toolbar.
4. Uncheck the actions you want to disable and leave the icons checked for those actions you want to appear in Work Portal for users assigned to the selected role.
5. Save the changes.

## Note



Users assigned more than one role will see a toolbar containing all possible actions enabled for each of their assigned roles.

## How toolbars are displayed in users' Work Portals

After the toolbar is customized in Portal Administrator, Work Portal users will only see the customized toolbar.



FUEGO Work Portal

Welcome, John Smith

Search - Options - Help - Logout

Inbox

Applications

Orders

Attachments

Bookmarks

Consultations

History

Inbox

Showing 1-2 of 2

	Description		State	Received	Activity	Participant	Payment type	Order Amount	Initials
<input checked="" type="checkbox"/>	Diving Supply OrderFill1	<div><div></div><div></div><div></div></div>	Running	5:27 PM	Review Order		cash	100.00	jsmith
<input type="checkbox"/>	Flipper Scuba OrderFill2	<div><div></div><div></div><div></div></div>	Running	5:27 PM	Review Order		credit	20.00	jsmith

FuegoBPM™ - Work Portal



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# Chapter 14. FuegoBPM Archive Viewer

## Using the Archive Viewer

The Archive Viewer is a web application tool that allows you to retrieve information of instances that, after being completed or aborted have been stored in a database.

The FuegoBPM system does not retain instance information once an instance has completed or is aborted.

Usually, whenever an instance reaches the End Activity, the instance actually remains in the End activity with a status of completed or aborted.

The disposer is the tool responsible for deleting these instances according to the schedule configured in the FuegoBPM Web Console's Server Properties. The Disposer is also responsible for archiving; before disposing of the instances it will check to see if archiving was requested. This archiving functionality allows you to save the instance information into a database; storing relevant instance information as well as external variables.

## Logging into the Archive Viewer

To log into the Archive Viewer application, select the **Launch FuegoBPM Archive Viewer** from the FuegoBPM Administration Center. If the option is not available, verify in the **Web Application Server** tab in the configuration dialog, that the option **Start FuegoBPM Archive Viewer on Web Application Server startup** is checked.

The archiving viewer administrator has to define the security policy and rely on any of the well-known web containers security mechanisms. Therefore, FuegoBPM does not provide anything to avoid users to connect to it by default.



## About Access Configurations to Archiving Databases

The first time the FuegoBPM Archive Viewer web application is opened, no access configuration is created so it will prompt the *create database configuration* window. Access configurations are defined **only to connect** to the archiving database. But this configurations do not interfere with the access configuration to the archiving database defined in the FuegoBPM Web Console for the FuegoBPM Server. That is the configuration used to archive data. The configuration required in the FuegoBPM Archive is only used to access the archived data. Both have to be defined with the same configuration parameters.

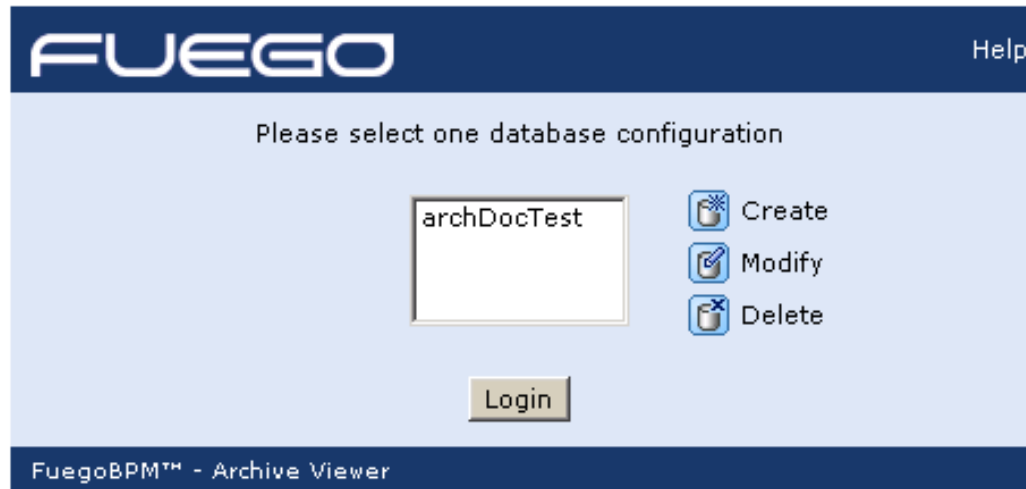
Access configurations to archiving databases are common for all the users. These access configurations are stored in the installation file *\$INST\_DIR/webapps/archivingviewer/WEB-INF/configDrivers.xml* file. This file holds the accesses defined to log in to the archiving databases.

If any user modifies an access configuration, all the users will be affected by the modification. But, again, it does not interfere with the *archiving* process, it will only attempt to connect to another database.

Follow the indications given in Creating a new access database configuration to create an access to the archiving database.

Choose from the access configurations created to log in, and click the **Login** button.





From the Archive Viewer main window you can also do one of the following:

- Select an archiving database configuration to log into
- Create a new access configuration to an archiving database
- Modify an access configuration to an archiving database
- Delete an existing access configuration to an archiving database

## Managing the Archiving database

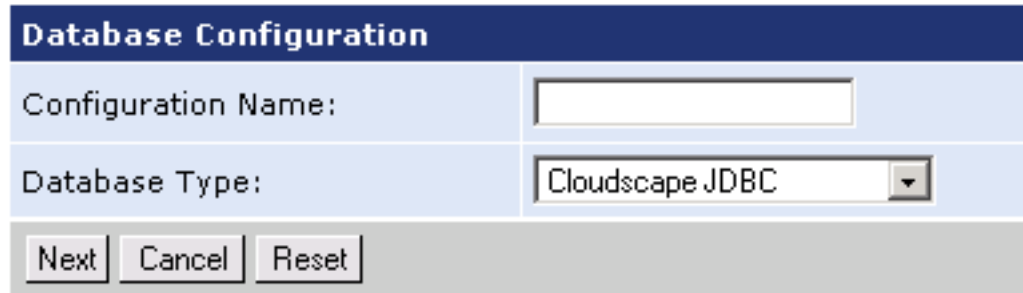
### Creating a new access to archive database

In order to be able to retrieve the information of instances archived in the Archiving database, a new configuration must be created with the same connection information used when defining the Archiving database configuration from Web Console application.

To create a new archiving database access configuration



1. From the log in window, click the **Create** button. The *Database configuration* window displays.



The screenshot shows a window titled "Database Configuration" with a dark blue header. Below the header, there are two input fields: "Configuration Name:" with a text box, and "Database Type:" with a drop-down menu showing "Cloudscape JDBC". At the bottom, there are three buttons: "Next", "Cancel", and "Reset".

2. Type a name for this access configuration you are creating, in the **Configuration Name** field.
3. Select the database type from the drop-down list to configure the Archiving database, and click **Next** to continue.
4. Complete the database configuration fields.



Database Configuration	
Configuration Name:	archDocTest
Database Type:	MSSQL

Properties	
Host	<input type="text" value="jesse"/>
Port	<input type="text" value="1433"/>
Database	<input type="text" value="archiving"/>
User	<input type="text" value="doc"/>
Password	<input type="password" value="xxxx"/>

Runtime	
Maximum Pool size	<input type="text" value="10"/>
Connection Idle time (Mins)	<input type="text" value="5"/>
Maximum opened cursors	<input type="text" value="50"/>

The required fields will change based on the database type selected. Refer to the System Administrator Guide document, **Appendix A - Database Considerations** for more information. See also, **Appendix A - Archiving Database Structure**.

5. Click **Save** to save the database configuration.

## Modifying an access to archive database



## To modify an archive database configuration

1. From the log in window, select the configuration you want to edit and click **Modify**. The window displaying all the configuration data is displayed.

Database Configuration	
Configuration Name:	archDocTest
Database Type:	MSSQL

Properties	
Host	<input type="text" value="jesse"/>
Port	<input type="text" value="1433"/>
Database	<input type="text" value="archiving"/>
User	<input type="text" value="doc"/> <a href="#">Change password</a>

Runtime	
Maximun Pool size	<input type="text" value="10"/>
Connection Idle time (Mins)	<input type="text" value="5"/>
Maximum opened cursors	<input type="text" value="50"/>

2. Modify the appropriate fields and click **Save** to save changes and return to the log in window.
3. Click **Cancel** to exit without changing any data, or **Reset** if you



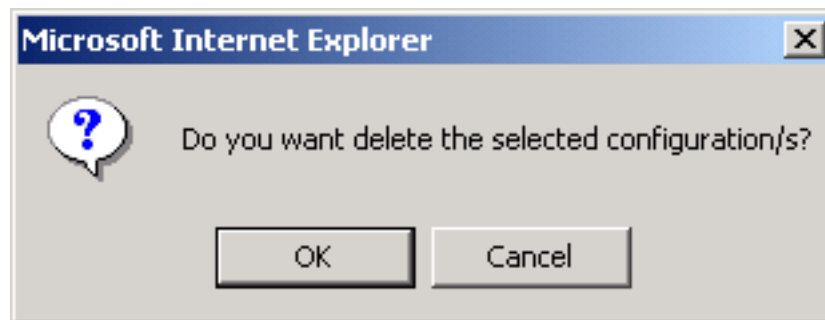
want the original data to be reloaded.

## Deleting an access to archive database

The delete function in the Archive Viewer application only allows you to delete the configuration used to access the archive database. If you want to actually delete the archiving database, you have to do it from the Web Execution Console.

### To delete an archiving database configuration

1. From the log in window, select the database configuration to delete and click **Delete**.
2. The confirmation dialog popup will display. Click **OK** to delete.



## Retrieving Instances

### Selecting the Process to archive

#### To select the archived processes

1. From the Archiving Viewer main window select the organization, containing the archived process, from the drop-down list. A list of archived processes, their publishing date, and the option to download the process' xpdL file displays.



**FuegoBPM™ Archive Viewer**
Queries Status - Help - Logout

**Archive Viewer**
Search Clear

**Organization** company

**Processes**

**CustomerManagement** [Select]  
☒ /CustomerManagement#Default-1.0(2) Feb 1, 2004 6:46:21 AM

**StockAdministration** [None]

**Filter Options**

Case Sensitive Matching:	<input type="checkbox"/>	<b>Batch Request</b>	E-mail:	<input type="text"/>
Maximum amount of instances to retrieve	<input type="text" value="10000"/>		Query Description:	<input type="text"/>
Instances order	Ascending <input checked="" type="radio"/> Descending <input type="radio"/>		Hours until expire:	<input type="text" value="1"/>
Sort instances by	<span>Copy</span>			

**Conditions**

Match all of the following ☒

**Add Condition:** Copy

Search Clear

**Filter Description**

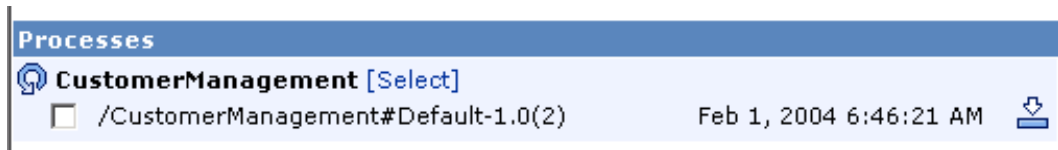
FuegoBPM™ - Archive Viewer


- To search for archived instances you must select at least on process or one of the versions of any of the available processes. Every Procesess listed has three different selection status indicated next to each process name : the options are [None], [All] and [Select]. If you select [None], no instance of that process will be retrieve by the search function. If you select [All], instances of that process, no matter the version of the proces they belong to, will be retrieved. To retrieve instances of a specific version of one of the listed processes, you must use the [Select] option which expands the list showing all the archived versions of the process and allows you to select one or more of those versions. By default, all the processes appear unselected [None]. Click on the process icon to select all the process' versions, the text **[All]** will be displayed on the right side of the process name.





- Click on the process icon again to select that process and expand the process' version. When a process is selected the text indicator **[Select]** will appear on the left of the selected process' name and all the existing versions of the process will be listed below.



- To select a specific version, click in the check box next to that version. If you click on the Download icon , the process .xpd file is downloaded.
- If you click on the icon again, you will deselect all the versions, and the text **[None]** is displayed on the right side of the process.



## Filter Options and Conditions

The Archive Viewer Filter Options allow you to quickly find specific instances by setting a range of options and conditions for searching.

### Filter Options

In the Filter Options area of the Archiving Viewer main window,



Filter Options	
Case Sensitive Matching:	<input type="checkbox"/>
Maximum amount of instances to retrieve	<input type="text" value="10000"/>
Instances order	Ascending <input checked="" type="radio"/> Descending <input type="radio"/>
Sort instances by	<input type="text" value="Copy"/>

1. Click in the Case Sensitive checkbox if you want case sensitive matching of the specified conditions.
2. Type in a number in the Maximum amount of instances to retrieve field. This number will indicate the maximum number of instances you want retrieved from your query.
3. Click in the Ascending or Descending radio buttons to indicate the sorting order for the retrieved instances.
4. Select the sort criteria from the Sort Instances by drop-down list. Options include: Author, Copy, Creation Time, Description, Priority, and State.

Creation time

- Copy
- Creation time
- Description
- Finalization Time
- Initiator
- Priority
- State

## Conditions

Conditions may be established on standard attributes and external variables.



- **Standard Attributes** are the default instance values provided by FuegoBPM on which you can build the conditions. Valid attributes include: Author, Copy, Creation Time, Description, Priority, Shipping Date, State,
- **External Variables** are instance variables. The external variable is used to save information across processes. (For more information, see External Variables in FuegoBPM Studio documentation)

1. Click in the Match all the following checkbox if you want all conditions met.

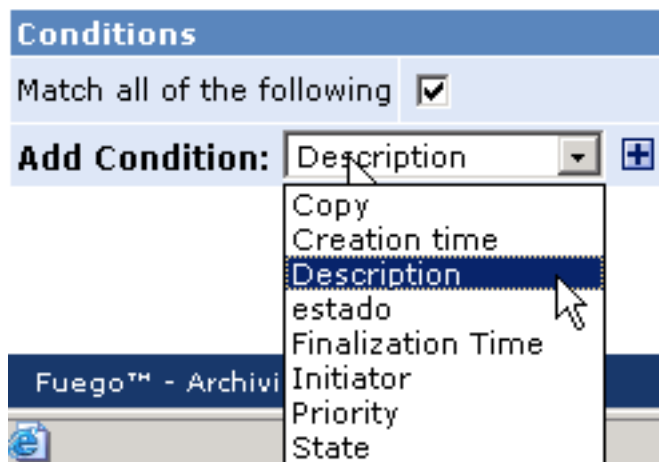


**Conditions**

Match all of the following ☒



**Add Condition:** Description 

2. Select an attribute from the Add Condition drop-down list. The list includes the standard attributes and the list of external variables.



**Conditions**

Match all of the following ☒

**Add Condition:**  

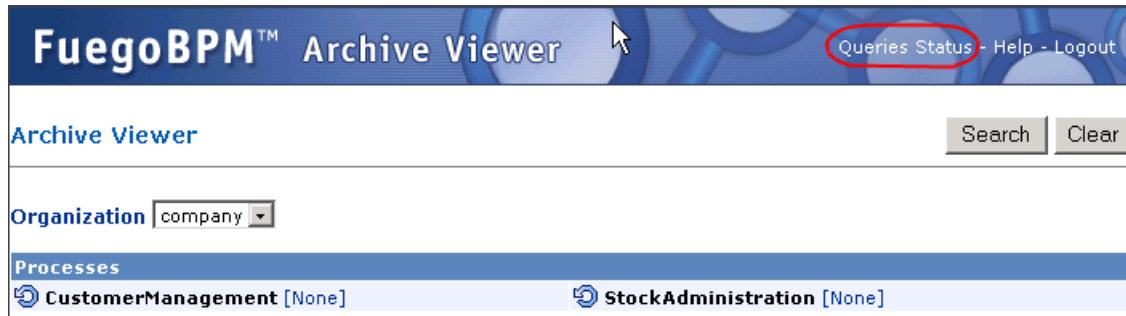
- Copy
- Creation time
- Description**
- estado
- Finalization Time
- Initiator
- Priority
- State

Fuego™ - Archivi



## Query Status

You can get the status of your query by clicking on Query Status, in the top right corner of the archive viewer main window.



The Query Status displays with the following information:

- Request ID
- Current state of the query
- Description of the query
- Available date and time the query will be able to be accessed
- Notification email



## Reviewing Retrieved Instances



The information retrieved consists of all the instances matching the condition specified up to the maximum amount indicated in the maximum amount of instances to retrieve, in the Filter Options area.

r\3

Showing 1-5 of 5							
Description	Priority	State	Creation time	Process	Initiator	Copy	Finalization Time
<a href="#">Martin Hanks</a>	Normal	Completed	Jul 1, 2004 12:39:57 PM	/CustomerManagement#Default-1.0	fuego Fuego	0	Jul 1, 2004 12:40:15 PM
<a href="#">John Smith</a>	Normal	Completed	Jul 1, 2004 12:45:01 PM	/CustomerManagement#Default-1.0	fuego Fuego	0	Jul 1, 2004 12:46:39 PM
<a href="#">Peter Mc Dowell</a>	Normal	Completed	Jul 1, 2004 12:45:19 PM	/CustomerManagement#Default-1.0	fuego Fuego	0	Jul 1, 2004 12:46:42 PM
<a href="#">Ann Parker</a>	Normal	Completed	Jul 1, 2004 12:45:40 PM	/CustomerManagement#Default-1.0	fuego Fuego	0	Jul 1, 2004 12:46:45 PM
<a href="#">Dan Pike</a>	Normal	Completed	Jul 1, 2004 12:46:13 PM	/CustomerManagement#Default-1.0	fuego Fuego	0	Jul 1, 2004 12:46:47 PM

In the top right corner you can move between pages by clicking Next or Prev.

If you click on an instance description the following will display in the instance information panel:

- General information,
- All variables and their values,
- Attachments and Notes,
- Audit trail of the instance, as in the Work Portal.



**FuegoBPM™ Archive Viewer** Queries Status - Help - Logout

**Martin Hanks** 

**Details**

<b>Process Name:</b>	/CustomerManagement#Default-1.0	<b>Priority:</b>	Normal
<b>State:</b>	Completed	<b>Creation time:</b>	Jul 1, 2004 12:39:57 PM
<b>Initiator:</b>	fuego Fuego	<b>Copy:</b>	0

**Variables**

<b>estado:</b>	APPROVED
----------------	----------


**Notes**

Description	Date	Participant	Activity
No notes available.			

**Attachments**













Name	Version	Creator	File Name
No attachments available.			

FuegoBPM™ - Archive Viewer

To view an instances audit trail, click the audit trail icon , on the right of the instance name. The following window appears.

**Audit trail** Help

**Instance: /CustomerManagement#Default-1.0/1/0**

Activity	Event	Responsible	Date	Copy
 <u>NewCustomer</u>	 Completed		01/07/2004 12:39:57	0
 <u>Begin</u>	 Completed		01/07/2004 12:39:57	0
 <u>AppCustomer</u>	 Completed		01/07/2004 12:39:57	0
 <u>AssignCreditLimitToCustomer</u>	 Completed		01/07/2004 12:40:06	0
 <u>FinalCustomerInfoCheck</u>	 Completed		01/07/2004 12:40:09	0
 <u>End</u>	 Completed		01/07/2004 12:40:14	0

FuegoBPM™ - Archive Viewer

## Batch Request

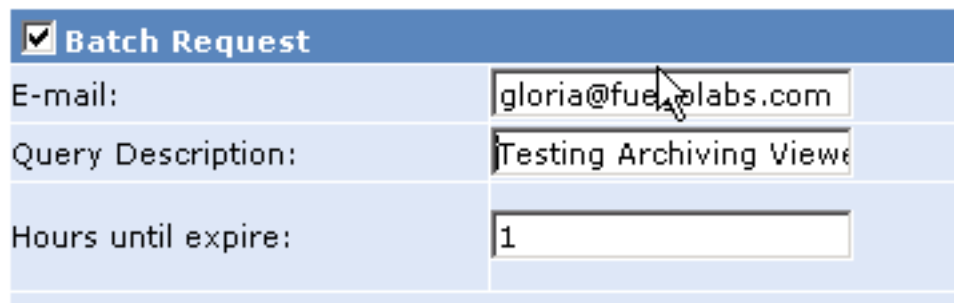
With the FuegoBPM Archiving Viewer you have the ability to submit a batch request. Because the archiving database contains lots of information, querying the archive database could take a long time.



However, with the Archive Viewer, you can submit your query as a batch request. The query will be performed in the background and the query results will be accessible through the link available in the notification mail or the query status panel.

### To perform a batch request

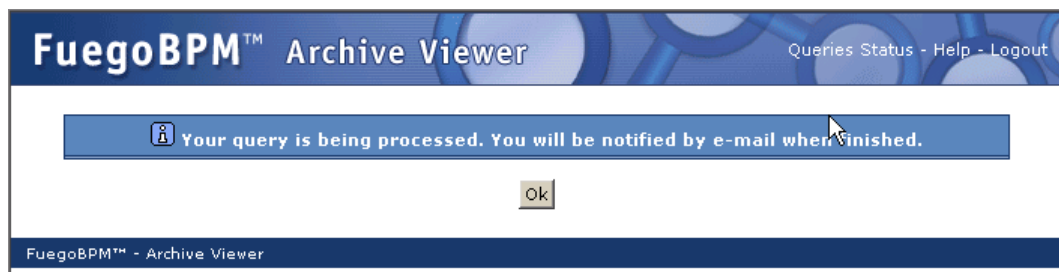
1. From the Archiving Viewer main window, click in the Batch Request check box to indicate you are submitting this query as a batch request.



The screenshot shows a form titled "Batch Request" with a checked checkbox. It contains three input fields: "E-mail:" with the value "gloria@fuegoelabs.com", "Query Description:" with the value "Testing Archiving Viewer", and "Hours until expire:" with the value "1".

<input checked="" type="checkbox"/> Batch Request	
E-mail:	gloria@fuegoelabs.com
Query Description:	Testing Archiving Viewer
Hours until expire:	1

2. In the email field, type the address of the person you want notified when the batch query is completed.
3. Type a description of the query in the Query Description field.
4. **Hours until expire:** Type a number indicating the **quantity of hours until the query will be available to access**.
5. When you submit your request the following window will display.



6. After submitting your query, you will be able to access to the query result both through the link available in the notification



mail or the Query Status panel. The query has a unique request id, through which the result of the query is available.

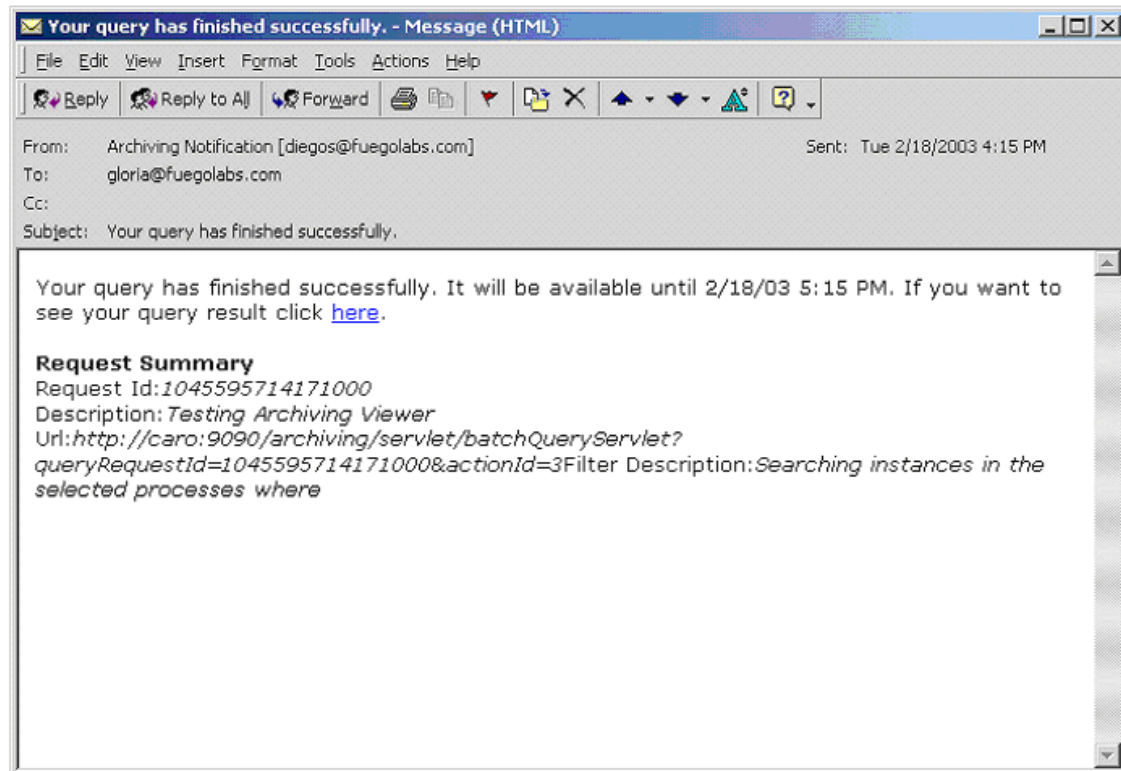
## Notification Mail

The notification email will be received in the e-mail address specified in the Batch request section. The query has a unique request id through which the result of the query is available. No login is required to access the query results, as the users do not require a login to use the Archive Viewer. The request id of the query has the relation with the access configuration to the archiving database on which the query was created.


The properties used to compose this email are defined in the `archiving.properties` file and include the:

- Sender address, taken from the property: `fuego.archiving.mailFrom`.
- SMTP Server used to send the mail, taken from the property: `fuego.archiving.smtpServer`.
- URL to which the link will be established, taken from the property: `fuego.archiving.archivingURL`.





## Note

 The From email and URL are the values set in the example properties file mentioned the Archiving Viewer, Required Configuration section above.



---

# Chapter 15. Archiving Data structure

## Archiving Data Structure

### Archiving Schema

The database structure to save the entire archived instance is detailed in the following schema.

### INSTANCE INFORMATION

#### INSTANCE

- ORGANIZATIONIN, DECIMAL (8, 0), NOT NULL, Organization Numerical ID
- PROCESSIN, DECIMAL (8, 0), NOT NULL, Process Numerical ID
- INSTANCEIN, DECIMAL (8, 0), NOT NULL, Instance Numerical ID
- THREADIN, DECIMAL (5, 0), NOT NULL, Instance Copy Numerical ID
- DESCRIPTION, VARCHAR2 ( 255), DEFAULT NULL, Description
- PARENTTHREAD, DECIMAL (5, 0), NOT NULL, Parent Copy
- PRIORITY ,INTEGER, NOT NULL, Priority
- CREATIONTIME, DATE, NOT NULL, Instance Creation Date
- AUTHOR, DECIMAL (8, 0), NOT NULL, Instance Creator
- PROCESSDEADLINE, DATE, DEFAULT NULL, Process Due Date
- ACTIVITYNAME, VARCHAR2 (255), DEFAULT NULL, Activity Name
- TOTALTHREADS, DECIMAL (5, 0), DEFAULT NULL, Number of copies



- STATE, INTEGER, NOT NULL, Status
  - INSTANCE\_RUNNING = 1
  - INSTANCE\_EXCEPTION = 2
  - INSTANCE\_SUSPENDED = 3
  - INSTANCE\_GRABBED = 4
  - INSTANCE\_COMPLETED = 5
  - INSTANCE\_ABORTED = 6
  - INSTANCE\_ACTIVITY\_COMPLETED = 7
- FINALIZATIONTIME, DATE, NOT NULL, Date in which the instance arrived to the END activity

PRIMARY KEY (ORGANIZATIONIN,PROCESSIN, INSTANCEIN, THREADIN)

## ATTACHMENT

There are two types of records:

1. **Attachment Record** - These records contain the real attachment data. The attachment is created while the instance is processed or any related instance creates the attachment (child, grandchild, and so on). The attachments created by the related instances are saved in the higher hierarchal parent if the Subflow or Process Creation activity property *Attachments can be visible to related* is enabled.
2. **Attachment Reference for Related Instance Record** - These records are created if an instance is created from a Subflow or Process Creation activity, and the activity's property *Attachments*



*can be visible to related* is enabled. In this case, the real attachment data will be attached to the parent and the related instance will have a record that references to the parent instance ID

- ORGANIZATIONIN, DECIMAL(8, 0), NOT NULL, Organization numerical ID.
- PROCESSIN, DECIMAL (8, 0), NOT NULL, Process numerical ID.
- INSTIN, DECIMAL (8, 0), NOT NULL, Instance Numerical ID.
- CREATIONTIME, DATE, DEFAULT NULL, Attachment creation time.
- ATTACHMENTIN, DECIMAL (8, 0) , NOT NULL, Attachment numerical ID.
- NAME, VARCHAR2 ( 255), DEFAULT NULL, Attachment name.
- DESCRIPTION, VARCHAR2 ( 255), DEFAULT NULL, Attachment description.
- VERSION, DECIMAL (3, 0), NOT NULL, Attachment version.
- LASTVERSION, INTEGER, NOT NULL, Latest version.
- CREATOR, DECIMAL (8, 0), NOT NULL, Attachment author.
- REMARKS, VARCHAR2 ( 255), DEFAULT NULL, Remarks.
- OSINFO, VARCHAR2 ( 60), DEFAULT NULL, Operation system.
- CANBEREFERENCED, INTEGER, NOT NULL, Indicates that this attachment record can have further references from a related instance. This field is applicable only for records type 1.
- REMOTEREERENCE, VARCHAR2 ( 255), DEFAULT NULL, Instance ID of the instance that has effectively the attachment. The instance ID of the higher hierarchal parent. This field is applicable



only for records type 2.

- CONTENTSIZE, DECIMAL (8, 0), DEFAULT NULL, Attachment content size.
- CONTENT, LONG RAW, DEFAULT NULL, Attachment content.

PRIMARY KEY (ORGANIZATIONIN,PROCESSIN, INSTIN, ATTACHMENTIN, VERSION)

### REMARKS

- ORGANIZATIONIN, DECIMAL (8, 0), NOT NULL, Organization Numerical ID
- PROCESSIN, DECIMAL (8, 0), NOT NULL, Process Numerical ID
- INSTIN, DECIMAL (8, 0), NOT NULL, Instance Numerical ID
- CREATIONTIME, DATE, NOT NULL, Remark Creation time
- REMIN, DECIMAL (4, 0), NOT NULL, Remark Numerical ID
- PARTICIPANT, DECIMAL (8, 0), NOT NULL, Participant who added the remark
- ACTIVITYNAME, VARCHAR2 ( 255), DEFAULT NULL, Activity in where the remark was added
- REMARK, LONG RAW, DEFAULT NULL, Remark content

PRIMARY KEY (ORGANIZATIONIN,PROCESSIN, INSTIN, CREATIONTIME, REMIN)

### VARIABLE

- ORGANIZATIONIN, DECIMAL (8, 0), NOT NULL, Organization



Numerical ID

- ID, VARCHAR2 ( 255), DEFAULT NULL, Variable ID
- VARIABLETYPE, VARCHAR2 ( 255), NOT NULL, Variable Type

PRIMARY KEY (ORGANIZATIONIN, ID)

### **BOOLEANVARIABLE**

- ORGANIZATIONIN, DECIMAL (8, 0), NOT NULL, Organization Numerical ID
- PROCESSIN , DECIMAL (8,0), NOT NULL, Process Numerical ID
- INSTIN , DECIMAL (8,0), NOT NULL, Instance Numerical ID
- THREADIN , DECIMAL (8,0), NOT NULL, Instance Copy Numerical ID
- ID, VARCHAR2 ( 255), NOT NULL, Variable ID
- VALUE, INTEGER, NOT NULL, Variable Type

PRIMARY KEY (ORGANIZATIONIN, PROCESSIN, INSTIN, THREADIN, ID)

INDEX BOOLEANID (ORGANIZATIONIN,ID,VALUE)

### **DECIMALVARIABLE**

- ORGANIZATIONIN, DECIMAL (8, 0), NOT NULL, Organization Numerical ID
- PROCESSIN , DECIMAL (8,0), NOT NULL, Process Numerical ID
- INSTIN , DECIMAL (8,0), NOT NULL, Instance Numerical ID



- THREADIN , DECIMAL (8,0), NOT NULL, Instance Copy Numerical ID
- ID, VARCHAR2 ( 255), NOT NULL, Variable ID
- VALUE, DECIMAL(25,6), NOT NULL, Variable Type

PRIMARY KEY (ORGANIZATIONIN, PROCESSIN, INSTIN, THREADIN, ID)

INDEX DECIMALID (ORGANIZATIONIN,ID,VALUE)

### **INTEGERVARIABLE**

- ORGANIZATIONIN, DECIMAL (8, 0), NOT NULL, Organization Numerical ID
- PROCESSIN , DECIMAL (8,0), NOT NULL, Process Numerical ID
- INSTIN , DECIMAL (8,0), NOT NULL, Instance Numerical ID
- THREADIN , DECIMAL (8,0), NOT NULL, Instance Copy Numerical ID
- ID, VARCHAR2 ( 255), NOT NULL, Variable ID
- VALUE, INTEGER, NOT NULL, Variable Type

PRIMARY KEY (ORGANIZATIONIN, PROCESSIN, INSTIN, THREADIN, ID)

INDEX INTEGERID (ORGANIZATIONIN,ID,VALUE)

### **REALVARIABLE**

- ORGANIZATIONIN, DECIMAL (8, 0), NOT NULL, Organization Numerical ID



- PROCESSIN , DECIMAL (8,0), NOT NULL, Process Numerical ID
- INSTIN , DECIMAL (8,0), NOT NULL, Instance Numerical ID
- THREADIN , DECIMAL (8,0), NOT NULL, Instance Copy Numerical ID
- ID, VARCHAR2 ( 255), NOT NULL, Variable ID
- VALUE, REAL, NOT NULL, Variable Type

PRIMARY KEY (ORGANIZATIONIN, PROCESSIN, INSTIN, THREADIN, ID)

INDEX REALID (ORGANIZATIONIN,ID,VALUE)

### **STRINGVARIABLE**

- ORGANIZATIONIN, DECIMAL (8, 0), NOT NULL, Organization Numerical ID
- PROCESSIN , DECIMAL (8,0), NOT NULL, Process Numerical ID
- INSTIN , DECIMAL (8,0), NOT NULL, Instance Numerical ID
- THREADIN , DECIMAL (8,0), NOT NULL, Instance Copy Numerical ID
- ID, VARCHAR2 ( 255), NOT NULL, Variable ID
- VALUE, STRING, NOT NULL, Variable Type

PRIMARY KEY (ORGANIZATIONIN, PROCESSIN, INSTIN, THREADIN, ID)

INDEX STRINGID (ORGANIZATIONIN,ID,VALUE)

### **TIMEVARIABLE**



- ORGANIZATIONIN, DECIMAL (8, 0), NOT NULL, Organization Numerical ID
- PROCESSIN , DECIMAL (8,0), NOT NULL, Process Numerical ID
- INSTIN , DECIMAL (8,0), NOT NULL, Instance Numerical ID
- THREADIN , DECIMAL (8,0), NOT NULL, Instance Copy Numerical ID
- ID, VARCHAR2 ( 255), NOT NULL, Variable ID
- VALUE, STRING, NOT NULL, Variable Type

PRIMARY KEY (ORGANIZATIONIN, PROCESSIN, INSTIN, THREADIN, ID)

INDEX TIMEID (ORGANIZATIONIN,ID,VALUE)

## **META DATA: Process, Activities, Participants**

### **PROCESS**

- ORGANIZATIONIN, DECIMAL (8, 0) , NOT NULL, Organization Numerical ID
- PROCESSID, VARCHAR2 (255), NOT NULL, Process ID
- PROCESSIN, DECIMAL (8, 0), NOT NULL, Process Numerical ID
- PROCESSXPDL, LONG RAW, NOT NULL, XPDL file
- PUBLISHINGTIME, DATE, NOT NULL, Published Date

PRIMARY KEY (ORGANIZATIONIN, PROCESSID, PROCESSIN)

INDEX IDENTNUMBER ( ORGANIZATIONIN,PROCESSIN, PROCESSID



)

## **ACTIVITY**

- ORGANIZATIONIN, DECIMAL (8, 0), NOT NULL, Organization Numerical ID
  - PROCESSIN, DECIMAL (8, 0), NOT NULL, Process Numerical ID
  - ACTIVITYNAME, VARCHAR2 ( 255), DEFAULT NULL, Activity Name
  - ACTIVITYTYPE, VARCHAR2 (15), NOT NULL, Activity Type
- 
- BEGIN = 0;
  - END = 1;
  - SPLIT = 2;
  - JOIN = 3;
  - GRAB = 4;
  - INTERACTIVE = 5;
  - GLOBAL = 6;
  - SERIAL = 7;
  - SPLIT\_N = 8;
  - PROCESS\_CREATION = 9;
  - PROCESS\_NOTIFICATION = 10;
  - NOTIFICATION\_WAIT = 11;
  - TERMINATION\_WAIT = 12;
  - GLOBAL\_CREATION = 13;



- AUTOMATIC = 14;
- GLOBAL\_AUTOMATIC = 15;
- SUBFLOW = 16;

PRIMARY KEY (ORGANIZATIONIN,PROCESSIN, ACTIVITYNAME)

### **PROCESSIMAGE**

- ORGANIZATIONIN. DECIMAL (8, 0), NOT NULL, Organization Numerical ID
- PROCESSID, VARCHAR2 (255), NOT NULL, Process ID
- PROCESSIN, DECIMAL (8,0), NOT NULL, Process Numerical ID
- IMAGE, LONG RAW, NOT NULL, Image

PRIMARY KEY (ORGANIZATIONIN, PROCESSID, PROCESSIN)

### **PARTICIPANT**

- ORGANIZATIONIN, DECIMAL (8, 0), NOT NULL, Organization Numerical ID
- PARTICIPANTIN, DECIMAL (8, 0), NOT NULL, Participant Numerical ID
- NAME, VARCHAR2 (255) , NOT NULL, Participant Name
- PARTICIPANTUID, VARCHAR2 (255), NOT NULL, Participant User ID



PRIMARY KEY (ORGANIZATIONIN, PARTICIPANTIN)

## **ORGANIZATION**

- ID, VARCHAR2 (255), NOT NULL, Organization ID
- ORGANIZATIONIN, DECIMAL (8, 0), NOT NULL, Organization Numerical ID

PRIMARY KEY (ID)

## **EVENT**

- ORGANIZATIONIN, DECIMAL (8, 0), NOT NULL, Organization Numerical ID
- PROCESSIN, DECIMAL (8, 0), NOT NULL, Process Numerical ID
- INSTIN, DECIMAL (8, 0), NOT NULL, Instance Numerical ID
- THREADIN, DECIMAL (5, 0), NOT NULL, Instance Copy Numerical ID
- EVENTIN, DECIMAL (8, 0), NOT NULL, Event Numerical ID
- ACTIVITYNAME, VARCHAR2 ( 255), DEFAULT NULL, Activity name in which the event occurred
- EVENTTIME, DATE, NOT NULL, Time the Event occurred
- PARTICIPANT, DECIMAL (8, 0), NOT NULL, Participant that generated the event
- EVENTTYPE, INTEGER, NOT NULL, Event Type
  - INSTANCE\_CREATED = 0
  - INSTANCE\_END = 1



- ACTIVITY\_IN = 2
  - ACTIVITY\_OUT = 3
  - GLOBAL\_EXECUTED = 4
  - ITEM\_SELECTED = 5
  - ITEM\_UNSELECTED = 6
  - ITEM\_EXECUTED = 7
  - INSTANCE\_SUSPENDED = 8
  - INSTANCE\_RESUMED = 9
  - INSTANCE\_GRABBED = 10
  - INSTANCE\_UNGRABBED = 11
  - INSTANCE\_SELECTED = 12
  - INSTANCE\_UNSELECTED= 13
  - SUBFLOW\_INSTANCE\_CREATED = 14
  - INSTANCE\_ABORTING = 15
  - INSTANCE\_TO\_EXCEPTION = 16
  - INSTANCE\_ABORTED = 17
  - ACTIVITY\_COMPLETED = 18
  - INSTANCE\_UPDATED = 19
- 
- EVENTDATA, VARCHAR2 ( 255), DEFAULT NULL,

PRIMARY KEY (ORGANIZATIONIN,PROCESSIN, INSTIN, THREADIN,  
EVENTTIME, EVENTIN)



---

# Chapter 16. Appendixes

## Server Database Configuration

### Database Special considerations for the Server

Usually the database used by a FuegoBPM Server is automatically configured through the Web Console. The FuegoBPM Studio platform supports the following databases:

- Cloudscape
- Generic JDBC Version 1
- IBM DB2 AS/400 JDBC
- IBM DB2 JDBC
- IBM DB2 JDBC (Type 2)
- IBM DB2 OS/390 JDBC
- Informix JDBC
- MsSQL JDBC (Microsoft Driver)
- MsSQL JDBC (i-net Driver)
- MySQL JDBC
- Oracle JDBC
- PointBase JDBC
- Postgresql JDBC
- Remote JDBC



- Sybase JDBC
- Sybase SA JDBC

For further information on any of these database configurations, refer to the appropriate section within this documentation.

## Cloudscape Server Database Configuration

### Cloudscape Server Database Configuration

FuegoBPM Studio supports Informix Cloudscape, version 3 or higher. Cloudscape is a pure Java RDBMS, so it has built-in JDBC support.

The schema name is created when you add a new Server and database in the Execution Console. The name consists of the prefix *ftdb\_* and the name of the Server. This name cannot be changed because other FuegoBPM Suite applications reference it.

#### Note



An incompatibility issue exists between the Cloudscape JDBC drivers and other database drivers. If a problem arises, you must remove the Cloudscape drivers from the ext directory as stated above in order for the Cloudscape database access to work properly. You must also modify the CLASSPATH file (ftclasspath.conf) to remove the drivers.

## IBM DB2 Server Database Configuration

### IBM DB2 Server Database Configuration

The IBM DB2 JDBC Driver is available from IBM Corporation as part of the IBM DB2 database.

When creating a configuration that can be used later to create an Server in the Web Execution Console, you must specify the following:



- The database host.
- The port where the database server is listening.
- The database name.
- The database user and password. This user should exist in DB2 and have sufficient rights to create schema and tables, which are used to store information.

The schema name consists of the prefix *fdb\_* and the name of the Server. The name cannot be changed because other FuegoBPM Suite applications reference it. The schema name is defined when an Server is created in the Web Execution Console.

## Informix Server Database Configuration

### Informix Server Database Configuration

The schema name is created when you add a new Server and database in the Execution Console. The name consists of the prefix *fdb\_* and the name of the Server. This name cannot be changed because other FuegoBPM Suite applications reference it.

## MS SQL Microsoft Drivers Server Database Configuration

### MS SQL (Microsoft Drivers) Server Database Configuration

#### Configuring an MS SQL Database


Before running the Server with MS SQL database, ensure the following requirements are met:

- Microsoft SQL Server version 7.0 or higher is installed,



configured, and running.

### Note


 No special configuration is required.

- Microsoft SQL JDBC driver is installed with a JDBC driver. Currently, FuegoBPM supports I-Net Opta JDBC Driver from I-Net Software. This is a commercial driver and can be ordered online. For more information, see the I-Net Software Internet page: <http://www.inetsoftware.de>.

### Database User

When you create a new Server, a new database user is created. The name of the user consists of the prefix *ftdb\_* and the name of the Server. The name cannot be changed because other FuegoBPM Suite applications reference it. Additionally, a new database with the same name as the user database is created and is assigned as the default database. The created user is granted database access (using stored procedure *sp\_grantdbaccess*) and table creating access (using the GRANT CREATE TABLE command).

### Note

 Microsoft SQL Server, in conjunction with the I-Net Opta Driver, uses a large amount of memory when storing and accessing binary data. This situation can be critical if end users create attach large files to process instances. On a Windows platform, the Task Manager can help you monitor memory usage. In a high concurrence environment, dead locks may occur frequently due to the Microsoft SQL Server locking scheme, which can produce dead locks even when identical records are not locked. For more information, see <http://support.microsoft.com>.

## Oracle Server Database Configuration



## Oracle Server Database Configuration

The following software must be in place before you start the Server with an Oracle database:

- Oracle database
- Oracle TNSListener, ready to work remotely using a TCP/IP port
- Oracle JDBC driver
  - Thin JDBC driver
  - OCI JDBC driver

Each FuegoBPM Server must have a user that stores all process information when a process is published, deployed, and running, and information on the instances flowing through the process.

The Oracle TNSListener serves as a bridge to access the Oracle database. By default, the TNSListener is installed on TCP port 1521. This port is used in the configuration for each of the FuegoBPM Servers so that they can easily access the Oracle database.

Oracle JDBC drivers enable the Server to access the database. The driver also makes information persistent in the database.

The Oracle database settings are as follows:

- **Schema** - Schema is automatically created when a Server is added to the Web Console. The name cannot be changed.
- **Host** - The host name of the machine or server where Oracle resides.
- **Port** - Default port number for Oracle.



- **SID** - System identification for database; also used to connect to database. Sometimes called Oracle ID.
- **User** - The user name set up by the Oracle system administrator. (Automatically created when the Server is created.) Each Server is related to an Oracle user. The user name in the Oracle instance is preceded by the prefix *fldb\_* and ends with the name of the Server. The user name is defined in the Web Console when the Server is created. Once defined, the name cannot be changed because other FuegoBPM Suite applications reference it.
- **Password** - The administrative password for the Oracle database.
- **Driver type** - The type of drive that Oracle uses (thin or oci8).
- **Database String** - Check this box if you want to specify a special JDBC URL. In the next box, define the JDBC URL. This may be useful when connecting to an Oracle RAC. For example: `jdbc:oracle:thin@host`.
- **Advanced** - See below.

### On the Advanced tab

- **Tablespace** - Some database administrators divide databases into tablespaces to control and maintain table sizes. If your company uses tablespace names, enter the appropriate name here. Leave the field blank if there are no tablespaces and a default tablespace will be created. When the user name is created in the Execution Console, the user creation statement reference tablespaces. Consequently, it is necessary to define the tablespaces.
- **Temporary Tablespace** - Enter the appropriate temporary tablespace name here. This field is going to be used by FuegoBPM Server's database to perform temporary indexing for some



access. TEMP of type TEMPORARY. This tablespace performs temporary operations for the Server.

- **Administrator user** - Enter the administrator user name for the Oracle database. This is the user name that will be used to create the Server's database user in the Oracle instance. The password will be required at user creation time.
- **Profile** - A profile is a set of limits on database resources. If you assign the profile to a user, that user cannot exceed the established limits in the profile. This allows the administrator to limit the actions of a particular Oracle user. The Oracle administrator may have different profiles set for different groups of users so that there is control over what each group is authorized to use and over which resources from the database a particular group will have.
- **Use Timestamp for Date columns** - When you select this property it makes the DATE fields work like TIMESTAMP. If the property is not selected, the DATE SQL fields type store only the day and the TIMESTAMP field type store both, day and time.

### User Permissions

When the Oracle user is created in the Execution Console, the following permissions are granted:

- CONNECT
- RESOURCE

### Defaults Assigned to Users

When the Oracle user is created in the Execution Console, the following defaults are assigned:



- TEMPORARY TABLESPACE "TEMP"
- PROFILE "DEFAULT"

### **Default for Tables Inside an Oracle User**

By default, when the Oracle user is created for a Server in the Web Console, the tables related to this user are created as follows:

- Table's default tablespace is assigned when the user is created. This tablespace is configured in the Database tab when configuring the database for the server.
- Storage characteristics are the default table characteristics.
- An optional cluster.
- Partitioning definitions.
- Index-organized or heap-organized.

### **Length of Transactions**

Most of the transactions performed by the Server or Oracle are short in duration. Thus, it is not necessary to include large rollback segments. High concurrence over the Oracle database provides enough space to manage multiple transactions.

### **Oracle Instance Character Set**

The Server does not require a specific character set. The character set used depends on the region or country where you reside.

### **Oracle Instance Language**

The language chosen for Oracle is left to your discretion.



# Sybase Server Database Configuration

## Sybase Server Database Configuration

On Sybase, by default, all new databases are created with very little space available for log messages and data. Therefore, some tuning might avoid problems, such as "Waiting for log space..." or "No more data space available..." on the database server.

### LOG Space Problem

When there is no more space for logging, Sybase by default suspends the corresponding transaction until the database administrator adds more space to the database. When this happens, there is no way for FuegoBPM Server to log anything. Under these circumstances, all automatic work will be locked and frozen because Sybase will not be able to continue working unless more space is provided. However, the connections will continue to be opened and will remain waiting for the database to respond. When more space is granted and the transactions are closed, the FuegoBPM Server will continue working.

### DATA Space Problem

If the Sybase database runs out of data space, the transactions are aborted by Sybase. The FuegoBPM Administrator will receive warnings like the ones outlined below in the FuegoBPM Server log files and eventually by mail if this option has been configured in the Execution Console.

```
[<W> mm/dd/yy mm:ss AM/PM] PERSISTENCE SQL EXCEPTION:  
attempt: 0 [Can't allocate space for object 'syslogs'  
in database 'Database Name' because 'logsegment'  
segment is full/has no free extents. If you ran out of  
space in syslogs, dump the transaction log. Otherwise,  
use ALTER DATABASE or sp_extendsegment to increase  
size of the segment.]
```



Even if the Sybase database is in an idle state, the Server will keep working. The Server will continue to retry until the maximum retry value is reached (this value is specified in Execution Console). It is at this point that the `ToDoItem` execution will be rescheduled for a later moment, as it is defined in the Server properties. This retry action is repeated until Sybase's database is ready for usage again or until the maximum retry value is exceeded.

After five attempts (the default value), you will receive the following SEVERE message about the `ToDoItem` rescheduling:

```
[<S> mm/dd/yy mm:ss AM/PM] An unexpected error occurred
while running an automatic item.
Details:Exception: java.lang.RuntimeException:
                    ExceededTransactionAction retries
```

The following changes are recommended to address these space problems. In Sybase's database properties, it is recommended you configure the following parameters:

1. Add more device space for data and logging. Consider:
  - a. The rate size of an instance
  - b. The amount of instances the server will manage
  - c. The components involved in all processes
  - d. The attachments users may add
2. If you still run out of log space, you can set this properties enabled for the corresponding database:
  - a. Truncate log on checkpoint



- b. Abort transaction on full log

### **Connections to the Database**

If the Sybase database is not shared among Servers (i.e., if there is not more than one Server with the Sybase database as the RDBMS), you should not experience any trouble related to connection initialization at FuegoBPM Server's startup time. However, if the Sybase database is used by more than one Server or other applications, you should take into consideration the following Sybase properties and also compare them with the initial connections configured for the FuegoBPM Servers.

- Number of remote connections
- Number of remote loggings
- Number of user connections

### **Concurrency: Deadlocks**

If you do not intend to run processes with high concurrency and several automatic threads running at the same time on a Server, you can skip this section. However, if your processes generated large overhead due to multiple automatic activities being executed at the same time due to a high end user concurrency on the Work Portal, you should read the following section. Sybase has some limitations on allowing FuegoBPM Servers to perform parallel and concurrent tasks in the Sybase database.

You should also read this section if the following message appears several times in your Server log:





```
[<W> mm/dd/yy mm:ss AM/PM] PERSISTENCE SQL EXCEPTION:  
attempt: 0 [Your server command  
          (family id #0, process id #24)  
encountered a deadlock situation.  
Please re-run your command.]
```

This message is raised by Sybase when a deadlock is found. Unfortunately, Sybase does not provide a clear solution for this problem. It only points to the tables involved in the deadlock and the way the transactions are being managed.

Because the Server can work with huge volume of parallel processes, the recommendations when the Server is running with Sybase database to persist process information are as follows:

- If the deadlock WARNINGS do not affect the normal operation of the processes, set the ToDoItems retry time to a short interval time so that the transaction is retried in a short period of time. This recommendation is provided so that the ToDoItems (associated with automatic activities) are retried as soon as possible to avoid experimenting long breaks in the Server work. This is very evident if there is a JOIN activity waiting for copies to arrive that are waiting to be re-executed.
- This problem can also be solved when designing the process. When the transaction fails, we can route the instance to an exception handling activity where it is going to be sent back automatically or manually for re-execution. However, this may also fail if there is too little space in the database. The routing also needs to be persisted in the database and it will block if there is not enough space.



- In Sybase, all tables are created with the same lock scheme ("allpages") by default. Fuego recommends that the lock scheme is change to "datarows" for those tables that have high concurrency during Server execution. Below, a list of tables that have the higher concurrency in the Server is provided. These are the tables whose local schema should be changed: PPROCINSTANCE PPROCRELATION (only if any of the processes use Inter-rocess Communication) Below, the DB scripts or SQL statements are provided to change the lock scheme for the tables outlined above.alter table PPROCINSTANCE lock datarows go alter table PPROCRELATION lock datarows go

Finally, it is strongly recommended to set the property "read committed with lock" to 1. It is also important to know that this property is a Sybase Server-wide parameter and that this change will affect all databases deployed in the Sybase Server.

### **Sybase Database Settings**

The Sybase database settings are as follows:

- **Schema** - The schema of the database is created automatically. This field cannot be modified.
- **Host** - The host name of the machine or the server where Sybase resides.
- **Port** - The port number where database resides.
- **User** - The user name to access the database. This field cannot be modified.
- **Password** - The administrator password to access the database.
- **Administrator user** - The administrator user name for the database.



# Appendix B - FuegoBPM FDI Implementation using IPlanet

The FuegoBPM Enterprise Administration Center provides access to the IPlanet directory service using a JNDI interface provided by Sun in the J2SE.

## To configure FDI using IPlanet

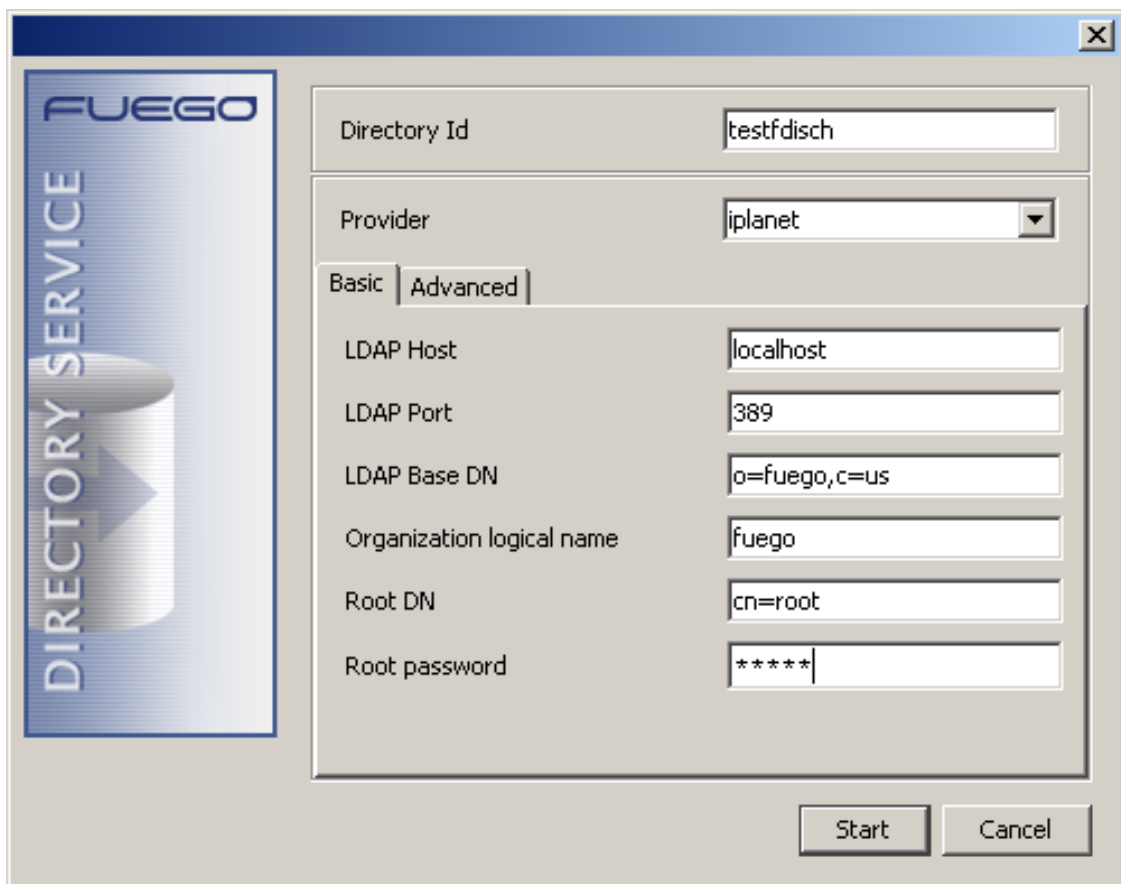
1. Click the Configuration link on the FuegoBPM Enterprise Administration Center main window. The Configuration dialog box appears.
2. Click the Directory tab.
3. Click the **Add** button and select *to create a new directory* **or** *use an existing one* and click **OK**.
4. The wizard to create a directory is opened. Give a name to the directory you are about to create. This name is that which will later be used within the FuegoBPM system to identify this directory service configuration.
5. Select the **Provider**. In this case, choose the option *iplanet*. Complete the fields in the tabs displayed in the dialog as explained below.

## Basic Configuration

1. **LDAP host:** The name of the host where the directory service (LDAP) is installed.
2. **LDAP port:** The port number of the host where the directory service (LDAP) is installed.



3. **LDAP base DN:** The topmost entry of the directory service (LDAP). For example, o=fuego, c=us.
4. **Organization logical name :** Name of the organization.
5. **Root DN :** DN of the root user, for example cn=root Root
6. **Root password :** Password of the root user.



The screenshot shows a Windows-style dialog box titled "FUEGO DIRECTORY SERVICE". On the left is a vertical banner with the "FUEGO" logo at the top and "DIRECTORY SERVICE" written vertically below it. The main area of the dialog has two tabs: "Basic" (selected) and "Advanced". The "Basic" tab contains several configuration fields:

- Directory Id:** A text box containing "testfdisch".
- Provider:** A dropdown menu showing "iplanet".
- LDAP Host:** A text box containing "localhost".
- LDAP Port:** A text box containing "389".
- LDAP Base DN:** A text box containing "o=fuego,c=us".
- Organization logical name:** A text box containing "fuego".
- Root DN:** A text box containing "cn=root".
- Root password:** A text box containing "\*\*\*\*\*".

At the bottom right of the dialog are two buttons: "Start" and "Cancel".

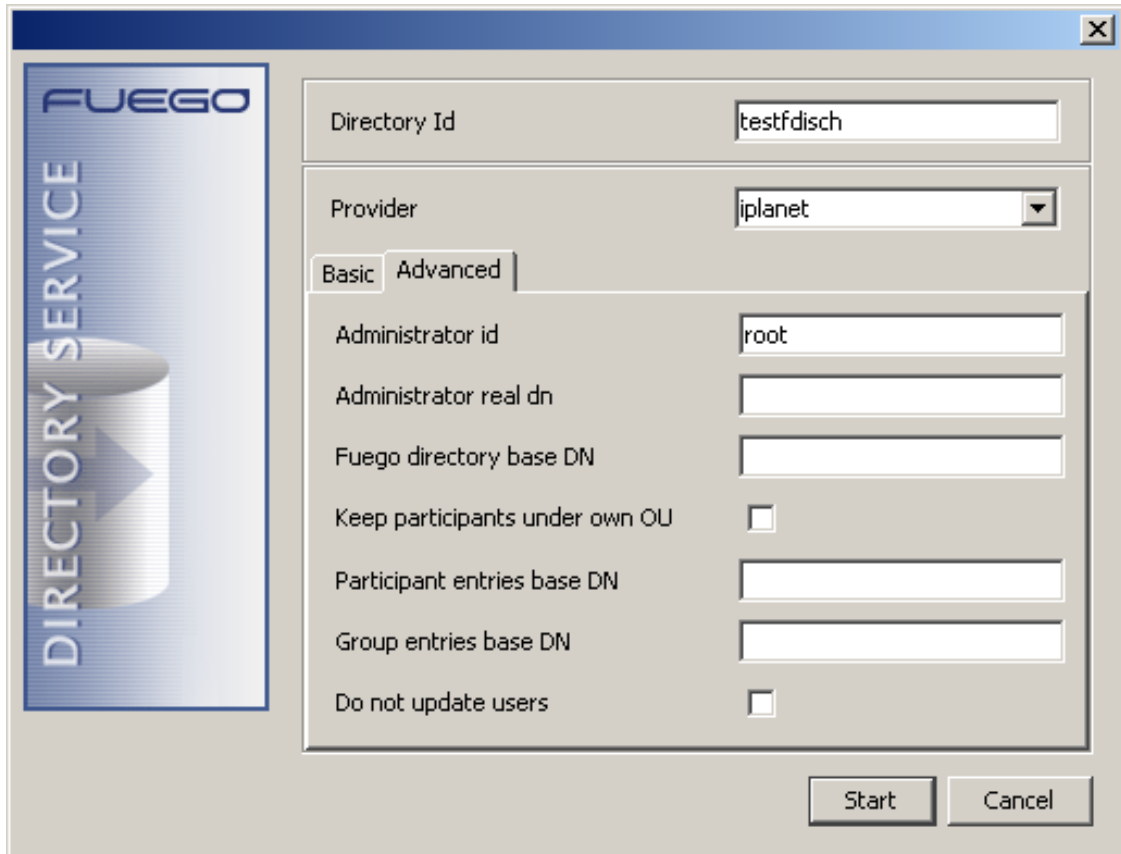
## Advanced Configuration

1. **Administrator ID** - Identification name of the administrator user. This must be the ID assigned to the participant in the FuegoBPM system.



2. **Administrator real DN** - (Optional) In case you want to authenticate to iPlanet using a different user, for example "cn=fuegoroot". This should be an existing iPlanet user with permissions of user creation, modification and deletion, apart from being able to write in the *fuegoDirectoryRoot*. Whilst you will be required to connect using the logical name entered in 1. (Administrator id) FuegoBPM will use the Administrator real DN to authenticate to iPlanet.
3. **Fuego directory base DN** - Fuego directory base DN - Base distinguished name (DN) under which the FuegoBPM directory structure will be generated.
4. **Keep participants under own OU and Participant entries base DN** - Specify whether participant entries are going to be kept under each participant's OU or all participants are going to be kept under one single entry. Both values are optional.
5. **Participant entries base DN** - Base distinguished name (DN) under which the participants can be found. This is useful when the organization has participants present and wants to use them in the FuegoBPM system.
6. **Group entries base DN** - Specify the base DN for the group's location.
7. **Do not update users** - The following participant's data will be disabled if this property is true: first name, last name, telephone, fax and email.






## Appendix C - FuegoBPM FDI Implementation using MsSQL

FuegoBPM Enterprise Administration Center provides access to a MsSQL database so that it can be used as a directory service. The database is accessed via a JDBC interface.

### Note

 **Remember!** You must first install the correct driver so that FuegoBPM can access the database.

### To add a directory to a MsSQL database

1. Click the Configuration link on the FuegoBPM Enterprise



Administration Center main window. The Configuration dialog box appears.

2. Click the Directory tab.
3. Click the **Add** button and select *to create a new directory or use an existing one* and click **OK**.
4. The wizard to create a directory is opened. Give a name to the directory you are about to create. This name is that which will later be used within the FuegoBPM system to identify this directory service configuration.
5. Select the **Provider**. Choose the option *mssqlserver*. Complete the fields as explained below.

## Basic Configuration

1. **Show the SQL sentences:** Please refer to section Getting the schema SQL creation script to learn how to use this feature.
2. **Database host:** The host of the database server where the FuegoBPM FDI will be deployed.
3. **Database port:** The port for the MsSQL server where the FDI will be deployed.
4. **Organization logical name:** The logical name of the organization to which the FDI will belong to.
5. **Administrator User:** Administrator user ID. The *Administrator User* is used to create both, the *Database* and the *Login name* (if it doesn't exist). The user can be anyone with access to MSSQL Server, however he/she must have the following permissions:

- a. Security Administrators



b. Database Creators

6. **Administrator Password:** Administrator password.
7. **Database:** Enter the name of the database that will contain the directory service you are creating. This database is created automatically by the wizard using the *Administrator User*.
8. **Login name:** User name of the MySQL server that will be used when FuegoBPM needs to connect to the directory server. If the user does not exist it is created by the wizard using the *Administrator User*.
9. **Login password:** The password of the user used to log in to the database.
10. **Confirm password:** Retype the password for confirmation.



**FUEGO**  
DIRECTORY SERVICE

Directory Id: testfdisch

Provider: MsSQL JDBC (i-net Driver)

Basic | Advanced

Show the SQL sentences: ☐

Database host: rex

Database port: 1433

Organization logical name: fuego

Administrator user: sa

Administrator password: \*\*\*\*

Database: testfdisch

Login name: testfdisch

Login Password: \*\*\*

Confirm password: \*\*\*

Start Cancel

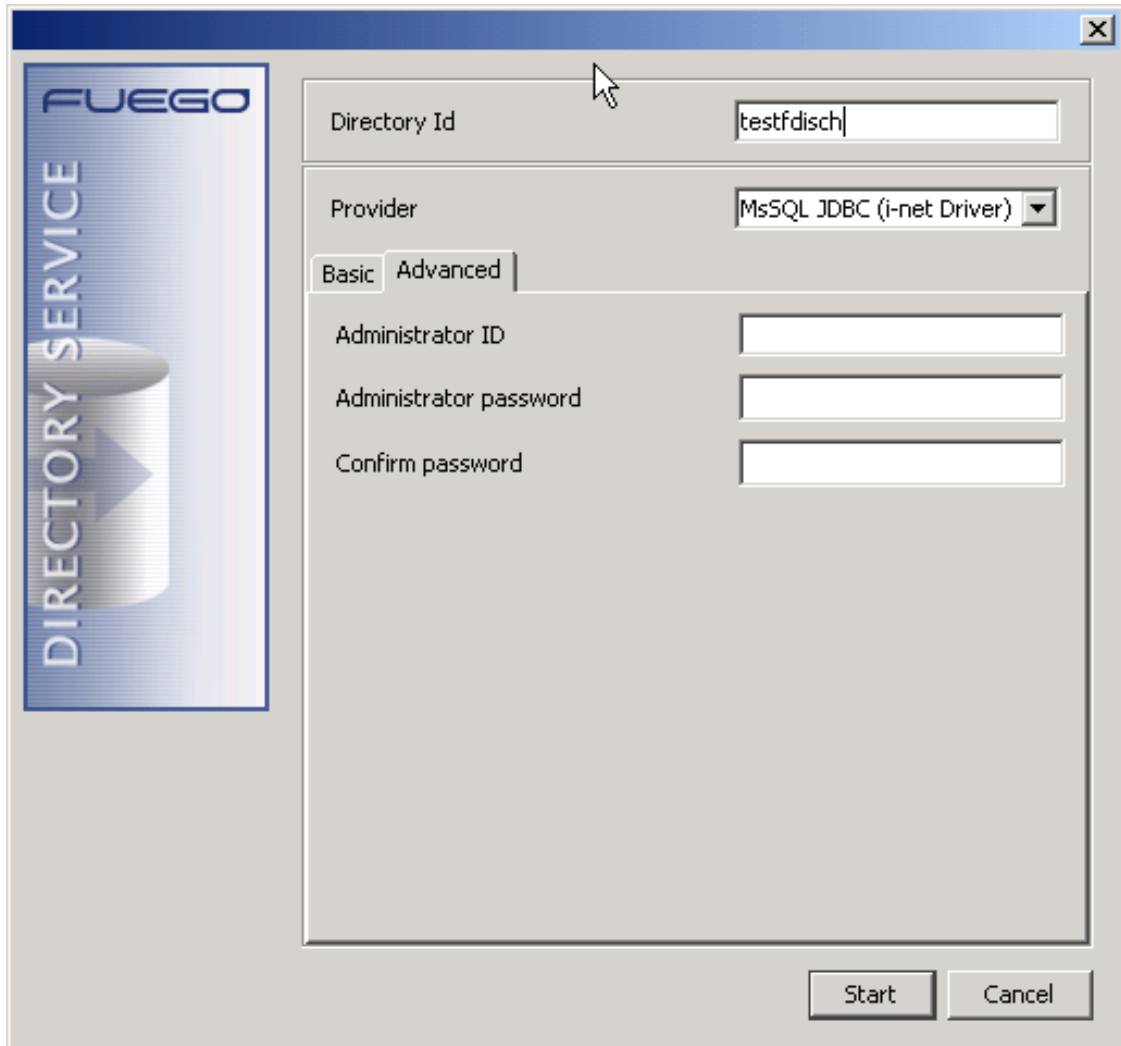
## Advanced Configuration

1. **Administrator ID:** Administrator ID for Fuego.
2. **Administrator password:** Fuego Administrator user password.
3. **Confirm password:** Retype the password for confirmation.

If the fields **Administrator ID / password** are empty, the Fuego's administrator id and password will be the ones specified in



"Administrator user" and "Administrator password" in the Basic Configuration.



## Appendix D - FuegoBPM FDI Implementation using Oracle

FuegoBPM Enterprise Administration Center provides access to an Oracle database so that it can be used as a directory service. The database is accessed via a JDBC interface.

**To configure the Oracle database**



1. Click the Configuration link on the FuegoBPM Enterprise Administration Center main window. The Configuration dialog box appears.
2. Click the Directory tab.
3. Click the **Add** button and select to *create a new directory or use an existing one* and click **OK**.
4. The wizard to create a directory is opened. Give a name to the directory you are about to create in the **Directory Id** field. This name is the name that later will be used within the FuegoBPM system to identify this directory service configuration.
5. Select the **Provider**. In this case, choose the option *oracle*. Complete the fields in the tabs displayed in the dialog as explained below.

## Basic Configuration

1. **Show the SQL sentences** - It should be checked if the Administrator wants to get the SQL Script executed to create the Directory Service Database structure. Refer to section Getting the schema SQL creation script in the System Administrator Guide to learn how to use this feature.
2. **Database host** – The host of the database server where the FuegoBPM FDI will be deployed.
3. **Database port** – The port for the Oracle server where the FDI will be deployed. Oracle JDBC driver connects with Oracle 9i using TCP/IP's protocol.
4. **Organization logical name** - The logical name of the organization to which the FDI will belong.



5. **Administrator User** – Oracle's Administrator user ID. This is a user with enough permission to create a Schema, a Login and tables on the created Directory Service Database.
6. **Administrator Password** – Administrator password.
7. **Schema name** – The name of the owner of the schema to create in the Oracle instance that will contain the FDI tables. This name is used to create the Oracle User that will contain the FDI tables. This Oracle Schema or User will be created when executing the SQL Script provided when the Wizard is started.
8. **Schema password** – The password of the owner of the schema to create. The password for the Schema Name specified in the previous field.
9. **Confirm password** - Retype the password for confirmation. It is just for consistency when providing passwords as its value is not visualized to the Administrator entering the password.
10. **SID** – Schema ID.
11. **Specify JDBC url** - Check this box if you want to specify a URL different than the default one (connecting to a single Oracle Instance). Mainly if you are working with an Oracle clustering environment rack.
12. **JDBC url**: Define the custom Oracle JDBC URL when working with clustering.



The image shows a configuration window for FuegoBPM. At the top, there is a 'Directory ID' field with the value 'DocDir'. Below it is a 'Provider' dropdown menu set to 'Oracle JDBC'. The window has two tabs: 'Basic' (selected) and 'Advanced'. Under the 'Basic' tab, there are several configuration options: 'Show SQL Statements' (unchecked checkbox), 'Database Host' (text field with 'sputnik'), 'Database Port' (text field with '1521'), 'Organization Logical Name' (text field with 'company'), 'Administrator User' (text field with 'system'), 'Administrator Password' (password field with 8 asterisks), 'Schema Name' (text field with 'docdir'), 'Schema Password' (password field with 8 asterisks), 'Confirm Password' (password field with 8 asterisks), 'SID' (text field with 'sputnik'), 'Specify JDBC URL' (unchecked checkbox), and 'JDBC URL' (empty text field). At the bottom right, there are 'Start' and 'Cancel' buttons.

Directory ID	DocDir
Provider	Oracle JDBC
Basic   Advanced	
Show SQL Statements	<input type="checkbox"/>
Database Host	sputnik
Database Port	1521
Organization Logical Name	company
Administrator User	system
Administrator Password	*****
Schema Name	docdir
Schema Password	*****
Confirm Password	*****
SID	sputnik
Specify JDBC URL	<input type="checkbox"/>
JDBC URL	
Start Cancel	

## Advanced Configuration

1. **Administrator ID** - The Administrator ID *root* is the Oracle user through which FuegoBPM will access the Oracle database, the



Fuego Directory Service Administrator's ID. All FuegoBPM participants will access the Oracle database using the *root* user. If FuegoBPM handles the authentication, Root will be the first participant created in FuegoBPM (as defined above).

2. **Administrator password** - Administrator *root* password.
3. **Confirm password** - Retype the password for confirmation.
4. **Fuego Handles authentication** - If each participant with FuegoBPM will not be an Oracle user, then select *Fuego handles authentication*. This is the preferred authentication mechanism since all Fuego Business Process participants will be persisted in the Directory Service Database. If this checkbox is not selected, the authentication will rely on Oracle's database authentication. For more information refer to the Oracle FDI instructions.
5. **Table space** - The Fuego Administrator can decide in which tablespace the tables for the FDI tables will reside..
6. **Temporary tablespace** - The Fuego Administrator can decide in which tablespace the temporary structures related to the FDI Users should reside..
7. **Profile** - The Fuego Administrator can associate an Oracle profile to the FDI User being created..



The screenshot shows the Oracle Administrator configuration window. At the top, the 'Directory ID' is set to 'DocDir'. Below it, the 'Provider' is set to 'Oracle JDBC'. There are two tabs: 'Basic' and 'Advanced'. The 'Basic' tab is selected, showing fields for 'Administrator ID' (set to 'root'), 'Administrator Password' (set to '\*\*\*\*'), 'Fuego handles authentication' (checked), 'Tablespace' (empty), 'Temporary Tablespace' (empty), and 'Profile' (empty). At the bottom right, there are 'Start' and 'Cancel' buttons.

After successfully creating the Database, Oracle's Administrator should grant permissions to the FuegoBPM Directory Service Oracle User to access the tables:

- DBA\_2PC\_PENDING
- DBA\_2PC\_NEIGHBORS
- DBA\_PENDING\_TRANSACTIONS



This is needed in case transactions need to be rolled back when involving information persisted in the FuegoBPM Directory Service. Log in as "sys as sysdba". The following statement can be executed with Oracle's SQL Plus:


```
GRANT SELECT ON DBA_PENDING_TRANSACTIONS TO SCHEMA_NAME;
```

where SCHEMA\_NAME is the Oracle schema name given when the Directory Service schema was created (e.g. *docdir* is the Schema Name).

## Appendix E - FuegoBPM FDI Implementation using IBM DB2

FuegoBPM Enterprise Administration Center provides access to IBM DB2 databases to deploy the Organization information and process metadata in this RDBMS vendor. This integration is achieved using IBM DB2 JDBC Drivers Type 2 or 3.

### Note

 **Remember!** You must first install the correct JDBC drivers so that FuegoBPM can access the database. The JDBC Drivers may be installed from the FuegoBPM Enterprise Administration Center Application.

### Configuring the DB2 database

1. Click on the Configuration link on FuegoBPM's Enterprise Administration Center main window. The Configuration dialog box will show up.
2. Click on the Directory tab.
3. Click on the **Add** button and select any of the 2 possible options: *create a new directory* or *use an existing one*. After the selecting on of these, click **OK** to proceed.



4. The wizard to create a directory will start. Provide a logical name to reference the Directory Service Database you are about to create. This name will later be used within the FuegoBPM System to reference the Directory Service Location and other configuration parameters.
5. Select the **Provider**. Choose the option *db2* or *db2type2*. Complete the fields as explained below.

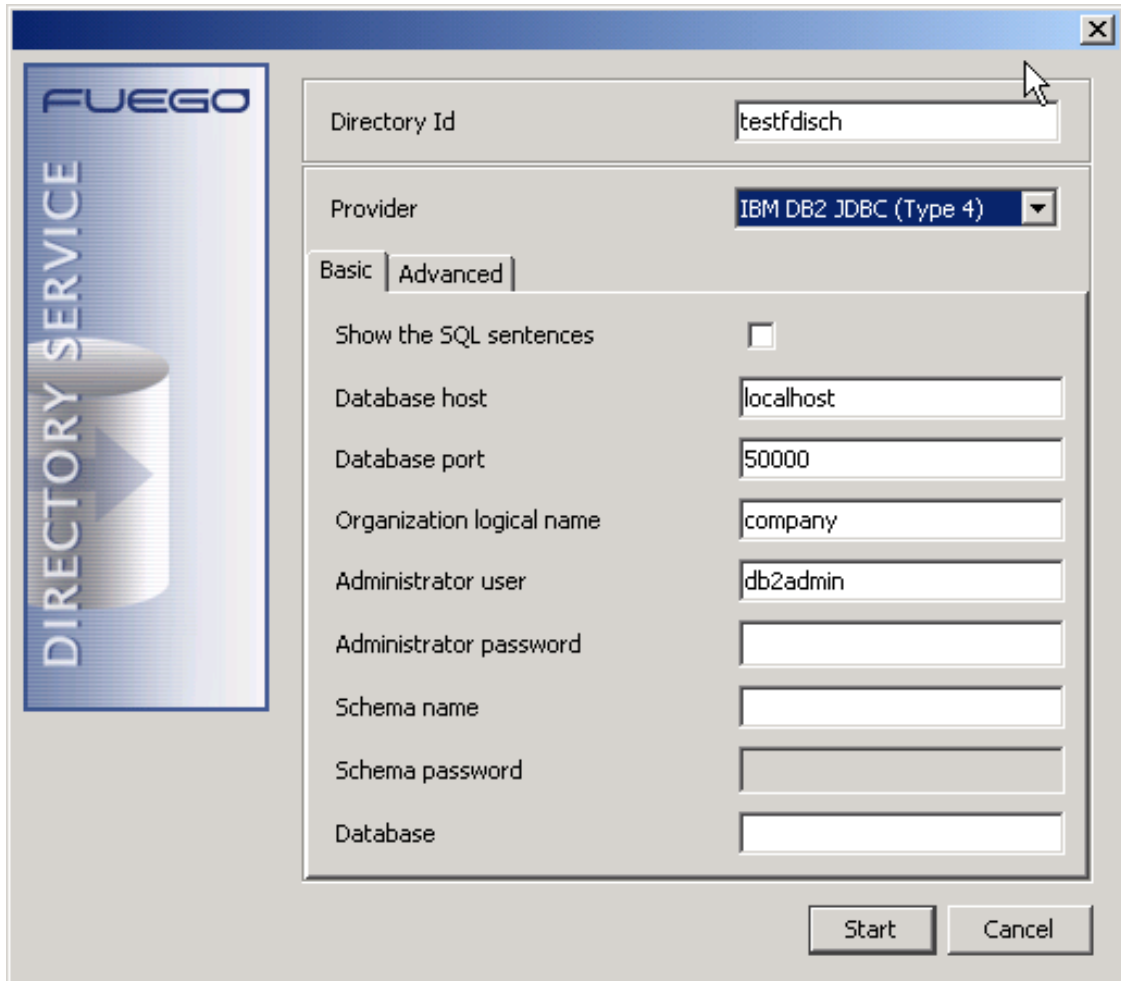
## IBM DB2 (JDBC Driver Type 3 & 4)

### Basic Configuration

1. **Show the SQL sentences** - Please refer to section Getting the schema SQL creation script to learn how to use this feature.
2. **Database host** - The host of the database server where the FuegoBPM FDI will be deployed.
3. **Database port** - The port for the IBM DB2 JDBC Bridge server that will connect to the Database where the FDI Database will be deployed.
4. **Organization logical name** - The logical name of the organization to which the FDI will belong to.
5. **Administrator User** - Administrator user ID. This user in DB2 usually is "db2admin".
6. **Administrator Password** - Administrator password.
7. **Schema name** - The name of the schema to create within the selected database below.
8. **Database** - The database name where the schema will be



created.



The screenshot shows a configuration window titled "FUEGO DIRECTORY SERVICE". On the left is a vertical banner with the FUEGO logo and the text "DIRECTORY SERVICE". The main area is divided into two tabs: "Basic" (selected) and "Advanced". In the "Basic" tab, the "Directory Id" is "testfdisch" and the "Provider" is "IBM DB2 JDBC (Type 4)". Below these are several input fields: "Show the SQL sentences" (unchecked checkbox), "Database host" (localhost), "Database port" (50000), "Organization logical name" (company), "Administrator user" (db2admin), "Administrator password" (empty), "Schema name" (empty), "Schema password" (empty), and "Database" (empty). At the bottom right are "Start" and "Cancel" buttons.

Directory Id	testfdisch
Provider	IBM DB2 JDBC (Type 4)
Basic   Advanced	
Show the SQL sentences	<input type="checkbox"/>
Database host	localhost
Database port	50000
Organization logical name	company
Administrator user	db2admin
Administrator password	
Schema name	
Schema password	
Database	
Start Cancel	

The difference between type 3 and type 4 is the default database port shown, 6789 and 50000 respectively.

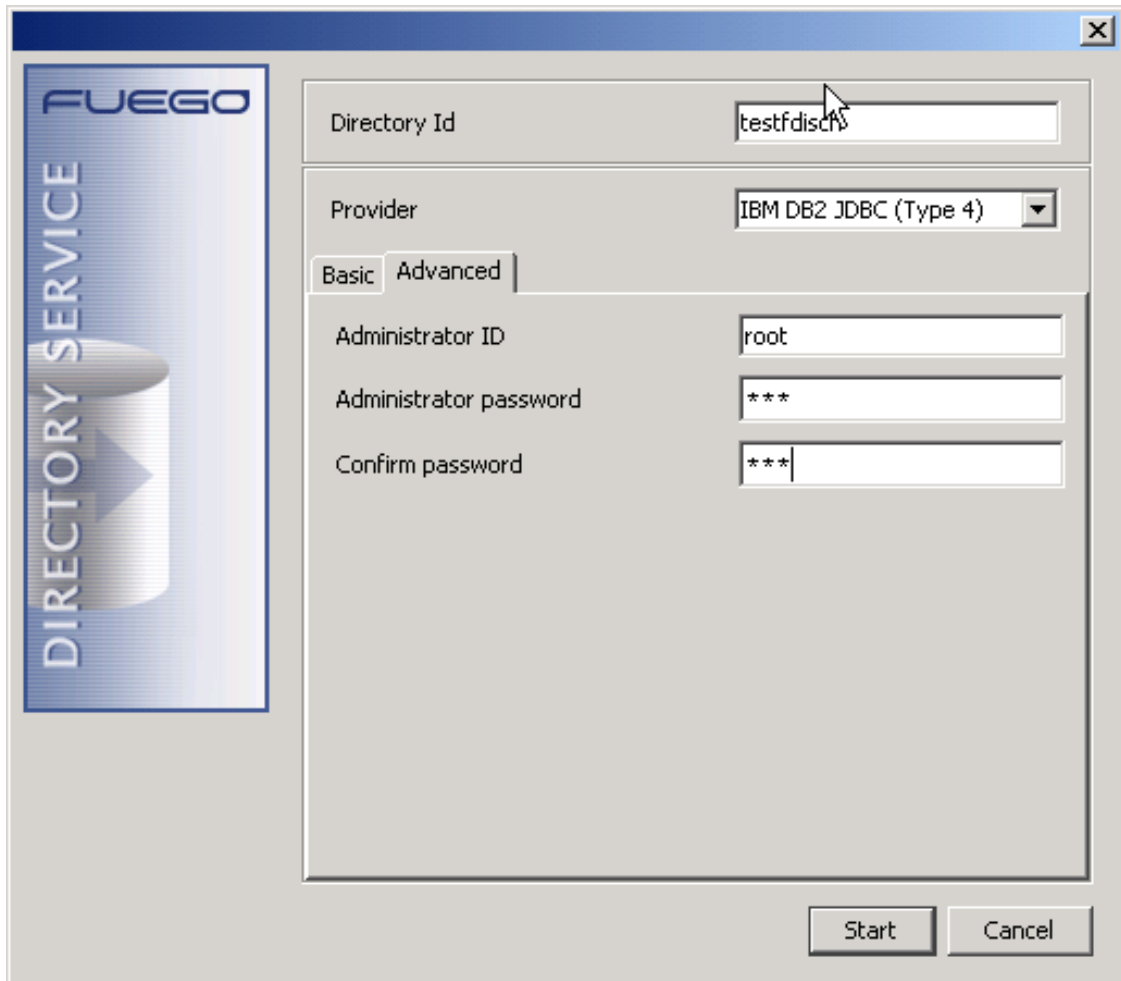
## Advanced Configuration

1. **Administrator ID** - The Administrator ID to access the FuegoBPM FDI IBM DB2 Schema. By default this Administrator ID is the one provided in the previous panel. If you want an Administrator User ID other than the IBM DB2 Database



Administrator, you can change it here. FuegoBPM uses the convention of creating an Administrator user called "root". If FuegoBPM handles the authentication option is selected, the "Administrator ID" entry will be the first participant created in FuegoBPM FDI Database.

2. **Administrator password** - Administrator's ID password.
3. **Confirm password** - Retype the password for confirmation.



The screenshot shows a window titled "FUEGO DIRECTORY SERVICE". On the left is a vertical banner with the Fuego logo and the text "DIRECTORY SERVICE". The main area contains configuration fields:

- Directory Id:** A text box containing "testfdisc".
- Provider:** A dropdown menu showing "IBM DB2 JDBC (Type 4)".
- Tabs:** "Basic" and "Advanced". The "Basic" tab is selected.
- Administrator ID:** A text box containing "root".
- Administrator password:** A text box containing three asterisks "\*\*\*".
- Confirm password:** A text box containing three asterisks "\*\*\*".

At the bottom right are "Start" and "Cancel" buttons.

## IBM DB2 (JDBC Driver Type 2)

The only difference with the option *db2* (db2 type 3), is that you do



not have to configure **Database host** and **port**.

## Important Note

When using IBM DB2 Type 2 as your FDI source, the following error message may appear: *java.sql.SQLException: No suitable driver*. The reason for this is that technically the DB2 JDBC Type 2 driver needs to load native libraries (DLLs in Windows) and they cannot be loaded in more than one application classloader.

This error message may appear for example when both the FuegoBPM Web Console and FuegoBPM Work Portal Web Applications are booted together in the embedded Tomcat Web Server that comes with the FuegoBPM Enterprise distribution. Both web applications try to load the JDBC Driver in each other's classloader and the second one trying to load it, fails throwing the error message mentioned before.

To prevent this error from happening, do not include the *db2java.zip* into the Web Application's *WEB-INF/lib* directory, rather on the Tomcat's *share/lib* directory. By doing this, the class is loaded in the Tomcat's main classloader rather than on each one of the Web Application Classloaders.

If you are using IBM DB2's JDBC Type 2 Drivers, it is required that IBM DB2 Client package is installed in the same machines where FuegoBPM is deployed.

## Appendix F - Using FuegoBPM Ant Tasks

The following describes the integration between **FuegoBPM** and Apache's **Ant** build tool.

FuegoBPM provides an Ant library to automate some administrative tasks using Ant scripts. This includes the deployment of processes, managing Server configurations, and importing/exporting organizational



data. It is assumed that the reader is familiar with XML and the FuegoBPM system. Basic knowledge of how Ant works is also required.

## Introduction

Apache **Ant** (<http://ant.apache.org>) is a platform-independent (Java-based) build tool. It is useful for automating complicated repetitive tasks and thus is well suited for implementing standardized build and deployment processes.

Ant scripts are called build files and are written in XML. Each build file defines one project with at least one *target*. A target contains a set of *tasks*, which are the actions that will be executed for that target.

The power of Ant lies on the fact that its XML syntax is designed to be extended. Ant provides a good set of standard tasks to achieve many common actions (like copying files and compiling source code), but new ones can be added.

FuegoBPM provides a set of tasks that add Fuego-specific functionality to Ant scripts, including:

- Creation and general management of FuegoBPM Directories (see Task **fuego:directoryschema**)
- Publishing and deploying processes (see Task **fuego:publish**)
- Starting, stopping and general management of FuegoBPM Servers (see Task **fuego:engine**)
- Importing and exporting of configuration resources (see Task **fuego:resources**)
- Importing and exporting of organizational data participants, roles, and org. units (see Task **fuego:directoryadmin**)



This information is not a tutorial on Ant itself, but on the additional tasks provided by Fuego.

For more documentation, tutorials and general reference about Ant, please refer to its official website. It provides a manual and pointers to several online articles and published books about Ant.

## Appendix G - What to backup of your FuegoBPM Enterprise installation

To make a backup of your enterprise installation

### Files

Files to take into account, if modified, are:

- Configuration files at: **\$INST\_DIR/enterprise/conf.**
- Any **non versionable jars.**
- Any **installed drivers**, reinstall them using the **Install drivers** action in the FuegoBPM Administration Center.
- **directory.properties,**
- Web Applications:
  - customization files of the web application: **css files, custom jsp, images.**
  - Portal:
    - custom jsps,
    - **\$INST\_DIR/webapps/portal/WEB-INF/portal.properties**



- Portal Admin:
  - `$INST_DIR/webapps/portaladmin/WEB-INF/portaladmin.properties`
- Archiving Viewer:
  - `$INST_DIR/webapps/archivingviewer/WEB-INF/archiving.properties`
  - `$INST_DIR/webapps/archivingviewer/WEB-INF/configDrivers.xml`:  
this file holds the accesses defined to log in to the archiving databases.

## Databases

Databases to be backuped of your enterprise installation are:

- Engine
- FDI
- Archiving
- BAM
- DataStore

# Appendix H - Updating FuegoBPM Applications

## What are Fuego Service Packs and HotFixes



FuegoBPM can be updated by applying a Service Pack (SP) or a Hotfix.

It is recommended that all Fuego Applications are updated to the same Service Pack or Hotfix. This will prevent eventual compatibility problems when migrating and deploying a project implemented with a FuegoBPM Studio version and deployed into a different one.

Another recommendation prior to applying a Service Pack or Hotfix is, when updating an Enterprise for J2EE is to backup the Application Server as well as the deployed Applications.

## **Service Pack**

A Service Pack (SP) is an update of the software that contains bug fixing and minor improvements. This is a packaging mechanism used by Fuego to deliver these bug corrections and improvements to the Fuego Customer Base.

The Service Pack packaging ONLY contains the delta of the modified files based on the previous Fuego Service Pack or release.

They are not acumulative, therefore, for example, to apply SP3, you first have to apply SP1 and SP2.

In most of the cases, the Service Pack packaging is significantly smaller than the Installer package.

FuegoBPM can be configured to point to a URL at Fuego where new service packs will be published when available. However, this is not the recommended approach for getting service packs for UAT or Production Environment. Manual Service Pack application is recommended for UAT or Production environments.

## **Hotfix**

Fuego HotFixes is a packaging mechanism used by Fuego to deliver corrections to the customer before the closure date of a Service pack. HotFixes (HF) contain corrections for Production Halted



situations and also corrections that require very complicated workarounds. Essentially, the HotFix allows Fuego to release a correction ahead of service Pack release time. All corrections included into a HotFix will be included in the following Service Pack based on internal procedures enforced by Fuego. The Fuego customer can install safely a HotFix knowing that these corrections will not be lost when applying the next available Service Pack released by Fuego.

They are acumulative. That means that when you apply the latest hotfix, you are applying every other HotFix released previously for your particular version.

A HotFix can only be applied manually after getting it in the Fuego's Customer Support Download page.

## **FuegoBPM Service Pack Installation**

Service Packs do not generate automatically any backup of files being modified. For this reason, the developer or administrator should manually create a backup of all the folders and files underneath the installation directory of the product being updated so that the state before the Service Pack is applied can be restored if needed. The most convinient way is to create an archive file of the Fuego Product root installation folder into a ZIP file (most common format for Windows) or TAR/TGZ (on Unix Operating Systems).

### **Configure Service Pack preferences**

Refer to FuegoBPM Administration Center - Performing Service Pack Updates topic, to learn how to configure the *Service Packs Update*.

### **Getting and Applying a Service Pack**

Service Packs can be obtained either *OnLine*, by configuring and executing the *Check for updates* action, or *Manually* from the Fuego's Customer Support Download page.



- **OnLine:** the *Check for updates* action, obtains the Service Pack and applies it to the installation.
- **Manually:** once the Service Pack was download from the Customer Support Download page, execute the *Local Update* action from the FuegoBPM application.

## Applying a Service Pack to the FuegoBPM Enterprise

### Before Applying a Service Pack to an Enterprise Installation

Before starting the installation of the Service Pack and after making the indicated backup of your installation, all other Fuego Enterprise applications should be stopped. These applications may include a running FuegoBPM Server, a Fuego Updater, and eventually the FuegoBPM COMBridge and .NETBridge.

### Checking the Service pack logging

The Service Pack installation is recorded into a logging file provided by Fuego. This file is located in the following folder underneath the Fuego Enterprise root installation directory: update/updateHistory.log.

After a successful installation of a Service Pack over an existing Fuego Enterprise installation, the following entries should be found at the end of this logging file.

**Thu Feb 02 02:28:19 ART 2006 - Start Installing Update - Installation Info: 5.5 GA 7 - Patch Info: 5.5 GA 8(Tue Jan 03 19:28:58 ART 2006) Thu Feb 02 02:39:03 ART 2006 - Update Installed Successfully - Installation Info: 5.5 GA 7 - Patch Info: 5.5 GA 8(Tue Jan 03 19:28:58 ART 2006)**

Likewise, if there is an error in the application of the Service Pack, the failure attempt will be logged into this file. The reason of the failure will be shown in the Progress Windows when applying the Service Pack as well as in the Admin Center log file



(AdminCenterConsole.log) inside the “log” folder underneath the Fuego Enterprise root installation directory.

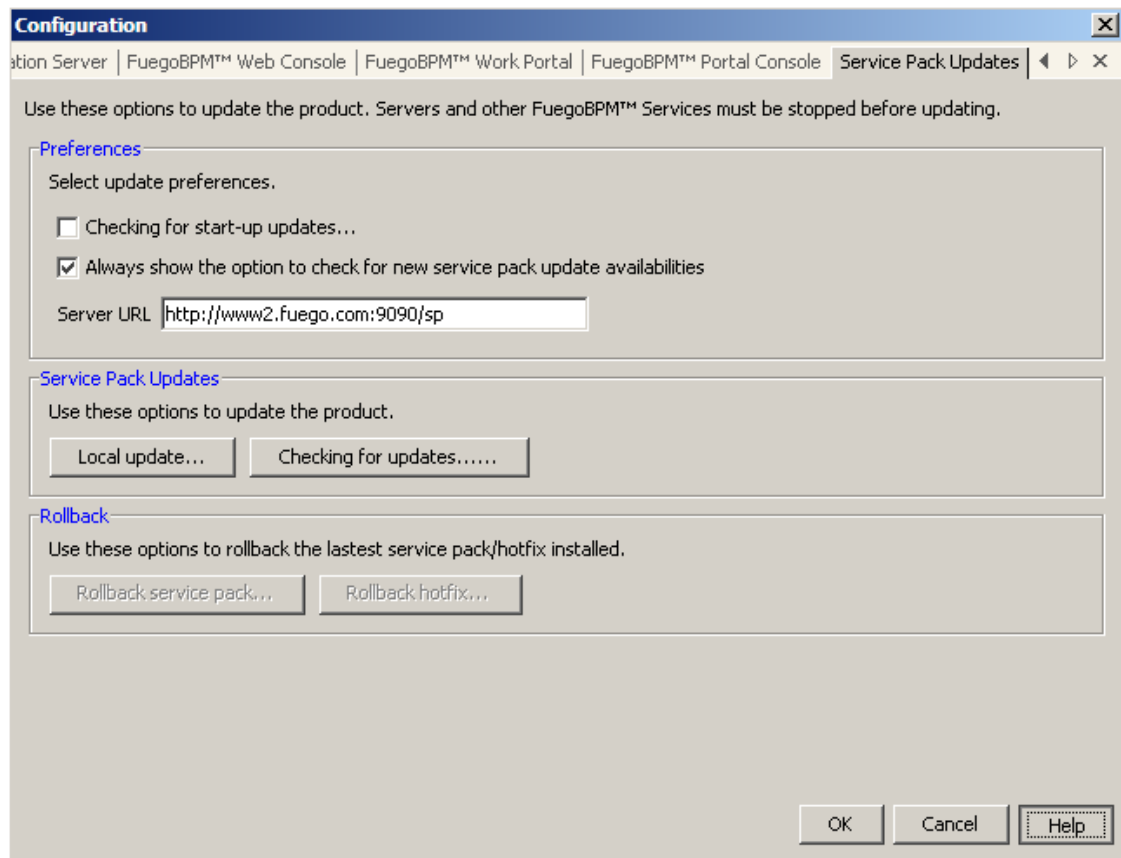
In addition, the “Build#” and “Built On” properties on the Help->About panel should reflect the date of the Service Pack. It is strongly recommended that the Fuego Administrator checks this panel to re-confirm the successful installation of the Service Pack.

## **Performing Service Pack updates**

### **To perform a service pack update**


1. Click the Configuration link on the FuegoBPM Enterprise Administration Center main window. The Configuration dialog box appears.
2. Click the Service Pack Updates tab.





## Applying a Service Pack OnLine

### Note

 **Important:** Before updating a FuegoBPM Service Pack, stop all Servers and any other FuegoBPM services. Otherwise, the update will fail.

To apply a Service Pack online,

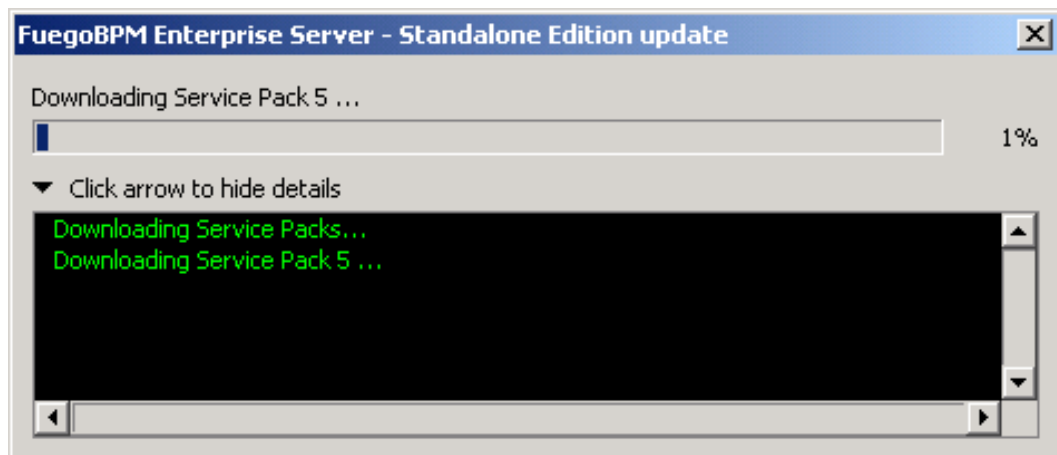
1. Click the button *Check for updates...* in the **Service Pack Updates** tab of the FuegoBPM Administration Center,
2. The *Check for updates* detects which are the possible SPs to apply to your installation.





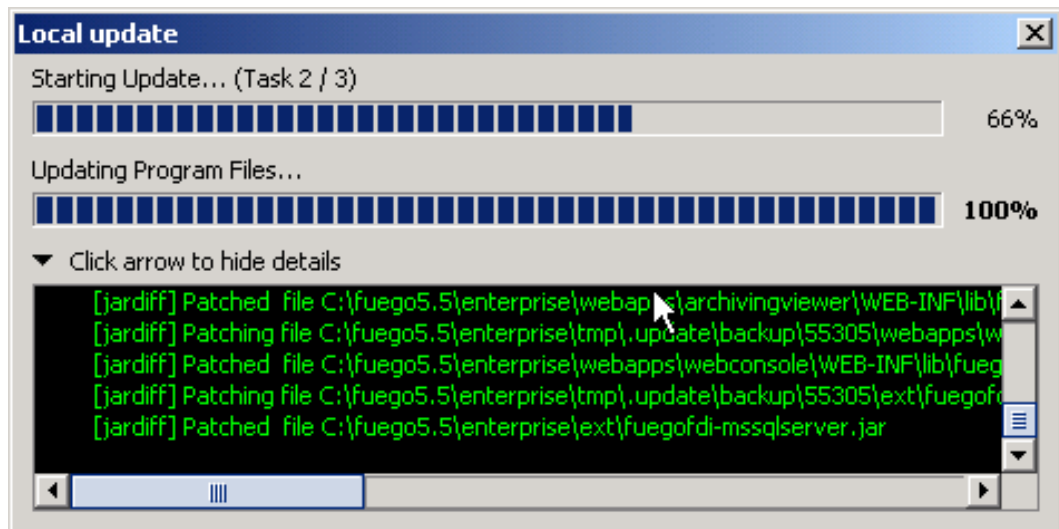
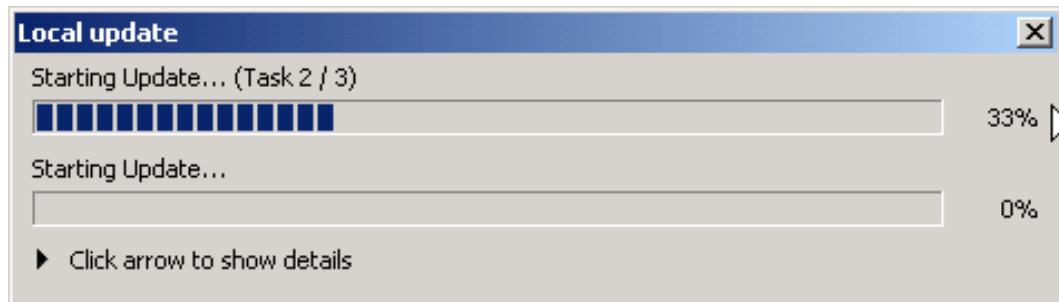
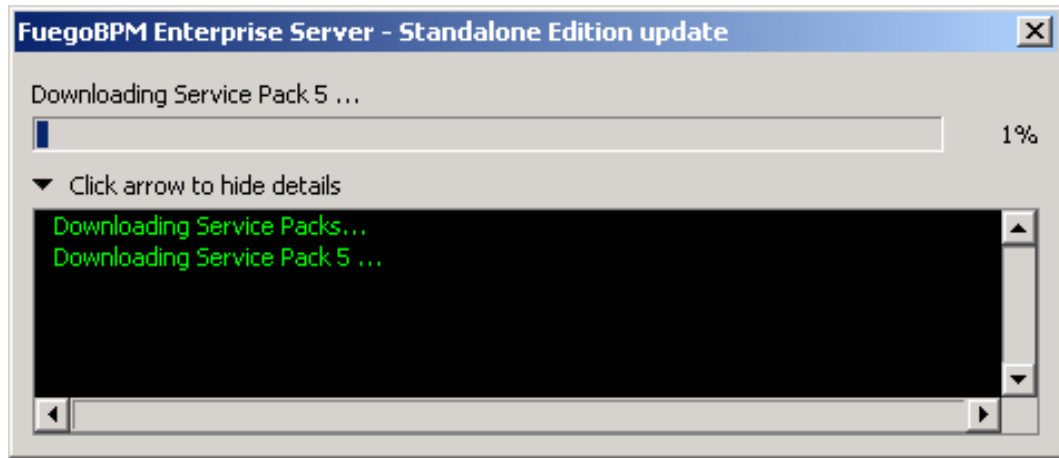
In this example the installation is a FuegoBPM Enterprise Standalone SP4. The *Check for Updates* detects SP5 and SP6 can be updated. And let's the user know that the SP7 would have to be done after restarting the FuegoBPM Administration Center.

3. Click **Yes** to begin the update or **No** to cancel the operation. Once the execution is confirmed a dialog showing the progress is displayed. Click the arrow to *show* or *hide* the update details.

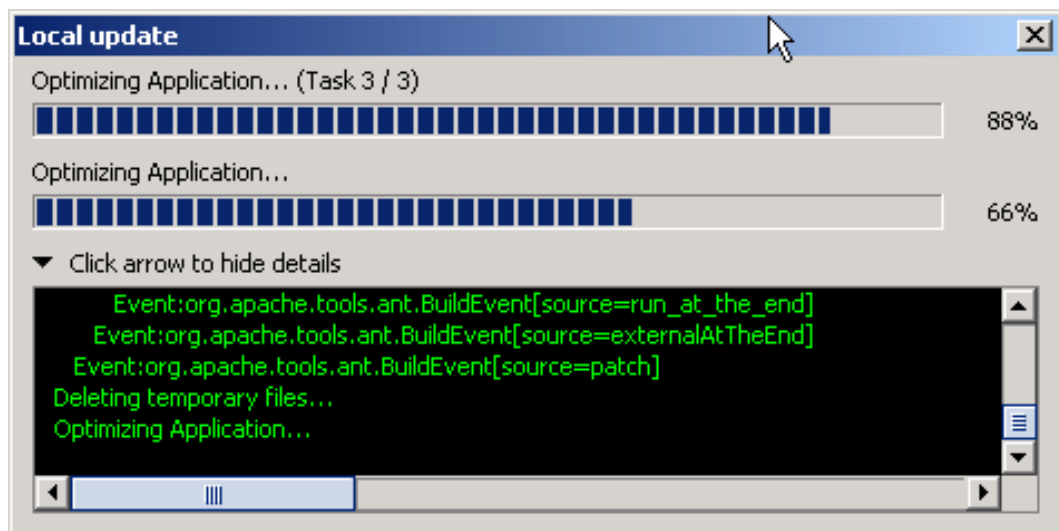
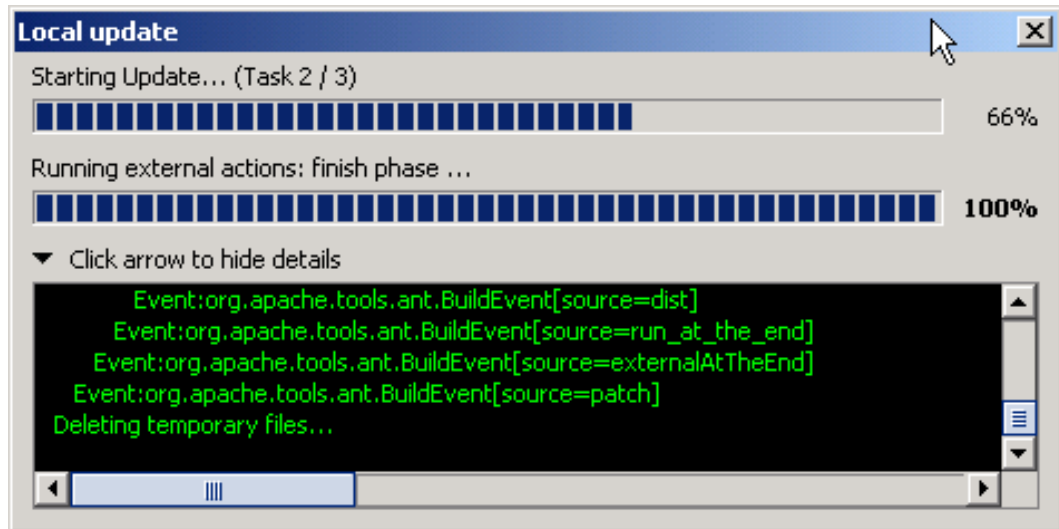


4. Some of the steps you will see while updating:

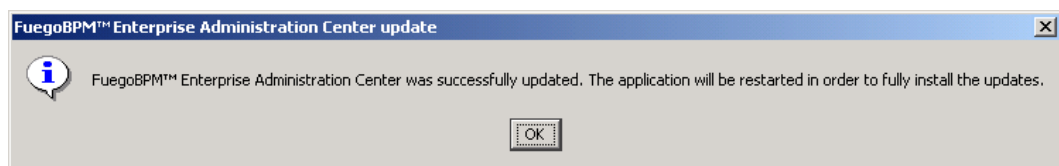








5. Once the installation update ends, it restarts the FuegoBPM Studio.



## Note




When you start FuegoBPM Administration Center, you can set its



preferences to automatically check for new updates.

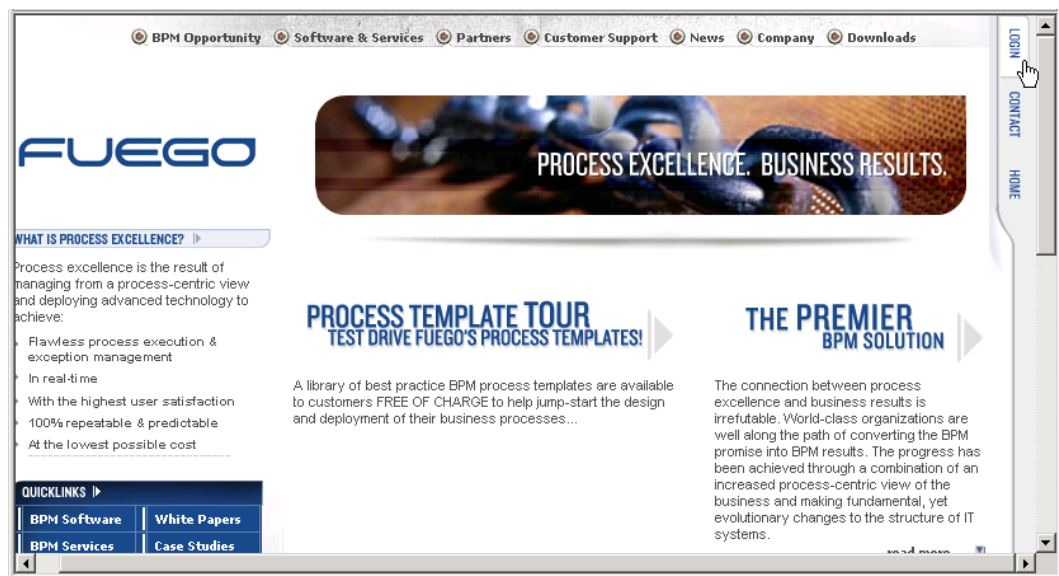
## Applying a Service Pack Manually

### Note

 **Important:** Before updating a FuegoBPM Service Pack, stop all Servers and any other FuegoBPM services. Otherwise, the update will fail.

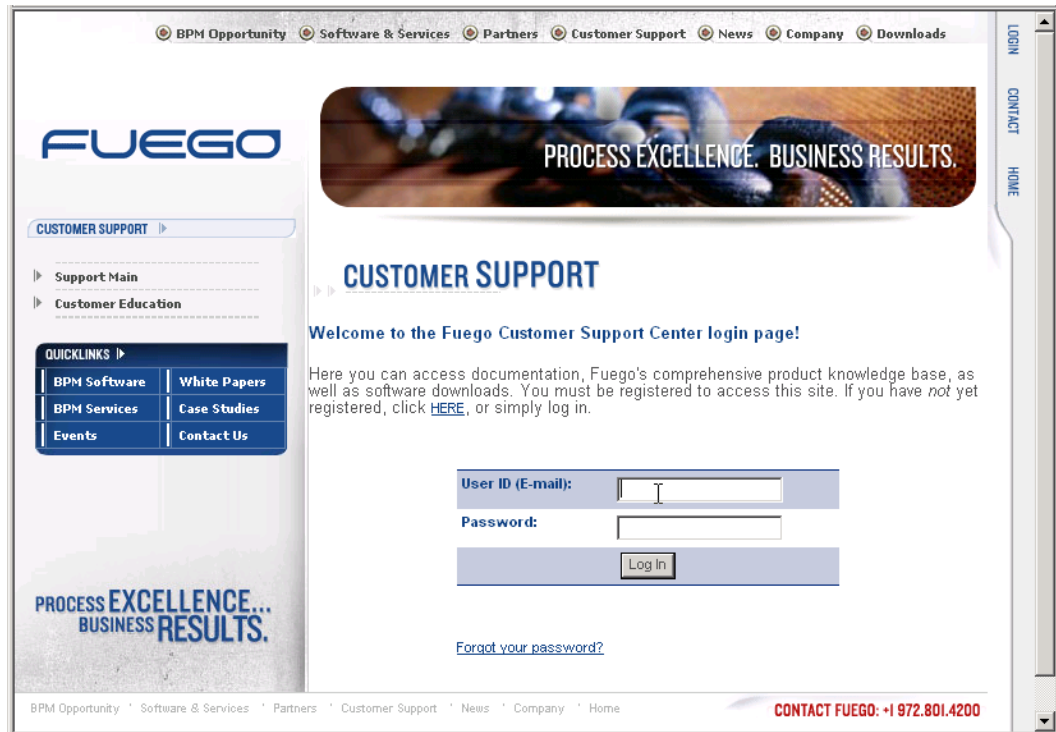
To apply a Service Pack manually,

1. Go to the Fuego homesite and select the *Login* tab on the right top of your browser,

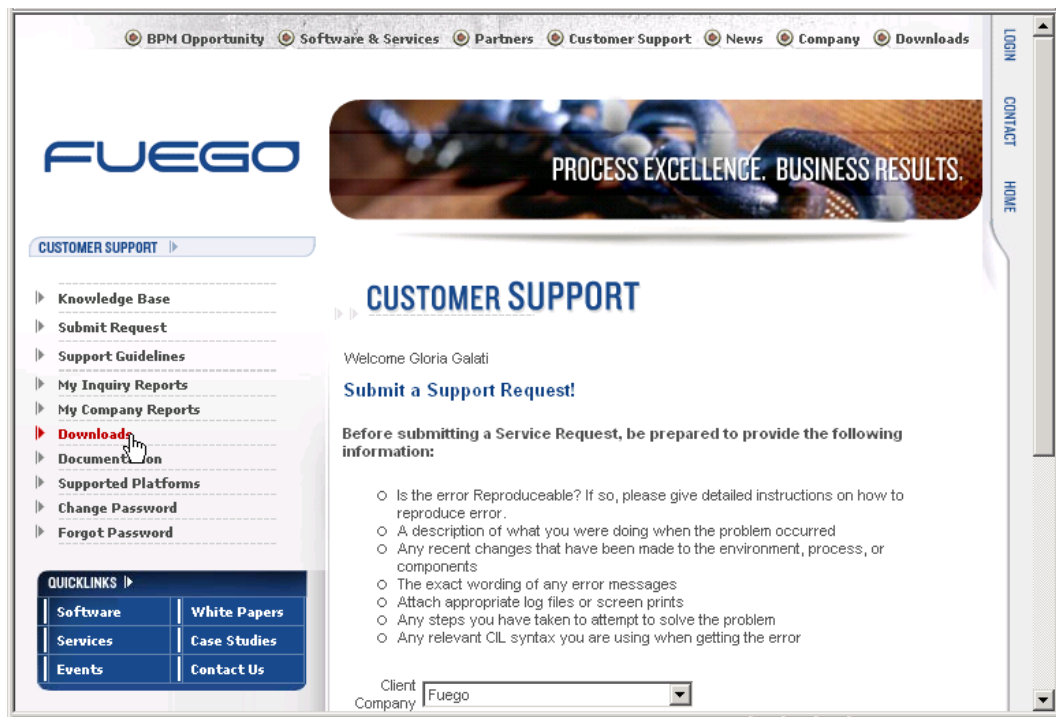


2. Type your email and password,



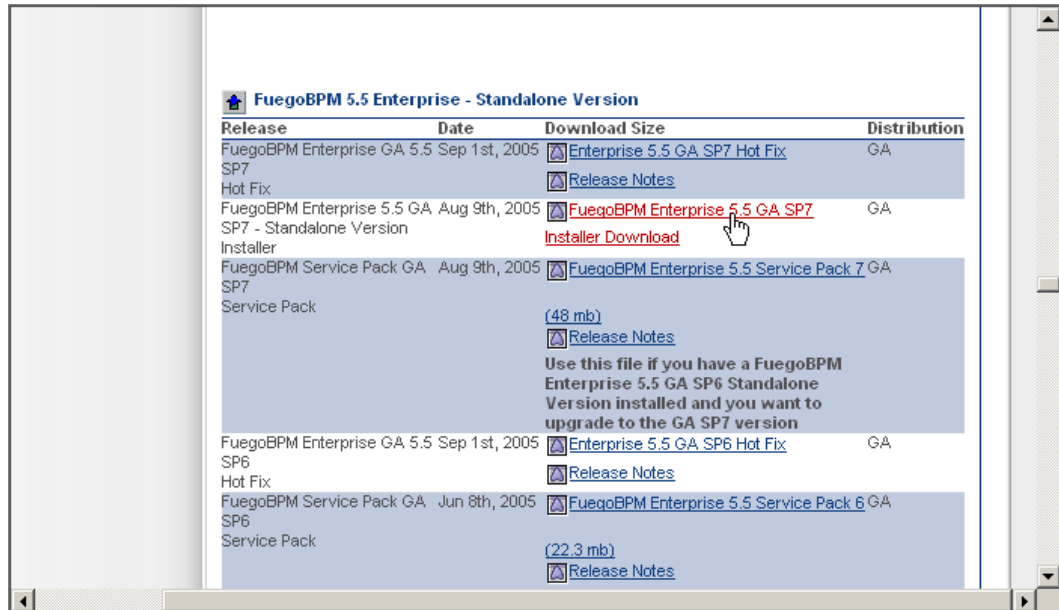


3. Click on the link *Downloads* on the left pane of the screen,



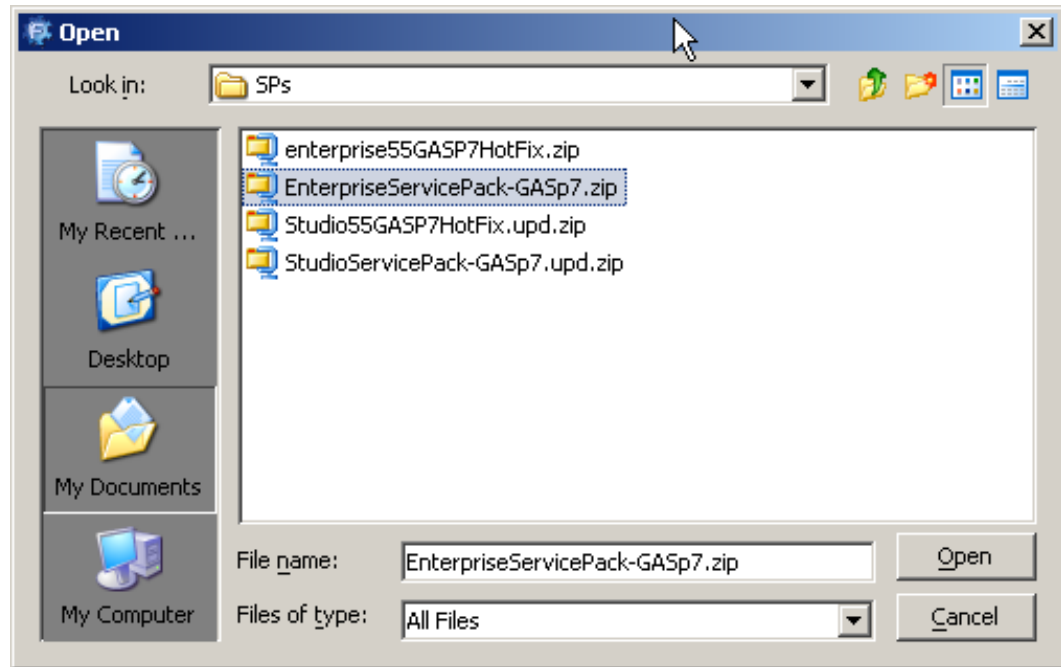


4. The list of versions is listed according to your customer profile. Select the Service Pack you are looking for and begin the download .

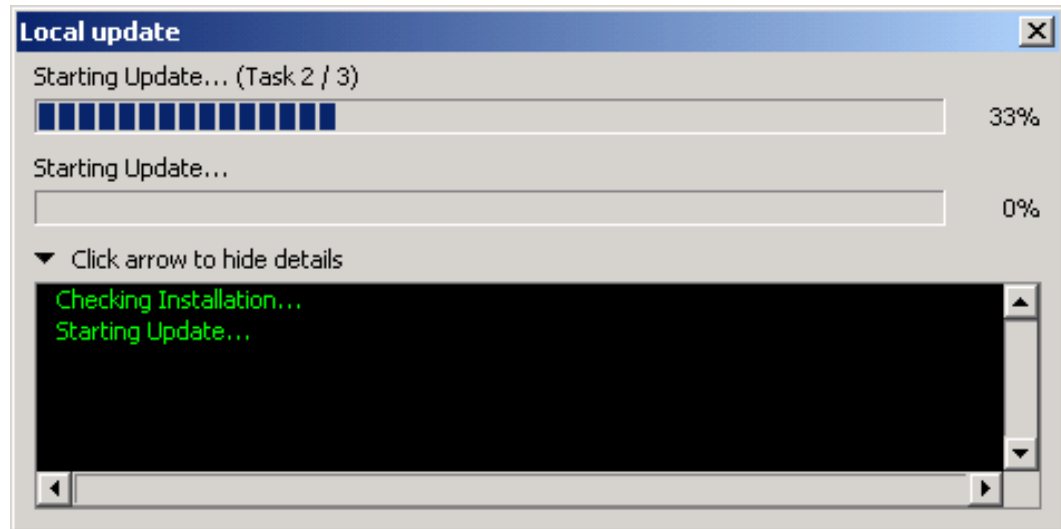


5. Once the download has finished, launch the FuegoBPM Administration Center.
6. Run the *Local Update* button in the **Service Pack Updates** tab of the FuegoBPM Administration Center. Browse to the location where the Service Pack was downloaded, select the file and click **Open**.



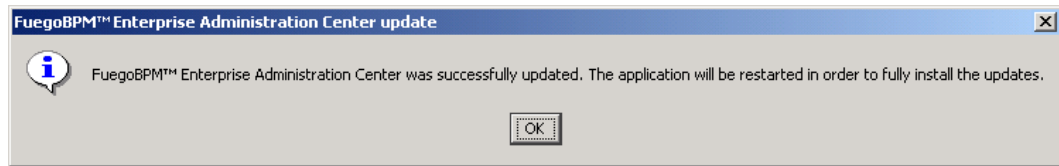


7. The Service pack installation begins.



8. Once the installation update ends, it restarts the FuegoBPM Administration Center.





## Applying a Service Pack to the FuegoBPM Studio

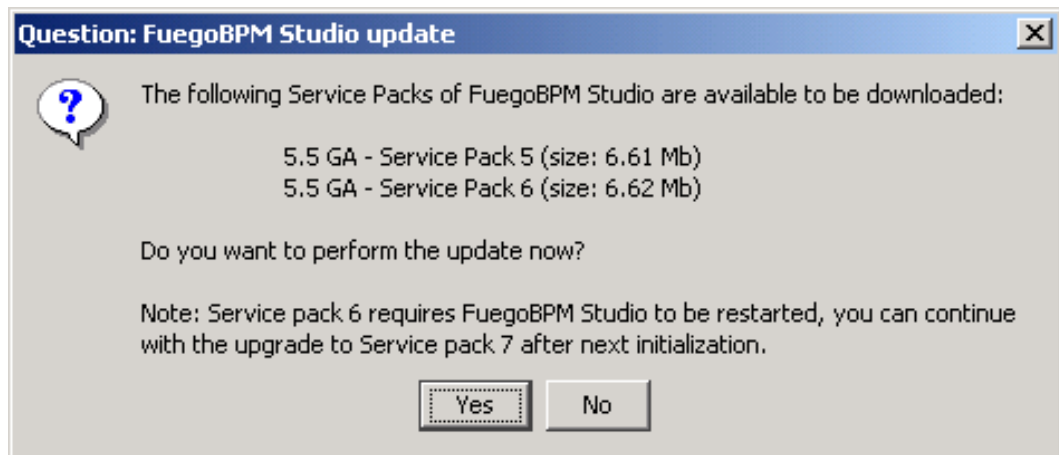
### Configure Service Pack preferences

Refer to FuegoBPM Studio Preferences, to learn how to configure the *Service Packs Update*.

### Applying a Service Pack OnLine

To apply a Service Pack online,

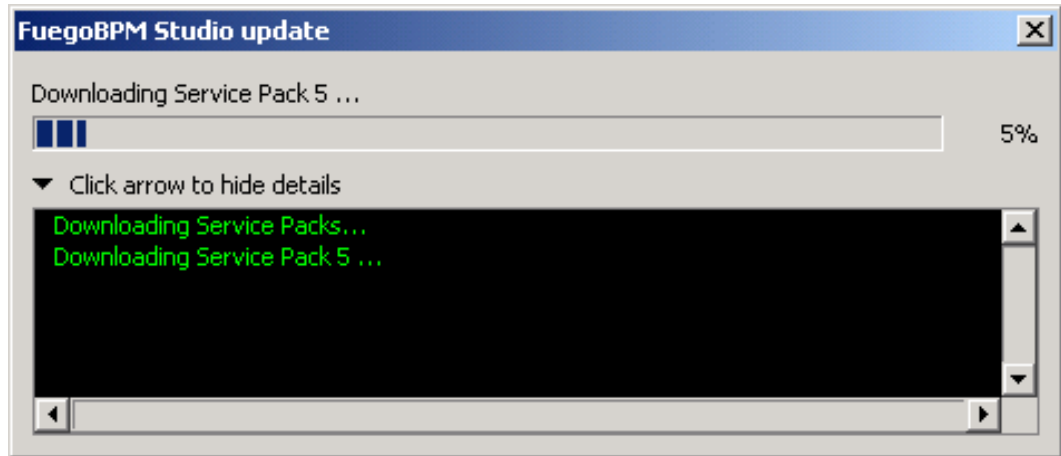
1. Run the option *Updates/Check for Updates* from the main menu **File** of the FuegoBPM Studio,
2. The *Check for Updates* detects which are the possible SPs to apply to your installation.



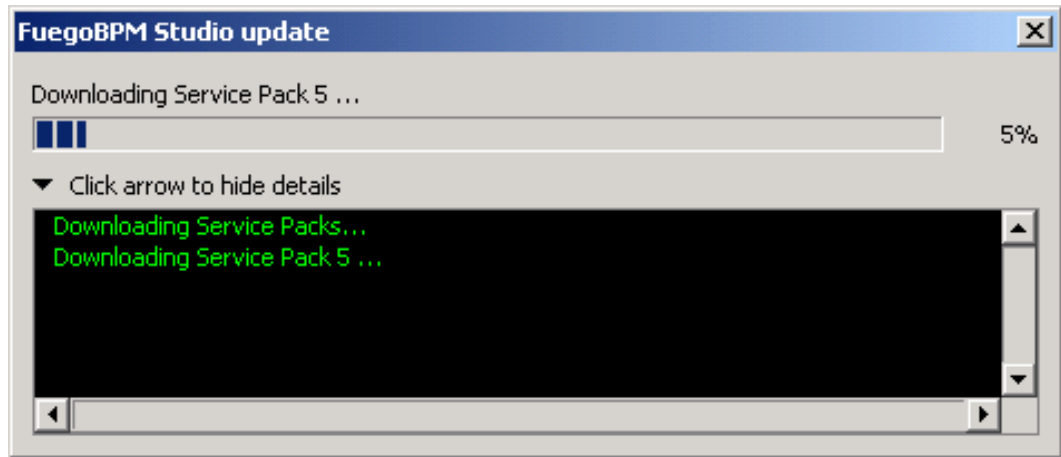
In this example the installation is a FuegoBPM Studio SP4. The *Check for Updates* detects SP5 and SP6 can be updated. And let's the user know that the SP7 would have to be done after restarting the FuegoBPM Studio.



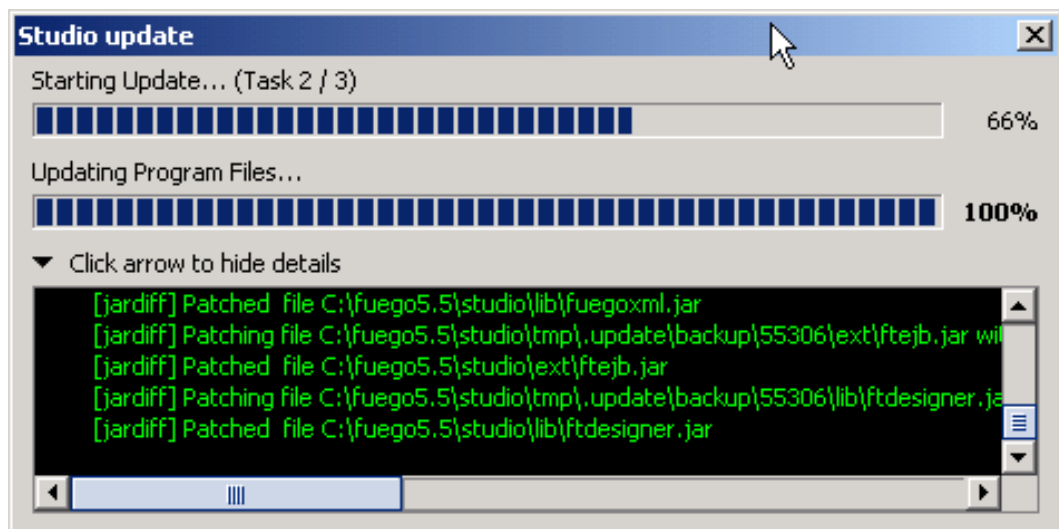
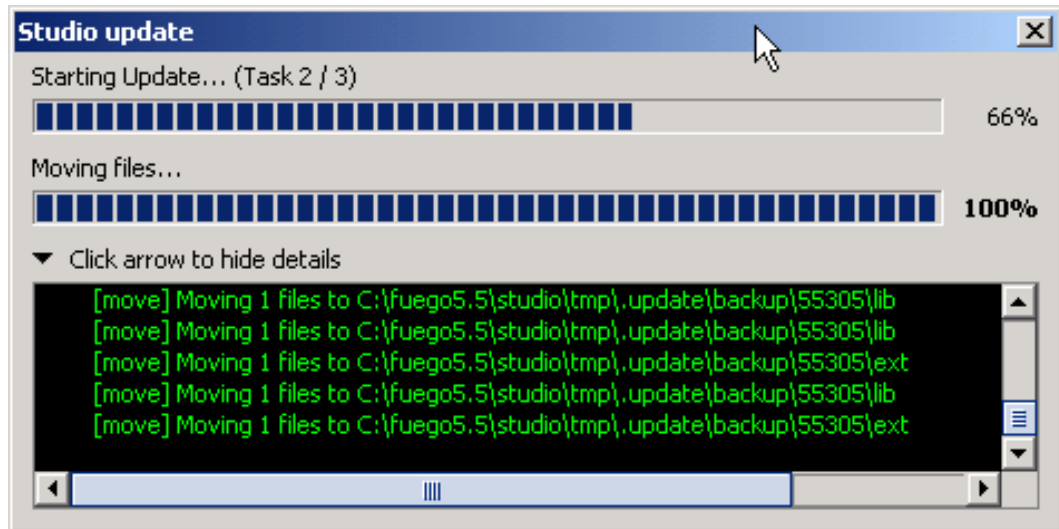
3. Click **Yes** to begin the update or **No** to cancel the operation. Once the execution is confirmed a dialog showing the progress is displayed. Click the arrow to *show* or *hide* the update details.



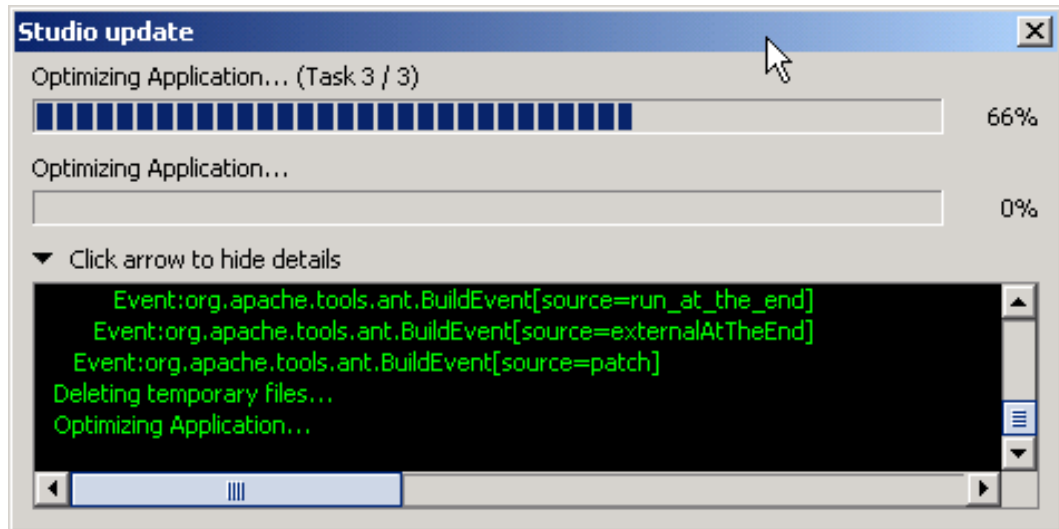
4. Some of the steps you will see while updating:



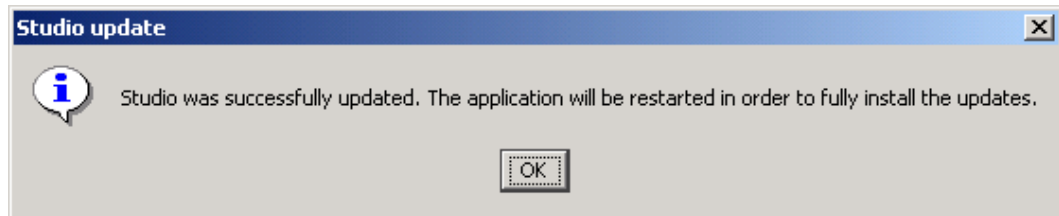









5. Once the installation update ends, it restarts the FuegoBPM Studio.



## Note

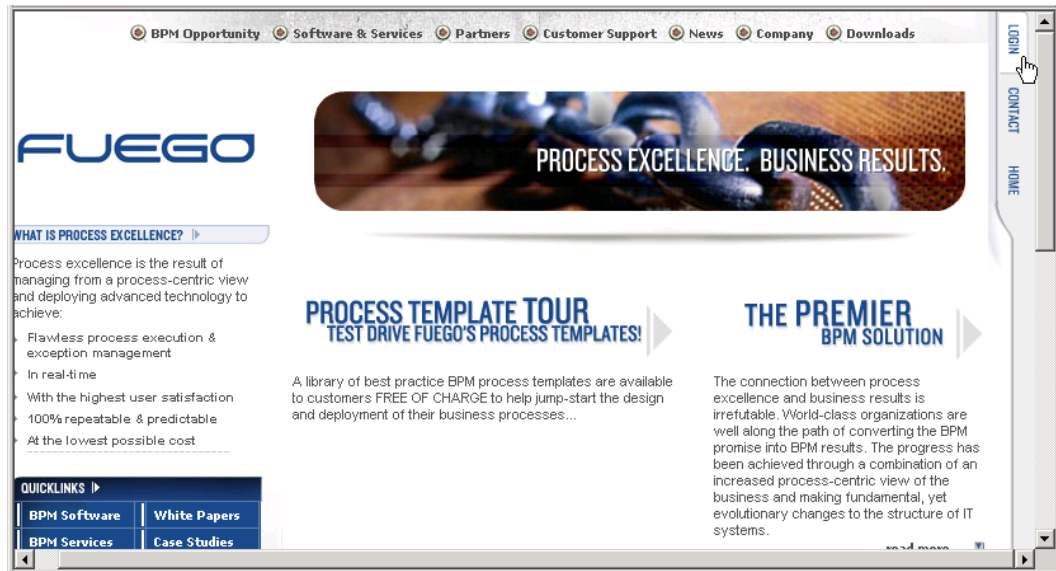
 When you start FuegoBPM Studio, you can set the Studio preferences to automatically check for new updates.

## Applying a Service Pack Manually

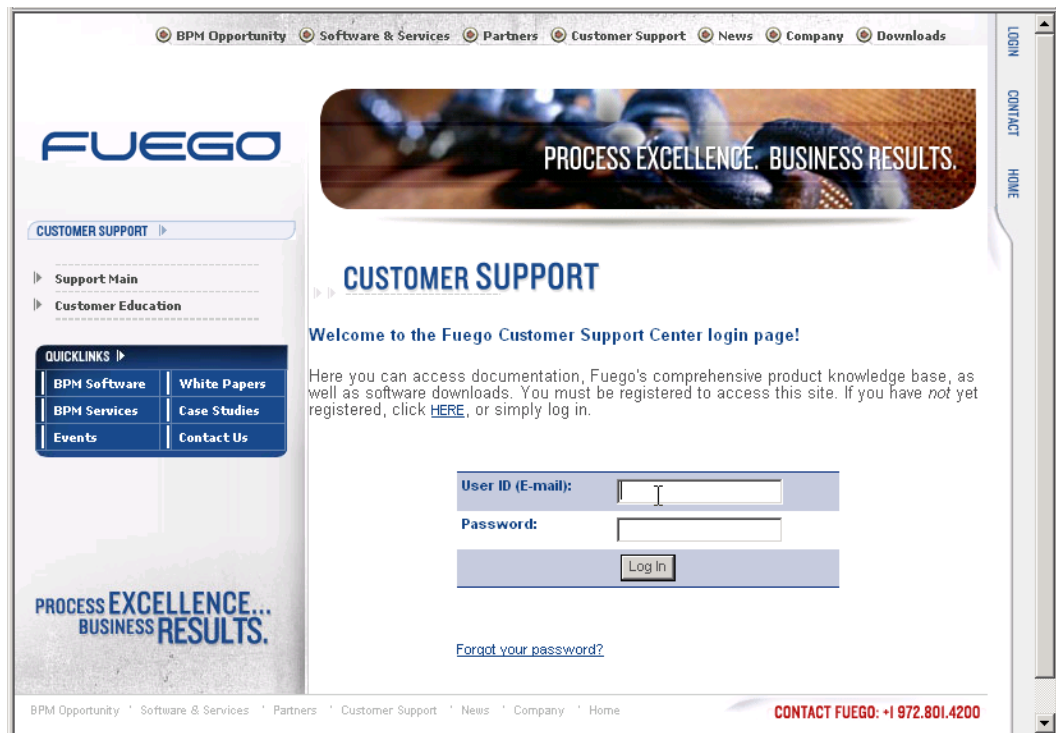
To apply a Service Pack manually,

1. Go to the Fuego homepage and select the *Login* tab on the right top of your browser,



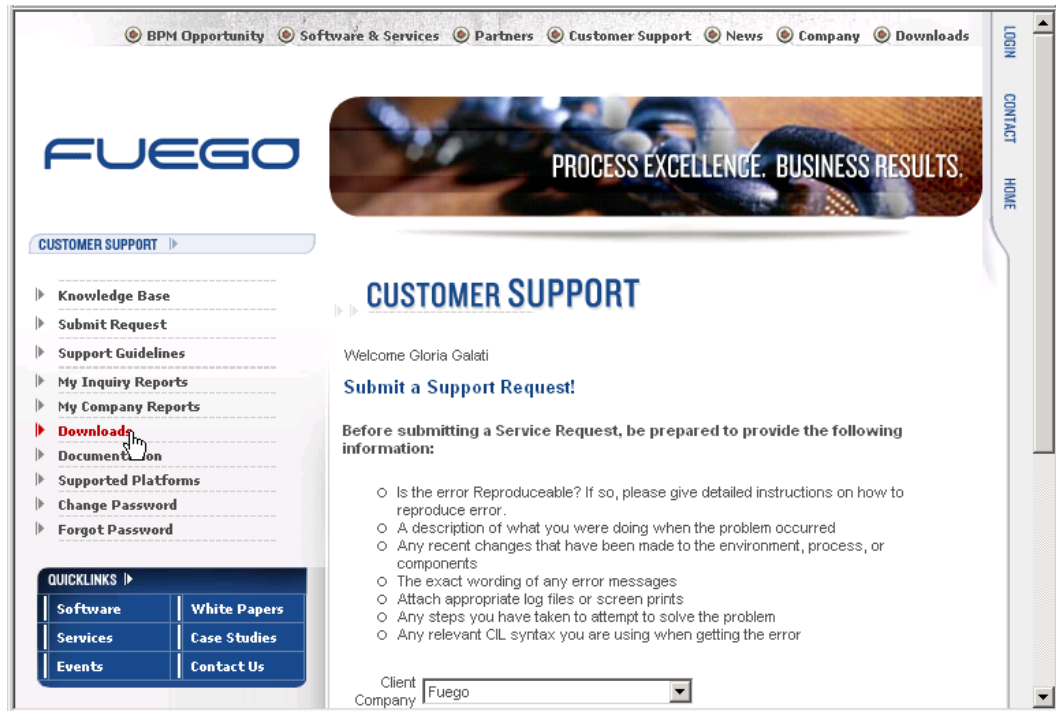


2. Type your email and password,

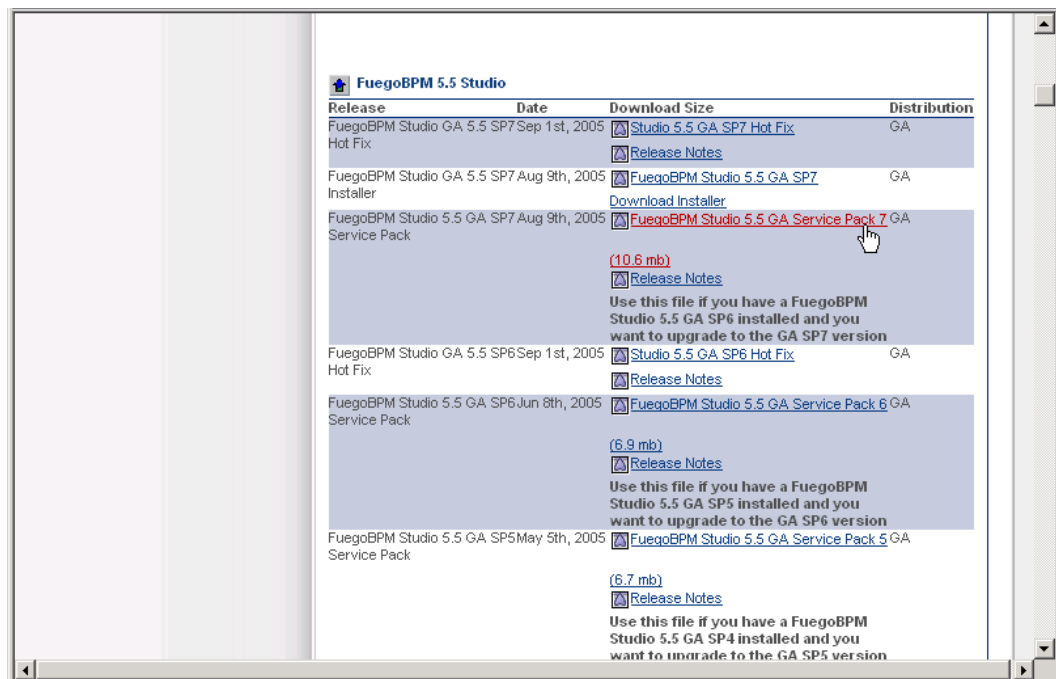


3. Click on the link *Downloads* on the left pane of the screen,



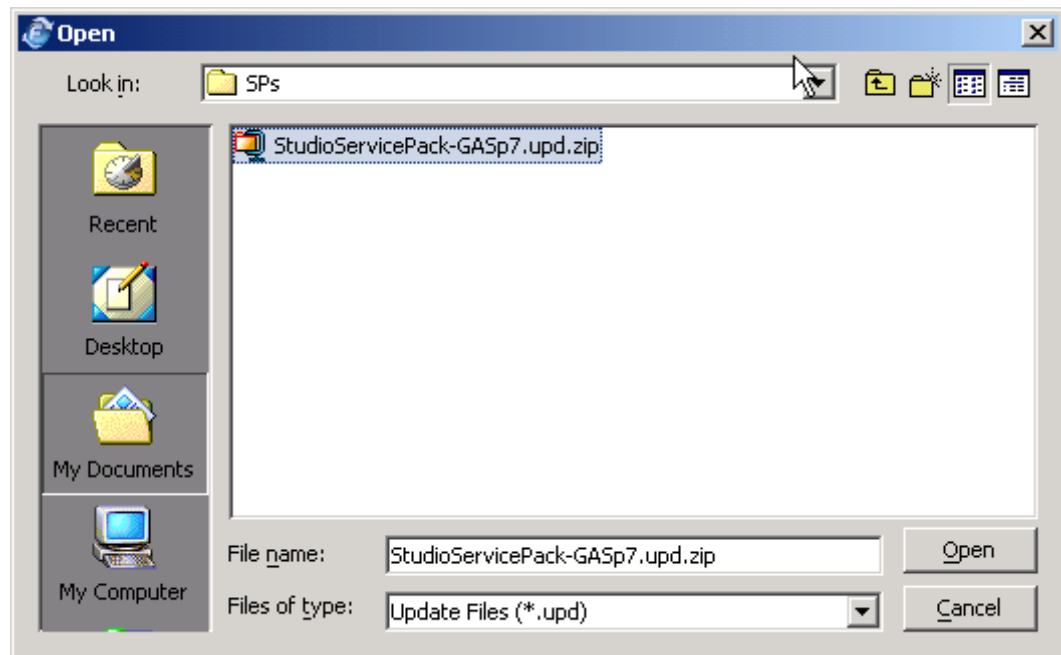


4. The list of versions is listed according to your customer profile. Select the Service Pack you are looking for and begin the download .

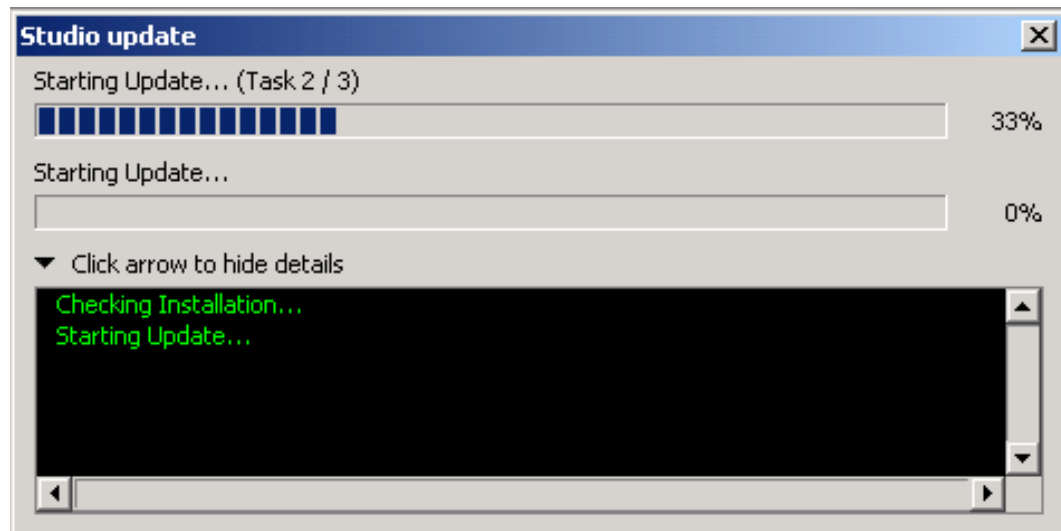




5. Once the download has finished, launch the FuegoBPM Studio and close any opened project.
6. Run the *Updates/Studio Local Update* option from the main *File* menu. Browse to the location where the Service Pack was downloaded, select the file and click **Open**.

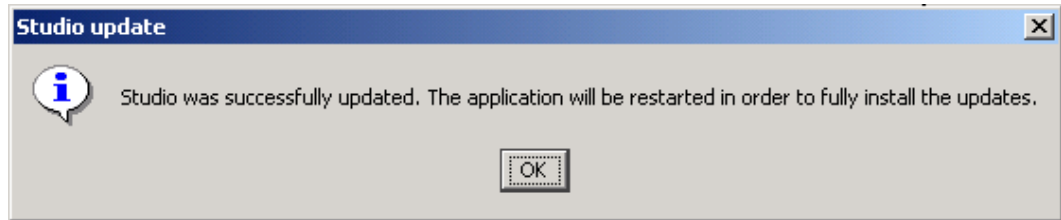


7. The Service pack installation begins.





8. Once the installation update ends, it restarts the FuegoBPM Studio.



## Rollback Service Pack

If a Service Pack has been applied and needs to be rolled-back, run the option *Updates/Rollback service pack* from the main menu **File** of the FuegoBPM Studio

## Applying a Service Pack to the FuegoBPM Designer

### Configure Service Pack preferences

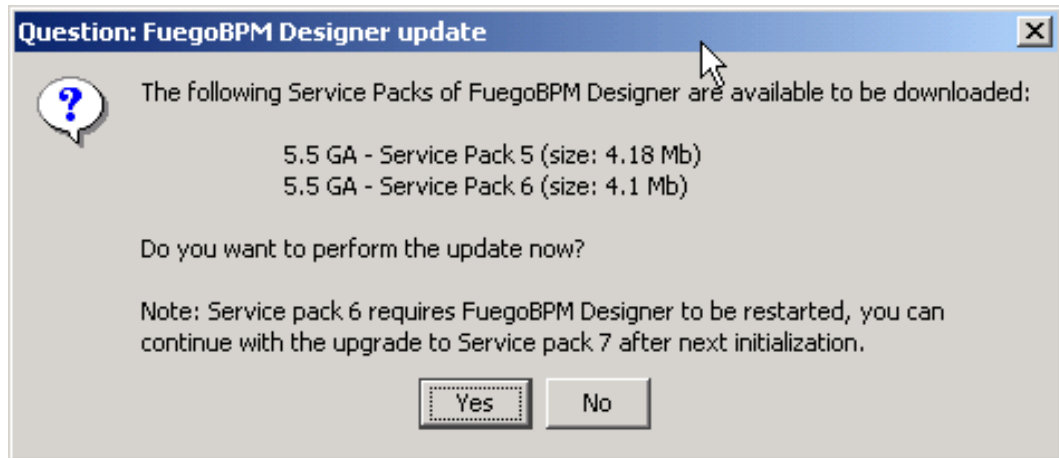
Refer to FuegoBPM Designer Preferences, to learn how to configure the *Service Packs Update*.

### Applying a Service Pack OnLine

To apply a Service Pack online,

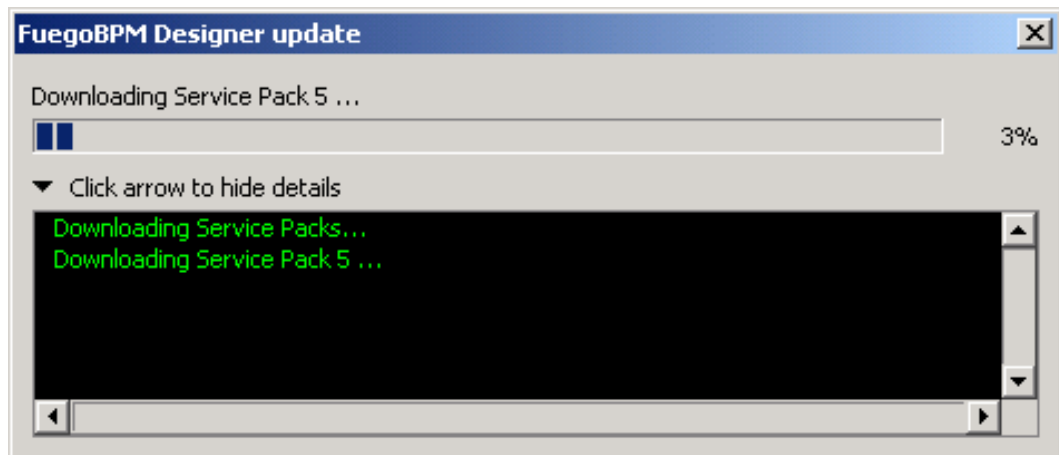
1. Run the option *Check for Updates* in the main menu **File** of the FuegoBPM Designer,
2. The *Check for Updates* detects which are the possible SPs to apply to your installation.





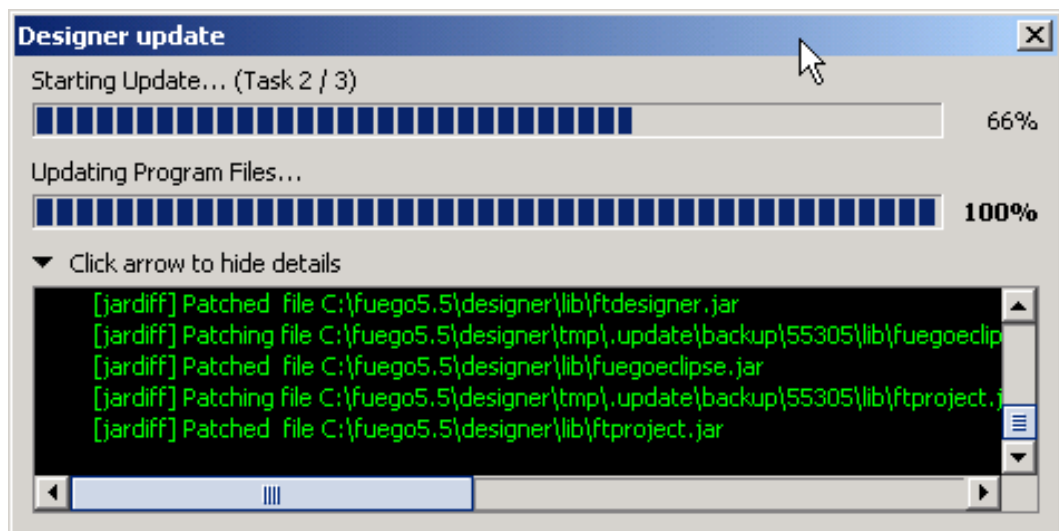
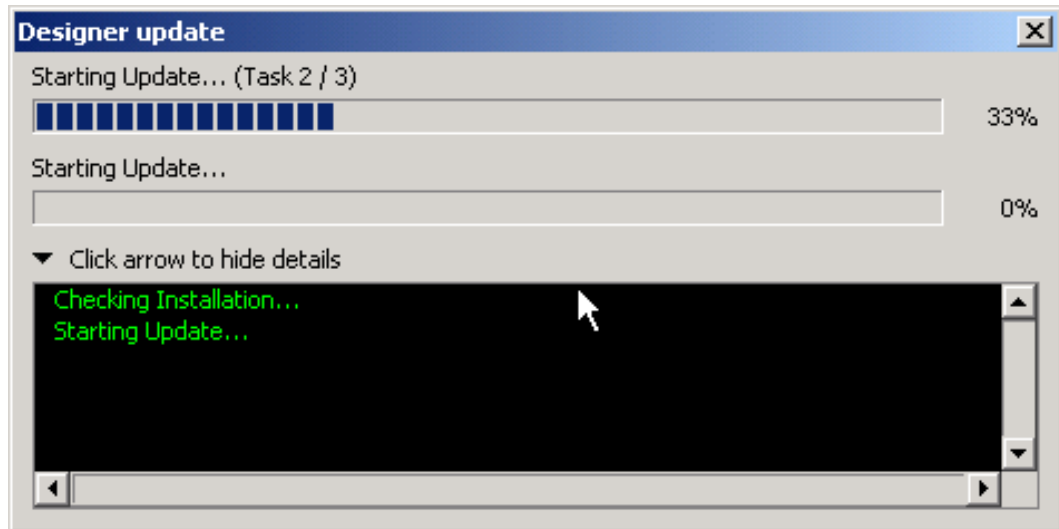
In this example the installation is a FuegoBPM Designer SP4. The *Check for Updates* detects SP5 and SP6 can be updated. And let's the user know that the SP7 would have to be done after restarting the FuegoBPM Designer.

3. Click **Yes** to begin the update or **No** to cancel the operation. Once the execution is confirmed a dialog showing the progress is displayed. Click the arrow to *show* or *hide* the update details.

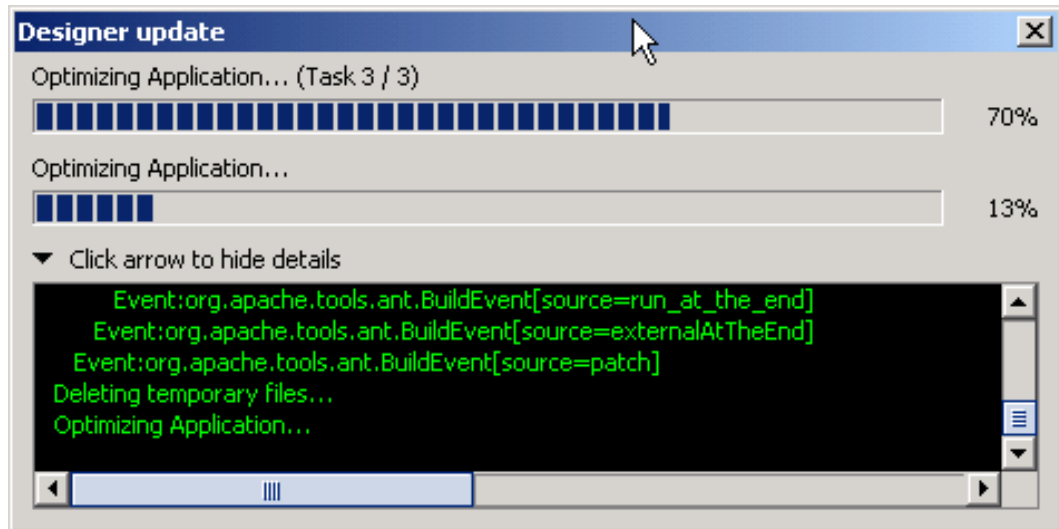


4. Some of the steps you will see while updating:

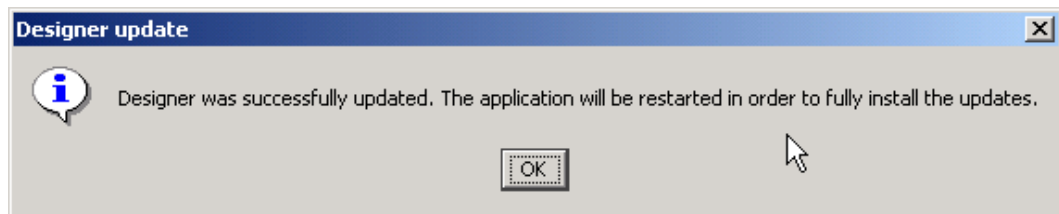









5. Once the installation update ends, it restarts the FuegoBPM Designer.



## Note

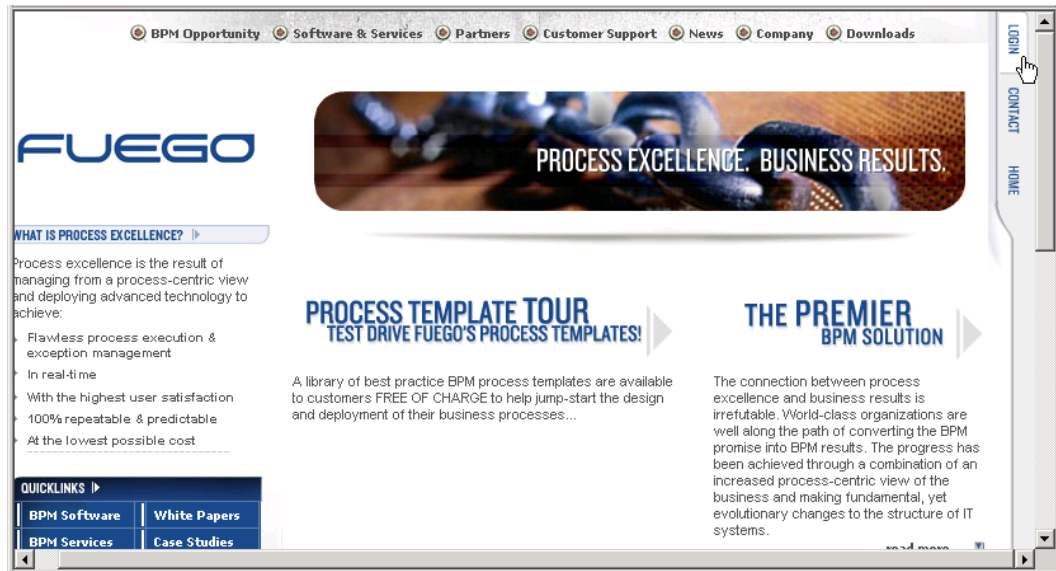
 When you start FuegoBPM Designer, you can set the Designer preferences to automatically check for new updates.

## Applying a Service Pack Manually

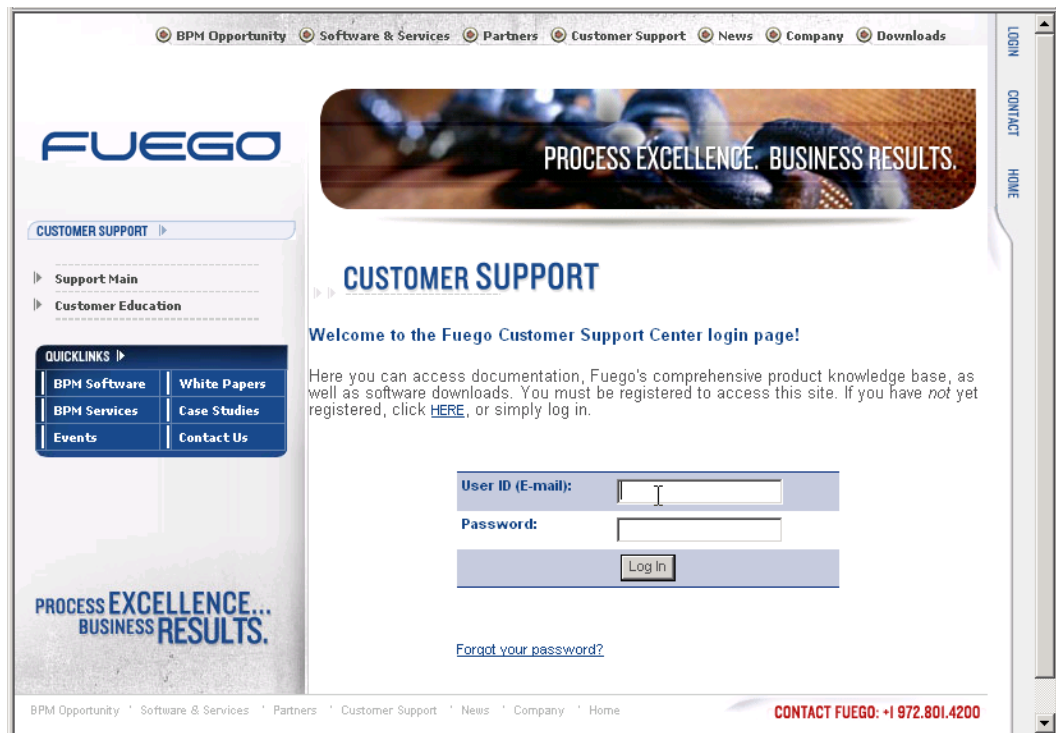
To apply a Service Pack manually,

1. Go to the Fuego homepage and select the *Login* tab on the right top of your browser,



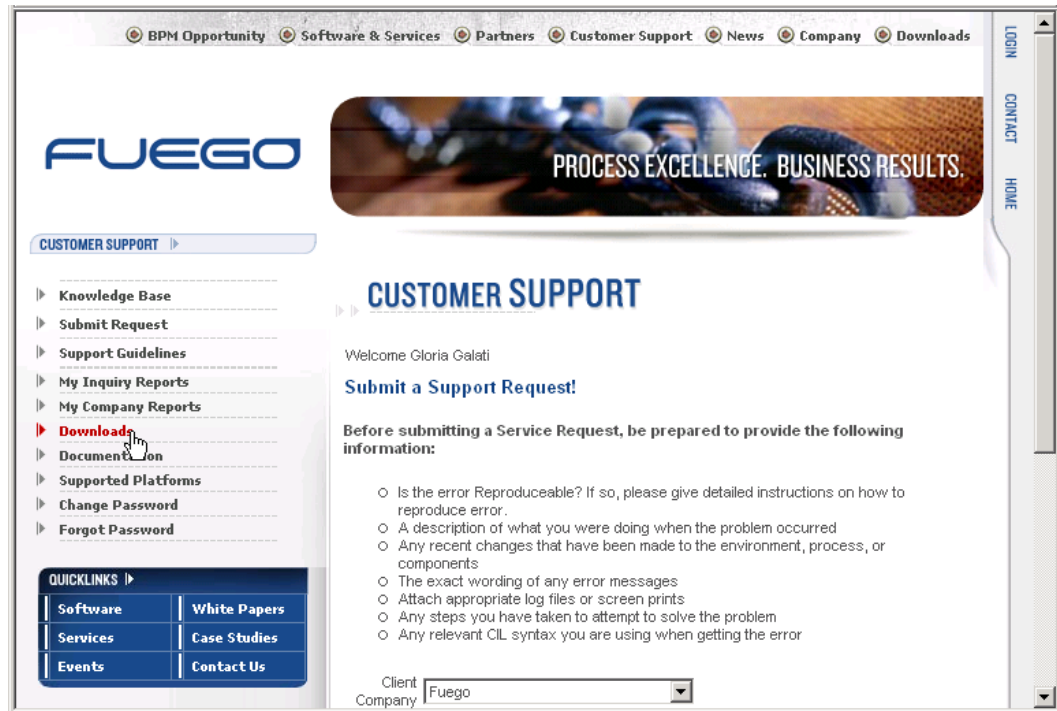


2. Type your email and password,

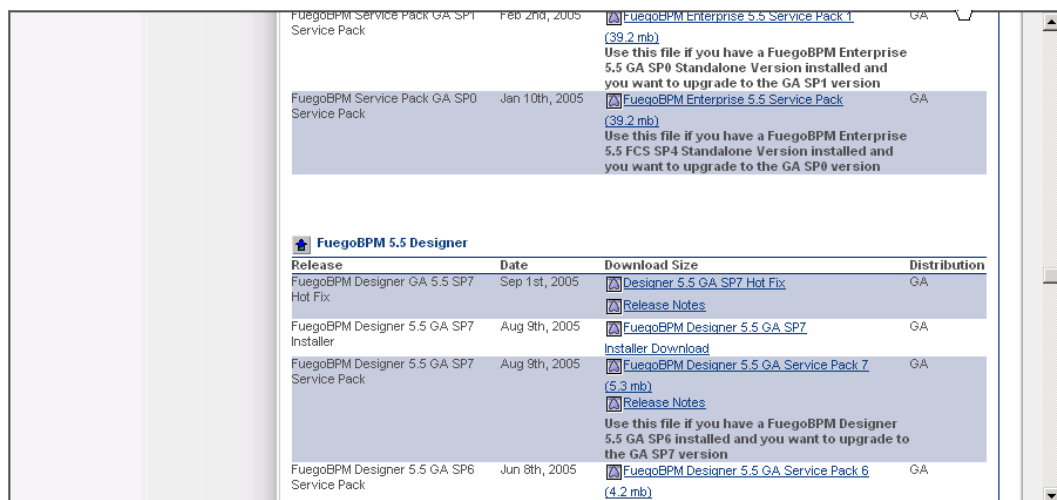


3. Click on the link *Downloads* on the left pane of the screen,



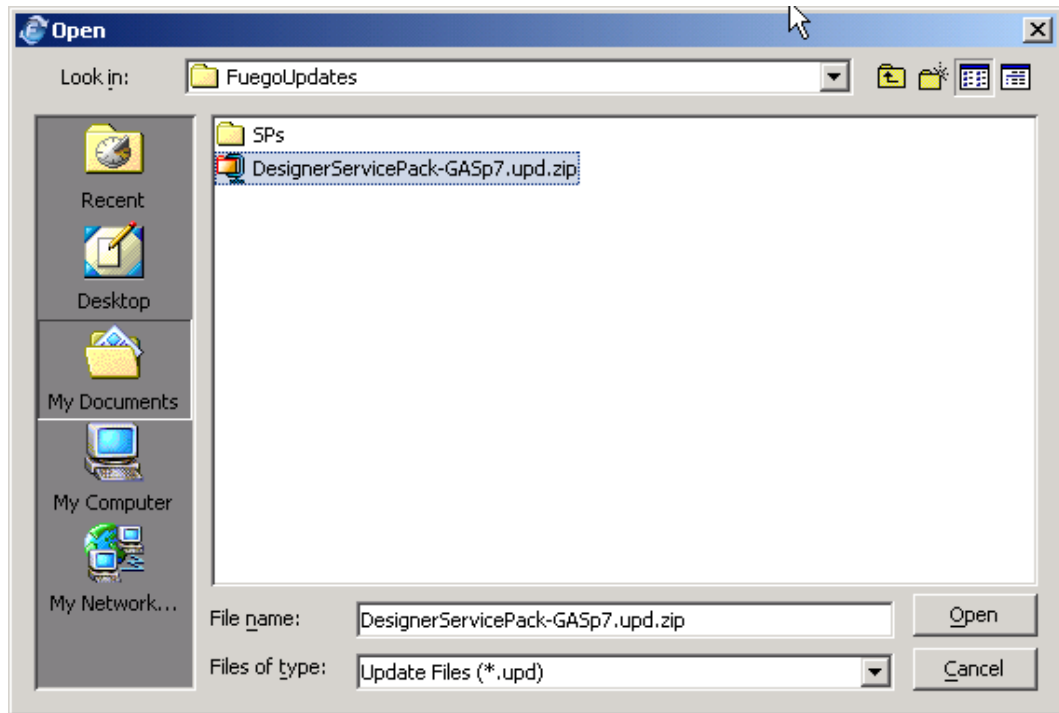


4. The list of versions is listed according to your customer profile. Select the Service Pack you are looking for and begin the download .

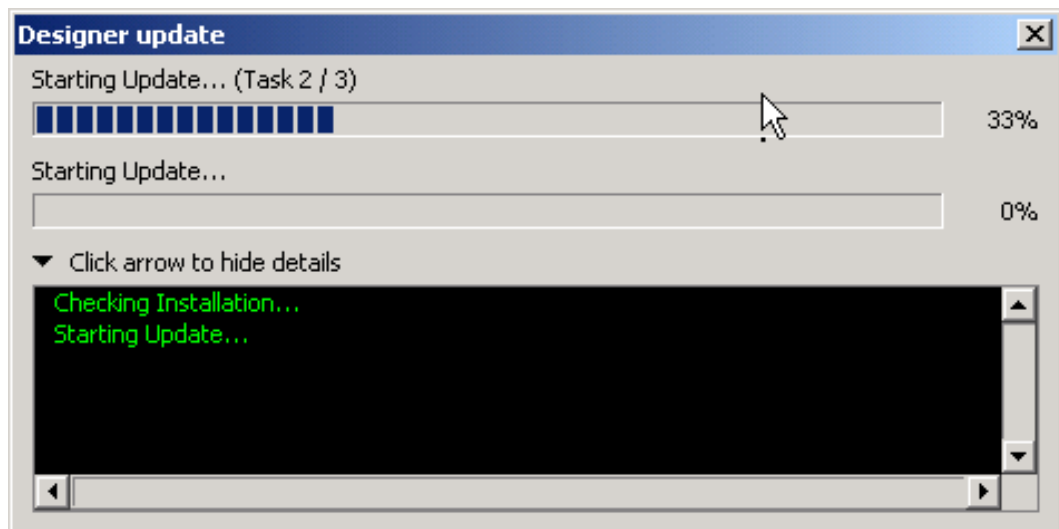




to the location where the Service Pack was downloaded, select the file and click **Open**.

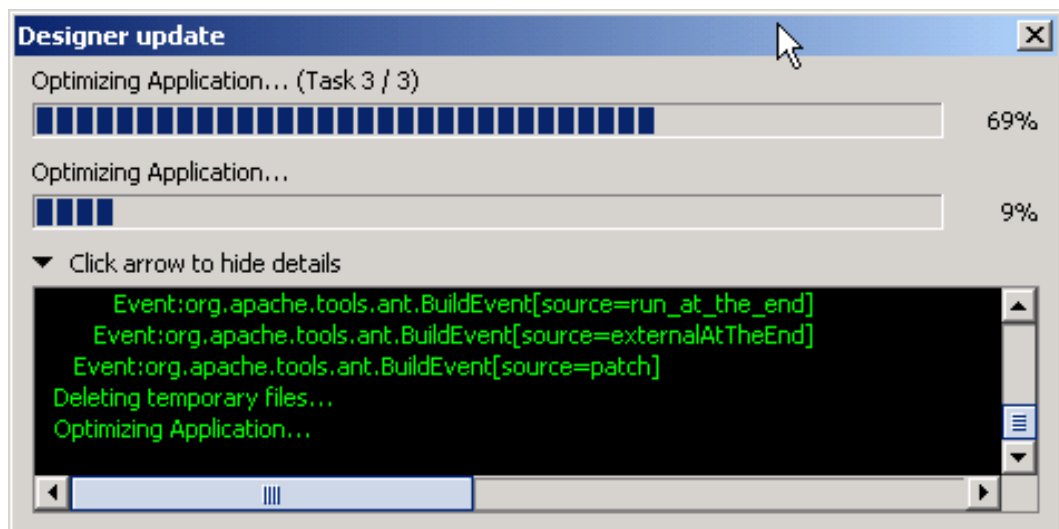
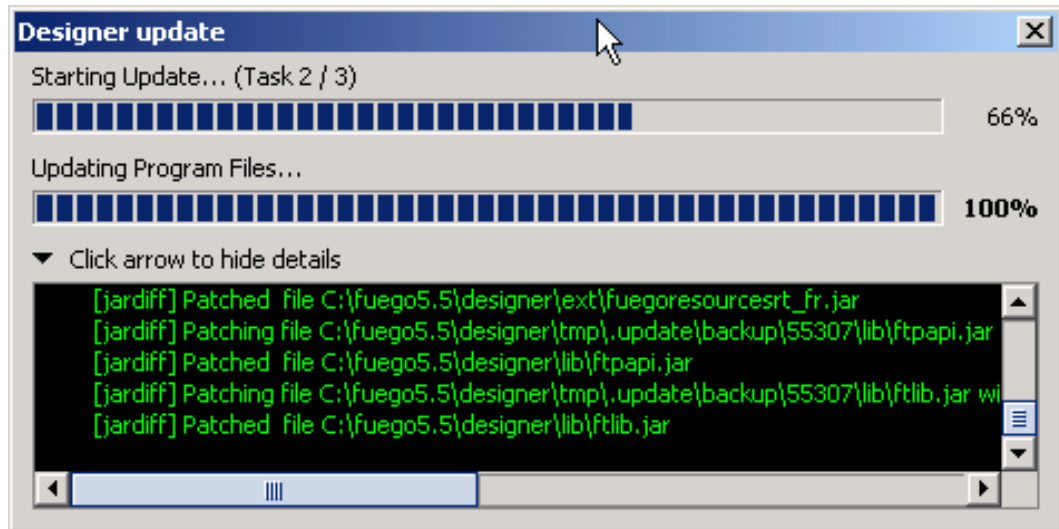


7. The Service pack installation begins.

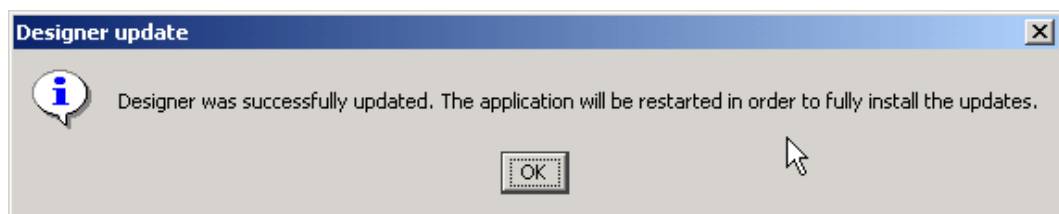


Some steps you will see while updating:





8. Once the installation update ends, it restarts the FuegoBPM Designer.



## FuegoBPM HotFix Installation



## HotFix Backup Strategy

When a *Hotfix* is applied it automatically builds a backup of the files to be updated. The backup is done under the directory *update/hotfix* under the installation directory. Under this directory a new folder is created for each hotfix applied. The new folder is named *fix\_X*, with **X** the number of the applied hotfix. All the files to be modified are copied under this *fix\_X* folder, following the directories hierarchy. Therefore, if the state before the hotfix has to be restored, the files can be copied to their original directories from the last *fix\_X* directory.

The backup is necessary since before the next Service Pack is installed, Fuego will need to rollback all the HotFixes applied to a Fuego installation. This is required since the Service Packs assume an installation without any HotFixes installed.

HotFixes are *idem-potent*. This means that they can be applied as many times as the Fuego Administrator requires that it will always generate the same result. Another property, is that HotFixes are accumulative. This means that the latest published HotFix includes ALL previous release corrections.

One last recommendation is that the Fuego Administrator makes sure that ONLY newer HotFixes are installed on top of a Fuego Enterprise installation with already HotFixes installed. This will help preserve the incremental correction of issues in the Fuego Code. If a previous HotFix is installed, the results are not deterministic.

## Getting and Applying a Hotfix

Get a Hotfix by connecting and downloading it from the Fuego's Customer Support Download page.

Apply a Hotfix by executing the *Local Update* action of the FuegoBPM application.

## Applying a Hotfix to the FuegoBPM Enterprise



## **Before Applying a Service Pack to an Enterprise Installation**

Before starting the installation of the Service Pack and after making the indicated backup of your installation, all other Fuego Enterprise applications should be stopped. These applications may include a running FuegoBPM Server, a Fuego Updater, and eventually the FuegoBPM COMBridge and .NETBridge.

## **Checking the Service pack logging**

The HotFix installation is recorded into a logging file provided by Fuego. This file is located in the following folder underneath the Fuego Enterprise root installation directory: update/updateHistory.log.

After a successful installation of a HotFix over an existing Fuego Enterprise installation, the following entries should be found at the end of this logging file.

**Thu Feb 02 02:51:36 ART 2006 - Start Installing HotFix - Installation Info: 5.5 GA 8 - Patch Info: 5.5 GA 8(Wed Feb 01 17:43:34 CST 2006) Thu Feb 02 02:56:15 ART 2006 - HotFix Installed Successfully - Installation Info: 5.5 GA 8 - Patch Info: 5.5 GA 8(Wed Feb 01 17:43:34 CST 2006)**

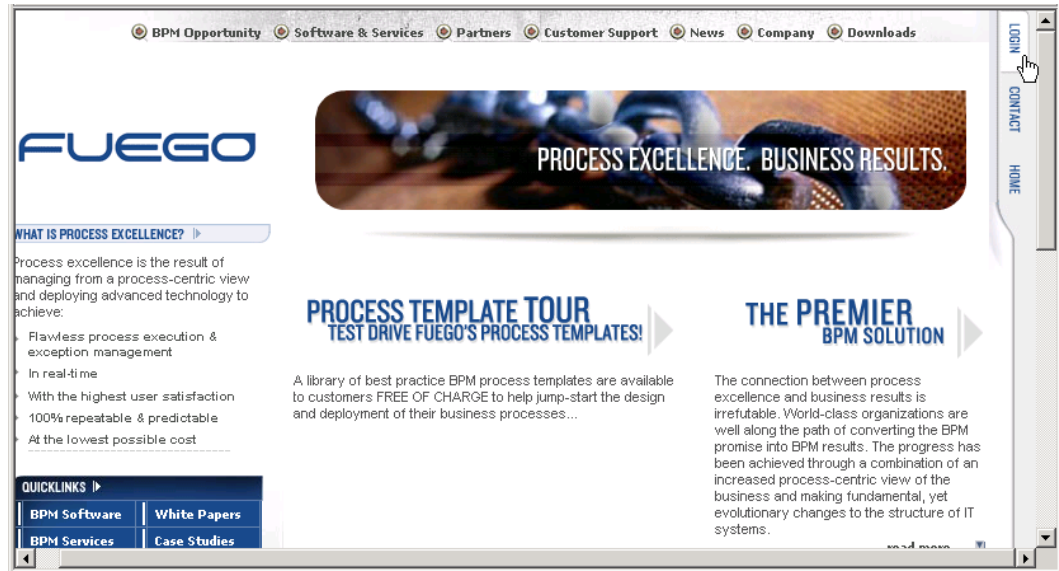
Likewise, if there is an error in the application of the HotFix, the failure attempt will be logged into this file. The reason of the failure will be shown in the Progress Windows when applying the HotFix as well as in the Admin Center log file (AdminCenterConsole.log) inside the "log" folder underneath the Fuego Enterprise root installation directory.

In addition, the Build# on the Help->About panel should reflect the date of the HotFix. It is strongly recommended that the Fuego Administrator checks this panel to re-confirm the successful installation of the HotFix.

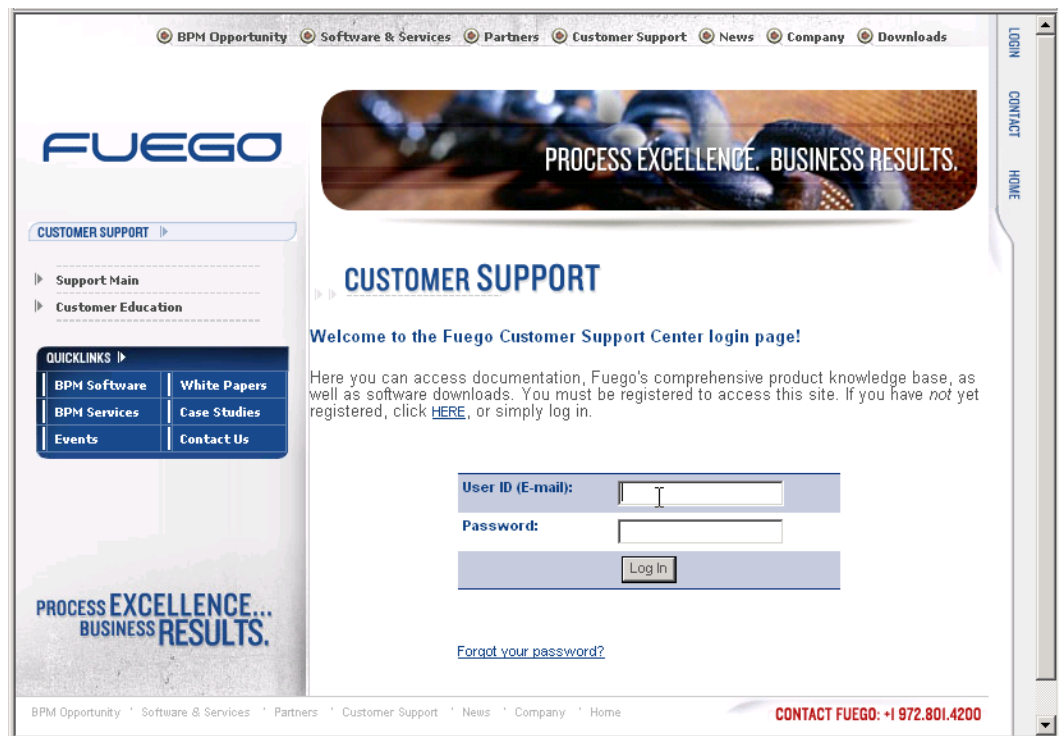
## **Performing HotFix update**



1. Go to the Fuego homepage and select the *Login* tab on the right top of your browser,

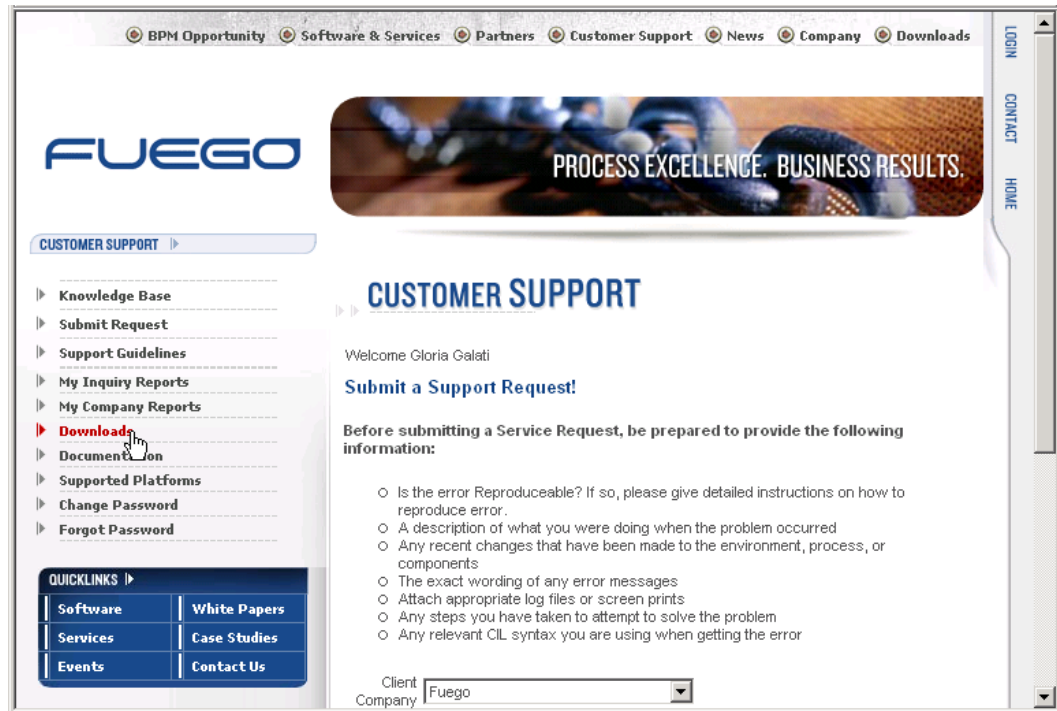


2. Type your email and password,

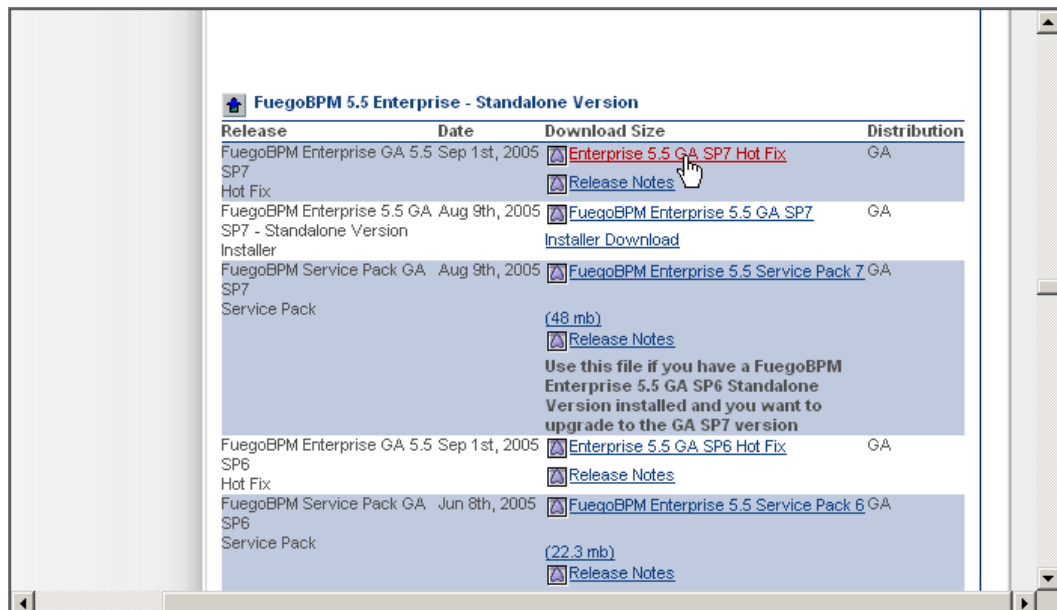


3. Click on the link *Downloads* on the left pane of the screen,





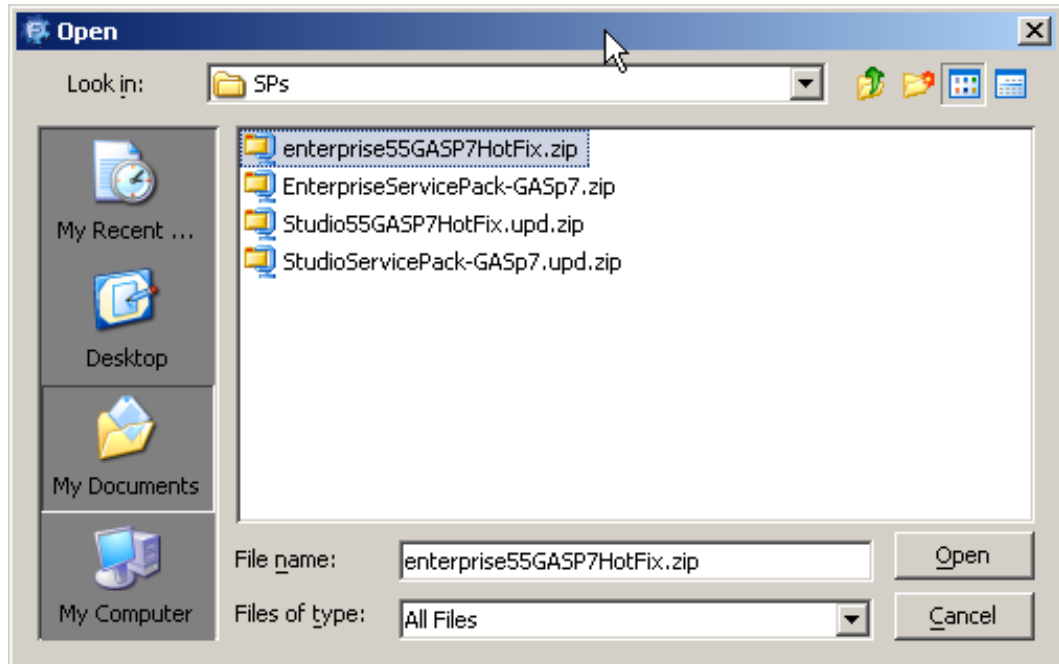
4. The list of versions is listed according to your customer profile. Select the Hotfix you are looking for and begin the download .



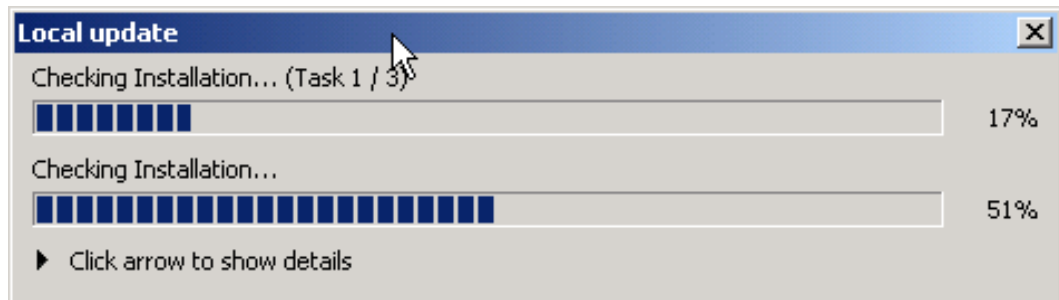
5. Once the download has finished, launch the FuegoBPM Administration Center and close any opened project.



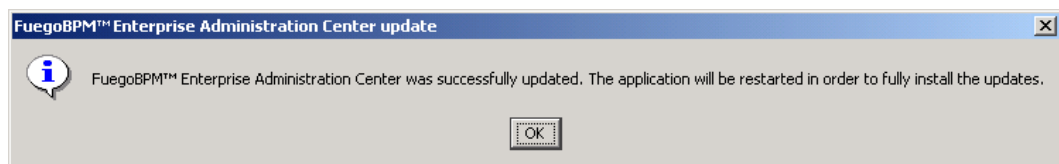
- Run the *Local Studio Update* button in the **Service Pack Updates** tab of the FuegoBPM Administration Center. Browse to the location where the Hotfix was downloaded, select the file and click **Open**.



- The Hotfix installation begins.



- Once the installation update ends, it restarts the FuegoBPM Administration Center.





## Rolling back a HotFix

Fuego HotFixes can be manually rolled back based on automatic backup generated at HotFix installation time. When a Fuego HotFix is installed, the files (with their corresponding directory layout) to be modified by the HotFix are copied inside the "update/hotfix\_X" folder underneath the Fuego Enterprise root installation directory. The "X" in the hotfix\_X folder name represents the n-th HotFix applied to a Fuego Enterprise installation. The "X" with the biggest integer number is the latest applied HotFix.

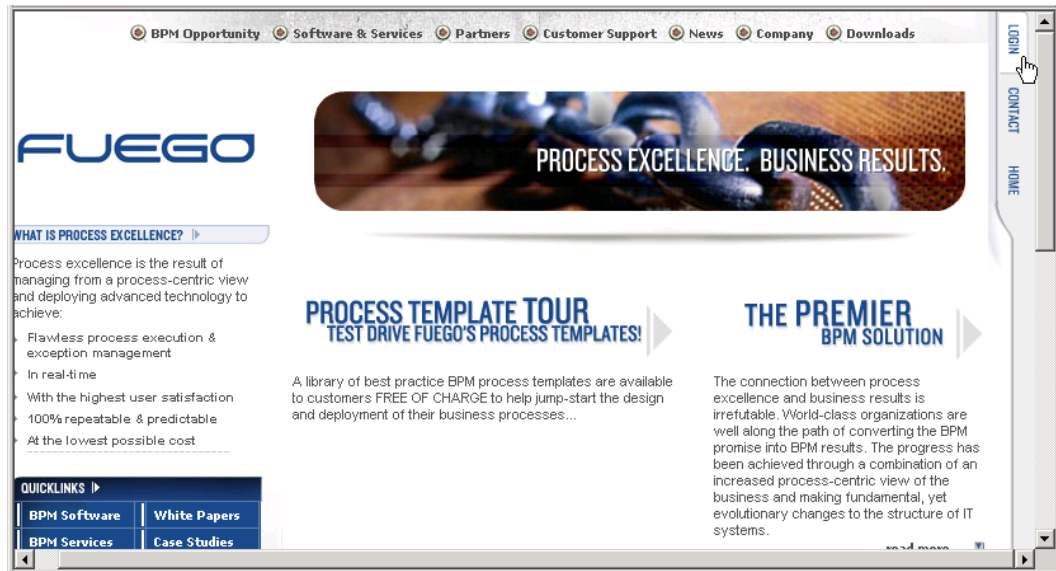
In the event that a HotFix needs to be rollbacked, the whole directory layout structure inside update/hotfix\_X can be copied on top of the Fuego Enterprise root installation folder. It is recommended that the Fuego Administrator generates a backup of this folder before proceeding with this file copy action.

After successfully copying all the files automatically saved by the HotFix installation, the Fuego Administrator should delete the "cache" folder in the Fuego Enterprise root installation folder. Once this directory and contained files have been removed, the Fuego Administrator can proceed to start the Fuego Admin Center.

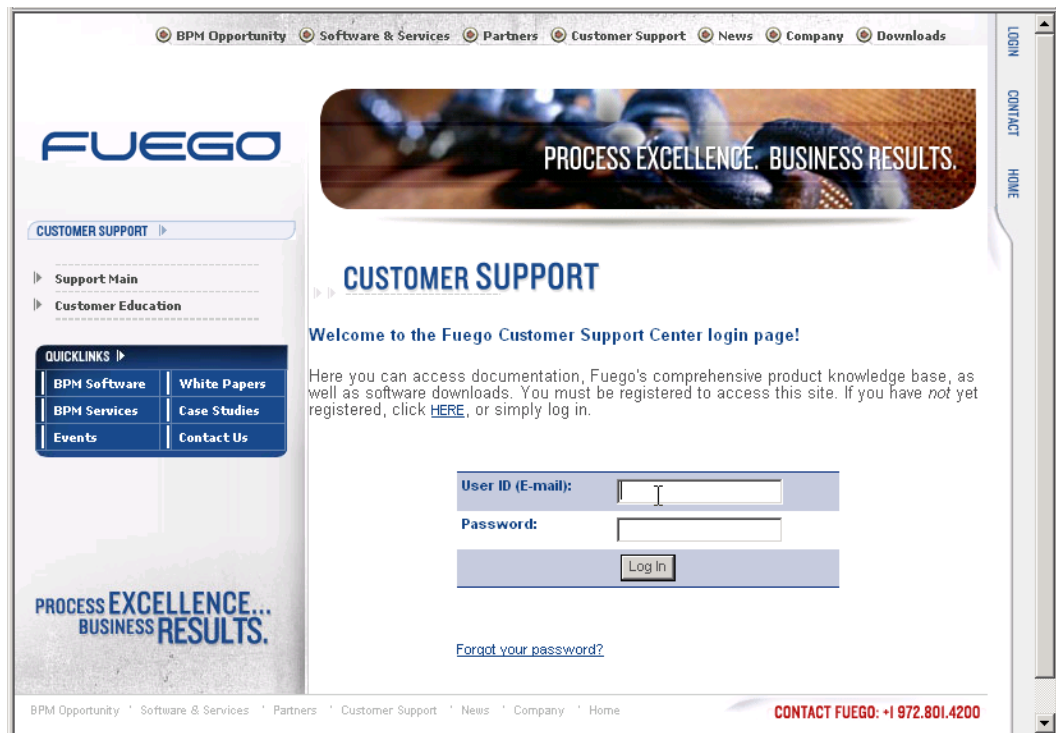
## Applying a Hotfix to the FuegoBPM Studio

1. Go to the Fuego homesite and select the *Login* tab on the right top of your browser,



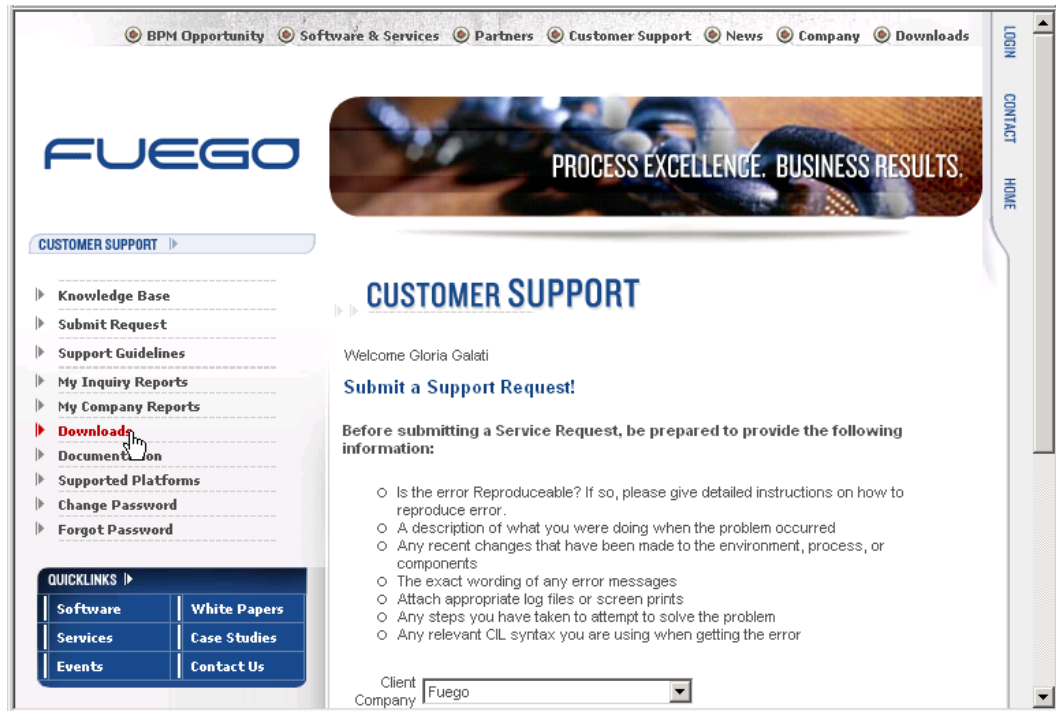


2. Type your email and password,

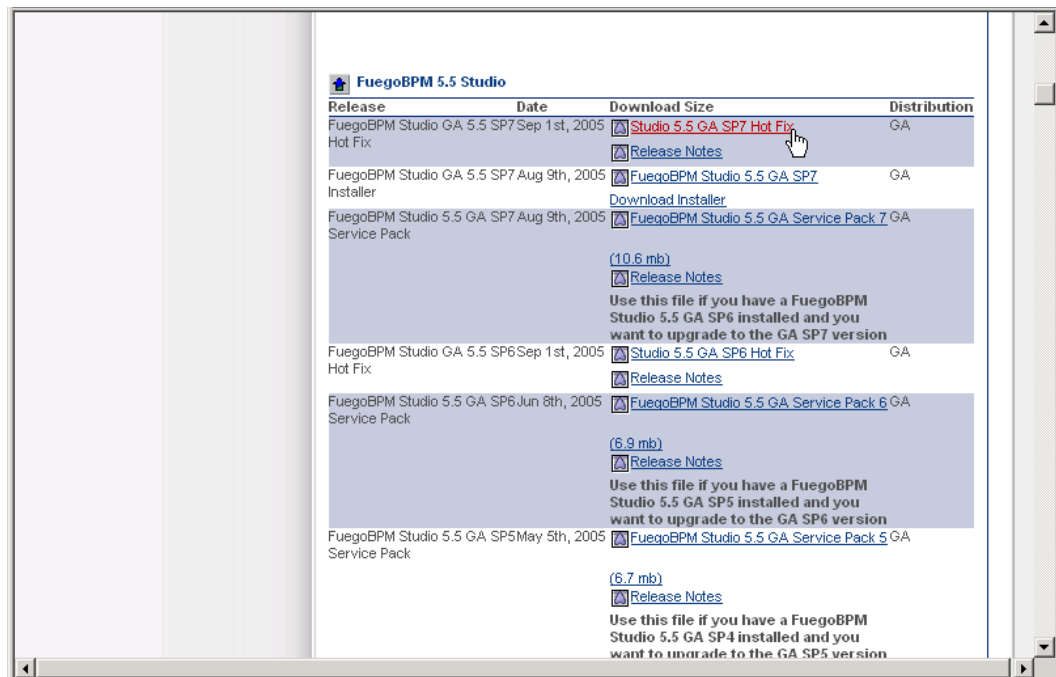


3. Click on the link *Downloads* on the left pane of the screen,





4. The list of versions is listed according to your customer profile. Select the Hotfix you are looking for and begin the download .

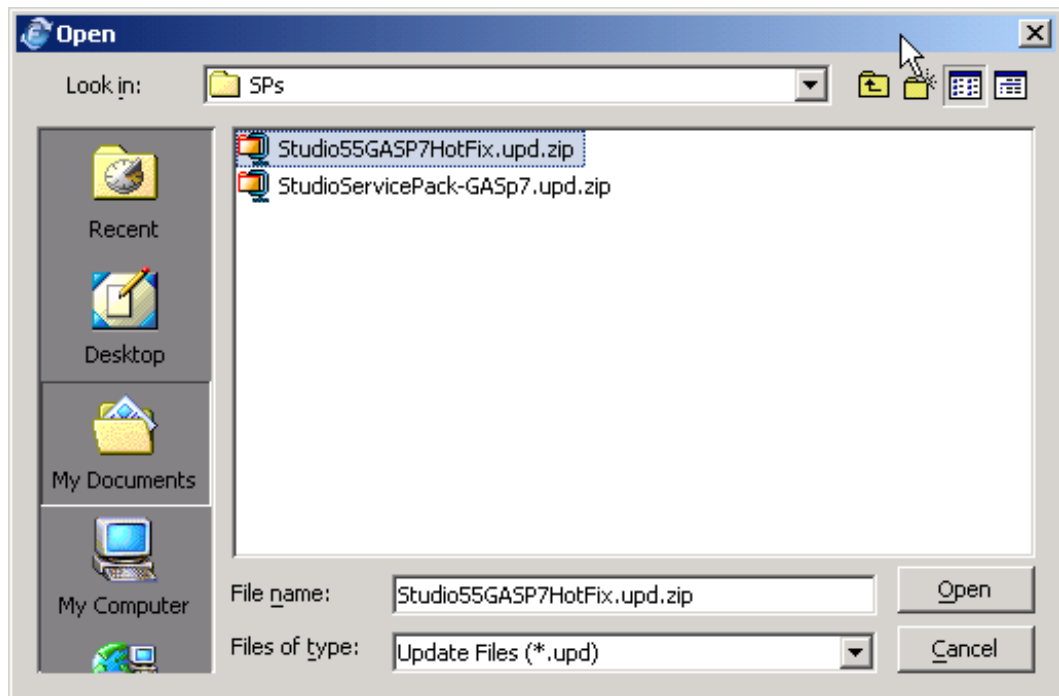


5. Once the download has finished, launch the FuegoBPM Studio

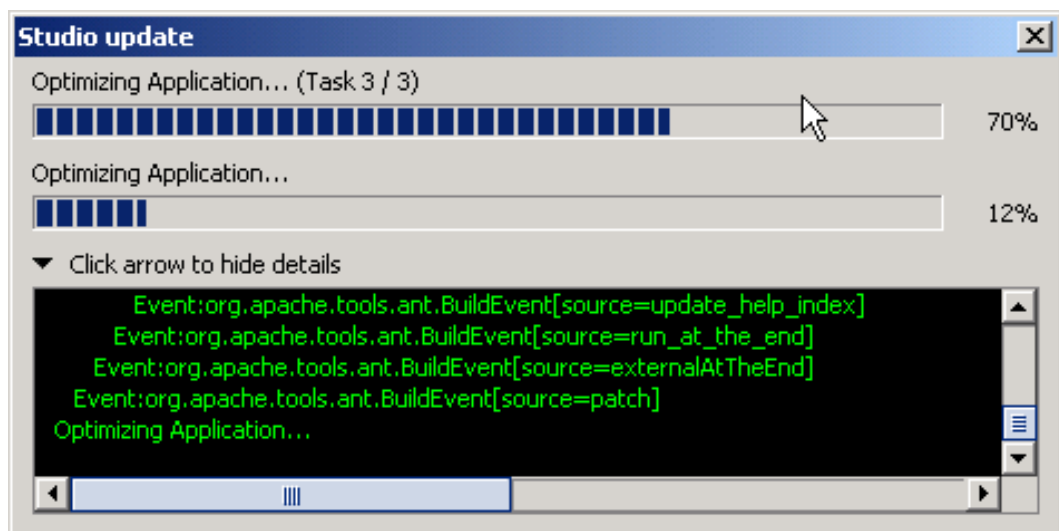


and close any opened project.

6. Run the *Updates/Studio Local Update* option from the main *File* menu. Browse to the location where the Hotfix was downloaded, select the file and click **Open**.



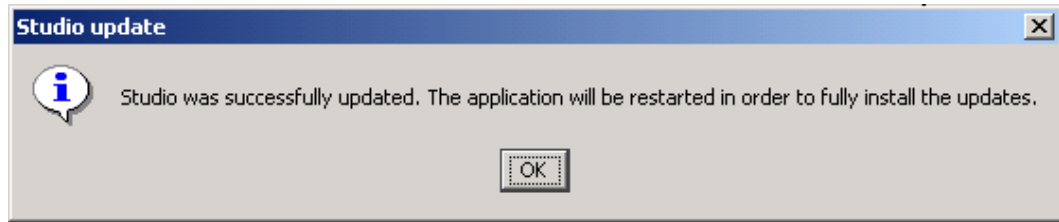
7. The Hotfix installation begins.



8. Once the installation update ends, it restarts the FuegoBPM



Studio.

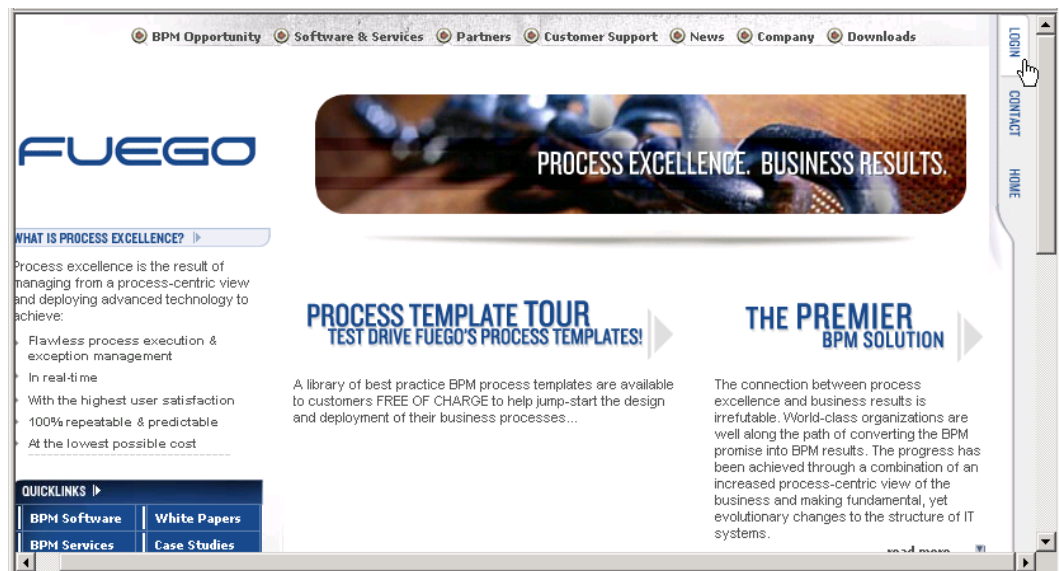


## Rollback Hotfix

If a Hotfix has been applied and needs to be rolled-back, run the option *Updates/Rollback hotfix* from the main menu **File** of the FuegoBPM Studio

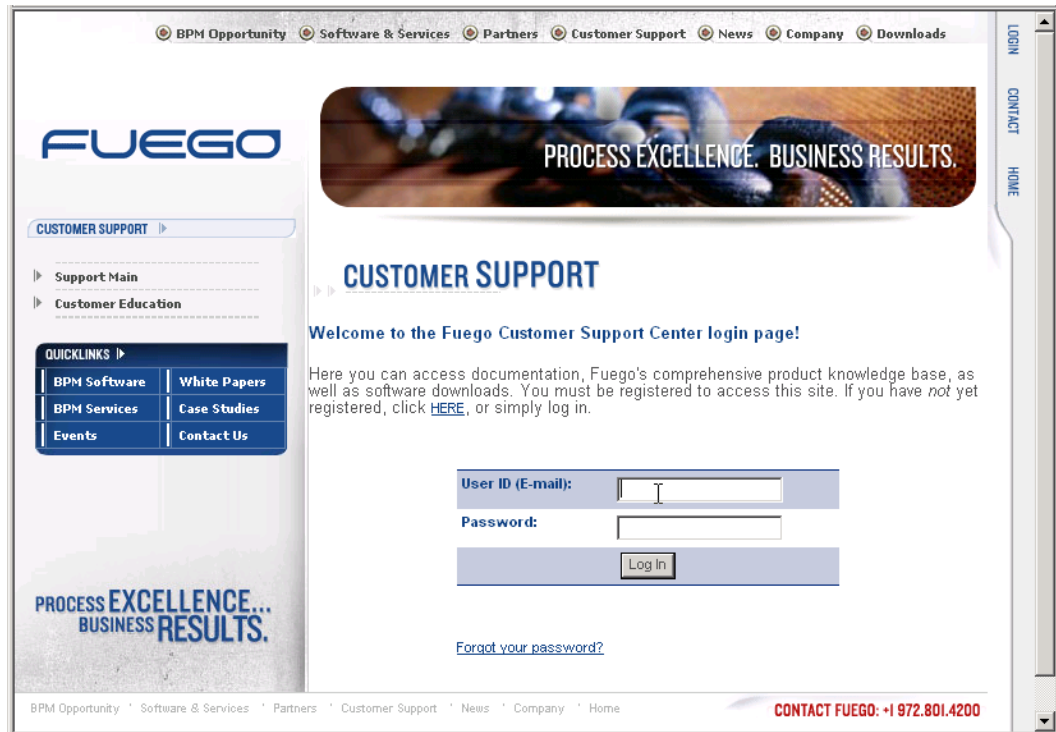
## Applying a Hotfix to the FuegoBPM Designer

1. Go to the Fuego homesite and select the *Login* tab on the right top of your browser,

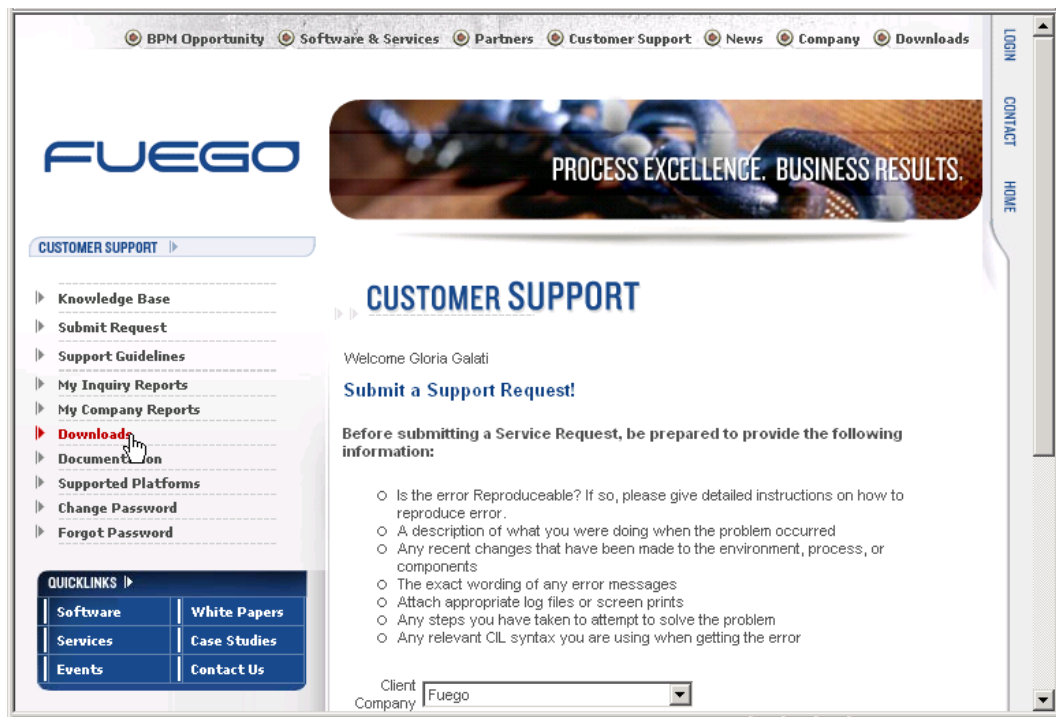


2. Type your email and password,



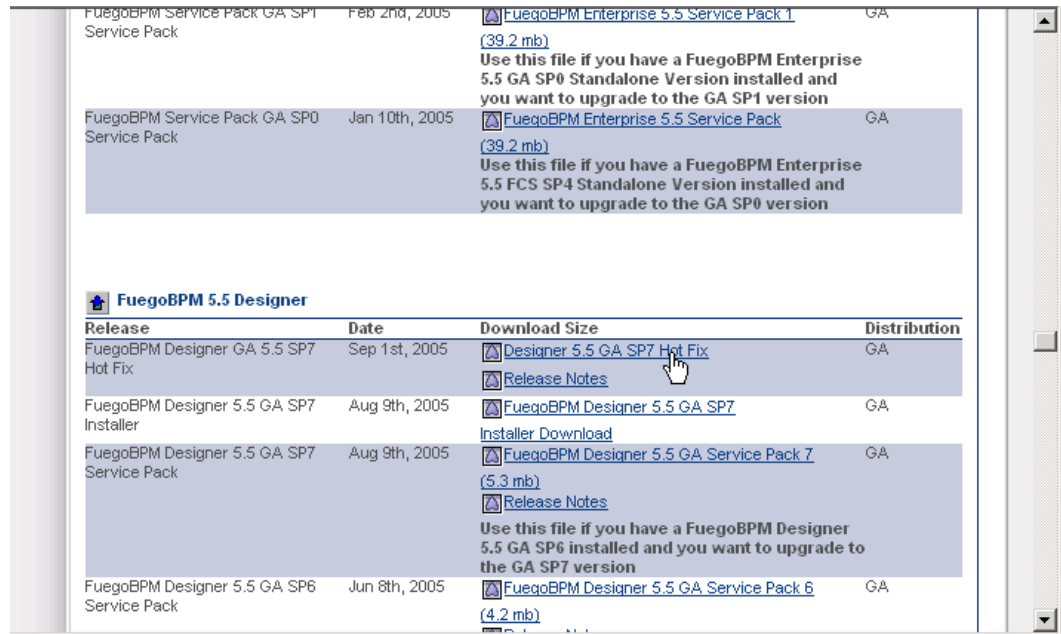


3. Click on the link *Downloads* on the left pane of the screen,



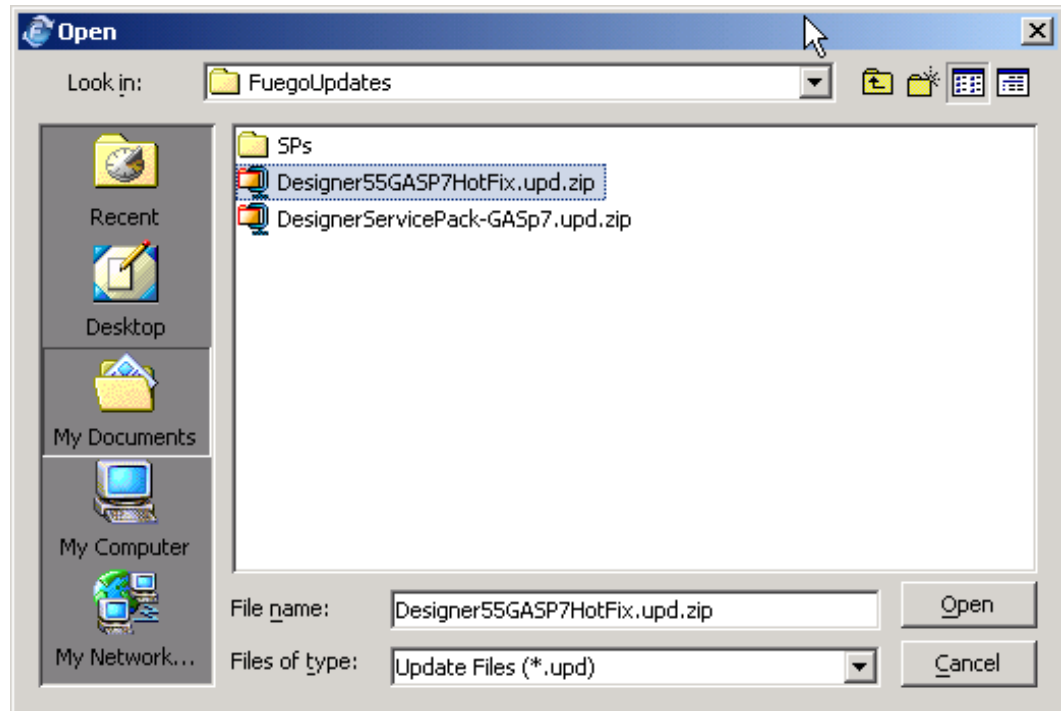


4. The list of versions is listed according to your customer profile. Select the Hotfix you are looking for and begin the download .

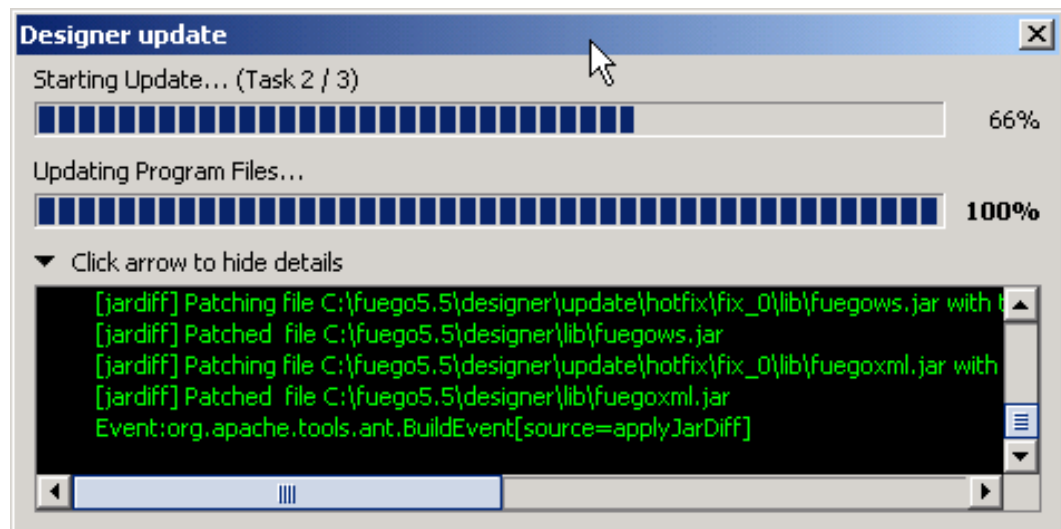


5. Once the download has finished, launch the FuegoBPM Designer and close any opened project.
6. Run the *Designer local update'* option in the main *File* menu. Browse to the location where the Hotfix was downloaded, select the file and click **Open**.



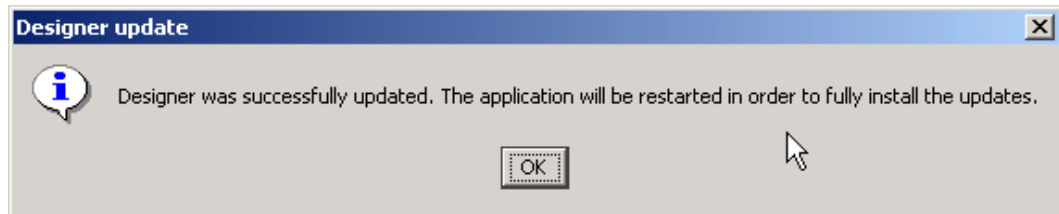


7. The Hotfix installation begins.



8. Once the installation update ends, it restarts the FuegoBPM Designer.





## Completing the update for a FuegoBPM Enterprise for J2EE Installation

After a successful installation of the new Service Pack, the Fuego Administrator should proceed to update the J2EE Installation in the Application Server where the Fuego Resources are deployed.

In most of the cases, it is not necessary to update Fuego Deployer, FuegoBPM Server and eventually the Fuego Projects applications. However, there may be cases in which certain actions need to be done to the existing deployment to take advantage of corrections incorporated in the applied Service Pack or HotFix.

In order to know if further actions are required in terms of re-generating any of the Fuego J2EE Application, the Fuego Administrator should check the Release Notes or HotFix notes for specific references.

## Generating Fuego EARs and WARs

Follow these steps to obtain updated versions of the Fuego libraries and application files:

- Obtain the new Fuego libraries files: Go to Server Configuration Page and click on the **J2EE Application Server Files (EARs, WARs)** link in the FuegoBPM WebConsole. Once in the new panel, click on the file link to obtain the new version of the libraries. In a basic Fuego J2EE installation, the Fuego Administration should use only one library file named *fuegoj2ee-lib-all.jar*. If the Fuego



Administrator is updating a Cluster Fuego J2EE installation, he/she may also need to update the library files with names *fuegoj2ee-engine-cluster.jar* and *jgroups-core.jar*.

- If the Fuego Deployer needs to be updated, the Fuego Administrator should get the new copy from the following directory in the Fuego Enterprise for J2EE root folder: *\$FUEGO\$/j2ee/\$YOUR\_APP\_SERVER/deployer*. The Fuego Deployer is shipped and packaged as an EAR file.
- If the FuegoBPM Server needs to be updated, the Fuego Administrator should re-generate the Fuego Server Application. For this purpose, the Fuego Administrator should go to the **Server Configuration** page and click on the **J2EE Application Server Files (EARs, WARs)** link in the FuegoBPM WebConsole. In the new panel, the Fuego Administrator should click on the icon to create the Fuego Server EAR file.
- If the FuegoBPM Work Portal or FuegoBPM Portal Administrator Web Applications require an update, the Fuego Administrator should re-generate the application WAR or EAR files. This can be accomplished, by going to the Server Configuration Page and clicking on the **J2EE Application Server Files (EARs, WARs)** link in the FuegoBPM WebConsole. Once in the J2EE application page, the Fuego Administrator should click on the **Create war and ear** link to re-create the FuegoBPM Work Portal or FuegoBPM Portal Administrator WAR and EAR files.
- If a Project Update is needed (eventually there was a problem



while assembling the project ear file), the Fuego Administrator should re-generate the project EAR file. This can be accomplished, by going to the **Server Configuration** page and clicking on the **J2EE Application Server Files (EARs, WARs)** link in the FuegoBPM WebConsole. Once in the J2EE application page, the Fuego Administrator should click on the **Create the ear project file** link for each one of the currently deployed projects or the ones the correction should apply.

A useful final checking is to verify all J2EE resources (libraries, EARs and WARs) have been updated to the actual date and time. The Fuego Administrator should notice the date and time for a J2EE resource is updated after completing the re-generation action. This way, the Fuego Administrator will be sure that the right resources will be moved into the Application Server.

## Deploying Fuego EARs and or WARs into the Application Server

To update Fuego resources already deployed in the Application Server, these are the recommended steps to follow:


- The Application Server Administrator should stop the Application Server instance or cluster where Fuego resources (FuegoBPM Server EAR, FuegoBPM Work Portal, etc) are deployed.
- Update the Fuego libraries: The Fuego Administrator will need to replace the existing Fuego JAR files. The JAR file *fuegoj2ee-lib-all.jar* should be retrieved from the Fuego J2EE Resources Panel in the FuegoBPM WebConsole and place it in the right directory where these libraries are already deployed. Depending on your deployment configuration, the Fuego Administrator may need to copy this JAR file into more than one box or directory. If Fuego is




installed in a clustered configuration, the Fuego Administrator may also need to replace the cluster specific JARs also included with Fuego whose names are: *fuegoj2ee-engine-cluster.jar* and *jgroups-core.jar*. In some cases, the JARs should be obtained from the FuegoBPM WebConsole by the Fuego Administrator and these files handed over to the Application Server Administrator for their deployment.

- After replacing these files, the Application Server Administrator should start the Application Server instances or cluster where the Fuego resources are deployed.
- If Fuego Deployer Application needs to be updated, the Fuego Administrator should provide the Application Server Administrator the Deployer EAR file usually located underneath these directory inside the installation root folder: *j2ee/\$YOUR\_APP\_SERVER/deployer*. The Application Server Administrator should then redeploy this EAR. Refer to the Installation guide for instructions on how to deploy this Fuego Application in your Application Server. This may vary depending on whether a cluster configuration is being used.
- The Application Server Administrator should start the Fuego Deployer again after its deployment since this operation is not automatic after deploying the EAR file.
- If the FuegoBPM Server EAR should be updated, the Fuego Administrator should first re-generate the FuegoBPM EAR file and then use the already deployed Fuego Deployer for this purpose. To accomplish the FuegoBPM Server redeployment, the Fuego



Administrator can click the “re-install” button  (the one in the middle). Alternatively, the Fuego Administrator can generate the FuegoBPM EAR file and then provide this file to the Application Server Administrator for its deployment using the Application Server deployment tools.

- If the FuegoBPM Work Portal and FuegoBPM Portal Administrator applications have been deployed using the WAR packaging and these need to get updated, the Fuego Administrator should re-generate the WAR files and provide this file to the Application Server Administrator for its deployment. If on the other hand, the EAR packaging is used, these can be deployed directly by the Fuego Administrator from the FuegoBPM WebConsole using the Fuego Deployer. Prior to deploying the FuegoBPM Work Portal and/or FuegoBPM Portal Administrator, the WAR/EAR files should be re-generated. To accomplish the FuegoBPM Work Portal and/or FuegoBPM Portal Administrator redeployment, the Fuego Administrator can click the “re-install” button  (the one in the middle).
- Alternatively, there may be corrections that may require the Fuego Project EARs to be updated. For this reason, the Fuego Administrator should re-generate the Project EARs and deploy them using the Fuego Deployer or by providing the newly generated EAR files for their deployment to the Application Server Administrator.
- A full restart of the Application Server instance or Cluster is recommended after applying a Service Pack and updating Fuego Resources in the Application Server.



If for any reason you need to update the Fuego Libraries, FuegoBPM Server, Fuego Deployer, FuegoBPM Work Portal or FuegoBPM Portal Administrator, it is strongly recommended to ask the Application Server Administrator to keep a copy of the WAR/EAR to be replaced. This can help in the event of needing to rollback the Service Pack changes. Alternatively, the Fuego Installation can be rolled back, all the J2EE resources re-generated and re-deployed again. This last procedure may take more time than restoring the J2EE Resources.

## Appendix I - Other Documents of Interest

Additionally you can consult the following documentation:

1. PAPI Javadoc: in the FuegoBPM Enterprise installation directory, in the **help/docs** directory.
2. ANT Javadoc: in the FuegoBPM Enterprise installation directory, in the **help/docs** directory.
3. APIs for integrating with Fuego: in the Fuego support site.