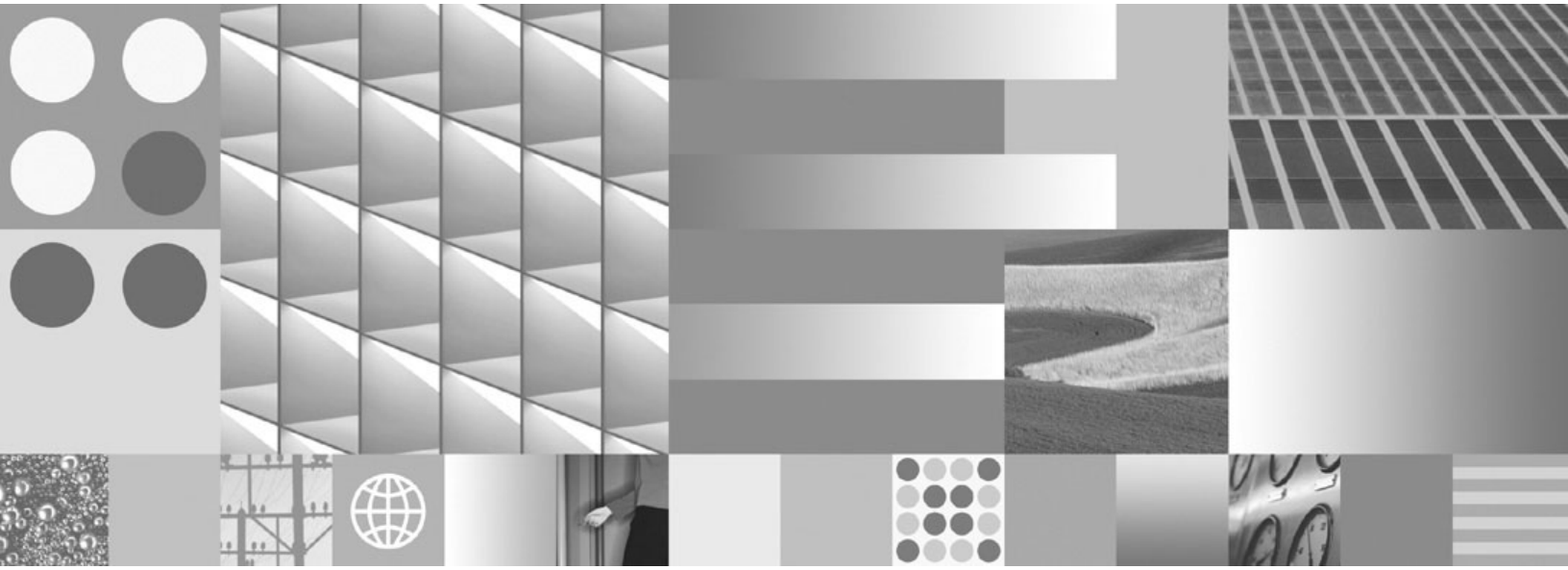
FileNet P8 Business Process Framework (BPF)

**Version 4.1.0**



# Installation Guide

GC31-5517-03

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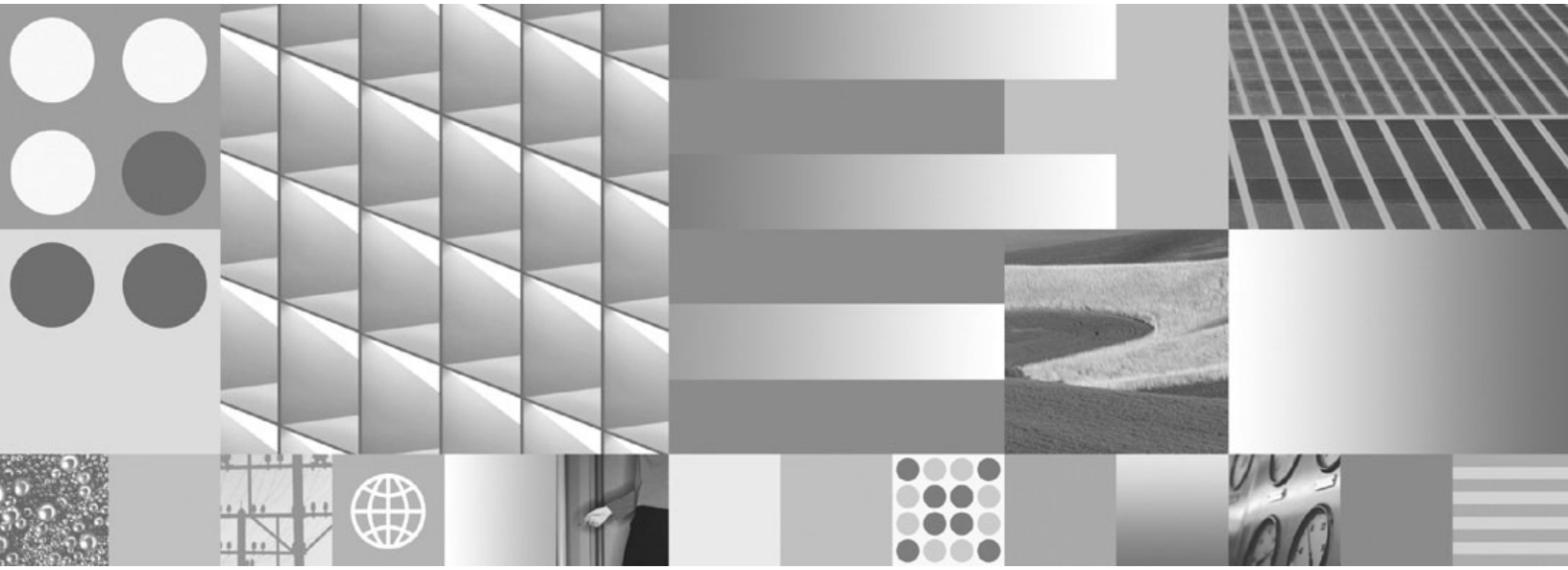

# Installation Guide

GC31-5517-03

**Note**
Before using this information and the product it supports, read the information in "Notices" on page 157.

This edition applies to version 4.1.0 of IBM FileNet Business Process Framework (product number 5724-R75), and to all subsequent releases and modifications until otherwise indicated in new editions.

# Contents

# ibm.com and related resources

Product support and documentation are available from ibm.com.

## Support and assistance

Product support is available on the Web. Click Support from the product Web site at:

**FileNet Content Manager Support**
http://www.ibm.com/software/data/content-management/filenet-content-manager/support.html

## Information center

You can view the product documentation in an Eclipse-based information center that you can install when you install the product. By default, the information center runs in a Web server mode that other Web browsers can access. You can also run it locally on your workstation. See the information center at http://publib.boulder.ibm.com/infocenter/p8docs/v4r5m1/index.jsp.

## PDF publications

You can view the PDF files online using the Adobe Acrobat Reader for your operating system. If you do not have the Acrobat Reader installed, you can download it from the Adobe Web site at http://www.adobe.com.

See the following PDF publications Web sites:

| Product | Web site |
|---|---|
| Product Documentation for FileNet P8 Platform | http://www.ibm.com/support/docview.wss?rs=3278&uid=swg27010422 |

"How to send your comments"
Your feedback is important in helping to provide the most accurate and highest quality information.

"Contacting IBM" on page viii
To contact IBM customer service in the United States or Canada, call 1-800-IBM-SERV (1-800-426-7378).

# How to send your comments

Your feedback is important in helping to provide the most accurate and highest quality information.

Send your comments by using the online reader comment form at https://www14.software.ibm.com/webapp/iwm/web/signup.do?lang=en_US&source=swg-rcf.

### Consumability survey

You are invited to tell IBM how to improve the consumability of software products. If you want to help IBM make IBM® FileNet® P8 easier to use, take the Consumability Survey at http://www.ibm.com/software/data/info/consumability-survey/.

## Contacting IBM

To contact IBM customer service in the United States or Canada, call 1-800-IBM-SERV (1-800-426-7378).

To learn about available service options, call one of the following numbers:

- In the United States: 1-888-426-4343
- In Canada: 1-800-465-9600

For more information about how to contact IBM, see the Contact IBM Web site at http://www.ibm.com/contact/us/.

# Planning and preparing for Business Process Framework installation

Before you begin your installation of Business Process Framework, you must plan the installation and prepare your environment.

"Planning the installation"
You must review the installation planning information before your Business Process Framework installation so that you know what deployments are supported, understand how the tasks in the installation tasks are organized by Role, and know how to use the Installation and Upgrade Worksheet.

"Performing the required installation preparation tasks" on page 7
To efficiently carry out the required installation preparation tasks, you must assign your staff to carry out the tasks that are organized by administrative role.

## Planning the installation

You must review the installation planning information before your Business Process Framework installation so that you know what deployments are supported, understand how the tasks in the installation tasks are organized by Role, and know how to use the Installation and Upgrade Worksheet.

To install Business Process Framework:

- Retrieve updates to IBM FileNet P8 documentation and software.
- Read through this infocenter to become familiar with the tasks you are going to perform when you set up your Business Process Framework software.

**Important:** Follow the planning, installing, and configuring tasks in the order presented. If you do otherwise, or you install FileNet P8 components on machines containing components for existing FileNet P8 systems, you might encounter unforeseen problems or be required to perform additional installation steps. See the *IBM FileNet P8 Troubleshooting Guide*.

"Prerequisites for installing Business Process Framework" on page 2
The Business Process Framework application works within the FileNet P8 Platform environment. You must install and configure your FileNet P8 Platform environment before you install Business Process Framework.

"Installation and deployment stages of Business Process Framework" on page 2
Business Process Framework provides a sample application that you can use as a starting point for developing your own customized application. You can install Business Process Framework in development environment before you deploy your finished application.

"Collocating different Business Process Framework versions" on page 3
You can choose to install the latest version of Business Process Framework on the same server as an older versions. This configuration requires some additional settings.

"Definition of installation roles" on page 4
The tasks in this guide and the rows in the Installation and Upgrade Worksheet are organized by administrative roles. Your organization might have different roles, and some of the responsibilities of listed roles will vary from those assigned by default in this documentation.

"Using the installation and upgrade worksheet" on page 5
The Installation and Upgrade Worksheet is a Microsoft® Excel spreadsheet (`p8_worksheet.xls`). The worksheet describes the properties and parameters required to complete IBM FileNet P8 installation, upgrade, and configuration programs, and provides a way to record the values you assign to these properties and parameters.

## Prerequisites for installing Business Process Framework

The Business Process Framework application works within the FileNet P8 Platform environment. You must install and configure your FileNet P8 Platform environment before you install Business Process Framework.

The Business Process Framework installation process is designed to copy or create the necessary Business Process Framework foundational components on a system on which the baseFileNet P8 Platform products are already installed. The following FileNet P8 Platform components must be installed and operational before you begin installing Business Process Framework:

- Content Engine
- Process Engine
- Application Engine
- FileNet eForms (Optional. This software is required only if eForms integration from Business Process Framework is to be used.)

Business Process Framework must be collocated with Application Engine. Install the Business Process Framework server on the same Web application server where your Application Engine is installed and your Workplace application is deployed.

## Installation and deployment stages of Business Process Framework

Business Process Framework provides a sample application that you can use as a starting point for developing your own customized application. You can install Business Process Framework in development environment before you deploy your finished application.

Business Process Framework is an application framework that provides a starting point for creating custom Business Process Management applications. The framework is defined through Business Process Framework configuration settings and optionally through code extensions that you add.

Typically, Business Process Framework is first installed in the development environment. The Case Management Sample Application is installed automatically to provide a working Business Process Framework application that can be used to test Business Process Framework functionality for installation signoff.

At a high level, a typical Business Process Framework installation process performs the following basic activities to deliver the required Business Process Framework components:

- Installs and deploys the Business Process Framework Web Application to the Web application server
- Creates and populates the Business Process Framework Meta database tables needed to support Business Process Framework.
- Configures the FileNet Content Engine, Process Engine, and Application Engine environment with Business Process Framework.

- Copies the application configuration files for the Case Management sample application to the FileNet P8 environment (optional).
- Installs the Business Process Framework Explorer configuration tool on the administration workstation.

In the development environment, the developers of Business Process Framework custom applications modify the configuration files and optionally add code extensions to create their site-specific Business Process Framework Web applications.

Before installing Business Process Framework in another environment such as unit testing, user acceptance testing, deployment staging, and production, you must determine whether a typical Business Process Framework installation is required or if a completed Business Process Framework application is to be deployed to that environment using a different process. If your enterprise has specific processes for staging and deploying web applications, you must develop a plan for deploying Business Process Framework Web applications according to these processes. If your enterprise does not have a deployment management process, you can install Business Process Framework in the additional environments as usual. You then manually move the site-specific configuration and code extension files to the new environments. For more information on moving the Business Process Framework configuration files to other environments, see the *IBM FileNet Business Process Framework Explorer Handbook*.

## Collocating different Business Process Framework versions

You can choose to install the latest version of Business Process Framework on the same server as an older versions. This configuration requires some additional settings.

It is possible for Business Process Framework 4.0.0 and Business Process Framework 4.1.0 instances to share the same instance of Application Engine. Consider the following requirements:

- Access Roles are always read from the application operating system (the Content Engine ObjectStore defined in Business Process Framework Explorer).
- The combination of ObjectStore name in Business Process Framework Explorer and the Workplace preference name should be unique. For example, if you have created a Workplace41 preference for your Business Process Framework 4.1.0 application with OS41 and a Workplace400 preference for your Business Process Framework 4.0.0 application with OS400 (with access roles created in both the ObjectStores), then using the Workplace41 preference name for Business Process Framework 4.0.0 and vice versa will make the application fail to logon with the error "You are not assigned to any Roles".
- You must configure the Workplace `InfoPages.xml` and `Actions.xml` files in such a way that Workplace will know which instance of Business Process Framework (which URL) it should use to open Business Process Framework cases that the user chooses in Workplace Search Results. In `InfoPages.xml`, you must configure different “infoPage” nodes, each with “classes” nodes containing only those OIID/GUID values for the relevant Bp8Case subclass(es) for each instance of Business Process Framework. In `Actions.xml`, it will be necessary to configure different actions, such as “openCase400” and “openCase410” and then configure the “classes” node under each, to contain only those OIID/GUID values for the relevant Bp8Case subclass(es) for each instance of Business Process Framework.

That way, the users will not be able to see the incorrect action and will only see the one that is appropriate for their own instance of Business Process Framework.

## Definition of installation roles

The tasks in this guide and the rows in the Installation and Upgrade Worksheet are organized by administrative roles. Your organization might have different roles, and some of the responsibilities of listed roles will vary from those assigned by default in this documentation.

### Installation administrator

- Runs IBM FileNet P8 installers during initial setup.
- Runs the Configuration Manager tool during initial setup, followed by starting IBM FileNet Enterprise Manager.
- Runs IBM FileNet P8 Upgrade programs during upgrades.
- Abbreviated as IA. Responsible for coordinating the information described in this worksheet. The information itself will require the input from the other roles.

The role of IA is usually filled by an IBM FileNet Certified Professional (FCP).

### Information technology administrator

- Responsible for the networking and operating systems settings required by IBM FileNet P8.
- Responsible for performing certain security configurations.
- Abbreviated as ITA. Responsible for providing the information in the rows in the *Installation and Upgrade Worksheet* with a value of ITA in the **Role** column.

### Security administrator

- Responsible for configuring the directory servers required by IBM FileNet P8 components, including Content Engine and Application Engine.
- Creates and maintains directory server user and group accounts.
- Abbreviated as SA. Responsible for providing the information in the rows in the *Installation and Upgrade Worksheet* with a value of SA in the **Role** column.

### Database administrator

- Creates, configures, maintains database installations and database or table spaces.
- Responsible for creating database accounts needed by IBM FileNet P8.
- For purposes of this documentation, the database administrator is expected to have responsibilities regarding the JDBC data sources.
- Abbreviated as DBA. Responsible for providing the information in the rows in the *Installation and Upgrade Worksheet* with a value of DBA in the **Role** column.

### Application server administrator

- Responsible for providing the application servers required by IBM FileNet P8.
- Responsible for application server administrative accounts.
- Abbreviated as ASA. Responsible for providing the information in the rows in the *Installation and Upgrade Worksheet* with a value of ASA in the **Role** column.

### IBM FileNet P8 administrator

- This role designation actually refers to the administrator or administrators who perform regular maintenance of Content Engine, Process Engine Application Engine, Workplace or Workplace XT.
- The administrator who logs on to Enterprise Manager by using the gcd_admin account or an object_store_admin account is considered an IBM FileNet P8 administrator.
- Abbreviated as P8A. Responsible for providing the information in the rows of the *Installation and Upgrade Worksheet* with a value of P8A in the **Role** column.

### E-mail Administrator

- Creates an e-mail account that will be used to configure the Notification Tab of the Process Task Manager so that Process Engine can send e-mail notifications to end users. (Required only if you use this feature.)
- Abbreviated as EA.

## Using the installation and upgrade worksheet

The Installation and Upgrade Worksheet is a Microsoft Excel spreadsheet (`p8_worksheet.xls`). The worksheet describes the properties and parameters required to complete IBM FileNet P8 installation, upgrade, and configuration programs, and provides a way to record the values you assign to these properties and parameters.

Administrators who are preparing the environment for installation or upgrade of IBM FileNet P8 components must use the worksheet during their preparation tasks to record the appropriate values and provide them to the Installation Administrator who runs the installation or upgrade programs.

Some of the features of the Installation and Upgrade Worksheet are:

- Instructions: describes the worksheet and includes a button that runs the Customize Worksheet macro.
- The two highlighted columns, **Property or Parameter** and **ENTER YOUR VALUE HERE**, provide the simplest view of the requirement. The others add identifying information and help you sort and filter the rows usefully.
- The **Role** column assigns each row to an administrator and uses the following acronyms:
  - ITA: Information Technology Administrator
  - ASA: Application Server Administrator
  - DBA: Database Administrator
  - SA: Security Administrator
  - P8A: IBM FileNet P8 Administrator
- Property definitions are contained in the column titled **Description**.
- Some rows, though not all, contain a hyperlink in the **PPG Links** column. Click this hyperlink to run a query against the IBM Information Center, which opens with the Search Results pane showing the topics that contain the words in the query phrase. Browse the search results until you have enough information to be able to enter a value in the Worksheet row.

"Running the Customize Worksheet macro" on page 6
The Customize Worksheet macro lets you extract only those rows that describe your environment.

"Autofiltering and sorting the Worksheet"
There are several ways to organize the Worksheet to make finding properties and entering values easier.

**Related reference**

Installation and Upgrade worksheet
The worksheet is a Microsoft Excel spreadsheet that describes the properties and parameters required to complete installation, upgrade, and configuration. It also provides a way to record the values that you assign to these properties and parameters.

## Running the Customize Worksheet macro

The Customize Worksheet macro lets you extract only those rows that describe your environment.

**Important:** For support of the full range of built-in filter and macro features, use Microsoft Excel to view the Installation and Upgrade Worksheet file. You can use other spreadsheet programs to view the file; however, filter and macro support can vary. For example, in Calc from OpenOffice.Org, the column filters work as expected, but the Customize Worksheet button does not.
To run the Customize Worksheet macro:

1. Open the Installation and Upgrade Worksheet (`p8_worksheet.xls`) and click the **Instructions** worksheet (also called a tab).
2. Scroll down until you see the button representing the Customize Worksheet macro. Click the button.
3. Select the components and options that describe the environment you are preparing for IBM FileNet P8.
   - Installation or Upgrade
   - FileNet P8 Components
   - Application Server type
   - Operating system
   - Database type
   - Directory Server type
   - Number of object stores (adds new sets of rows for creating additional data sources)
   - Name of customized sheet
4. Click **OK**. The macro copies the rows that fulfill your selection criteria into a new worksheet with the name you entered. Enter the values for your environment into this new worksheet.
5. Click the name of the new worksheet at the bottom of the Excel window. Add your preparation values into this new worksheet.
6. Notice that the new worksheet has buttons at the top titled **Show Installer View** and **Show Full View**, depending on its state. The **Show Installer View** displays only those columns that you need while running installation or configuration programs.

## Autofiltering and sorting the Worksheet

There are several ways to organize the Worksheet to make finding properties and entering values easier.

AutoFiltering is a quick way to display only those rows that meet a certain criteria. To use AutoFilter:

1. Make sure AutoFiltering is enabled. (Select the entire row with the column headers, then click **Data → Filter → Autofilter**.) AutoFilter arrows will appear to the right of the column labels.
2. Click the **AutoFilter** arrow in the **Installation or Configuration Program** column header and select the program you are interested in (for example, PE installer).
3. Click the **AutoFilter** arrow in the **Setup Type** column header, select **Custom**, and specify **Setup Type contains Installation**.
4. For a custom AutoFilter, click the **AutoFilter** in any column header, select **Custom**, and specify Setup Type contains "Installation".
5. To turn off AutoFiltering in a column, click the column **AutoFilter** arrow and select **(All)**.
6. To reorder rows alphabetically, do a Sort:
   a. Click anywhere in a column, for example, Column A Role.

      The only possible values in the Role column are ASA, SA, DBA, ITA, and P8A. Sorting on Role therefore groups the rows by this attribute, in alphabetic order. Several other columns also have a limited number of possible values which means they can be usefully sorted.
   b. Click the **Sort Ascending** icon in the Excel toolbar, or use the **Data → Sort** menu command. The rows sort on Role.

      Sorting the Worksheet reassigns row numbers. If you refer to rows by number, be aware that row numbers change if you change the sort order.

## Performing the required installation preparation tasks

To efficiently carry out the required installation preparation tasks, you must assign your staff to carry out the tasks that are organized by administrative role.

In addition to Business Process Framework specific preparation tasks, follow the plan and prepare instructions in the *Plan and Prepare Your Environment for IBM FileNet P8* document for the components you are installing.

"IBM FileNet P8 administrator tasks" on page 8
The FileNet P8 Administrator must carry out several tasks to prepare your environment for your IBM FileNet P8 Platform installation.

"Installation administrator tasks" on page 10
The Installation administrator must coordinate with and delegate responsibilities to the other administrators to prepare for theBusiness Process Framework installation.

"Information technology administrator tasks" on page 11
The Information Technology administrator must prepare the network and operating systems, and carry out certain security configurations to prepare your environment for Business Process Framework.

"Security administrator tasks" on page 11
The Security administrator must prepare the security environment for Business Process Framework, including planning the security environment, configuring the directory server, and creating accounts.

"Database administrator tasks" on page 13
The Database administrator must prepare the databases required for Business Process Framework, including gathering information about data sources, creating databases and database accounts, and installing client software.

# IBM FileNet P8 administrator tasks

The FileNet P8 Administrator must carry out several tasks to prepare your environment for your IBM FileNet P8 Platform installation.

Review all rows assigned to the FileNet P8 Administrator (P8A) in the Installation and Upgrade Worksheet. While you complete the following preparation tasks, provide values for the rows that are appropriate to your installation.

**Tip:** With the **Data** → **Filter** → **AutoFilter** command enabled, as it is by default in the shipping worksheet file (`p8_worksheet.xls`), perform the following actions to quickly see only the properties assigned to a particular role:

- Click the **AutoFilter** drop-down arrow in the **Role** column header and select **P8A**.
- Further filter the result set by clicking the **AutoFilter** drop-down arrow in any of the other columns and selecting a value or clear a filter by selecting **All**.



## Configuring Content Engine integrated logon (optional)

Business Process Framework Explorer provides the capability for the application developer to log on to Content Engine and lookup properties while configuring Business Process Framework application fields. You can configure the Content Engine for Windows Integrated Logon to avoid the requirement to enter credentials from Business Process Framework Explorer.

The following IBM FileNet P8 documentation reference can assist you in configuring Windows Integrated Logon for Content Engine: **IBM FileNet P8 Documentation** → **System Administration** → **Enterprise-wide Administration** → **IBM FileNet P8 Security** → **Authentication** → **Kerberos for Content Engine**. Because there are system prerequisites for Content Engine Integrated Logon, read this topic before installing Business Process Framework Explorer. There is no additional installation or configuration required by Business Process Framework Explorer to use Windows Integrated Logon.

When running Business Process Framework Explorer, if you log in to Windows by using a Windows Active Directory domain account, then Business Process Framework Explorer always uses Integrated Logon to log on to the Content Engine. If you have not configured Integrated Logon, Business Process Framework Explorer returns an error when it attempts to log on to the Content Engine. You

can still work in this environment by typing in by hand the values which Business Process Framework Explorer otherwise retrieves from the Content Engine.

## Preparing the bootstrap object store

If the Bootstrap object store and the default object store are different, you can prepare an object store to be the Bootstrap object store.

The bootstrap object store stores the site preferences file for Workplace. These settings are important to the functions of Business Process Framework. The **System-wide setting → Bootstrap Content Engine Object Store Name** setting in Business Process Framework Explorer specifies the display name of the Bootstrap Object Store. This object store contains Workplace access roles, the Case ID generation object (Bp8Settings), Business Process Framework stored searches, and the Business Process Framework site preferences.

A Business Process Framework installation makes changes to the bootstrap object store configuration. This happens automatically if you are using the default object store for your bootstrap object store. If you choose to use one other than the default, you must manually configure the bootstrap object store.

To manually configure the bootstrap object store:

1. Identify the object store that has the Workplace site preference file stored.
2. In Enterprise Manager, import `ce_base.xml` (available in the Business Process Framework installation media) to the object store. This action generates a Bp8Settings object called Settings in the ***OS*** → **Root Folder → Business Process Framework folder** in the object store.

## Editing Workplace site preferences

Site preferences in Workplace influence behavior in the Business Process Framework Web application.

To set the Workplace site preferences for Business Process Framework:

Set these preferences under **Workplace → Admin → Site Preferences → General**

- Enable custom objects: Yes

  This setting applies to search capabilities. Set this to Yes to allow Business Process Framework to display necessary objects in search returns. Without this setting, Workplace searches will not return custom objects like Business Process Framework case objects or audit log objects.
- Add as major version: Yes

  Business Process Framework does not support minor versions of documents in Content Engine. If you save a document as a minor version, such as 1.1, you will only see the previous major version, 1, in Business Process Framework. Set this to yes to ensure that document version integrity is preserved.
- Check in as major version: Yes

  Business Process Framework does not support minor versions of documents in Content Engine. If you save a document as a minor version, such as 1.1, you will only see the previous major version, 1, in Business Process Framework. Set this to yes to ensure that document version integrity is preserved.

### Configuring Process Engine case-insensitive view support

Process Engine 4.0.3 and later supports case-insensitive views. The new Process Engine views provide case-insensitive column names. Using these new views replaces the manual step of removing the quotation marks in the current VWV views.

To configure Process Engine case-insensitive views

Use the vwtool with the **createDBviewsCI** command to create database views that are not case sensitive. For details, see the IBM FileNet P8 help topic **System Administration Process → Administration → Administrative tools → vwtool → Commands → createDBviewsCI**.

**Tip:** You can use vwtool to generate a list of database view names to use when updating the object names of workflow queues in Business Process Framework Explorer after installation.

## Installation administrator tasks

The Installation administrator must coordinate with and delegate responsibilities to the other administrators to prepare for theBusiness Process Framework installation.

To prepare for the installation:

- Complete the installation worksheet for your environment

  If you are using the Installation and Upgrade Worksheet for your environment, complete the worksheet with the relevant information as described in "Using the installation and upgrade worksheet" on page 5.
- Verify the contents of the installation package

  This information is a brief description of the contents of the Business Process Framework installation package:

  **admin (folder)**
  Contains the `filenet_bpf_explorer_setup.exe` installation program for Business Process Framework Explorer.

  **setup (folder)**
  Contains the *platform*`filenet_bpf_setup.bin or .exe` files used to install Business Process Framework.

  "Installing Content Engine client libraries"
  If Business Process Framework Explorer is installed on a desktop with no Content Engine client libraries (the "COM Compatibility Client API" installation feature), Content Engine integration is disabled.

### Installing Content Engine client libraries

If Business Process Framework Explorer is installed on a desktop with no Content Engine client libraries (the "COM Compatibility Client API" installation feature), Content Engine integration is disabled.

The Business Process Framework Explorer is still usable for all configuration tasks, but the Business Process Framework Explorer user does not have access to the lists of object stores, classes and properties. Instead, the user must type in the names of these entities.

The Content Engine client libraries are not fully installed with Enterprise Manager. You must also install the Content Engine client libraries even if installing Enterprise Manager. See the *IBM FileNet P8 Platform Installation and Upgrade Guide* for information.

## Information technology administrator tasks

The Information Technology administrator must prepare the network and operating systems, and carry out certain security configurations to prepare your environment for Business Process Framework.

"Copying installation software disk contents to target machine"
When you are ready to install, you must make the installation software available to the administrator who can run the installation.

"Making staging folder accessible"
The staging folder must be accessible from the various systems where Business Process Framework software is to be installed.

### Copying installation software disk contents to target machine

When you are ready to install, you must make the installation software available to the administrator who can run the installation.

To copy installation software disk contents to a target machine:

1. Insert the disk for the target platform into a reader.
2. For systems other than Windows, mount the disk device.
3. Copy the contents of the disk to a staging folder. This folder must be accessible to the systems where Business Process Framework software is to be installed.

### Making staging folder accessible

The staging folder must be accessible from the various systems where Business Process Framework software is to be installed.

The following table identifies which servers require access to specific subfolders of the staging folder.

*Table 1. Staging folders*

| Server | Folder |
|---|---|
| Business Process Framework administrative workstation | *staging folder*/misc<br><br>*staging folder*/admin |
| meta data server | *staging folder*/sql |
| Web application server | *staging folder*/misc<br><br>*staging folder*/setup |

To make the staging folder accessible:

1. Use FTP or a tool of your choice to share the original staging folder or to copy the staging folder to other servers as indicated in the preceding table.
2. If you copy the *staging folder* to other servers, record the locations.

## Security administrator tasks

The Security administrator must prepare the security environment for Business Process Framework, including planning the security environment, configuring the directory server, and creating accounts.

"Configuring LDAP security"
Your LDAP repository must include any users and groups that can be mapped to Workplace access roles before you install Business Process Framework.

"Configuring users and groups in Workplace site preferences"
After you have created the users and groups in the LDAP repository, you can map the user and access roles in the Workplace site preferences. This security authentication and authorization method supports the Business Process Framework Case Management sample application.

## Configuring LDAP security

Your LDAP repository must include any users and groups that can be mapped to Workplace access roles before you install Business Process Framework.

The Case Management Sample Application maps its Business Process Framework Roles to Workplace access roles and then maps Workplace access roles to existing LDAP users or groups. Users and groups that can be mapped to the following Workplace access roles must therefore be in your LDAP repository before the Business Process Framework installation:

- sue
- joe
- ana
- mark

The names of your LDAP users and groups do not have to reflect or resemble the names of the Workplace access roles to which they are to be assigned. However, since it often takes considerable lead time to arrange for the creation of new LDAP Users and groups, it is recommended that you have the security administrator at your site add the names of your LDAP users and groups to your LDAP repository before you begin the actual installation.

**Important:** If you use Workplace access roles to assign Business Process Framework roles, users that have Full Control access to a Content Engine object store have access to all Business Process Framework roles. The privileges associated with Full Control access override any limits set by the Workplace access roles preventing you from excluding an object store super user from a given Business Process Framework role. For information about other methods of assigning roles, see the *IBM FileNet Business Process Framework Explorer Handbook*.

## Configuring users and groups in Workplace site preferences

After you have created the users and groups in the LDAP repository, you can map the user and access roles in the Workplace site preferences. This security authentication and authorization method supports the Business Process Framework Case Management sample application.

The Case Management sample application uses Workplace access roles and maps them to existing LDAP users or groups. There are five Business Process Framework Roles defined to support the Case Management sample application that must be defined in Workplace access roles:

- Supervisor (Add sue LDAP user)
- Indexer (Add joe LDAP user)
- Reviewer (Add mark LDAP user)
- Approver (Add ana LDAP user)
- BPF Site Designers (Add sue LDAP user)

In Business Process Framework, role membership is managed by LDAP security group membership. Business Process Framework Roles are linked to Workplace access roles, which are linked to LDAP Users or Groups.

To enhance performance, it is recommended that you use Workplace access roles (set the Business Process Framework Metastore setting Enable Access Roles to true) instead of direct LDAP integration, especially in cases where the LDAP directory is large or complex (containing many levels of nested groups or folders).

Access Roles must be located in the bootstrap Object Store. This Object Store is specified in Business Process Framework Explorer system-wide settings.

Within Workplace™ Site Preferences, define Workplace access roles corresponding to the Business Process Framework Roles required for the Case Management sample application.

To define corresponding roles:

1. Click **Admin** → **Site Preferences**.
2. Click **Access Roles**.
3. Click **Add Role**.
4. Name the new role appropriately, such as `Supervisor`.
5. Remove all default added role members by using the **Remove** link next to each member.
6. Click **Add New Members**.
7. Select either **User** or **Groups** to display the appropriate list.
8. Type the beginning characters of the user or group name to be added to this role, in this case, `sue`.
9. Click **Search**. After a brief delay, the matching names are displayed.
10. Choose the appropriate name, such as `sue`.
11. Click **Accept**. The Site Preferences page opens again, with the new user or group name listed for the role under Allowed Access.
12. Add the other required access roles.
    - Indexer (Add joe LDAP user)
    - Reviewer (Add mark LDAP user)
    - Approver (Add ana LDAP user)
    - BPF Site Designers (Add sue LDAP user)
13. Click **Apply**.

When you reach define Metastore roles in Business Process Framework Explorer you can map these new Workplace access roles to the appropriate security profile in the Business Process Framework Metastore.

With LDAP integration and Access Roles enabled, an LDAP user who has full control to the Bootstrap Object Store can see all user profiles, even if they are not in the LDAP group mapped to an associated access role.

## Database administrator tasks

The Database administrator must prepare the databases required for Business Process Framework, including gathering information about data sources, creating databases and database accounts, and installing client software.

## JDBC driver requirements

The JDBC drivers required to support Business Process Framework must be available before the installation of Business Process Framework.

The JDBC drivers required to support Business Process Framework are listed in the *IBM FileNet P8 Hardware and Software Requirements* document. Make arrangements with the customer to make sure that the drivers are available before installing Business Process Framework.

### DB2

You can download the `db2jcc.jar` and `db2jcc_license_cu.jar` files from the IBM Support site.

### Microsoft SQL Server

You can download the latest `jtds-1.x.y.jar` file from SourceForge.net.

### Oracle

You can download the `ojdbc14.jar` file from the Oracle Web site.

**Related information**

Product documentation, requirement, and compatibility for IBM FileNet P8 Platform
Download IBM FileNet P8 Hardware and Software Requirements, the IBM FileNet P8 Compatibility Matrix, and other IBM FileNet P8 documentation.

Download the IBM Application Development Client
The IBM Application Development Client includes the DB2 JDBC driver.

Download the jtds-1.x.y.jar file from Sourceforge for Microsoft SQL Server

## Installing JDBC drivers

The Business Process Framework installer uses JDBC to install the Metastore database and to create the data source in the application server. You must put the JDBC drivers in a folder on the Business Process Framework server that is accessible to the installer.

If the Metastore and Process Engine databases have different database types, the directory must contain both JDBC drivers.

"Installing JDBC drivers on Oracle WebLogic Server"
You must put the JDBC drivers in a folder on the Business Process Framework server that is accessible to the installer.

"Installing JDBC drivers on JBoss Application Server" on page 16
You must put the JDBC drivers in a folder on the Business Process Framework server that is accessible to the installer.

**Installing JDBC drivers on Oracle WebLogic Server:**

You must put the JDBC drivers in a folder on the Business Process Framework server that is accessible to the installer.

If the Metastore and Process Engine databases have different database types, the directory must contain both JDBC drivers.

If you are using Oracle WebLogic Server with a DB2 Metastore database or a DB2 Process Engine database, you must place the drivers in a directory and add the drivers to the CLASSPATH of `startWebLogic.cmd` or `startWebLogic.sh`.

To install JDBC drivers:

1. Open the WebLogic Server startup script.

| Option | Description |
|---|---|
| **Windows** | *BEA_HOME*\user_projects\domains*yourdomain*\bin\startWeblogic.cmd |
| **UNIX®** | *BEA_HOME*\user_projects\domains*yourdomain*\bin\startWeblogic.sh |

2. Insert the following text in the script to add the drivers to the CLASSPATH.

   The text is shown on two lines for readability. Type the text on a single line in the script:

   ```
   set CLASSPATH=c:\jdbc\db2jcc.jar;c:\jdbc\db2jcc_license_cu.jar;
   %CLASSPATH%;%MEDREC_WEBLOGIC_CLASSPATH%
   ```

3. Restart WebLogic Server.

   For more information, see "JDBC driver requirements" on page 14.

**Installing JDBC drivers on JBoss Application Server:**

You must put the JDBC drivers in a folder on the Business Process Framework server that is accessible to the installer.

If the Metastore and Process Engine databases have different database types, the directory must contain both JDBC drivers.

To install JDBC drivers:

1. Place the drivers in the following directory: *JBOSS_HOME*/server/*server_name*/lib
2. Restart JBoss Application Server.

   For more information, see "JDBC driver requirements" on page 14.

## Configuring the firewall for database access

If Business Process Framework Explorer and Business Process Framework Web application are to access a remote database, you must enable communication between the Business Process Framework server and the server on which the database resides.

You do not have to configure the firewall if the database resides on the Business Process Framework server.

**Tip:** The Business Process Framework firewall configuration is in addition to any firewall configuration required for Process Engine. For more information about the Process Engine requirements, see the IBM FileNet P8 Documentation topic: **System Administration → Process Engine Administration → System administration tasks → Configure firewall ports and setup**.

The database Listener port is used for communication between the Business Process Framework Server and the database.

The ports are bi-directional between the Business Process Framework Server and the database, and the database and the Business Process Framework Server.

The database ports are user-configurable.

- Oracle listener port (for example, 1521).
- DB2 listener port (for example, 50000).
- Microsoft SQL Server Server listener port (for example, 1433).

## Creating a new Metastore database (Step0 script)

When you are installing a new Business Process Framework application, you must create an empty Business Process Framework Metastore database before you run the Business Process Framework installation program. The Business Process Framework installation program then creates tables, and populates the database with initial configuration data.

Business Process Framework provides a SQL script, called `Step0`, that contains sample SQL for database creation. The `Step0` script creates the database for DB2 and Microsoft SQL Server. For Oracle, the script creates only the table space and schema. You can modify and run this script to create the database, or you can use other tools to create an empty database.

**Important:** Do not run the Step0 script if you are upgrading an existing Business Process Framework application. In that case, the upgraded application uses the existing Metastore database.

"Creating a DB2 database"
You can use the Step0 SQL Server script to create a Business Process Framework database on DB2.

"Creating a Microsoft SQL Server database"
You can use the Step0 SQL script to create a Business Process Framework database on Microsoft SQL Server.

"Creating an Oracle database" on page 18
You can use the Step0 SQL script to create a Business Process Framework table space and schema on Oracle.

**Creating a DB2 database:**

You can use the Step0 SQL Server script to create a Business Process Framework database on DB2.

To create a Business Process Framework database:

1. Create an operating system user to function as *meta user* for *meta database*, or identify an existing user to fill that role.
2. Set the DB2 database page size to 32 KB.
3. If the meta database name *meta database* is different from the default value BP8DB, then perform the following steps to change the name in the Step0 script. Otherwise, proceed to step 4. The maximum length for a database name is eight characters.
   a. Open the following file in the editor of your choice: *staging folder*\SQL\DB2\Step0.DB2.Bp8.Metabase.1.0.sql
   b. Replace all instances of the string BP8DB with your meta database name *meta database*.
   c. Save the file and close it.
4. If the database location has to be different so that the default location DB2 is used, then specify the location in the Step0 script. Otherwise, continue with the next step.

   In a high availability environment the database must be on shared storage (for example, a separate drive letter on Windows or a separate mount point on UNIX). Running the Step0 script without modifying the location results in the Metastore database being located on the node where the command was run rather than on shared store, causing the cluster to fault during failover.
5. Open the Command Editor. Click **Start menu** → **Programs** → **IBM DB2** → **Command Line Tools** → **Command Editor**.
6. Change the Statement Termination Character to @ (at sign).

   You can change this character at the bottom of the Command Editor window.
7. Click **Selected** → **Open** to open the Step0.DB2.Bp8.Metabase.1.0.sql file in Command Editor.
8. Click **Selected** → **Execute** to run the script and create the Metastore database.

**Creating a Microsoft SQL Server database:**

You can use the Step0 SQL script to create a Business Process Framework database on Microsoft SQL Server.

To create a Business Process Framework database:

1. 1. If the meta database name *meta database* is different from the default value Bp8Metastore, perform the following steps to change the name in the `Step0` script. Otherwise, proceed to step 2.
   a. Open the following file in the editor of your choice:

      *staging folder*`\SQL\SQL\Step0.mssql.Bp8.Metabase.1.0.SQL`
   b. Replace all instances of the string Bp8Metastore with your meta database name *meta database*.
   c. Save the file.
2. If SQL Server is installed in a location other than `C:\Program Files\Microsoft SQL Server`, perform the following steps to change the path in the `Step0` script. Otherwise, proceed to the next step.

   **Important:** If the path is different and you do not make this change, errors occur in the CREATE DATABASE statement in `Step0.mssql.Bp8.Metabase.1.0.SQL`.
   a. Open the following file in the editor of your choice:

      *staging folder*`\SQL\SQL\Step0.mssql.Bp8.Metabase.1.0.SQL`
   b. Search for the following SQL statement text and replace the *variable paths* with the correct path for the install directory of SQL Server on your machine.

      ```
      CREATE DATABASE [Bp8Metastore] ON
       (NAME = N'Bp8Metastore_dat', FILENAME = N'
       c:\Program Files\Microsoft SQL Server\MSSQL\data\Bp8Metastore.mdf' ,
        SIZE = 5, FILEGROWTH = 10%) LOG ON
        (NAME = N'Bp8Metastore_log', FILENAME = N'
       c:\Program Files\Microsoft SQL Server\MSSQL\data\Bp8Metastore.ldf' ,
        SIZE = 5, FILEGROWTH = 10%)
      ```
   c. Save and close the file.
3. Click **Start menu** → **Programs** → **Microsoft SQL Server** → **Query Analyzer** to open SQL Server Query Analyzer.
4. Log on by using the *meta admin user* and *meta admin password*.
   a. Select **Master Database** from the combination box on toolbar.
   b. Select **File** → **Open**, and select **... staging folder\SQL\SQL\ Step0.mssql.Bp8.Metabase.1.0.SQL**.
5. Select **Query** → **Execute**.

**Creating an Oracle database:**

You can use the `Step0` SQL script to create a Business Process Framework table space and schema on Oracle.

To create Business Process Framework table space and schema:

1. Verify the following prerequisites before you begin the installation process:
   - The Oracle database exists. This database can be created by using the Oracle Database Configuration Assistant.
   - The Oracle listener for the database exists. The listener can be created by using the Oracle Net Configuration Assistant.
   - The Net Service Name for the database exists. This name can be created by using the Oracle Net Configuration Assistant.
   - You are able to log on to database and run scripts by using Oracle SQL Plus Worksheet.

2. Determine if it is preferable in your environment to use the supplied Business Process Framework script (called Step0) to create a new table space and the necessary Business Process Framework users, or if they prefer to install into an existing database configuration. To modify and run the Step0 script, perform the following steps. Otherwise, proceed to the next step.

   a. Locate the Step0 script:

      *staging folder*\SQL\Oracle\Step0.oracle.Bp8.Metabase.1.0.SQL.

      **Important:** It is highly recommended to create a separate table space for Business Process Framework inside the database. The following procedure customizes the Step0 script to create this table space.

   b. Manually update the Step0 script as follows:

      1) Uncommment the following statements by removing the two hyphens (--) at the beginning of each statement:

```
--CREATE TABLESPACE "BPF_DATA" DATAFILE
'C:\ORACLE\ORADATA\HFOS\BPF_DATA.ora' SIZE 50M
-- EXTENT MANAGEMENT LOCAL SEGMENT SPACE
      MANAGEMENT AUTO;
--CREATE TABLESPACE "BPF_INDEX" DATAFILE
'C:\ORACLE\ORADATA\HFOS\BPF_INDEX.ora' SIZE 50M
-- EXTENT MANAGEMENT LOCAL SEGMENT SPACE
      MANAGEMENT AUTO;
-- IDENTIFIED BY "bp8"
      DEFAULT TABLESPACE "BPF_DATA"
```

      2) Comment out the following statement by adding two hyphens (--) at the beginning of the statement: IDENTIFIED BY "bp8" DEFAULT TABLESPACE "USERS"

         The resulting updated SQL script looks like the following script:

```
CREATE TABLESPACE "BPF_DATA" DATAFILE
     'C:\ORACLE\ORADATA\HFOS\BPF_DATA.ora'
     SIZE 50M
EXTENT MANAGEMENT LOCAL SEGMENT SPACE
   MANAGEMENT AUTO;

CREATE TABLESPACE "BPF_INDEX" DATAFILE
     'C:\ORACLE\ORADATA\HFOS\BPF_INDEX.ora'
     SIZE 50M
EXTENT MANAGEMENT LOCAL SEGMENT SPACE
   MANAGEMENT AUTO;

CREATE USER "BP8" PROFILE "DEFAULT"
IDENTIFIED BY "bp8" DEFAULT TABLESPACE "BPF_DATA"
-- IDENTIFIED BY "bp8" DEFAULT TABLESPACE "USERS"
QUOTA UNLIMITED
ON "BPF_DATA"
ACCOUNT UNLOCK;

GRANT "CONNECT" TO "BP8";
GRANT "RESOURCE" TO "BP8";
GRANT "DBA" TO "BP8";
GRANT SELECT ANY TABLE TO "BP8";

ALTER SESSION SET CURRENT_SCHEMA=BP8;
```

   c. Modify the Step0 script for your environment. In particular, ensure that the data file location points to the appropriate database directory.

      Verify the location of the DATAFILE before starting the script. Record the appropriate name as the *meta database*.

By default the user logon Bp8 (with password Bp8) is created with read/write access to the Business Process Framework Metastore. Record the appropriate information in your worksheet as *meta user* and *meta password*.

3. Grant the appropriate privileges to the *meta admin user*.
4. Run the customized `step0` script or the script provided by the database administrator, by using *meta admin user*, and taking care to run the script against the Business Process Framework database. If errors occur, review the script for incorrect references.

## Installing the database client for Business Process Framework explorer

First determine whether the database engine is local or remote. The database engine is local if it is installed on a Windows instance where you plan to install Business Process Framework Explorer software.

The database is remote if it is on a separate server from the Business Process Framework Explorer.

**Microsoft SQL Server**

If you use a Microsoft SQL Server (local or remote), you do not have to install the database client for Business Process Framework Explorer.

Database connections for Business Process Framework Explorer at run time are handled through an ODBC data source.

For an Microsoft SQL Server database, the ODBC data source is automatically created during the Business Process Framework Explorer installation.

**DB2**

If you use a remote DB2 database, you must install the DB2 client software, and test client connectivity to database server before installing Business Process Framework Explorer application. If the DB2 database is local to the Business Process Framework Explorer, this client software installation is not necessary because the database server installation includes the necessary client software.

Database connections for Business Process Framework Explorer at run time are handled through an ODBC data source.

For an DB2 database, the ODBC data source is configured with a database alias name. Make sure that the database alias name is configured and tested before you install Business Process Framework Explorer.

**Oracle**

If you use a remote Oracle database, you must install the Oracle client software, and test client connectivity to database server before installing Business Process Framework Explorer application. If the Oracle database is local to the Business Process Framework Explorer, this client software installation is not necessary because the database server installation includes the necessary client software.

The database connection for Business Process Framework Explorer at run time are handled through the Oracle OLEDB Provider. This is the same provider that is used for the Oracle SQLPlus client. Although Business Process Framework Explorer uses the Oracle OLEDB Provider, the WFImport utility that is used to import workflow configuration from PEP files (workflow maps) uses an ODBC datasource.

For an Oracle database, the ODBC data source is configured with a TNS name. The TNS name must be created and tested before Business Process Framework Explorer installation.

To install the Oracle client:

This procedure shows the minimal choices (specific to the needs of Business Process Framework metastore) for installing a database client. Consult the Oracle 9i or Oracle 10g installation documentation for complete preinstallation requirements and instructions.

From the Available Products screen:

1. For Oracle 9i, choose from the list of available product components:
   - Oracle 9i Client
   - Oracle Network Utilities
   - Oracle Database Utilities
   - SQL *PLUS
   - (Windows) Oracle Windows Interfaces (select all the subcomponents)
   - Oracle Services for Microsoft Transaction Server
2. For Oracle 10g, choose from the list of available product components:
   - Oracle 10g Client
   - Oracle Network Utilities
   - Oracle Database Utilities
   - SQL *PLUS
   - (Windows) Oracle Windows Interfaces (select all the subcomponents)
   - Oracle Services for Microsoft Transaction Server
3. Using Oracle Net Configuration Assistant, test the connection to the Oracle database server with an appropriate Oracle user and password.

See the *Plan and Prepare Your Environment for IBM FileNet P8* for additional information about installing and configuring database clients.

## Database security

The Business Process Framework install process requires two different Rational database management system user accounts, which are referenced as Business Process Framework *meta admin user* and Business Process Framework *meta user* in the Business Process Framework Prerequisite Worksheet.

"Meta database admin user for database creation"
The *meta admin user* is an administrator account required to access the Metastore provider. Typically, this account is used only during database creation.

"Meta database user for runtime access" on page 22
The *meta user* is an account required to access the Metastore Provider on an ongoing basis by both the Business Process Framework Web Application and Business Process Framework Explorer.

**Meta database admin user for database creation:**

The *meta admin user* is an administrator account required to access the Metastore provider. Typically, this account is used only during database creation.

It might be necessary to have a DBA with an account that has the privileges to perform the tasks of the *meta admin user* during the installation. Many companies do not divulge the passwords for accounts with this level of privilege to installation personnel. In such circumstances, have one of your DBAs run these scripts for you by using any account they choose (as long as it has the DBA Role with the SYSDBA Privilege).

**DB2**

The SYSDBA privilege is required to create new database (assuming that the Business Process Framework table spaces are to be located in a new database). Roles required: DBA.

**Oracle**

The SYSDBA privilege is required to create new database (assuming that the Business Process Framework table spaces are to be located in a new database). Roles required: DBA.

**SQL Server**

System Administrators server role.

**Meta database user for runtime access:**

The *meta user* is an account required to access the Metastore Provider on an ongoing basis by both the Business Process Framework Web Application and Business Process Framework Explorer.

The *meta user* is an account required to access the Metastore Provider on an ongoing basis by both the Business Process Framework Web Application and Business Process Framework Explorer.

This account must have read/write access to the Business Process Framework Metastore database. The Business Process Framework Metastore creation scripts create this user and grant privileges for Microsoft SQL Server and Oracle. For DB2, you must create an operating system user and assign it the appropriate privileges yourself.

**DB2**

- System Privileges: Create table, View, and Stored Procedure.
- Group: Must be in DB2 user group. By default this group is named:
  - DB2USERS on Windows platforms
  - db2grp1 on UNIX platforms

**Oracle**

- Roles: CONNECT
- System Privileges: CREATE SESSION (this comes with the CONNECT Role)
- Object Permissions: Either EXECUTE (for stored procedures) or INSERT, UPDATE, DELETE, and SELECT permission on all Bp8 objects.

  If your schema is named Bp8 and you are using the Bp8 user account (schema owner) as your *meta user*, then your *meta user* schema automatically has these permissions.

If you are using an account other than the schema owner as your *meta user*, then you must develop and run scripts to grant to the *meta user* the specified privileges on each object in the schema. For example: GRANT INSERT, UPDATE, DELETE, SELECT ON application_settings to Bp8. Because the ANY privileges apply to the whole database and not just an individual schema, you must grant the specified privileges for each table, view, stored procedure, and so on, individually. There is no separate privilege to grant SELECT, for example, on all objects in a schema.

By default, both the Business Process Framework Oracle *meta user* and schema are named BP8. If you use a different name for the *meta user* and schema, you must change the following line in `Bp8sql.xml` file to use the new name:

```
<ORACLE>alter session set current_schema=meta user</ORACLE>
```

The `Bp8sql.xml` file is in the Business Process Framework Explorer home directory in the same directory as the Business Process Framework `Explorer.msc` file.

In addition, if you use the scripts provided with the Business Process Framework software to create a Business Process Framework Metastore manually, you must change the *meta user* name prior to running the scripts. (The Business Process Framework installer normally creates the Business Process Framework Metastore automatically; in this case there is no reason to change the name in the scripts by hand.)

- In the `Step0.oracle.Bp8.Metabase.1.0.sql file`, change all references to the *meta user* name.
- In the `Step1.oracle.Bp8.Metabase.1.0.sql`, `Step2.oracle.Bp8.Metabase.1.0.sql`, and `Step3.oracle.Bp8.Metabase.1.0.sql` files, change the *meta user* name in the following line:

  ```
  ALTER SESSION SET CURRENT_SCHEMA=meta user;
  ```

**Microsoft SQL Server**

public and db_owner roles.

## Enabling accent insensitive collation (optional)

Business Process Framework supports both accent-sensitive and accent insensitive collation for Microsoft SQL Server databases. Accent-sensitive collation is the default mode.

To enable accent insensitive collation:

1. Navigate to the appropriate folder for your database:
   - *staging folder*`\sql\DB2`
   - *staging folder*`\sql\Oracle`
   - *staging folder*`\sql\SQL`
2. 2. Edit the `Step0`, `Step1`, `Step2`, and `Step3` files to change the following line:

   `COLLATE SQL_Latin1_General_CP1_CI_AS` to `COLLATE SQL_Latin1_General_CP1_CI_AI`
3. Load data into the Business Process Framework Metastore database manually. For instructions, see “Loading the Business Process Framework Metastore” on page 110.
4. Import the Business Process Framework Metastore manifest manually. For instructions, see “Importing the Metastore manifest” on page 112.

# Installing and configuring Business Process Framework

After you plan your installation and perform the prerequisite tasks, you can install and configure Business Process Framework.

"Environment conditions that require additional manual configuration after installation"
The Business Process Framework installation program automatically configures the P8 Platform environment to work with Business Process Framework. However, some component versions require additional manual configuration after the installation is complete.

"Installing Business Process Framework" on page 27
You can choose to install Business Process Framework automatically, using the installation program, or manually. If you choose a manual installation, you must also manually configure the applications after the installation.

"Verifying Business Process Framework server installation" on page 32
After you complete the Business Process Framework installation, you can verify the installation by checking log entries and testing the connections and the application.

"Configuring Business Process Framework server after installation" on page 40
The Business Process Framework server installation program configures many necessary settings automatically. However, you must perform additional configuration when you complete the installation.

"Installing Business Process Framework Explorer" on page 44
Business Process Framework Explorer provides the capability for the application developer to log on to Content Engine and look up properties while configuring Business Process Framework application fields. Install Business Process Framework Explorer on a Windows machine.

"Verifying the Business Process Framework Explorer installation" on page 44
You can verify the Business Process Framework Explorer installation by checking whether you can log on to Business Process Framework Explorer without errors.

"Configuring Business Process Framework Explorer after installation" on page 44
Although the Business Process Framework Explorer installation program automatically configures the application, you must perform some additional configuration with the installation is complete.

"Logging on to a sample Business Process Framework Web application" on page 49
You can verify the installation and configuration by logging on to the Business Process Framework application you set up.

## Environment conditions that require additional manual configuration after installation

The Business Process Framework installation program automatically configures the P8 Platform environment to work with Business Process Framework. However, some component versions require additional manual configuration after the installation is complete.

## Installing with Process Engine version 4.0.3 or later

If you install Business Process Framework with Process Engine version 4.0.3 or later, you must perform the following additional configuration tasks manually:

- Creating base or solution-specific workflow objects

  **Important:** Import `qcreate_cm.xml` and `qcreate_base.xml` from the BPF 4.1.0-003 fix pack package, not from the BPF4.1.0 installer package.
- Updating the Process Map
- Applying P8 Platform changes to the Business Process Framework installation

## Installing with Application Engine versions 4.0.2.0, 4.0.2.1, or 4.0.2.2

Installing with certain versions of Application Engine can result in a login error. To prevent the error, you can upgrade to Application Engine 4.0.2.3. To maintain an earlier version of Application Engine, you can copy `containericons.properties` and `customobjecticons.properties` from `install_path\Config\AE\` to `install_path\Config\bpf`.

## Installing on Oracle WebLogic Server 10.x and WebSphere® Application Server 7.x

Although Oracle WebLogic Server 10.x and WebSphere Application Server 7.x are supported application server platforms, the Business Process Framework installation program does not include these choices. During the installation, choose Oracle WebLogic Server 9.2 instead of 10.x, or choose WebSphere Application Server 6.1 instead of 7.x.

## Installing on JBoss Application Server 4.2.3

JBoss Application Server 4.2.3 is a supported application server platform. However, the Business Process Framework installation program does not deploy automatically to JBoss Application Server 4.2.3. To enable manual deployment, remove the following files from the `/BPF/WEB-INF/lib` directory:

- `serializer.jar`
- `xalan.jar`
- `xercesImpl.jar`
- `xml-apis.jar`

After you have deleted the jar files, manually deploy the Business Process Framework application. See the task Manually deploying the Business Process Framework Web application on JBoss Application Server.

## Installing with DB2 9.5

If you want to use DB2 version 9.5, you must manually configure the Metastore database. The installation program asks ″Do you want to create the Metastore automatically?″ If you are installing with DB2 9.5, choose `No` for this option. After the installation program is complete, follow the steps in Loading the Business Process Framework Metastore on DB2 to manually create the Business Process Framework Metastore database.

**Related tasks**

"Creating base or solution specific workflow objects" on page 104
If certain base and solution specific workflow objects were not created during the Business Process Framework automatic installation, you can create them by editing XML files and importing them in the Process Configuration Console.

"Loading the Business Process Framework Metastore" on page 110
You can choose to manually load data into the Business Process Framework Metastore database.

"Deploying the Web application on JBoss Application Server 4.0.x or 4.2.x" on page 143
You can manually deploy the Business Process Framework Web application on JBoss Application Server 4.0.x or 4.2.x.

"Applying IBM FileNet P8 Platform changes to the Business Process Framework installation" on page 144
You can apply IBM FileNet P8 Platform changes to the Business Process Framework installation. Verify your installation and component versions.

**Related reference**

"Updating the process map" on page 105
Updating the process map is an automated process in the Business Process Framework installation program. If an error occurs during this part of the installation, you can manually update the process map using the Workplace application.

## Installing Business Process Framework

You can choose to install Business Process Framework automatically, using the installation program, or manually. If you choose a manual installation, you must also manually configure the applications after the installation.

"Installing Business Process Framework with automatic configuration"
You can choose to use the Business Process Framework automatic installation program, for an interactive or silent installation. This installation tool not only installs the application, but also configures the datasource and the FileNet P8 Platform environment.

"Manually installing Business Process Framework" on page 30
Although the easiest and safest way to install Business Process Framework is to allow the installer to automatically perform most of the tasks, many portions of the installation can instead be performed manually for more control.

### Installing Business Process Framework with automatic configuration

You can choose to use the Business Process Framework automatic installation program, for an interactive or silent installation. This installation tool not only installs the application, but also configures the datasource and the FileNet P8 Platform environment.

The Business Process Framework automatic installation program installs the application on the Web application server. The installation program also does the following configuration tasks automatically:

- Creating data sources on the Web application server.
- Deploying the Business Process Framework Web Application to the Web application server.

- Configuring Business Process Framework Operations XML files (`bp8_config.xml` and `log4j.xml`).
- Adding appropriate database stubs in the Component Manager classpath.
- Running Metastore schema scripts.
- Importing Metastore database configuration.
- Updating the Workplace URL, Process Engine connection point name, and Process Engine view names in the Metastore configuration.

You can only use automatic installation on the first instance of Business Process Framework. Any additional Business Process Framework instances must be installed and configured manually.

"Installing Business Process Framework interactively"
The Business Process Framework installation program prompts you for the site-specific information required to install the Business Process Framework Web application. See the completed Installation and Upgrade Worksheet for this information.

"Installing Business Process Framework silently" on page 29
You can install and configure Business Process Framework silently. To do so, you first must create a response file which can be used to perform a silent installation or upgrade.

"Backup files created by the Business Process Framework installation program" on page 30
The Business Process Framework installation program adds configuration to files in the Application Engine installation. The installation program creates backups of these files before it changes the files.

## Installing Business Process Framework interactively

The Business Process Framework installation program prompts you for the site-specific information required to install the Business Process Framework Web application. See the completed Installation and Upgrade Worksheet for this information.

- Ensure that the Content Engine, Process Engine, and Application Engine are running and operational so that the installer can deploy the new application and configure the IBM FileNet P8 environment.
- Ensure that the Business Process Framework Metastore database server is running, so that the installer can populate the empty Metastore.
- Stop the Component Manager and close all open Process Task Manager tools on the Application Engine so that the installer can update the `vwtaskman.xml` file in the Application Engine Router directory.

To install Business Process Framework interactively:

1. Open your completed Installation and Upgrade Worksheet file.

   **Tip:** In the worksheet file, verify that the **Data → Filter → AutoFilter** command is enabled. To view Business Process Framework values, filter by **BPF Installer** in the **Installation or Configuration Program** column.
2. 1. Start the Business Process Framework setup wizard:

| Option | Description |
|---|---|
| **AIX®:** | Navigate to */staging_folder*/`setup` and run `AIXfilenet_bpf_setup.bin`. |

| Option | Description |
|---|---|
| **HP-UX RISC:** | Navigate to /*staging_folder*/setup and run HPUXfilenet_bpf_setup.bin. |
| **HP-UX Itanium®:** | Navigate to /*staging_folder*/setup and run HPUXIA64filenet_bpf_setup.bin. |
| **Linux®:** | Navigate to /*staging_folder*/setup and run LINUXfilenet_bpf_setup.bin. |
| **Solaris:** | Navigate to /*staging_folder*/setup and run SOLARISfilenet_bpf_setup.bin. |
| **Windows:** | Navigate to *staging_folder*\setup and run WINDOWSfilenet_bpf_setup.exe. |

3. Complete the Business Process Framework Web application installation program screens with the values recorded in your Installation and Upgrade Worksheet.
4. Restart the Application Engine and Business Process Framework application server after the installation completes.

## Installing Business Process Framework silently

You can install and configure Business Process Framework silently. To do so, you first must create a response file which can be used to perform a silent installation or upgrade.

- Ensure that the Content Engine, Process Engine, and Application Engine are running and operational so that the installer can deploy the new application and configure the IBM FileNet P8 environment.
- Ensure that the Business Process Framework Metastore database server is running, so that the installer can populate the empty Metastore.
- Stop the Component Manager and close all open Process Task Manager tools on the Application Engine so that the installer can update the vwtaskman.xml file in the Application Engine Router directory.

To install Business Process Framework silently:

1. Open your completed Installation and Upgrade Worksheet file.

   **Tip:** In the worksheet file, verify that the **Data → Filter → AutoFilter** command is enabled. To view only Business Process Framework values, filter by **BPF Installer** in the **Installation or Configuration Program** column.
2. Use the values specified in your Installation and Upgrade Worksheet to modify the Windows or UNIX default silent input file to match your environment. The silent input file is located at *staging folder*/setup/BPF_silent_input.txt. You can also record a response file by running the installation program with the following parameters:

| Option | Description |
|---|---|
| **Windows** | *Platform*filenet_bpf_setup.exe -options-record BPFSilentInstall.rsp |
| **UNIX** | *Platform*filenet_bpf_setup.bin -options-record BPFSilentInstall.rsp |

3. To load parameters from the response file to use as initial values in the setup UI, run the installation program with the following parameters:

| Option | Description |
| --- | --- |
| **Windows** | `WINDOWSfilenet_bpf_setup.exe -options BPFSilentInstall.rsp` |
| **UNIX** | *PLATFORM*`filenet_bpf_setup.bin -options BPFSilentInstall.rsp` |

4. To perform a silent installation, where the parameters are taken from the response file and no setup UI is presented, use one of these commands to run the installation program:

| Option | Description |
| --- | --- |
| **Windows** | `WINDOWSfilenet_bpf_setup.exe –options BPFSilentInstall.rsp –silent` |
| **UNIX** | *PLATFORM*`filenet_bpf_setup.bin –options BPFSilentInstall.rsp –silent` |

### Backup files created by the Business Process Framework installation program

The Business Process Framework installation program adds configuration to files in the Application Engine installation. The installation program creates backups of these files before it changes the files.

The Business Process Framework Web Application installer updates the Workplace configuration files under the *AE_install_dir*`/FileNet/Config/AE` folder and the Process Engine connection configuration files under the `/Router` folder on the Application Engine server.

During automatic installation, the installer creates copies of the original configuration files, renamed to `.bak`, in the same directory as the original files.

## Manually installing Business Process Framework

Although the easiest and safest way to install Business Process Framework is to allow the installer to automatically perform most of the tasks, many portions of the installation can instead be performed manually for more control.

To manually install Business Process Framework:

1. Follow the same steps as for automatic install, in the Configuration of the environment before Business Process Framework server installation topic.

   **Tip:** The Business Process Framework Operations component must be installed and configured by the installer. You cannot manually configure this component. Therefore, if you are performing a custom installation, you must select the Business Process Framework Operations component on the Select features screen to make the Business Process Framework Operations available to your applications. (If you do not, you must run the installer again if you want to install and configure the Business Process Framework Operations. Doing so reinstalls the Business Process Framework Web application files. Because the custom installation option does not support installation of individual components, you must always select the Business Process Framework Metastore and the Business Process Framework Web Application along with any other components to be installed.)

2. Run the installation program as documented in Installing Business Process Framework with automatic configuration. On the screen Choose the installation type that best suits your needs, choose **Custom**.
3. On the next screen, leave unchecked any feature you want to install or configure manually:
   a. Import of the Content Engine/Process Engine manifest and add or transfer case management sample workflow
   b. Creation of data sources
   c. Deployment of the Web application
   d. Creation of the Business Process Framework Metastore and import of Business Process Framework manifest
4. Manually do only the configuration tasks you chose not to have the installer do automatically:
   a. If you did not select `Case Management Sample Configuration` on the Installer screen which contains the select the features for Business Process Framework and want to install the Case Management Sample Configuration manually, then import the Content Engine/Process Engine manifest and add/transfer case management sample workflow:
      - "Importing Content Engine base objects" on page 103
      - "Importing Content Engine solution specific objects" on page 103
      - "Creating base or solution specific workflow objects" on page 104
      - "Updating the process map" on page 105
   b. If you did not select `User-defined Configuration` on the Installer screen which contains the select the features for Business Process Framework and want to install a user-defined configuration manually, then import the user-defined Content Engine/Process Engine manifest, add or transfer user-defined workflow and optionally install custom code:
      - "Importing Content Engine base objects" on page 103
      - "Importing Content Engine solution specific objects" on page 103
      - "Creating base or solution specific workflow objects" on page 104
      - "Updating the process map" on page 105

      If you have custom code, manually add the custom code such as `JSP`, `JAR`, or `XML` files to the Business Process Framework `WAR` or `EAR` or Business Process Framework folder in the installation location and deployment location.
   c. If you selected `Use Existing` on the Installer screen that asks for the Process Engine Datasource and Metastore Datasource, then create data sources:
      - "Creating the JDBC data source for the Business Process Framework Metastore" on page 115
      - "Creating the JDBC data source for the Process Engine" on page 127
   d. If you selected `No` on the Installer screen that asks if you want to deploy Web application automatically, then deploy the Web application, following the steps in "Deploying the Business Process Framework Web application" on page 139.
   e. If you selected `No` on the Installer screen that asks if you want to create Metastore automatically, then load the Business Process Framework Metastore and import the Business Process Framework manifest:
      - "Loading the Business Process Framework Metastore" on page 110
      - "Importing the Metastore manifest" on page 112
5. Continue the procedure followed during automatic installation.

Follow the steps from "Verifying Business Process Framework server installation," through and including "Configuring Business Process Framework server after installation" on page 40 (including all sections in between).

6. If you chose to manually import the Metastore Manifest, follow the steps in "Editing the Metastore settings" on page 113.
7. Validate the Business Process Framework Web Application by following the steps in "Logging on to a sample Business Process Framework Web application" on page 49.

# Verifying Business Process Framework server installation

After you complete the Business Process Framework installation, you can verify the installation by checking log entries and testing the connections and the application.

1. "Checking for errors logged during installation"
   The automatic installation process creates connections to various system components to import and configure data and parameters. If any errors occur during the installation process (for example, if the Content Engine server is not responding), the installer continues to install the other components and shows error messages when the installation completes.
2. "Testing data source connections" on page 37
   You can test the JDBC data source connections to the Business Process Framework Metastore and the Process Engine.
3. "Verifying that the Web application is deployed and running" on page 39
   You can use the application server console or tools to verify that the Business Process Framework Web application is deployed and running.
4. "Verifying the Business Process Framework operations component" on page 40
   You must verify that Verify that the Business Process Framework operations component is started in Component Manager.

## Checking for errors logged during installation

The automatic installation process creates connections to various system components to import and configure data and parameters. If any errors occur during the installation process (for example, if the Content Engine server is not responding), the installer continues to install the other components and shows error messages when the installation completes.

"Business Process Framework log file locations"
The Business Process Framework installation process creates log files to record results and issues. Check the logs for errors after the installation.

"Business Process Framework error messages" on page 35
Search for the Error key word in the log files. If errors occur, you can do manual configuration to correct the problems.

### Business Process Framework log file locations

The Business Process Framework installation process creates log files to record results and issues. Check the logs for errors after the installation.

*Table 2. Log file names and descriptions*

| Log file | Description |
|---|---|
| `.../FileNet/BPF/BPFInstaller.log` | Contains the `InstallShield log`. This shows what InstallShield-level components were started and which of those components, if any, failed during installation. |

*Table 2. Log file names and descriptions (continued)*

| Log file | Description |
| --- | --- |
| .../FileNet/BPF/BPFInstallerAnt.log | Contains the results of the manifest import of the Business Process Framework specific configuration into the Content Engine and Process Engine and the results of Workplace integration configuration. |

*Table 2. Log file names and descriptions (continued)*

| Log file | Description |
|---|---|
| .../FileNet/BPF/instdata/logs/*.log | These logs provide detailed information on the configuration tasks performed by the installer. In general, if a component is installed successfully, you will see BUILD SUCCESSFUL at the end of the associated log in this directory; otherwise you will see BUILD FAILED.<br><br>**install_bpf_metastore_install.log**<br>Log file for Metastore population<br><br>**install_create_ear.log**<br>Log file for packaging of the WebApp.<br><br>**install_create_war.log**<br>Log file for packaging of the WebApp.<br><br>**install_DeployWebApp_appserver.StartApp.log**<br>Log file for deployment of the WebApp.<br><br>**install_is_bp8opcfg_bp8ciops.log**<br>Log file for configuration of Business Process Framework operations and modification of bp8_config.xml and log4j.xml in bpfciops.jar.<br><br>**install_is_bp8opcfg_taskman_jdbc.log**<br>Log file for configuration of Application Engine connection point and modification of vwtaskman.xml.<br><br>**install_MetastoreDS_appserver.Configjdbc.log**<br>Log file for creation of the Metastore data source.<br><br>**install_ProcessDS_appserver.Configjdbc.log**<br>Log file for create Process Engine database data source.<br><br>**install_is_bpfup_del_webroot.log**<br>Log file for deletion of temporary folder webroot.<br><br>**install_summary.log**<br>Summary showing whether each component was installed or configured successfully.<br><br>**.properties files**<br>These files are for internal use by the installer and are not generally useful for diagnostic purposes. They can be ignored.<br><br>**.all files**<br>These files are for internal use by the installer and are not generally useful for diagnostic purposes. They can be ignored.<br><br>**install_trace.log**<br>These files are for internal use by the installer and are not generally useful for diagnostic purposes. They can be ignored.<br><br>**install_status.log**<br>These files are for internal use by the installer and are not generally useful for diagnostic purposes. They can be ignored. |

*Table 2. Log file names and descriptions (continued)*

| Log file | Description |
|---|---|
| .../FileNet/BPF/logs/bpf_donot_delete.jar | This file contains temporary data created during import of the manifest into Content Engine and Process Engine, during workflow transfer, and during configuration of Workplace integration.<br><br>This file is for internal use by the installer and is not generally useful for diagnostic purposes. It can be ignored. |

## Business Process Framework error messages

Search for the Error key word in the log files. If errors occur, you can do manual configuration to correct the problems.

The following tables summarize the errors that might occur in the installation process. In each table, the problem column identifies the general cause of the problem. The solution column provides a reference to the topic in "Manually editing installation settings" on page 99 that describes how to manually install the component that did not install.

*Table 3. Error in creating the BPFAssembly folder*

| Error message | Possible problem | Solution |
|---|---|---|
| | The Business Process Framework installer cannot create the *bpf_install_path*/FileNet/BPFAssembly folder on a UNIX server if a previous or partially successful installation or uninstallation exists. | 1. Uninstall Business Process Framework.<br>2. Manually delete the folder at /InstallShield/Universal/FileNet/BPF.<br>3. Reinstall Business Process Framework. |

*Table 4. Error in base manifest or case management manifest*

| Error message | Problem | Solution |
|---|---|---|
| Noncritical exception encountered while installing Base Manifest to Content Engine Object Store. | The Content Engine Base Manifest was not imported. | See "Importing Content Engine base objects" on page 103 |
| Noncritical exception encountered while installing Case Management Manifest to Content Engine Object Store. | The Content Engine Case Management Manifest was not imported. | See "Importing Content Engine solution specific objects" on page 103 |

*Table 5. Error in custom objects import in Content Engine*

| Error message | Possible problem | Solution |
|---|---|---|
| Noncritical exception encountered while installing Custom Manifest to Content Engine Object Store. | The custom Content Engine manifest import XML file was not imported | Use Enterprise Manager to import the file manually. See the IBM FileNet P8 Platform documentation for the import procedure details. |

*Table 6. Error in base or solution specific workflow object creation*

| Error message | Possible problem | Solution |
|---|---|---|
| Noncritical exception encountered while installing Base Workflow Queue Configuration. | Certain base and solution specific workflow objects were not created.<br><br>This error can occur if the Process Engine server is not responding. | "Creating base or solution specific workflow objects" on page 104 manually. |
| Noncritical exception encountered while installing Case Management Workflow Queue Configuration. | This error can occur if the Process Engine server is not responding. | "Creating base or solution specific workflow objects" on page 104 manually. |

*Table 7. Error in custom workflow object creation*

| Error message | Possible problem | Solution |
|---|---|---|
| Noncritical exception encountered while installing custom Workflow Queue Configuration. | An error occurred during custom workflow object creation regarding the custom Content Engine manifest import XML file. | See the IBM FileNet P8 Platform documentation to create workflow object manually. |

*Table 8. Error in updating solution specific process map*

| Error message | Possible problem | Solution |
|---|---|---|
| Noncritical exception encountered while installing Case Management Workflow Transfer. | An error occurred while installing the case management process map. | "Updating the process map" on page 105. |

*Table 9. Error in updating custom process map*

| Error message | Possible problem | Solution |
|---|---|---|
| Noncritical exception encountered while installing Custom Workflow Transfer. | An error occurred while installing the Custom Workflow Transfer process map. | See the IBM FileNet P8 Platform documentation to create the process map manually. |

*Table 10. Error in updating taskman policy file*

| Error message | Possible problem | Solution |
|---|---|---|
| Noncritical exception encountered while updating Application Engine taskman policy file. | The taskman policy file in the router folder was not updated. | See "Editing the taskman policy" on page 106. |

*Table 11. Error in updating taskman login configuration*

| Error message | Possible problem | Solution |
|---|---|---|
| Noncritical exception encountered while updating Application Engine taskman login configuration. | The taskman login configuration in the router folder under the Application Engine installation folder was not updated. | See "Editing taskman login configuration" on page 108. |

*Table 12. Error in updating `vwtaskman.xml` file*

| Error message | Possible problem | Solution |
|---|---|---|
| Noncritical exception encountered while updating `vwtaskman.xml`. | The `vwtaskman.xml` configuration in router folder under the Application Engine installation folder was not updated. | See "Adding taskman libraries (`vwtaskman.xml`)" on page 106. |

*Table 13. Error in updating `taskman.properties` file*

| Error message | Possible problem | Solution |
|---|---|---|
| Noncritical exception encountered while updating `taskman.properties`. | The taskman.properties configuration in the router folder under the Application Engine installation folder was not updated.<br><br>This error can occur the Application Engine information provided during installation was not correct. | See "Editing the taskman.properties file" on page 106. |

*Table 14. Error in updating workplace integration files*

| Error message | Possible problem | Solution |
|---|---|---|
| Noncritical exception encountered while copying `Bp8ViewActions.jsp` to Workplace or updating `Actions.xml`, `infopages.xml`, `Integration.xml`. | The Workplace files for Business Process Framework were not updated. | Manually update the Workplace files as described in "Workplace integration" on page 101. |

*Table 15. Error in creating data sources*

| Error message | Possible problem | Solution |
|---|---|---|
| | Data sources were not created properly during the automatic installation. | Manually create the data sources following the steps in these sections:<br>• "Creating the JDBC data source for the Business Process Framework Metastore" on page 115<br>• "Creating the JDBC data source for the Process Engine" on page 127 |

*Table 16. Error in deploying Web application*

| Error message | Possible problem | Solution |
|---|---|---|
| | Web application was not properly deployed during the automatic installation. | Manually deploy the Web application following the steps in this section: "Deploying the Business Process Framework Web application" on page 139 |

*Table 17. Error in creating Business Process Framework metastore and importing the metastore manifest*

| Error message | Possible problem | Solution |
|---|---|---|
| | The Business Process Framework Metastore was not created or the Metastore Manifest was not successfully imported. | Manually create the Metastore and import the manifest as described in:<br>• "Loading the Business Process Framework Metastore" on page 110<br>• "Importing the Metastore manifest" on page 112 |

## Testing data source connections

You can test the JDBC data source connections to the Business Process Framework Metastore and the Process Engine.

"Testing the data source connection on WebLogic Server 8.1.5"
You can use the WebLogic Server 8.1.5 Administrative Console tools to test the data source connections.

"Testing the data source connections on WebLogic Server 9.2.x and 10"
You can use the WebLogic Server 9.2.x or 10 Administrative Console tools to check the data source connections.

"Testing the data source connections on WebSphere Application Server 6.0" on page 39
You can use the WebSphere Application Server 6.0 Administrative Console to test the data source connections.

"Testing the data source connections on WebSphere Application Server 6.1" on page 39
You can use the WebSphere Application Server 6.1 Administrative Console to test the data source connections.

"Testing the data source connections on WebSphere Application Server 7.0" on page 39
You can use the WebSphere Application Server 7.0 Administrative Console to test the data source connections.

## Testing the data source connection on WebLogic Server 8.1.5

You can use the WebLogic Server 8.1.5 Administrative Console tools to test the data source connections.

To test a data source connection:

1. Log in to WebLogic Server console by using a Web browser: http://*web application server*:7001/console
2. Select **Domain name** → **Services** → **JDBC** → **Connection Pools**.
3. Select the Connection Pool which is used by Business Process Framework.
4. Click **Configuration** → **Connections tab**.
5. Select **Show advance options**.
6. Enable **Test Reserved Connections** and **Test Created Connections**.
7. Click the **Testing** tab.
8. Click **Test pool**. A success message should be displayed.
9. Repeat the previous steps for the Process Engine data source.

## Testing the data source connections on WebLogic Server 9.2.x and 10

You can use the WebLogic Server 9.2.x or 10 Administrative Console tools to check the data source connections.

To test a data source connection:

1. Log in to WebLogic Server console by using a Web browser: http://*web application server*:7001/console
2. Select **Services** → **JDBC** → **Data Sources**
3. Select the data source for the Metastore data source.
4. Click the **Monitoring** tab.
5. Click the **Testing** tab.
6. Select the target server.
7. Click the **Test Data Source** button. A success message displays.
8. Repeat steps for the Process Engine data source.

### Testing the data source connections on WebSphere Application Server 6.0

You can use the WebSphere Application Server 6.0 Administrative Console to test the data source connections.

To test the connections:

1. Log onto WebSphere Application Server Administrative Console: http://*web application server*:9060/ibm/console.
2. Click **Resources** → **JDBC Providers**.
3. Select the JDBC provider that is used for the Business Process Framework Metastore.
4. Click **Data Sources** in the Additional Properties.
5. Select the checkbox for *meta datasource*.
6. Click **Test Connection**. A success message displays.
7. Repeat steps for the Process Engine data source.

### Testing the data source connections on WebSphere Application Server 6.1

You can use the WebSphere Application Server 6.1 Administrative Console to test the data source connections.

To test the connections:

1. Log onto WebSphere Application Server Administrative Console: http://*web application server*:9060/ibm/console
2. Click **Resources** → **JDBC Providers** → **Data Sources**.
3. Select the checkbox for *meta datasource*.
4. Click **Test Connection**. A success message should be displayed.
5. Repeat steps for the Process Engine data source.

### Testing the data source connections on WebSphere Application Server 7.0

You can use the WebSphere Application Server 7.0 Administrative Console to test the data source connections.

To test the connections:

1. Log onto WebSphere Application Server Administrative Console: http://*web application server*:9060/ibm/console
2. Click **Resources** → **JDBC** → **Data sources**.
3. Select the checkbox for *meta datasource*.
4. Click **Test connection**. A success message is displayed.
5. Repeat steps for the Process Engine data source.

## Verifying that the Web application is deployed and running

You can use the application server console or tools to verify that the Business Process Framework Web application is deployed and running.

To verify the deployment was successful:

| Option | Description |
|---|---|
| **WebSphere Application Server 6.x or 5.x** | From the Administrative Console, expand Applications. Click **Enterprise Applications**. Verify that the Web application Business Process Framework is listed and running. |
| **WebLogic Server 9.2.x** | From the WebLogic Server Console, *mydomain*, expand **Deployments**. Verify that the Web application Business Process Framework is listed and running. |
| **WebLogic Server 8.1.x** | From the WebLogic Server Console, *mydomain*, expand **Deployments** → **Web Application Modules**. Verify that the Web application Business Process Framework is listed and running. |
| **JBoss Application Server** | Verify that the `bpf` folder exists in the *JBOSS_HOME*`\server\<ServerType>\deploy` directory. |

## Verifying the Business Process Framework operations component

You must verify that Verify that the Business Process Framework operations component is started in Component Manager.

To verify the Business Process Framework operations component:

1. Start the IBM FileNet P8 Platform Task Manager.
2. Verify that the Business Process Framework operations component is started in Component Manager.

# Configuring Business Process Framework server after installation

The Business Process Framework server installation program configures many necessary settings automatically. However, you must perform additional configuration when you complete the installation.

"Updating Process Engine database views" on page 41
The queues used by the Business Process Framework Web application must be updated. It is not necessary to update the other Process Engine views used for logs or rosters. This update is not necessary if you are using Microsoft SQL Server.

"Copying modified configuration files into the deployed Workplace application" on page 43
The Business Process Framework install or upgrade modifies the `Integration.xml` file and adds a `Bp8ViewActions.jsp` file in the Workplace installation directory. The modified files must be incorporated into the deployed Workplace application.

"Applying IBM FileNet P8 Platform changes after installation" on page 43
After the Business Process Framework installation is complete you can apply IBM FileNet P8.

# Updating Process Engine database views

The queues used by the Business Process Framework Web application must be updated. It is not necessary to update the other Process Engine views used for logs or rosters. This update is not necessary if you are using Microsoft SQL Server.

To determine the views that are used by the Business Process Framework Web application and must be updated:

1. Log on to Business Process Framework Explorer.
2. Expand **Workflow Configuration → Queues**.
3. Open the properties of each queue, the Object Name is the Process Engine queue name you must update.

"Updating Oracle database views"
You must manually adjust the Process Engine database views after modifying workflow queue definitions or transferring a workflow definition to the isolated region when you use the Oracle database views. To change the view definition, you must drop the view and re-create it.

"Updating DB2 database views" on page 42
You must manually adjust the Process Engine database views after modifying workflow queue definitions or transferring a workflow definition to the isolated region when you use the DB2 database views. To change the view definition, you must drop the view and re-create it.

## Updating Oracle database views

You must manually adjust the Process Engine database views after modifying workflow queue definitions or transferring a workflow definition to the isolated region when you use the Oracle database views. To change the view definition, you must drop the view and re-create it.

To manually update Process Engine views:

1. Find the database views:
   a. In Oracle Enterprise Manager, find ***pe database*** → **Schema** → ***pe runtime user*** → **Views**.
   b. Find the views for all queues in the isolated region in question. These views have names that adhere to the following naming convention: "VWVQ" + <*IsolatedRegionNumber*> + "_" + <*QueueName*>.

      **Tip:** You do not have to update the other views for logs or rosters, and so on. You must update the queues used by the Business Process Framework Web Application.
2. Create the SQL statements for each view:
   a. Right-click **Show Object DDL**.
   b. Click Ctrl-A, Ctrl-C: Put DDL contents in Notepad (for each view).
   c. Put a semi-colon after each DDL statement.
3. Run the SQL statements as follows:
   a. Delete the quotation marks (preferably, use search and replace to replace the quotation marks (") with nothing) for all SQL statements.
   b. Run the statements in the Oracle SQL Worksheet.

## Updating DB2 database views

You must manually adjust the Process Engine database views after modifying workflow queue definitions or transferring a workflow definition to the isolated region when you use the DB2 database views. To change the view definition, you must drop the view and re-create it.

To manually update Process Engine database views:

1. Browse for all views to be updated:
   a. From DB2 Control Center, expand the object tree until you find the Views folder.
   b. Find the views for all queues in the isolated region in question. These views have names that adhere to the following naming convention: ″VWVQ″ + <*IsolatedRegionNumber*> + ″_″ + <*QueueName*>.

      **Tip:** You do not have to update the other views for logs or rosters, and so on. You only have to update the queues used by the Business Process Framework Web Application.
2. Back up the views definition to a safe location:
   a. From the Control Center, expand the object tree until you find the Views folder.
   b. Click the **Views** folder. Any existing views are displayed in the right pane.
   c. Right-click the view object that you want to back up, and select **Alter**.
   d. Copy the SQL statement from window and paste it into a file, and then save the file.
3. Drop view by using the Control Center:
   a. From the Control Center, expand the object tree until you find the Views folder.
   b. Click the **Views** folder. Any existing views are displayed in the right pane.
   c. Select the view that you want to drop.
   d. Right-click one of the selected views in the contents pane, and select **Drop**. The Confirmation window opens.
   e. To delete the view or views you selected in the Drop box, click **OK**.
4. Create View by using the Control Center:
   a. From the Control Center, expand the object tree until you find the Views folder.
   b. Right-click the **Views** folder and select **Create**. The Create View window opens.
   c. Use the **View schema** list box to specify the schema for the view that you are creating.
   d. In the **View name** field, type the view name. The name must match the view name you deleted earlier.
   e. In the SQL statement box, paste the SQL text that you saved to a file in step 2. Go to the beginning of the SQL statement and delete ″**CREATE VIEW VIEW_NAME**″. (Control center appends ″CREATE VIEW VIEW_NAME″ from view name text box.) Delete the quotation marks (preferably, use search and replace to replace the quotation marks (″) with nothing) for all SQL statements.
   f. Click **OK** to begin processing the SQL statement.

## Copying modified configuration files into the deployed Workplace application

The Business Process Framework install or upgrade modifies the `Integration.xml` file and adds a `Bp8ViewActions.jsp` file in the Workplace installation directory. The modified files must be incorporated into the deployed Workplace application.

To copy the modified files into the Workplace application:

- If Workplace is deployed as an exploded folder, or if you are using WebSphere Application Server, you can re-deploy Workplace or:
  1. Copy the `Integration.xml` and `Bp8ViewActions.jsp` files from the Workplace installation directory to the deployed Workplace directory.
  2. Restart the application server.
- If your installation directory contains a packaged .war or .ear file and you are not using WebSphere Application Server:
  1. Run the Workplace `create_app_engine_`*`deploy_type`*`.`*`script_type`* script in the Workplace installation directory to generate a new `.war` or `.ear` file with the updated `Integration.xml` and `Bp8ViewActions.jsp` files.
  2. Redeploy Workplace.

## Applying IBM FileNet P8 Platform changes after installation

After the Business Process Framework installation is complete you can apply IBM FileNet P8.

Apply IBM FileNet P8 Platform changes.
The Business Process Framework 4.1 installation is packaged with JAR files from these IBM FileNet P8 software levels:

- IBM FileNet P8 Content Engine: P8CE-4.0.1
- IBM FileNet P8 Process Engine: P8PE-4.0.2
- IBM FileNet P8 Application Engine: P8AE-4.0.1-000.001
- IBM FileNet P8 eForms: P8eForms-4.0.1

These IBM FileNet P8 software levels are the software versions required in order to run Business Process Framework 4.1. If you have installed a later fix pack for the Content Engine, Process Engine, Application Engine or (optionally) eForms, you must replace certain JAR files in the Business Process Framework install and deploy locations to ensure your Business Process Framework software functions correctly. The following table identifies the JAR files that you must replace for each component:

| Component | JAR Files |
|---|---|
| Content Engine | `Jace.jar javaapi.jar` |
| Process Engine | `pe.jar peResources.jar` |
| Application Engine | • `aeeforms.jar`<br>• `listener.jar mailapi.jar`<br>• `p8ciops.jar p8toolkit.jar`<br>• `soap.jar`<br>• `p8webappLogging.jar`<br>• `commons-fileupload-1.*.jar` |

| Component | JAR Files |
| --- | --- |
| eForms | • eforms-resources.jar<br>• eforms.jar<br>• itext-1.5.2.jar<br>• jai_codec.jar<br>• commons-httpclient-2.0.2.jar |

You can find the new versions of these files in the Workplace WEB-INF\lib folder. By default the WEB-INF folder on the Application Engine is in the following location:

- Windows: C:\Program Files\FileNet\Workplace\WEB-INF\lib
- UNIX: /opt/FileNet/Workplace/WEB-INF/lib

## Installing Business Process Framework Explorer

Business Process Framework Explorer provides the capability for the application developer to log on to Content Engine and look up properties while configuring Business Process Framework application fields. Install Business Process Framework Explorer on a Windows machine.

To install Business Process Framework Explorer:

1. Open your completed Installation and Upgrade Worksheet file.

   **Tip:** In the worksheet file, verify that the **Data → Filter → AutoFilter** command is enabled. To view only Business Process Framework Explorer values, filter by **BPF Explorer Installer** in the **Installation or Configuration Program** column.
2. Log on to the Windows machine with an account that has local administrator privileges.
3. Navigate to the directory *staging folder*\admin and run the following command: filenet_BPF_explorer_setup.exe
4. Complete the Business Process Framework Explorer installation program screens with the values recorded in your Installation and Upgrade Worksheet.

## Verifying the Business Process Framework Explorer installation

You can verify the Business Process Framework Explorer installation by checking whether you can log on to Business Process Framework Explorer without errors.

To verify Business Process Framework Explorer logon:

1. Verify that you can log on to Business Process Framework Explorer without error.
2. If you configured Content Engine integration by installing the Content Engine Client libraries, verify that you can access an Object Store from the Business Process Framework Explorer Case Type or Application Field Property UI.

## Configuring Business Process Framework Explorer after installation

Although the Business Process Framework Explorer installation program automatically configures the application, you must perform some additional configuration with the installation is complete.

"Updating the bootstrap operating system and Workplace site preference name in Business Process Framework Explorer" on page 45

If the bootstrap operating system is different from the case object store name, you must change bootstrap operating system to the bootstrap name. You can set this in the Business Process Framework Explorer application.

"Updating the *pe runtime user* in queue definitions if not using the default"
If you are using a *pe runtime user* other than the default, you must change settings for that value in the Workflow Configuration.

"Updating queue filters" on page 46
If either one of the Metastore or Process Engine database is a Microsoft SQL Server database, and the other is Oracle or DB2, then you must update the queue filters.

"Defining Metastore roles" on page 46
You must define Metastore roles before you validate the installation because the roles must be configured before you log in to the Web application.

"Modifying case type configuration" on page 46
You can modify the case type configuration of various properties.

"Updating queue names for case-insensitive views" on page 49
If your environment includes Process Engine 4.0.3 or later, you must update the object name of each queue to match with Process Engine case-insensitive views.

"Restarting Business Process Framework application server" on page 49
After you modify any settings in Business Process Framework Explorer, restart the Business Process Framework application server.

## Updating the bootstrap operating system and Workplace site preference name in Business Process Framework Explorer

If the bootstrap operating system is different from the case object store name, you must change bootstrap operating system to the bootstrap name. You can set this in the Business Process Framework Explorer application.

By default, the Business Process Framework installation sets the bootstrap operating system to the case object store name. If the bootstrap operating system is different from the case object store name, you must change bootstrap operating system to the bootstrap name. This setting is named Content Engine Bootstrap Object Store and is located under system-wide settings in the Business Process Framework Explorer.

By default, the Business Process Framework installation sets the Workplace site preference to Workplace. If your Workplace site preference name is not Workplace, you must change the setting to the correct value in Business Process Framework Explorer. This setting is named Workplace Preference Name and is located under system-wide settings in the Business Process Framework Explorer.

## Updating the *pe runtime user* in queue definitions if not using the default

If you are using a *pe runtime user* other than the default, you must change settings for that value in the Workflow Configuration.

If the value of *pe runtime user* is different than f_sw, change the alias prefix of the object name of each queue in **Workflow Configuration → Queues** to match the actual value of *pe runtime user*.

For example, if the user alias is dbo, the object name for the Case Management queue is dbo.VWVQ1_CaseManagement. Change or view a queue object name by right clicking the queue in question and selecting **Properties**.

## Updating queue filters

If either one of the Metastore or Process Engine database is a Microsoft SQL Server database, and the other is Oracle or DB2, then you must update the queue filters.

To update the queue filters:

| Option | Description |
|---|---|
| **Workflow Configuration → Queue Filters (for Process Engine implementations by using SQL Server only)** | Verify that the `NOLOCK` option is utilized in all queue filter SQL Server queries. For example: `SELECT COUNT(UserID) FROM Users WITH (NOLOCK) WHERE Username LIKE 'smith'.`<br><br>This option is necessary to reduce or eliminate deadlock contention. Change or view a queue filter's SQL Server query by right clicking the queue filter in question and selecting Properties. |
| **Workflow Configuration → Queue Filters (for Process Engine implementations by using Oracle and DB2)** | Verify that the `NOLOCK` option is not utilized in all queue filter SQL Server queries. This syntax is not valid for Oracle.<br><br>Change or view a queue filter's SQL Server query by right clicking the queue filter in question and selecting Properties. |

## Defining Metastore roles

You must define Metastore roles before you validate the installation because the roles must be configured before you log in to the Web application.

To define roles within Business Process Framework Explorer.

Click **User and Access Information → Roles**.
These roles correspond to LDAP groups or Workplace access roles depending on Metastore settings.
For more information, see the Business Process Framework Explorer Handbook sections LDAP security definition and Workplace access roles and User and access information configuration.

## Modifying case type configuration

You can modify the case type configuration of various properties.

Business Process Framework uses the case type ID value to determine which object store to search for Bp8CaseType objects and audit log objects. It also looks for the right object store in which to place document objects. If you do not specify the Bp8CaseType value, Business Process Framework will encounter errors when searching for cases and attachments in multiple object stores.

"Adding a case type picklist" on page 47
You can create and add a case type picklist to the New Picklist properties.

"Updating the Bp8CaseType application field" on page 47
You can update the Bp8CaseType property on the Applications Field page.

"Selecting the field Bp8CaseType in workflow filters" on page 47
For each workflow query filter, you must change the Microsoft SQL Server query string to add Bp8CaseType into the select field.

"Adding the parameter Bp8CaseType in attachment and eForms tabs" on page 48
Using a database tool, open the TABS table in Metastore database. For the two rows which TAB_NAME are Attachment and eForms, change the TAB_CONTENT column value by adding a parameter Bp8CaseType .

"Exposing the field Bp8CaseType in inbasket" on page 48
For each Inbasket, its configuration must expose the Bp8CaseType field for all case types on Case Fields tab of the Inbasket property page.

"Adding Bp8CaseType to create_eFormsCase tool" on page 48
If you plan to use eForms with Business Process Framework, you must add Bp8CaseType to the create_eFormsCase tool.

## Adding a case type picklist

You can create and add a case type picklist to the New Picklist properties.

To add a case type picklist:

1. Create a Case Type Picklist in **Miscellaneous** → **Pick Lists** → , right-click **Pick Lists** and select **New** → **Picklist**.
2. In the New Picklist Properties page, input the Name: `CaseType Picklist` and the description: `Picklist for Case Type, value/text=type code/type` description.
3. Press **Edit** button to open Picklist Advanced Configuration page and input Microsoft SQL Server:

   ```
   SELECT case_type_id as ID, case_type_id as CODE, name as DESCRIPTION, -1
   as ACTIVE FROM case_types ORDER BY name
   ```

   After that, a Case Type picklist is created.

## Updating the Bp8CaseType application field

You can update the Bp8CaseType property on the Applications Field page.

To update the Bp8CaseType application field:

1. Open Bp8CaseType property page in **Case Fields Configuration** → **Application Fields** page.
2. Choose **Case Type Picklist** in the Pick list field and save.

## Selecting the field Bp8CaseType in workflow filters

For each workflow query filter, you must change the Microsoft SQL Server query string to add Bp8CaseType into the select field.

For example, for the filter Public Inbasket, follow the steps later in this section to change its SQL Server query string:

1. Launch Business Process Framework Explorer.
2. Open the property page of the filter **Public Inbasket**.
3. Click the button **Edit Query**. Insert the string `Bp8CaseType` into the select list. The original value is:

   ```
   select %PAGESIZE% F_WobNum, F_UniqueId, F_Locked, F_LockUser, F_BoundUser,
   Bp8CaseID, 9999 as queue_depth from %VIEWNAME% WHERE %FILTERBY% F_StepName='
   STEPNAME%' order by %ORDERBY%, F_EnqueueTime, F_UniqueId asc
   ```

   Change to:

   ```
   select %PAGESIZE% F_WobNum, F_UniqueId, F_Locked, F_LockUser, F_BoundUser,
   Bp8CaseID, Bp8CaseType, 9999 as queue_depth from %VIEWNAME% WHERE %FILTERBY%
   F_StepName='%STEPNAME%' order by %ORDERBY%,F_EnqueueTime, F_UniqueId asc
   ```

## Adding the parameter Bp8CaseType in attachment and eForms tabs

Using a database tool, open the TABS table in Metastore database. For the two rows which TAB_NAME are Attachment and eForms, change the TAB_CONTENT column value by adding a parameter Bp8CaseType .

For the row Attachment, the original value is:

```
Bp8AttachmentsTab.jsp?eventTarget=attachmentsTab&eventName=
ExecuteSearch&TabName={TABNAME}&Inbasket={IID}&Bp8CaseID={CFNAME}&_showatt=0
```

This value must be changed to:

```
Bp8AttachmentsTab.jsp?eventTarget=attachmentsTab&eventName=
ExecuteSearch&TabName={TABNAME}&Inbasket={IID}&Bp8CaseID={CFNAME}
& Bp8CaseType={CFNAME} & _showatt=0
```

For example, the following SQL command can be used to change the Attachment row:

```
UPDATE TABS SET
TAB_CONTENT='Bp8AttachmentsTab.jsp?eventTarget=attachmentsTab&eventName=
ExecuteSearch&TabName={TABNAME}&Inbasket={IID}&Bp8CaseID={CFNAME}&Bp8CaseType=
{CFNAME}&_showatt=0'WHERE TAB_NAME='Attachment'
```

For the row eForms, the original value is:

```
/BpfFormServlet?Bp8CaseID={CFNAME}&mode=1&_showatt=0&page=P001
```

This value must be changed to:

```
/BpfFormServlet?Bp8CaseID={CFNAME} & Bp8CaseType={CFNAME} &
mode=1&_showatt=0&page=P001
```

For example, this Microsoft SQL Server command can be used to change the eForms row:

```
UPDATE TABS SET
TAB_CONTENT='/BpfFormServlet?Bp8CaseID={CFNAME}&Bp8CaseType={CFNAME}&
mode=1&_showatt=0&page=P001'WHERE TAB_NAME='eForms'
```

## Exposing the field Bp8CaseType in inbasket

For each Inbasket, its configuration must expose the Bp8CaseType field for all case types on Case Fields tab of the Inbasket property page.

To expose the Bp8CaseType field:

1. Launch Business Process Framework Explorer.
2. Open the property page of the Inbasket you want to modify.
3. Open the **Case Fields** tab.
4. Select **Bp8CaseType** in the left list and click the button **->**, then the field is inserted into the right field list. Set its Visible and R/O value to **YES**.
5. Click the button **Reset Layout**.
6. Click the button and **Apply**" and click the button **OK**.

## Adding Bp8CaseType to create_eFormsCase tool

If you plan to use eForms with Business Process Framework, you must add Bp8CaseType to the create_eFormsCase tool.

Follow these steps to add the parameter Bp8CaseType to the tool create_eFormsCase:

1. Start Business Process Framework Explorer.

2. Open the property page of the tool create_eFormsCase.
3. Change the Handle URL value by adding the parameter objectStoreName. The parameter value must be the correct object store symbolic name storing the case object of the case type for which the eForms template is designed. For example, this tool starts the eForms for Case Management tool, and the object store for case object of Case Management is BPFOSCase.

   The original value of Handle URL is:

   ```
   ExtCommand.jsp?eForms&ExtTask=create_eform_case&id=
     {46A4F3A1-41C2-46B9-AE71-4393D906B335}&vsId=
     {6F434403-DFC8-4E7D-B9D5-4C9572AD80BD}&objectType=document
   ```

   Change to:

   ```
   ExtCommand.jsp?eForms&ExtTask=create_eform_case&id=
     {46A4F3A1-41C2-46B9-AE71-4393D906B335}&vsId=
     {6F434403-DFC8-4E7D-B9D5-4C9572AD80BD}&objectStoreName=
     BPFOSCase&objectType=document
   ```

## Updating queue names for case-insensitive views

If your environment includes Process Engine 4.0.3 or later, you must update the object name of each queue to match with Process Engine case-insensitive views.

To update queue names:

1. In Business Process Framework Explorer, click **Workflow Configuration** → **Queues**.
2. Right-click the first queue, and choose **Properties**.
3. In the **Object name** field, edit the name to match the case-insensitive Process Engine view name, and click **OK**. You can obtain these names from a Process Engine vwtool report.
4. Repeat the configuration changes for all remaining queues.

## Restarting Business Process Framework application server

After you modify any settings in Business Process Framework Explorer, restart the Business Process Framework application server.

# Logging on to a sample Business Process Framework Web application

You can verify the installation and configuration by logging on to the Business Process Framework application you set up.

When Business Process Framework is initially installed in a development environment, it is installed with a test application configuration called the Case Management Sample Application. This application is a preconfigured application on top of Business Process Framework that can be used to test all aspects of Business Process Framework functionality.

In order to validate that the Business Process Framework and Business Process Framework Explorer components were installed properly and correctly integrated with Content Engine, Process Engine, and Application Engine, the following test case should be performed against the Case Management Sample Application.

To log on to a sample application:

1. Access Business Process Framework from the following URL: http://*web application server*:*web port*/*web BPF name*

2. Log on to Business Process Framework. If this is the first time you are logging on to the Business Process Framework Web application, you will have to set the Business Process Framework bootstrap information. Make sure you save the bootstrap information to the Bootstrap Object Store.
3. Create a new Case.
4. Open the case from the Index Inbasket and enter sample case field data.
5. Attach a document to the case by using the Attach Document tool.
6. Open the attached content in the Viewer.

   **Tip:** Ensure that the appropriate JRE is installed for the browser.
7. Perform a Business Process Framework Case Search. You must first configure a case search. For more information, see "Configuring stored searches" on page 77.
8. Choose **Action → Complete** on the case, then locate the case in the **Review Inbasket** to make sure it was dispatched.
9. Open Layout Designer through the Edit Layout tool.
10. Log off Business Process Framework.
11. Log on to Business Process Framework Explorer and verify all configuration data is present.
12. In order to verify that BPF_Operations are working in Component Manager, add a new document to the Case Management Documents document class. The document must have a DocEntryStatus value of 1, and a DocType value of 1.

    The subscription event launches a workflow that creates a new case. If BPF_Operations is running, you see a new Case in the **Index Inbasket**. For information on creating a workflow subscription, see "Modifying Business Process Framework operations logging (optional)" on page 85.

# Planning and preparing for Business Process Framework upgrade

Before you upgrade Business Process Framework, you must plan the upgrade and prepare your environment.

1. "Planning the upgrade"
   You must review the upgrade planning information before your Business Process Framework installation so that you know what deployments are supported, understand how the tasks in the installation tasks are organized by Role, and know how to use the Installation and Upgrade Worksheet.
2. "Performing the required upgrade preparation tasks" on page 55
   To do the required upgrade preparation tasks, you must assign your staff to complete the tasks that are organized by administrative role.

## Planning the upgrade

You must review the upgrade planning information before your Business Process Framework installation so that you know what deployments are supported, understand how the tasks in the installation tasks are organized by Role, and know how to use the Installation and Upgrade Worksheet.

To install Business Process Framework:

- Retrieve updates to IBM FileNet P8 documentation and software.
- Read through this guide to become familiar with the tasks you perform when you set up your Business Process Framework software.
- See "Using the installation and upgrade worksheet" on page 53 for more information about an available P8 Worksheet to record information that is required during installation.

**Important:** Follow the planning, installing, and configuring tasks in the order presented. If you do otherwise, or you install FileNet P8 components on machines containing components for existing FileNet P8 systems, you might encounter unforeseen problems or be required to perform additional installation steps. See the *IBM FileNet P8 Troubleshooting Guide*.

"Upgrade paths" on page 52
You must review the upgrade planning information before your Business Process Framework installation so that you know what deployments are supported, understand how the tasks in the installation tasks are organized by Role, and know how to use the Installation and Upgrade Worksheet.

"Definition of upgrade roles" on page 52
The tasks in this guide and the rows in the Installation and Upgrade Worksheet are organized by administrative roles. Your organization might have different roles, and some of the responsibilities of listed roles varies from the roles assigned by default in this documentation.

"Using the installation and upgrade worksheet" on page 53
The Installation and Upgrade Worksheet is a Microsoft Excel spreadsheet (`p8_worksheet.xls`). The worksheet describes the properties and parameters required to completeBusiness Process Framework installation, upgrade, and configuration programs, and provides a way to record the values you assign to these properties and parameters.

## Upgrade paths

You must review the upgrade planning information before your Business Process Framework installation so that you know what deployments are supported, understand how the tasks in the installation tasks are organized by Role, and know how to use the Installation and Upgrade Worksheet.

The following upgrade paths are available for this version of Business Process Framework:

- Business Process Framework 4.0 (with FileNet P8 Platform 4.0) to Business Process Framework 4.1 (with FileNet P8 Platform 4.0, 4.5, or 4.5.1)

  Upgrade to 4.1 with FileNet P8 Platform 4.5 or 4.5.1 is supported only with the installation of the Business Process Framework fix pack 4.1.0-003.
- Business Process Framework 3.6 (with FileNet P8 Platform 3.5) to Business Process Framework 4.1 (with FileNet P8 Platform 4.0) **for JBoss only**
- Business Process Framework 3.5.2 (with FileNet P8 Platform 3.5) to Business Process Framework 4.1 (with FileNet P8 Platform 4.0) **for JBoss only**

Before starting your upgrade, you must already have upgraded all related IBM FileNet P8 products. It is not supported to change or upgrade other components at the same time as the Business Process Framework upgrade. For example, changing the IBM FileNet P8 Platform release, application server vendor or release, or database vendor or release during a Business Process Framework upgrade is not supported.

The upgrade process updates the Business Process Framework release software while keeping any site-specific configuration. The following components are updated during a Business Process Framework upgrade:

- Business Process Framework Web application
- Business Process Framework Explorer
- Business Process Framework Metastore schema changes
- Business Process Framework Metastore configuration
- Business Process Framework Operations component
- Solution-specific code if any

## Definition of upgrade roles

The tasks in this guide and the rows in the Installation and Upgrade Worksheet are organized by administrative roles. Your organization might have different roles, and some of the responsibilities of listed roles varies from the roles assigned by default in this documentation.

### Installation administrator

- Runs Business Process Framework installers during initial setup.
- Runs Business Process Framework upgrade programs during upgrades.
- Abbreviated as IA. Responsible for coordinating the information described in this worksheet. The information itself requires the input from the other roles.

The role of IA is typically filled by an FileNet Certified Professional (FCP).

### Information technology administrator

- Responsible for the networking and operating systems settings required by Business Process Framework.

- Responsible for performing certain security configurations.
- Abbreviated as ITA. Responsible for providing the information in the rows in the *Installation and Upgrade Worksheet* with a value of ITA in the **Role** column.

### Security administrator

- Responsible for configuring the directory servers required by Business Process Framework components.
- Creates and maintains directory server user and group accounts.
- Abbreviated as SA. Responsible for providing the information in the rows in the *Installation and Upgrade Worksheet* with a value of SA in the **Role** column.

### Database administrator

- Creates, configures, maintains database installations and database or table spaces.
- Responsible for creating database accounts required by Business Process Framework.
- For purposes of this documentation, the database administrator is expected to have responsibilities regarding the JDBC data sources.
- Abbreviated as DBA. Responsible for providing the information in the rows in the *Installation and Upgrade Worksheet* with a value of DBA in the **Role** column.

### Application server administrator

- Responsible for providing the application servers required by Business Process Framework.
- Responsible for application server administrative accounts.
- Abbreviated as ASA. Responsible for providing the information in the rows in the *Installation and Upgrade Worksheet* with a value of ASA in the **Role** column.

### IBM FileNet P8 administrator

- This role designation actually refers to the administrator or administrators who perform regular maintenance of Content Engine, Process Engine Application Engine, Workplace or Workplace XT.
- The administrator who logs on to Enterprise Manager by using the gcd_admin account or an object_store_admin account is considered an IBM FileNet P8 administrator.
- Abbreviated as P8A. Responsible for providing the information in the rows of the *Installation and Upgrade Worksheet* with a value of P8A in the **Role** column.

## Using the installation and upgrade worksheet

The Installation and Upgrade Worksheet is a Microsoft Excel spreadsheet (`p8_worksheet.xls`). The worksheet describes the properties and parameters required to completeBusiness Process Framework installation, upgrade, and configuration programs, and provides a way to record the values you assign to these properties and parameters.

Administrators who are preparing the environment for installation or upgrade of IBM FileNet P8 components must use the worksheet during their preparation tasks to record the appropriate values and provide them to the Installation Administrator who runs the installation or upgrade programs.

Some of the features of the Installation and Upgrade Worksheet are:

- Instructions: describes the worksheet and includes a button that runs the Customize Worksheet macro.
- The two highlighted columns, **Property or Parameter** and **ENTER YOUR VALUE HERE**, provide the simplest view of the requirement. The others add identifying information and help you sort and filter the rows usefully.
- The **Role** column assigns each row to an administrator and uses the following acronyms:
  - ITA: Information Technology Administrator
  - ASA: Application Server Administrator
  - DBA: Database Administrator
  - SA: Security Administrator
  - P8A: IBM FileNet P8 Administrator
- Property definitions are contained in the column titled **Description**.
- Some rows, though not all, contain a hyperlink in the **PPG Links** column. Click this hyperlink to run a query against the IBM Information Center, which opens with the Search Results pane showing the topics that contain the words in the query phrase. Browse the search results until you have enough information to be able to enter a value in the Worksheet row.

  "Running the customize worksheet macro"
  The Customize Worksheet macro lets you extract only those rows that describe your environment.

  "Autofiltering and sorting the worksheet" on page 55
  There are several ways to organize the Worksheet to make finding properties and entering values easier.

## Running the customize worksheet macro

The Customize Worksheet macro lets you extract only those rows that describe your environment.

**Important:** For support of the full range of built-in filter and macro features, use Microsoft Excel to view the Installation and Upgrade Worksheet file. You can use other spreadsheet programs to view the file; however, filter and macro support can vary. For example, in Calc from `OpenOffice.Org`, the column filters work as expected, but the Customize Worksheet button does not.

To run the Customize Worksheet macro:

1. Open the Installation and Upgrade Worksheet (`p8_worksheet.xls`) and click the **Instructions** worksheet (also called a tab).
2. Scroll down until you see the button representing the Customize Worksheet macro. Click the button.
3. Select the components and options that describe the environment you are preparing for IBM FileNet P8.
   - Installation or Upgrade
   - IBM FileNet P8 Components
   - Application Server type
   - Operating system
   - Database type
   - Directory Server type
   - Number of object stores (adds new sets of rows for creating additional data sources)
   - Name of customized sheet

4. Click **OK**. The macro copies the rows that fulfill your selection criteria into a new worksheet with the name you entered. Enter the values for your environment into this new worksheet.
5. Click the name of the new worksheet at the bottom of the Excel window. Add your preparation values into this new worksheet.
6. Notice that the new worksheet has buttons at the top titled **Show Installer View** and **Show Full View**, depending on its state. The **Show Installer View** displays only those columns that are required while running installation or configuration programs.

### Autofiltering and sorting the worksheet

There are several ways to organize the Worksheet to make finding properties and entering values easier.

AutoFiltering is a quick way to display only those rows that meet a certain criteria.

To use AutoFilter:

1. Make sure AutoFiltering is enabled. (Select the entire row with the column headers, then click **Data → Filter → Autofilter**.) AutoFilter arrows appear to the right of the column labels.
2. Click the **AutoFilter** arrow in the **Installation or Configuration Program** column header and select the program you are interested in (for example, Process Engine installer).
3. Click the **AutoFilter** arrow in the **Setup Type** column header, select **Custom**, and specify **Setup Type contains Installation**.
4. For a custom AutoFilter, click the **AutoFilter** in any column header, select **Custom**, and specify Setup Type contains Installation.
5. To turn off AutoFiltering in a column, click the **AutoFilter** arrow and select **(All)**.
6. To reorder rows alphabetically, do a Sort:
   a. Click anywhere in a column, for example, Column A Role.

      The only possible values in the Role column are ASA, SA, DBA, ITA, and P8A. Sorting on Role therefore groups the rows by this attribute, in alphabetic order. Several other columns also have a limited number of possible values which means they can be usefully sorted.
   b. Click the **Sort Ascending** icon in the Excel toolbar, or use the **Data → Sort** menu command. The rows sort on Role.

      Sorting the Worksheet reassigns row numbers. If you refer to rows by number, be aware that row numbers change if you change the sort order.

## Performing the required upgrade preparation tasks

To do the required upgrade preparation tasks, you must assign your staff to complete the tasks that are organized by administrative role.

In addition to the required upgrade preparation tasks, Business Process Framework specific preparation tasks, follow the plan and prepare instructions in the *Plan and Prepare Your Environment for IBM FileNet P8* document for the components you are installing.

"IBM FileNet P8 administrator tasks" on page 56
The FileNet P8 Administrator must carry out several tasks to prepare your environment for your Business Process Framework upgrade.

"Application server administrator tasks" on page 58
The application server administrator must coordinate with and delegate responsibilities to the other administrators to prepare for theBusiness Process Framework installation.

"Information technology administrator tasks" on page 58
The Information Technology administrator must prepare the network and operating systems, and carry out certain security configurations to prepare your environment for Business Process Framework.

"Database administrator tasks" on page 59
The Database administrator must prepare the databases required for Business Process Framework, including gathering information about data sources, creating databases and database accounts, and installing client software.

# IBM FileNet P8 administrator tasks

The FileNet P8 Administrator must carry out several tasks to prepare your environment for your Business Process Framework upgrade.

"Identifying the Business Process Framework version"
You can confirm the version of your Business Process Framework installation by checking the About screen in the Web application, or by checking the `version.txt` file.

"Backing up Business Process Framework files"
Before you run the Business Process Framework upgrade, you must back up files that you want to preserve after the upgrade.

"Preparing the IBM FileNet P8 environment for upgrade" on page 57
Before you run the upgrade installation for Business Process Framework, you must prepare the IBM FileNet P8 for the upgrade.

"Configuring Process Engine case-insensitive view support" on page 58
Process Engine 4.0.3 and later supports case-insensitive views. The new Process Engine views provide case-insensitive column names. Using these new views replaces the manual step of removing the quotation marks in the current VWV views.

## Identifying the Business Process Framework version

You can confirm the version of your Business Process Framework installation by checking the About screen in the Web application, or by checking the `version.txt` file.

To identify the software version:

1. Check the version information of the Web application by pointing to the following URL: http://*web_application_server*:*web_port*/*web_BPF_name*/About.jsp
   The port number depends on the application server you use.
2. Check the version number of the Business Process Framework Explorer.
   - In the Explorer UI, click **Help → About** to see the version information.
   - Check the `version.txt` file in `install_path\FileNet\BPF\BPFExplorer`.

## Backing up Business Process Framework files

Before you run the Business Process Framework upgrade, you must back up files that you want to preserve after the upgrade.

It is not a requirement to check in all the documents when running a Business Process Framework application upgrade.

To back up files:

1. Verify that all application users have logged off the Business Process Framework application.
2. Back up your existing `bp8ciops.jar` used by BPF_Operations component. If you are using BPF Operations, this JAR file is located at *`install_path`*`/bpfops/` on the Application Engine where the BPF_Operations component runs under the Component Manager. This JAR file contains two XML files, of which `bp8_config.xml` must, and `log4j.xml` might contain custom and application-specific settings which you must copy back into the corresponding files in the new `bp8ciops.jar` installed during the upgrade.
3. Back up the entire deployed folder used by the Business Process Framework Web application for recovery purposes.
4. Back up the Workplace files used by Business Process Framework, for recovery purposes only:
   - *`AE_install_path`*`/FileNet/Config/AE/Actions.xml`
   - *`AE_install_path`*`/FileNet/Config/AE/InfoPages.xml`
   - *`AE_deploy_path`*`/Workplace/Bp8ViewActions.jsp`
   - *`AE_deploy_path`*`/Workplace/WEB_INF/Integration.xml`
5. Create a custom code folder and copy any custom code modules to be deployed during the upgrade into this folder.

   If you do not have any custom code you want to retain after the upgrade, you can skip this step. If that is true and you have no production data, you might want to simply perform a new install.

   The folder structure must mimic the Business Process Framework Web application folder structure exactly. Custom code is defined as any code module that is not part of the Business Process Framework Web application, but that has been created as an extension to the application and must be deployed after an upgrade of the Business Process Framework Web application.

   If there are no custom code modules to be deployed, continue with the next step.
6. If you have any custom Web modules registered that uses Layout Designer, back up the `BPFModule.xml` file located under the `WEB-INF` folder in the deployed Business Process Framework Web application.

## Preparing the IBM FileNet P8 environment for upgrade

Before you run the upgrade installation for Business Process Framework, you must prepare the IBM FileNet P8 for the upgrade.

To prepare the IBM FileNet P8 environment:

1. Export the configuration of the isolated region by using the Export feature of the Process Configuration Console.
2. Check that the Case Management Sample Workflow, eForms Case Management Sample Workflow for eForms integration, or the customized workflows are in a check-in state (optional but recommended).
3. Ensure that the Content Engine and Process Engine are running and operational so that the installer can configure the IBM FileNet P8 environment.
4. Stop the Component Manager and close all open Process Task Manager tools on the Application Engine so that the installer can update the `vwtaskman.xml` file in the Application Engine Router directory.

### Configuring Process Engine case-insensitive view support

Process Engine 4.0.3 and later supports case-insensitive views. The new Process Engine views provide case-insensitive column names. Using these new views replaces the manual step of removing the quotation marks in the current VWV views.

To configure Process Engine case-insensitive views

Use the vwtool with the **createDBviewsCI** command to create database views that are not case sensitive. For details, see the IBM FileNet P8 help topic **System Administration Process → Administration → Administrative tools → vwtool → Commands → createDBviewsCI**.

**Tip:** You can use vwtool to generate a list of database view names to use when updating the object names of workflow queues in Business Process Framework Explorer after installation.

**Related tasks**

"Updating queue names for case-insensitive views" on page 73
If your environment includes Process Engine 4.0.3 or later, you must update the object name of each queue to match with Process Engine case-insensitive views.

## Application server administrator tasks

The application server administrator must coordinate with and delegate responsibilities to the other administrators to prepare for theBusiness Process Framework installation.

To prepare the application server for the upgrade:

1. Do not undeploy or remove the existing Business Process Framework Web application before the upgrade. During upgrade, the installation program removes the existing deployment and replaces it with a new one.
2. Prepare the Application Engine and Business Process Framework application server for upgrade.

   (WebSphere Application Server and WebLogic Server) Ensure that the Application Engine and Business Process Framework application server is running and operational so that the installation program can undeploy the old application and deploy the new application.

   (JBoss Application Server) Stop the Application Engine and Business Process Framework application server so that the installer can undeploy the old application and deploy the new application.

## Information technology administrator tasks

The Information Technology administrator must prepare the network and operating systems, and carry out certain security configurations to prepare your environment for Business Process Framework.

"Copying installation software disk contents to target machine" on page 59
You must copy the installation software to a staging folder on the target server.

"Making the staging folder accessible" on page 59
The staging folder must be accessible from the various systems where Business Process Framework software is to be installed.

### Copying installation software disk contents to target machine

You must copy the installation software to a staging folder on the target server.

To copy installation software disk contents to a target machine:

1. Insert the disk for the target platform into a reader.
2. For systems other than Windows, mount the disk device.
3. Copy the contents of the disk to a staging folder. This folder must be accessible to the systems where Business Process Framework software is to be installed.

### Making the staging folder accessible

The staging folder must be accessible from the various systems where Business Process Framework software is to be installed.

The following table identifies which servers require access to specific subfolders under the staging folder.

*Table 18. Required servers*

| Server | Folder |
|---|---|
| *BPF admin workstation* | *staging folder*/misc<br><br>*staging folder*/admin |
| *Metastore server* | *staging folder*/sql |
| *Web application server* | *staging folder*/misc<br><br>*staging folder*/setup |

To make the staging folder accessible:

1. Use FTP or a tool of your choice to share the original staging folder or to copy the staging folder to other servers as indicated in the preceding table.
2. If you copy the staging folder to other servers, record the directory path for the installation administrator.

## Database administrator tasks

The Database administrator must prepare the databases required for Business Process Framework, including gathering information about data sources, creating databases and database accounts, and installing client software.

"Preparing the database for upgrade"
To prepare your database for an upgrade, you must back up your database and export the configuration of your Metastore database to an XML manifest by using the Export feature in the Business Process Framework Explorer.

### Preparing the database for upgrade

To prepare your database for an upgrade, you must back up your database and export the configuration of your Metastore database to an XML manifest by using the Export feature in the Business Process Framework Explorer.

To prepare the database for upgrade:

1. Export the configuration of your Metastore database to an XML manifest by using the Export feature in the Business Process Framework Explorer and make a full database backup within your RDBMS.

Consult the section of the *BPF Explorer Handbook* entitled Saving and Moving BPF Configurations for further details of what information you have to save or back up prior to beginning your upgrade.

**Remember:** The Business Process Framework Manifest export and database backup are for recovery purposes only. The existing Business Process Framework Metastore is upgraded in place.

2. Make a full database backup of the existing Business Process Framework Object Store, for recovery purposes only.
3. Ensure that the Business Process Framework Metastore database server is running, so that the installation program can update the Metastore.

# Upgrading and configuring Business Process Framework

After you have finished planning your upgrade and performing the prerequisite tasks, you are ready to upgrade and configure Business Process Framework.

1. "Upgrading Business Process Framework server"
   You can upgrade Business Process Framework server interactively by using the upgrade installation program. You can also choose to run the installation silently. Both methods automatically configure Business Process Framework server.
2. "Validating Business Process Framework server upgrade" on page 63
   Ensure that all expected application configuration and custom code are deployed before you validate the Business Process Framework server upgrade activity.
3. "Configuring Business Process Framework server after upgrade" on page 63
   You must configure the Business Process Framework server after you upgrade. The user name and password in the Process Task manager resets reset after upgrade.
4. "Upgrading Business Process Framework Explorer" on page 64
   You can upgrade Business Process Framework explorer by removing the current version and reinstalling from the */staging folder*/admin/ folder.
5. "Verifying Business Process Framework Explorer upgrade" on page 64
   After you upgrade Business Process Framework Explorer, you can verify the activity.
6. "Configuring Business Process Framework Explorer after upgrade" on page 65
   You can configure Business Process Framework Explorer after you perform an upgrade.
7. "Verifying the Business Process Framework Web application after upgrade" on page 74
   Ensure that the Business Process Framework upgrade was successful by logging on to a sample Web application.

## Upgrading Business Process Framework server

You can upgrade Business Process Framework server interactively by using the upgrade installation program. You can also choose to run the installation silently. Both methods automatically configure Business Process Framework server.

"Upgrading Business Process Framework server interactively"
The Business Process Framework Web application installer updates the Workplace configuration files under the *AE_install_dir*/FileNet/Config/AE folder and the Process Engine connection configuration files under the /Router folder on the Application Engine server.

"Upgrading Business Process Framework server silently" on page 62
You can perform a silent upgrade to the Business Process Framework server.

### Upgrading Business Process Framework server interactively

The Business Process Framework Web application installer updates the Workplace configuration files under the *AE_install_dir*/FileNet/Config/AE folder and the Process Engine connection configuration files under the /Router folder on the Application Engine server.

During automatic upgrade, the installer creates copies of the original configuration files in the *BPF_HOME*/instdata/backup folder.

To upgrade interactively:

1. Open your completed Installation and Upgrade Worksheet file.

   **Tip:** In the worksheet file, verify that the **Data → Filter → AutoFilter** command is enabled. To view only Business Process Framework values, filter by **BPF Installer** in the **Installation or Configuration Program** column.

2. 1. Start the Business Process Framework installation program:

| Option | Description |
|---|---|
| **AIX** | Navigate to /*staging_folder*/setup and run AIXfilenet_bpf_setup.bin |
| **HP-UX RISC** | Navigate to /*staging_folder*/setup and run HPUXfilenet_bpf_setup.bin |
| **HP-UX Itanium** | Navigate to /*staging_folder*/setup and run HPUXIA64filenet_bpf_setup.bin |
| **Linux** | Navigate to /*staging_folder*/setup and run LINUXfilenet_bpf_setup.bin |
| **Solaris** | Navigate to /*staging_folder*/setup and run SOLARISfilenet_bpf_setup.bin |
| **Windows** | Navigate to *staging_folder*\setup and run WINDOWSfilenet_bpf_setup.exe. |

3. Complete the Business Process Framework Web application upgrade program screens with the values recorded in your Installation and Upgrade Worksheet.
4. Stop the Business Process Framework application server after running the installer.
5. Delete all the following cache folders for the Business Process Framework Web application:

| Option | Description |
|---|---|
| **Oracle WebLogic Server** | *bea_home*/user_projects/domains/*app_domain*/servers/*server_name*/tmp/_WL_user. |
| **WebSphere Application Server 5.x** | *WAS_Home*\temp*node_name*\servers\server1*bpf* |
| **WebSphere Application Server 6.x** | *WAS_Home*\profiles*profile-name*\temp*node_name*\server1*bpf* |

6. Start the Business Process Framework application server.

## Upgrading Business Process Framework server silently

You can perform a silent upgrade to the Business Process Framework server.

To install Business Process Framework silently:

1. Open your completed Installation and Upgrade Worksheet file.

   **Tip:** In the worksheet file, verify that the **Data → Filter → AutoFilter** command is enabled. To view only Business Process Framework values, filter by **BPF Installer** in the **Installation or Configuration Program** column.

2. Record a response file by running the installation program with the following parameters:

| Option | Description |
|---|---|
| **Windows** | *Platform*filenet_bpf_setup.exe -options-record BPFSilentUpgrade.rsp |
| **UNIX** | *Platform*filenet_bpf_setup.bin -options-record BPFSilentUpgrade.rsp |

3. To load parameters from the response file to use as initial values in the setup UI, run the installation program with the following parameters:

| Option | Description |
|---|---|
| **Windows** | WINDOWSfilenet_bpf_setup.exe -options BPFSilentInstall.rsp |
| **UNIX** | *PLATFORM*filenet_bpf_setup.bin -options BPFSilentInstall.rsp |

4. To perform a silent upgrade, where the upgrade parameters are taken from the response file and no setup UI is presented, use one of these commands to run the installation program:

| Option | Description |
|---|---|
| **Windows** | WINDOWSfilenet_bpf_setup.exe –options BPFSilentUpgrade.rsp –silent |
| **UNIX** | *PLATFORM*filenet_bpf_setup.bin –options BPFSilentUpgrade.rsp –silent |

## Validating Business Process Framework server upgrade

Ensure that all expected application configuration and custom code are deployed before you validate the Business Process Framework server upgrade activity.

To verify the success of the Business Process Framework upgrade, verify the upgrade by checking log entries and testing the connections and the application.

## Configuring Business Process Framework server after upgrade

You must configure the Business Process Framework server after you upgrade. The user name and password in the Process Task manager resets reset after upgrade.

To configure after the upgrade:

1. The user name and password for the BPF_Operation in Process Task manager will be reset after upgrade. Change the user name and password after these steps:
   a. Navigate to **Workplace** → **Admin** → **Process Configuration Console**.
   b. Open the Server node for your Process Engine Server
   c. Open the Component Queues node.
   d. Right click **BPF_Operations**.
   e. Provide the proper user name and password in the Adaptor tab.

2. If you are using Microsoft SQL Server 2005 for the Business Process Framework Metastore, ensure that the Application Engine Process Task Manager is configured to use the latest version of `jtds-xxx.jar`.
3. Apply IBM FileNet P8 Platform fix pack changes after upgrade

   Follow the instructions under "Applying IBM FileNet P8 Platform changes to the Business Process Framework installation" on page 144.

## Upgrading Business Process Framework Explorer

You can upgrade Business Process Framework explorer by removing the current version and reinstalling from the */staging folder*/admin/ folder.

To upgrade the Business Process Framework Explorer:

1. Uninstall Business Process Framework Explorer.
   a. Open **Start Menu → Settings → Control Panel → Add/Remove Programs**.
   b. Select **FileNet Business Process Framework Explorer**.
   c. Select **Change/Remove**.
2. Reinstall Business Process Framework Explorer from the */staging folder*/admin/ folder. While installing Business Process Framework Explorer, enter the name of the existing Metastore database.
   a. Open your completed Installation and Upgrade Worksheet file.
   b. Log on to the Windows machine with an account that has local administrator privileges.
   c. Navigate to the directory *staging folder*\admin and run the following command: `filenet_BPF_explorer_setup.exe`
   d. Complete the Business Process Framework Explorer installation program screens with the values recorded in your Installation and Upgrade Worksheet.

## Verifying Business Process Framework Explorer upgrade

After you upgrade Business Process Framework Explorer, you can verify the activity.

"Verifying Business Process Framework Explorer log on"
After you log on to Business Process Framework Explorer, you can verify the activity.

"Verifying key parameters after upgrade" on page 65
You can verify that key settings in Business Process Framework Explorer are the same as before the upgrade.

### Verifying Business Process Framework Explorer log on

After you log on to Business Process Framework Explorer, you can verify the activity.

To verify the Business Process Framework Explorer log on:

1. Verify that you can log on to Business Process Framework Explorer without error.
2. If you have configured Content Engine integration by installing the Content Engine Client libraries, verify that you can access an Object Store from the Business Process Framework Explorer Case Type or Application Field Property UI.

## Verifying key parameters after upgrade

You can verify that key settings in Business Process Framework Explorer are the same as before the upgrade.

# Configuring Business Process Framework Explorer after upgrade

You can configure Business Process Framework Explorer after you perform an upgrade.

"Defining Business Process Framework site designer role (upgrade from 3.5.2 only)"
If you are upgrading Business Process Framework 3.5.2 to Business Process Framework 4.1, the Business Process Framework Site Designer role must be defined.

"Defining eForms case creation tool (upgrade from 3.5.2 only)"
You can configure the eForms Case Creation Tool to be available for existing application upgrades from Business Process Framework 3.5.2.

"Updating toolbar.xml item sequence (upgrade from 3.5.2 only)" on page 66
If you have deployed as a WAR or EAR file, you must update the contents of Toolbar.xml within the WAR or EAR.

"Removing redundant Priorities Filter picklist entry (upgrade from 3.5.2 only)" on page 66
Since Business Process Framework 3.6, the Priorities picklist entry replaces the old Priorities Filter entry.

"Modifying case type configuration" on page 66
You can modify the case type configuration of various properties.

"Exposing the new case operations features" on page 69
Business Process Framework 4.1 adds three new case operations: Merge Case, Split Case and Reclassify Case. After an upgrade, these operations must be added to Tools to make them available to the application, and to make the upgrade consistent with a fresh installation. The new tools can then be exposed from existing inbaskets only if that is desirable in your existing application.

"Modifying adhoc search definition" on page 71
You can modify search definitions. The adhoc search definitions show examples of the values.

"Updating queue names for case-insensitive views" on page 73
If your environment includes Process Engine 4.0.3 or later, you must update the object name of each queue to match with Process Engine case-insensitive views.

## Defining Business Process Framework site designer role (upgrade from 3.5.2 only)

If you are upgrading Business Process Framework 3.5.2 to Business Process Framework 4.1, the Business Process Framework Site Designer role must be defined.

To enable Layout Designer, you must manually create a Business Process Framework Site Designer role and assign a user to that role in Business Process Framework Explorer. Please see the Business Process Framework Web Application UI Guide for more details on Layout Designer.

## Defining eForms case creation tool (upgrade from 3.5.2 only)

You can configure the eForms Case Creation Tool to be available for existing application upgrades from Business Process Framework 3.5.2.

You can configure the eForms Case Creation Tool in the eForms Integration to Business Process Framework document, to make the eForms Case Creation Tool available to an existing application upgraded from Business Process Framework 3.5.2.

## Updating toolbar.xml item sequence (upgrade from 3.5.2 only)

If you have deployed as a WAR or EAR file, you must update the contents of Toolbar.xml within the WAR or EAR.

Follow these steps to update the `toolbar.xml` file. See "Updating the contents of the Business Process Framework WAR file" on page 146 or "Updating the contents of the Business Process Framework EAR file" on page 146 for more details.

To edit the XML file:

Edit the document *BPF Deployment Home*`\WEB-INF\Toolbar.xml` Ensure that the items for Sign Out, Preferences, Search and other tools appear in the file in the correct order, from right to left in the Web application.
(In 3.5.2 the items were displayed from left to right; in 3.6 and later, the display is from right to left.)

## Removing redundant Priorities Filter picklist entry (upgrade from 3.5.2 only)

Since Business Process Framework 3.6, the Priorities picklist entry replaces the old Priorities Filter entry.

The old Priorities Filter entry from 3.5.2 is now obsolete and redundant. The following procedure is recommended to remove the redundant entry.

To remove the redundant Priorities Filter:

1. Replace Priority Filter pick list entry with **Priority** in any fields where it is used in your current Web application.
2. Delete the Priorities Filter entry from the list at **Miscellaneous** → **Pick Lists** → **Priorities**.

## Modifying case type configuration

You can modify the case type configuration of various properties.

Business Process Framework uses the case type ID value to determine which object store to search for Bp8CaseType objects and audit log objects. It also looks for the right object store in which to place document objects. If you do not specify the Bp8CaseType value, Business Process Framework will encounter errors when searching for cases and attachments in multiple object stores.

"Adding a case type picklist" on page 67
You can create and add a case type picklist to the New Picklist properties.

"Updating the Bp8CaseType application field" on page 67
You can update the Bp8CaseType property on the Applications Field page.

"Selecting the field Bp8CaseType in workflow filters" on page 67
For each workflow query filter, you must change the Microsoft SQL Server query string to add Bp8CaseType into the select field.

"Adding the parameter Bp8CaseType in attachment and eForms tabs" on page 68
Using a database tool, open the TABS table in Metastore database. For the two

rows which TAB_NAME are Attachment and eForms, change the TAB_CONTENT column value by adding a parameter Bp8CaseType .

"Exposing the field Bp8CaseType in inbasket" on page 68
For each Inbasket, its configuration must expose the Bp8CaseType field for all case types on Case Fields tab of the Inbasket property page.

"Adding Bp8CaseType to create_eFormsCase tool" on page 68
The following step is only required if you are using, or intend to use, eForms with Business Process Framework.

## Adding a case type picklist

You can create and add a case type picklist to the New Picklist properties.

To add a case type picklist:

1. Create a Case Type Picklist in **Miscellaneous** → **Pick Lists** → , right-click **Pick Lists** and select **New** → **Picklist**.
2. In the New Picklist Properties page, input the Name: `CaseType Picklist` and the description: `Picklist for Case Type, value/text=type code/type` description.
3. Press **Edit** button to open Picklist Advanced Configuration page and input Microsoft SQL Server:

   ```
   SELECT case_type_id as ID, case_type_id as CODE, name as DESCRIPTION, -1
   as ACTIVE FROM case_types ORDER BY name
   ```

   After that, a Case Type picklist is created.

## Updating the Bp8CaseType application field

You can update the Bp8CaseType property on the Applications Field page.

To update the Bp8CaseType application field:

1. Open Bp8CaseType property page in **Case Fields Configuration** → **Application Fields** page.
2. Choose **Case Type Picklist** in the Pick list field and save.

## Selecting the field Bp8CaseType in workflow filters

For each workflow query filter, you must change the Microsoft SQL Server query string to add Bp8CaseType into the select field.

For example, for the filter Public Inbasket, follow the steps later in this section to change its SQL Server query string:

1. Launch Business Process Framework Explorer.
2. Open the property page of the filter **Public Inbasket**.
3. Click the button **Edit Query**. Insert the string `Bp8CaseType` into the select list. The original value is:

   ```
   select %PAGESIZE% F_WobNum, F_UniqueId, F_Locked, F_LockUser, F_BoundUser,
   Bp8CaseID, 9999 as queue_depth from %VIEWNAME% WHERE %FILTERBY% F_StepName='
   STEPNAME%' order by %ORDERBY%, F_EnqueueTime, F_UniqueId asc
   ```

   Change to:

   ```
   select %PAGESIZE% F_WobNum, F_UniqueId, F_Locked, F_LockUser, F_BoundUser,
   Bp8CaseID, Bp8CaseType, 9999 as queue_depth from %VIEWNAME% WHERE %FILTERBY%
   F_StepName='%STEPNAME%' order by %ORDERBY%,F_EnqueueTime, F_UniqueId asc
   ```

## Adding the parameter Bp8CaseType in attachment and eForms tabs

Using a database tool, open the TABS table in Metastore database. For the two rows which TAB_NAME are Attachment and eForms, change the TAB_CONTENT column value by adding a parameter Bp8CaseType .

For the row Attachment, the original value is:

```
Bp8AttachmentsTab.jsp?eventTarget=attachmentsTab&eventName=
ExecuteSearch&TabName={TABNAME}&Inbasket={IID}&Bp8CaseID={CFNAME}&_showatt=0
```

This value must be changed to:

```
Bp8AttachmentsTab.jsp?eventTarget=attachmentsTab&eventName=
ExecuteSearch&TabName={TABNAME}&Inbasket={IID}&Bp8CaseID={CFNAME}
& Bp8CaseType={CFNAME} & _showatt=0
```

For example, the following SQL command can be used to change the Attachment row:

```
UPDATE TABS SET
TAB_CONTENT='Bp8AttachmentsTab.jsp?eventTarget=attachmentsTab&eventName=
ExecuteSearch&TabName={TABNAME}&Inbasket={IID}&Bp8CaseID={CFNAME}&Bp8CaseType=
{CFNAME}&_showatt=0'WHERE TAB_NAME='Attachment'
```

For the row eForms, the original value is:

```
/BpfFormServlet?Bp8CaseID={CFNAME}&mode=1&_showatt=0&page=P001
```

This value must be changed to:

```
/BpfFormServlet?Bp8CaseID={CFNAME} & Bp8CaseType={CFNAME} &
mode=1&_showatt=0&page=P001
```

For example, this Microsoft SQL Server command can be used to change the eForms row:

```
UPDATE TABS SET
TAB_CONTENT='/BpfFormServlet?Bp8CaseID={CFNAME}&Bp8CaseType={CFNAME}&
mode=1&_showatt=0&page=P001'WHERE TAB_NAME='eForms'
```

## Exposing the field Bp8CaseType in inbasket

For each Inbasket, its configuration must expose the Bp8CaseType field for all case types on Case Fields tab of the Inbasket property page.

Follow the steps later in this section to expose the Bp8CaseType field.

To expose the field:

1. Launch Business Process Framework Explorer.
2. Open the property page of the Inbasket you want to modify.
3. Open the **Case Fields** tab.
4. Select **Bp8CaseType** in the left list and click the button **->**, then the field is inserted into the right field list. Set its Visible and R/O value to **YES**.
5. Click the button **Reset Layout**.
6. Click the button and **Apply**" and click the button **OK**.

## Adding Bp8CaseType to create_eFormsCase tool

The following step is only required if you are using, or intend to use, eForms with Business Process Framework.

Follow these steps to add the parameter Bp8CaseType to the tool create_eFormsCase:

1. Launch Business Process Framework Explorer,
2. Open the property page of the tool create_eFormsCase.
3. Change the Handle URL value by adding the parameter objectStoreName. Set the parameter value to the correct object store symbolic name storing case object of the case type for which the eForms template is designed. For example, this tool starts eForms for Case Management, and the object store for case object of Case Management is BPFOSCase.

   The original value of Handle URL is:

   ```
   ExtCommand.jsp?eForms&ExtTask=create_eform_case&id=
     {46A4F3A1-41C2-46B9-AE71-4393D906B335}&vsId=
     {6F434403-DFC8-4E7D-B9D5-4C9572AD80BD}&objectType=document
   ```

   Change to:

   ```
   ExtCommand.jsp?eForms&ExtTask=create_eform_case&id=
     {46A4F3A1-41C2-46B9-AE71-4393D906B335}&vsId=
     {6F434403-DFC8-4E7D-B9D5-4C9572AD80BD}&objectStoreName=
     BPFOSCase&objectType=document
   ```

## Exposing the new case operations features

Business Process Framework 4.1 adds three new case operations: Merge Case, Split Case and Reclassify Case. After an upgrade, these operations must be added to Tools to make them available to the application, and to make the upgrade consistent with a fresh installation. The new tools can then be exposed from existing inbaskets only if that is desirable in your existing application.

For all of the three Case Operation tools configuration, fields Tool name, Display label, and Handler URL must be set as shown. Settings for Appearance and Visibility are recommended. Case Fields must be chosen on demand.

If Case Management Workflow is used for the Case Type, for Reclassify Case and Split Case, the field **CreateCase** must be selected and set to **0 read-only (R/O)**.

To add the new case operation tools:

1. In Business Process Framework Explorer, navigate to **Application Settings** → **Tools**.
2. Create a new tool called Merge Case.
   a. In the right pane of the Tools window, right click and choose **New** → **Tool**.
   b. Use the following General settings for the merge_case tool.

*Table 19. Settings for Merge Case tool*

| For this field | Specify this value |
|---|---|
| Case type | Case Management |
| Tool name | merge_case |
| Display label | Merge Case |
| Handler URL | MergeCase.jsp |
| Window width | 800 |
| Window height | 600 |
| Resizable | (Checked) |
| Modal | (Checked) |

*Table 19. Settings for Merge Case tool (continued)*

| For this field | Specify this value |
|---|---|
| Case mode | (Checked) |
| Browse mode | (Unchecked) |

c. Specify the following Display Label settings:

*Table 20. Display Label settings for Merge Case tool*

| Display Label | Case Field | Value | Required | Visible |
|---|---|---|---|---|
| Company Name | Company Name | (Blank) | (Checked) | (Checked) |
| Priority | Priority | (Blank) | (Checked) | (Checked) |
| Effective Date | Effective Date | (Blank) | (Checked) | (Checked) |
| Designated Rep | Designated Rep | (Blank) | (Checked) | (Checked) |
| Contract Amount | Contract Amount | (Blank) | (Unchecked) | (Checked) |
| Expired | Expired | (Blank) | (Checked) | (Checked) |

d. Click **Apply** and **OK** to save the new tool.

3. Create a new tool called Reclassify Case.
   a. In the right pane of the Tools window, right click and choose **New** → **Tool**.
   b. Use the following General settings for the reclassify_case tool.

*Table 21. Settings for Reclassify Case tool*

| For this field | Specify this value |
|---|---|
| Case type | Case Management |
| Tool name | reclassify_case |
| Display label | Reclassify Case |
| Handler URL | ReclassifyCase.jsp |
| Window width | 800 |
| Window height | 600 |
| Resizable | (Checked) |
| Modal | (Checked) |
| Case mode | (Checked) |
| Browse mode | (Unchecked) |

c. Specify the following Display Label settings:

*Table 22. Display Label settings for Classify Case tool*

| Display Label | Case Field | Value | Required | Visible |
|---|---|---|---|---|
| CreateCase | CreateCase | 0 | (Unchecked) | (Checked) |
| Expired | Expired | (Blank) | (Unchecked) | (Checked) |
| Effective Date | Effective Date | (Blank) | (Unchecked) | (Checked) |
| Contract Notes® | Contract Notes | (Blank) | (Unchecked) | (Checked) |
| Contract Amount | Contract Amount | (Blank) | (Unchecked) | (Checked) |
| Company Name | Company Name | (Blank) | (Unchecked) | (Checked) |

*Table 22. Display Label settings for Classify Case tool (continued)*

| Display Label | Case Field | Value | Required | Visible |
|---|---|---|---|---|
| Account Number | Account Number | (Blank) | (Unchecked) | (Checked) |
| Received Date | Received Date | (Blank) | (Unchecked) | (Checked) |
| Priority | Priority | (Blank) | (Unchecked) | (Checked) |

d. Click **Apply** and **OK** to save the new tool.

4. Create a new tool called Split Case.
   a. In the right pane of the Tools window, right click and choose **New** → **Tool**.
   b. Use the following General settings for the split_case tool.

*Table 23. Settings for Split Case tool*

| For this field | Specify this value |
|---|---|
| Case type | Case Management |
| Tool name | split_case |
| Display label | Split Case |
| Handler URL | SplitCase.jsp |
| Window width | 800 |
| Window height | 600 |
| Resizable | (Checked) |
| Modal | (Checked) |
| Case mode | (Checked) |
| Browse mode | (Unchecked) |

c. Specify the following Display Label settings:

*Table 24. Display Label settings for Split Case tool*

| Display Label | Case Field | Value | Required | Visible |
|---|---|---|---|---|
| Company Name | Company Name | (Blank) | (Checked) | (Checked) |
| Priority | Priority | (Blank) | (Checked) | (Checked) |
| Effective Date | Effective Date | (Blank) | (Checked) | (Checked) |
| Designated Rep | Designated Rep | (Blank) | (Checked) | (Checked) |
| Contract Amount | Contract Amount | (Blank) | (Unchecked) | (Checked) |
| Expired | Expired | (Blank) | (Checked) | (Checked) |
| CreateCase | CreateCase | 0 | (Checked) | (Checked) |

d. Click **Apply** and **OK** to save the new tool.

## Modifying adhoc search definition

You can modify search definitions. The adhoc search definitions show examples of the values.

There are three adhoc search definitions to be modified. Open **BPF Explorer** → **Application Settings** → **Web Application**, and update the following three adhoc search definitions values.

## Case attachments list - adhoc search definition

In the Case attachments list, there are search definitions that must be configured. The adhoc search definitions show examples of the values.

To update the Case attachments list search definition field, add the new values to the front of the existing entry. The original value is:

```
 select a.Bp8ObjectID as Id, a.Bp8ObjectType as ObjectType, a.Id as AttachID,
d.DocumentTitle, d.VersionSeries, d.VersionStatus, d.MajorVersionNumber,
d.MinorVersionNumber, d.MimeType, d.isReserved, d.IsVersioningEnabled,
f.FolderName, c.Bp8CaseID from ((Bp8Attachment a left join Document d ON
d.VersionSeries = a.Bp8VersionSeries) left join Folder f ON f.Id = a.Bp8ObjectGUID)
left join CustomObject c ON c.Id = a.Bp8ObjectGUID where a.Bp8CaseID = ^1 and ^2
order by a.Bp8ObjectType desc, f.FolderName asc, d.DocumentTitle asc
```

Add the following new values at the front of the field:

```
select a.Bp8ObjectRepositoryId as ObjectStoreId, a.Bp8ObjectGUID as ObjectGUID,
a.Bp8ObjectClass as ObjectClassID, a.Bp8VersionSeries as DocVersionSeries,
```

The result will be the following list of values:

```
select a.Bp8ObjectRepositoryId as ObjectStoreId, a.Bp8ObjectGUID as ObjectGUID,
a.Bp8ObjectClass as ObjectClassID, a.Bp8VersionSeries as DocVersionSeries,
a.Bp8ObjectID as Id, a.Bp8ObjectType as ObjectType, a.Id as AttachID,
d.DocumentTitle, d.VersionSeries, d.VersionStatus, d.MajorVersionNumber,
d.MinorVersionNumber, d.MimeType, d.isReserved, d.IsVersioningEnabled, f.FolderName,
c.Bp8CaseID from ((Bp8Attachment a left outer join Document d ON d.VersionSeries =
a.Bp8VersionSeries) left outer join Folder f ON f.Id = a.Bp8ObjectGUID) left outer
join CustomObject c ON c.Id = a.Bp8ObjectGUID where a.Bp8CaseID = ^1 and ^2 order by
a.Bp8ObjectType desc, f.FolderName asc, d.DocumentTitle asc
```

## Attachments tab - adhoc search definition

In the Attachments tab, there are search definitions that must be configured. The adhoc search definitions show examples of the values.

To update the Attachments tab search definition field, add the new values to the front of the existing entry. The original value is:

```
select a.Bp8ObjectID as Id, a.Bp8ObjectType as ObjectType, a.Id as AttachID,
f.FolderName, d.DocumentTitle, d.ReceivedDate, d.CompanyName, d.ContractAmount,
d.DocumentType, d.CasePriority, d.VersionSeries, d.VersionStatus,
d.MajorVersionNumber, d.MinorVersionNumber, d.MimeType, d.isReserved,
d.IsVersioningEnabled from (Bp8Attachment a left join Document d ON
d.VersionSeries = a.Bp8VersionSeries) left join Folder f ON f.Id =
a.Bp8ObjectGUID where a.Bp8CaseID = ^1 and ^2 order by a.Bp8ObjectType desc,
f.FolderName asc, d.DocumentTitle asc
```

Add the following new values to the front of the entry:

```
select a.Bp8ObjectRepositoryID as ObjectStoreId, a.Bp8ObjectGUID as ObjectGUID,
a.Bp8VersionSeries as DocVersionSeries,
```

The result will be the following list of values:

```
select a.Bp8ObjectRepositoryID as ObjectStoreId, a.Bp8ObjectGUID as ObjectGUID,
a.Bp8VersionSeries as DocVersionSeries, a.Bp8ObjectID as Id,
a.Bp8ObjectType as ObjectType, a.Id as AttachID, f.FolderName, d.DocumentTitle,
d.ReceivedDate, d.CompanyName, d.ContractAmount, d.DocumentType, d.CasePriority,
d.VersionSeries, d.VersionStatus, d.MajorVersionNumber, d.MinorVersionNumber,
d.MimeType, d.isReserved, d.IsVersioningEnabled from (Bp8Attachment a left outer
join Document d ON d.VersionSeries = a.Bp8VersionSeries) left outer join Folder
f ON f.Id = a.Bp8ObjectGUID where a.Bp8CaseID = ^1 and ^2 order by a.Bp8ObjectType
desc, f.FolderName asc, d.DocumentTitle asc
```

### Viewer documents list - adhoc search definition

In the Viewer documents list, there are search definitions that must be configured. The adhoc search definitions show examples of the values.

To update the Viewer documents list search definition field, add the new values to the front of the existing entry. The original value is:

```
 select d.Id, d.ObjectType, a.Id as AttachID, d.DocumentTitle, d.isReserved,
d.IsVersioningEnabled , d.VersionSeries, d.VersionStatus, d.MajorVersionNumber,
d.MinorVersionNumber, d.MimeType from Bp8Attachment as a left join Document
as d on d.VersionSeries = a.Bp8VersionSeries where a.Bp8CaseID = ^1 and ^2 order
by d.DocumentTitle asc
```

Add the following new values at the front of the field:

```
select a.Bp8ObjectRepositoryID as ObjectStoreId, a.Bp8ObjectGUID as ObjectGUID,
a.Bp8VersionSeries as DocVersionSeries, a.Bp8ObjectType as ObjectType,
a.
```

The result will be the following list of values:

```
select a.Bp8ObjectRepositoryID as ObjectStoreId, a.Bp8ObjectGUID as ObjectGUID,
a.Bp8VersionSeries as DocVersionSeries, a.Bp8ObjectType as ObjectType,
a.Id as AttachID, a.Bp8ObjectID as Id, d.DocumentTitle, d.isReserved,
d.IsVersioningEnabled , d.VersionSeries, d.VersionStatus, d.MajorVersionNumber,
d.MinorVersionNumber, d.MimeType from Bp8Attachment as a left outer join Document
as d on d.VersionSeries = a.Bp8VersionSeries where a.Bp8CaseID = ^1 and ^2
order by d.DocumentTitle asc
```

## Updating queue names for case-insensitive views

If your environment includes Process Engine 4.0.3 or later, you must update the object name of each queue to match with Process Engine case-insensitive views.

To update queue names:

1. In Business Process Framework Explorer, click **Workflow Configuration** → **Queues**.
2. Right-click the first queue, and choose **Properties**.
3. In the **Object name** field, edit the name to match the case-insensitive Process Engine view name, and click **OK**. You can obtain these names from a Process Engine vwtool report.
4. Repeat the configuration changes for all remaining queues.

**Related tasks**

"Configuring Process Engine case-insensitive view support" on page 58
Process Engine 4.0.3 and later supports case-insensitive views. The new Process Engine views provide case-insensitive column names. Using these new views replaces the manual step of removing the quotation marks in the current VWV views.

## Verifying the Business Process Framework Web application after upgrade

Ensure that the Business Process Framework upgrade was successful by logging on to a sample Web application.

You must verify the Business Process Framework Web application after you perform the upgrade. Follow the procedures in "Logging on to a sample Business Process Framework Web application" on page 49.

To log on to a sample Web application:

1. Access Business Process Framework from the following URL: http://*web application server*:*web port*/*web BPF name*
2. Log on to Business Process Framework. If this is the first time you are logging on to the Business Process Framework Web application, you will have to set the Business Process Framework bootstrap information. Make sure you save the bootstrap information to the Bootstrap Object Store.
3. Create a new Case.
4. Open the case from the Index Inbasket and enter sample case field data.
5. Attach a document to the case by using the Attach Document tool.
6. Open the attached content in the Viewer.

   **Tip:** Ensure that the appropriate JRE is installed for the browser.
7. Perform a Business Process Framework Case Search. You must first configure a case search. For more information, see "Configuring stored searches" on page 77.
8. Choose **Action** → **Complete** on the case, then locate the case in the **Review Inbasket** to make sure it was dispatched.
9. Open Layout Designer through the Edit Layout tool.
10. Log off Business Process Framework.
11. Log on to Business Process Framework Explorer and verify all configuration data is present.
12. In order to verify that BPF_Operations are working in Component Manager, add a new document to the Case Management Documents document class. The document must have a DocEntryStatus value of 1, and a DocType value of 1.

    The subscription event launches a workflow that creates a new case. If BPF_Operations is running, you see a new Case in the **Index Inbasket**. For information on creating a workflow subscription, see "Modifying Business Process Framework operations logging (optional)" on page 85.

# Configuring Business Process Framework after installation or upgrade

After you install or upgrade Business Process Framework, you can configure additional settings and features.

system for multiple object stores will have all their data stored in the DefaultOS. These cases are referred to as legacy cases.

## Configuring Business Process Framework for eForms (optional)

The steps to integrate eForms with Business Process Framework are not included in this document and are not part of the standard Business Process Framework installation package implementation.

For information on how to perform this configuration, see the eForms Integration to Business Process Framework document.

## Configuring Business Process Framework Explorer for multiple Metastores (optional)

You do not need to configure Business Process Framework Explorer if Business Process Framework Explorer accesses only one Business Process Framework Metastore.

Business Process Framework Explorer can update multiple Metastores, but all Metastores must be of the same database type, for example, DB2 or Oracle.

By default, Business Process Framework Explorer accesses the Metastore that you specify as you install Business Process Framework Explorer. You can configure the Windows registry to enable Business Process Framework Explorer to access multiple Metastores of the same database type. When the user logs on, Business Process Framework Explorer presents a menu listing the Metastores available to the user.

To configure Business Process Framework Explorer for multiple Metastores:

1. Open the registry editor. Click **Start** → **Run** and enter `regedit`. Click **OK**.
2. Locate the `My Computer\HKEY_LOCAL_MACHINE\SOFTWARE\FileNet Business Process Framework` key. Locate a **Common** key.
3. For each Metastore:
   a. Create a new copy of the `Bp8sql.xml` file. Change the value of *meta user* in the following line in the new copy of the `Bp8sql.xml` file:

      ```
      <ORACLE>alter session set current_schema=meta user</ORACLE>
      ```

      **Tip:** The `Bp8sql.xml` file is in the Business Process Framework Explorer home directory in the same directory as the `BPFExplorer.msc` file.
   b. Create an ODBC connection for the Metastore: Click **Start Menu** → **Programs** → **Administrative Tools** → **Data Sources (ODBC)** .
   c. Select the **System DSN** tab.
   d. Select **Add**.

      **Tip:** An ODBC connection already exists for the Metastore specified during Business Process Framework Explorer setup.
   e. In the registry editor, export the common Metastore settings. Click **Common**. Select **Registry** → **Export Registry File**.
   f. Change the following in the exported registry file:

      **Key name**
      For example, change `HKEY_LOCAL_MACHINE\SOFTWARE\IBM FileNet`

Business Process Framework\Common to HKEY_LOCAL_MACHINE\SOFTWARE\IBM FileNet Business Process Framework\Metastore1. The key name determines the name of the Metastore as shown to the user in the log on drop-down menu. In the above example *Metastore1* appears as one of the Metastore choices.

**DATABASE_CONNECTION_STRING.**
Change the DSN to reference your ODBC DSN.

This value is used by the WFImport.exe utility. It requires that both UID (user ID) and PWD (password) be present as the WFImport.exe utility has no ability to ask for this information as user input at runtime. We do not regard this as a security risk but the WFImport.exe is a tool that is typically used only during the development phase of a project. The WFImport.exe must use ODBC on DB2, Oracle and Microsoft SQL Server configurations. That is the only supported connectivity type for this utility.

**BP8_EXPLORER_DATABASE_CONNECTION_STRING**
Change the DSN to reference your ODBC DSN.

This value must be configured to use ODBC on Microsoft SQL Server and OLEDB on Oracle. Issues have been known to occur with Oracle ODBC drivers and it has been determined that, on Oracle platforms, OLEDB must be used for **BP8_EXPLORER_DATABASE_CONNECTION_STRING** and **ODBC** for **DATABASE_CONNECTION_STRING**.

**DATABASE_SQL_XML**
Change the full file path to point to the new copy of the Bp8sql.xml file.

**DATABASE_SQL_XML**
Must be updated for Oracle only.

g. Import the edited registry file. Click **Registry** → **Import Registry File**.

**Important:** Do not delete **HKEY_LOCAL_MACHINE\SOFTWARE\FileNet Business Process Framework\Common**.

## Configuring stored searches

You can configure the search folder and templates so that you can perform custom object type searches for Case search. You must configure the search folder and templates and store them in the Bootstrap Object Store for the Search and Attach Document tool to find them.

To configure a simple search:

1. Using Enterprise Manager, create a folder for holding search templates and stored searches, for example: **Object Stores** → ***bootstrap os display name*** → **Root Folder** → **BPF** → **Searches**.
2. Using Search Designer (invoked from Workplace), create a search template.
3. Go to the **Object Stores** tab. Select the Object Store containing the case objects to be found.
4. Set the Object Types settings.
   a. Click the **Object Types** tab.
   b. Click **Custom Objects**.

**Tip:** If Workplace was not configured to enable custom objects, this check mark does not appear. To enable custom objects, do the task Editing Workplace Site Preferences.

c. Verify that **Documents** is also selected.

d. Click **Update Subclass List**.

e. In the View section, select **Editable**.

f. In the Object Subclass section, select the appropriate child class of Bp8Case. For the Case Management sample application, this is Case Management.

5. Set the Search Criteria settings.
   a. Click the **Search Criteria** tab.
   b. In the View column in the first table, select **Editable**.
   c. In the Property column in the first table, Select **Bp8CaseID**.
   d. In the Operator column, select **is equal to**.
6. Choose **File** → **Add New** → **...**. Browse for your search folder.
7. Enter the document title: `BPFCase ID Search`.
8. Click **Next** and **Finish**.
9. Using Enterprise Manager, get the GUID for the folder containing the search templates. Right click the folder and select **Properties**. On the Properties tab, select **All Properties** as the filter and copy the Property Value for the ID property. Save the GUID to a temporary file.
10. Stop the Business Process Framework Web application in the Web application server.
11. Update the *BPF Deployment Home*`\WEB-INF\Toolbar.xml` file.

    **Tip:** If you have deployed Business Process Framework as a WAR or EAR file, you must update the contents of `Toolbar.xml` file within the WAR or EAR. See "Updating the contents of the Business Process Framework WAR file" on page 146 or "Updating the contents of the Business Process Framework EAR file" on page 146 and perform the following steps:

    a. Find the item section that starts with `Item Caption='Search' Name='Search' SearchMode='no'`.
    b. In that item section find the *Action* section with the `invokeWorkplaceObject` call. The first parameter in the invokeWorkplaceObject is a GUID.
    c. Substitute the current GUID with the GUID for your search folder. If the invokeWorkplaceObject method is used to invoke versionable content in Content Engine. For example, if you choose to configure it to point to an actual Search Template or other document rather than a Folder where Searches are stored, you must change the GUID value when a new version of the content is created. Otherwise invokeWorkplaceObject continues to invoke the original version.
    d. Save the changes.
12. Repackage your WAR or EAR file, if you are using one.
13. Redeploy your Web application.
14. Restart the Business Process Framework Web application in the Web application server.
15. Test the Search functionality when you log onto Business Process Framework.

## Setting Content Engine security

You must set security permissions for Business Process Framework data model files that you imported into the object store.

Business Process Framework Installer imports Business Process Framework specific data model files to the object store. After you import the required data model files to the object store, you must set security permissions. LDAP role groups refer to the LDAP groups that correspond to Business Process Framework Metastore roles.

1. Use Enterprise Manager to apply security permissions to the Business Process Framework specific classes and objects as listed in the following tables.

   **Object Stores Realm (top-level EM root node)**

| Group | Security permissions |
|---|---|
| Administrative users or groups | Full Control |
| #AUTHENTICATED-USERS (or LDAP role groups) | Use stores and services |

   ***os_display_name* (root node)**
   Where *os_display_name* is the object store name.

| Group | Security permissions |
|---|---|
| Administrative users or groups | Full Control |
| #AUTHENTICATED-USERS (or LDAP role groups) | Use stores and services |

   ***os_display_name* → Other Classes → Custom Object → *object_type***
   Where *object_type* is one of the following types:
   - **Bp8Object**
   - **Bp8Attachment**
   - **Bp8AuditLogItem**
   - **Bp8Case** and subclasses, where each subclass might have different LDAP role groups assigned

   If you are changing security on an object store that contains the above object instances, apply the Default Instance Security to any existing instances of the classes listed above.

| Groups | Security permission sets | Default instance security permission sets |
|---|---|---|
| Administrative users or groups | Full Control | Full Control |
| LDAP role groups | Modify Properties | Modify Properties |

   ***os_display_name* → Root Folder → BPF → Bp8Settings: object instance [search for id = B4DF1A0E-CB28-4979-B34B-F997F9E30E3D]**
   This is the object instance, not the Bp8Settings class.

| Group | Security permissions |
|---|---|
| Administrative users or groups | Full Control |
| LDAP role groups | Modify properties |

*os_display_name* → **Root Folder** → **BPF** → **Site Layouts**

| Group | Security permissions |
|---|---|
| Administrative users or groups | Full Control |
| LDAP role groups | Modify properties |

*os_display_name* → **Document Class** → *document_class_name*
where each *document_class_name* subclass might have different LDAP role groups assigned.

| Group | Security permissions |
|---|---|
| Administrative users or groups | Full Control |
| LDAP role groups | Modify properties |

2. Restart the Content Engine application server.

# Deploying Business Process Framework documentation

You can deploy the Business Process Framework documentation from the documentation CD.

To deploy Business Process Framework documentation:

1. Insert the documentation CD into a CD reader.
2. For systems other than Windows, mount the CD device.

   "Installing the Business Process Framework help documentation on WebSphere Application Server"
   To view help topics for Business Process Framework, you must install and deploy the `bpf_help.war` file on WebSphere Application Server.

   "Installing the Business Process Framework help documentation on Oracle WebLogic Server 8.1.x" on page 81
   To view help topics for Business Process Framework, you must install and deploy the `bpf_help.war` file on Oracle WebLogic Server 8.1.x.

   "Installing the Business Process Framework help documentation on Oracle WebLogic Server 9.2.x or 10" on page 81
   To view help topics for Business Process Framework, you must install and deploy the `bpf_help.war` file on Oracle WebLogic Server 9.2.x. or 10

   "Installing the Business Process Framework help documentation on JBoss Application Server 4.0.x or 4.2.x" on page 82
   To view help topics for Business Process Framework, you must install and deploy the `bpf_help.war` file on JBoss Application Server 4.0.x or 4.2.x.

## Installing the Business Process Framework help documentation on WebSphere Application Server

To view help topics for Business Process Framework, you must install and deploy the `bpf_help.war` file on WebSphere Application Server.

To install Business Process Framework help:

1. Install Business Process Framework Help from the WebSphere Application Server administrative console:
   a. Click **Applications** → **Enterprise** → **Applications** → **Install**.
   b. Browse to `bpf_help.war` file on the documentation CD.

c. Enter Context Root: *web BPF help name*
d. Click **Next** or **Continue** until Install New Application screen is reached.
e. Click **Finish**. A success message is displayed.
f. Click **Save to Master Configuration**.
g. Click **Save**.

2. Confirm that Business Process Framework Help is functional:
   a. From the WebSphere Application Server administrative console, go to **Applications → Enterprise Applications**.
   b. Check *web BPF help name*.
   c. Click **Start**.
   d. Invoke help: http://*web application server*:9080/*web BPF help name*

## Installing the Business Process Framework help documentation on Oracle WebLogic Server 8.1.x

To view help topics for Business Process Framework, you must install and deploy the `bpf_help.war` file on Oracle WebLogic Server 8.1.x.

To install Business Process Framework help:

1. Install Business Process Framework Help from the WebLogic Server administrative console.
   a. Click **Deployments → Web Application Modules**.
   b. Click **Deploy a new Web Application Module**.
   c. Click **Upload your files**.
   d. Browse to `bpf_help.war` or the `bpf_help` folder on the documentation CD.
   e. Click **Upload**.
   f. Select the target `bpf_help.war` or `bpf_help` and click **Target Module**.
   g. Enter Name: `web BPF help name`.
   h. Click **Deploy**.
2. Confirm Business Process Framework Help is functional. Invoke help: `http://web application server:7001/web BPF help name`.

## Installing the Business Process Framework help documentation on Oracle WebLogic Server 9.2.x or 10

To view help topics for Business Process Framework, you must install and deploy the `bpf_help.war` file on Oracle WebLogic Server 9.2.x. or 10

To install Business Process Framework help:

1. Start the application server.
2. From theWebLogic Server Console, navigate to the domain to which you want to deploy Business Process Framework Web application.
3. Click **Deployments**.
4. (Oracle WebLogic Server 9.2.x only) Under Change Center, click **Lock & Edit**.
5. From the right pane of the WebLogic Server Console, browse and select the radio button for `bpf_help.war` or the `bpf_help` folder on the documentation CD.
6. Click **Install**. Accept the defaults for the deployment.
7. Click **Finish**. Business Process Framework Web application is deployed.
8. To verify that the deployment was successful, expand Web applications. The Web application Business Process Framework help is listed.

## Installing the Business Process Framework help documentation on JBoss Application Server 4.0.x or 4.2.x

To view help topics for Business Process Framework, you must install and deploy the `bpf_help.war` file on JBoss Application Server 4.0.x or 4.2.x.

To install Business Process Framework help:

1. Copy the `bpf_help.war` file or the `bpf_help` folder from the documentation CD to *JBOSS_HOME*`/server/`*server_name*`/deploy/`.
2. If you copied the folder, rename the new folder to `bpf_help.war`.
3. Restart the JBoss Application Server.
4. Verify that the application deployed successfully, by browsing to the Business Process Framework help URL: http://*server_name*:*port*/bpf_help

   The default port number is 8080.

# Setting tuning parameters (optional but highly recommended)

This optional but highly recommended step sets the Business Process Framework **Case ID** and **Microsoft Internet Explorer Cache Setting** parameters.

Temporarily disable metadata cache. When you configure the system, disable Metadata cache in Business Process Framework Explorer: **Application Settings** → **Enable Metadata cache = False**.

**Remember:** When Metadata cache is enabled, Business Process Framework Explorer changes take effect only after the Web application is restarted.

Set the following parameters:

**Case ID**
: Reset the Case ID back to 1 with each release or set it to a particular starting number. To make that change, locate the Settings object in the *Root Folder*`/BPF` folder in the Content Engine repository and set the Bp8LastCaseID to a desired number.

**Microsoft Internet Explorer Cache Setting**
: Set the Microsoft Internet Explorer cache setting to automatic on user desktops to achieve best performance. To verify or correct the browser settings, open **Tools** → **Internet Options** → **General tab** → **Settings** and ensure the Check for newer versions of stored pages is set to Automatically.

**Tip:** This setting is not needed on JBoss Application Server.

"Setting the **HTTP Connection Timeout** parameter in WebSphere Application Server"
You must set the **HTTP Connection Timeout** parameter on WebSphere Application Server.

"Setting the JVM heap size on Oracle WebLogic Server" on page 83
You must set the JVM heap settings on Oracle WebLogic Server.

## Setting the HTTP Connection Timeout parameter in WebSphere Application Server

You must set the **HTTP Connection Timeout** parameter on WebSphere Application Server.

To set the **HTTP Connection Timeout** parameter:

1. Increase the HTTP connection timeout from the default 5 seconds to 10 seconds or more.
2. Modify **ConnectionIOTimeout** and **ConnectionKeepAliveTimeout** parameters in WebSphere Application Server.

   Changing these parameters is required to resolve timeout and XML parsing errors that might be observed on slow or busy network connections.
3. Follow the instructions for your version of WebSphere Application Server for setting HTTP transport custom properties.

**Related information**

WebSphere Application Server 7.x HTTP transport custom properties

Setting WebSphere Application Server 6.x HTTP transport custom properties

## Setting the JVM heap size on Oracle WebLogic Server

You must set the JVM heap settings on Oracle WebLogic Server.

To set the JVM heap settings:

1. Set JVM heap minimum and maximum settings to an equal number.

   This step minimizes the negative performance effects of the garbage collection in Java™.
2. Set the heap size to 256 MB or more on the production installation.

# Adding database indexes in the Content Engine database

You must add database indexes to properties in the Content Engine object store.

You must index the following properties in the Content Engine object store:

*Table 25. Object store properties*

| Object | Index field name |
|---|---|
| Bp8Attachment | Bp8ObjectGUID |
| Bp8Attachment | Bp8Attachment_ Bp8Case |
| Bp8AuditLogItem | Bp8AuditLogItem_ Bp8Case |
| Bp8Case | Bp8CaseID |

Do the following steps for each of the items previously listed by using Enterprise Manager:

1. Navigate to **Enterprise Manager** → *os display name* → **Other Classes** → **Custom Object** → **Bp8Object**.
2. Right click the appropriate object.
3. Select **Properties**.
4. Select **Property Definitions** tab.
5. Check the **Inherited Properties** check box.
6. Select the appropriate field name.
7. Click **Edit**.
8. Verify that the Indexed text box has value of single indexed. If not:
   a. Click the **Set/Remove** button.
   b. Click **Set** radio button.

c. Check the **Single Indexed** check box.
d. Click **OK**.

9. Click **OK** to close Properties page.

## Configuring Business Process Framework SSL security (optional)

You can optionally configure Business Process Framework to direct sign-ins through a Secure Socket Layer (SSL) HTTPS connection.

The Business Process Framework Web application must be installed.

Business Process Framework Web application supports the following methods of configuring an SSL environment:

**Full SSL support**
A single Business Process Framework Web application server, where all of the software is running under SSL.

**One server SSL redirect**
One Business Process Framework Web application server set up to redirect logon attempts on the non-SSL port to the SSL port.

**Two server SSL redirect**
Two Business Process Framework Web application servers, where one is SSL-enabled, and the other redirects users to the SSL-enabled Business Process Framework Web application server to log on.

"Setting up full SSL support on a single Business Process Framework Web application server"
You can set up full SSL support on a single Business Process Framework Web application server.

"Setting up SSL redirect on a single Business Process Framework Web application server" on page 85
You can set up SSL redirect on a single Business Process Framework Web application server.

"Setting up SSL redirect on two Business Process Framework Web application servers" on page 85
You can set up SSL redirect on two Business Process Framework Web application servers.

### Setting up full SSL support on a single Business Process Framework Web application server

You can set up full SSL support on a single Business Process Framework Web application server.

To set up full SSL support:

1. Enable SSL on the application server that runs Business Process Framework Web application (see your SSL documentation).
2. Test the SSL connection by signing into Business Process Framework Web application by using the following URL: https://*BPF_Web_Application_server_name*:*SSL port*/Context_Root

   The entire sign-in process is handled by the SSL-enabled host.

## Setting up SSL redirect on a single Business Process Framework Web application server

You can set up SSL redirect on a single Business Process Framework Web application server.

To set up SSL redirect:

1. Enable SSL on the application server that runs Business Process Framework Web application (see your SSL documentation).
2. Change the sslInfo attribute in bootstrap preferences file (SERVER:HTTPSPORT) format. Save the file.

   **Tip:** The first time you log on to Business Process Framework Web Application, you get a bootstrap page to set Business Process Framework bootstrap information. You can set sslinfo attribute from bootstrap page. For subsequent logons you manually edit the bootstrap preference file to set sslinfo attribute.
3. Sign out of Business Process Framework Web Application, and close your browser.
4. Test the SSL connection by signing into Business Process Framework Web Application by using the following URL: http://*BPF_Web_Application_server_name:non-SSL port*/Context_Root

   You are redirected to the SSL-enabled port for sign in, then back to the non-SSL enabled port after sign-in is complete.

## Setting up SSL redirect on two Business Process Framework Web application servers

You can set up SSL redirect on two Business Process Framework Web application servers.

To set up SSL redirect:

1. Install Business Process Framework Web application on both computers so that both Business Process Framework Web applications use the same `bootstrap.properties` and `UTCryptokeyFile.properties` files. (The Setup program prompts you to configure both locations. For SSL redirect to work, each Business Process Framework Web application must use the same User Token cryptographic key file).
2. Change the sslInfo attribute in bootstrap preferences file (SERVER:HTTPSPORT) format. Save the file.
3. Sign out of both Business Process Framework Web application and close your browser.
4. Test the SSL connection by signing into first Business Process Framework Web application by using the following URL: http://*BPF_Web_Application_server_name:non-SSL port*/Context_Root

   You are redirected to the SSL-enabled port for sign in to the second Business Process Framework Web application instance, and then back to the non-SSL enabled port after sign-in is complete.

# Modifying Business Process Framework operations logging (optional)

You can change the default Business Process Framework logging operations.

Logging in the Business Process Framework operations component is enabled by default by using the ERROR level. The following levels are supported:

**error** Log errors only (default).

**warning**
Log errors and warnings.

**info** Log all above and information type messages.

**debug** Log information on the detailed level (this option might generate large file).

By default, logging is directed to the `Bp8Operations` file located in the `BPF\bpfops` folder. A new empty log is created at the end of each day.

To modify Business Process Framework operations logging:

1. Extract `log4j.xml` from the *install.home*`/bpfops/bp8ciops.jar` package by using WinZip or another tool.
2. Modify the following sections of the `log4j.xml` file:
   - Log File Name: `param name="File" value="bp8operations.log"/` where value = the name and the location of the log file.

     **Tip:** The default location of log files is the `\bin` directory of the running JVM. Be aware that usage of absolute path (including drive letter) is impossible, but any relative path from bin directory of JVM directory can be used. For example: `/../../../logs/bp8ciops.log`.
   - Logging Level: `level value ="error"/` where value = error, warning, info, or debug
3. Add the `log4j.xml` file back to `bp8ciops.jar`. Create production and debug level copies of `bp8ciops.jar` to simplify management.
4. Restart the Component Manager for the changes to take effect.

## Creating workflow subscription on the Content Engine Case Management Documents document class (optional)

You can create and configure workflow subscription on Content Engine Case Management Documents document class.

Bypass this step if you are not using the standard process map (Case Management Sample Application).

If you are using the Case Management Sample Application, you must create and configure this Workflow Subscription so that the creation event for new Case Management Documents objects triggers the launch of new workflows that either creates new Business Process Framework Cases (with the new document attached) or attaches the new document to an existing Case (depending on values configured below).

The sample process map has different behavior depending on how the subscription is configured and on the values of DocumentType and AccountNumber in the new document:

- If the DocumentType is set to 1, regardless of whether you map DocumentType in the Property Map, then when the subscription is launched, it will create a case in the Index Inbasket, and attach the document to it.
- If the DocumentType is set to 2 and DocumentType is not mapped in the Property Map, then when the subscription is launched, it will attach a document to the existing case with the same value in the AccountNumber field, in the

Index inbasket. You must provide a value for AccountNumber or the workflow will not be able to find the existing case. If there are multiple existing cases with that AccountNumber value, the workflow will attach the document to a single arbitrary case.

- If the DocumentType is set to 2 and DocumentType is mapped in the Property Map, then when the subscription is launched, it will create a new case in the Matching Inbasket, and attach the document to it.

Regardless of the behavior that you want, you must change DocEntryStatus from None to DocEntry (interval value is 1) for the sample workflow to operate correctly.

"Creating subscriptions from Enterprise Manager or Workplace"
Follow this procedure to create a subscription from the FileNetEnterprise Manager. You can also create the workflow subscription from Workplace.

"Testing the workflow subscription on the Content Engine Case Management Documents document class" on page 88
You can test workflow subscriptions on Content Engine Case Management Documents document class by creating a new instance of the Case Management Documents class or by launching the workflow manually.

"Troubleshooting the workflow subscription" on page 90
If you launch a workflow subscription and you see no new Case or no new Attachment on an existing Case, ensure that BPF_Operations is running in Component Manager. If BPF_Operations is stopped, restart it and see whether your results now appear as expected.

## Creating subscriptions from Enterprise Manager or Workplace

Follow this procedure to create a subscription from the FileNetEnterprise Manager. You can also create the workflow subscription from Workplace.

To create the subscription:

1. Log on to Enterprise Manager and open the Case Management Documents Class Properties screen by navigating through **Object Stores** → ***os display name*** → **Document Classes** → **Case Management Documents**.
2. Click the **Subscriptions** tab and then click **Create**.
3. Follow the steps indicated by the Content Engine Create a Subscription Wizard. Begin by using Case Management Workflow for the Name and Description on the Name and Describe the Subscription screen. Then, click **Next**.
4. On the Specify the Type of Object screen, click the **Applies to all instances of class Case Management Documents** radio button and ensure to check the Workflow checkbox. Then, click **Next**.
5. On the Specify Triggers screen, select and highlight **Creation Event** in the list of Available Events on the left-hand side of the dialog, then click the **>>** button to move it over to the list of Subscribed Events on the right-hand side of the dialog. Then, click **Next**.
6. On the Specify Workflow Information screen that follows, leave Workflow Event Action selected in the first dropdown list (Select a Workflow Event Action) and then select **Case Management Workflow** in the second dropdown (Select a Workflow Definition). Doing this automatically populates the third dropdown (Select a Version) with the number of the latest (current) version of your Case Management Workflow.
7. Select **Enable Manual Launch** before you click **Next**.

**Remember:** Your Case Management Workflow must be saved as a Workflow Definition document object in your Object Store for it to appear here in the list of available Workflows. Transferring a Workflow Map to the Isolated Region in Process Engine without also saving it in Content Engine does not work. The number in the Isolated Region field defaults to whatever is actually in use on your machine.

8. On the Specify Additional Properties screen, enter `DocEntryStatus=1` for Filter Expression and click **Next**.
9. On the Complete the Create a Subscription Wizard screen, confirm your settings and click **Finish**.
10. Reopen the properties for your new subscription and configure its Property Map. To do this, while still on the Subscriptions tab of the property page for your Case Management Documents Class Properties screen, highlight the new Case Management Workflow subscription and click **Properties**.
11. Click the **Workflow** tab of the Case Management Workflow Properties screen and enter the following Property Map settings:

*Table 26. Property map settings*

| Process Engine property | Content Engine property |
|---|---|
| AccountNumber | AccountNumber |
| Bp8CaseID | Bp8CaseID |
| CompanyName | CompanyName |
| ContractAmount | ContractAmount |
| DocumentType | DocumentType |
| EffectiveDate | EffectiveDate |
| Priority | CasePriority |
| ReceivedDate | ReceivedDate |

**Tip:** The Workflow Property and Document Property names for the Case Management Sample Application are all the same except for CasePriority (Content Engine) and Priority (Process Engine).

12. When you finish adding the last mapping, click **Cancel**. Then, click **Apply** and **OK**.

## Testing the workflow subscription on the Content Engine Case Management Documents document class

You can test workflow subscriptions on Content Engine Case Management Documents document class by creating a new instance of the Case Management Documents class or by launching the workflow manually.

"Starting the workflow subscription by creating a new document instance" on page 89
Creating a document in the Content Engine launches a workflow. The behavior of that workflow varies depending on how the workflow subscription is configured.

"Manually starting the workflow subscription" on page 89
You can manually create the Workflow Subscription in two ways. You can create a new Case Management Documents document and leave DocEntryStatus set to None (0), so that the Workflow Subscription does not run through the Creation Event, and then browse to the new document. You can

also browse to an existing Case Management Documents document in Workplace and open its Information page.

## Starting the workflow subscription by creating a new document instance

Creating a document in the Content Engine launches a workflow. The behavior of that workflow varies depending on how the workflow subscription is configured.

To test the Workflow Subscription by creating a new instance of the Case Management Documents class, log on to Workplace and browse to a folder in your Object Store where you want to place your new documents.

To start the workflow subscription by creating a new document instance:

1. You might have to create this folder yourself. Once there, click the **Add Document** link to launch the Add Document Wizard. Then click the **Change Class** link and select **Case Management Documents**.
2. Enter document property values in the resulting screen, making sure to change DocEntryStatus from None to DocEntry (1). (This is because of the Filter Expression you set when configuring the Workflow Subscription itself.) Otherwise the Workflow Subscription you created is not launched.
3. Enter values for DocumentType and AccountNumber depending on the behavior you want, as explained above.
4. Once you have finished entering the document property values, click the **Next** button, adjust the security settings (on the resulting Set Security screen) as needed (or take the defaults), then click **Next** again and. On the Select File screen, browse to a local file to upload as the content of this new document object. When you are done, click **Finish**. The Workflow Subscription launches a new Workflow.
5. To check the results, log on to the Business Process Framework Web application and look at the case in the Index or Matching Inbasket.

## Manually starting the workflow subscription

You can manually create the Workflow Subscription in two ways. You can create a new Case Management Documents document and leave DocEntryStatus set to None (0), so that the Workflow Subscription does not run through the Creation Event, and then browse to the new document. You can also browse to an existing Case Management Documents document in Workplace and open its Information page.

When you have browsed to the document, make sure to change the value of the DocEntryStatus property to DocEntry (1) if it is already set to any other value. Otherwise, you cannot start the Workflow Subscription. This is because of the Filter Expression you set when configuring the Workflow Subscription itself.

To start the workflow subscription manually:

1. Click the **Launch** link to see the Workplace Launch Processor's Launch Step General screen.
2. Click each of the four links under Information to review the values configured (noting that your current document is set as the Initiating Attachment) and then click the **Launch** button.
3. On the Attachments screen, click the **Assign** link and browse.
4.

## Troubleshooting the workflow subscription

If you launch a workflow subscription and you see no new Case or no new Attachment on an existing Case, ensure that BPF_Operations is running in Component Manager. If BPF_Operations is stopped, restart it and see whether your results now appear as expected.

Try the following tasks to troubleshoot problems with workflow subscriptions on Content Engine Case Management Documents document class.

- If BPF_Operations is running and you still see no effects from launching your Workflow Subscription, open Process Administrator and search for new Work Items to see if any Work Item was launched.
- If a Work Item was launched, open it in Process Tracker to see what went wrong. Click the **Workflow History** tab, highlight the line where the Exception occurred, right click and select **View Information Stack...**. Then highlight the line in the upper pane and then hover your mouse pointer above the Error Message text to see full information about the error.
- Alternatively, if a search in Process Administrator indicates that no Work Item was launched at all, open the Windows Application Event Log on the Content Engine server to see if any error occurred during launch.

# Configuring for multiple object store support

You can configure Business Process Framework to support multiple object stores.

Business Process Framework 4.1 adds multiple object store support. A single Business Process Framework application can use different object stores for its attachments, audit logs and case object data. If an existing application uses this feature, some changes to the previous 4.1 configuration are required.

Many of these changes are made to queries that could be customized in an existing installation. Ensure that you retain your customizations when you apply these updates.

**Remember:** There is no automated way to migrate existing data from one object store to another. After you enable multiple object store support, all preexisting case objects, audit logs, attachments, and so on are located in the same object store.

"Roles of object stores in a multiple object store configuration" on page 91
You can configure different object stores for a Business Process Framework environment that uses multiple object stores.

"Configuring object stores for multiple object store support" on page 91
The Bootstrap Object Store setting, Default Object Store setting, Case Object Store settings (one per case type), and Audit Log Object Store settings (one per case type) in the Business Process Framework Metastore can all point to the same object store, or each can point to a different object store, or some mixture in between.

"Configuring additional case types to use multiple object stores" on page 93
The case object store and audit log object store are configured on the case type. If you want to store case objects or audit log entries in multiple object stores, you will have to define multiple case types, and configure each case type to specify the desired Case Object Store and Audit Log Object Store.

## Roles of object stores in a multiple object store configuration

You can configure different object stores for a Business Process Framework environment that uses multiple object stores.

You can prepare the following types of object stores:

**Bootstrap object store**
The bootstrap object store is used for resolving Workplace site preference, Access Roles, Bp8Settings object for CaseId generation, and site preference. The object store filling this role is configured as a System-Wide setting.

**Default object store**

The default object store is used to store Case Object, Audit logs, and Attachment objects for any Case Type if there is no specific Object Store mentioned under the Case Type configuration.

If the case type is not known, Business Process Framework looks for the case first in the default object store. All cases created in previous releases of Business Process Framework are assumed to reside in the default object store. The object store filling this role is configured as a System-Wide setting.

**Case object store**
The case object store is used to store the Bp8Case and Bp8Attachment custom objects for Business Process Framework cases of a given case type. Each Case Type configuration has a setting for the object store which will fill this role for cases of that type.

**Audit log object store**
The audit log object store is used to store the audit log entries for Business Process Framework cases of a given case type. Each Case Type configuration has a setting for the object store which will fill this role for cases of that type.

## Configuring object stores for multiple object store support

The Bootstrap Object Store setting, Default Object Store setting, Case Object Store settings (one per case type), and Audit Log Object Store settings (one per case type) in the Business Process Framework Metastore can all point to the same object store, or each can point to a different object store, or some mixture in between.

The Business Process Framework application installer will initially specify a single Object Store to fill all of these roles throughout the Metastore. Any other object store configuration must be configured manually after installation. In addition to changing the setting in the Metastore, object stores must be prepared for use by Business Process Framework.

The remainder of this section assumes that `ce_ CaseType.xml` is the Content Engine data model for the case type, including the data model for:

- CaseType subclass under the Bp8Case class.
- CaseType Document subclass under the Document class.

"Preparing an object store to be the bootstrap object store" on page 92
You must manually prepare an object store to be the bootstrap object store.

"Preparing an object store to hold Business Process Framework case objects of a given case type" on page 92
You must prepare an object store to hold Business Process Framework case objects from selected case types.

"Preparing an object store to hold Business Process Framework audit log entries for cases of a given case type"
You can prepare an object store to hold Business Process Framework audit log entries for selected case types.

"Preparing an object store to hold Business Process Framework documents tied to cases of a given case type" on page 93
You can prepare an object store to hold Business Process Framework documents that are tied to case of selected case types.

"Preparing an object store to hold Business Process Framework attachments" on page 93
Attachments to Business Process Framework cases can reside in any object store in the IBM FileNet P8 domain, without restriction. (This refers to the actual attached document, folder or custom object.

## Preparing an object store to be the bootstrap object store

You must manually prepare an object store to be the bootstrap object store.

The **System-wide setting → Bootstrap Content Engine Object Store Name** setting specifies the display name of the Bootstrap Object Store. This object store contains Workplace access roles, the CaseId generation object (Bp8Settings), Business Process Framework stored searches and the Business Process Framework site preferences.

To manually configure the bootstrap object store:

1. Identify the object store that has Workplace site preference stored.
2. In Enterprise Manager, import the file `ce_base.xml` to the object store. Importing the file generates a Bp8Settings object called Settings in the **Operating system → Root Folder → Business Process Framework** folder in the object store.

If the Business Process Framework system is already running and you must import the `ce_base.xml` file again to the bootstrap Object Store, do the following tasks:

- Record the last case ID. Right-click the Bp8Settings object and select **Properties**. Click the **Properties** tab. Record the Bp8LastCaseID property value.
- Import the `ce_base.xml` file.
- Manually update Bp8LastCaseID property value to the recorded case ID.

## Preparing an object store to hold Business Process Framework case objects of a given case type

You must prepare an object store to hold Business Process Framework case objects from selected case types.

To prepare an object store:

1. Import the file `ce_base.xml` into the Object Store, if this was not done previously.
2. Import the data model from the file `ce_`*`CaseType`*`.xml`, including:
   - The CaseType subclass under the Bp8Case class.
   - The CaseType Documents subclass under the Document class.

## Preparing an object store to hold Business Process Framework audit log entries for cases of a given case type

You can prepare an object store to hold Business Process Framework audit log entries for selected case types.

To prepare an object store:

1. Import the file `ce_base.xml` into the Object Store if this was not done previously.
2. Import the data model from the file `ce_CaseType.xml`, including:
   - The CaseType subclass under the Bp8Case class.
   - It is not necessary to create the CaseType Documents subclass under the Document class.

### Preparing an object store to hold Business Process Framework documents tied to cases of a given case type

You can prepare an object store to hold Business Process Framework documents that are tied to case of selected case types.

To prepare an object store:

1. Import the file `ce_base.xml` into the Object Store, if this was not done previously.
2. Import the data model from the file `ce_CaseType.xml`, including:
   - The CaseType subclass under the Bp8Case class.
   - The CaseType Documents subclass under the Document class.

### Preparing an object store to hold Business Process Framework attachments

Attachments to Business Process Framework cases can reside in any object store in the IBM FileNet P8 domain, without restriction. (This refers to the actual attached document, folder or custom object.

Each such attachment is referenced by a Business Process Framework Attachment object, which always resides in the same object store with the Business Process Framework case object.)

Because no Business Process Framework data is stored with the attachment, no special preparation of the object store is required.

## Configuring additional case types to use multiple object stores

The case object store and audit log object store are configured on the case type. If you want to store case objects or audit log entries in multiple object stores, you will have to define multiple case types, and configure each case type to specify the desired Case Object Store and Audit Log Object Store.

When you define additional case types, also create a search template for the new case type.

# Legacy cases in a multiple object store environment

The original cases that were created in Business Process Framework 4.0 are stored in the DefaultOS in Business Process Framework 4.1. Likewise, any cases that were created in Business Process Framework 4.1 before you configure the system for multiple object stores will have all their data stored in the DefaultOS. These cases are referred to as legacy cases.

In general, legacy cases (cases created in previous releases of Business Process Framework software) will function without issue in a multiple object store

environment. There are consequences to changing case type settings to use a different object store when you have existing legacy cases of that type.

"Impact on existing legacy cases when changing case object store"
When changing the Case Object Store on a case type configuration to a different object store than the default, you are responsible for moving the existing legacy cases to the new object store. If the cases are not moved, they will not be visible to the Business Process Framework application, since Business Process Framework will expect to find them in the new object store.

"Impact on existing legacy cases when changing audit log object store"
When you change the audit object store on a case type configuration to a different object store than the default, you are responsible for moving the existing audit log objects to the new object store. If the audit entries are not moved, they will not be visible in the Business Process Framework Web application, because Business Process Framework will expect to find them in the new object store.

"Impact on existing legacy cases when changing document object store"
You can change the document object store to reference a different object store without impacting the existing legacy cases.

"Example: impact on existing legacy cases when changing object store settings" on page 95
This example describes the impact on existing legacy cases when you change the Case Management case type object store setting.

"Multiple object store capabilities in workflows" on page 95
To make full use of the multiple object store support capabilities, you must use a workflow that is enabled for multiple object store support.

## Impact on existing legacy cases when changing case object store

When changing the Case Object Store on a case type configuration to a different object store than the default, you are responsible for moving the existing legacy cases to the new object store. If the cases are not moved, they will not be visible to the Business Process Framework application, since Business Process Framework will expect to find them in the new object store.

If the cases are not moved, they will not be visible to the Business Process Framework application, since Business Process Framework will expect to find them in the new object store.

## Impact on existing legacy cases when changing audit log object store

When you change the audit object store on a case type configuration to a different object store than the default, you are responsible for moving the existing audit log objects to the new object store. If the audit entries are not moved, they will not be visible in the Business Process Framework Web application, because Business Process Framework will expect to find them in the new object store.

## Impact on existing legacy cases when changing document object store

You can change the document object store to reference a different object store without impacting the existing legacy cases.

Changing the document object store to reference a different object store does not impact existing legacy cases.

For example, if you changed the Case Management case type setting to use multiple object stores as follows:

- Case object store: Defaultobject store
- AuditLog object store: object store 2
- Document object store: object store 3

In this situation, you could:

- View and update legacy cases. However, the legacy audit logs might be missing unless you moved them to object store 2.
- Attach a document from any object store to legacy cases. In this situation, Business Process Framework saves the audit logs to object store 2.
- Create, view, and update new cases. In this situation, Business Process Framework saves the cases to the Default Object Store and the audit logs to object store 2.
- Attach a document from any object store to a case without restriction. Attached documents, folders or custom objects can reside in any object store regardless of settings on the case type.

## Example: impact on existing legacy cases when changing object store settings

This example describes the impact on existing legacy cases when you change the Case Management case type object store setting.

For example, if you changed the Case Management case type setting to use multiple object stores as follows:

- Case object store: Defaultobject store
- AuditLog object store: object store 2
- Document object store: object store 3

In this situation, you could:

- View and update legacy cases. However, the legacy audit logs might be missing unless you moved them to object store 2.
- Attach a document from any object store to legacy cases. In this situation, Business Process Framework saves the audit logs to object store 2.
- Create, view, and update new cases. In this situation, Business Process Framework saves the cases to the Default Object Store and the audit logs to object store 2.
- Attach a document from any object store to a case without restriction. Attached documents, folders or custom objects can reside in any object store regardless of settings on the case type.

## Multiple object store capabilities in workflows

To make full use of the multiple object store support capabilities, you must use a workflow that is enabled for multiple object store support.

The staging folder contains sample workflows for use with both single object store and multiple object store configurations, for cases with and without eForms:

*Table 27. Multiple object support*

| Folder or file | Description |
|---|---|
| `misc/solutions/case management/config/` | Case Management sample configuration |
| | CaseManagement.pep<br><br>Sample workflow map for single operating system, non-eForms |
| | CaseManagementMOSS.pep<br><br>Sample workflow map for multiple operating system, non-eForms |
| | eFormsCaseManagement.pep<br><br>Sample workflow map for single operating system with eForms |
| | eFormsCaseManagementMOSS.pep<br><br>Sample workflow map for multiple operating system with eForms |

To switch workflows, check out the old workflow and check in the new one, then transfer the workflow to the Process Engine. If you are using eForms, reconfigure eForms integration to use the new version of workflow following the *eForms Integration Guide*. If there is a Content Engine event subscription associated with the workflow, remember to update it to use the new version of the workflow.

`CaseManagementMoss.pep` uses new Business Process Framework Operations methods that are compatible with multiple object store support. You must modify the object store names for the UpdateCase method.

"Differences between 4.0 and multiple object store support case management sample workflows"
The 4.0 Case Management Sample Workflow cases save their artifacts in a default object store that is specified in the workflow definition. Cases created by using the new sample workflow enabled for Multiple Object Store Support store their artifacts in the object stores specified in the case type definition.

## Differences between 4.0 and multiple object store support case management sample workflows

The 4.0 Case Management Sample Workflow cases save their artifacts in a default object store that is specified in the workflow definition. Cases created by using the new sample workflow enabled for Multiple Object Store Support store their artifacts in the object stores specified in the case type definition.

If you launch the original 4.0 Case Management Sample Workflow to create a case, then the case objects, audit logs and initiating object will all be saved to the default object store specified in the workflow definition, replicating the single object store behavior of Business Process Framework 4.0.

If you instead launch the new sample workflow that is enabled for Multiple Object Store Support to create a case, then the case objects, audit logs and initiating object will be saved to the corresponding object stores specified in the case type definition in Business Process Framework Explorer.

There is also a new sample workflow for use with eForms in a multiple object store environment. The differences are basically the same as for the non-eForms workflows.

# Manually editing installation settings

You can manually edit the configuration settings after the installation is complete. This is useful if the error logs for your installation indicate a problem with the automatic configuration. You can also choose to do some parts of the installation manually.

"Integrating Business Process Framework with Workplace" on page 100
If a redeploy of the Workplace Web application overwrites settings specific to Business Process Framework, you might have to manually recreate these settings.

"Importing Content Engine base objects" on page 103
You can use Enterprise Manager to import base Content Engine objects.

"Importing Content Engine solution specific objects" on page 103
You can use Enterprise Manager to import solution specific objects.

"Creating base or solution specific workflow objects" on page 104
If certain base and solution specific workflow objects were not created during the Business Process Framework automatic installation, you can create them by editing XML files and importing them in the Process Configuration Console.

"Updating the process map" on page 105
Updating the process map is an automated process in the Business Process Framework installation program. If an error occurs during this part of the installation, you can manually update the process map using the Workplace application.

"Configuring Business Process Framework operations" on page 105
You can manually configure the Business Process Framework operations by editing Application Engine and Business Process Framework configuration files.

"Configuring user tokens" on page 109
User token configuration across Workplace and Business Process Framework (and possibly other IBM FileNet P8 applications such as IBM InfoSphere™ Enterprise Records) allows those applications to share credentials. Allowing applications to share credentials avoids the need for multiple login prompts when the user moves between these applications

"Editing the Business Process Framework Web application web.xml file" on page 110
Business Process Framework Installer updates Metastore data source name *meta datasource* and Process data source name *pe datasource* in `web.xml` during installation time.

"Loading the Business Process Framework Metastore" on page 110
You can choose to manually load data into the Business Process Framework Metastore database.

"Importing the Metastore manifest" on page 112
You can use the Business Process Framework Explorer application to import the Metastore manifest.

"Editing the Metastore settings" on page 113
You can edit the Metastore settings by using the Business Process Framework Explorer application.

"Creating the JDBC data source for the Business Process Framework Metastore" on page 115
The Business Process Framework Web application requires a connection to the

data source for the Business Process Framework Metastore. You can create the JDBC data source according to your Web application server and database type.

"Creating the JDBC data source for the Process Engine" on page 127
The Business Process Framework Web application requires a connection to the data source for the Process Engine. You can create the JDBC data source according to your Web application server and database type.

"Deploying the Business Process Framework Web application" on page 139
After you have installed and configured the Business Process Framework server, you can manually deploy the Web application on the application server.

"Applying IBM FileNet P8 Platform changes to the Business Process Framework installation" on page 144
You can apply IBM FileNet P8 Platform changes to the Business Process Framework installation. Verify your installation and component versions.

"Updating the contents of the Business Process Framework WAR file" on page 146
Various procedures involve updating the contents of the Business Process Framework WAR file in the installation location.

"Updating the contents of the Business Process Framework EAR file" on page 146
Various procedures involve updating the contents of the Business Process Framework EAR file in the installation location.

# Integrating Business Process Framework with Workplace

If a redeploy of the Workplace Web application overwrites settings specific to Business Process Framework, you might have to manually recreate these settings.

"Editing Workplace settings"
This step applies to new installations or in cases where Workplace redeployment overwrites Business Process Framework integration settings.

"Workplace integration" on page 101
In addition to creating settings in the Workplace application, you can also edit settings in the configuration files that are part of the Workplace installation.

## Editing Workplace settings

This step applies to new installations or in cases where Workplace redeployment overwrites Business Process Framework integration settings.

It is possible to deploy Workplace again without overwriting the Business Process Framework integration settings, avoiding the need to repeat the integration tasks in this section. To avoid repeating the integration tasks, recreate the `Workplace.war` and `Workplace.ear` files by running `/opt/FileNet/AE/deploy/create_app_engine_war.sh` and `/opt/Filenet/AE/deploy/create_app_engine_ear.sh`.

1. Under **Workplace** → **Admin** → **Site Preferences** → **General**, ensure that these preferences are set:
   - Enable custom objects: **Yes**
   - Add as major version: **Yes**
   - Check in as major version: **Yes**
2. Run Workplace Integration.

## Workplace integration

In addition to creating settings in the Workplace application, you can also edit settings in the configuration files that are part of the Workplace installation.

- GUID (Example: 5309C5AF-6D24-4BDB-BB6C-71C61E7EFC53)

  The object GUIDs shown later in this section are examples for referencing the Case Management class from the Case Management Sample Configuration. You have to add one or more Bp8 Case Object GUIDs representing classes in your solution. These classes are Bp8 Case child classes. Use Enterprise Manager to determine the GUIDS.
- URL (Example: http://p8demo30:7001/BPF/Bp8Main.jsp)

  The URLs shown later in this section are examples and might have to be changed. Consult the IBM FileNet P8 Platform documentation.
- Folder References: All the Workplace folder references are to the deployed instance of Workplace (the instance used by the Web server).
- This procedure assumes that you have imported the following Content Engine manifests (in previous steps):
  - The base Business Process Framework manifest
  - The Case Management manifest or some other custom manifest
- You have only imported the base Workplace manifest if Enterprise Manager does not show any child classes under **Bp8** → **Case** ***os display name*** → **Other Classes** → **Custom Object** → **Bp8** → **Object** → **Bp8**.

### Editing infopages.xml

Do not use lowercase alpha hex digit characters for the id (GUID) parameters in `Actions.xml` and `InfoPages.xml`. Due to a limitation in Workplace, specifying 92689f34-9f53-44ce-85ef-2d561e50d139 instead of 92689F34-9F53-44CE-85EF-2D561E50D139, for example, as a GUID value in the `InfoPages.xml` and `Actions.xml` files (for the Bp8Case custom object class) fails to work. Workplace does not pick up the value. Use only uppercase alpha hex digit characters.

See the procedure introduction for background information. The items in italics are not entered. They are shown in the example later in this section for context only. Edit `InfoPages.xml` in *`AE_install_path`*`/FileNet/Config/AE`. Add this section:

```
<object key="objectInfoPages" version="3.0">
<list key="pages">
<object key="infoPage">
<array key="objectTypes">
<value>customobject</value>
</array>
<array key="classes">
<value>{92689F34-9F53-44CE-85EF-2D561E50D139}</value>
</array>
<setting key="url">http://web app server:web port/web BPF name
  /Bp8IntegrationServlet?_commandId=9000</setting>
<setting key="isPopup">true</setting>
<setting key="popupHeight">550</setting>
<setting key="popupWidth">650</setting>
<setting key="useToken">true</setting>
</object>
</list>
</object>
```

**Remember:** The `object key="infoPage"` subsection can go at the end of the `<list key="pages">` section. Search for `</list>`.

## Editing actions.xml

Do not use lowercase alpha hex digit characters for the ID (GUID) parameters in `Actions.xml` and `InfoPages.xml`.

Due to a limitation in Workplace, specifying 92689f34-9f53-44ce-85ef-2d561e50d139 instead of 92689F34-9F53-44CE-85EF-2D561E50D139, for example, as a GUID value in the `InfoPages.xml` and `Actions.xml` files (for the Bp8Case custom object class) fails to work. Workplace does not pick up the value. Use only uppercase alpha hex digit characters.

See the procedure introduction for background information. The items in italics are not entered. They are shown in the example later in this section for context only. Edit `Actions.xml` in *`AE_install_path`*`/FileNet/Config/AE`. Add the following sections.

Add the following section to the <array key="topLevelActions"> section:

```
<!-- top levelactions -->
 <array key="topLevelActions">
<value>openCase</value>
</array>
```

Add the following section to the <list key="actionDefinitions"> section:

```
<list key="actionDefinitions">
<object key="actionDefinition">
<setting key="id">openCase</setting>
<setting key="title" localizationKey="server.Actions_xml.openInCaseQuery">Open Case
  </setting>
<setting key="url">http://web app server:web port
  /web BPF name/Bp8IntegrationServlet?_commandId=9000&amp;id=
  {OBJECT_ID}&amp;objectType={OBJECT_TYPE}</setting>
<setting key="img">images/action/Launch16.gif</setting>
<setting key="hiddenForGuests">true</setting>
<array key="objectTypes">
<value>customobject</value></array>
<array key="classes">
<value>{92689F34-9F53-44CE-85EF-2D561E50D139}</value>
</array>
<setting key="isPopup">true</setting>
<setting key="useToken">true</setting>
<setting key="popupHeight">550</setting>
<setting key="popupWidth">650</setting>
</object>
</list>
```

- The items earlier in this section in braces (such as OBJECT_TYPE) are to be left alone in the XML. Do not substitute actual values.
- If Business Process Framework is deployed on a Web farm or in a load balancing environment, *Web app server* must point to the name or address of the load balancer.

## Editing integration.xml

See the procedure introduction for background information. The items in italics are not entered; they are shown in the example later in this section for context only. Edit `Integration.xml` in `Workplace...\WEB-INF`. Add the following section:

```
<object key = "propertyPageConfiguration" version = "3.0">
<list key = "commands">
<object key = "command">
<setting key = "id">4030</setting>
```

```
<setting key = "url">Bp8ViewActions.jsp</setting>
<setting key = "description">View by external request</setting>
</object>
<object key = "command">
<setting key = "id">4040</setting>
<setting key = "url">operations/WcmCheckoutObject.jsp</setting>
<setting key = "description">Check Out Document</setting>
</object>
<object key = "command">
<setting key = "id">4050</setting>
<setting key = "url">operations/WcmCancelCheckout.jsp</setting>
<setting key = "description">Cancel Checkout From CheckoutList</setting>
</object>
<object key = "command">
<setting key = "id">4060</setting>
<setting key = "url">wizards/WcmCheckinDocument.jsp</setting>
<setting key = "description">Quick Check In Document</setting>
</object>
</list>
</object>
```

### Copying files

Copy this file to the main folder of the deployed Workplace instance (the parent folder of WEB-INF): Bp8 `ViewActions.jsp`. This file can be found in the *staging folder*`/misc/components/Workplace` folder.

**Tip:** For more information about Workplace integration, see **BPF Advanced Configuration** → **BPF Integration Servlet** in the Business Process Framework Help documentation.

### Reloading XML files

To reload the XML files in Workplace:

1. Click **Admin** → **Site Preferences** → **Refresh**.
2. Click **Reload configuration files**.

**Tip:** See the IBM FileNet P8 Platform documentation for further details on modifying the `Actions.xml` and `InfoPages.xml` files.

## Importing Content Engine base objects

You can use Enterprise Manager to import base Content Engine objects.

If any error occurs during the import of the base Content Engine objects, the installation program shows an error message at the end of installation.

In such a condition use Enterprise Manager to import it manually.

See the IBM FileNet P8 Platform documentation for the import procedure details.

- Base Business Process Framework Objects: *staging folder*`/misc/base/config/ce_base.xml`

## Importing Content Engine solution specific objects

You can use Enterprise Manager to import solution specific objects.

If any error occurs during the import of the solution specific Content Engine objects, the installation program shows an error message at the end of installation.

If this occurs, you can use Enterprise Manager to import the solution specific objects manually.

- Case Management Sample Configuration: *staging folder*/misc/solutions/case_management/config/ce_cm.xml

See the IBM FileNet P8 Platform documentation for the import procedure details.

## Creating base or solution specific workflow objects

If certain base and solution specific workflow objects were not created during the Business Process Framework automatic installation, you can create them by editing XML files and importing them in the Process Configuration Console.

To create base or solution-specific workflow objects manually, set the following parameter values in Workplace:

1. Point your browser to: http://*web application server*:*port*/Workplace

   **Tip:** Consult your Web application service for the correct port number.
2. From the Workplace menu, select **Author** → **Advanced Tools** → **Process Configuration Console**.
3. Locate the connection point that is configured with the isolated region where you want your base or solution-specific objects to be created. Right click the connection point and click **Import from XML file**. navigate to base or solution specific object creation XML file.
4. Browse to the base or solution specific object creation XML file. The XML files are located in *staging folder*/misc/wfutil/
   - For base workflow objects, use qcreate_base.xml.
   - For solution-specific workflow objects, use qcreate_cm.xml.

   **Important:**
   - Do NOT modify the qcreate_base.xml file in the *staging folder*/misc/base/config folder or the qcreate_cm.xml file in the *staging folder*/misc/solutions/case_management/config folder. The files in those folders are used by the Business Process Framework installer only.
   - Choose, but do NOT modify the qcreate_base.xml and qcreate_cm.xml files in the *staging folder*/misc/wfutil/. Use the files in those folders for manual import through Process Configuration Console. They have the same names but different content from the files in the config folders.
5. Click **Yes** on the Caution screen. The import progress and success status are displayed.

**Related concepts**

"Environment conditions that require additional manual configuration after installation" on page 25
The Business Process Framework installation program automatically configures the P8 Platform environment to work with Business Process Framework. However, some component versions require additional manual configuration after the installation is complete.

## Updating the process map

Updating the process map is an automated process in the Business Process Framework installation program. If an error occurs during this part of the installation, you can manually update the process map using the Workplace application.

Determine which process map to use:

- Custom Process Map: You have your own process map.
- Case Management Sample Configuration: You are using the Case Management Sample process map, located at *staging folder*\misc\solutions\case_management\config\CaseManagement.pep

To update the process map:

1. Start your Web browser and log in to Workplace.
2. Select **Author** → **Advanced Tools** → **Process Designer** from the Workplace menu.
3. Select **File** → **Open...** and navigate to the pep file.
4. If you are using the Case Management Sample process map, the object store names must be updated from the default value Bp8ObjectStore to the name of your actual object store in these three operations: Create Case, Attach Document and Update Case.
5. Click **File** → **Validate**. (Verify that there are no errors.)
6. Select **File** → **Transfer**. (Save the workflow to a wanted folder location such as *ObjectStore* → **BPF** → **Workflow** folder. (Verify that the transfer is successful.)
7. Select **File** → **Exit**. (Check in the workflow.)

**Related concepts**

"Environment conditions that require additional manual configuration after installation" on page 25
The Business Process Framework installation program automatically configures the P8 Platform environment to work with Business Process Framework. However, some component versions require additional manual configuration after the installation is complete.

## Configuring Business Process Framework operations

You can manually configure the Business Process Framework operations by editing Application Engine and Business Process Framework configuration files.

"Editing the taskman policy" on page 106
The `taskman.policy` configuration file contains a privilege setting for the `bp8ciops.jar` file.

"Editing the taskman.properties file" on page 106
You can edit the `taskman.properties` located in the Router folder in the Application Engine installation folder.

"Adding taskman libraries (vwtaskman.xml)"
The Task Manager uses a set of libraries that must be added to vwtaskman.xml during Business Process Framework installation.

"Editing taskman login configuration" on page 108
You can edit the taskman.login.config file to match your environment settings.

"Editing Business Process Framework operations component queue" on page 108
You can use the Process Configuration Console to edit the operations component queue.

## Editing the taskman policy

The taskman.policy configuration file contains a privilege setting for the bp8ciops.jar file.

To edit the taskman policy:

1. Edit **taskman.policy**. (By default, it is found in the Router folder in the Application Engine installation folder.)
2. If bp8ciops.jar file is not listed, create a new section to grant the required privileges.

   Example:

```
grant codeBase "file: {install.home} /bpfops/bp8ciops.jar "
{
     permission java.security.AllPermission;
};
```

3. Save and close taskman.policy.

## Editing the taskman.properties file

You can edit the taskman.properties located in the Router folder in the Application Engine installation folder.

To edit the taskman.properties file:

1. Edit taskman.properties. (By default, it is found in the Router folder in the Application Engine installation folder.)
2. Add path for *install.home*/bpfops/bp8ciops.jar to TaskManager.ComponentManager.ClassPath.

## Adding taskman libraries (vwtaskman.xml)

The Task Manager uses a set of libraries that must be added to vwtaskman.xml during Business Process Framework installation.

The Task Manager uses the following libraries:

*Table 28. Task Manager libraries*

| Expected path | Library short name |
|---|---|
| *install.home*/bpfops/bp8ciops.jar | bp8ciops.jar |
| *install.home*/bpfops/lib/oracleJDBCDriver_stub.jar | oracleJDBCDriver_stub.jar |
| *install.home*/bpfops/lib/sqlJDBCDriver_stub.jar | sqlJDBCDriver_stub.jar |
| *install.home*/bpfops/lib/db2JDBCDriver_stub.jar | db2JDBCDriver_stub.jar |

The JDBC Data Source configuration and roster configuration file, bp8_config.xml, is distributed in the *install.home*/bpfops/bp8ciops.jarfile. Extract bp8_config.xml from the bp8ciops.jar package by using WinZip or another tool.

Set the following XML elements as indicated:

- User: *meta user*
- Password: *meta password*
- Database: *meta database*
- Server: *metadata server*

Put the updated bp8_config.xml file into the bp8ciops.jar package.

**Tip:**

- You might have to uncomment the JDBC section for your database.
- XML parser errors can occur when BPF_Operations is used with Oracle if the JDBC node for MSSQL is commented out. You must delete the node for MSSQL from the bp8_config.xml file to prevent such errors.

To add taskman libraries:

| Option | Description |
|---|---|
| **DB2** | Add the required files to the vwtaskman.xml file as follows:<br>1. Start the Application Engine Process Task Manager (using **routercmd**).<br>2. Stop the Component Manager (in the Application Engine).<br>3. Go to the **Required Libraries** tab.<br>4. Add the following files from the /opt/FileNet/BPF/bpfops/lib folder:<br>• db2jcc.jar<br>• db2jcc_license_cu.jar<br>• oracleJDBCDriver_stub.jar<br>• sqlJDBCDriver_stub.jar<br>5. Add the bp8ciops.jar file from the /opt/FileNet/BPF folder. |
| **Microsoft SQL Server** | Add the required files to the vwtaskman.xml file as follows:<br>1. Set the DBType to **MSSQL**.<br>2. Start the Application Engine Process Task Manager (by using **routercmd** ).<br>3. Stop the Component Manager (in the Application Engine).<br>4. Go to the **Required Libraries** tab.<br>5. Add the following files from the /opt/FileNet/BPF/bpfops/lib folder:<br>• jtds-1.x.y.jar<br>• db2JDBCDriver_stub.jar<br>• oracleJDBCDriver_stub.jar<br>6. Add the bp8ciops.jar file from the /opt/FileNet/BPF folder. |

| Option | Description |
| --- | --- |
| **Oracle** | Add the required files to the `vwtaskman.xml` file as follows:<br>1. Set the DBType to **Oracle**.<br>2. Start the Application Engine Process Task Manager (by using **routercmd**).<br>3. Stop the Component Manager in the Application Engine.<br>4. Go to the **Required Libraries** tab.<br>5. Add the following files from the `/opt/FileNet/BPF/bpfops/lib` folder:<br>• `db2JDBCDriver_stub.jar`<br>• `ojdbc14.jar`<br>• `db2JDBCDriver_stub.jar`<br>• `sqlJDBCDriver_stub.jar`<br>6. Add the `bp8ciops.jar` file from the `/opt/FileNet/BPF` folder. |

## Editing taskman login configuration

You can edit the `taskman.login.config` file to match your environment settings.

To edit taskman login configuration:

1. Open `taskman.login.config` for editing.

   By default, `taskman.login.config` is in the Router subdirectory in the Application Engine installation directory.
2. Edit the routername setting under CELogin, if necessary to match your environment settings.

   **Tip:** Do not use localhost as a system name.
   For example:

```
CELogin
{
     filenet.vw.server.VWLoginModule required
routerurl="{pe connection point name}";
     com.filenet.wcm.toolkit.server.operations.util.CELoginModule
          required credTag=Clear;
};
```

3. Save and close `taskman.login.config` file.

## Editing Business Process Framework operations component queue

You can use the Process Configuration Console to edit the operations component queue.

To edit Business Process Framework operations component queue:

1. Navigate to **P8 Workplace** → **Admin** → **Process Configuration Console**, right-click the connection point icon for your Isolated Region, and choose **Connect**.
2. Open the Server node for your Process Engine Server, right-click the **Component Queues** node, and select **Register Additional Classes**.
3. On the Jar File Locations tab of the Component Registration dialog:

a. Navigate to and add the JAR files used by BPF_Operations for your meta database type as follows:

**DB2**

Add db2 drivers and Oracle stub and Microsoft SQL Server stub:

- `db2jcc.jar`
- `db2jcc_license_cu.jar`
- `oracleJDBCDriver_stub.jar`
- `sqlJDBCDriver_stub.jar`

**Oracle**

Add Oracle drivers and DB2 stub and Microsoft SQL Server stub:

- `ojdbc14.jar`
- `sqlJDBCDriver_stub.jar`
- `db2JDBCDriver_stub.jar`

**Microsoft SQL Server**

Add Microsoft SQL Server drivers and DB2 stub and Oracle stub:

- `jtds-1.x.y.jar`
- `oracleJDBCDriver_stub.jar`
- `db2JDBCDriver_stub.jar`

b. Click **OK**.

4. Right-click the BPF_Operations component queue node and select **Properties**. Make sure to select the correct Java class: ″/com/filenet/Operations/Bp8Operations.class″.
5. On the **Adaptor** tab of the property page dialog box, ensure that Java Component is selected in the Adaptor drop-down, and then click **Configure**. Ignore any error regarding introspection class.
6. Navigate to and select the `bp8ciops.jar` file that BPF_Operations is using. Make sure to select the correct Java class `/com/filenet/Operations/Bp8Operations.class`.
7. Click **OK**.
8. To configure an exposed operation, navigate to the **Operations** tab, make the wanted changes, and then click **OK**. Configuring an exposed operation is only necessary to expose your own custom methods as operations. If the normal installation of Business Process Framework operations fails, the fix is to manually import `qcreate_base.xml` or `qcreate_cm.xml` as explained in section “Creating base or solution specific workflow objects” on page 104.
9. Right-click your Connection Point node and select **Commit Changes** to commit your changes to isolated region.
10. Start **Process Task Manager** → **Component Manager** → **BPF_Operations**.

## Configuring user tokens

User token configuration across Workplace and Business Process Framework (and possibly other IBM FileNet P8 applications such as IBM InfoSphere Enterprise Records) allows those applications to share credentials. Allowing applications to share credentials avoids the need for multiple login prompts when the user moves between these applications

For detailed information about how to configure user tokens, please see the IBM FileNet P8 Platform documentation: **IBM FileNet P8 Documentation → Developer Help → Workplace Integration and Customization → User Tokens → Configuring Applications to Use Tokens**.

## Editing the Business Process Framework Web application web.xml file

Business Process Framework Installer updates Metastore data source name *meta datasource* and Process data source name *pe datasource* in `web.xml` during installation time.

These `web.xml` settings were added during the manual configuration process after installation. Business Process Framework installer does not perform data source name validation. In case any of these data source names have been entered wrong during installation, you might want to edit `web.xml` file to correct these entries. These entries can be manually edited in `web.xml` by browsing *`install.home`*`/web/`*`web application name`*`/WEB-INF` location.

WAR or EAR installation requires extracting contents in temporary folder and bundling it again after making correction in `web.xml` .

Modify bold italic text to correct data source names:

- *`init-param`*
- *`param-name MetaStoreDSName/param-name`*
- *`param-value Bp8MetadataDS/param-value`*
- */`init-param`*
- *`init-param`*
- *`param-name ProcessStoreDSName/param-name`*
- *`param-value`* `Bp8ProcessDS/`*`param-value`*
- */`init-param`*

## Loading the Business Process Framework Metastore

You can choose to manually load data into the Business Process Framework Metastore database.

"Loading the Business Process Framework Metastore data on DB2" on page 111
You can use the Command Editor to load the Business Process Framework Metastore data on DB2®.

"Loading the Business Process Framework Metastore data on Microsoft SQL Server" on page 111
You can use the Query Analyzer to load the Business Process Framework Metastore on Microsoft SQL Server.

"Loading the Business Process Framework Metastore data on Oracle" on page 112
You can use the SQL scripts to load the Business Process Framework Metastore on Oracle.

**Related concepts**

"Environment conditions that require additional manual configuration after installation" on page 25
The Business Process Framework installation program automatically configures the P8 Platform environment to work with Business Process Framework. However, some component versions require additional manual configuration after the installation is complete.

## Loading the Business Process Framework Metastore data on DB2

You can use the Command Editor to load the Business Process Framework Metastore data on DB2.

1. Open the Command Editor.

| Option | Description |
|---|---|
| **Windows** | **Start menu → Programs → DB2 → Command Line Tools → Command Editor** |
| **UNIX** | |

2. Change the **Statement Termination Character** to `@`. You can change this character at the bottom of the Command Editor Window.
3. Click **Add** button and select the database.
4. Clear **User implicit credentials** and enter *meta user* and *meta password* and click **Ok**. Now you have logged on to *meta user* with *meta password*.
5. Perform this step only if you are doing a new install. Do not run the `Step1`.Microsoft SQL Server script if you are performing an upgrade. Open **Step1.DB2.Bp8.Metabase.1.0.sql** in Command Editor: **Selected → Open** , then start the script: **Selected → Execute** .

   This step loads all necessary data. The following errors are benign and can be ignored if seen:
   - SQL0100W No row was found for FETCH, UPDATE, or DELETE; or the result of a query is an empty table. SQLSTATE=02000
   - SQL0204N IDENTIFIER is an undefined name. SQLSTATE=42704 SQL0458N In a reference to routine IDENTIFIER by signature, a matching routine could not be found. SQLSTATE=42883 *IDENTIFIER* here is a placeholder for the names of various stored procedures.
6. Open **Step1.DB2.Bp8.Metabase.1.0.sql** in Command Editor: **Selected → Open** .
7. Run the script: **Selected → Execute**

## Loading the Business Process Framework Metastore data on Microsoft SQL Server

You can use the Query Analyzer to load the Business Process Framework Metastore on Microsoft SQL Server.

1. Start the Microsoft SQL Server Query Analyzer:
   a. Click **Start menu → Programs → Microsoft SQL Server → Query Analyzer**.
   a. Log on by using the *meta admin user*.
   b. Select the *meta database* if not already selected (in combination box on toolbar).

c. Perform this step only if you are doing a new installation. Do not run the Step1 SQL Server script if you are performing an upgrade. Select **File ...** → **Open** → *staging folder*\SQL\SQL\Step1.mssql.Bp8.Metabase.1.0.SQL. Select **Query ...** → **Execute**.

d. Run the Step2 and Step3 scripts.

1) Select **File ...** → **Open ...** → *staging folder*\SQL\SQL\Step2.mssql.Bp8.Metabase.1.0.SQL

2) Select **Query ...** → **Execute**.

2. Assign a password.

The scripts create user Bp8 with a Bp8 password. Record this name on your worksheet as *meta user* and *meta password*.

You can assign a new password in this manner:

a. Open Enterprise Manager: **Start menu** → **Programs** → **Microsoft SQL Server** → **SQL Server Enterprise Manager**.

b. Right-click **SQL Server Group** → **Security** → **Logins** → **bp8**.

c. Select **Properties**.

d. Determine the *meta password* and record on your worksheet.

e. Enter password: *meta password*.

f. Click **Ok** and confirm the new password.

## Loading the Business Process Framework Metastore data on Oracle

You can use the SQL scripts to load the Business Process Framework Metastore on Oracle.

1. Connect as *meta user*.
2. Run these scripts:

**Important:** Run this set of scripts only if you are doing a new installation. Do not run the Step1 SQL Server script if you are performing an upgrade.

- *staging folder*\SQL\Oracle\Step1.oracle.Bp8.Metabase.1.0.SQL
- *staging folder*\SQL\Oracle\Step2.oracle.Bp8.Metabase.1.0.SQL
- *staging folder*\SQL\Oracle\Step3.oracle.Bp8.Metabase.1.0.SQL

# Importing the Metastore manifest

You can use the Business Process Framework Explorer application to import the Metastore manifest.

To import the Metastore manifest:

1. Determine which manifest to use:

| Option | Description |
|---|---|
| **Base** | *staging folder*\misc\base\config\bpf_base_[dbtype].xml |
| **Case management sample configuration** | Use *staging folder*\misc\solutions\case_management\config\bpf_cm_[dbtype].xml |
| **Custom** | Use your own custom manifest XML file. |

2. Log in to Business Process Framework Explorer.

3. Select **Export** and **Import Management**.
4. Right-click for pop up menu: **All Tasks → Import XML Manifest**.
5. Click **Yes: Confirm loss of current configuration**.
6. Select your manifest.
7. Click **No: User information is not to be preserved**.
8. If you are importing a manifest from a Business Process Framework system where the Workflow user ID values in Process Engine are different from the values in the environment where the Business Process Framework system was created, you can update the WF_USER_ID column in the USERS table in the Metastore by setting all rows to NULL. In this way, Business Process Framework automatically interrogates Process Engine for the correct values for these users in your environment. Otherwise, Business Process Framework assumes that existing values are correct, causing problems in the Web Application whereby a user who has opened a Case receives warnings that the Case is locked by another user even though the Case is not locked at all. To reset the WF_USER_ID column, run the following SQL Server statement against the Metastore:

   ```
   update users set wf_user_id=null
   ```

   If you are importing a manifest that was created in the same environment (a backup, for example), then you can skip this step, as the Workflow user ID values in Process Engine are still be the same.

## Editing the Metastore settings

You can edit the Metastore settings by using the Business Process Framework Explorer application.

To edit the Metastore settings:

1. Start the application by selecting **Start Menu → Programs → Business Process Framework → BPF Explorer**.
2. Log in by using *meta user* and *meta password*.
3. Edit the following settings:

*Table 29. Metastore settings and values*

| Setting | Value |
|---|---|
| **Application Settings → System-wide Settings → Process EngineConnection Point** | *pe connection point*<br>**Tip:** The connection point is case sensitive. |
| **Application Settings → System-wide Settings → Bootstrap Content Engine Object Store Name** | *bootstrap os display name*<br>This is the display name of the bootstrap object store.<br>The bootstrap object store stores Workplace access roles and Case ID generation object (Bp8Settings), as well as Business Process Framework site preferences and stored searches.<br>You must enter the exact spelling of the display name of the object store as defined in Enterprise Manager. |

*Table 29. Metastore settings and values (continued)*

| Setting | Value |
| --- | --- |
| **Application Settings → System-wide Settings → Default Content Engine Object Store Name** | *default os symbolic name*<br><br>This is the symbolic name of the default object store.<br><br>This object store is used by default when no alternate entry exists in the case type map.<br><br>You must enter the exact spelling of the symbolic name of the object store as defined in Enterprise Manager. |
| **Application Settings → Web Application → Workplace Integration Servlet URL** | *workplace url*<br><br>Language references: *\| http://p8demo30:7001/Workplace/<br><br>This example indicates that the URL: http://p8demo30:7001/Workplace/ is to be used for all languages. Different URLs might be specified for particular languages; for example: en-us\|http://p8demo30:7001/WorkplaceEn/<br><br>The language designations are the industry-standard designations used in Web browsers. |
| **Workflow Configuration → Queues** | Change the object names for queues listed in this section to correspond to the isolated region in use (as determined by the Process Engine Connection Point specified in the **Application Settings → System-wide Settings → Processing Engine Connection Point**.<br><br>For example, if 26 is the isolated region, the object name for the Case Management queue is *pe runtime user*.VWVQ26_CaseManagement.<br><br>Also, if the value of *pe runtime user* is different from f_sw, change the alias prefix of the object name of each queue in **Workflow Configuration → Queues** to match the actual value.<br><br>For example, if the user alias is dbo, the object name for the Case Management queue is dbo.VWVQ1_CaseManagement.<br><br>Change or view the queue object name by right clicking the queue in question and selecting **Properties**. |
| **Workflow Configuration → Queue Filters** (for Process Engine implementations by using SQL Server only) | Verify that the NOLOCK option is used in all queue filter SQL queries.<br><br>For example: SELECT COUNT(UserID) FROM Users WITH (NOLOCK) WHERE user name LIKE 'smith'<br><br>This option is necessary to reduce or eliminate deadlock contention.<br><br>Change or view a queue filter SQL query by right clicking the queue filter in question and selecting **Properties**. |

*Table 29. Metastore settings and values (continued)*

| Setting | Value |
| --- | --- |
| **Workflow Configuration** → **Queue Filters** (for Process Engine implementations by using Oracle and DB2. | Verify that the NOLOCK option is not used in all queue filter SQL queries. This syntax is not valid for Oracle.<br><br>Change or view a queue filter SQL query by right clicking the queue filter in question and selecting **Properties**. |
| **Miscellaneous** → **Inbasket Filters** → **Company Name** (for Oracle and DB2 implementations by using the Case Management Sample Application manifest only) | Change the Company Name regular template to be: UPPER(CompanyName) LIKE UPPER('%PARAM1%')<br><br>Change or view the Company Name regular template by right-clicking **Company Name**, selecting **Properties**, and clicking **Expression** within the Regular area. |
| **Miscellaneous** → **Inbasket Filters** → **Account Number** (for Oracle and DB2 implementations by using the Case Management Sample Application manifest only) | Change the Account Number regular template to be: UPPER(AccountNumber) LIKE UPPER('%PARAM1%')<br><br>Change or view the Account Number regular template by right-clicking **Account Number**, selecting **Properties**, and clicking **Expression** within the Regular area. |

## Creating the JDBC data source for the Business Process Framework Metastore

The Business Process Framework Web application requires a connection to the data source for the Business Process Framework Metastore. You can create the JDBC data source according to your Web application server and database type.

The XA driver type is not supported.

"Creating the Metastore data source on WebSphere Application Server for DB2" on page 116
You can manually configure the JDBC data source connection for the Metastore on WebSphere Application Server for DB2.

"Creating the Metastore data source on WebSphere Application Server for Oracle" on page 118
You can manually configure the JDBC data source connection for the Metastore on WebSphere Application Server for Oracle.

"Creating the Metastore data source on WebSphere Application Server for Microsoft SQL Server" on page 119
You can manually configure the JDBC data source connection for the Metastore on WebSphere Application Server for Microsoft SQL Server.

"Creating the Metastore data source on Oracle WebLogic Server 8.1.x for DB2" on page 121
Before you configure the JDBC data source connection for the Metastore on Oracle WebLogic Server 8.1.x for DB2, you must first create a JDBC connection pool.

"Creating the Metastore data source on Oracle WebLogic Server 9.2.x or 10 for DB2" on page 122
You can manually configure the JDBC data source connection for the Metastore on Oracle WebLogic Server 9.2.x or 10 for DB2.

"Creating the Metastore data source on Oracle WebLogic Server 8.1.x for Oracle" on page 122

Before you configure the JDBC data source connection for the Metastore on Oracle WebLogic Server 8.1.x for Oracle, you must first create a JDBC connection pool.

"Creating the Metastore data source on Oracle WebLogic Server 9.2.x or 10 for Oracle" on page 123
You can manually configure the JDBC data source connection for the Metastore on Oracle WebLogic Server 9.2.x or 10 for Oracle.

"Creating the Metastore data source on Oracle WebLogic Server 8.1.x for Microsoft SQL Server" on page 124
Before you configure the JDBC data source connection for the Metastore on Oracle WebLogic Server 8.1.x for Microsoft SQL Server, you must first create a JDBC connection pool.

"Creating the Metastore data source on Oracle WebLogic Server 9.2.x or 10 for Microsoft SQL Server" on page 125
You can manually configure the JDBC data source connection for the Metastore on Oracle WebLogic Server 9.2.x or 10 for Microsoft SQL Server.

"Creating the Metastore data source on JBoss Application Server for DB2" on page 126
You can manually configure the JDBC data source connection for the Metastore on JBoss Application Server for DB2.

"Creating the Metastore data source on JBoss Application Server for Oracle" on page 126
You can manually configure the JDBC data source connection for the Metastore on JBoss Application Server for Oracle.

"Creating the Metastore data source on JBoss Application Server for Microsoft SQL Server" on page 127
You can manually configure the JDBC data source connection for the Metastore on JBoss Application Server for Microsoft SQL Server.

## Creating the Metastore data source on WebSphere Application Server for DB2

You can manually configure the JDBC data source connection for the Metastore on WebSphere Application Server for DB2.

1. Log on to WebSphere Application Server Administrative Console: http://*web application server*}:9060/ibm/console
2. To create the JDBC Provider:
   a. Click **Resources** → **JDBC Providers**.

      Skip this sub step if *pe connection pool* exists. Otherwise, do the following:
   b. Click **New**.
   c. Select the database type: **DB2**
   d. Select the provider type: **DB2 Universal JDBC Driver Provider**
   e. Select the implementation type: **Connection pool DataSource**
   f. Click **Next**.
   g. Click **Apply**.
   h. Save changes to master configuration.
3. To create the Initial JDBC Data Source:
   a. Click **Resources** → **JDBC Providers**.
   b. Click the appropriate provider: **DB2 Universal JDBC Driver Provider**.
   c. Click **DataSources** under Additional Properties.
   d. Click **New**.

e. Enter the Name for the Data Source. Record this name on your worksheet as *meta datasource*.
f. Enter JNDI name: *meta datasource*.

**Restriction:** The Data Source name and the Data Source JNDI name must be the same.

g. Enter Description: *meta datasource*
h. Enter Database name: *meta database*
i. Enter Server name: *meta data server*
j. Click **Apply**.
k. Save changes to master configuration.

4. To create the Authentication Entry:
   a. Click **Resources** → **JDBC Providers**.
   b. Click the appropriate provider: **DB2 Universal JDBC Driver Provider**
   c. Click **DataSources** under Additional Properties.
   d. Click ***meta datasource***.
   e. Click **J2EE Connector Architecture (J2C) authentication data entries** under Related Items.
   f. Click **New**.
   g. Enter Alias name *meta authentication name*. Suggested name: Bp8MetatdataAlias
   h. Enter user ID: *meta user*
   i. Enter Password: *meta password*
   j. Click **Apply**.
   k. Save changes to master configuration.
5. To set the JDBC Data Source Authentication:
   a. Click **Resources** → **JDBC Providers**.
   b. Click the appropriate provider: **DB2 Universal JDBC Driver Provider**
   c. Click **DataSources** under Additional Properties.
   d. Click ***meta datasource***.
   e. Select Component-managed authentication alias: ***meta authentication name***
   f. Click **Apply**.
   g. Save changes to master configuration.
6. To set the JDBC Data Source Additional Properties:
   a. Click **Resources** → **JDBC Providers**.
   b. Click the appropriate provider: **DB2 Universal JDBC Driver Provider**
   c. Click **DataSources** under Additional Properties.
   d. Click ***meta datasource***.
   e. Select **Custom properties** under Additional Properties.
   f. Add property Name: **resultSetHoldability Value: 1 Type: java.lang.Integer**
   g. Add property Name: **webSphereDefaultIsolationLevel Value: 2 Type: java.lang.Integer**
   h. Save changes to master configuration.
7. To test the connection:
   a. Click **Resources** → **JDBC Providers**.
   b. Click the appropriate provider: **DB2 Universal JDBC Driver Provider**

c. Click **DataSources** under Additional Properties.
d. Click ***meta datasource***.
e. Click **Test Connection**.

A success message is displayed.

## Creating the Metastore data source on WebSphere Application Server for Oracle

You can manually configure the JDBC data source connection for the Metastore on WebSphere Application Server for Oracle.

1. Log on to WebSphere Application Server Administrative Console: http://*web application server*:9060/ibm/console
2. To create the JDBC Provider:
   a. Record Oracle JDBC Driver as *meta connection pool* on worksheet.
   b. Click **Resources → JDBC Providers**.

   Skip these sub steps if *meta connection pool* exists. Otherwise, do this procedure:
   a. Click **New**.
   b. Select the database type: **Oracle**
   c. Select the provider type: **Oracle JDBC Driver**
   d. Select the implementation type: **Connection pool Data Source**
   e. Click **Next**.
   f. Enter *meta connection pool* in the Name field.
   g. Keep the default class path value of oracle.jdbc.pool.OracleConnectionPoolDataSource. Record it as the *meta class path* on the worksheet.
   h. Click **Apply**.
   i. Save changes to master configuration.
   j. Click **Environment → WebSphere Variables**.
   k. Verify that any environment variables that are used in *meta class path* is set correctly.
3. To create the Initial JDBC Data Source:
   a. Click **Resources → JDBC Providers**.
   b. Click the appropriate provider: ***meta connection pool***.
   c. Click **DataSources** under Additional Properties.
   d. Click **New**.
   e. Enter the Name for the Data Source. Record this name on your worksheet as *meta datasource*.
   f. Enter JNDI name: *meta datasource*.

      **Restriction:** The Data Source name and the Data Source JNDI name must be the same.
   g. Enter Description: *meta datasource*
   h. Enter URL: `jdbc:oracle:thin:@{meta data server}:1521:`*meta database sid*

      **Tip:** If URL does not work for any reason try: `jdbc:oracle:thin@`*TNS Descriptor*
      For example:

```
jdbc:oracle:thin:@(DESCRIPTION=(ADDRESS_LIST=(ADDRESS=(PROTOCOL=TCP)
(HOST=p8demo35)(PORT=1521)))(CONNECT_DATA=(SERVER=DEDICATED)
(SERVICE_NAME=Bp8.Metastore)))
```

i. Click **Apply**.

j. Save changes to master configuration.

4. To create the Authentication Entry:
   a. Click **Resources → JDBC Providers**.
   b. Click the appropriate provider: ***meta connection pool***
   c. Click **DataSources** under Additional Properties.

      **Tip:** Do not select Data Sources (Version 4).
   d. Click ***meta datasource***.
   e. Click **J2EE Connector Architecture (J2C) authentication data entries** under Related Items.
   f. Click **New**.
   g. Enter Alias name. Enter on your worksheet as *meta authentication name*.
   h. Enter user ID: *meta user*
   i. Enter Password: *meta password*
   j. Click **Apply**.
   k. Save changes to master configuration.
5. To set the JDBC Data Source Authentication:
   a. Click **Resources → JDBC Providers**.
   b. Click the appropriate provider: ***meta connection pool***
   c. Click **DataSources** under Additional Properties.
   d. Click ***meta datasource***.
   e. Select Component-managed authentication alias: ***meta authentication name***
   f. Click **Apply**.
   g. Save changes to master configuration.
6. To test the connection:
   a. Click **Resources → JDBC Providers**.
   b. Click the appropriate provider: ***meta connection pool***
   c. Click **DataSources** under Additional Properties.
   d. Click ***meta datasource***.
   e. Click **Test Connection**.

   A success message is displayed.

## Creating the Metastore data source on WebSphere Application Server for Microsoft SQL Server

You can manually configure the JDBC data source connection for the Metastore on WebSphere Application Server for Microsoft SQL Server.

1. Log on to the WebSphere Application Server Administrative Console: http://*web application server*:9060/ibm/console
2. To create the JDBC Provider:
   a. Click **Resources → JDBC Providers**.

   Skip these sub steps if *meta connection pool* exists. Otherwise, do these steps:
   a. Click **New**.
   b. Select the database type: **SQL Server**

c. Select the provider type: **WebSphere embedded ConnectJDBC driver for MS SQL Server**
d. Select the implementation type: **Connection pool data source**.
e. Click **Next**.
f. Click **Apply**.
g. Save changes to master configuration.

3. To create the Initial JDBC Data Source:
   a. Click **Resources** → **JDBC Providers**.
   b. Click the appropriate provider: ***meta connection pool***.
   c. Click **DataSources** under Additional Properties. Do not select Data Sources (Version 4).
   d. Click **New**.
   e. Enter the name for the Data Source. Suggested name: Bp8MetadataDS.
   f. Enter JNDI name: *meta datasource*

      **Restriction:** The Data Source name and the Data Source JNDI name must be the same.
   g. Enter Description: *meta datasource*
   h. Enter Database name: *meta database*
   i. Enter Server name: *meta data server*
   j. Click **Apply**.
   k. Save changes to master configuration.
4. To create the Authentication Entry:
   a. Click **Resources** → **JDBC Providers**.
   b. Click the appropriate provider: ***meta connection pool***
   c. Click **DataSources** under Additional Properties.
   d. Click ***meta datasource***.
   e. Click **J2EE Connector Architecture (J2C) authentication data entries** under Related Items.
   f. Click **New**.
   g. Enter Alias name. *meta authentication name*
   h. Enter user ID: *meta user*
   i. Enter Password: meta password.
   j. Click **Apply**.
   k. Save changes to master configuration.
5. To set the JDBC Data Source Authentication:
   a. Click **Resources** → **JDBC Providers**.
   b. Click the appropriate provider: ***meta connection pool***
   c. Click **DataSources** under Additional Properties.
   d. Click ***meta datasource***.
   e. Select Component-managed authentication alias: ***meta authentication name***
   f. Click **Apply**.
   g. Save changes to master configuration.
6. To test the connection:
   a. Click **Resources** → **JDBC Providers**.
   b. Click the appropriate provider: ***meta connection pool***

c. Click **DataSources** under Additional Properties.
d. Click ***meta datasource***.
e. Click **Test Connection**.

A success message is displayed.

## Creating the Metastore data source on Oracle WebLogic Server 8.1.x for DB2

Before you configure the JDBC data source connection for the Metastore on Oracle WebLogic Server 8.1.x for DB2, you must first create a JDBC connection pool.

1. Log in to Oracle WebLogic Server console from a Web browser: http://*web application server*:7001/console
2. To configure a connection pool, select **Services** → **JDBC** → **Connection pools**.
   a. Click **Configure a new JDBC Connection Pool.....**
   b. Select Database Type: **DB2**.
   c. Select Database Driver: **DB2 Driver (Type 4) Versions: 7.x, 8.x**
   d. Click **Continue**.
   e. Determine the *meta connection pool* name and record on your worksheet. Suggested name: Bp8MetadataPool
   f. Select Name: **meta connection pool**
   g. Enter Database name: *meta database*
   h. Enter Host name: *meta data server*
   i. Enter Port: 50000 (default).
   j. Enter Database user name: *meta user*
   k. Enter Database password: *meta password*
   l. Click **Continue**.
   m. Select **Create** → **Deploy**.
   n. Select **Services** → **JDBC** → **Connection pools** → **Bp8MetadataPool**.
   o. Click the **Configuration Connections** tab.
   p. Click **Show** under Advanced Options.
   q. Check **Test Reserved Connections** and **Test Release Connections** and click **Apply**.
   r. Click the **Testing** Tab.
   s. Click **Test Pool**. You receive the Connection Successful message.
3. To create JDBC Data Source:
   a. Select **Services** → **JDBC** → **DataSources**.
   b. Select **Configure a new JDBC DataSource....**
   c. Determine the *meta datasource* name and record on your worksheet. Suggested name: Bp8MetadataDS
   d. Enter name: *meta datasource*
   e. Enter JNDI name: *meta datasource*

      **Restriction:** The Data Source name and the Data Source JNDI name must be the same.
   f. Enter Honor Global Transactions: selected
   g. Enter Emulate Two-Phase commit: unselected
   h. Click **Continue**.

i. Select ***meta connection pool***.
j. Select **Continue**.
k. Select **Create**.

## Creating the Metastore data source on Oracle WebLogic Server 9.2.x or 10 for DB2

You can manually configure the JDBC data source connection for the Metastore on Oracle WebLogic Server 9.2.x or 10 for DB2.

1. Log into Oracle WebLogic Server console from a Web browser: http://*web application server*:7001/console
2. To create JDBC Data Source:
   a. Select **Services** → **JDBC** → **DataSources**.
   b. (Oracle WebLogic Server 9.2.x only) Click **Lock & Edit** button under Change Center.
   c. Click **New....**
   d. Determine the *meta datasource* name and record on your worksheet. Suggested name: Bp8MetadataDS
   e. Enter name: *meta datasource*
   f. Enter JNDI name: *meta datasource*

      **Restriction:** The Data Source name and the Data Source JNDI name must be the same.
   g. Select Database Type: **DB2**
   h. Select Database Driver: **DB2 Driver (Type 4) Versions: 7.X 8.X**
   i. Click **Next**.
   j. Enter Support Global Transactions: `selected`
   k. Enter Emulate Two-Phase commit: `unselected`
   l. Click **Next**.
   m. Enter Database name: *meta database*
   n. Enter Host name: *meta data server*
   o. Enter Port: `50000`
   p. Enter Database user name: *meta user*
   q. Enter Password: *meta password*
   r. Click **Next**.
   s. Select **Test Configuration**. The Connection Test succeeded message displays.
   t. Click **Next**.
   u. Select ***Server*** under Select Targets (default is AdminServer).
   v. Click **Finish**.
   w. Click **Activate Changes** button under Change Center.

## Creating the Metastore data source on Oracle WebLogic Server 8.1.x for Oracle

Before you configure the JDBC data source connection for the Metastore on Oracle WebLogic Server 8.1.x for Oracle, you must first create a JDBC connection pool.

1. Log in to Oracle WebLogic Server console from a Web browser: http://*web application server*:7001/console
2. To configure Connection Pool:

a. Select **Services** → **JDBC** → **Connection pools**.
b. Click **Configure a new JDBC Connection Pool....**
c. Select Database Type: **Oracle**.
d. Select Database Driver: **Oracle Driver (Type 4)**
e. Click **Continue**.
f. Determine the *meta connection pool* name and record it on your worksheet. Suggested name: Bp8MetadataPool
g. Select Name: ***meta connection pool***.
h. Enter Database name: *meta database*.
i. Enter host name: *meta data server*.
j. Enter Port: 1521 (default)
k. Enter Database user name: *meta user*
l. Enter Database password: *meta password*
m. Click **Continue**.
n. Modify **Properties** → **SID** if necessary.
o. Select the **Test Driver Configuration**. You receive the Connection Successful message.
p. Select **Create** → **Deploy**.

3. To create JDBC Data Source:
   a. Select **Services** → **JDBC** → **DataSources**.
   b. Select **Configure a new JDBC DataSource....**
   c. Determine the *meta datasource* name and record on your worksheet. Suggested name: Bp8MetadataDS
   d. Enter name: *meta datasource*.
   e. Enter JNDI name: *meta datasource*.

      **Restriction:** The Data Source name and the Data Source JNDI name must be the same.
   f. Enter Honor Global Transactions: selected
   g. Enter Emulate Two-Phase commit: unselected.
   h. Click **Continue**.
   i. Select ***meta connection pool***.
   j. Select **Continue**.
   k. Select **Create**.

## Creating the Metastore data source on Oracle WebLogic Server 9.2.x or 10 for Oracle

You can manually configure the JDBC data source connection for the Metastore on Oracle WebLogic Server 9.2.x or 10 for Oracle.

1. Log in to Oracle WebLogic Server console from a Web browser: http://*web application server*:7001/console
2. To create the JDBC Data Source:
   a. Select **Services** → **JDBC** → **DataSources**.
   b. (Oracle WebLogic Server 9.2.x) Click **Lock & Edit** button under Change Center.
   c. Click **New...**.

d. Determine the *meta datasource* name and record on your worksheet. Suggested name: Bp8MetadataDS
e. Enter name: *meta datasource*
f. Enter JNDI name: *meta datasource*

   **Restriction:** The Data Source name and the Data Source JNDI name must be the same.
g. Select Database Type: **Oracle**
h. Select Database Driver: **Oracle Driver (Type 4)**
i. Click **Next**.
j. Enter Support Global Transactions: selected
k. Enter Emulate Two-Phase commit: unselected
l. Click **Next**.
m. Enter Database name: *meta database*.
n. Enter host name: *meta data server*
o. Enter Port: 1521 (default).
p. Enter Database user name: *meta user*
q. Enter Password: *meta password*
r. Click **Next**.
s. Modify **Properties** → **SID** if necessary.
t. Click **Test Configuration**. You receive the Connection Test succeeded message.
u. Click **Next**.
v. Select ***Server*** under Select Targets (default is AdminServer).
w. Click **Finish**.
x. Click **Activate Changes** button under Change Center.

## Creating the Metastore data source on Oracle WebLogic Server 8.1.x for Microsoft SQL Server

Before you configure the JDBC data source connection for the Metastore on Oracle WebLogic Server 8.1.x for Microsoft SQL Server, you must first create a JDBC connection pool.

1. Log in to Oracle WebLogic Server console from a Web browser: http://*web application server*:7001/console
2. To configure connection pool, select **Services** → **JDBC** → **Connection pools**.
   a. Click **Configure a new JDBC Connection Pool.....**
   b. Select Database Type: **MS SQL Server**.
   c. Select Database Driver: **MS SQL Server Driver (Type 4) Versions: 7.0,2000**
   d. Click **Continue**.
   e. Determine the *meta connection pool* name and record on your worksheet. Suggested name: Bp8MetadataPool
   f. Select Name: **meta connection pool**
   g. Enter Database name: *meta database*
   h. Enter Host name: *meta data server*
   i. Enter Port: 1433.
   j. Enter Database user name: *meta user*
   k. Enter Database password: *meta password*

l. Click **Continue**.
m. Select the **Test Driver Configuration**. You receive the Connection successful message.
n. Select **Create** → **Deploy**.

3. To create JDBC Data Source:
   a. Select **Services** → **JDBC** → **DataSources**.
   b. Select **Configure a new JDBC DataSource....**
   c. Determine the *meta datasource* name and record on your worksheet. Suggested name: Bp8MetadataDS
   d. Enter name: *meta datasource*
   e. Enter JNDI name: *meta datasource*

      **Restriction:** The Data Source name and the Data Source JNDI name must be the same.
   f. Enter Honor Global Transactions: `selected`
   g. Enter Emulate Two-Phase commit: `unselected`
   h. Click **Continue**.
   i. Select ***meta connection pool***.
   j. Select **Continue**.
   k. Select **Create**.

## Creating the Metastore data source on Oracle WebLogic Server 9.2.x or 10 for Microsoft SQL Server

You can manually configure the JDBC data source connection for the Metastore on Oracle WebLogic Server 9.2.x or 10 for Microsoft SQL Server.

1. Log in to Oracle WebLogic Server console from a Web browser: http://*web application server*:7001/console
2. To create JDBC Data Source:
   a. Select **Services** → **JDBC** → **DataSources**.
   b. (Oracle WebLogic Server 9.2.x) Click **Lock & Edit** under Change Center.
   c. Click **New....**
   d. Determine the *meta datasource* name and record on your worksheet. Suggested name: Bp8MetadataDS
   e. Enter name: *meta datasource*
   f. Enter JNDI name: *meta datasource*

      **Restriction:** The Data Source name and the Data Source JNDI name must be the same.
   g. Select Database Type: ***MS SQL Server***
   h. Select Database Driver: **MS SQL Server Driver (Type 4) Versions: 7.0,2000**
   i. Click **Next**.
   j. Enter Support Global Transactions : `selected`
   k. Enter Emulate Two-Phase commit : `unselected`
   l. Click **Next**.
   m. Enter Database name: *meta database*
   n. Enter Host name: *meta data server*
   o. Enter Port: 1433

p. Enter Database user name: *meta user*

q. Enter Password: *meta password*

r. Click **Next**.

s. Select the **Test Configuration**. You receive the Connection Test succeeded message.

t. Click **Next**.

u. Select ***Server*** under Select Targets (default is AdminServer).

v. Click **Finish**.

w. Click **Activate Changes** button under Change Center.

## Creating the Metastore data source on JBoss Application Server for DB2

You can manually configure the JDBC data source connection for the Metastore on JBoss Application Server for DB2.

1. Create a file named `ms-ds.xml` with this content:

```
<datasources>
     <local-tx-datasource>
          <jndi-name>  {meta datasource}  </jndi-name>
          <use-java-context>false</use-java-context>
          <connection-url>  jdbc:db2://  {meta data server}  :
{meta data port}  /  {meta database}  </connection-url>
          <driver-class>com.ibm.db2.jcc.DB2Driver</driver-class>
          <user-name>  {meta user}  </user-name>
          <password>  {meta password}  </password>
     </local-tx-datasource>
</datasources>
```

2. Edit the contents of this file, replacing these parameters with the values from the prerequisite worksheet:

   *meta datasource*
   *meta data server*
   *meta data port*
   *meta database*
   *meta user*
   *meta password*

3. Copy the file to directory *JBOSS_HOME*`/server/`*server_name*`/deploy`.

## Creating the Metastore data source on JBoss Application Server for Oracle

You can manually configure the JDBC data source connection for the Metastore on JBoss Application Server for Oracle.

1. Create a file named `ms-ds.xml` with this content:

```
<datasources>
     <local-tx-datasource>
          <jndi-name>  {meta datasource}  </jndi-name>
          <use-java-context>false</use-java-context>
          <connection-url>  jdbc:oracle:thin:@  {meta data server}  :
{meta data port}  :  {meta database}  </connection-url>
          <driver-class>oracle.jdbc.driver.OracleDriver</driver-class>
          <user-name>  {meta user}  </user-name>
          <password>  {meta password}  </password>
     </local-tx-datasource>
</datasources>
```

2. Edit the contents of this file, replacing these parameters with the values from the prerequisite worksheet:

   *meta datasource*
   *meta data server*
   *meta data port*
   *meta database*
   *meta user*
   *meta password*

3. Copy the file to directory *JBOSS_HOME*/server/*server_name*/deploy.

## Creating the Metastore data source on JBoss Application Server for Microsoft SQL Server

You can manually configure the JDBC data source connection for the Metastore on JBoss Application Server for Microsoft SQL Server.

1. Create a file named ms-ds.xml with this content:

```
<datasources>
     <local-tx-datasource>
          <jndi-name>  {meta datasource}  </jndi-name>
          <use-java-context>false</use-java-context>
          <connection-url>  jdbc:jtds:sqlserver://  {meta data server}  :
{meta data port}  /  {meta database}  </connection-url>
          <driver-class>net.sourceforge.jtds.jdbc.Driver</driver-class>
          <user-name>  {meta user}  </user-name>
          <password>  {meta password}  </password>
     </local-tx-datasource>
</datasources>
```

2. Edit the contents of this file, replacing these parameters with the values from the prerequisite worksheet:

   *meta datasource*
   *meta data server*
   *meta data port*
   *meta database*
   *meta user*
   *meta password*

3. Copy the file to directory *JBOSS_HOME*/server/*server_name*/deploy.

# Creating the JDBC data source for the Process Engine

The Business Process Framework Web application requires a connection to the data source for the Process Engine. You can create the JDBC data source according to your Web application server and database type.

"Creating the Process Engine data source on WebSphere Application Server for DB2" on page 128
You can manually configure the JDBC data source connection for the Process Engine on WebSphere Application Server for DB2.

"Creating the Process Engine data source on WebSphere Application Server for Oracle" on page 130
You can manually configure the JDBC data source connection for the Process Engine on WebSphere Application Server for Oracle.

"Creating the Process Engine data source on WebSphere Application Server for Microsoft SQL Server" on page 131
You can manually configure the JDBC data source connection for the Process Engine on WebSphere Application Server for Microsoft SQL Server.

## Creating the Process Engine data source on WebSphere Application Server for DB2

You can manually configure the JDBC data source connection for the Process Engine on WebSphere Application Server for DB2.

1. Log on to WebSphere Application Server Administrative Console: http://*web application server*}:9060/ibm/console
2. To create the JDBC Provider:
   a. Click **Resources → JDBC Providers**.

      Skip this sub step if *pe connection pool* exists. Otherwise, do the following:

   b. Click **New**.
   c. Select the database type: **DB2**

d. Select the provider type: **DB2 Universal JDBC Driver Provider**
e. Select the implementation type: **Connection pool DataSource**
f. Click **Next**.
g. Click **Apply**.
h. Save changes to master configuration.

3. To create the Initial JDBC Data Source:
   a. Click **Resources** → **JDBC Providers**.
   b. Click the appropriate provider: **DB2 Universal JDBC Driver Provider**.
   c. Click **DataSources** under Additional Properties.
   d. Click **New**.
   e. Enter the Name for the Data Source. Record this name on your worksheet as *pe datasource*.
   f. Enter JNDI name: *pe datasource*.

      **Restriction:** The Data Source name and the Data Source JNDI name must be the same.
   g. Enter Description: *pe datasource*
   h. Enter Database name: *pe database*
   i. Enter Server name: *pe data server*
   j. Click **Apply**.
   k. Save changes to master configuration.
4. To create the Authentication Entry:
   a. Click **Resources** → **JDBC Providers**.
   b. Click the appropriate provider: **DB2 Universal JDBC Driver Provider**
   c. Click **DataSources** under Additional Properties.
   d. Click ***meta datasource***.
   e. Click **J2EE Connector Architecture (J2C) authentication data entries** under Related Items.
   f. Click **New**.
   g. Enter Alias name *pe authentication name*. Suggested name: Bp8MetatdataAlias
   h. Enter user ID: *pe user*
   i. Enter Password: *pe password*
   j. Click **Apply**.
   k. Save changes to master configuration.
5. To set the JDBC Data Source Authentication:
   a. Click **Resources** → **JDBC Providers**.
   b. Click the appropriate provider: **DB2 Universal JDBC Driver Provider**
   c. Click **DataSources** under Additional Properties.
   d. Click ***pe datasource***.
   e. Select Component-managed authentication alias: ***pe authentication name***
   f. Click **Apply**.
   g. Save changes to master configuration.
6. To test the connection:
   a. Click **Resources** → **JDBC Providers**.
   b. Click the appropriate provider: **DB2 Universal JDBC Driver Provider**

c. Click **DataSources** under Additional Properties.
d. Click *pe datasource*.
e. Click **Test Connection**.

A success message is displayed.

## Creating the Process Engine data source on WebSphere Application Server for Oracle

You can manually configure the JDBC data source connection for the Process Engine on WebSphere Application Server for Oracle.

1. Log on to WebSphere Application Server Administrative Console: http://*web application server*}:9060/ibm/console
2. To create the JDBC Provider:
   a. Click **Resources** → **JDBC Providers**.

      Skip this sub step if *pe connection pool* exists. Otherwise, do the following:
   b. Click **New**.
   c. Select the database type: **Oracle**
   d. Select the provider type: **Oracle JDBC Driver Provider**
   e. Select the implementation type: **Connection pool DataSource**
   f. Click **Next**.
   g. Enter *pe connection pool* in the Name field.
   h. Keep the default class path value of oracle.jdbc.pool.OracleConnectionPoolDataSource. Record it as the Class path as the *pe class path* on the worksheet.
   i. Click **Apply**.
   j. Save changes to master configuration.
   k. Click **Environment** → **WebSphere Application Server Variables**.
   l. Verify that any environment variables used in *meta class path* is set correctly.
3. To create the Initial JDBC Data Source:
   a. Click **Resources** → **JDBC Providers**.
   b. Click the appropriate provider: ***pe connection pool***
   c. Click **DataSources** under Additional Properties.
   d. Click **New**.
   e. Enter the Name for the Data Source. Record this name on your worksheet as *pe datasource*.
   f. Enter JNDI name: *pe datasource*.

      **Restriction:** The Data Source name and the Data Source JNDI name must be the same.
   g. Enter Description: *pe datasource*
   h. Enter Database name: *pe database*
   i. Enter URL: JDBC:oracle:thin:@*pe data server*:1521:*pe database sid*.

      **Tip:** If URL does not work for any reason try: JDBC:oracle:thin@*TNS Descriptor*
      For example:

      ```
      JDBC:oracle:thin:@(DESCRIPTION=(ADDRESS_LIST=(ADDRESS=(PROTOCOL=TCP)
      (HOST=p8demo35)(PORT=1521)))(CONNECT_DATA=(SERVER=DEDICATED)
      (SERVICE_NAME=Bp8.Metastore)))
      ```

j. Click **Apply**.
k. Save changes to master configuration.

4. To create the Authentication Entry:
   a. Click **Resources** → **JDBC Providers**.
   b. Click the appropriate provider: ***pe datasource***
   c. Click **DataSources** under Additional Properties.
   d. Click ***pe datasource***.
   e. Click **J2EE Connector Architecture (J2C) authentication data entries** under Related Items.
   f. Click **New**.
   g. Enter Alias name *pe authentication name*. Suggested name: Bp8MetatdataAlias
   h. Enter user ID: *pe user*
   i. Enter Password: *pe password*
   j. Click **Apply**.
   k. Save changes to master configuration.
5. To set the JDBC Data Source Authentication:
   a. Click **Resources** → **JDBC Providers**.
   b. Click the appropriate provider: **DB2 Universal JDBC Driver Provider**
   c. Click **DataSources** under Additional Properties.
   d. Click ***pe datasource***.
   e. Select Component-managed authentication alias: ***pe authentication name***
   f. Click **Apply**.
   g. Save changes to master configuration.
6. To test the connection:
   a. Click **Resources** → **JDBC Providers**.
   b. Click the appropriate provider: ***pe authentication name***
   c. Click **DataSources** under Additional Properties.
   d. Click ***pe datasource***.
   e. Click **Test Connection**.

   A success message is displayed.

## Creating the Process Engine data source on WebSphere Application Server for Microsoft SQL Server

You can manually configure the JDBC data source connection for the Process Engine on WebSphere Application Server for Microsoft SQL Server.

1. Log on to the WebSphere Application Server Administrative Console: http://*web application server*}:9060/ibm/console
2. To create the JDBC Provider:
   a. Click **Resources** → **JDBC Providers**.

   Skip this sub step if *pe connection pool* exists. Otherwise, do this procedure:
   a. Click **New**.
   b. Select the database type: **SQL Server**
   c. Select the provider type: **WebSphere embedded ConnectJDBC driver for MS SQL Server**
   d. Select the implementation type: **Connection pool data source**.

e. Click **Next**.
f. Click **Apply**.
g. Save changes to master configuration.

3. To create the Initial JDBC Data Source:
   a. Select **Services** → **JDBC** → **DataSources**.
   b. Click the appropriate provider: ***pe connection pool***.
   c. Click **DataSources** under Additional Properties.
   d. Click **New**.
   e. Enter the name for the Data Source *pe connection pool*. Suggested name: Bp8ProcessDS
   f. Enter JNDI name: ***pe connection pool***.

      **Restriction:** The Data Source name and the Data Source JNDI name must be the same.
   g. Enter Description: ***pe datasource***
   h. Enter Database name: ***pe datasource***
   i. Enter Server name: ***pe data server***
   j. Click **Apply**.
   k. Save changes to master configuration.
4. To create the Authentication Entry:
   a. Click Resources > JDBC Providers.
   b. Click the appropriate provider: {pe connection pool}.
   c. Click Data Sources under Additional Properties.
   d. Click {pe datasource}.
   e. Click J2EE Connector Architecture (J2C) authentication data entries under Related Items.
   f. Click New.
   g. Enter Alias name {pe authentication name}. Suggested name: Bp8ProcessAlias. Record this name on your worksheet as {pe authentication name}.
   h. Enter user ID: {pe end-user}.
   i. Enter Password: {pe password}.
   j. Click Apply.
   k. Save changes to master configuration.
5. To set the JDBC Data Source Authentication:
   a. Click Resources > JDBC Providers.
   b. Click the appropriate provider: {pe connection pool}.
   c. Click Data Sources under Additional Properties.
   d. Click {pe datasource}.
   e. Select Component-managed authentication alias: {pe authentication name}.
   f. Click Apply.
   g. Save changes to master configuration.
6. To test the connection:
   a. Click Resources > JDBC Providers.
   b. Click the appropriate provider: {pe connection pool}.
   c. Click Data Sources under Additional Properties.

d. Select the check box for {pe datasource}.
e. Click Test Connection.
f. A success message is displayed.

## Creating the Process Engine data source on Oracle WebLogic Server 8.1.x for DB2

Before you configure the JDBC data source connection for the Process Engine on Oracle WebLogic Server 8.1.x for DB2, you must first create a JDBC connection pool.

1. Log in to Oracle WebLogic Server console from a Web browser: http://*web application server*:7001/console
2. To configure the Connection Pool:
   a. Select **Services** → **JDBC** → **Connection pools**.
   b. Click **Configure a new JDBC Connection Pool**.
   c. Select Database Type: **DB2**
   d. Select Database Driver: **DB2 Driver (Type 4) Version: 7.x 8.x**
   e. Click **Continue**.
   f. Determine the *pe connection pool* name and record on your worksheet. Suggested name: Bp8ProcessPool
   g. Enter Name: *pe connection pool*
   h. Enter Database name: *pe database*.
   i. Enter host name: *pe data server*
   j. Enter Port: 50000 (default).
   k. Enter Database user name: *pe user*
   l. Enter Password: *pe password*
   m. Click **Continue**.
   n. Select **Create** → **Deploy**.
   o. Select **Services** → **JDBC** → **Connection pools** → **Bp8ProcessPool**.
   p. Click the **Configuration Connections** tab.
   q. Click **Show** under Advanced Options.
   r. Check **Test Reserved Connections** and **Test Release Connections** and click **Apply**.
   s. Click the **Testing** Tab.
   t. Click **Test Pool**.

   You receive the Connection Successful message.
3. To create the JDBC Data Source:
   a. Select **Services** → **JDBC** → **DataSources**.
   b. Select **Configure a new JDBC DataSource.....**
   c. Determine the *pe datasource* name and record on your worksheet. Suggested name: Bp8ProcessDS
   d. Enter name: *pe datasource*
   e. Enter JNDI name: *pe datasource*

      **Restriction:** The Data Source name and the Data Source JNDI name must be the same.
   f. Enter Support Global Transactions: selected
   g. Enter Emulate Two-Phase commit: unselected

h. Click **Continue**.
i. Select ***pe connection pool***
j. Select **Continue**.
k. Select **Create**.

## Creating the Process Engine data source on Oracle WebLogic Server 9.2.x or 10 for DB2

You can manually configure the JDBC data source connection for the Process Engine on Oracle WebLogic Server 9.2.x or 10 for DB2.

1. Log in to Oracle WebLogic Server console from a Web browser: http://*web application server*:7001/console
2. To create the JDBC Data Source:
   a. Select **Services → JDBC → DataSources**.
   b. (Oracle WebLogic Server 9.2.x only) Click the **Lock & Edit** button under Change Center.
   c. Click **New....**
   d. Determine the *pe datasource* name and record on your worksheet. Suggested name: Bp8ProcessDS
   e. Enter name: **pe datasource**
   f. Enter JNDI name: **pe datasource**.

      **Restriction:** The Data Source name and the Data Source JNDI name must be the same.
   g. Select Database Type: **DB2**.
   h. Select Database Driver: **DB2 Driver (Type 4) Versions: 7.x, 8.x**
   i. Click **Next**.
   j. Enter Honor Global Transactions: `selected`
   k. Enter Emulate Two-Phase commit: `unselected`
   l. Click **Next**.
   m. Enter Database name: *`pe database`*
   n. Enter Host name: *`pe data server`*
   o. Enter Port: `50000` (default).
   p. Enter Database user name: *`pe user`*
   q. Enter Database password: *`pe password`*
   r. Click **Next**.
   s. Select **Test Configuration**. You receive the Connection Test succeeded message.
   t. Click **Next**.
   u. Select ***Server*** under Select Targets (default is AdminServer).
   v. Click **Finish**.
   w. Click **Activate Changes** button under Change Center.

## Creating the Process Engine data source on Oracle WebLogic Server 8.1.x for Oracle

Before you configure the JDBC data source connection for the Process Engine on Oracle WebLogic Server 8.1.x for Oracle , you must first create a JDBC connection pool.

1. Log in to Oracle WebLogic Server console from a Web browser: http://*web application server*:7001/console
2. To configure the Connection Pool:
   a. Select **Services** → **JDBC** → **Connection pools**.
   b. Click **Configure a new JDBC Connection Pool**.
   c. Select Database Type: **Oracle**
   d. Select Database Driver: **Oracle Driver (Type 4)**
   e. Click **Continue**.
   f. Determine the *pe connection pool* name and record on your worksheet. Suggested name: Bp8ProcessPool
   g. Enter Name: *pe connection pool*
   h. Enter Database name: *pe database*.
   i. Enter host name: *pe data server*
   j. Enter Port: 1521 (default).
   k. Enter Database user name: *pe user*
   l. Enter Password: *pe password*
   m. Click **Continue**.
   n. Modify **Properties** → **SID** if necessary.
   o. Click **Test Configuration**. You receive the Connection Test succeeded message.
   p. Select **Create** → **Deploy**.
3. To create the JDBC Data Source:
   a. Select **Services** → **JDBC** → **DataSources**.
   b. Select **Configure a new JDBC DataSource.....**.
   c. Determine the *pe datasource* name and record on your worksheet. Suggested name: Bp8ProcessDS
   d. Enter name: *pe datasource*
   e. Enter JNDI name: *pe datasource*

      **Restriction:** The Data Source name and the Data Source JNDI name must be the same.
   f. Enter Support Global Transactions: selected
   g. Enter Emulate Two-Phase commit: unselected
   h. Click **Continue**.
   i. Select ***pe connection pool***
   j. Select **Continue**.
   k. Select **Create**.

## Creating the Process Engine data source on Oracle WebLogic Server 9.2.x or 10 for Oracle

You can manually configure the JDBC data source connection for the Process Engine on Oracle WebLogic Server 9.2.x or 10 for Oracle.

1. Log in to Oracle WebLogic Server console from a Web browser: http://*web application server*:7001/console
2. To create the JDBC Data Source:
   a. Select **Services** → **JDBC** → **DataSources**.

b. (Oracle WebLogic Server 9.2.x only) Click the **Lock & Edit** button under Change Center.
c. Click **New....**
d. Determine the *pe datasource* name and record on your worksheet. Suggested name: Bp8ProcessDS
e. Enter name: **pe datasource**
f. Enter JNDI name: **pe datasource**.

   **Restriction:** The Data Source name and the Data Source JNDI name must be the same.
g. Select Database Type: **Oracle**.
h. Select Database Driver: **Oracle Driver (Type 4)**
i. Click **Next**.
j. Enter Honor Global Transactions: `selected`
k. Enter Emulate Two-Phase commit: `unselected`
l. Click **Next**.
m. Enter Database name: *`pe database`*
n. Enter Host name: *`pe data server`*
o. Enter Port: `1521` (default).
p. Enter Database user name: *`pe user`*
q. Enter Database password: *`pe password`*
r. Click **Next**.
s. Modify **Properties** → **SID** if necessary.
t. Select **Test Configuration**. You receive the Connection Test succeeded message.
u. Click **Next**.
v. Select ***Server*** under Select Targets (default is AdminServer).
w. Click **Finish**.
x. Click **Activate Changes** button under Change Center.

## Creating the Process Engine data source on Oracle WebLogic Server 8.1.x for Microsoft SQL Server

Before you configure the JDBC data source connection for the Process Engine on Oracle WebLogic Server 8.1.x for Microsoft SQL Server , you must first create a JDBC connection pool.

1. Log in to Oracle WebLogic Server console from a Web browser: http://*web application server*:7001/console
2. To configure the Connection Pool:
   a. Select **Services** → **JDBC** → **Connection pools**.
   b. Click **Configure a new JDBC Connection Pool**.
   c. Select Database Type: **MS SQL Server**
   d. Select Database Driver: **MS SQL Server Driver (Type 4) Versions: 7.0,2000**
   e. Click **Continue**.
   f. Determine the *pe connection pool* name and record on your worksheet. Suggested name: Bp8ProcessPool
   g. Enter Name: *pe connection pool*
   h. Enter Database name: *`pe database`*.

i. Enter host name: *pe data server*
j. Enter Port: 1433
k. Enter Database user name: *pe user*
l. Enter Password: *pe password*
m. Click **Continue**.
n. Click **Test Configuration**. You receive the Connection Test succeeded message.
o. Select **Create** → **Deploy**.

3. Create JDBC Data Source:
   a. Select **Services** → **JDBC** → **DataSources**.
   b. Select **Configure a new JDBC DataSource.....**.
   c. Determine the *pe datasource* name and record on your worksheet. Suggested name: Bp8ProcessDS
   d. Enter name: *pe datasource*
   e. Enter JNDI name: *pe datasource*

      **Restriction:** The Data Source name and the Data Source JNDI name must be the same.
   f. Enter Support Global Transactions: selected
   g. Enter Emulate Two-Phase commit: unselected
   h. Click **Continue**.
   i. Select ***pe connection pool***
   j. Select **Continue**.
   k. Select **Create**.

## Creating the Process Engine data source on Oracle WebLogic Server 9.2.x or 10 for Microsoft SQL Server

You can manually configure the JDBC data source connection for the Process Engine on Oracle WebLogic Server 9.2.x or 10 for Microsoft SQL Server.

1. Log in to Oracle WebLogic Server console from a Web browser: http://*web application server*:7001/console
2. To create the JDBC Data Source:
   a. Select **Services** → **JDBC** → **DataSources**.
   b. (Oracle WebLogic Server 9.2.x only) Click **Lock & Edit** button under Change Center.
   c. Click **New....**
   d. Determine the *pe datasource* name and record on your worksheet. Suggested name: Bp8MetadataDS
   e. Enter name: *pe datasource*
   f. Enter JNDI name: *pe datasource*

      **Restriction:** The Data Source name and the Data Source JNDI name must be the same.
   g. Select Database Type: ***MS SQL Server***
   h. Select Database Driver: **MS SQL Server Driver (Type 4) Versions: 7.0,2000**
   i. Click **Next**.
   j. Enter Support Global Transactions: selected.

k. Enter Emulate Two-Phase commit: unselected.
l. Click Next.
m. Enter Database name: *pe database*
n. Enter Host name: *pe server*
o. Enter Port: 1433
p. Enter Database user name: *pe user*
q. Enter Password: *pe password*
r. Click **Next**.
s. Select the **Test Configuration**. You receive the Connection Test succeeded message.
t. Click **Next**.
u. Select ***Server*** under Select Targets (default is AdminServer).
v. Click **Finish**.
w. Click **Activate Changes** button under Change Center.

## Creating the Process Engine data source on JBoss Application Server for DB2

You can manually configure the JDBC data source connection for the Process Engine on JBoss Application Server for DB2.

1. Create a file named , with the following content:

```
<datasources>
     <local-tx-datasource>
          <jndi-name>  {meta datasource}  </jndi-name>
          <use-java-context>false</use-java-context>
          <connection-url>  jdbc:db2://  {pe data server}  :
{pe data port}  /  {pe database}  </connection-url>
          <driver-class>com.ibm.db2.jcc.DB2Driver</driver-class>
          <user-name>  {meta user}  </user-name>
          <password>  {pe password}  </password>
     </local-tx-datasource>
</datasources>
```

2. Edit the contents of this file, replacing these parameters with the values from the prerequisite worksheet

   *meta datasource*
   *pe data server*
   *pe data port*
   *pe database*
   *meta user*
   *pe password*

3. Copy the file to directory *JBOSS_HOME*/server/*server_name*/deploy.

## Creating the Process Engine data source on JBoss Application Server for Oracle

You can manually configure the JDBC data source connection for the Process Engine on JBoss Application Server for Oracle.

1. Create a file named ps-ds.xml, with the following content:

```
<datasources>
     <local-tx-datasource>
          <jndi-name>  {meta datasource}  </jndi-name>
          <use-java-context>false</use-java-context>
          <connection-url>  jdbc:oracle:thin:@  {pe data server}  :
```

```
{pe data port}  :  {pe database}  </connection-url>
          <driver-class>oracle.jdbc.driver.OracleDriver</driver-class>
          <user-name>  {meta user}  </user-name>
          <password>  {pe password}  </password>
     </local-tx-datasource>
</datasources>
```

2. Edit the contents of this file, replacing these parameters with the values from the prerequisite worksheet:

```
meta datasource
pe data server
pe data port
pe database
meta user
pe password
```

3. Copy the file to directory *JBOSS_HOME*/server/*server_name*/deploy.

## Creating the Process Engine data source on JBoss Application Server for Microsoft SQL Server

You can manually configure the JDBC data source connection for the Process Engine on JBoss Application Server for Microsoft SQL Server.

1. Create a file named ps-ds.xml, with the following content:

```
<datasources>
     <local-tx-datasource>
          <jndi-name>  {meta datasource}  </jndi-name>
          <use-java-context>false</use-java-context>
          <connection-url>  jdbc:jtds:sqlserver://  {pe data server}  :
{pe data port}  /  {pe database}  </connection-url>
          <driver-class>net.sourceforge.jtds.jdbc.Driver</driver-class>
          <user-name>  {meta user}  </user-name>
          <password>  {pe password}  </password>
     </local-tx-datasource>
</datasources>
```

2. Edit the contents of this file, replacing these parameters with the values from the prerequisite worksheet:

```
meta datasource
pe data server
pe data port
pe database
meta user
pe password
```

3. Copy the file to directory *JBOSS_HOME*/server/*server_name*/deploy.

# Deploying the Business Process Framework Web application

After you have installed and configured the Business Process Framework server, you can manually deploy the Web application on the application server.

"Deploying the Web application on IBM WebSphere Application Server 6.x" on page 140
You can use the WebSphere Application Server Administrative Console to deploy the Business Process Framework Web Application.

"Deploying the Web application on IBM WebSphere Application Server 7.x" on page 141
You can use the WebSphere Application Server 7.x Administrative Console to manually deploy the Business Process Framework Web Application.

"Deploying the Web application on Oracle WebLogic Server 8.1.X" on page 142
You can use the Oracle WebLogic Server console to manually deploy the Business Process Framework Web application.

"Deploying the Web application on Oracle WebLogic Server 9.2.x or 10" on page 143
You can use the Oracle WebLogic Server Console to manually deploy the Business Process Framework Web Application.

"Deploying the Web application on JBoss Application Server 4.0.x or 4.2.x" on page 143
You can manually deploy the Business Process Framework Web application on JBoss Application Server 4.0.x or 4.2.x.

## Deploying the Web application on IBM WebSphere Application Server 6.x

You can use the WebSphere Application Server Administrative Console to deploy the Business Process Framework Web Application.

1. To install the Business Process Framework Web Application (WAR or EAR):
   a. Verify that the `app_name.war` or `app_name.ear` file was created.
   b. From the WebSphere Application Server Administrative Console, expand **Applications**.
   c. Click **Install New Application** .

      The Preparing for the application installation dialog opens.
      - If the Administrative Console is running locally, select **Local Path** and browse to the location of the `app_name.war` or `app_name.ear` file that was created by the setup program. The default path is:
        – Windows: `C:\Program Files\FileNet\BPF\web\`
        – UNIX: `/opt/FileNet/BPF/web/`

        **Remember:** Do not enter the machine name.
      - If the Administrative Console is remote, select **Remote File System** and enter the fully qualified path to the `app_name.war` or `app_name.ear` file.

        **Remember:** Do not enter the machine name.
2. Enter `BPF` and click **Next** to deploy a new application.
   a. Enter the context root.

      **Tip:** The context root is the name of the application you log in to for using the Web interface, for example: http://*WebAApplicationServerName*:*port#*/*Context Root*
   b. On the Preparing for the application installation screen, leave the defaults, and click **Next**.
   c. On the Application Security Warningscreen, click **Continue**.
   d. At Install New Application, Step 1, specify the application name. Enter `BPF`, or the name you chose to call the application, click **Next**.
   e. At Install New Application, Step 2, Map modules to servers, specify the Web server you are planning to use. Check **BPF** and click **Next**.
   f. At Install New Applicatio", Step 3, Map Virtual Hosts for Web Modules, check **BPF**, keep the default virtual host (default_host), and click **Next**.
   g. At Install New Application, Step 4, verify your configuration and click **Finish**.
   h. Once the configuration is saved, click **Save to Master Configuration**.
3. Stop and restart the application server.

4. To set the Classloader to **Parent_First**: Do not set the Classloader to Parent_Last as is done for Workplace and IBM InfoSphere Enterprise Records. Because this setting differs across IBM FileNet P8 applications, ensure that you apply this setting only to the Business Process Framework application, and not to the application server as a whole.
   a. From the WebSphere Application Server Administrative Console, expand Applications, click **Enterprise Applications**, and then click your application. (The default application is bpf.)
   b. From the Configuration tab, set the Classloader Mode to **PARENT_FIRST** (default).
   c. Verify that the WAR Classloader Policy is set to **Module**.
   d. Under Related Items, click **Web Modules**, and then click **bpf.war**.
   e. From the Configuration tab, set the Classloader Mode to **PARENT_FIRST** (Default). Click **Apply** → **Save** and **Save changes to the Master Configuration**.
5. To start the Enterprise Application:
   a. From the Administrative Console, expand **Applications**.
   b. Click **Enterprise Application** to the left of the Business Process Framework application, and click **Start**.

## Deploying the Web application on IBM WebSphere Application Server 7.x

You can use the WebSphere Application Server 7.x Administrative Console to manually deploy the Business Process Framework Web Application.

1. To install the Business Process Framework Web Application (WAR or EAR):
   a. Verify that the `app_name.war` or `app_name.ear` file was created.
   b. From the WebSphere Application Server Administrative Console, navigate to **Applications** → **WebSphere Enterprise Applications** → **New Enterprise Applications** → **Install**.
   c. Select the file to deploy.
      - If the Administrative Console is running locally, select **Local File System** and browse to the location of the `app_name.war` or `app_name.ear` file that was created by the setup program. The default path is:
        – Windows: `C:\Program Files\FileNet\BPF\web\`
        – UNIX: `/opt/FileNet/BPF/web/`

        **Remember:** Do not enter the machine name.
      - If the Administrative Console is remote, select **Remote File System** and enter the fully qualified path to the `app_name.war` or `app_name.ear` file.

        **Remember:** Do not enter the machine name.
   d.
2. If you are deploying as a WAR file, enter `BPF` as the Context Root and click **Next** to deploy the new application.

   **Tip:** The context root is the name of the application you log in to for using the Web interface, for example: http://*WebAApplicationServerName*:*port#*/*Context Root*
   a. On the Preparing for the application installation screen, leave the defaults, and click **Next**.

b. On the Application Security Warningscreen, click **Continue**.
c. At Install New Application, Step 1, specify the application name. Enter `BPF`, or the name you chose to call the application, click **Next**.
d. At Install New Application, Step 2, Map modules to servers, specify the Web server you are planning to use. Check **BPF** and click **Next**.
e. At Install New Application, Step 3, Map Virtual Hosts for Web Modules, check **BPF**, keep the default virtual host (default_host), and click **Next**.
f. At Install New Application, Step 4, verify your configuration and click **Finish**.
g. Once the configuration is saved, click **Save to Master Configuration**.

3. Stop and restart the application server.
4. To set the Classloader to **Parent_First**: Do not set the Classloader to Parent_Last as is done for Workplace and IBM InfoSphere Enterprise Records. Because this setting differs across IBM FileNet P8 applications, ensure that you apply this setting only to the Business Process Framework application, and not to the application server as a whole.
   a. From the WebSphere Application Server Administrative Console, navigate to**Applications → Enterprise Applications → BPF → Class loading and update detection**.
   b. Set the Classloader order to **Classes loaded with parent class loader first (parent first)** (default).
   c. Verify that the WAR Classloader Policy is set to **Module**.
   d. Under Related Items, click **Web Modules**, and then click **bpf.war**.
   e. From the Configuration tab, set the Classloader Mode to **PARENT_FIRST** (Default). Click **Apply → Save** and **Save changes to the Master Configuration**.
5. To start the Enterprise Application:
   a. From the Administrative Console, expand **Applications**.
   b. Click **Enterprise Application** to the left of the Business Process Framework application, and click **Start**.

## Deploying the Web application on Oracle WebLogic Server 8.1.X

You can use the Oracle WebLogic Server console to manually deploy the Business Process Framework Web application.

To deploy the application:

1. Start the application server.
2. From the Oracle WebLogic Server Console, *mydomain*, expand **Deployments**, and click **Web Application Modules**.
3. Click **Deploy a new Web Application Module**.
4. In the right pane of the Oracle WebLogic Server Console, browse to and select the radio button for the Business Process Framework folder in the *path to folder location*. The default path is:

| Option | Description |
|---|---|
| **Windows** | `C:\Program Files\FileNet\BPF\web\` |
| **UNIX:** | `/opt/FileNet/BPF/web/` |

5. Click **Target Module** and select **BPF**. Verify that the Name field.

6. Click **Deploy**. To verify that the deployment was successful, expand Web Applications.

## Deploying the Web application on Oracle WebLogic Server 9.2.x or 10

You can use the Oracle WebLogic Server Console to manually deploy the Business Process Framework Web Application.

To deploy the application:

1. Start the application server.
2. From the Oracle WebLogic Server Console, navigate to the domain to which you want to deploy Business Process Framework Web Application.
3. Click **Deployments**.
4. Click **Lock & Edit** button under Change Center.
5. From the right pane of the Oracle WebLogic Server Console, browse to and select the radio button for the Business Process Framework folder:

| Option | Description |
|---|---|
| **Windows** | `C:\Program Files\FileNet\BPF\web\` |
| **UNIX** | `/opt/FileNet/BPF/web/` |

6. Click **Install**.
7. Accept the defaults for the deployment.
8. Click **Finish**. Business Process Framework Web Application is deployed. To verify that the deployment was successful, expand Web Applications. The web application Business Process Framework is listed.

## Deploying the Web application on JBoss Application Server 4.0.x or 4.2.x

You can manually deploy the Business Process Framework Web application on JBoss Application Server 4.0.x or 4.2.x.

To deploy Business Process Framework:

1. Copy Web application files in the Business Process Framework Web Folder to *JBOSS_HOME*`/server/`*server_name*`/deploy/`. The default path of Business Process Framework Web Folder is:

| Option | Description |
|---|---|
| **Windows** | `C:\Program Files\FileNet\BPF\web\` |
| **UNIX** | `/opt/FileNet/BPF/web/` |

   If you are deploying Business Process Framework as a folder, you will be copying the folder (by default, this folder is named `bpf`) and everything beneath it. The copied Business Process Framework folder must be renamed to `bpf.war` in the JBoss Application Server deploy directory.

   If you are deploying Business Process Framework as a `.war` file, you will be copying the `.war` file (by default, this file is named `bpf.war`). In this case, no rename is required.
2. Restart the JBoss Application Server.

**Related concepts**

"Environment conditions that require additional manual configuration after installation" on page 25
The Business Process Framework installation program automatically configures the P8 Platform environment to work with Business Process Framework. However, some component versions require additional manual configuration after the installation is complete.

## Applying IBM FileNet P8 Platform changes to the Business Process Framework installation

You can apply IBM FileNet P8 Platform changes to the Business Process Framework installation. Verify your installation and component versions.

Apply IBM FileNet P8 Platform changes.
The Business Process Framework 4.1 installation is packaged with JAR files from these IBM FileNet P8 software levels:

- IBM FileNet P8 Content Engine: P8CE-4.0.1
- IBM FileNet P8 Process Engine: P8PE-4.0.2
- IBM FileNet P8 Application Engine: P8AE-4.0.1-000.001
- IBM FileNet P8 eForms: P8eForms-4.0.1

These IBM FileNet P8 software levels are the software versions required in order to run Business Process Framework 4.1. If you have installed a later fix pack for the Content Engine, Process Engine, Application Engine or (optionally) eForms, you must replace certain JAR files in the Business Process Framework install and deploy locations to ensure your Business Process Framework software functions correctly. The following table identifies the JAR files that you must replace for each component:

| Component | JAR Files |
|---|---|
| Content Engine | `Jace.jar javaapi.jar` |
| Process Engine | `pe.jar peResources.jar` |
| Application Engine | • `aeeforms.jar`<br>• `listener.jar mailapi.jar`<br>• `p8ciops.jar p8toolkit.jar`<br>• `soap.jar`<br>• `p8webappLogging.jar`<br>• `commons-fileupload-1.*.jar` |
| eForms | • `eforms-resources.jar`<br>• `eforms.jar`<br>• `itext-1.5.2.jar`<br>• `jai_codec.jar`<br>• `commons-httpclient-2.0.2.jar` |

You can find the new versions of these files in the Workplace `WEB-INF\lib` folder. By default the `WEB-INF` folder on the Application Engine is in the following location:

- Windows: `C:\Program Files\FileNet\Workplace\WEB-INF\lib`
- UNIX: `/opt/FileNet/Workplace/WEB-INF/lib`

1. “Copying the updated JAR files to the Business Process Framework installation location”
   You must copy the updated JAR files to the Business Process Framework installation location to ensure the installation is complete.
2. “Deploying the application” on page 146
   You can deploy Business Process Framework again if Business Process Framework is deployed as an exploded folder, or if you are using WebSphere Application Server.

**Related concepts**

“Environment conditions that require additional manual configuration after installation” on page 25
The Business Process Framework installation program automatically configures the P8 Platform environment to work with Business Process Framework. However, some component versions require additional manual configuration after the installation is complete.

## Copying the updated JAR files to the Business Process Framework installation location

You must copy the updated JAR files to the Business Process Framework installation location to ensure the installation is complete.

By default, the Business Process Framework installation location is:

- Windows: `C:\Program Files\FileNet\BPF`
- UNIX: `/opt/FileNet/BPF`

To copy the updated JAR files:

- Ignore the existing IBM FileNet P8 jar files in `bpfops/lib`. The IBM FileNet P8 jar files in `bpfops/lib` are not used at runtime. You do not have to update these jar files when applying IBM FileNet P8 Platform fix pack changes; however, updating the files does no harm.
- (Optional) Update the existing IBM FileNet P8 jar files in `BPFAssembly/CE_API`. Other IBM FileNet P8 components update the IBM FileNet P8 jar files beneath the `CE_API` in their installation. Although these files are not used by Business Process Framework, we recommend for consistency that you update the jar files beneath `BPFAssembly/CE_API` when you apply IBM FileNet P8 Platform fix pack changes.
- If Business Process Framework is installed as an EAR file: Follow the instructions in “Updating the contents of the Business Process Framework EAR file” on page 146. In that procedure, delete the existing `commons-fileupload-1.*.jar` file and copy the JAR files in the table earlier in this section from *`Workplace deploy folder`*`/WEB-INF/lib` to the `C:\temp_war\WEB-INF\lib` folder.
- If Business Process Framework is installed as a WAR File: Follow the instructions in “Updating the contents of the Business Process Framework WAR file” on page 146. In that procedure, delete the existing `commons-fileupload-1.*.jar` file and copy the JAR files in the table earlier in this section from `Workplace deploy folder/WEB-INF/lib` to the `C:\temp_war\WEB-INF\lib` folder.
- If Business Process Framework is installed in a folder structure: Copy the JAR files from *`Workplace deploy folder`*`/WEB-INF/lib` to the `BPF WEB-INF/lib` folder, overwriting the existing files.

### Deploying the application

You can deploy Business Process Framework again if Business Process Framework is deployed as an exploded folder, or if you are using WebSphere Application Server.

To deploy the application:

1. 1. Copy the JAR files from *Workplace deploy folder*/WEB-INF/lib to *BPF deploy folder*/WEB-INF/lib folder, overwriting the existing files. The *BPF deploy folder* is:
   - WebSphere Application Server: *WAS_Home*/profiles/*profile-name*/installedApps/*node_name*/*bpf*/WEB-INF/lib
   - Oracle WebLogic Server: No copy is required as the install and deployment locations are identical.
   - JBoss Application Server: *JBoss_install_path*/server/*server_name*/deploy/bpf.war/WEB-INF/lib
2. Restart the application server.

If your installation directory contains a packaged .war or .ear file and you are not using WebSphere Application Server, redeploy the newly packaged .war or .ear file

## Updating the contents of the Business Process Framework WAR file

Various procedures involve updating the contents of the Business Process Framework WAR file in the installation location.

To update the contents of the Business Process Framework WAR file:

1. Copy the WAR file to a temporary folder. In this procedure, the temporary folder is assumed to be c:\temp_war.
2. Open a command window.
3. Navigate to C:\temp_war and then run the following command to extract the WAR file contents: jar -xvf bpf.war
4. Delete the WAR file from the c:\temp_war folder.
5. Change the contents of the exploded WAR file in the C:\temp_war\WEB-INF\lib folder.
6. Rebundle the WAR file by running the following command: jar -cvf bpf.war *
7. Copy the WAR file into the Business Process Framework installation location.

## Updating the contents of the Business Process Framework EAR file

Various procedures involve updating the contents of the Business Process Framework EAR file in the installation location.

To update the contents of the Business Process Framework EAR file:

1. Copy the EAR file to a temporary folder. In this procedure, the temporary folder is assumed to be c:\temp_ear.
2. Open a command window.
3. Navigate to the C:\temp_ear folder and then run the following command to extract the WAR file and META-INF folder contents to the temporary folder: jar -xvf bpf.ear

4. Delete the EAR file from the `C:\temp_ear` folder.
5. Copy the WAR file from the `C:\temp_ear` folder to another temporary folder. In this procedure, the second temporary folder is assumed to be `C:\temp_war`.
6. Navigate to `C:\temp_war` and then run the following command to extract the WAR file contents:`jar -xvf bpf.war`
7. Delete the WAR file from the `c:\temp_war` folder.
8. Change the contents of the exploded EAR file in the `C:\temp_war\WEB-INF\lib` folder.
9. Rebundle the WAR file by running the following command: `jar -cvf bpf.war *`
10. Copy the WAR file generated in the previous step from the `c:\temp_war` folder to the `c:\temp_ear` folder.
11. Rebundle the EAR file by running this command: `jar -cvf bpf.ear *`
12. Copy the EAR file into the Business Process Framework installation location.

# Uninstalling Business Process Framework

The Business Process Framework 4.1 uninstallation program can automatically undeploy the Web application, which makes the 4.1 uninstallation procedures different than previous Business Process Framework releases.

The uninstallation program can automatically undeploy the Business Process Framework Web application, remove data sources from application server, and remove the J2C user in WebSphere Application Server.

Some folders and files (the Business Process Framework Deployment Home folder and `BPFAssembly`) might not be deleted during the uninstallation because a running process prevents its deletion. You might need to remove these folders manually.

The uninstallation program does not revert the Workplace files or Application Engine router files (under `..AE/Router` folder) that the Business Process Framework installer updated.

The uninstallation program does not uninstall Business Process Framework operations.

The uninstallation program does not remove the Business Process Framework Metastore database or configurations in the Content Engine or Process Engine.

1. "Uninstalling Business Process Framework Web application and Business Process Framework operations" on page 150
   You can undeploy Business Process Framework Web application and its operations with the uninstallation program or undeploy the Web application manually.
2. "Uninstalling Business Process Framework Explorer" on page 151
   You can use the Microsoft Windows **Add or Remove Programs** program to remove Business Process Framework Explorer from your server.
3. "Manually uninstalling the Business Process Framework Web application" on page 151
   You can bypass the automatic uninstallation and manually uninstall the Business Process Framework Web application.
4. "Manually deleting data sources" on page 153
   The uninstallation program automatically deletes the data sources in the Web application server. If you choose to manually remove Business Process Framework, you must also manually delete the data sources from your Web application server.
5. "Removing the deployment file from WebSphere Application Server" on page 155
   For WebSphere Application Server installations only, whether you chose automatic or manual removal of Business Process Framework, after uninstallation you must remove additional deployment information from the WebSphere Application Server administration console.
6. "Removing Business Process Framework components from the FileNet P8 Platform environment" on page 155
   After you uninstall the Business Process Framework applications, you have the

option to completely remove the Business Process Framework from your environment by deleting all data and configuration from the other FileNet P8 Platform components.

## Uninstalling Business Process Framework Web application and Business Process Framework operations

You can undeploy Business Process Framework Web application and its operations with the uninstallation program or undeploy the Web application manually.

It does not matter whether the Component Manager or Process Task Manager on the Application Engine is running or not.

To uninstall Business Process Framework Web application and Business Process Framework operations:

1. Start or stop the Web application server:

| Option | Description |
|---|---|
| **For JBoss Application Server on Windows only** | Shut down the Web application server. |
| **For all other application server and operating system combinations** | Ensure that the Web application server is running. |

2. Start the uninstallation program:

| Option | Description |
|---|---|
| **UNIX** | `bpf_uninstall.bin` |
| **Windows** | `bpf_uninstall.exe` |

   **Tip:** For Windows, you can also start the uninstallation program from the Windows **Add or Remove Programs** window.

3. Select to automatically undeploy the Business Process Framework Web application and automatically remove the data sources and have the uninstaller automatically perform these tasks, or manually undeploy the Business Process Framework Web application and remove the data sources from the application server.
4. Stop application server if it is running.
5. Delete all the cache folders for the Business Process Framework Web Application. The location of the default cache folders for the Business Process Framework Web Application are as follows:

| Option | Description |
|---|---|
| **Oracle WebLogic Server** | *bea_home*/user_projects/domains/*app_domain*/servers/*server_name*/tmp/_WL_user |
| **WebSphere Application Server 5.x** | *WAS_Home*\temp*node_name*\servers\server1*bpf* |
| **WebSphere Application Server 6.x** | *WAS_Home*\profiles*profile-name*\temp*node_name*\server1*bpf* |

6. Delete the deployed Business Process Framework application directory. The default location depends on which version of the application server you are on:

**Tip:** These folders might not be deleted when the Web Application is deleted.

| Option | Description |
|---|---|
| **WebSphere Application Server 5.x** | *WAS_Home*\installedApps*node_name**bpf* |
| **WebSphere Application Server 6.x** | *WAS_Home*\profiles*profile-name*\installedApps*node_name**bpf* |
| **Oracle WebLogic Server 8.1.x** | • .../.wlnotdelete/extract/...*application name*<br>• .../upload/*application name*<br>These folders might reside under C:/bea/user_projects/domains/mydomain/myserver :<br>• .../.wlnotdelete/extract/myserver_BPF_BPF<br>• .../upload/BPF |
| **Oracle WebLogic Server 9.2.x** | /tmp/_WL_user/*application name*<br>These folders might reside under C:/bea/user_projects/domains/mydomain/servers/AdminServer: /tmp/_WL_user/BPF |

7. On the Application Engine server, stop the Component Manager BPF_Operations component by using the FileNet Process Task Manager.
8. Exit FileNet Process Task Manager.
9. Delete the *BPF_install_path*/FileNet/BPF and *BPF_install_path*/FileNet/BPF/BPFAssembly directories.

## Uninstalling Business Process Framework Explorer

You can use the Microsoft Windows **Add or Remove Programs** program to remove Business Process Framework Explorer from your server.

Run this procedure on the server where Business Process Framework Explorer is installed:

1. Open **Start Menu** → **Settings** → **Control Panel** → **Add/Remove Programs**.
2. Select **FileNet Business Process Framework Explorer**.
3. Select **Change/Remove**.

## Manually uninstalling the Business Process Framework Web application

You can bypass the automatic uninstallation and manually uninstall the Business Process Framework Web application.

The Business Process Framework installation program removes the Web Application automatically. Perform the manual uninstallation only if you do not want to use the uninstallation program or the uninstallation program failed.

"Manually uninstalling the Business Process Framework Web application from WebSphere Application Server" on page 152
You can remove the Business Process Framework on WebSphere Application Server by uninstalling the Web application.

"Manually uninstalling the Business Process Framework Web application from Oracle WebLogic Server 8.1.x"
You can remove Business Process Framework by deleting the BPF module on Oracle WebLogic Server 8.1.x.

"Manually uninstalling the Business Process Framework Web application from Oracle WebLogic Server 9.2.x or 10"
You can remove Business Process Framework by deleting the Business Process Framework module on Oracle WebLogic Server 9.2.x or 10.

"Manually uninstalling the Business Process Framework Web application from JBoss Application Server" on page 153
You can remove Business Process Framework by removing the `bpf.war` file on JBoss Application Server

## Manually uninstalling the Business Process Framework Web application from WebSphere Application Server

You can remove the Business Process Framework on WebSphere Application Server by uninstalling the Web application.

To uninstall Business Process Framework:

1. Use Internet Explorer to go to the WebSphere Application Server Administration page: http://*web application server*:9060/ibm/console
2. Enter your name.
3. Navigate to **Applications/Enterprise Applications**.
4. Select the Business Process Framework application name.
5. Click **Stop**.
6. Reselect **Business Process Framework** (or other application name you have Business Process Framework deployed under).
7. Click **Uninstall** and then **Save**.

## Manually uninstalling the Business Process Framework Web application from Oracle WebLogic Server 8.1.x

You can remove Business Process Framework by deleting the BPF module on Oracle WebLogic Server 8.1.x.

To delete the module:

1. Log in to WebLogic Server console from a Web browser: http://*web application server*:7001/console
2. Delete module by doing the following:
   a. Expand **mydomain** → **Deployments** → **Web Application Modules** (in navigation tree pane).
   b. Right-click **BPF**.
   c. Select **Delete BPF**.
   d. Click **Yes**.
   e. Click **Continue**.

## Manually uninstalling the Business Process Framework Web application from Oracle WebLogic Server 9.2.x or 10

You can remove Business Process Framework by deleting the Business Process Framework module on Oracle WebLogic Server 9.2.x or 10.

To delete the module:

1. Log in to WebLogic Server console from a Web browser: http://*web application server*:7001/console
2. (Oracle WebLogic Server 9.2.x only) Click **Lock & Edit** button under **Change → Center**.
3. Delete the module. Click **mydomain → Deployments**.
   a. Select **BPF**.
   b. Click **Delete**.
   c. Click **Yes** on Delete Deployments screen.
   d. Click **Activate Changes** button under **Change → Center**.

## Manually uninstalling the Business Process Framework Web application from JBoss Application Server

You can remove Business Process Framework by removing the `bpf.war` file on JBoss Application Server

To remove the `bpf.war` file:

1. Shut down JBoss Application Server.
2. Remove `bpf.war` from the *JBOSS_HOME*`/server/`*server_name*`/deploy` directory.
3. Remove the `bpf.war` cache folder *JBOSS_HOME*`>server/`*server_name*`/work/jboss.web/localhost/bpf`.

# Manually deleting data sources

The uninstallation program automatically deletes the data sources in the Web application server. If you choose to manually remove Business Process Framework, you must also manually delete the data sources from your Web application server.

"Manually deleting data sources from WebSphere Application Server"
You can manually delete data sources from WebSphere Application Server by deleting the appropriate JDBC provider.

"Manually deleting data sources from Oracle WebLogic Server 8.1" on page 154
If you chose to do a manual removal of Business Process Framework, you must also manually delete data sources in the Oracle WebLogic Server 8.1. Administrative Console. Delete both the Metastore datasource and the Process Engine datasource, as well as related connection pools.

"Manually deleting data sources from Oracle WebLogic Server 9.2 or 10" on page 154
If you chose to do a manual removal of Business Process Framework, you must also manually delete data sources in the Oracle WebLogic Server 9.2.x or 10 Administrative Console. Delete both the Metastore datasource and the Process Engine datasource.

"Manually deleting data sources from JBoss Application Server" on page 155
You can manually delete data sources from JBoss Application Server by removing the `ms-ds.xml` and `ps-ds.xml` files.

## Manually deleting data sources from WebSphere Application Server

You can manually delete data sources from WebSphere Application Server by deleting the appropriate JDBC provider.

To delete the JDBC Provider:

1. Log onto the WebSphere Application Server administrative console: http://*web application server*:9060/ibm/console
2. Create JDBC Provider:
   a. Click **Resources** → **JDBC Providers**.
3. Click the appropriate JDBC provider.
4. Click the Data source link.
5. Choose the Data source used by Business Process Framework.
6. Click J2EE Connecter Architecture(J2C) authentication data entries in Related Items.
7. Delete the J2C Alias that Business Process Framework used.
8. Go back to the data source page in step2.
9. Delete the *meta datasource* data source which is used by Business Process Framework.
10. Go back to **Resources** → **JDBC Provider**.
11. Delete the JDBC Provider which is used by Business Process Framework.
12. Repeat these steps to delete the *process datasource*.

## Manually deleting data sources from Oracle WebLogic Server 8.1

If you chose to do a manual removal of Business Process Framework, you must also manually delete data sources in the Oracle WebLogic Server 8.1. Administrative Console. Delete both the Metastore datasource and the Process Engine datasource, as well as related connection pools.

To log in to WebLogic Server and delete data sources:

1. Log in toWebLogic Server console from a Web browser: http://*web application server*:7001/console
2. Delete data sources:
   a. Expand **Services** → **JDBC** → **DataSources** (in navigation tree pane).
   b. Right-click ***meta datasource***.
   c. Select **Delete *meta datasource***.
   d. Click **Yes**.
   e. Click **Continue**.
   f. Repeat the same process for the *pe datasource*.
3. Delete connection pools as follows:
   a. Expand **Services** → **JDBC** → **Connection Pools**.
   b. Right click ***meta connection pool***.
   c. Select **Delete *meta connection pool***.
   d. Click **Yes**.
   e. Click **Continue**.
   f. Repeat the same process for the *pe connection pool*.

## Manually deleting data sources from Oracle WebLogic Server 9.2 or 10

If you chose to do a manual removal of Business Process Framework, you must also manually delete data sources in the Oracle WebLogic Server 9.2.x or 10 Administrative Console. Delete both the Metastore datasource and the Process Engine datasource.

To log in to WebLogic Server and delete data sources:

1. Log in toWebLogic Server console from a Web browser: http://*web application server*:7001/console
2. Click **Lock & Edit** button under **Change → Center**.
3. Delete **DataSources**:
   a. Expand **Services → JDBC → DataSources** (in tree-view pane).
   b. Select *meta datasource* in right pane.
   c. Click **Delete *meta datasource* ...**
   d. Click **Yes** on Delete JDBC Data Sources screen.
   e. Click **Activate → Changes** button under **Change → Center**.
   f. Repeat the same process for the *pe datasource*.

### Manually deleting data sources from JBoss Application Server

You can manually delete data sources from JBoss Application Server by removing the `ms-ds.xml` and `ps-ds.xml` files.

To delete data sources from JBoss Application Server:

1. Shut down JBoss Application Server.
2. Remove the `ms-ds.xml` and `ps-ds.xml` files from `JBOSS_HOME/server/server_name/deploy`.

## Removing the deployment file from WebSphere Application Server

For WebSphere Application Server installations only, whether you chose automatic or manual removal of Business Process Framework, after uninstallation you must remove additional deployment information from the WebSphere Application Server administration console.

To remove the deployment file automatically:

In the WebSphere Application Server Administration page, click **Environment → Update Web Server Plugin → OK**. This procedure automates removal of the deployment file after you uninstall the Web application. This step must be performed after every uninstallation.

## Removing Business Process Framework components from the FileNet P8 Platform environment

After you uninstall the Business Process Framework applications, you have the option to completely remove the Business Process Framework from your environment by deleting all data and configuration from the other FileNet P8 Platform components.

This is an optional portion of the uninstallation process. It is useful if you want to completely remove an installation of Business Process Framework.

"Deleting the object store in Content Engine" on page 156
You can delete the object store in Content Engine to remove all historical case data. Removing the object store is not recommended for production systems or for object stores that are used by other applications.

"Deleting the object store database" on page 156
You can delete the object store database remove all historical case data.

Removing the object store database is not recommended for production systems or for object store databases that are used by other applications.

"Deleting the metastore database"
You can delete the metastore database to remove all historical data. Removing the metastore database is not recommended for production systems or for metastore databases that are used by other applications.

"Deleting the Process Engine database"
You can delete the Process Engine database to remove data. Removing the Process Engine database is not recommended for production systems or for Process Engine databases that are used by other applications or other isolated regions.

## Deleting the object store in Content Engine

You can delete the object store in Content Engine to remove all historical case data. Removing the object store is not recommended for production systems or for object stores that are used by other applications.

To delete the object store:

1. Click **Start** → **Programs** → **IBM FileNet P8 Platform** → **Enterprise Manager SnapIn**.
2. Right-click **Object Stores** → ***os display name***.
3. Select **Delete**.
4. Click **Yes**.
5. Click **OK** on other prompts.

## Deleting the object store database

You can delete the object store database remove all historical case data. Removing the object store database is not recommended for production systems or for object store databases that are used by other applications.

Contact the database system administrator to delete object store database.

## Deleting the metastore database

You can delete the metastore database to remove all historical data. Removing the metastore database is not recommended for production systems or for metastore databases that are used by other applications.

Contact the database system administrator to delete the metastore database.

## Deleting the Process Engine database

You can delete the Process Engine database to remove data. Removing the Process Engine database is not recommended for production systems or for Process Engine databases that are used by other applications or other isolated regions.

Contact the database system administrator to delete the Process Engine database. Alternatively, you can initialize the Process Engine isolated region again from the Process Configuration Console and reuse it.

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# Index

## Special characters



## A



## B



## C



## D

## E



## F



## G



## H



## I



## J

Program Number: 5724-R75

GC31-5517-03