FileNet Business Activity Monitor

Installing and Configuring

Release 3.6.0

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Notices

For notices regarding this documentation, refer to Help Directory > Notices in the FileNet P8 online documentation.

Typographical Conventions

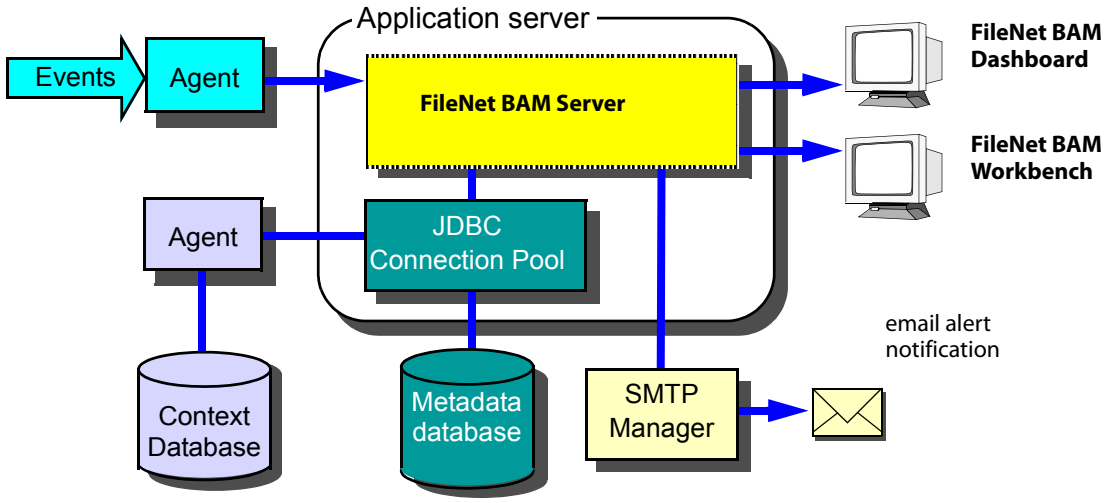
This document uses the conventions in the following table to distinguish elements of text.

Convention	Usage
UPPERCASE	Environment variables, status codes, utility names.
Bold	Paths and file names, program names, clickable user-interface elements (such as buttons), and selected terms such as command parameters or environment variables that require emphasis.
Italic	User-supplied variables and new terms introduced in text.
<*italic*>	User-supplied variables that replace everything between and including the angle bracket delimiters (< and >).
Monospace	Code samples, examples, display text, and error messages.

Contents

Preface

FileNet Business Activity Monitor (BAM) runs in an application server environment. It stores information about the runtime objects in a metadata database, sends email alert notifications through an SMTP mail manager, and receives and retrieves event and context data through agents: processes that know how to take external data and put it into a FileNet Business Activity Monitor format. Agents may run in the application server environment, or may be external to it, as shown in this diagram.



What's in this guide?

This guides shows system administrators how to install, set up, and configure FileNet Business Activity Monitor, as described in the following chapters:

- "Setting Up" on page 8 explains the system requirements and the steps necessary to set up the environment and the metadata DBMS.
- "Configuring the Metadata Database" on page 18 shows you how to configure the metadata database on each of the supported databases. The metadata database contains the definitions of all objects in FileNet Business Activity Monitor installation.
- "Installing FileNet Business Activity Monitor" on page 24 describes how to install and deploy the application on each of the supported application servers.
- "Configuring FileNet Business Activity Monitor" on page 74 details how to set up the application for users and how to run a test program that verifies your configuration.
- "Uninstall FileNet Business Activity Monitor" on page 90 provides the steps for removing the application from the installation.
- "FileNet Business Activity Monitor Database Settings" on page 95 enumerates the settings necessary for connecting to the DBMS that manages the metadata database.

Administrating the application

When FileNet BAM Server is running, you can administer the application from the Administration Console in the FileNet BAM Workbench.

To access the FileNet BAM Workbench interface:

- Point your browser to the application running on the application server.

  For example:

  ```
  http://filenetbam_host:7001/filenetbam/workbench
  ```

Setting Up

This chapter describes how to prepare for installing.

In this Chapter:

Supported databases for metadata database

FileNet Business Activity Monitor supports numerous databases for the metadata database. However, support varies depending on the application server you use. The following table lists the supported application servers and database options.

Application server	Supported databases for metadata
BEA WebLogic Version 8.1.2	• Oracle 9.2 or later • SQL Server 2000 plus SP3 or later • SQL Server 2005 • DB2 7.2.8 • DB2 8.2
IBM WebSphere Version 5.1.x and 6.x (6.0.x and 6.1.x)	• Oracle 9.2 and 10G • SQL Server 2000 plus SP3 • SQL Server 2005 (WebSphere (6.1.x only) • DB2 7.2.8 • DB2 8.2
JBoss Versions 3.2.6 (32-bit and 64-bit)	• Oracle 9.2 or later • SQL Server 2000 plus SP3 or later • SQL Server 2005 • DB2 7.2.8 • DB2 8.2

NOTE: For detailed metadata database and JDBC driver information, see "Configuring the Metadata Database" on page 18.

Supported platforms

FileNet Business Activity Monitor supports the following operating systems (as certified by the desired application server provider):

- Windows 2000
- Solaris 5.9
- AIX 5.x
- Linux (kernel 2.4)
- HP/UX

Supported application servers

Following are the minimum system configurations certified in this release, organized by application server:

- *BEA WebLogic Version 8.1.2*
- *IBM WebSphere Version 5.1.x and 6.x (6.0.x and 6.1.x)*
- *JBoss Versions 3.2.6 (32-bit and 64-bit)*

Each option is further described below.

NOTE: Support for application servers is limited to specific operating systems which are certified by the application server provider. For more information, see "Supported platforms" on page 9.

Table 1: BEA WebLogic Version 8.1.2

Installation on WebLogic is detailed in "Installing and Deploying on BEA WebLogic" on page 25.

BEA WebLogic Requirements		
JDK	1.4.2_05 or later version 1.4.2_x **Note:** You must use the *JDK*; the *JRE* is insufficient.	
Disk space	750 MB	
Metadata database	**Database**	**JDBC Driver**
	Oracle 9.2 or later	• Oracle thin driver (ojdbc14.jar) • Oracle thick driver (OCI) **Note:** You must use the driver supplied with the 10g client. **Note:** Use of the thick driver requires installation of the Oracle Client.
	SQL Server 2000 plus SP3 or later	Embedded BEA driver for MS SQL Server
	SQL Server 2005	
	DB2 7.2.8	• db2jcc.jar • db2jcc_license_cu.jar
	DB2 8.2	

Table 2: IBM WebSphere Version 5.1.x and 6.x (6.0.x and 6.1.x)

Installation on WebSphere is detailed in "Installing and Deploying on IBM WebSphere" on page 40.

NOTE: Version 5.1.x requires fix packs, as described in "Supported application servers" on page 10.

<table>
<tr><th colspan="3">IBM WebSphere Requirements</th></tr>
<tr><td>JDK</td><td colspan="2">JDK SR2 (native)</td></tr>
<tr><td>Disk space</td><td colspan="2">Minimum 96 MB, with an additional 60 MB of temporary space allocated to the installation process</td></tr>
<tr><td rowspan="5">Metadata database</td><td>Database</td><td>JDBC Driver</td></tr>
<tr><td>Oracle 9.2
(WebSphere 5.1.x only)</td><td rowspan="2">• Oracle thin driver (ojdbc14.jar)
• Oracle thick driver (OCI)
Note: You must use the driver supplied with the 10g client.</td></tr>
<tr><td>Oracle 10G
(WebSphere 5.1.x and 6.0.x)</td></tr>
<tr><td>SQL Server 2000 plus SP3 or later</td><td>• mssqlserver.jar
• msbase.jar
• msutil.jar</td></tr>
<tr><td>SQL Server 2005</td><td>Use the native WebSphere drivers, as described in "Configuring a new JDBC provider" on page 44.</td></tr>
<tr><td>DB2 7.2.8</td><td>• db2jcc.jar
• db2jcc_license_cu.jar</td></tr>
</table>

Table 3: JBoss Versions 3.2.6 (32-bit and 64-bit)

JBoss is available from *http://prdownloads.sourceforge.net/jboss*. Installation on JBoss is detailed in "Installing and Deploying on JBoss" on page 55.

JBoss Requirements		
JDK	1.4.2_05 or later version 1.4.2_x **Note:** You must use the *JDK*; the *JRE* is insufficient.	
Disk space	115 MB	
Metadata database	**Database**	**JDBC Driver**
	Oracle 9.2 or later (including 10G)	• Oracle thin driver (ojdbc14.jar) • Oracle thick driver (OCI) **Note:** You must use the driver supplied with the 10g client.
	SQL Server 2000 plus SP3 or later	• mssqlserver.jar • msbase.jar • msutil.jar OR • sqljdbc.jar
	SQL Server 2005	sqljdbc.jar
	DB2 7.2.8	• db2jcc.jar • db2jcc_license_cu.jar
Note: There is an existing Microsoft issue with the sqljdbc.jar driver, which is addessed in the Microsoft Knowledge Base article 917054 (http://support.microsoft.com/kb/917054). **Note:** The sqljdbc.jar driver is backward compatible to version 2000. However, if you use the 2005 driver (sqljdbc.jar) you must make sure that the version 2000 drivers are not in the class path.		

Other basic requirements

This section describes the additional requirements for installing, deploying, and running FileNet Business Activity Monitor:

- *Client memory*
- *Web browser*
- *Mail server*

Client memory

The client machine accessing FileNet Business Activity Monitor should have a minimum of 512 MB RAM; 1.0 GB is recommended.

Web browser

FileNet Business Activity Monitor is tested for Microsoft Internet Explorer 6.0 (with patch 828750), or higher, browser for accessing FileNet BAM Workbench.

NOTE: You must also install Macromedia Flash, version 8.0 or higher.

NOTE: If your implementation of FileNet Business Activity Monitor is running in an Asian language, you must configue the browser for the appropriate language support. Refer the Internet Explorer or Windows documentation.

Mail server

A running SMTP (simple mail transfer protocol) email server for delivering email notifications. The server is external to FileNet Business Activity Monitor and is managed by your email system administrator. Contact that administer to set up an account for FileNet Business Activity Monitor. The application will need an account and password for sending mail, an address to use in the From address field, and the name of the email server host.

Upgrading from previous versions

This section describes general best practices to follow when upgrading to a new version. However, you should refer to the release notes for the new version to see if there are any version-specific migration procedures required.

To upgrade FileNet Business Activity Monitor to a new version:

1. Export the data from the metadata database:
    - Log in to FileNet BAM Workbench.
    - Use the Import/Export feature as described in the FileNet BAM Workbench documentation.
    - You can export data as either a JAR file or as a directory structure.
2. Locate the recovery log directory.

The recovery log directory contains checkpoint files that will have to be deleted in a later step in this procedure. To find this location:

- Open FileNet BAM Workbench.
- Go to the Administration Console tab and click the System Settings button.
- In the Systems Settings dialog box, open the Checkpoint Configuration tab pane.

The path is specified in the Recovery Log Directory setting.

3. Shut down FileNet Business Activity Monitor.
4. (For JBoss implementations only) Remove the following directories:
   - $JBOSS_HOME/server/default/work
   - $JBOSS_HOME/server/default/tmp
   - $JBOSS_HOME/server/default/data
   - $JBOSS_HOME/server/conf/jboss.web
5. (For WebSphere and WebLogic implementations only) Un-deploy the old FileNet Business Activity Monitor EAR file using the administrative tools in the console of the respective application server.
6. Open the recovery log directory and delete the filestore*.dat, DEFAULTRECOVERYLOGGER_*, and chkpoint_.x directories.
7. In the application server home directory, locate and delete the filestore*.dat, DEFAULTRECOVERYLOGGER_*, and chkpoint_.x directories.
8. Drop the database tables for the metadata.

   You may wish to simply to recreate the database from scratch.
9. Deploy the new version on the desired application server, as described in the “Installing FileNet Business Activity Monitor” on page 24.
10. Log in to FileNet BAM Workbench.

NOTE: You will have to reconfigure the initial settings, as described in “Configuring FileNet Business Activity Monitor in FileNet BAM Workbench” on page 75.

11. Import the data you exported in the first step of this procedure.

    Again, use the Import/Export feature in FileNet BAM Workbench.

Installing BAM documentation

NOTES

- You must install the documentation on an application server if you intend to configure it for online help functionality in the FileNet P8 software.
- The application server must be Java-enabled to use the Help's Search functionality (e.g., IBM WebSphere or BEA WebLogic).
- Users must have Java Script support enabled on their web browsers to use some of the features in the help (such as Search and the tables of contents). The help files are contained in a folder called "ecm_help."
- Updates to the documentation are provided periodically. Please check the FileNet Worldwide Customer Support web site for updates.

To refresh the documentation on the application server

1. Ensure that you have the latest version of the FileNet P8 Platform 3.5.1 documentation installed on your application server. See the *FileNet P8 Platform Installation and Upgrade Guide* for more information.
2. Refer to your server documentation. Complete any initial steps that might be necessary before updating the ecm_help files. For example, on a WebLogic server, you must undeploy the ecm_help application.
3. Copy the **ecm_help** folder on the FileNet BAM Documentation CD to the application server where the FileNet P8 documentation is installed. Here's an example on a WebLogic server: **bea\user_projects*myDomain*\ecm_help**.

   ### NOTES

   - If you downloaded updated BAM documentation from the FileNet Customer Service and Support web site (http://www.css.filenet.com), install the updated version instead of the version on the BAM Documentation CD.
   - During the copy, some FileNet BAM documentation files will overwrite existing files.
   - If you later install a version of the FileNet P8 Platform documentation that is newer than **3.5.0**, you must refresh the BAM documentation on the application server.
4. After you copy the BAM documentation, download and replace the installation PDF files under the Installation directory with the latest files from FileNet Customer Service and Support web site (http://www.css.filenet.com).
5. Refer to your application server documentation. Complete any additional steps that might be necessary after updating the ecm_help files. For example, on a WebLogic server, you must redeploy the ecm_help application.

Update the Search Index

Once you've installed the BAM Help, you should update the search index files. Unless you complete this step, the documentation search function will not find the BAM content.

NOTES

- If you're installing more than one FileNet P8 functional expansion, update the search after all the functional expansions have been installed. If you install another functional expansion later, update the search index again by following the procedure below.
- To update the Help Search index, you must specify the path to the JRE installation on the application server where you intend to install the FileNet P8 Help.
- When you update the Search Help index, a backup of the files in the existing **ecm_help/search/index/core** subdirectory will be copied automatically to an **ecm_help/search/index/indexOld** subdirectory. To return to the previous indexed state, reapply these backed-up files to the **core** subdirectory (after first removing the new files created there).

To update the Help Search index

indexFiles.bat is a script that launches the Java-based indexer (indexFiles.sh for UNIX-based systems).

The script is located in this directory: **ecm_help/search.**

If you have already deployed or installed this FileNet P8 help as a web application, undeploy or uninstall it before proceeding.

NOTE For WebSphere you must deploy the original ecm_help.war file, execute it, then stop WebSphere. Next, copy the files to the deployed location, update the search, and then restart WebSphere.

1. Ensure that you have copied the FileNet P8 Platform help and all your functional expansions to a designated application server.

   The FileNet P8 Platform help includes placeholder files for functional expansions that are released on different schedules. As a result, when you install the documentation for the various components in the prescribed order, you might see warning messages about overwriting newer files. Ignore the messages and allow the overwrites to occur. By doing so the actual functional expansion help files will replace the placeholder files.

2. Open a command prompt on the application server.
3. From the command line, navigate to the **search** subdirectory under your **ecm_help** root directory.
4. Using a text editor, open the search-indexing script file that is appropriate to your application server operating system:

   indexFiles.bat (Windows)

   indexFiles.sh (UNIX)

5. Modify the JAVA_HOME variable in the script file with the path to your JRE installation (version 1.3 or later). The defaults are:

   SET JAVA_HOME=c:/j2sdk1.4.2 (Windows)

   JAVA_HOME="/usr/java/j2sdk1.4.1_02" (UNIX)

6. Save your changes and close the text editor.
7. Run the updated search-indexing script file.

8. By default, the script backs up the existing index files to **indexOld**, and then re-indexes all the help files starting from the root **ecm_help** directory, and writes the index to this directory:

   ecm_help/search/index/core.

To deploy and verify the documentation web site

1. Deploy or install the copied FileNet P8 documentation as a web application. Use the appropriate instructions provided with your application server.
2. Verify that the application server and the new **ecm_help** documentation web site are running, as follows:

   a. From your web browser, access the **_start_here.htm** page in the top-level **ecm_help** directory.

   b. The documentation Help Directory should open.

   c. Click the **Search** link on the Help Directory toolbar. The documentation Search page should open.

   NOTE Use the following URL to configure the online help location for the various FileNet P8 components either while running Setup programs or later via site preferences settings:

   `http://<docserver:port#>/<ecm_help>/`

   where:

   docserver is the name of the Java web server.

   port# is the port number.

   <*ecm_help*> is the root folder of the documentation website. You can use multi-part root folders (e.g., / docs/ ecm_help) if your application server supports them.

Configuring the Metadata Database

This chapter shows you how to configure and install the metadata database on each of the supported databases. The metadata database contains the definitions of all objects in FileNet Business Activity Monitor installation. It also contains the details of alerts and of object runtime data persisted to disk.

NOTE: For information about database support and configuration for the supported application servers, see “Installing FileNet Business Activity Monitor” on page 24.

In this Chapter:

Before you begin: suggested best practices

Prior to configuring a new metadata database for IBM DB2, MS SQL Server, or Oracle, it is recommended that you make copies of the driver and the utility files and copy them to a common, local directory. By eliminating extensive and potentially cross-network file paths, this simple step simplifies the instantiation process.

Using Derby as a metadata database

Apache Derby is bundled with FileNet Business Activity Monitor, however, it's use is limited to the JBoss application. The database is initialized when the application is started for the first time.

Using IBM DB2 as a metadata database

This section describes how to set up and configure a metadata database on IBM DB2, including the following:

- *Version requirements for DB2 database*
- *DB2 disk space requirements*
- *Creating a user account for the dedicated database*
- *Additional DB2 configuration required for IBM WebSphere*

Each point is discussed in further detail below.

Version requirements for DB2 database

The table below lists the supported versions and operating systems for using DB2 as the metadata database.

Table 4: Version requirements for IBM DB2

Version	Operating Systems	Required JDBC Drivers
7.2 EE or EEE FP 10	• IBM AIX 5.1, 5.2 • Sun Solaris 9 • HP HP-UX 11i	db2jcc.jar db2jcc_license_cu.jar **Note:** The required drivers should be available in your database installation directory.
8.1 FP9a 8.2 FP2	• Windows 2000 Server • IBM AIX 5.1, 5.2, 5.3 • Sun Solaris 9 • HP HP-UX 11i • RedHat Enterprise Linux 3 (IA32) • RedHat Enterprise Linux 3 (Itanium)	

Note:

- IBM has withdrawn support for DB2 UDB 7.2 effective September 20, 2004. Any deployments continuing to leverage DB2 7.2 after that date must have purchased extended support rights from IBM to provide support and/or error corrections on that configuration.
- Only 32 bit DB2 UDB 7 supported on HP-UX 11i.
- 64-bit DB2 UDB 8 is supported on AIX and Solaris.
- 64-bit DB2 UDB 8.2 supported on RHEL 3 (Itanium)
- For partitioning and replication support on DB2 UDB 8.1 (FP3 and FP4a), contact IBM Technical Support for a special build for APAR IY50250

DB2 disk space requirements

Because the persisted data can grow quite large, it is important to allocate at least 50 MB for the metadata database. For production deployments, allocate at least 200 MB.

Creating a user account for the dedicated database

Create a user account for the dedicated database that has create, modify, and update privileges. This account information will be required when you configure the database connection for the application server.

Additional DB2 configuration required for IBM WebSphere

If you will implement FileNet Business Activity Monitor on the IBM WebSphere application server, the database configuration must adhere to some additional limitations, as described below.

- The DB2 driver(s) must be installed on the host supporting FileNet Business Activity Monitor.

  These will be referenced in the application server configuration.

- The following environment variables must be set:
  - DB2INSTANCE identifies the name of the instance to use.
  - The library path environment variable specifies the directory that contains the DB2 shared libraries, the location of which depends on where DB2 is installed. As shown below, the command varies for different platforms.

Platform	Sample environment variable settings
Windows	`DB2INSTANCE DB2` `PATH C:\SQLLIB\BIN;%PATH%`

Solaris	`export DB2INSTANCE=db2fs`
	`export LD_LIBRARY_PATH=/opt/IBM/db2/V8.1/lib:${LD_LIBRARY_PATH}`
	Note: The string “/opt/IBM/db2/V8.1” indicates the DB2 installation directory. You must use a valid file path in the setting.

AIX	`export DB2INSTANCE=db2fs`
	`export LIBPATH=/opt/IBM/db2/V8.1/lib:${LIBPATH}`
	Note: The string “/opt/IBM/db2/V8.1” indicates the DB2 installation directory. You must use a valid file path in the setting.

HP/UX	`export DB2INSTANCE=db2fs`
	`export SHLIB_PATH=/opt/IBM/db2/V8.1/lib:${SHLIB_PATH}`
	Note: The string “/opt/IBM/db2/V8.1” indicates the DB2 installation directory. You must use a valid file path in the setting.

Using MS SQL Server as a metadata database

The table below lists the supported versions and operating systems for using MS SQL Server as the metadata database.

Table 5: Version requirements for MS SQL Server

<table>
<tr><th>Version</th><th>Operating Systems</th><th>Required JDBC Driver(s)</th></tr>
<tr><td>2000 plus:
• SP2
• SP3a
• SP4</td><td rowspan="2">• Windows 2000 Server
• Windows 2000 Advanced Server SP3-plus</td><td rowspan="2">• mssqlserver.jar (from version 2000)
• msbase.jar (from version 2000)
• msutil.jar (from version 2000)
OR
• sqljdbc.jar (from version 2005) (WebLogic and JBoss implementations only)
Note: The sqljdbc.jar driver is backward compatible to version 2000. However, you must make sure that the version 2000 drivers are not in the class path.</td></tr>
<tr><td>2005</td></tr>
<tr><td colspan="3">Note: There is an existing Microsoft issue with the sqljdbc.jar driver, which is addessed in the Microsoft Knowledge Base article 917054 (http://support.microsoft.com/kb/917054).
Note: The sqljdbc.jar driver is backward compatible to version 2000. However, if you use the 2005 driver (sqljdbc.jar) you must make sure that the version 2000 drivers are not in the class path.</td></tr>
</table>

Creating a user account and dedicated database

Create a dedicated database with a user account that has read/write privileges. This information will be required when you configure the database connection for the application server.

Using Oracle as a metadata database

The table below lists the supported versions and operating systems for using Oracle as the metadata database.

NOTE: If you intend to use the Oracle thick (OCI) driver, you must install the Oracle client and create a TNS alias.

Table 6: Version requirements for Oracle database

Version	Operating Systems	Required JDBC Driver
9.2.0.x 10.1.0	• HP HP-UX 11i • IBM AIX 5.1, 5.2, 5.3 • RedHat Enterprise Linux 3 • Sun Solaris 9 • SUSE Enterprise 9 • Windows 2000 Server	• Oracle thin driver (ojdbc14.jar) • Oracle thick driver (OCI) **Note:** You must use the Oracle 10G thin driver for all configurations.

Creating a user account and dedicated database

Create a dedicated database with a user account that has CONNECT and RESOURCE privileges. This information will be required when you configure the database connection for the application server.

NOTE: Ensure that at least 100MB of available tablespace.

You can now proceed to install and deploy FileNet Business Activity Monitor as described in “Installing FileNet Business Activity Monitor” on page 24.

Installing FileNet Business Activity Monitor

This chapter describes how to install and deploy FileNet Business Activity Monitor on each of the supported application servers (JBoss, WebLogic, and IBM WebSphere).

NOTE: Before installing on any application server, you must complete the metadata database configuration and instantiation as described in “Configuring the Metadata Database” on page 18.

In this Chapter:

Installing and Deploying on BEA WebLogic

This section shows you how to install and deploy FileNet Business Activity Monitor using BEA WebLogic.

This section describes the following:

- *Before you start*
- *Configuring the metadata connection*
- *Configuring the Process Analyzer data connection*
- *Modifying the WebLogic JVM (required)*
- *Deploying*
- *Increasing the JDBC metadata connection pool maximum capacity*

Before you start

Before you begin, check the following overviews below to help ensure a successful installation and deployment:

- *Version requirements*
- *Preliminary setup*
- *Procedural overview*

Version requirements

The following table describes the product and system requirements for BEA WebLogic.

BEA WebLogic Requirements		
Version	BEA WebLogic Version 8.1.2	
JDK	1.4.2_05 or later version 1.4.2_x **Note:** You must use the *JDK*; the *JRE* is insufficient.	
Disk space	750 MB	
Metadata database	**Database**	**JDBC Driver**
	Oracle 9.2 or later	Embedded drivers for Oracle thin or thick drivers
	SQL Server 2000 plus SP3 or later	Embedded BEA drivers for MS SQL Server
	SQL Server 2005	

Preliminary setup

To successfully install and deploy FileNet Business Activity Monitor on WebLogic, you must have the following:

- A new domain available on the BEA WebLogic 8.1 server.

  This is the name you will need in "Creating the JDBC metadata connection pool" on page 27, when identifying the BEA WebLogic Domain Location.

- FNBAM_weblogic.ear or FNBAM_weblogic_oracle.ear (provided on FileNet Business Activity Monitor installation disk)

- (UNIX only) Create the directory /opt/bam with read and write privileges for use by the Installer.

Procedural overview

Installing and deploying FileNet Business Activity Monitor on a WebLogic application server involves the following procedures:

- "Configuring the metadata connection" on page 27

  This section describes how to create the required JDBC connection pool and metadata data source in the BEA WebLogic Console.

- "Configuring the Process Analyzer data connection" on page 33

  This section describes how to create the required JDBC connection pool and data source for Process Analyzer in the BEA WebLogic Console.

- "Modifying the WebLogic JVM (required)" on page 35

  This section describes how to modify the WebLogic JVM settings by editing the start scripts.

- "Deploying" on page 37

  This section describes the process of deploying FileNet Business Activity Monitor on the WebLogic application server.

- "Increasing the JDBC metadata connection pool maximum capacity" on page 39

  This section describes how to increase the maximum capacity of the connection pool.

Configuring the metadata connection

This section shows you how to set up the database connection for the metadata database. There are two separate procedures:

- *Creating the JDBC metadata connection pool*
- *Creating the metadata data source*

Both procedures are further described below.

Creating the JDBC metadata connection pool

This section describes how to create the required JDBC metadata connection pool in the BEA WebLogic Console.

To create the JDBC connection pool:

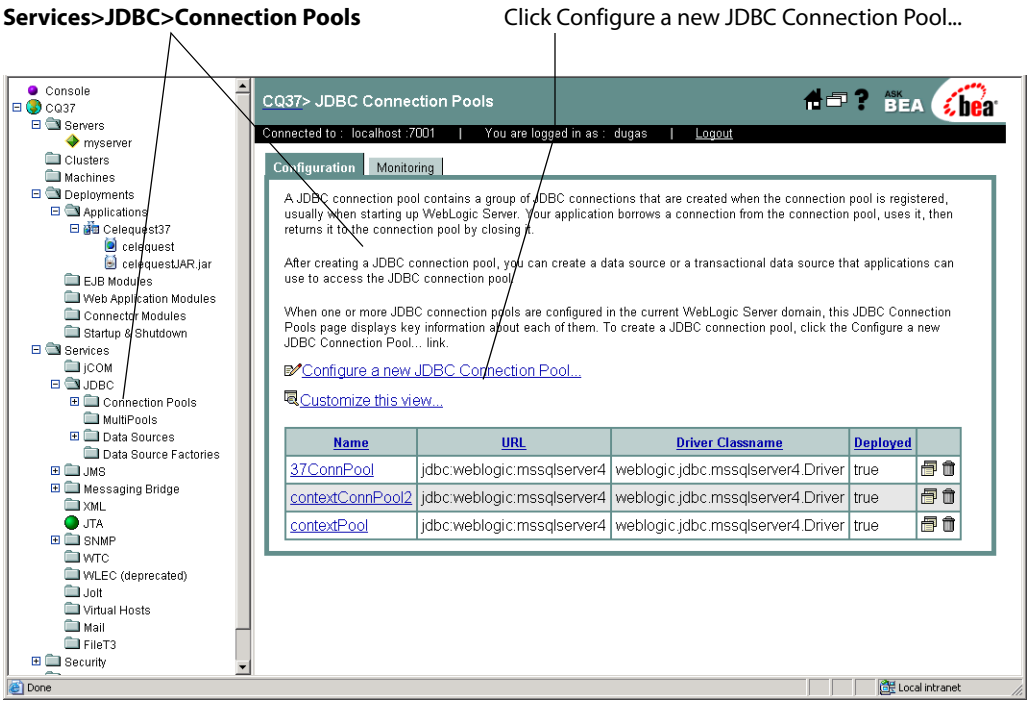
1. Start the BEA WebLogic server.
   - [Domain]\startWebLogic.cmd (Windows)
   - [Domain]/startWebLogic.sh (Unix)
2. Open the BEA WebLogic Server Console in a web browser and log in.

   The URL should be http://*host:port*/console. For example http://localhost:7001/console.
3. In the panel on the left, open **Services>JDBC>Connection Pools**.

   The right frame redisplays to show the JDBC Connection Pools page.

4. Click **Configure a New JDBC Connection Pool**.

   The Choose database page displays.



5. Specify one of the databases supported by FileNet Business Activity Monitor.

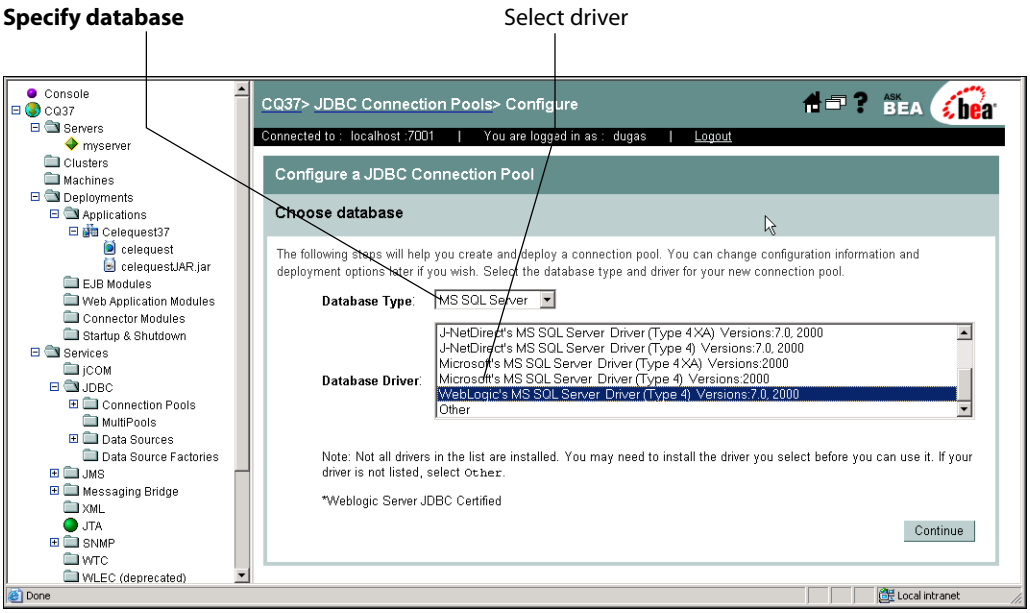
   - DB2
   - MS SQL Server
   - Oracle

   When you select a database type, the database driver field dynamically displays the driver options for the selected database.

6. From the database driver field, select the driver to be used:

   - For DB2, select *IBM's DB2 Driver (Type 2)*
   - For MS SQL Server, select *WebLogic's MS SQL Server Driver (Type 4)*
   - For Oracle thin client, select *Oracle's Driver (Thin) versions 9.x, 10*

- For Oracle thick (OCI) client, select *Oracle's Driver (OCI) versions 9.0.1...*



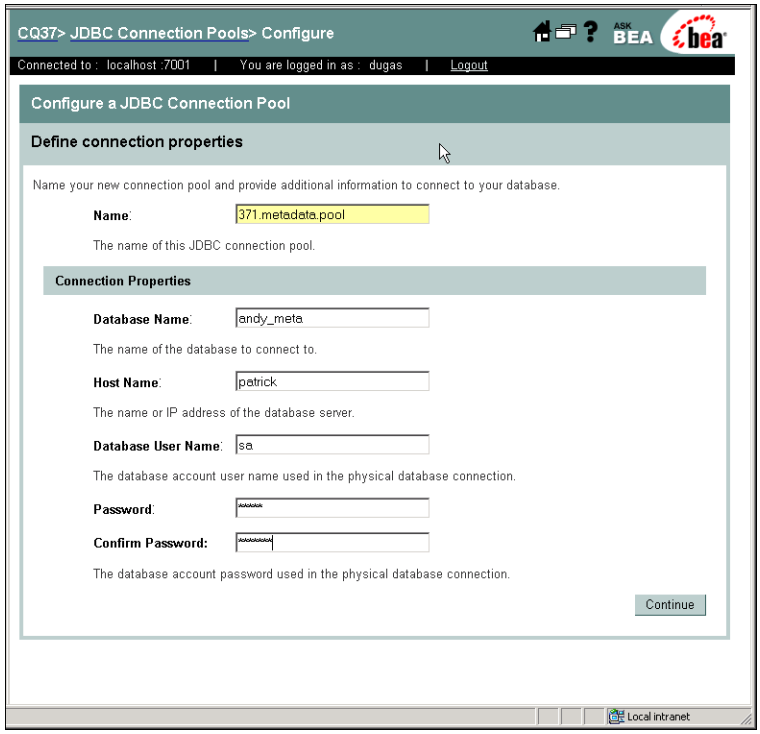
7. Click **Continue**.

   The Define Connection Properties page displays.

8. Complete the **Connection Property** fields as follows:

   - Name: Enter a name for the pool, such as metadataPool.
   - Database Name: Specify the database name (DB2 and MS SQL Server) or database instance (Oracle).
   - Host Name: Network ID or IP address of the database host machine.
   - User Name: Name of user with sufficient permissions.

- Password/Confirm Password: User password.



9. Click **Continue**.

   You can now test the new connection pool or deploy it directly.

NOTE: After deployment, you must modify the connection configuration, as described in "Increasing the JDBC metadata connection pool maximum capacity" on page 39.

Creating the metadata data source

This section describes how to create data sources in the WebLogic Server Console. You must create the metadata data source, as described below.

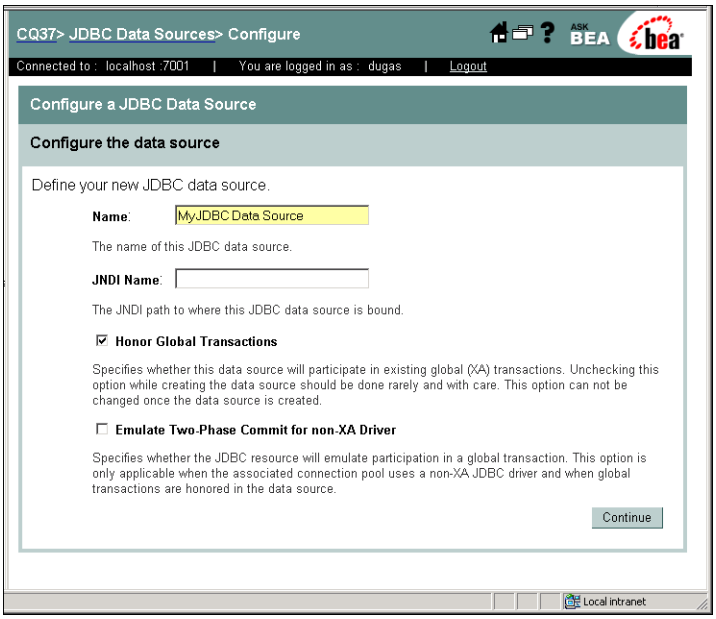
To create the data source in the WebLogic Server Console:

1. In the panel on the left, open **Services>JDBC>Data Sources**.

   The right frame redisplays to show the JDBC Data Sources page.

2. Click **Configure a new JDBC Data Source**.

   The Configure the data source page displays.



3. For the Name value, enter com.celequest.metadata.metaDatasource.
4. For the JNDI Name, enter com.celequest.metadata.metaDatasource.
5. De-select the **Honor Global Transactions** check box.

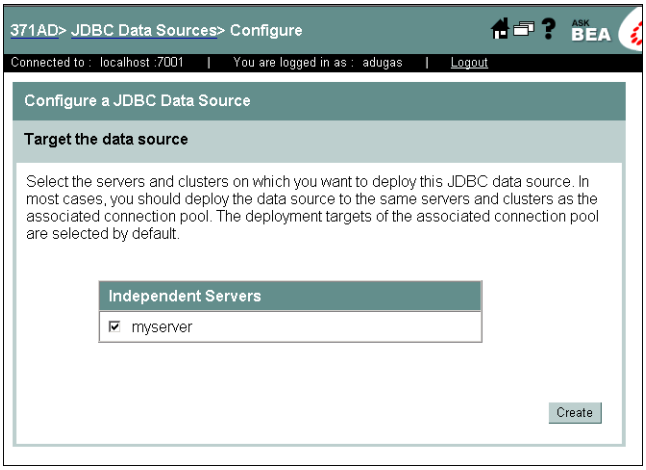
6. Click **Continue**.

   The Connect to connection pool page displays.

7. For Pool Name, select the name of the connection pool created in the previous section.

8. Click **Continue**.

   The Target the data source page displays.



9. Select the same server as in Step 5 in the preceding section.

10. Click **Create**.

    The JDBC Data Sources page displays again, now listing the new data source.

Configuring the Process Analyzer data connection

This section shows you how to set up the database connection for Process Analyzer. There are two separate procedures:

- *Creating the Process Analyzer connection pool*
- *Creating the Process Analyzer data source*

Both procedures are further described below.

Creating the Process Analyzer connection pool

This section describes how to create the required JDBC Process Analyzer connection pool.

To create the JDBC connection pool:

1. Start the BEA Weblogic server if needed.
   - [Domain]\startWeblogic.cmd (Windows)
   - [Domain]/startWeblogic.sh (UNIX)
2. Open the BEA Weblogic Server Console in a web browser and log in.

   The URL should be http://host:port/console. For example http://localhost:7001/console.
3. In the panel on the left, open **Services>JDBC>Connection Pools**.

   The right frame redisplays to show the JDBC Connection Pools page.
4. Click **Configure a New JDBC Connection Pool**.

   The Choose database page displays.
5. Specify the database type.
   - MS SQL Server

   When you select a database type, the database driver field dynamically displays the driver options for the selected database.
6. From the database driver field, select the driver to be used:
   - For MS SQL Server, select *Microsoft's MS SQL Server Driver (Type 4)*
7. Click **Continue**.

   The Define Connection Properties page displays.
8. Complete the **Connection Property** fields as follows:
   - Name: Enter a name for the pool, such as PAPool.
   - Database Name: Specify the name of the database (MS SQL Server).
   - Host Name: Network ID or IP address of the database host machine.
   - User Name: Name of user with sufficient permissions.
   - Password/Confirm Password: User password.
9. Click **Continue**.

You can now test the new connection pool or deploy it directly. After deployment, you must modify the connection configuration, as described in the following steps.

To modify the connection configuration:

1. Access the connection configuration:
   - In the panel on the left, open **Services>JDBC>Connection Pools**.
   - In the resulting page in the right panel, click the name of the pool created in the previous step (e.g., PAPool). The Connections page for the specified connection pool displays.
2. Select the Configuration tab.
3. On the Connections tab, change the Maximum Capacity setting to 200.

NOTE: You can accept the defaults for the remaining settings.

4. In the Advanced Options section, click **Show**.
   - Check **Test Reserved Connections**.
   - Increase the **Connection Reserve Timeout** to 600 seconds.
5. Click **Apply**.
6. Select the Testing tab, and click **Test Pool**. Make sure the test completes successfully.
7. Select the **Target and Deploy** tab.

   This tab pane lists the servers or clusters on which the JDBC connection pool can be deployed.
8. Select the desired server, and click **Apply**.

The JDBC connection pool has now been successfully completed. You can now create the database source, as described in the next section.

Creating the Process Analyzer data source

This section describes how to create the Process Analyzer data source in the Weblogic Server Console.

To create the data source in the Weblogic Server Console:

1. In the panel on the left, open **Services>JDBC>Data Sources**.

   The right frame redisplays to show the JDBC Data Sources page.
2. Click **Configure a new JDBC Data Source**.

   The Configure the Data Source page displays.
3. Enter the following settings:
   - For the Name value, enter com.celequest.context.
   - For the JNDI Name, enter com.celequest.context.
   - Uncheck the **Honor Global Transactions** checkbox.
4. Click **Continue**.

   The Connect to connection pool page displays.
5. For Pool Name, select the name of the connection pool created for Process Analyzer.

6. Click **Continue**.

   The Target the data source page displays.

7. Select the same server as in Step 5 in the preceding section.

8. Click **Create**.

   The JDBC Data Sources page displays again, now listing the new data source.

Modifying the WebLogic JVM (required)

This section describes how to modify the WebLogic JVM by editing the start scripts.

To modify the WebLogic JVM:

1. If running, shut down the WebLogic server:
   - In the WebLogic Server Console, open **Servers**.
   - Select the server in the right panel. This should be the same server domain created for this installation and deployment.
   - In the resulting page, select the **Control** tab.
   - Click **Graceful shutdown of this server**.
2. Locate the WebLogic start script and open in a text editor.

NOTE: This is the same start script described in Step 1 of "Creating the JDBC metadata connection pool" on page 27 of this document.

3. Locate and modify the JAVA_HOME setting:

   ```
   set JAVA_HOME=C:\bea\jdk142_04
   ```

   The modified version should point to the current Sun JDK location, for example:

   ```
   set JAVA_HOME=C:\j2sdk1.4.2_08
   ```

4. Set the memory parameters:
   - Windows:

     ```
     set MEM_ARGS=-XX:MaxPermSize=128M -Xms96m -Xmx512m
     ```

   - Solaris:

     ```
     MEM_ARGS=-XX:MaxPermSize=128M -Xms96m -Xmx512m
     ```

NOTE: The above memory settings show recommended minimum values. If the capacity is available, you may set them higher.

5. Enable UTF-8 support by adding the following line to the JAVA_OPTIONS environment variable:

   ```
   -Dfile.encoding=utf8
   ```

6. Save and close the start script file.

Setting optional metadata parameters

You can set numerous optional parameters for the metadata database, including language, country, and collation strength. These parameters are added to the start script for the WebLogic application server and use the following basic format:

com.celequest.property.**[PARAMETER]**=**[VALUE]**

Each parameter is described in the table below. This table is followed by specific procedures for setting the parameters in the application server configuration.

Parameter	Description
LANGUAGE	The ISO language code for the server.
COUNTRY	The ISO country code for the server.
LOCALESORT	Set to true or false to indicate whether to perform locale sensitive string comparisons. (Default is false.)
STRENGTH	Specifies the level of collation strength, that is, the extent to which the non-English characters are compared and collated: primary, secondary, tertiary, or identical. Primary is the least discriminating; identical is the greatest. (Default is tertiary.) For more information about collation parameters, see the Sun Java documentation at: http://java.sun.com/j2se/1.4.2/docs/api/java/util/Locale.html **Note:** This setting is functional only if LOCALESORT is set to true.
DECOMPOSITION	Specifies one of the following collation decomposition modes: none, canonical, or full. (Default is canonical.) For more information about collation parameters, see the Sun Java documentation at: http://java.sun.com/j2se/1.4.2/docs/api/java/util/Locale.html **Note:** This setting is functional only if LOCALESORT is set to true.

To set metadata parameters in the WebLogic application server configuration:

1. If running, shut down the WebLogic server:
   - In the WebLogic Server Console, open **Servers**.
   - Select the server in the right panel. This should be the same server domain created for this installation and deployment.
   - In the resulting page, select the **Control** tab.
   - Click **Graceful shutdown of this server**.

2. Locate the WebLogic start script and open in a text editor.

NOTE: This is the same start script described in Step 1 of "Creating the JDBC metadata connection pool" on page 27 of this document.

3. Locate the JAVA_OPTIONS environment variable.
4. Add parameter settings using the following syntax:

```
com.celequest.property.[PARAMETER]=[VALUE]
```

For example, to set the LANGUAGE parameter to Portuguese, you would add the following command:

```
-Dcom.celequest.property.LANGUAGE=PT
```

NOTE: Note that the -D command is prepended to the setting.

5. Delimit multiple settings with a space.

For example, to set both language (Portuguese) and locale (Brazil), the settings would look as follows

```
-Dcom.celequest.property.LANGUAGE=PT
-Dcom.celequest.property.LOCALE=BR
```

6. Save and close the run script.

Deploying

This section describes the process of deploying FileNet Business Activity Monitor on the WebLogic application server.

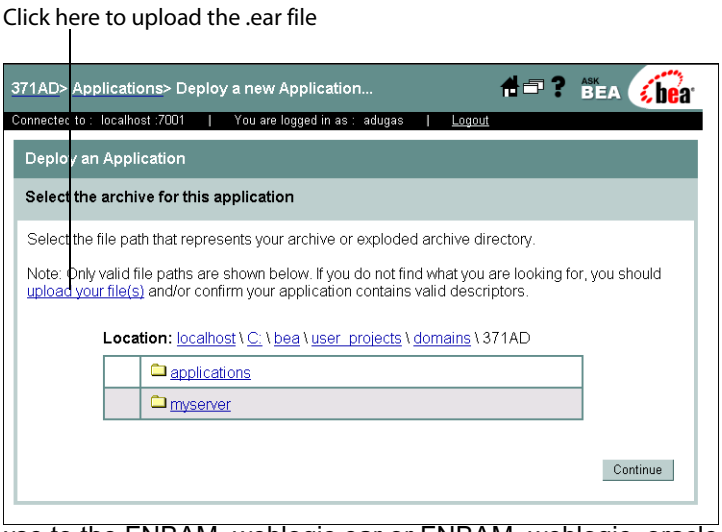
To deploy FileNet Business Activity Monitor:

1. Restart the BEA WebLogic serverusing the start script:
   - [Domain]\startWebLogic.cmd (Windows)
   - [Domain]/startWebLogic.sh (UNIX)
2. Open the BEA WebLogic Server Console in a web browser and log in.

   The URL should be http://*host:port*/console. For example, http://localhost:7001/console.
3. In the panel on the left, open **Deployments>Applications**.

   The right frame redisplays to show the Applications page.
4. Click **Deploy a new Application**.
5. In the resulting page, find and click the **upload your file(s)** link.

The Upload and Install an Application or Module page displays.



6. Browse to the FNBAM_weblogic.ear or FNBAM_weblogic_oracle.ear (depending on the database being used) on the FileNet Business Activity Monitor installation disk and click **Upload**.

   After the file uploads, the Deploy an Application page redisplays.

7. If more than one valid file path displays, select the most appropriate.

8. Click **Continue**.

   A pre-deploy review page displays, enabling you to confirm the choices you made.

9. Click **Deploy to Finish**.

   FileNet Business Activity Monitor is now running on the WebLogic application server.

10. To confirm, open a web browser and go to URL http://host:port/filenetbam/workbench.

    For example *http://localhost:7001/*filenetbam*/workbench*.

Increasing the JDBC metadata connection pool maximum capacity

After deploying the configured connection pool, you must modify the connection configuration by increasing the maximum capacity.

To modify the connection configuration:

1. Access the connection configuration:
   - In the panel on the left, open **Services>JDBC>Connection Pools**.
   - In the resulting page in the right panel, click the name of the pool created in the previous step (e.g., metadataPool). The Connections page for the specified connection pool displays.
2. Select the Configuration tab.
3. On the Connections tab, change the Maximum Capacity setting to 200.

NOTE: You can accept the defaults for the remaining settings.

4. In the Advanced Options section, click **Show**.
5. Check **Test Reserved Connections**.
6. Click **Apply**.
7. Select the Testing tab, and click **Test Pool**. Make sure the test completes successfully.
8. Select the **Target and Deploy** tab.

   This tab pane lists the servers or clusters on which the JDBC connection pool can be deployed.
9. Select the desired server, and click **Apply**.

The JDBC connection pool has now been successfully completed.

Installing and Deploying on IBM WebSphere

This section describes how to install and deploy FileNet Business Activity Monitor on IBM WebSphere Application Server (versions 5.1.x and 6.0).

In this section:

Version requirements

The following table describes the product and system requirements for installing and deploying FileNet Business Activity Monitor on IBM WebSphere. FileNet Business Activity Monitor supports versions 5.1.x and 6.0, as detailed in the table below.

IBM WebSphere Requirements	
Version 5.1.x	The following fix packs are required: • JDK SR2 • 511_fpl
Version 6.x	No fix packs are required for this version.

<table>
<tr><th colspan="3">IBM WebSphere Requirements</th></tr>
<tr><td rowspan="4">Metadata database</td><td>Database</td><td>JDBC Driver(s)</td></tr>
<tr><td>IBM DB2</td><td>db2jcc.jar
db2jcc_license_cu.jar</td></tr>
<tr><td>MS SQL Server 2000</td><td>• mssqlserver.jar
• msbase.jar
• msutil.jar
Note: (See additional notes below.)</td></tr>
<tr><td>MS SQL Server 2005
(WebSphere 6.1.x only)</td><td>• sqlserver.jar
• base.jar
• util.jar
Note: As indicated in “Configuring a new JDBC provider” on page 44, use the default drivers in the class path. See additional notes below.</td></tr>
<tr><td>Oracle</td><td>ojdbc14.jar (from version 10g)
Note: You can use either the OCI (thick) or thin driver. Use of the thick driver requires installation of the Oracle Client.</td></tr>
<tr><td colspan="3">Note: If you followed the recommendations described in “Before you begin: suggested best practices” on page 19, the above-referenced JDBC drivers should be locally accessible.</td></tr>
</table>

Preliminary setup

To successfully install and deploy FileNet Business Activity Monitor on WebSphere, review the following requirements, recommendations, and limitations:

- If you intend to use the Oracle thick (OCI) driver, you must install the Oracle client and create a TNS alias.
- If you are using either the Network Deployment or Extended Deployment versions of WebSphere, you must create a dedicated server scope for deploying FileNet Business Activity Monitor installation.

  All FileNet Business Activity Monitor installation activities should take place within the scope of this server.
- FNBAM_websphere5.x.ear (provided on FileNet Business Activity Monitor installation disk)

Creating a JAAS authentication alias (DB2 only)

If you are using DB2 as metadata database, you must first create an authentication alias which conforms to a valid user on the database. This alias will be referenced in the configuration.

To create a JAAS authentication alias:

1. Start the WebSphere server and open the IBM WebSphere Administrative Console.
2. In the left panel, expand the **Security** node.
3. Select **Security>JAAS Configuration>J2C Authentication Data.**

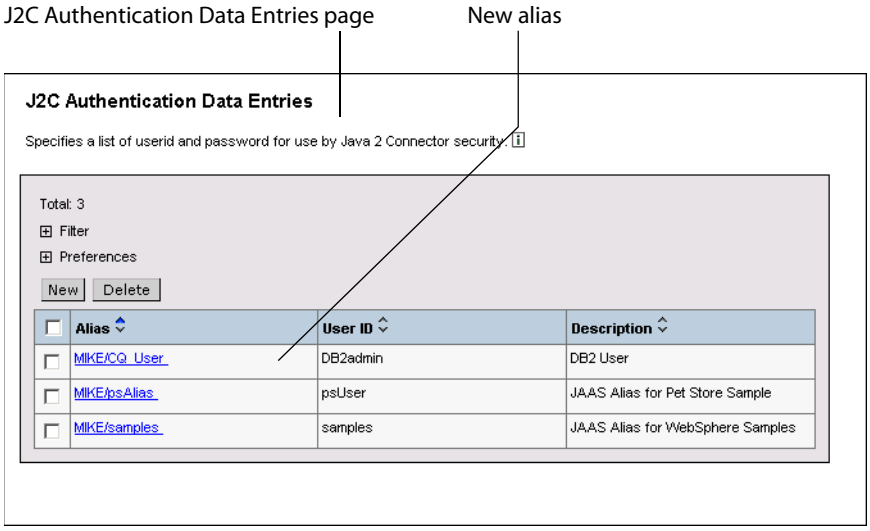
   This displays the J2C Authentication Data Entries page.
4. Click **New**.

   In the resulting page, enter values for the following fields:

Field	Description
Alias	Any value. This will be used to reference the authentication parameters below.
User ID	Valid user ID for the DB2 database.
Password	Valid password for above user.
Description	Optional text description.

5. Click **OK**.

   The new alias now displays in the list. You can now proceed to install and deploy FileNet Business Activity Monitor on the WebSphere Application Server.



Configuring IBM WebSphere for FileNet Business Activity Monitor

This section describes how to configure IBM WebSphere prior to deploying FileNet Business Activity Monitor. This process is divided into the following procedures:

- *Creating a new server instance*
- *Configuring a new JDBC provider*
- *Defining the WebSphere data source*
- *Setting Application Server parameters*

Creating a new server instance

It is recommended that you create a dedicated server instance in WebSphere for the FileNet Business Activity Monitor installation.

NOTE: Detailed instructions for creating a new server instance can be found at:

Version	Link to online documentation
5.1.x	*http://publib.boulder.ibm.com/infocenter/wasinfo/v5r1//index.jsp?topic=/com.ibm.websphere.base.doc/ info/aes/ae/trun_svr_create.html*
6.0	*http://publib.boulder.ibm.com/infocenter/wasinfo/v6r0//index.jsp?topic=/com.ibm.websphere.base.doc/info/aes/ae/trun_svr_create.html*

Configuring a new JDBC provider

In the IBM WebSphere Administrative Console, you must configure a new JDBC provider.

Detailed instructions for creating a new JDBC provider can be found at:

Version	Link to online documentation
5.1.x	*http://publib.boulder.ibm.com/infocenter/wasinfo/v5r1//index.jsp?topic=/com.ibm.websphere.exp.doc/info/exp/ae/tdat_ccrtprov.html*
6.0	*http://publib.boulder.ibm.com/infocenter/wasinfo/v6r0/index.jsp?topic=/com.ibm.websphere.zseries.doc/info/zseries/ae/tdat_ccrtpds.html*

When creating the new JDBC provider, use the following configuration:

1. Select a supported database type and the JDBC Provider as indicated in the table below:

Database	JDBC Provider
DB2	DB2 Universal JDBC Driver Provider
MS SQLServer	WebSphere embedded Connect JDBC driver for MS SQL Server
Oracle	Oracle JDBC Driver

2. (**WebSphere 6.x only**) From the implementation type options, select *Connection pool data source*.

3. When defining the Classpath setting, use the following settings as appropriate as follows, substituting real values for `[FILE_PATH]`:

Database	Add to Classpath setting
DB2	[FILE_PATH]/db2jcc.jar [FILE_PATH]/db2jcc_license_cu.jar
MS SQLServer 2000	[FILE_PATH]/mssqlserver.jar [FILE_PATH]/msbase.jar [FILE_PATH]/msutil.jar **Note:** Similarly named native versions are already referenced; you should delete these.
MS SQLServer 2005 (Websphere 6.1.x only)	For MSSQL Server, you do not need to modify the class path setting. Leave the default native drivers intact: • sqlserver.jar • base.jar • util.jar
Oracle	[FILE_PATH]/ojdbc14.jar

4. Save the new provider configuration.

   You can now configure the data source, as described in the next section.

Defining the WebSphere data source

Detailed instructions for defining the data source for the new JDBC provider configuration can be found at:

Version	Link to online documentation
5.1.x	*http://publib.boulder.ibm.com/infocenter/wasinfo/v5r1/index.jsp?topic=/com.ibm.websphere.base.doc/info/aes/ae/tdat_ccrtpds.html*
6.0	*http://publib.boulder.ibm.com/infocenter/wasinfo/v6r0/topic/com.ibm.websphere.base.doc/info/aes/ae/tdat_ccrtpds.html*

When defining the data source for the new JDBC provider, use the following configuration:

1. Complete the specified settings as follows:

Setting	Value
Name	com.celequest.metadata.metaDatasource
JNDI Name	jdbc/com.celequest.metadata.metaDatasource
Container managed persistence	Clear check box
(Oracle 10g only) Datasource Helper Class Name	com.ibm.websphere.rsadapter.Oracle10gDataStoreHelper
(DB2 only) Container-managed Authentication Alias	Select the value you created in "Creating a JAAS authentication alias (DB2 only)" on page 42.

2. Configure custom properties for the **com.celequest.metadata.metaDatasource** as follows:

Database type	Custom property	Value
DB2	serverName	Enter the host name or IP address of the machine running the database
	portNumber	Port number DB2 is running from. (Typically 50000, though your configuration might differ.)
	databaseName	Enter the database name.

Database type	Custom property	Value
MS SQLServer (2000 and 2005)	serverName	Enter the host name or IP address of the machine running the database
	portNumber	Port number MS SQLServer is running from. (Typically 1433, though your configuration might differ.)
	databaseName	Enter the database name.
	selectMethod	cursor

Oracle
(9i and 10g)
	URL	**Thin driver:**
		`jdbc:oracle:thin:@[host name]:[port]:[SID]`
		For example: *jdbc:oracle:thin:@orclhost:1521:orcl*
		Thick (OCI) driver:
		`jdbc:oracle:oci:[schema]/[password]@[tnsalias]`
		For example: *jdbc:oracle:oci:cqstmeta/sagud@CQtns*

	driverType	Enter “thin” or “oci” as appropriate

3. Create the following custom properties:

Setting	Description
user (must be lowercase)	Specify the value for the database user name you created in “Creating a user account for the dedicated database” on page 20.
password (must be lowercase)	Specify the password for the user account specified above.

4. Click **OK** and save the new provider configuration.
5. Test the new connection.

Setting Application Server parameters

This section describes how to set the server parameters. Specifically, this procedure will pass environment variables to the JVM so it can access the FileNet Business Activity Monitor metadata. You will also set heap size limits.

Detailed instructions for setting the JVM parameterscan be found at:

Version	Link to online documentation
5.1.x	*http://publib.boulder.ibm.com/infocenter/wasinfo/v5r1/topic/com.ibm.websphere.base.doc/info/aes/ae/urun_rconfproc_jvm.html*
6.0	*http://publib.boulder.ibm.com/infocenter/wasinfo/v6r0//index.jsp?topic=/com.ibm.websphere.base.doc/info/aes/ae/urun_rconfproc_jvm.html*

NOTE: When you perform the following procedures, consider also the procedures in "Setting optional metadata parameters" on page 50, since these are also configured in the JVM settings.

When setting JVM parameters, use the following configuration:

1. Set the following standard parameters as follows:

Parameter	Value
Initial Heap	`128` **Note:** It is highly recommended that you consult with customer services to determine optimal heap settings.
Maximum Heap	`512` **Note:** It is highly recommended that you consult with customer services to determine optimal heap settings.
Generic JVM	`-Dfile.encoding=utf8` **Note:** This enables UTF-8 support (required).

2. Create a new custom property (**com.celequest.metadata.jdbcDriver property**) as described in the following table:

Setting	Value
Name	com.celequest.metadata.jdbcDriver
Value	• DB2: com.ibm.db2.jcc.DB2Driver • MS SQLServer: com.microsoft.jdbc.sqlserver.SQLServerDriver • Oracle: oracle.jdbc.driver.OracleDriver
Description	(Optional)

3. Create a new custom property (**com.celequest.metadata.jdbcURL property**) as described in the following table:

Setting	Value
Name	com.celequest.metadata.jdbcURL
Value	**DB2:** jdbc:db2://[server_name]:[port]/cqstmeta:user=[username];password=[password]; For example: *jdbc:db2://DB2server:50000]/cqstmeta:user=werdna;password=sagud62;*
	MS SQLServer: jdbc:microsoft:sqlserver://[hostname]:[port];databaseName=cqstmeta;selectMethod=Cursor;user=[username];password=[password] For example: *jdbc:microsoft:sqlserver://hostname:1433:databaseName=cqstmeta;SelectMethod=Cursor;user=tjones;password=j0nesv1ll3* **Note:** This value must match the same URL configuration you created in "Defining the WebSphere data source" on page 46.
	Oracle thin driver: jdbc:oracle:thin:[user]/[password]@[host name]:[port]:[SID] For example: *jdbc:oracle:thin:werdna/sagud@orclhost:1521:orcl* **Oracle thick/OCI driver:** `jdbc:oracle:oci:[schema]/[password]@[tnsalias]` For example: *jdbc:oracle:oci:cqstmeta/sagud@CQtns* **Note:** In either case, this value must match the same URL configuration you created in "Defining the WebSphere data source" on page 46.
Description	(Optional)

4. Save the new configuration.

NOTE: You must shut down and restart the server instance for the changes to the JVM properties to take effect.

You can now deploy FileNet Business Activity Monitor on the IBM WebSphere Application server, as described in the following section.

Setting optional metadata parameters

You can set numerous optional parameters for the metadata database, including language, country, and collation strength. These parameters are added as Custom Properties to the Java Virtual Machine configuration for the server on which FileNet Business Activity Monitor will be deployed.

NOTE: Consider adding these parameters when you perform the procedures described in "Configuring IBM WebSphere for FileNet Business Activity Monitor" on page 43.

Each parameter is described in the table below. This table is followed by specific procedures for setting the parameters in the application server configuration.

Parameter	Description
LANGUAGE	The ISO language code for the server.
COUNTRY	The ISO country code for the server.
LOCALESORT	Set to true or false to indicate whether to perform locale sensitive string comparisons. (Default is false.)
STRENGTH	Specifies the level of collation strength, that is, the extent to which the non-English characters are compared and collated: primary, secondary, tertiary, or identical. Primary is the least discriminating; identical is the greatest. (Default is tertiary.) For more information about collation parameters, see the Sun Java documentation at: http://java.sun.com/j2se/1.4.2/docs/api/java/util/Locale.html **Note:** This setting is functional only if LOCALESORT is set to true.
DECOMPOSITION	Specifies one of the following collation decomposition modes: none, canonical, or full. (Default is canonical.) For more information about collation parameters, see the Sun Java documentation at: http://java.sun.com/j2se/1.4.2/docs/api/java/util/Locale.html **Note:** This setting is functional only if LOCALESORT is set to true.

To set metadata parameters in the WebSphere application server configuration:

1. Return to the Java Virtual Machine page described in the preceding section and click the **Custom Properties** link.
2. Create a new property for each additional parameter using the following format :

Name	Value
*com.celequest.property.**[PARAMETER NAME]*** For example, to create a setting for the LANGUAGE parameter, you would specify: *com.celequest.property.**LANGUAGE***	For the value, specify the ISO two-letter language code (en for English, fr for French, etc.).

For example, to set both language (Portuguese) and country (Brazil), you would create two properties, as follows:
 	
`com.celequest.property.LANGUAGE` with a value of `PT`
 	
`com.celequest.property.COUNTRY` with a value of `BR`	

3. Click **OK** and save the new configuration:

You can now deploy FileNet Business Activity Monitor on the IBM WebSphere Application server, as described in the following section.

Predeploying FileNet BAM Server

Pre-deploy FileNet BAM Server using the procedure described below. This procedure creates a new EAR file (FNBAM_websphere_deploy.ear) which you will deploy on the application server in place of the provided EAR file (FNBAM_websphere5.x.ear).

In the first procedure, you will create FileNet Business Activity Monitor deployment EAR file; in the second, you will deploy it on the application server.

To predeploy the FileNet Business Activity Monitor EAR:

1. Stop WebSphere Application Server.
2. Create a working directory.

   For example, in Unix you might create `/opt/wrk`.
3. Create a temporary directory.

   For example, in Unix you might create `/opt/tmp`.
4. Create a destination directory.

   For example, in Unix, you might create `/opt/bam`.

5. Open a command shell or command prompt console, and change the current working directory to the [WebSphere_root]/AppServer/bin directory, where [WebSphere_root] is the root directory of the WebSphere installation.
6. Run the `ejbDeploy` command to create a new EAR file with deployed EJBs.

   For example, in Unix the command would look like:

   `ejbDeploy.sh [working_directory]/FNBAM_websphere5.x.ear [temporary_directory] [destination_directory]/FNBAM_websphere_deploy.ear`

   where *[working_directory]* is the working directory you created, *[temporary_directory]* is the temporary directory you created, and *[destination_directory]* is the destination directory you created.

   This command creates a new EAR file named FNBAM_websphere_deploy.ear in the *[destination_directory]* directory.

NOTE: When the command is completed, make sure the command shell indicates that 0 errors occurred. It is acceptable if there is one warning and one info message.

Deploying FileNet Business Activity Monitor on IBM WebSphere

After completing the preceding configuration procedures, you can deploy FileNet Business Activity Monitor on the application server.

For more information about deploying applications on IBM WebSphere:

Version	Link to online documentation
5.1.x	*http://publib.boulder.ibm.com/infocenter/wasinfo/v5r1//topic/com.ibm.websphere.base.doc/info/aes/ae/trun_appl.html*
6.0	*http://publib.boulder.ibm.com/infocenter/wasinfo/v6r0/index.jsp?topic=/com.ibm.websphere.base.doc/info/aes/ae/cjmx_app_manage.html*

To deploy the application:

1. Start the IBM WebSphere application server, if it is not currently running, and open the IBM WebSphere Administrative Console.
2. In the left panel, expand the **Applications** node and click **Enterprise Applications**.

   This action displays the Enterprise Applications page.
3. Click the **Install** button.
4. Deploy the FNBAM_websphere_deploy.ear you created in "Predeploying FileNet BAM Server" on page 51.

   This action displays the first of a series of configuration pages.
5. Click **Next**
6. When the *Preparing for the application installation page* displays, select the *Generate Default Bindings* option, and click **Next**.

7. When the *Deploy EJBs Option - Database Type* setting displays, select the appropriate database from the dropdown menu.

Database	Database type setting
DB2	DB2UDB_V81
MS SQLServer	MSSQLSERVER_2000
Oracle	ORACLE_V9I or ORACLE_V10G (for WebSphere 6.x only)

8. When the CurrentBackendId setting displays, ensure that it corresponds to the above database type.
9. Click through the remaining steps: no further configuration is required for FileNet Business Activity Monitor deployment.

NOTE: (**WebSphere 6.0 only**) You may receive a “Resource Warning” after Step 5; you can ignore it.

10. At Step 12, click **Finish**.

    IBM WebSphere installs FileNet Business Activity Monitor.

Additional post-installation configuration (Unix only)

Before starting FileNet Business Activity Monitor on AIX, Solaris, or HP/UX, there is an additional step in which you must copy several files into the WebSphere installation directory.

Copy the additional files as follows:

1. In the installation directory of the WebSphere application server, open the appropriate directory:
   - **AIX**: /AppServer/java/jre/lib/endorsed
   - **Solaris**: /AppServer/java/jre/lib/endorsed
   - **HP/UX**: /AppServer/java/jre/lib/endorsed
2. Copy the following files:
   - dom3-xercesImpl-2.4.0.jar
   - xalan-2.4.1.jar
   - dom3-xml-apis-2.4.0.jar

   All three files can be copied from the following directory on the installation CD:

   \FilenetBAM/Server/Websphere

Running FileNet Business Activity Monitor on IBM WebSphere

After configuring IBM WebSphere and deploying FileNet Business Activity Monitor, you can start FileNet Business Activity Monitor directly in the application server.

To start FileNet Business Activity Monitor:

1. Start the WebSphere server and open the IBM WebSphere Administrative Console.
2. In the left panel, expand the **Applications** node and click **Enterprise Applications**.

   This action displays the Enterprise Applications page, which lists the FileNet Business Activity Monitor.
3. Select the FileNet Business Activity Monitor by checking the check box.
4. Click the **Start** button.

Creating a context data source for Process Analyzer

You must configure a context data source to access data from Process Analyzer. For IBM WebSphere, you must configure a JDBC connection using the URL-based method described in the *JDBC* chapter in the Server Reference documentation.

If you import the pre-configured BAM project files, you must:

1. Modify the provided JDBC agent and set the Type of JDBC Connection to URL-based.
2. Enter the JDBC URL:

   `jdbc:microsoft:sqlserver://[Process Analyzer database server]:[Process Analyzer database server port];databaseName=VMAEDM;user=[Process Analyzer database username];password=[Process Analyzer database password]`

   For example:

   `jdbc:microsoft:sqlserver://hqdaffodil:1433;databaseName=VMAEDM;user=sa;password=sa`
3. Enter the JDBC Driver Class:

   `com.microsoft.jdbc.sqlserver.SQLServerDriver`

Installing and Deploying on JBoss

This section describes how to install and deploy FileNet Business Activity Monitor on JBoss. FileNet Business Activity Monitor supports version 3.2.6, both 32-bit and 64-bit.

This section describes the following:

- *Before you start*
- *Version requirements*
- *Installing the JBoss application server*
- *Configuring the JDBC metadata database connection*
- *Configuring the Process Analyzer data source descriptor*
- *Defining generic data sources*
- *Modifying the JVM configuration*
- *Setting optional metadata parameters*
- *Setting the environment variables (Unix only)*
- *Modifying the JBoss thread configuration*
- *Modifying JBoss for enhanced performance (optional)*
- *Modifying the port setting (optional)*
- *Deploying*
- *Shutting down on JBoss*
- *Directories and files on JBoss installation*
- *JBoss logging*
- *JBoss ports and multiple installations on a host*

Before you start

Before starting a JBoss implementation, note the following:

1. Check the "Version requirements" on page 58.
2. Ensure the following conditions are set:
   - Java JDK 1.4.x must be installed and available to the host environment to run JBoss.

     This is available from *http://java.sun.com*.
   - The JAVA_HOME environment variable points to the installed location of the JDK.

NOTE: You must use the *JDK*; the JRE is insufficient. If you are running JBoss on Unix, see also "Setting the environment variables (Unix only)" on page 67.

3. Install the JBoss application server, as described in "Installing the JBoss application server" on page 59.
4. As a best practice, delete the following directories in the JBoss installation:
   - \$JBOSS_HOME$\server\all
   - \$JBOSS_HOME$\server\minimal

   This helps prevent using implementing in the wrong directories or configuring the wrong but similarly named configuration files.
5. Preview the JBoss configuration files.

Implementing on JBoss requires you to manually configure several files. The following table lists each affected file and the section that describe its configuration.

File	Location (…/$JBOSS_HOME$/...)
celequest_metadata-ds.xml	"Configuring the JDBC metadata database connection" on page 60. This file is created from a template provided in the FileNet Business Activity Monitor installation, and is used to define the metadata data source. After configuration, it is copied to the /$JBOSS_HOME$/server/default/deploy directory.
standardjbosscmp-jdbc.xml	"Configuring the JDBC metadata database connection" on page 60 This file is created from a template provided in the FileNet Business Activity Monitor installation. After configuration, it is copied to the /$JBOSS_HOME$/server/default/conf directory, where it replaces a JBoss file with the same name.
jboss-service.xml (optional)	"Modifying the port setting (optional)" on page 69 This is a JBoss provided file that is directly modified. It is located in the /$JBOSS_HOME$/server/default/deploy/jbossweb-tomcatxx.sar/META-INF directory
jboss-service.xml (optional)	"Modifying the port setting (optional)" on page 69 This is a JBoss provided file that is directly modified. It is located in the /$JBOSS_HOME$/server/default/deploy/http-invoker.sar/META-INF directory.
run.bat (Windows) OR run.sh (UNIX)	"Modifying the JVM configuration" on page 64 AND "Setting the environment variables (Unix only)" on page 67 This is the run script for the JBoss application server startup. It is located in the /$JBOSS_HOME$/bin directory.
celequest_context-ds.xml	"Configuring the Process Analyzer data source descriptor" on page 62 AND "Defining generic data sources" on page 63 This file is created from a template provided in the FileNet Business Activity Monitor installation, and is used to configure the Process Analyzer data source, in addition to any secondary context data sources. **Note:** A uniquely named copy of this file is required for each data source descriptor, excluding the metadata data source. After configuration, it is copied to the /$JBOSS_HOME$/server/default/deploy directory.

Version requirements

The following tables describe the product and system requirements for installing and deploying FileNet Business Activity Monitor on JBoss.

<table>
<tr><th colspan="3">JBoss (32-bit) Requirements</th></tr>
<tr><td>JDK</td><td colspan="2">1.4.2_05 or later version 1.4.2_x
Note: You must use the JDK; the JRE is insufficient.</td></tr>
<tr><td>Disk space</td><td colspan="2">115 MB</td></tr>
<tr><td rowspan="6">Metadata database</td><td>Database</td><td>JDBC Driver</td></tr>
<tr><td>Oracle 9.2 or later</td><td>• Oracle thin driver (ojdbc14.jar)
• Oracle thick driver (OCI)
Note: You must use the Oracle 10G thin driver for all configurations.</td></tr>
<tr><td>MS SQL Server 2000</td><td>• sqljdbc.jar
OR
• mssqlserver.jar
• msbase.jar
• msutil.jar
Note: The sqljdbc.jar driver is backward compatible to versions 2000.</td></tr>
<tr><td>MS SQL Server 2005</td><td>• sqljdbc.jar
Note: You must make sure that the version 2000 drivers are not in the class path.</td></tr>
<tr><td>DB2 7.2.8</td><td rowspan="2">• db2jcc.jar
• db2jcc_license_cu.jar</td></tr>
<tr><td>DB2 8.2</td></tr>
<tr><td colspan="3">Note: There is an existing Microsoft issue with the sqljdbc.jar driver, which is addessed in the Microsoft Knowledge Base article 917054 (http://support.microsoft.com/kb/917054).
Note: The sqljdbc.jar driver is backward compatible to version 2000. However, if you use the 2005 driver (sqljdbc.jar) you must make sure that the version 2000 drivers are not in the class path.</td></tr>
</table>

JBoss (64-bit) Requirements		
JDK	1.4.2_05 or later version 1.4.2_x, 64-bit installation **Note:** You must use the *JDK*; the *JRE* is insufficient.	
Disk space	115 MB	
Metadata database	**Database**	**JDBC Driver**
	Oracle 9.2 or later	Oracle 10g 64-bit JDBC drivers

Installing the JBoss application server

This section takes you through the JBoss installation process specific to FileNet Business Activity Monitor.

NOTE: Before proceeding, be sure to complete the setup steps listed in "Setting Up" on page 8.

Install FileNet Business Activity Monitor for JBoss as follows:

1. Install JBoss 3.2.6.

   You can download jboss-xxx.zip from *http://prdownloads.sourceforge.net/jboss/*.

2. Copy FileNet Business Activity Monitor EAR file from the CD-ROM to the JBoss server/default/deploy directory.

   The application EAR file is located on the CD-ROM at:

   ```
   <cd-rom>/Server/jboss/FNBAM_jboss3.2.x.ear
   ```

   The JBoss deploy directory location is:

   ```
   …/$JBOSS_HOME$/server/default/deploy
   ```

3. (Optional) Copy the sample JBoss configuration files from the CD-ROM to the application directory.

   You can use these templates later as you configure JBoss.

   ```
   <cd-rom>/samples/jboss/*
   ```

4. (Optional) Install the FileNet Business Activity Monitor test demonstration files:

   Copy the Demo directory from the CD-ROM to the common directory described in "Before you begin: suggested best practices" on page 19.

   Windows: Drag the folder from the CD-ROM to the folder on the server.

   UNIX: `cp -r <cd-rom>/samples/installer ~/filenetbam`

   You can now configure JBoss for FileNet Business Activity Monitor.

Configuring the JDBC metadata database connection

In this procedure, you must copy the database driver(s) to the JBoss directory, create and deploy a metadata source descriptor, and configure data type mapping. The metadata source descriptor defines the database connection configuration and specifies the JDBC drivers.

NOTE: This descriptor must be a <no-tx-datasource> datasource. You can find a template for the descriptor file (celequest_metadata-ds.xml) in the /samples/jboss directory on the product CD-ROM.

To configure the metadata database connection:

1. Copy the database driver files (i.e., ojdbc14.jar for 10g) to the /server/default/lib directory.
2. Set the metadata data source:
   - Copy the celequest_metadata-ds.xml file in the /samples/jboss directory on the product CD-ROM to the /server/default/deploy directory in the JBoss installation.
   - Open the celequest_metadata-ds.xml file in a text editor.
   - Set the following parameters, based on the database type:

Setting	Database	Value format
<connection-url>	DB2	jdbc:db2://[host]:[port]/[database name]
	Derby	jdbc:derby:////metadata
	MS SQLServer	jdbc:microsoft:sqlserver://[host]:[port]; SelectMethod=cursor;databaseName=[dbname]; user=[dbuser];password=[dbpassword]
	Oracle	**Thin:** jdbc:oracle:thin:[dbuser]/[dbpassword]@[dbhost]:[dbport]:[dbSID] **Thick (OCI):** jdbc:oracle:oci:[dbuser]/[dbpassword]@[tnsalias]
<driver-class>	DB2	com.ibm.db2.jcc.DB2Driver
	Derby	org.apache.derby.jdbc.EmbeddedDriver
	MS SQLServer	com.microsoft.jdbc.sqlserver.SQLServerDriver
	Oracle	oracle.jdbc.driver.OracleDriver
Note: For all databases, you must also specify a user name and password in the appropriate elements in the celequest_metadata-ds.xml file.		

   - Save and close the celequest_metadata-ds.xml file.
3. Set the data type mapping in accord with the database type:

- Locate the celequest_standardjbosscmp-jdbc.xml.xxx file in the /samples/jboss directory on the product CD-ROM.
- Open this file in a text editor.
- In the <defaults> section near the top, modify the <datasource-mapping> parameter to match the metadata database:

Database	Value
DB2	DB2
Derby	Derby
MS SQLServer	MS SQLSERVER2000
Oracle (versions 9i and 10g)	Oracle9i **Note:** The 9i type mappings function for 10g also.
Note: The value corresponds with a type-mapping configuration located in the type-mappings block in this file.	

- Resave the file as standardjbosscmp-jdbc.xml in the $JBOSS_HOME$/server/default/conf directory.

  This will overwrite the existing standardjbosscmp-jdbc.xml.

This completes the metadata database connection configuration.

Configuring the Process Analyzer data source descriptor

In this section you will create the Process Analyzer context database source descriptor by modifying the celequest_context-ds.xml file.

To create the Process Analyzer context database source descriptor:

1. Create a context database source descriptor in the JBoss deploy directory:

   …/$JBOSS_HOME$/server/default/deploy/celequest_context-ds.xml

   You can find a template of this file in the /samples/jboss directory on the product CD-ROM.

NOTE: The descriptor must be a <no-tx-datasource> datasource.

2. Configure as follows:

```
<jndi-name><!--Insert jndiName --></jndi-name>
<connection-url><!--Insert jdbcURL --></connection-url>
<driver-class><!--Insert jdbcDriver --></driver-class>
<!-- The login and password -->
<user-name><!--Insert dbUsername --></user-name>
<password><!--Insert dbPassword --></password>
```

   In the above configurtion:

   - jndiName is a unique string that you provide. This is the same name that will be specified in the FileNet BAM Workbench when configuring a context data source.
   - jdbcURL is usually:

```
jdbc:microsoft:sqlserver://<host>:<port(probably 1433)>;
SelectMethod=cursor;databaseName=<dbname>;
user=<dbuser>;password=<dbpassword>
```

   - jdbcDriver is usually:

```
com.microsoft.jdbc.sqlserver.SQLServerDriver
```

3. Save the descriptor file as filenet_ProcessAnalyzer_context-ds.xml in the $JBOSS_HOME$/server/default/deploy directory.

   As a best practice, and especially if you plan to configure multiple JDBC agents in FileNet BAM Workbench, you should modify the file name to indicate the corresponding source. By giving the file a unique name, the $JBOSS_HOME$/server/default/deploy directory can accommodate multiple JNDI definition configurations.

NOTE: For more information about additional data source configurations, see “Defining generic data sources” on page 63.

4. Copy the database driver files (sqljdbc.jar, msbase.jar, mssqlserver.jar, msutil.jar) to the /server/default/lib directory.

Defining generic data sources

For every JDBC agent (for example, for accessing context data) you create in FileNet BAM Workbench, you must create a corresponding JNDI definition in the JBoss installation.

To create a JNDI definition in the JBoss implementation:

1. Locate the celequest_context-ds.xml file in the /samples/jboss directory on the product CD-ROM.
2. Open this file in a text editor.
3. Complete the following parameters so they correspond with the JDBC agent configuration in FileNet BAM Workbench:

Parameter	Description
<jndi-name>	Specify a JNDI name, for example: *com.celequest.context.contextDatasource* This name may be modified to reflect the data source, for example: com.celequest.sqlserver.contextDatasource
<connection-url>	Specify the complete connection URL for the desired database, for example: • MySQL: *jdbc:mysql:///[hostname]:[port]/[database name]* **Note:** You can configure a JNDI definition for any JDBC source, including DB2, MySQL, MS SQLServer, Oracle, and others.
<driver-class>	Enter the driver class for JDBC connection.
<user-name>	Enter a valid user name. **Note:** The specified user should have read privileges.
<password>	Enter the password for the above user.
<min-poll-size>	Accept the default of 5.
<max-poll-size>	Increase this value to 200.

4. Resave the file as celequest_context-ds.xml in the $JBOSS_HOME$/server/default/deploy directory.

   As a best practice, and especially if you plan to configure multiple JDBC agents in FileNet BAM Workbench, you should modify the file name to indicate the corresponding source, for example:

   ```
   filenet_FinanceDB_context-ds.xml
   ```

   By giving the file a unique name, the $JBOSS_HOME$/server/default/deploy directory can accommodate multiple JNDI definition configurations.

Modifying the JVM configuration

You can modify the JVM configuration by editing the run script (run.bat or run.sh) that starts JBoss. To this file you must add or modify the following: memory setting, stack size, UTF-8, and other potential parameters.

To modify the JVM configuration:

1. Locate and open the run script that starts JBoss.

   This file is located at:

   …\$JBOSS_HOME$\bin\run.bat (Windows)

   …/$JBOSS_HOME$/bin/run.sh (UNIX)

2. Change the JAVA_OPTS memory settings to 128M minimum and 512M maximum, and include -server to improve performance.

   The following table shows examples for each operating system:

Operating System	Example
run.bat (Windows)	set JAVA_OPTS=%JAVA_OPTS% -Xms128m -Xmx512m
run.sh (UNIX)	JAVA_OPTS="$JAVA_OPTS -Xms128m –Xmx512m"

3. Add a JAVA_OPTS setting to disable double logging of system output.

NOTE: This is a work-around to JBoss bug 877974.

   The following table shows examples for each operating system:

Operating System	Example
run.bat (Windows)	set JAVA_OPTS=%JAVA_OPTS% -Dorg.jboss.logging.Log4jService.catchSystemOut=false -Dorg.jboss.logging.Log4jService.catchSystemErr=false **Note:** The above should be entered on a single line.
run.sh (UNIX)	JAVA_OPTS="$JAVA_OPTS -Dorg.jboss.logging.Log4jService.catchSystemOut=false -Dorg.jboss.logging.Log4jService.catchSystemErr=false” **Note:** The above should be entered on a single line.

4. (**Required**) Enable UTF-8 support by adding the following line to the JAVA_OPTS setting:

   ```
   -Dfile.encoding=utf8
   ```

5. (**Required**) Increase the thread stack size to 300 by adding the following line to the JAVA_OPTS setting:

   ```
   -XX:ThreadStackSize=300
   ```

6. (**64-bit JBoss only**) Activate the 64-bit JVM by adding the following line to the JAVA_OPTS setting:

   ```
   -D64
   ```

7. Save and close the run script file.

NOTE: Before closing the file, consider the optional parameters you can set for the metadata connection, as described in the following section.

NOTE: For Unix installations, you will further modify the run script to set environment variables, as described in “Setting the environment variables (Unix only)” on page 67.

Setting optional metadata parameters

You can set numerous optional parameters for the metadata database, including language, country, and collation strength. These parameters are added to the start script for the JBoss application server and use the following basic format:

com.celequest.property.**[PARAMETER]**=**[VALUE]**

Each parameter is described in the table below. This table is followed by specific procedures for setting the parameters in the application server configuration.

Parameter	Description
LANGUAGE	The ISO language code for the server.
COUNTRY	The ISO country code for the server.
LOCALESORT	Set to true or false to indicate whether to perform locale sensitive string comparisons. (Default is false.)
STRENGTH	Specifies the level of collation strength, that is, the extent to which the non-English characters are compared and collated: primary, secondary, tertiary, or identical. Primary is the least discriminating; identical is the greatest. (Default is tertiary.) For more information about collation parameters, see the Sun Java documentation at: http://java.sun.com/j2se/1.4.2/docs/api/java/util/Locale.html **Note:** This setting is functional only if LOCALESORT is set to true.
DECOMPOSITION	Specifies one of the following collation decomposition modes: none, canonical, or full. (Default is canonical.) For more information about collation parameters, see the Sun Java documentation at: http://java.sun.com/j2se/1.4.2/docs/api/java/util/Locale.html **Note:** This setting is functional only if LOCALESORT is set to true.

To set metadata parameters in the JBoss application server configuration:

1. Stop the application server if it is running.
2. Locate and open the run script that starts JBoss.

   This file is located at:

   …\$JBOSS_HOME$\bin\run.bat (Windows)

   …/$JBOSS_HOME$/bin/run.sh (UNIX)
3. Locate the JAVA_OPTS environment variable.
4. Add parameter settings using the following syntax:

   ```
   com.celequest.property.[PARAMETER]=[VALUE]
   ```

   For example, to set the LANGUAGE parameter to Portuguese, you would add the following command:

   ```
   -Dcom.celequest.property.LANGUAGE=PT
   ```

NOTE: Note that the -D command is prepended to the setting.

5. Delimit multiple settings with a space.

   For example, to set both language (Portuguese) and country (Brazil), the settings would look as follows

   ```
   -Dcom.celequest.property.LANGUAGE=PT
   -Dcom.celequest.property.COUNTRY=BR
   ```

6. Save and close the run script.

Setting the environment variables (Unix only)

For installations on Unix, it is recommended you modify the run script to include the environment variable settings described below.

NOTE: Add the following settings at the top of the run script.

To set the environment variables for Unix installations:

NOTE: You must use the *JDK*; the JRE is insufficient.

1. Locate and open the run script that starts JBoss, located at:

   …/$JBOSS_HOME$/bin/run.sh (UNIX)

1. Set the JAVA_HOME variable:

   ```
   set JAVA_HOME=/[FILE PATH]/j2sdk1.4.2_08
   ```

2. Save and close the run script file.

Modifying the JBoss thread configuration

Before deploying, you must modify the thread configuration in the JBoss server.xml file to the recommended settings

NOTE: This procedure requires restarting the JBoss application server.

To modify the thread configuration:

1. In the \server\default\deploy\jbossweb-tomcat50.sar directory, locate and open the server.xml file.
2. Locate the block listed under the **<!-- A HTTP/1.1 Connector on port -->** heading.

NOTE: The specific port number and other settings may vary.

3. Modify the values in this block to match the **bolded settings** in the code snippet below:

```
<!-- A HTTP/1.1 Connector on port 8080 -->
<Connector port="8080" address="${jboss.bind.address}"
maxThreads="400" minSpareThreads="100" maxSpareThreads="75"
enableLookups="false" redirectPort="8443" acceptCount="100"
connectionTimeout="20000" disableUploadTimeout="true"/>
```

4. Save and close the server.xml file.

NOTE: Prior to closing the server.xml file and restarting JBoss, consider making the optional enhancement modifications described in "Modifying JBoss for enhanced performance (optional)" on page 68.

5. Restart JBoss.

Modifying JBoss for enhanced performance (optional)

The following procedure is recommended for enhancing the overall FileNet Business Activity Monitor network performance.

NOTE: This procedure requires restarting the JBoss application server.

To enhance network performance:

1. In the \server\default\deploy\jbossweb-tomcat50.sar directory, locate and open the server.xml file.
2. Locate the block listed under the **<!-- A HTTP/1.1 Connector on port -->** heading.

NOTE: The specific port number and other settings may vary.

This block should look like this:

```
<!-- A HTTP/1.1 Connector on port -->
<Connector port="8080" address="${jboss.bind.address}"
maxThreads="400" minSpareThreads="100" maxSpareThreads="75"
enableLookups="false" redirectPort="8443" acceptCount="100"
connectionTimeout="20000" disableUploadTimeout="true"/>
```

3. Add the following parameters:

```
compression="on"
socketBuffer="1045576" />
```

4. Save and close the server.xml file
5. Restart JBoss.

Modifying the port setting (optional)

By default, JBoss uses port 8080 for HTTP connections (the port that you will use to connect to the FileNet BAM Workbench). However, if this causes a port conflict with other running applications, you can change the port configuration by modifying two other and distinct jboss-service.xml files in other directories, as shown below.

To modify the port configuration:

1. In the server/default/deploy/jbossweb-tomcatxx.sar/META-INF directory, locate and open the jboss-service.xml file.
2. Modify the HTTP port setting, which located in the **HTTP/1.1 Connector** block:

```
<!-- A HTTP/1.1 Connector on port 8080 -->
<Connector className="org.apache.coyote.tomcat4.CoyoteConnector"
 address="${jboss.bind.address}" port="8080" …
 enableLookups="true" acceptCount="10" debug="0"
 connectionTimeout="20000" useURIValidationHack="false"/>
```

3. Save and close the file.
4. In the server/default/deploy/http-invoker.sar/META-INF directory, locate and open the jboss-service.xml file.
5. Update each of the FOUR occurrences of the InvokerURLSuffix attribute.

```
…
<attribute name="InvokerURLSuffix">:8080/invoker/…
…
```

6. Save and close the file.

You can now deploy the FileNet Business Activity Monitor application.

Deploying

This section describes how to deploy on JBoss.

To deploy the FileNet Business Activity Monitor on JBoss:

1. Log in to the machine that will host the FileNet Business Activity Monitor.

NOTE: You must be root on UNIX.

2. Start the FileNet Business Activity Monitor by running the JBoss “run” script:
   - …\$JBOSS_HOME$\bin\run.bat (Windows)
   - …/$JBOSS_HOME$/bin/run.sh (UNIX)
3. The JBoss application server is running when it displays its version number in the log messages.

Before users can use the FileNet Business Activity Monitor, you need to set up and configure several settings. For detailed instructions, see “Configuring FileNet Business Activity Monitor” on page 74.

Shutting down on JBoss

Shut down the FileNet Business Activity Monitor from the FileNet BAM Workbench; do not shut down JBoss first.

To shutdown FileNet Business Activity Monitor on JBoss:

1. Log into the FileNet BAM Workbench as a system administrator.
2. (Optional) Perform a system checkpoint. by selecting **System Settings dialog> Checkpoint Configuration** tab, **Run Now** option.

   A snapshot saves the state of the system. When the **Recover Checkpointed State on Restart** option of the System controls tab is on, the servers restore the last checkpoint data when they restart.
3. Stop the servers by selecting the **Administration Console> System Settings dialog> System Control tab> Shutdown Now** command.
4. (Optional) Shut down the JBoss application server.

Directories and files on JBoss installation

The FileNet Business Activity Monitor application EAR file is in the JBoss deploy directory, per Step 2 of “Installing the JBoss application server” on page 59.

```
…/$JBOSS_HOME$/server/default/deploy/FNBAM_jboss3.2.x.ear
```

Further, if you installed the optional Test-Demo files in Step 4 of “Installing the JBoss application server” on page 59, the directory will include:

- ../installer/Demo
- /README.txt
- /export.jar
- /orderStatusData_fixed.txt

JBoss logging

On JBoss installations, any message sent to any FileNet Business Activity Monitor log may also be recorded in the JBoss server.log file. By default, JBoss logs all messages published by the FileNet Business Activity Monitor servers, in addition to its own messages and those of any other applications running on it. You can turn off the file-logging of FileNet Business Activity Monitor messages with the JBoss log4j.xml configuration file.

NOTE: By default, FileNet Business Activity Monitor servers publish messages of Info severity or greater. You can change which messages they publish with the Administration Console of the FileNet BAM Workbench. For more information, see “Understanding logging” on page 107 in the workbench documentation.

To restrict JBoss from recording FileNet Business Activity Monitor messages:

1. Edit the log4j.xml configuration file located in the JBoss server/default/conf/ directory. In that file, scroll down to the following section:

```
<root>
    <appender-ref ref="CONSOLE"/>
    <appender-ref ref="FILE"/>
</root>
```

2. Change the <root> definition, and in the “Categories” section, add a new category as follows:

```
<root>
    <appender-ref ref="CONSOLE"/>
</root>
...
<category name="org">
    <appender-ref ref="FILE"/>
</category>
```

   This tells JBoss to send all messages from “org” categories to the console, such as those published by JBoss. Messages from “com” categories (such as com.celequest) are not logged to file.

3. Save the changed log4j.xml file and restart the JBoss server to effect the change.

Do not do this as a “hot” change to the log configuration because doing so will duplicate messages to both console and file.

JBoss ports and multiple installations on a host

To run multiple installations of JBoss on a single host, you need to configure each to use unique ports for the various services. Do so by making the changes noted **bold** face font in the following files:

- server\default\conf\jboss-service.xml

  This file defines five port settings.

```
<!-- Class Loading -->
<mbean code="org.jboss.web.WebService"
        name="jboss:service=WebService">
    <attribute name="Port">8083</attribute>
    ...

<!-- JNDI -->
<mbean code="org.jboss.naming.NamingService"
        name="jboss:service=Naming">
    <attribute name="Port">1099</attribute>
    <attribute name="BindAddress">${jboss.bind.address}</attribute>
    <!-- The port of the RMI naming service, 0 == anonymous -->
    <attribute name="RmiPort">1098</attribute>
    ...

<!-- RMI/JRMP invoker -->
<mbean code="org.jboss.invocation.jrmp.server.JRMPInvoker"
        name="jboss:service=invoker,type=jrmp">
    <attribute name="RMIObjectPort">4444</attribute>
    ...

<mbean code="org.jboss.invocation.pooled.server.PooledInvoker"
    name="jboss:service=invoker,type=pooled">
    ...
    <attribute name="ServerBindPort">4445</attribute>
    ...
```

- server\default\deploy\jbossweb-tomcat41.sar\META-INF\jboss-service.xml

  This file has two port settings.

```
<!-- A HTTP/1.1 Connector on port 8080 -->
<Connector className="org.apache.coyote.tomcat4.CoyoteConnector"
        address="${jboss.bind.address}" port="appserver.8080"
    ...
<!-- A AJP 1.3 Connector on port 8009 -->
<Connector className="org.apache.coyote.tomcat4.CoyoteConnector"
    address="${jboss.bind.address}" port="8009" minProcessors="5"
    ...
```

- server\default\deploy\http-invoker.sar\META-INF\jboss-service.xml

  This file has four references to the HTTP port you defined above:

```
<mbean code="org.jboss.invocation.http.server.HttpInvoker"...>
...
<attribute name="InvokerURLSuffix">:8080 /invoker/EJBInvokerServlet</attribute>
...
```

```
<mbean code="org.jboss.invocation.http.server.HttpInvokerHA"...>
...
<attribute name="InvokerURLSuffix">:8080 /invoker/EJBInvokerHAServlet</attribute>
...

<mbean code="org.jboss.invocation.http.server.HttpProxyFactory"...>
<attribute name="InvokerURLSuffix">:8080 /invoker/JMXInvokerServlet</attribute>
...

<mbean code="org.jboss.invocation.http.server.HttpProxyFactory"...>
<attribute name="InvokerURLSuffix">:8080 /invoker/readonly/JMXInvokerServlet</attribute>
...
```

- server\default\deploy\snmp-adaptor.sar\managers.xml

  This file has one port specification:

```
<manager>
    <address>localhost</address>
    <port>1162</port>
    <local-port>0</local-port>
    <version>1</version>
</manager>
```

- server\default\deploy\snmp-adaptor.sar\META-INF\jboss-service.xml

  This file has one port specification, and is the same port specified in managers.xml above:

```
<service>
    <mbean code="org.jboss.jmx.adaptor.snmp.trapd.TrapdService"
         name="jboss.jmx:name=SnmpAgent,service=trapd,type=logger">
       <attribute name="Port">1162</attribute>
    </mbean>
    ...
```

After changing the application server name instance and port numbers, restart the JBoss application server to effect the changes.

Configuring FileNet Business Activity Monitor

This chapter describes how to configure the FileNet Business Activity Monitor, including the following topics

In this Chapter:

Configuring FileNet Business Activity Monitor in FileNet BAM Workbench

Most configuration settings for the FileNet Business Activity Monitor are performed from the Administration Console in the FileNet BAM Workbench.

After installing and deploying the FileNet Business Activity Monitor, you need to define a few settings before users can use the product. Specifically, you need to:

- Change the system manager password.
- Identify a directory for log files.
- Enable email by configuring the SMTP (simple mail transfer protocol) connection.
- Create an account for each user.

All four settings are described below.

To connect to and administer the FileNet Business Activity Monitor:

1. Log into the FileNet BAM Workbench:

   Using a browser compatible with Microsoft Internet Explorer 6.0 or newer, connect to the FileNet BAM Workbench from the application server running the FileNet Business Activity Monitor:

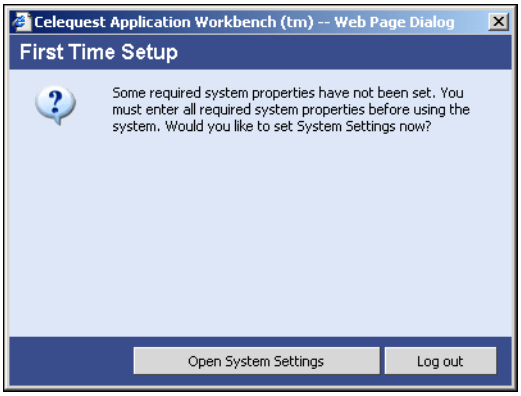
   ```
   http://filenetbam_host:port/filenetbam/workbench
   ```

2. On the login page, enter the system manager username and password.

   For your installation for this release, the values are as follows:

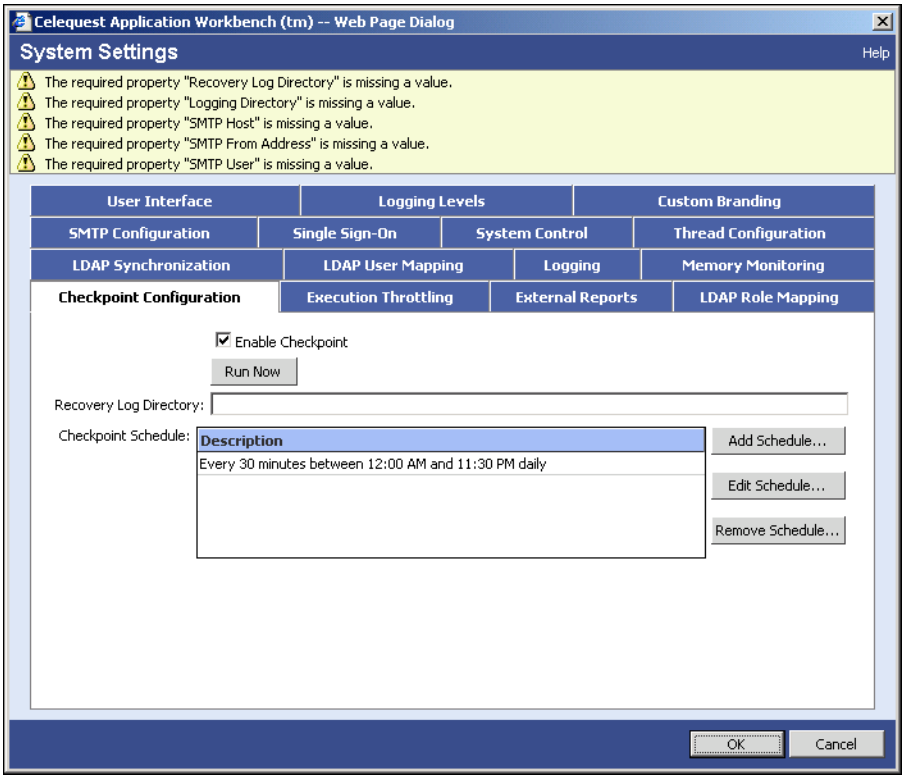
   - Username: system
   - Password: manager

   The first time you log in after installation, an alert will prompt you to complete the several required system settings.



3. Open the Administration Console and click **System Settings**.

The System Settings dialog box opens by default to the Checkpoint Configuration tab pane of the System Settings dialog box. The settings that need to be configured are listed in a panel at the top of the dialog box.



4. Complete the following five settings:

Setting	Location of setting
Recovery Log Directory	Checkpoint Configuration tab pane
Logging Directory	Logging tab pane
SMTP Host	SMTP Configuration tab pane This is the name of the e-mail host that provides the transport. A typical name might look like this: mail.mydomain.com.
SMTP From Address	SMTP Configuration tab pane This is the address that appears in the From field for all e-mail messages sent by the system.
SMTP User	SMTP Configuration tab pane This is the user name that the system uses to access the transport.

The SMTP (simple mail transfer protocol) configuration specifies how the FileNet Business Activity Monitor connects to the mail server that delivers email notifications. The server is external to the

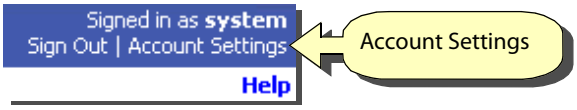
FileNet Business Activity Monitor and is managed by your email system administrator. Contact that administer to set up an account for the FileNet Business Activity Monitor, and for details about these configuration settings.

5. Click **OK**.

NOTE: You will not be able to exit the System Settings dialog until all five settings have been completed.

6. Create user accounts as follows:

   - Click the **Account Settings** link.



   - Change the default password in User Details, and the e-mail address in the default Delivery Profile.
   - Create an account for each user. See the “User accounts” documentation in the *Introduction* section of the server reference dodcumentation for detailed information.

   This completes the steps for configuring the FileNet Business Activity Monitor. Users may now log in and begin creating scenarios.

NOTE: You should run the test-demo to confirm that the installation is working correctly. See “Running the Test-Demo” on page 87.

Setting up LDAP settings

In addition to allowing you to manually create users and user permissions, FileNet Business Activity Monitor enables you to import user information from supported LDAP providers. FileNet Business Activity Monitor can be set up for scheduled synchronizations with the LDAP server to update the existing users and roles; manual synchronization is also an option.

NOTE: A “role” in FileNet Business Activity Monitor maps to a “group” on the LDAP server.

In the importation process, FileNet Business Activity Monitor adds or updates the users; LDAP groups are converted to roles in FileNet Business Activity Monitor. When users are imported, they retain the LDAP role assignments.

NOTE: For more information, see “Limitations in LDAP connectivity” on page 79 and “Best practices” on page 79.

FileNet Business Activity Monitor has tested and certifies integration with the following LDAP providers:

- SunOne Directory Server 5.2
- Tivoli Directory Server 6.0
- Microsoft Active Directory 2003

NOTE: FileNet Business Activity Monitor should be able to integrate with any LDAP provider that supports LDAP Version 3 Protocol. However, only the three listed above are certified.

This section describes the following topics:

- *Limitations in LDAP connectivity*
- *Best practices*
- *Setting up LDAP user mapping*
- *Setting up LDAP role mapping*
- *Setting up LDAP synchronization*
- *Manually synchronizing with the LDAP server*

Limitations in LDAP connectivity

Bear in mind the following limitations:

- If FileNet Business Activity Monitor does not recognize a role, it creates the role and assign a set of zero permissions. You can later modify the permissions as necessary.
- If FileNet Business Activity Monitor imports a user but none of the groups/roles to which the user is assigned, the user is nonetheless created but remains unassigned to any roles in FileNet Business Activity Monitor.
- Users that have been manually created in FileNet Business Activity Monitor can be assigned to any imported roles. However, imported users cannot be assigned to imported roles; such assignments must be made on the LDAP server.

Best practices

When setting up LDAP in FileNet Business Activity Monitor, it is strongly recommended you adhere to the following best practices:

- If the line between FileNet Business Activity Monitor and the LDAP server is not secure, use the SSL option.
- For security reasons, the LDAP synchronization user, as described in “Setting up LDAP synchronization” on page 84, should be given minimum permissions, limited to querying the LDAP server.

  The password for this user is stored in the FileNet Business Activity Monitor metadata using *reversible* symmetric encryption. Therefore, anyone with access to the metadata could conceivably obtain this password.

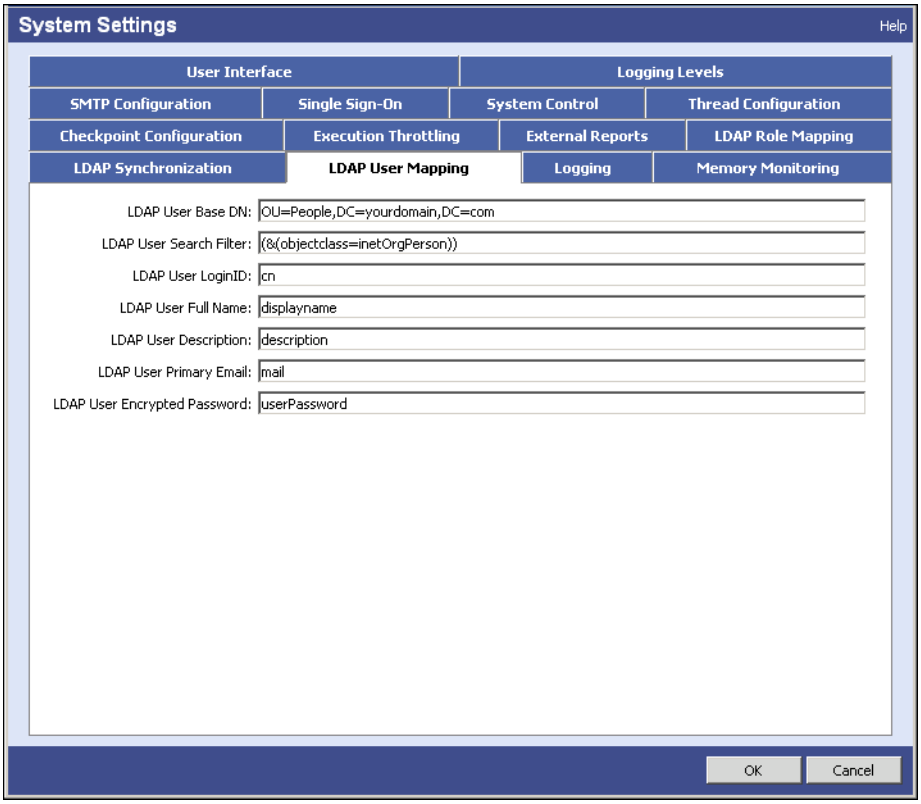
NOTE: This is also another strong argument for securing the metadata database.

Setting up LDAP user mapping

This section describes the user mapping parameters that determine which users will be imported and/or synchronized. The settins vary depending on the LDAP server provider being used.

To set the name mapping parameters:

1. In the **System Settings** dialog box, open the LDAP User Mapping tab.



2. Configure the following settings:

Parameter	Value
LDAP User Base DN	This is the root of the tree that will be searched for users.
LDAP User Search Filter	Use the format appropriate to the indicated provider. For example, your LDAP server could have a special group for FileNet Business Activity Monitor users. This filter could then ensure that only users with this group membership were imported.
LDAP User LoginID	Use the value appropriate to the indicated provider. This value will become the user's login ID in FileNet Business Activity Monitor.
LDAP User Full Name	Enter "cn" for both SunOne and Active Directory.
LDAP User Description	Enter "description" for both SunOne and Active Directory.
LDAP User Primary Email	Enter "userPrincipalName". This refers to the user's email address in the LDAP.
LDAP User EncryptedPassword	Enter "userPassword" for both SunOne and Tivolie. Leave blank for Active Directory.

NOTE: The sample settings in the above table have been tested and used in successfully LDAP configurations.

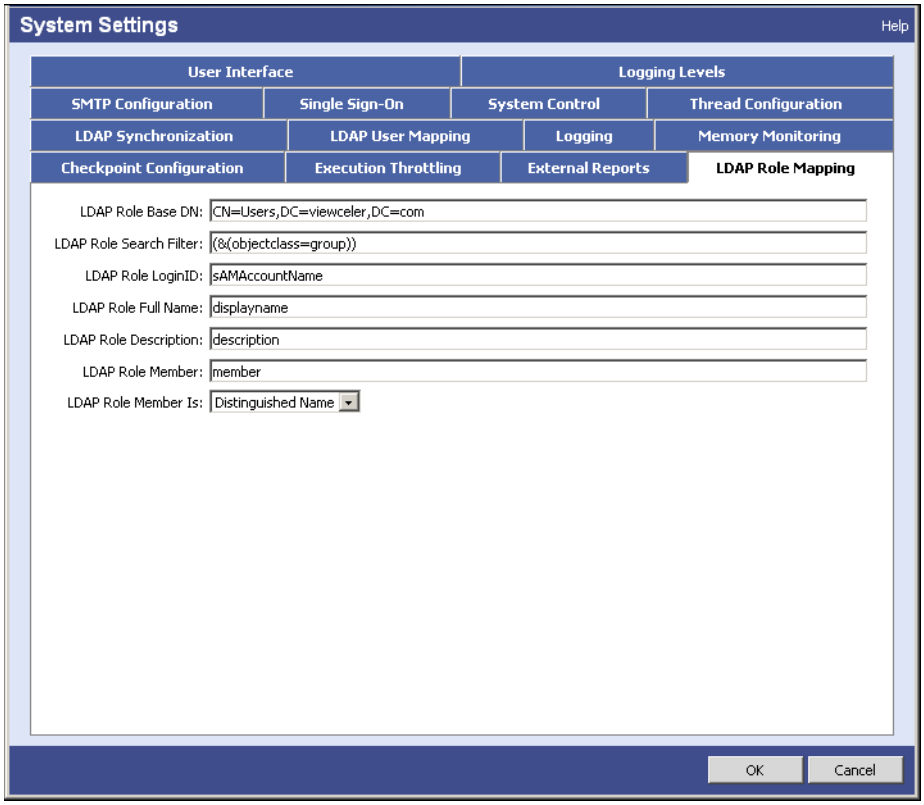
3. Click **OK** or click another tab to configure additional settings.

Setting up LDAP role mapping

This section describes the role mapping parameters that determine which groups/roles will be imported and/or synchronized. The settings vary depending on the LDAP server provider being used.

To set the role mapping parameters:

1. In the **System Settings** dialog box, open the LDAP Role Mapping tab.



2. Configure the following settings:

Parameter	Value
LDAP Role Base DN	Use the format appropriate to the indicated provider: • SunOne: OU=Groups,DC=yourdomain,DC=com • Active Directory: CN=Users,DC=yourdomain,DC=com
LDAP Role Search Filter	Use the value appropriate to the indicated provider: • SunOne: (&(objectclass=groupOfUniqueNames)) • Active Directory: (&(objectclass=group))
LDAP Role LoginID	Enter “cn” for both SunOne and Active Directory.
LDAP Role Full Name	Enter “displayname” for both SunOne and Active Directory.
LDAP Role Description	Enter “description” for both SunOne and Active Directory.
LDAP Role Member	This is the name of the multivalued property that contains role members: • SunOne: uniqueMember • Active Directory: member
LDAP Role Member is:	Select one of the following options: • Distinguished Name, if the role member properties identify users by distinguished names, such as “cn=jadmin,ou=people,dc=yourdomain,dc=com” • Login Id, if the role member properties identify users by value of the property used as the FileNet Business Activity Monitor login ID.

NOTE: The sample settings in the above table have been tested and used in successfully LDAP configurations.

3. Click **OK** or click another tab to configure additional settings.

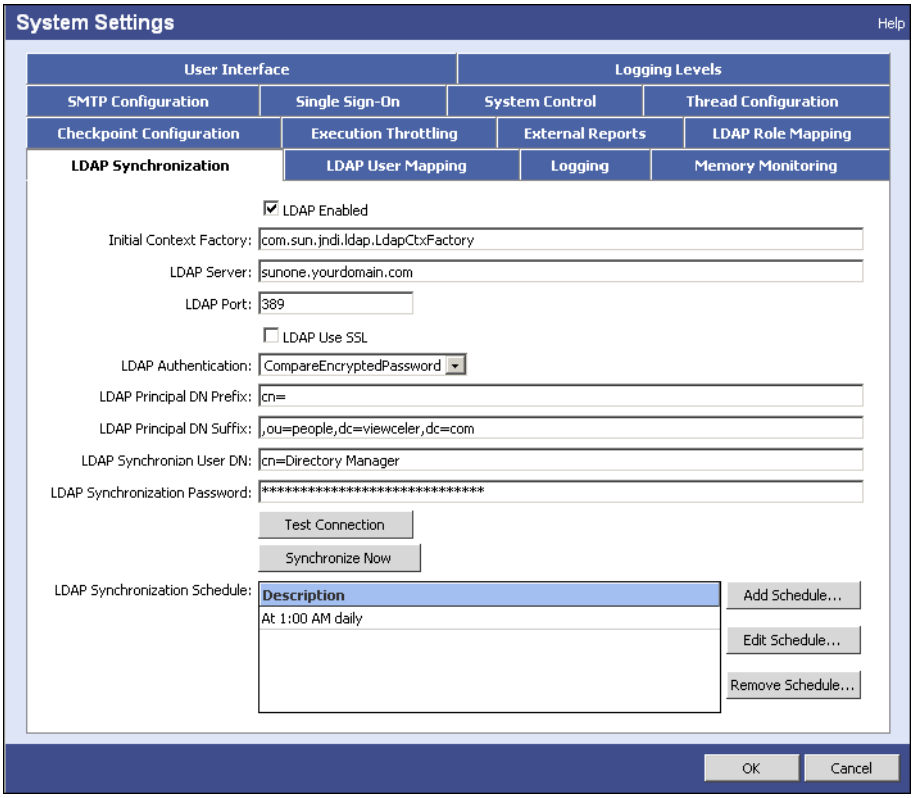
Setting up LDAP synchronization

This section describes the settings for scheduling the automatic synchronization of FileNet Business Activity Monitor with the LDAP server. During the synchronization process, FileNet Business Activity Monitor adds new roles to groups that appear on the LDAP server and removes any roles whose groups have been removed from the LDAP server.

NOTE: Users that have been added manually are not affected by synchronization, even if their roles have been removed from the LDAP server.

To set up LDAP synchronization:

1. Log into the FileNet BAM Workbench.
2. Open the Administration Console and click **System Settings**.
3. Open the LDAP Synchronization tab.



4. Configure the following settings:

Parameter	Value
Initial Context Factory	The JNDI (Java Naming and Directory Interface) through which FileNet Business Activity Monitor connects to the LDAP server. The default is: com.sun.jndi.ldap.LdapCtxFactory **Note:** You will probably not need to change this value.
LDAP Server	The DNS name or IP address of the LDAP server.
LDAP Port	Port on which the LDAP server is running. The default is 389; however, if you select the SSL option below, the port value is likely to be 636, depending on your LDAP server configuration.
LDAP SSL	Check or uncheck. If checked, the LDAP server must be configured for SSL. Also, this may affect the LDAP port setting, as described above.

Parameter	Value
LDAP Authentication	There are three options: • Simple • SASL (Simple Authentication and Security Layer) • Compare Encrypted Password **Note:** Select SASL for SunOne.
LDAP Principal DN Prefix	For the simple authentication method, this text will be inserted before the user's login name. For LDAP servers that require DN login, set this to the appropriate property value plus equal sign ("cn=", "uid=", etc.). For ActiveDirectory, leave this blank
LDAP Principal DN Suffix	For the simple authentication method, this text will be inserted after the user's login name. For LDAP servers that require DN login, set this to the appropriate chain of values. For example: “ou=Users,dc=domain,dc=name" For ActiveDirectory, which requires simple login with email address, set this to "@" plus the domain name of the ActiveDirectory. **Note:** For DN login, the first character of the prefix must be ","
LDAP Synchronization User	This is the user that binds to the server and reads the lists of users and roles. For security purposes, it is recommended to use a user that has no permissions other than LDAP directory reading.
LDAP Synchronization Password	Password for above user.

NOTE: The sample settings in the above table have been tested and used in successfully LDAP configurations.

5. After setting the parameters as desired, click **Test Connection**.
6. Set the LDAP Synchronization Schedule:

   Use the **Add Schedule**, **Edit Schedule**, and **Remove Schedule** buttons to create the desired scheduled.

NOTE: It is recommended you set synchronization for a time when as few users as possible are likely to be logged on.

7. Check the **LDAP Enabled** check box, if it is not checked already.
8. Click **OK** or click another tab to configure additional settings.

The LDAP synchronization settings are now complete. The next section describes the LDAP user mapping parameters.

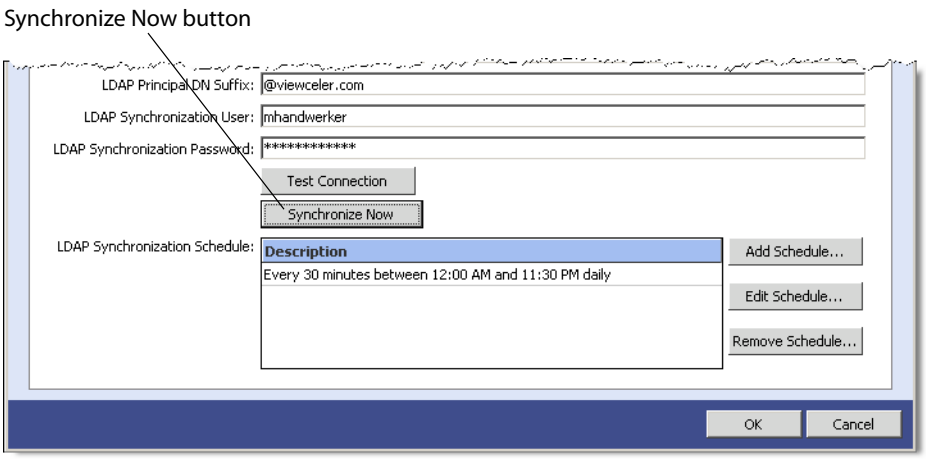
Manually synchronizing with the LDAP server

You can manually synchronize FileNet Business Activity Monitor with the LDAP server any time. Synchronization requests are queued to prevent concurrent synchronizations.

To manually synchronize:

1. Open the Administration Console and click **System Settings**.
2. Open the LDAP Synchronization tab.
3. Press the **Synchronize Now** button.

   After a few moments, a message will indicate that the synchronization is complete.



4. Click **OK** or click another tab to configure additional settings.

Running the Test-Demo

The Test-Demo allows you to see some of the basic functionality of the FileNet Business Activity Monitor, and to confirm that it is installed correctly. The Test-Demo uses XML files to configure dashboards, scenarios, rules, and alerts, and to load data that simulates events entering the system. It will send alert notifications to you, and optionally send you email messages with information about detected events.

To prepare for running the Test-Demo:

1. Configure the SMTP server settings per Step 6 on "Configuring FileNet Business Activity Monitor in FileNet BAM Workbench" on page 75.
2. Put the Test-Demo files in a directory that is accessible to the browser that you are using to access the FileNet BAM Workbench.
   - For UNIX installations, either copy the files to a Windows location, or mount the UNIX location as a Windows connection.
3. Locate the directory where you installed the demo files during installation.

The recommended location is:

C:\FilenetBAM\Installer\Demo (Windows)

~/filenetbam/installer/Demo (UNIX)

The original samples are located on the product CD-ROM in this directory:

\samples\installer\demo

You can now run the Test-Demo.

To run the Test-Demo:

1. Ensure that the FileNet Business Activity Monitor is running.
2. Open a browser window and log in to the FileNet BAM Workbench as the system user.

   `http://filenetbam_host/filenetbam/workbench`
3. On the Administration Console tab, click **Import/Export**.
4. Select **Import Metadata from Directory Server** and enter the full path to the latest subdirectory of the Demo directory. For example:

   `C:\FilenetBAM\Installer\Demo\_export.jar`
5. Choose **OK** and wait for the import to complete.
6. Log out and re-log in to the FileNet BAM Workbench as user “Zaphod” with password “twoheads”:

   `Username:` **Zaphod**
   `Password:` **twoheads**
7. (optional) Change Zaphod’s delivery profile to send his e-mail to you. Doing so will allow you to test the e-mail delivery configuration.
8. Upload the event data into the **orderStatusEvent** event stream.
   - Open the **FileNet BAM Workbench** tab.
   - Open the **Events** folder in the Table and Views list.
   - Select the orderStatusEvent event and then click the **Upload Event File** option. Upload the orderStatusData_fixed.txt file from the demo directory.

   After the “File has been processed” prompt, the events will have been received and processed by the rules.
9. Log in to FileNet BAM Dashboard and see two alert notifications:
   - In a new browser window, log in to FileNet BAM Dashboard as user “zaphod” with password “two-heads”:

     `http://filenetbam_host/filenetbam/dashboard`
   - Zaphod’s default dashboard shows two alert messages and a few charts associated with the dash-board. For details about an alert, click it directly.
10. If you changed zaphod’s email address in Step 7 above, you should also have received the alert notifications as email messages.

To remove the Test-Demo data and object definitions:

1. In the FileNet BAM Workbench, open the FileNet BAM Workbench:
   - Delete the orderStatusEventIdentifier agent (choose to delete all dependencies when prompted).
   - Delete the Zaphod user.
2. Open the Scenario Modeler and delete the Order Management business activity.

The Test-Demo data and objects are now removed from the installation.

Uninstall FileNet Business Activity Monitor

Uninstalling FileNet Business Activity Monitor involves removing the files installed with the application, dropping the metadata database, and removing the application server configuration settings.

In this Chapter:

Uninstalling on BEA WebLogic

This section describes how to uninstall from the BEA WebLogic application server.

To uninstall the FileNet Business Activity Monitor:

1. Start BEA WebLogic if it is not already running.
2. Run the Uninstaller application:

   On Windows:

   - Open the Windows Control Panel (**Start** > **Settings > Control Panel**).
   - Choose **Add/Remove Programs**.
   - Select FileNet Business Activity Monitor and click **Remove**.

   On Solaris:

   - Run the uninstaller:

     ```
     ./unstallerSparc.bin
     ```
3. When the uninstaller loads, click **Next** to proceed from the Welcome page.
4. Complete the following settings in the Locate the WebLogic Application Services screen:

NOTE: These are the same settings you defined in “Installing and Deploying on BEA WebLogic” on page 25.

Setting	Your value
Host name Host server machine name as referenced in URLs, such as http://**myHost**:7001/console.	
Port BEA WebLogic listening port, such as http://myHost:7001/console.	
User name BEA WebLogic administrator user name.	
Password BEA WebLogic administrator password.	

5. Click **Next** to proceed with the uninstall.

6. In the Drop Metadata Database Tables screen, enter the same values you assigned in when installing and configuring.

Setting	Your value
Database vendor Choose the name of the vendor for your database.	<pick-from-list>
Database instance name Instance name of the database.	
Database server name Server hosting the database.	
Database port Port number for connecting to the database.	
Database user name Username for connecting to the DBMS. Must have create and modify privileges for the metadata database.	
Database password Password for the database username.	

7. Click **Next** to proceed.
8. In the Uninstall FileNet Business Activity Monitor screen, click **Next** to uninstall the application.
9. In the Uninstall Summary screen, click **Finish**.
10. Restart the computer.

    Restarting is required to complete the uninstallation.
11. Remove the application directory and all of its contents. The recommended location is:

    C:\FilenetBAM (Windows)

    ~/filenetbam (UNIX)
12. Remove the FileNet Business Activity Monitor ear file.
13. (UNIX) Remove the installation directory and its contents:

```
rm -rf /opt/filenetbam/
```

Uninstalling on IBM WebSphere

This document describes how to uninstall FileNet Business Activity Monitor from the WebSphere Application Server (version 5.1.1.5).

This process includes exporting the metadata, dropping the tables from the metadata database, and uninstalling the EAR files associated with the FileNet Business Activity Monitor installation.

To uninstall the previous version of the FileNet Business Activity Monitor EAR:

1. Back up the metadata using the export function in FileNet BAM Workbench:
   - Log in to FileNet BAM Workbench.
   - Use the Import/Export feature as described in the FileNet BAM Workbench documentation.
2. Drop the tables for the metadata database:
   - Access the database or database schema used for FileNet Business Activity Monitor metadata database.
   - Drop the tables for the metadata database.

NOTE: To ensure the absolute destruction of the metadata, you may wish to delete the database or schema.

3. From the WebSphere Administration Console, uninstall the previous EAR file.

   Detailed instructions for uninstalling applications can be found at:

   http://publib.boulder.ibm.com/infocenter/wasinfo/v5r1//index.jsp?topic=/com.ibm.websphere.base.doc/info/aes/ae/trun_app_uninst.html

4. From the WebSphere Administration Console, remove the server instance on which FileNet Business Activity Monitor was running.

NOTE: Detailed instructions for deleting server instances can be found at:

http://publib.boulder.ibm.com/infocenter/wasinfo/v5r1//index.jsp?topic=/com.ibm.websphere.base.doc/ info/aes/ae/trun_svr_manage.html

5. Go to the [*WebSphere-Home*]\AppServer\installedApps\[*machine name*] directory and delete the entire FileNet Business Activity Monitor EAR directory.

NOTE: This step is only necessary if the IBM uninstaller did not clear these directories.

This completes the uninstalling of FileNet Business Activity Monitor from the WebSphere Application Server.

Uninstalling on JBoss

To uninstall FileNet Business Activity Monitor from a JBoss installation:

1. Stop FileNet Business Activity Monitor.

Log into the FileNet BAM Workbench as a system administrator and stop the servers from the **Administration Console> System Settings dialog> System Control tab> Shutdown Now** command.

2. (Optional) Stop the JBoss application server.
3. Remove the application EAR file from the JBoss deploy directory.

   ```
   …/$JBOSS_HOME$/server/default/deploy/FNBAM_websphere5.x.ear
   ```

4. Remove the contents of the following JBoss directories:

   ```
   $JBOSS_HOME$/server/default/work
   $JBOSS_HOME$/server/default/tmp
   $JBOSS_HOME$/server/default/data
   $JBOSS_HOME$/server/default/conf/jboss.web
   ```

5. Remove the source descriptors for the FileNet Business Activity Monitor database connection from the deploy directory.

   There should be at least one file (celequest_metadata-ds.xml) for the metadata database, and optionally other files for context data databases.

6. Remove the application directory and all of its contents.
7. The recommended location is:

   ```
   C:\FilenetBAM    << Windows
   ~/filenetbam     << UNIX
   ```

FileNet Business Activity Monitor Database Settings

The FileNet Business Activity Monitor uses a DBMS database to store the definitions of all objects in the FileNet Business Activity Monitor installation. It also stores the details of persisted runtime alerts and objects, which can use a significant amount of storage. As such, allocate at least 50 MB for the metadata database.

To access the database, FileNet Business Activity Monitor requires an account to use when connecting to the database. That account needs create, modify, and update privileges on the database.

NOTE: If you are using Sybase to manage the metadata database, you must allocate at least 50MB for the transaction log and configure the database to use “DDL in transaction”.

Connection pool settings

The FileNet Business Activity Monitor connects to the database via a database connection pool managed by the web application server. When installing the FileNet Business Activity Monitor, the procedures in “Creating the JDBC metadata connection pool” on page 27 requires the following settings. Fill in these values and provide them to the person installing the FileNet Business Activity Monitor.

Setting	Your value
Host Host machine name used to connect to the DBMS.	
Port Port on the host machine name used to connect to the DBMS.	

Setting	Your value
User name Account use name that the application uses to connect to the DBMS.	
Password Password for the <username>.	
Database instance name **(Sybase and SQL Server only)** Name of the database to accommodate the FileNet Business Activity Monitor metadata.	
SID **(Oracle only)** Database instance identifier.	
Maximum capacity Maximum connections to maintain to the database. Do not set this value lower than 200 connections.	200

Appendix: File Samples

This appendix contains complete copies of files used in the process of installing and configuring FileNet Business Activity Monitor, including:

“celequest_metadata-ds.xml” on page 98

“celequest_context-ds.xml” on page 98

celequest_metadata-ds.xml

This file is part of the JBoss configuration, as described in "Installing and Deploying on JBoss" on page 55. An electronic copy is available in the */samples/jboss* directory on the FileNet Business Activity Monitor product CD-ROM

```
<?xml version="1.0" encoding="UTF-8"?>
<datasources>
    <no-tx-datasource>
        <jndi-name>com.celequest.metadata.metaDatasource</jndi-name>

        <connection-url><!--Insert jdbcURL --></connection-url>
        <driver-class><!--Insert jdbcDriver --></driver-class>

        <!-- The login and password -->
        <user-name><!--Insert dbUsername --></user-name>
        <password><!--Insert dbPassword --></password>

        <min-pool-size>5</min-pool-size>
        <max-pool-size>20</max-pool-size>
        <idle-timeout-minutes>5</idle-timeout-minutes>
        <track-statements>false</track-statements>
        <application-managed-security/>

    </no-tx-datasource>
</datasources>
```

celequest_context-ds.xml

This file is part of the JBoss configuration, as described in "Installing and Deploying on JBoss" on page 55. An electronic copy is available in the */samples/jboss* directory on the FileNet Business Activity Monitor product CD-ROM.

```
<?xml version="1.0" encoding="UTF-8"?>
<datasources>
    <no-tx-datasource>
        <jndi-name><!--Insert jndiName --></jndi-name>

        <connection-url><!--Insert jdbcURL --></connection-url>
        <driver-class><!--Insert jdbcDriver --></driver-class>

        <!-- The login and password -->
        <user-name><!--Insert dbUsername --></user-name>
        <password><!--Insert dbPassword --></password>

        <min-pool-size>5</min-pool-size>
        <max-pool-size>20</max-pool-size>
        <idle-timeout-minutes>5</idle-timeout-minutes>
        <track-statements>false</track-statements>
        <application-managed-security/>
    </no-tx-datasource>
</datasources>
```

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