

# **TIBCO BusinessEvents™**

## **Installation**

*Software Release 4.0.1  
November 2010*

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# Preface



**This software may be available on multiple operating systems. However, not all operating system platforms for a specific software version are released at the same time. Please see the readme.txt file for the availability of this software version on a specific operating system platform.**

TIBCO BusinessEvents™ allows you to abstract and correlate meaningful business information from the events and data flowing through your information systems, and take appropriate actions using business rules. By detecting patterns within the real-time flow of events, BusinessEvents™ can help you to detect and understand unusual activities as well as recognize trends, problems, and opportunities. BusinessEvents publishes this business-critical information in real time to your critical enterprise systems or dashboards. With BusinessEvents you can predict the needs of your customers, make faster decisions, and take faster action.

BusinessEvents  
The Power to Predict™

## Topics

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- [Changes from the Previous Release of this Guide, page viii](#)
- [Related Documentation, page ix](#)
- [Typographical Conventions, page xiii](#)
- [How to Contact TIBCO Support, page xvi](#)

## Changes from the Previous Release of this Guide

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This section itemizes the major changes from the previous release of this guide.

### Migration Topics

The procedures for importing a 3.x project have been removed from the *TIBCO BusinessEvents Developer's Guide* to the migration topics in this guide.

The migration topics are expanded and improved. See the following:

- [Chapter 5, Migrating from Earlier Versions, page 35](#)
- [Chapter 7, Property Migration Reference, page 69](#)

### Linux Installations

Documentation about limitations relating to the Linux platform has been removed because the limitations no longer exist in this release.

### Partial Installer

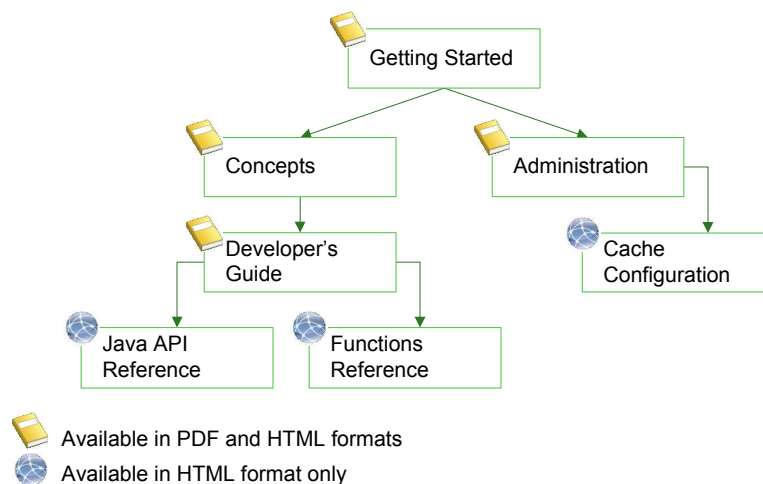
This service pack uses a partial installer: it requires a prior installation of the TIBCO BusinessEvents software (including any add-on products). You can't uninstall the service pack alone. This version of the installation guide is updated to explain these points.

## Related Documentation

This section lists documentation resources you may find useful.

### TIBCO BusinessEvents Documentation

The following diagram shows the relationships between the main documents in the set.



In addition to the above, the set contains an installation guide, release notes, and a readme file. The complete set is described next.

- *TIBCO BusinessEvents Installation*: Read this manual for instructions on site preparation and installation.
- *TIBCO BusinessEvents Getting Started*: After the product is installed, use this manual to learn the basics of BusinessEvents. This guide provides step-by-step instructions to implement an example project and also explains the main ideas so you gain understanding as well as practical knowledge.
- *TIBCO BusinessEvents Architect's Guide*: If you are architecting an application using TIBCO BusinessEvents, read this guide for overview and detailed technical information to guide your work.
- *TIBCO BusinessEvents Developer's Guide*: After the architect has designed the system, use this guide to implement the design in BusinessEvents Studio.
- *TIBCO BusinessEvents Administration*: This book explains how to configure, deploy, monitor, and manage a BusinessEvents application and the data it generates.



- Online References:
  - *TIBCO BusinessEvents Cache Configuration Guide*: This online reference is available from the HTML documentation interface. It provides configuration details for cache-based object management. Cache-based object management is explained in *TIBCO BusinessEvents Administration*.
  - *TIBCO BusinessEvents Java API Reference*: This online reference is available from the HTML documentation interface. It provides the Javadoc-based documentation for the BusinessEvents API.
  - *TIBCO BusinessEvents Functions Reference*: This online reference is available from the HTML documentation interface. It provides a listing of all functions provided with BusinessEvents, showing the same details as the tooltips available in the BusinessEvents Studio rule editor interface.
- *TIBCO BusinessEvents Release Notes*: Read the release notes for a list of new and changed features. This document also contains lists of known issues and closed issues for this release.

## Accessing BusinessEvents Functions Reference Documentation

All functions, including those used in add-ons, are documented in the HTML documentation interface for the BusinessEvents documentation set. The reference documentation is also available as tooltips in TIBCO BusinessEvents Studio.

To use the reference documentation for functions from the file system do the following:

1. Browse to `BE_HOME/doc/standard/html` and click **index.htm**. The HTML documentation interface appears.
2. In the left panel, browse to Online References and in the right panel choose TIBCO BusinessEvents Functions Reference. The reference opens in a new tab.
3. Click the navigation links to browse to the functions as desired.

## TIBCO BusinessEvents Event Stream Processing

This BusinessEvents add-on is available separately, and includes the BusinessEvents Query Language features and the Pattern Matching Framework.

- *TIBCO BusinessEvents Event Stream Processing Installation*: Read this brief manual for installation instructions. A compatible version of TIBCO BusinessEvents must be installed first.
- *TIBCO BusinessEvents Query Developer's Guide*: This manual explains how to use the object query language to query various aspects of the running system.

- *TIBCO BusinessEvents Event Stream Processing Pattern Matcher Developer's Guide*: This manual explains how to use the pattern matcher language and engine to correlate event patterns in a running system.
- *TIBCO BusinessEvents Event Stream Processing Release Notes*: Read the release notes for a list of new and changed features. This document also contains lists of known issues and closed issues for this release.

## TIBCO BusinessEvents Decision Manager



TIBCO BusinessEvents Decision Manager software does not run on Linux or Solaris operating systems.

This BusinessEvents add-on is available separately. It incorporates a decision modeling business user interface, and associated runtime.

- *TIBCO BusinessEvents Decision Manager Installation*: Read this brief manual for installation instructions. A compatible version of TIBCO BusinessEvents must be installed first.
- *TIBCO BusinessEvents Decision Manager User's Guide*: This manual explains how business users can use decision tables and other decision artifacts to create business rules. It also covers configuration and administration of Rules Management Server, which is used for authentication, authorization, and approval processes.
- *TIBCO BusinessEvents Decision Manager Release Notes*: Read the release notes for a list of new and changed features. This document also contains lists of known issues and closed issues for this release.

## TIBCO BusinessEvents Data Modeling

This BusinessEvents add-on is available separately. It contains state models and database concept features.

- *TIBCO BusinessEvents Data Modeling Installation*: Read this brief manual for installation instructions. A compatible version of TIBCO BusinessEvents must be installed first.
- *TIBCO BusinessEvents Data Modeling Developer's Guide*: This manual explains data modeling add-on features for BusinessEvents. The database concepts feature enables you to model BusinessEvents concepts on Database tables. The state modeler feature enables you to create state machines.

- *TIBCO BusinessEvents Data Modeling Release Notes*: Read the release notes for a list of new and changed features. This document also contains lists of known issues and closed issues for this release.

## TIBCO BusinessEvents Views

This BusinessEvents add-on is available separately. It includes graphical dashboard components for run-time event monitoring.

- *TIBCO BusinessEvents Views Installation*: Read this manual for instructions on site preparation and installation.
- *TIBCO BusinessEvents Views Developer's Guide*: This guide explains how to use BusinessEvents BusinessEvents Views to create meaningful metrics that are presented to business users in real-time for proactive decision making.
- *TIBCO BusinessEvents Views User's Guide*: This book explains how to monitor metrics in BusinessEvents BusinessEvents Views and how to represent the business processes graphically.
- *BusinessEvents Views Release Notes*: Read the release notes for a list of new and changed features. This document also contains lists of known issues and closed issues for this release.

## Other TIBCO Product Documentation

You may find it useful to refer to the documentation for the following TIBCO products:

- TIBCO ActiveSpaces®
- TIBCO Hawk®
- TIBCO Rendezvous®
- TIBCO Enterprise Message Service™
- TIBCO ActiveMatrix BusinessWorks™

## Typographical Conventions

The following typographical conventions are used in this manual.

Table 1 General Typographical Conventions

Convention	Use
<i>TIBCO_HOME</i> <i>ENV_HOME</i> <i>BE_HOME</i>	<p>Many TIBCO products must be installed within the same home directory. This directory is referenced in documentation as <i>TIBCO_HOME</i>. The value of <i>TIBCO_HOME</i> depends on the operating system. For example, on Windows systems, the default value is C:\tibco.</p> <p>Other TIBCO products are installed into an <i>installation environment</i>. Incompatible products and multiple instances of the same product are installed into different installation environments.</p> <p>An environment home directory is referenced in documentation as <i>ENV_HOME</i>. The value of <i>ENV_HOME</i> depends on the operating system. For example, on Windows systems the default value is C:\tibco.</p> <p>TIBCO BusinessEvents installs into a directory within an <i>ENV_HOME</i>. This directory is referenced in documentation as <i>BE_HOME</i>. The value of <i>BE_HOME</i> depends on the operating system. For example on Windows systems, the default value is C:\tibco\be\4.0.</p>
code font	<p>Code font identifies commands, code examples, filenames, pathnames, and output displayed in a command window. For example:</p> <p>Use MyCommand to start the foo process.</p>
<b>bold code font</b>	<p>Bold code font is used in the following ways:</p> <ul style="list-style-type: none"> <li>• In procedures, to indicate what a user types. For example: Type <b>admin</b>.</li> <li>• In large code samples, to indicate the parts of the sample that are of particular interest.</li> <li>• In command syntax, to indicate the default parameter for a command. For example, if no parameter is specified, MyCommand is enabled: MyCommand [<b>enable</b>   disable]</li> </ul>

Table 1 General Typographical Conventions (Cont'd)




Convention	Use
<i>italic font</i>	<p>Italic font is used in the following ways:</p> <ul style="list-style-type: none"><li>• To indicate a document title. For example: See <i>TIBCO BusinessWorks Concepts</i>.</li><li>• To introduce new terms For example: A portal page may contain several <i>portlets</i>. Portlets are mini-applications that run in a portal.</li><li>• To indicate a variable in a command or code syntax that you must replace. For example: <code>MyCommand <i>pathname</i></code></li></ul>
Key combinations	<p>Key name separated by a plus sign indicate keys pressed simultaneously. For example: <code>Ctrl+C</code>.</p> <p>Key names separated by a comma and space indicate keys pressed one after the other. For example: <code>Esc, Ctrl+Q</code>.</p>
	<p>The note icon indicates information that is of special interest or importance, for example, an additional action required only in certain circumstances.</p>
	<p>The tip icon indicates an idea that could be useful, for example, a way to apply the information provided in the current section to achieve a specific result.</p>
	<p>The warning icon indicates the potential for a damaging situation, for example, data loss or corruption if certain steps are taken or not taken.</p>

Table 2 Syntax Typographical Conventions

Convention	Use
[ ]	<p>An optional item in a command or code syntax.</p> <p>For example:</p> <pre>MyCommand [optional_parameter] required_parameter</pre>
	<p>A logical OR that separates multiple items of which only one may be chosen.</p> <p>For example, you can select only one of the following parameters:</p> <pre>MyCommand param1   param2   param3</pre>

Table 2 *Syntax Typographical Conventions*

Convention	Use
{ }	<p>A logical group of items in a command. Other syntax notations may appear within each logical group.</p> <p>For example, the following command requires two parameters, which can be either the pair param1 and param2, or the pair param3 and param4.</p> <pre>MyCommand {param1 param2}   {param3 param4}</pre> <p>In the next example, the command requires two parameters. The first parameter can be either param1 or param2 and the second can be either param3 or param4:</p> <pre>MyCommand {param1   param2} {param3   param4}</pre> <p>In the next example, the command can accept either two or three parameters. The first parameter must be param1. You can optionally include param2 as the second parameter. And the last parameter is either param3 or param4.</p> <pre>MyCommand param1 [param2] {param3   param4}</pre>

## How to Contact TIBCO Support

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For comments or problems with this manual or the software it addresses, please contact TIBCO Support as follows.

- For an overview of TIBCO Support, and information about getting started with TIBCO Support, visit this site:

<http://www.tibco.com/services/support>

- If you already have a valid maintenance or support contract, visit this site:

<https://support.tibco.com>

Entry to this site requires a user name and password. If you do not have a user name, you can request one.

## Chapter 1      **Installation Overview**

This document explains how to install TIBCO BusinessEvents on Microsoft Windows and UNIX systems.

### Topics

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- [Required and Optional Products, page 2](#)
- [TIBCO BusinessEvents Components and Add-on Products, page 4](#)
- [Upgrading TIBCO BusinessEvents, page 5](#)
- [Supported Windows Platforms and Guidelines, page 6](#)
- [Supported UNIX Platforms and Guidelines, page 8](#)
- [Installation History Log Files, page 10](#)
- [Using an Existing Eclipse \(or TIBCO Business Studio™\) Installation, page 11](#)



## Required and Optional Products

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Depending on the tasks you wish to perform, the following third-party products and additional TIBCO products listed in this section can be used with BusinessEvents. Only the JRE is a basic requirement.



**Upgrade all add-on products** When you upgrade TIBCO BusinessEvents, you must also upgrade all add-on products in use to the same version. Add-ons must be at the same version as BusinessEvents in order to work correctly.

## Required and Optional Third-Party Products

### JRE (Required for TIBCO BusinessEvents 4.x)

The 4.0 release of BusinessEvents requires JRE 1.6.0.

### DBMS for JDBC Backing Store

For backing store, the following DBMS software is supported (with limitations as noted):

- Oracle Database 10g Enterprise Edition Release 2
- Oracle Database 11g Enterprise Edition Release 1 and 2
- Oracle Real Application Clusters (RAC) 10g Release 2
- Oracle Real Application Clusters (RAC) 11g Release 1 and 2
- The Oracle Express Edition can also be used for non-production usage.



If you are using the Oracle Types-based backing store, you must use the `ojdbc6.jar` from Oracle 11g Release 1, as there are some issues with the jar from Release 2.

- Database driver `ojdbc6.jar` for use with Sun Java JRE 6 (Oracle Thin Driver only)
- Microsoft SQL Server 2005 and 2008 with `sqljdbc4.jar`

## Optional TIBCO Products

TIBCO BusinessEvents does not require installation of other TIBCO products. Certain features require use of other TIBCO products. The next table lists products that are typically used with BusinessEvents and the supported versions.

*Table 3 Optional TIBCO Products*

Component	Purpose
TIBCO ActiveMatrix BusinessWorks 5.8	Optional. TIBCO ActiveMatrix BusinessWorks is a scalable, extensible, and easy to use integration platform that allows you to develop integration projects. Optionally, you can use ActiveMatrix BusinessWorks in integration projects.
TIBCO Rendezvous 8.2.1 and higher	Optional. TIBCO Rendezvous can be used as a message transport.
TIBCO Hawk 4.8.1 and higher	Optional. Provides monitoring capability. Used (if available) by the BusinessEvents Monitoring and Management component to provide machine-level health metrics.  Also used for deployment using TIBCO Administrator.
TIBCO Enterprise Message Service 4.0 and higher	Optional. TIBCO Enterprise Message Service allows you to use the Java Messaging Services (JMS) as a message transport.
TIBCO Administrator 5.6	Optional. Can be used for deployment.
TIBCO Designer 5.6.2	Optional. Used for ActiveMatrix BusinessWorks integration projects.
TIBCO Runtime Agent 5.6.2	Used with TIBCO Administrator and TIBCO Designer.

## TIBCO BusinessEvents Components and Add-on Products

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### BusinessEvents and Add-on Products Must Be Installed at the Same Level

When you install a later version of BusinessEvents, you must also install that version of the add-on products you use. The version of BusinessEvents and all add-on products must match.

## TIBCO BusinessEvents

TIBCO BusinessEvents provides the following components.

- **Studio** — Eclipse-based component for designing BusinessEvents projects.
- **Eclipse Platform** — A provided Eclipse platform. If you do not use the provided Eclipse installation, you must have a preexisting Eclipse 3.4.2 installation. See [Using an Existing Eclipse \(or TIBCO Business Studio™\) Installation on page 11](#) for more information.
- **Monitoring and Management** — A configurable web-based user interface for monitoring and managing BusinessEvents clusters.
- **Documentation** — BusinessEvents documentation. The doc folder contains an HTML and a PDF folder. If you do not install documentation, this folder is not included in the installation.



The design time component, BusinessEvents Studio, is supported on Windows and Linux only.

Runtime components are available on all platforms.

## Add-on Products

When you install this release of BusinessEvents you can also install any add-on products you have purchased at the same time. Add-ons available in this release are:

- TIBCO BusinessEvents Data Modeling
- TIBCO BusinessEvents Event Stream Processing
- TIBCO BusinessEvents Decision Manager
- TIBCO BusinessEvents Views

# Upgrading TIBCO BusinessEvents

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**Before you install** Read [Chapter 5, Migrating from Earlier Versions, on page 35](#).

## Standard Upgrade Procedures

Software from TIBCO uses three numbers to indicate whether the release is major, minor or a patch. For example, 5.0.0 indicates a major release, 5.4.0 indicates a minor release and 5.3.3 indicates a service pack release.

The installer for a service pack release performs an automatic upgrade. For example, the installer automatically upgrades TRA 5.3.0 to 5.3.1 by overwriting the contents of the 5.3 directory.

If you are upgrading BusinessEvents to a new major or minor version, it is strongly recommended that you uninstall the earlier version of the product first and perform a fresh installation (full product installers only).

## Installing Over the Same Version

Note that if you are reinstalling over the same version, if any files are currently locked (that is, in use), the installer marks the file for deletion in the install location. After installation if the installer prompts you to reboot your system, you must reboot before using the software.

## Supported Windows Platforms and Guidelines

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### Supported Windows Platforms

The following is a list of supported platforms for Microsoft Windows:

- Windows Server 2003 (x86 and x86\_64)
- Windows Server 2008 (x86 and x86\_64)
- Windows XP (x86)
- Windows Vista Business Edition (x86)
- Windows 7

Disk space required in each case is 470MB.

### Installation Guidelines

#### Installer Account

You must have administrator privileges for the machine on which TIBCO BusinessEvents is installed.

If you do not have administrator privileges, the installer exits. You must then log out of the system and log in as a user with the required privileges, or request your system administrator to assign the privileges to your account.

#### Installing from a Network Drive

If you intend to install the product from a network drive, you must ensure that the account used for installation has permission to access the network drive.

#### Installing on Windows 2000 Terminal Server

There are two modes in terminal server, `Execute` and `Install`. By default all users are logged on in `Execute` mode, which allows them to run the applications. When you want to install TIBCO BusinessEvents for use by everyone, the Administrator should change to `Install` mode.

The best way to install TIBCO BusinessEvents on Windows 2000 Terminal Server is to use the Add/Remove Programs control panel applet, because this automatically sets the mode to `Install` during the installation and then back to `Execute` at the end.

Alternatively, you can manually change your mode to `Install` by typing `C:\> change user /install`

Change back to execute by typing `C:\> change user /execute`

Check your current mode by typing `C:\> change user /query`

If you install in the `Execute` mode, the installation registry is maintained in your user home directory. If you install in the `Install` mode, the installation registry is maintained in the `%SystemRoot%` folder.

### **Installing on 64bit and 32bit Operating Systems**

Within a single cache cluster, you can use a mixture of 64bit and 32bit operating systems.

## Supported UNIX Platforms and Guidelines

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### Supported UNIX Platforms

The following is a list of supported platforms for UNIX:

#### **Red Hat (x86) (32-bit & 64-bit)**

- Red Hat Enterprise Linux 4.x, 5.x, and materially equivalent Linux distributions

#### **SUSE (x86)**

- SUSE Linux Enterprise 11
- SUSE Linux Enterprise 10

#### **Solaris X86\_64**

- Solaris 10 (64-bit)

#### **Solaris SPARC**

- Solaris 10 (32-bit and 64-bit)
- Solaris 9 (32-bit)
- Solaris 8 (32-bit)

#### **Hewlett-Packard:**

- HP-UX 11i (v1, v2, v3) (PA-RISC) (32-bit & 64-bit)
- HP-UX 11i (v2, v3) (IA-64/Itanium) (64-bit)

#### **IBM (POWER):**

- AIX 6.1 (64-bit)
- AIX 5.3 (64-bit)

Disk space required in each case is 160MB.



For platforms that support 64-bit mode, post installation configuration is required. See [Configuration for 64-bit Mode on page 28](#).

For HP-UX platforms, also see [HP-UX on page 29](#).

All 32-bit installers are supported on 64-bit platforms as 32-bit software.

## Installation Guidelines

### Installer Account

BusinessEvents can be installed by a regular (non-root) user and super-user (root). Different users can install the same product at different locations.



**Installation of BusinessEvents add-on products must be performed by the same user who installed BusinessEvents** Dependency checking will not work correctly unless the same user installs all dependent products.

### Windowing Environment

A windowing environment such as CDE (that is, X11 Windows) is required to run the installer in GUI mode. It is not required for a console installation or silent installation.



## Installation History Log Files

---

Installation and uninstallation history is kept in log files in the `.TIBCO` directory within the installer's user directory.

The folder names use this format:

`install_month-day-year.time`

`uninstall_month-day-year.time`

The installation log files record environment details such as the user that invoked the installer, hostname, operating system details, and so on.

## Using an Existing Eclipse (or TIBCO Business Studio™) Installation

This section is relevant for full installers only, not partial (service pack) installers.

TIBCO recommends using the Eclipse software bundled with the TIBCO BusinessEvents software. However, if you prefer to use your existing Eclipse software installation, or want to install Eclipse separately, or want to install BusinessEvents for use with TIBCO Business Studio, you must update the Eclipse installation with the required plug-ins. You can do this before or after installing BusinessEvents.

The Eclipse requirements are:

- Eclipse release 3.4.2
- Eclipse Modeling Framework (EMF) release 2.4.2
- Model Development Tools (MDT) UML release 2.2.2
- Apache Xerces 2.9.x

### To Use an Existing Eclipse Installation with BusinessEvents

1. Download the above files from the Eclipse Foundation web site.
2. If you have not already done so, install the Eclipse release.
3. Extract the other components (EMF, MDT, and Apache Xerces) to the top-level directory of your Eclipse installation.
4. Re-initialize Eclipse before you begin installation of BusinessEvents. To do this, change directory to *BE\_HOME/studio/eclipse* and execute the command:

```
eclipse -clean -initialize
```

See [Re-Initialize Studio Plug-ins Registry after Add-on Software Installation on page 24](#) for more details

5. Install BusinessEvents for use with an existing Eclipse installation, as explained in this guide.  
  
(You can install BusinessEvents before you install the Eclipse software if you prefer; but by this point in the procedure both should be installed).
6. Copy the *TIBCOBusinessEvents-Studio-plugins.link* file from *BE\_HOME/studio/eclipse/dropins\_configuration* to *Your\_Eclipse/links*.

7. Configure the *Your\_Eclipse/eclipse.ini* file as follows:

- Ensure that the VM setting is done for Java 1.6 JVM. Path should appear in a new line:

`-vm`

`path to JRE 1.6`

- Add the following properties to `-vmargs`, each on a new line

`-DBE_HOME=path to BE_HOME`

`-Dstudio.wrapper.tra.file=<path to  
BE_HOME>/studio/eclipse/configuration/studio.tra`

`-DJDK_LIB=path to JRE 1.6/lib`

8. Change directory to *Your\_Eclipse location* and again run the command:

`eclipse.exe -clean -initialize`

9. Run the command `eclipse.exe`.

Running this command loads Eclipse with the BusinessEvents Studio plug-ins.

## Chapter 2 **BusinessEvents Installation**

This chapter describes how to install this service pack on top of an existing 4.0.0 release using TIBCO Universal Installer.

### Topics

---

- [Installer Overview, page 14](#)
- [Installing BusinessEvents, page 16](#)
- [Verifying the Installation, page 20](#)
- [Uninstalling TIBCO BusinessEvents, page 21](#)

## Installer Overview

---

### Download the BusinessEvents Software

Download the TIBCO BusinessEvents software from [download.tibco.com](https://download.tibco.com) and install it using the universal installer.

To download the software, you will need your username and password. If you did not receive a username and password, contact TIBCO Technical Support.

After you download the application, you can install it using the installer provided.



#### Limiting Access to TIBCO BusinessEvents Installations

In some enterprises, users are given limited access to software installations, such as TIBCO BusinessEvents. All users, however, require full rights to the Eclipse installation because certain files are written during normal use of BusinessEvents Studio. In this case you must install Eclipse separately, in areas where users have permission to write.

Use of a separately installed Eclipse installation (instead of the Eclipse software provided with TIBCO BusinessEvents) may be required for other reasons too.

#### Using an Existing Eclipse Installation

If you will use a separately installed Eclipse installation, follow instructions in the section [Using an Existing Eclipse \(or TIBCO Business Studio™\) Installation on page 11](#).

### TIBCO Environment and Default Installation Directory

The installer prompts you to specify the environment where BusinessEvents is installed. Each TIBCO environment is isolated. You can install the same software into different environments safely, for example, for test, QA, and staging purposes. You can install multiple TIBCO products into the same environment.

An environment has a name and a directory on disk. The directory is the root directory for all TIBCO products you want to install into this environment.

#### Microsoft Windows

The default installation location is *TIBCO\_HOME* where all TIBCO products are installed. Typically, *TIBCO\_HOME* is `c:\tibco`.

The Start menu path to the executable files includes the environment as follows:

**Start > TIBCO > *environment* > TIBCO BusinessEvents 4.0**

The name is also appended to the name of Windows services created by the installer.

## UNIX

The default installation directory depends on who performs the installation:

- For root users, the default installation directory is `/opt/tibco`.
- For non-root users, the default installation directory is `/<myhome>/tibco`, where `<myhome>` is the home directory of the user.

## User's Home Directory Space Requirement

In addition to the disk space required for the installed product, files created by the installer require at least 500 KB of disk space in the user's home directory.

## Installing BusinessEvents

---

The TIBCO installer can be run in different modes, supported on all platforms.

- [Install in GUI Mode](#)
- [Install in Console Mode](#)
- [Install in Silent Mode](#)



**If you will use an existing Eclipse installation** See [Using an Existing Eclipse \(or TIBCO Business Studio™\) Installation on page 11](#) for steps you must take before installing BusinessEvents.

**You can't use the 4.0.0 installer** You must use the installer provided with 4.0.1. It is different from the 4.0.0 installer.

**After installation is complete** Perform any post-installation tasks as required. See [Chapter 3, Post Installation Tasks, on page 23](#).

### Install in GUI Mode

The following procedure explains how to install BusinessEvents in GUI mode.

1. Prepare to install as follows:
  - a. Log in to the system on which you want to install BusinessEvents.
  - b. Open the physical media or download the BusinessEvents product package.
  - c. Extract the BusinessEvents product archive file to a temporary directory then navigate to that directory.
2. Run **TIBCOUniversalInstaller**.
3. Review the information in the Welcome dialog and click **Next**.
4. The License Agreement dialog displays. Review the terms of the license agreement and, if you agree to them, click **I accept the terms of the license agreement**. Then click **Next** to continue with the installation.

If you do not agree to the terms of the license agreement, click **Cancel** to exit from the installation process.

5. Select or create a TIBCO environment. For more details and guidelines see [TIBCO Environment and Default Installation Directory on page 14](#). Do one of the following:

- Select **Use an Existing TIBCO\_HOME**, select an environment from the list, and click **Next**.

For a service pack, select the environment used by the prior release.

- Create a new environment. Browse to and select a directory, and provide a name for the environment.

The name cannot contain special characters such as "\*", "?", ">", "<", ":", "|", "/", "\", or quotes (").



When installing multiple TIBCO products into a single installation environment, ensure that all the products are compatible.

6. Used in the full installer only. Do one of the following:

- Select **Typical** and click **Next**.
- Select **Custom installation** and click **Next**. At the next screen, select components to be installed from the panel on the right and click **Next**.

7. The Eclipse Location dialog displays. Do one of the following.

- Click **Next** to accept the provided Eclipse installation (recommended).
- Select the **Use my own Eclipse installation** check box. Requires prior preparation. See [Using an Existing Eclipse \(or TIBCO Business Studio™\) Installation on page 11](#). Specify the location of your Eclipse installation in the Eclipse Installation Location field, and click **Next**.

The installer performs some basic checks and if it finds any problems with the Eclipse configuration that you specified, it displays messages. If you are confident that the directory is correct (or if you plan to manually configure Eclipse later), continue the installation.

8. After the installer configures your installation choices, the Pre-Install Summary dialog displays. Review the information displayed in the dialog and make sure that it is correct.

If you want to change any of your choices, click **Back** to step back through the dialogs to the appropriate point. You can then restart the installation process from that point.

If you are satisfied with your choices, click **Install**.

The installer now performs the necessary installation tasks.



9. You may be prompted to replace files already on disk that are newer than the installation files.
  - In the case of a fresh installation of a service pack over a fresh installation of the prior full installer version, these messages are harmless. Overwrite all such existing files.
  - In the case of files you have changed: if you want to save configuration settings in any existing files, save them to a different name, and then replace the original files with the service pack files. After installation configure the newly installed files, using information from the prior version's file backups, as needed.
10. When installation has completed, the Post Install Summary dialog displays. Click **Finish** to exit from the installer. There is a slight delay while the installer deletes temporary files.

## Install in Console Mode

The following procedure explains how to install the software in console mode.

1. Open the physical media or download the TIBCO BusinessEvents product package.
2. Extract the TIBCO BusinessEvents product archive file to a temporary directory.
3. Using a console window, navigate to the temporary directory that contains the universal installer and run the installer using this command line:  
`TIBCOUniversalInstaller -console`
4. Complete the installation by responding to the console window prompts.

## Install in Silent Mode

The following procedures explain how to install the software in silent mode.

Any errors that occur during installation are listed in the installation log file (see the *User\_Home/.TIBCO* directory).

### Configure the Installation Responses

A configuration file, `TIBCOUniversalInstaller.silent`, is provided with the universal installer. Copy the file to another name (but keep the `.silent` extension) and use it to configure your installation choices.

You must edit the file in a text editor and provide all non-default values as needed before launching the silent installation. For example, ensure that the `installationRoot` and `createNewEnvironment` attributes are set correctly. The file includes comments to help you set the installation properties.

Save the configuration file to the same directory where the universal installer file is located.

### Install in Silent Mode

1. Open the distribution DVD or download the TIBCO BusinessEvents product package.
2. Extract the TIBCO BusinessEvents product archive file to a temporary directory.
3. Using a console window, navigate to the temporary directory that contains the universal installer.
4. Run the installer:

```
TIBCOUniversalInstaller -silent -V responseFile="myfile.silent"
```

If you are using the `TIBCOUniversalInstaller.silent` file, you need not supply the file name and can run `TIBCOUniversalInstaller -silent`.

A line similar to the following is written to the installer log file when installation completes:

```
Install, com.tibco.installer.util.TIBCOInstaller, dbg.Debug,  
The installation has completed. Please check the log file for  
additional information.
```

## Verifying the Installation

---

### Verifying TIBCO BusinessEvents Installation

After installation of TIBCO BusinessEvents and any of its add-on products, verify the installation as follows.

To verify if the installation is successful, first check the file `tibco_universal_installer.userid_install.log`, which is located in the `.TIBCO` directory of the user performing the installation:

Errors in this file, or the existence of error files under this folder, indicates installation problems. Error files have the following format:

`antTask_ERROR_log_post-install_mm-dd-yyyy.n.log`

If the log files don't indicate any errors, then open a simple example project in BusinessEvents Studio, and also run the example at the command line. The example readme files explain how to run the example at the command line, from the installed location. Check for errors on the command line or user interface. Absence of errors, and a normal engine start up indicate successful installation.

### Verifying Add-On Product Installations

To verify that all add-ons are installed, look for a list of add-ons in the folder `TIBCO_HOME/_installInfo`. Every successfully installed add-on has a corresponding XML file under this folder.

You can also check the install log file to confirm which add-ons are installed.

## Uninstalling TIBCO BusinessEvents

---

To uninstall TIBCO BusinessEvents do the following.



This procedure uninstalls the entire BusinessEvents installation, not just the service pack. It is not possible to uninstall only the service pack.

1. Run the universal uninstaller in one of the following ways:
  - Navigate to the `_uninst` directory located in the `TIBCO_HOME` directory and run the `universal_uninstall` program.
  - (Windows) From the Start menu, go to **Start > All Programs > TIBCO > TIBCO\_HOME > Universal Uninstaller**.
  - (Windows) Use Add/Remove Programs from the Control Panel.
2. The Welcome screen appears. Click **Next**.
3. Do one of the following:
  - To uninstall only TIBCO BusinessEvents (or a selection of products in this TIBCO home), click **Custom Uninstall**. Select the product or products you want to uninstall. Then click **Next**.
  - To uninstall all TIBCO products in this TIBCO home (that were installed using the universal installer), click **Typical Uninstall**. Then click **Next**.
4. The Pre-Uninstall Summary screen appears. Click **Uninstall**. Uninstallation proceeds and then you see the Post-Uninstall Summary.
5. Click **Finish** to close the uninstaller window.
6. If you are prompted to do so, restart the computer.
 

You may also want to manually delete any remaining files in the installation directory to completely remove the product.

For information on the uninstallation log files, see [Installation History Log Files on page 10](#).



## Chapter 3 Post Installation Tasks

This chapter explains some post-installation steps you may have to perform in your installation.



If you are upgrading from a 3.x or earlier release read [Chapter 5, Migrating from Earlier Versions, on page 35](#) for additional post-installation actions.

### Topics

---

- [Post Installation Tasks for All Platforms, page 24](#)
- [Check and Update JVM Settings in Properties Files, page 25](#)
- [All UNIX Installations — Directory Permissions, page 27](#)
- [Configuration for 64-bit Mode, page 28](#)

## Post Installation Tasks for All Platforms

---

This section explains changes that are required in the circumstances shown.

Also see [Check and Update JVM Settings in Properties Files on page 25](#) in case it pertains to your situation.

### Re-Initialize Studio Plug-ins Registry after Add-on Software Installation

When you install the add-on products after installing BusinessEvents, you need to ensure that the correct plug-ins contributed by the add-ons are initialized. To do this, re-initialize the studio plug-ins registry before you start using BusinessEvents Studio, as explained next.

#### To Re-Initialize Studio Plug-ins

1. Open a command prompt
2. Change directory to <BE\_HOME>/studio/eclipse.
3. Run the command  
`studio -clean -initialize`

### Open Projects in BusinessEvents Studio to Update Channel Format

The channel format changed slightly in this release. You must open all 4.0.0 projects in BusinessEvents Studio after upgrading to 4.0.1. You can then rebuild the EAR files, either in BusinessEvents Studio or using the Studio Tools utility.

Simply opening the project in BusinessEvents Studio is sufficient. It is not necessary to open the channel resources.

### Rebuild all EAR files

Whenever you upgrade to a later version of BusinessEvents you must rebuild all EAR files for your BusinessEvents projects.

You must also rebuild the EARs for the provided example projects you want to use.

For details on building EAR files in BusinessEvents Studio or using the Studio Tools utility, see *TIBCO BusinessEvents Developer's Guide*.

## Check and Update JVM Settings in Properties Files



This task is required for full installations. It is not typically required for service pack installations. It is valid on all platforms.

Check the engine properties file to ensure that all settings are appropriate for your platform.

### Set the Heap Size as Needed

By default, the initial (`-Xms`) and maximum (`-Xmx`) heap size are set to 1GB for both BusinessEvents and BusinessEvents Decision Manager. Change the settings as needed to meet your requirements. For BusinessEvents, the settings are in the `BE_HOME/bin/be-engine.tra` file. For BusinessEvents Decision Manager they are in the `BE_HOME/decisionmanager/DecisionManager.ini` file.

For example, if you want to run both BusinessEvents Decision Manager and BusinessEvents on a machine with 1GB memory, you might reduce the initial heap size setting (`-Xms`):

```
java.extended.properties=-server -Xms512m -Xmx1024m
```

As another example, if you use a machine with more memory, and you work with very large tables in BusinessEvents Decision Manager, you might increase the BusinessEvents Decision Manager heap size accordingly.

It can also be helpful to set the `MaxPermSize` as follows:

```
-XX:MaxPermSize=128m
```

### Platform-Specific Settings

Some of the JVM settings do not work for all platforms, and some platforms use additional, platform-specific parameters. For example, for AMD on Windows and 32 bit Sun JVM for Intel use:

```
JVM_LIB_PATH =%TIB_JAVA_HOME%/lib/i386/server/libjvm.dll
```

The IBM AIX platform uses parameters common to all JVMs, but does not use the `-d64` parameter. AIX also uses additional parameters (using the format, `-Xparameter`).

Refer to the appropriate JVM reference manuals for the platform in question. For example, for AIX you could refer to the following resources.

<http://www.ibm.com/developerworks/java/jdk/aix/j564/sdkguide.aix64.html>

<http://www.ibm.com/developerworks/java/jdk/aix/j532/sdkguide.aix32.html>



Note that you can determine the mode in which JVM is running using the following simple Java program:

```
System.getProperty("com.ibm.vm.bitmode");
```

It returns the following values:

- \* 32 - the JVM is running in 32-bit mode
- \* 64 - the JVM is running in 64-bit mode

## All UNIX Installations — Directory Permissions



This task is required for full installations. It is not typically required for service pack installations.

This section explains what directory permissions must be set to enable users to use the system.



This step is required on all UNIX platforms.

If you use TIBCO BusinessEvents Decision Manager, refer to its installation guide for additional actions.

### Permissions for BusinessEvents Directories

All TIBCO BusinessEvents users must have read, write, and execute permissions for the following directories:

```
bin Directory
$TIBCO_HOME/be/4.0/bin
```

For example, if TIBCO BusinessEvents has been installed in `/opt/tibco`, the user who installed TIBCO BusinessEvents should execute the following commands:

```
% chmod 777 /opt/tibco/be/4.0/bin/
```

(Other changes can be made using the `chown` command as needed.)

You can verify ownership and permissions using the long listing command, `ls -l`.

## Configuration for 64-bit Mode

---

The following platforms allow you to run TIBCO BusinessEvents in 64-bit mode:

- AIX
- HP-UX Itanium
- HP PA-RISC
- Linux
- Solaris 10 SPARC
- Solaris 10 X86

See [Supported UNIX Platforms and Guidelines on page 8](#) for versions supported.



An additional step is required for the HP-UX platforms. See [HP-UX on page 29](#)).

### To Configure for 64-bit Mode

To configure BusinessEvents for 64-bit mode you rename the provided 64 bit wrapper and configure the `be-engine.tra` and `be-rms.tra` files.

1. Open the `be-engine.tra` file and the `be-rms.tra` file for editing. In each file do the following:
  - a. In the `tibco.env.STD_EXT_CP` property, find `%RV_HOME%/lib` and replace it with `%RV_HOME%/lib/tibrvj.jar`.
  - b. Ensure that the `JVM_LIB_PATH` variable points to the appropriate JVM Server DLL or SO. For example:

For 64 bit Sun JVM for Intel or AMD on Linux, use:

```
JVM_LIB_PATH = %TIB_JAVA_HOME%/lib/amd64/server/libjvm.so
```

For 64 bit Sun JVM for Intel or AMD on Windows, use:

```
JVM_LIB_PATH =%TIB_JAVA_HOME%/lib/amd64/server/libjvm.dll
```

2. In each file, you also may want to increase the heap size and memory usage of the Java VM by adding JVM arguments to the `tibco.env.APP_ARGS` property and by changing the `tibco.env.HEAP_SIZE` property. The following lines are example values for these properties:

```
tibco.env.APP_ARGS=-d64 -XX:MinHeapFreeRatio=52
-XX:MaxHeapFreeRatio=90 -XX:GCTimeRatio=19
tibco.env.HEAP_SIZE=2048M
```

3. Save the files. (Remember to update the `be-rms.tra`, the `be-engine.tra`, and the files.)

## HP-UX

If you are using an HP-UX platform, open the `be-engine.tra` file and remove the following entry from the property `java.extended.properties` property:

```
-javaagent:%BE_HOME%/lib/cep-instrumentation.jar
```

(If this property is present, the executable fails to launch.)

### Enabling 64-bit Properties

By default, the 32-bit `java.extended.properties` are enabled.

Comment the 32-bit `java.extended.properties` and enable the 64-bit `java.extended.properties` in the TRA files in these folders:

```
BE_HOME/bin/be-engine.tra
```

```
BE_HOME/mm/bin/be-mm.tra
```

```
BE_HOME/rms/bin/be-rms.tra
```



## Chapter 4      **Installation FAQs and Troubleshooting**

This section provides some FAQs and troubleshooting tips.

### **Frequently Asked Questions**

#### **What should I do if JVM crashes when I run the installer?**

The installer first extracts the bundled JVM into a temporary area and then uses it to launch itself. If for some reason, the JVM crashes, you could still run the installer using another JVM, preferably JVM 1.5.0 or higher. The syntax is:

---

```
TIBCOUniversalInstaller.exe -is:javahome C:\j2sdk1.5.0
```

```
TIBCOUniversalInstaller-<UNIX platform>.bin
-is:javahome /opt/jre150
```

---

The javahome directory must contain bin/java.exe or bin/java.

The installer will use the externally supplied JRE to launch itself.

#### **Why and how should I set the DISPLAY variable on UNIX Platforms for GUI mode?**

The installer on UNIX must open an additional window, generally for graphics. It uses the DISPLAY environment variable to tell it on what computer to open the window. If the environment variable is not set, the installer will either wait or abort after displaying:

---

```
InstallShield Wizard
Initializing InstallShield Wizard...
Preparing Java(tm) Virtual Machine...
.....
.....
.....
```

---

The DISPLAY variable must be set to the IP address or name of the computer (on which the installer graphics window are to be displayed), followed by a screen address, which can be :0.0 as shown in the following example:

---

```
# Bourne shell
DISPLAY=ip_address:0.0; export DISPLAY

# Korn shell
export DISPLAY=ip_address:0.0

# C-shell
setenv DISPLAY ip_address:0.0
```

---

For example, consider a scenario where you need to install TIBCO BusinessEvents on a remote HP-UX machine (named *itaska*). Because you have a Solaris 5.6 machine (named *alaska*) that has a video card and monitor installed, you can run an X-window application on it. So you decide to telnet to *itaska* from *alaska*.

When you telnet to *itaska*, you will not get access to *itaska*'s monitor and will be unable to display an X-window application. That is why you must set the DISPLAY variable, which instructs the X-server to redirect all windows to the computer set in the variable. Before doing so, the computer (specified in the DISPLAY variable) must give permissions to share its monitor.

---

```
alaska> xhost + # give permission for all to its share monitor
alaska> telnet itaska
Welcome to HP-UX itaska 11.00
User:
Password:
itaska> export DISPLAY=alaska:0.0 # set display on alaska
itaska> tar -xvf TIB_tra-suite_5.3.0_h7_11.tar
```

---

### What is \_uninstall2 directory?

If the original uninstall directory is in use at uninstall time, it cannot be removed by the installer program. The installer then creates a second uninstall directory for the second installation. To remove the second installation, you must run the uninstall program from the second uninstall directory. The original uninstall directory can also be manually removed, if empty.

## Running Out of Disk Space

The installer calculates the disk space required in the product home location for the selected components. The calculation is done before the actual installation (copying of files to system) begins. The installer will proceed only if sufficient free disk space is available in product home location.

However, if disk space is consumed by another process while the installer is copying the files, and if the required disk space is thereby reduced, the installer may fail and will then give a failure message.

### **Solution**

While performing installation, avoid running other processes that consume disk space in product home location.

## **Installation Errors on HP-UX 11.00 64-bit Platform**

### **Error message**

Installation on a HP-UX 11.00 64 bit system may crash with the following error message:

```
Pid nnn killed due to trashed stack.
Pid nnn was killed due to failure in writing the signal context.
```

This happens only on HP-UX 11.00 64 bit systems. It does not happen on HP-UX 11.00 32 bit system and HP-UX 11.11 (or 11.i) system.

To determine the OS version on your system, run:

```
uname -a
```

To determine the kernel bits on your system, run:

```
getconf KERNEL_BITS
```

### **Resolution**

HP-UX kernel patch PHKL\_27282, resolves the above crash.

To determine if your system has the kernel patch, run:

```
/usr/sbin/swlist -l product PHKL_27282
```

or

```
what /stand/vmunix | grep PHKL_27282
```

If your system is an HP-UX 11.00 64 bit system and it does not have the patch, first install HP-UX kernel patch PHKL\_27282 and then proceed with the installation. Installation of patch PHKL\_27282, will reboot your system.



## Chapter 5

# Migrating from Earlier Versions

This chapter does not pertain to upgrading from version 4.0.0 to version 4.0.1. See [Chapter 3, Post Installation Tasks, on page 23](#) for steps you must take.

Read this chapter carefully and follow all migration steps that apply to your case.

If you are migrating from persistence object management to cache object management, also see [Chapter 6, Migrating Persistence Data to Backing Store, on page 53](#).

## Topics

---

- [Overview of Migration of 3.x Projects, page 36](#)
- [Import the 3.x TIBCO Designer Project, page 40](#)
- [Clean and Validate the Project, and Correct Validation Errors, page 43](#)
- [Other Post Import Actions, page 45](#)
- [Migrate the Backing Store Implementation and Backing Store Data, page 47](#)
- [Upgrading the Legacy Backing Store from Version 3.0.0 or Earlier, page 48](#)
- [Migrating Data to a Current Backing Store Implementation, page 49](#)
- [Backing Store Data Migration Property Reference, page 51](#)

## Overview of Migration of 3.x Projects

---

Direct migration from 3.0.0 and after to the current release is supported. After importing the 3.x project into BusinessEvents Studio, some manual steps will be required due to the changes in architecture.

Direct migration from versions earlier than 3.0.0 is not supported. First migrate to the latest 3.x version, then migrate from 3.x to 4.x.

This section explains some key points to help you understand the migration steps.

### Runtime Properties are Configured in the CDD File

**3.x Configuration** In 3.x (and earlier), runtime properties were set using individual properties set in one or more TRA files. In some cases, runtime properties were set in TIBCO Designer, specifically in the BAR resource, and some were set in the TIBCO Designer TRA file.

**4.x Configuration** Now only JVM-level properties (those that need to be used before the engine starts up) are set in the `be-engine.tra` file. Properties that were set in the TIBCO Designer TRA file (`designer.tra`) are now generally set in the `studio.tra` file:  
`BE_HOME/studio/eclipse/configuration/studio.tra`

In 4.x, runtime properties and other deploy-time settings are configured using a structured XML file called the Cluster Deployment Descriptor (CDD). A multi-tab editor in BusinessEvents Studio enables easy maintenance of this file.



In the 4.x architecture, you can't select what resources to include in the EAR file. This means that the EAR now includes all project resources and can be very large. During runtime however, the resources are enabled (filtered) through the CDD Agent Classes and Collections tabs.

Also in the CDD, you configure processing units that reference the agents you want to include in one engine at runtime. At deploy time you specify which processing units to deploy.

**CDD file** The CDD file provides fields for all commonly used settings, and it has property sheets where you can add other properties as needed. The property sheets are available at various levels, cluster, engine, and agent) so that you can scope the effect of the property appropriately.

When you import a 3.x project into BusinessEvents Studio, a CDD file is created using all known properties that can be automatically migrated. You must also check to ensure all properties are migrated. You may have to add some properties manually. Some properties are not relevant in the 4.x product, and additional properties not used in 3.x have been added to the product.

See [Property Migration Reference on page 70](#) for a list of 3.x runtime properties and their equivalent in 4.x.

## **Preloading of Entities is Configured in the CDD and has been Simplified**

If you use the preloading feature to load objects from the backing store into cache, you may have to reconfigure your settings. Configuration is done only in the CDD file now, and the logic of inclusion and exclusion has been simplified.

### **Metadata Properties (Extended Properties) Not Used for Preloading**

The following settings have been removed from entity metadata properties (also known as extended properties):

- Pre Load On Recovery
- Maximum Records to Load On Recovery

## **All Engine Types and Agent Classes are Now Configured in the CDD File**

In 3.x agents were configured using individual properties in the TRA files. Each TRA file provided the configuration for one engine.

In 4.x you configure all the engines you need to deploy in a single CDD file. When you deploy an engine, you specify the PU to use.

Some agents and processing units are created for you based on information available. After you import the project into BusinessEvents Studio, edit the CDD file to fully configure the agents and engines (processing units) as needed.

## **Use of the JDBC Backing Store is Recommended**

It is recommended that you use the current backing store implementation, the JDBC backing store. The JDBC backing store works with more DBMS products than the legacy Oracle-only backing store. It also has a more human-readable schema.

The legacy Oracle-only backing store is deprecated.

See [Migrate the Backing Store Implementation and Backing Store Data on page 47](#) for more details.

## Migrating TIBCO BusinessEvents Decision Manager Projects

If you use the TIBCO BusinessEvents Decision Manager add-on, you must follow a procedure to import the 3.x decision project (containing the decision tables) after you import the related 3.x TIBCO Designer project. See the *TIBCO BusinessEvents Decision Manager User's Guide* for details.

## Check Deprecated Features in Release Notes

As a part of upgrading it is important to check the deprecated features list in the Release Notes document and take action accordingly.

Various engine properties that were used in earlier versions are no longer used. See no longer used is provided in properties

## Migration Summary Procedure

Use this chapter and referenced documentation as needed to complete your migration. In summary, the steps are as follows:

1. Read through all the migration procedures.
2. Install the 4.x product in a new environment (TIBCO home).
3. Import the TIBCO Designer (3.x) project into BusinessEvents Studio. Note that if your project contains ActiveMatrix BusinessWorks or TIBCO Adapter resources, plan to use two projects, one for the TIBCO Designer resources and one for BusinessEvents.
4. In BusinessEvents Studio select Project > Validate to validate the project and then review the issues in the Problems tab and in the Error Log tab.
5. Follow the migration documentation to resolve the errors.

6. Take other actions as needed. For example:
  - Implement the JDBC Backing Store (recommended) or upgrade the Oracle-only backing store (deprecated).
  - Migrate backing store data.
  - Add project libraries and add them to the build path. Project libraries from 3.x are not compatible with 4.x. See [Add Project Libraries to the 4.x Project, page 46](#).
  - Reconfigure BusinessEvents-ActiveMatrix BusinessWorks Integration Projects.

For above actions, see [Other Post Import Actions, page 45](#) for more details.

7. Finally, rebuild the EAR files and deploy. See *TIBCO BusinessEvents Administration* for documentation on deployment options in 4.x.

## Import the 3.x TIBCO Designer Project

You can directly import 3.x projects using the BusinessEvents Studio user interface and save it as a current version project. You can also import a 3.x project at the command line. Import from versions earlier than 3.x is not supported.

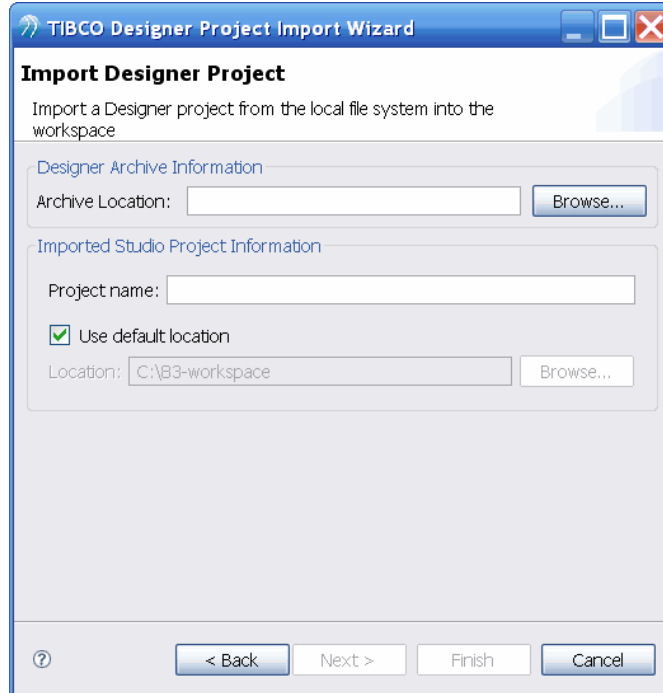
After you import the project, see [Clean and Validate the Project, and Correct Validation Errors on page 43](#) for the next step.

### Importing a BusinessEvents 3.x Project into BusinessEvents Studio

To import 3.x projects into BusinessEvents Studio, follow the procedure below.

#### To Import a 3.x Project in BusinessEvents Studio

1. Start BusinessEvents Studio. In Windows, click Start > All Programs > TIBCO > *YourEnvironment* > TIBCO BusinessEvents 4.0 > BusinessEvents Studio.
2. From the File menu, select **Import**. You see the Import wizard Select dialog.
3. Select TIBCO BusinessEvents > **TIBCO Designer** and click **Next**. You see the TIBCO Designer Project Import Wizard.



4. In the Archive Location field, browse to the location of the TIBCO Designer project and select its **vcrepo.dat** file.



This is not the single large dat file that was in use prior to ActiveEnterprise 5.0. It is the **vcrepo.dat** file that exists at the root of the 3.x project.

5. In the Project Name field, enter a name for the BusinessEvents Studio project. The default value is the original project name.
6. Specify a project location, or use the default workspace.
7. Click **Finish**.

The progress bar displays while the import is done. The status bar at the bottom of the window also displays progress. When the import is complete, you see the project folders in the Studio Explorer view.

## Importing a BusinessEvents 3.x Project at the Command Line

A BusinessEvents 3.x (TIBCO Designer) project imported using this utility does not run in the context of Eclipse (BusinessEvents Studio).

An additional step is required if you want to open the project in BusinessEvents Studio, as explained below.

### To Import a 3.x Project at the Command Line

1. Navigate to *BE\_HOME/studio/bin/* and open a command prompt.
2. Execute a command with the following format (all on one line) at a command prompt:

```
studio-tools -op importDesigner -designerProj designerProjDir [-name studioProjName]
-studioProj studioProjDir
```

For example:

```
studio-tools -op importDesigner -designerProj C:\FT\FT_Project -name FTImport
-studioProj c:\myWorkspace\FTImported
```

When the import has completed successfully, you see a message in the command window:

```
Imported the Designer Project successfully.
```

[Table 4, BusinessEvents Studio Tools Options](#), provides detailed information about the options.

See [To Open a Project Imported at the Command Line in BusinessEvents Studio, page 42](#) for a procedure you must do if you want to open the project in BusinessEvents Studio.

Table 4 BusinessEvents Studio Tools Options

Option	Description
<code>studio-tools</code>	The basic command to invoke studio tools. The <code>studio-tools</code> executable is located here:  <code>BE_HOME/studio/bin/studio-tools.exe</code>
<code>-op operation</code>	Operation to be performed. One operation is supported in this release:  <code>importDesigner</code> Imports a BusinessEvents 3.x (TIBCO Designer) project.
<code>-designerProj designerProjDir</code>	Absolute path to the TIBCO Designer project directory (the <code>.dat</code> file can be included but is not required). Import of release 3.x projects is supported.
<code>-name studioProjName</code>	Optional. Specifies the name of the BusinessEvents 4.x project (BusinessEvents Studio project). If not specified, the BusinessEvents Studio 3.x project name is used.
<code>-studioProj studioProjDir</code>	Absolute path to the BusinessEvents 4.x project directory (the BusinessEvents Studio project). The directories in the path are created if they do not exist.

### To Open a Project Imported at the Command Line in BusinessEvents Studio

To open a project imported at the command line, you must add it as a new project.

1. Start BusinessEvents Studio. In Windows, click Start > All Programs > TIBCO > *YourEnvironment* > TIBCO BusinessEvents 4.0 > BusinessEvents Studio.
2. From the File menu select **New > Project**. You see the New Project — Select a Wizard dialog.
3. Select **TIBCO BusinessEvents > Studio Project** and click **Next**.
4. In the Project Name field, enter the directory name where the imported project is located. (This is used as the project name.)
5. (If you imported the project to a directory in your default workspace, skip this step.) If the project directory is located outside the default workspace, uncheck the Use default location checkbox and browse to the *parent* directory of the project imported at the command line.
6. Click **Finish**. The project folders appear in the Studio Explorer view.



## Clean and Validate the Project, and Correct Validation Errors

### Clean and Validate the Project



Executing Project > Clean also performs validation, if you check Project > Build Automatically. In this case you don't have to do [step 2](#).

After you import the 3.x project into BusinessEvents Studio Explorer, do the following:

1. Highlight the project name in BusinessEvents Studio and select Project > Clean. At the Clean dialog, click Clean projects selected below, and then select the imported project. Click **OK**.

All build problems and built states are discarded. The project is rebuilt from scratch.

2. Highlight the project name in Studio Explorer and select Project > Validate to validate the project.

You may see some common validation errors that are addressed in the following sections. If you see additional errors that you can't resolve, contact your TIBCO representative for assistance.

After you clean and validate the project, and correct any errors, see [Other Post Import Actions on page 45](#) for the next step.

### Ambiguous Reference Errors (Unqualified References)

During migration, duplicate name references can cause issues. If the project contains unqualified references to rules, rule functions, or ontology types, and any of the rules, rule functions, or ontology types have the same simple name, duplicate name validation errors will result.

#### Error

In the BusinessEvents Studio Problems tab, you see listings for these issues, such as the following:

Ambiguous reference. Reference must be qualified, as multiple elements exist with the same name [/sharedResources/Element, Rules/Element, Concepts/Element]

One source of this issue is that in the 4.x product, rules are separate resources and in the 3.x product, they exist within ruleset resources.

**To Resolve the Issue**

To resolve the situation fully qualify all such ambiguous references.

**XSLT Mapper Errors**

If you have used the XPath (XSLT) mapper in TIBCO Designer, there could be errors that prevent a clean validation of the project after it is imported.

In 3.x, XSLT Mapper errors were not reported during project validation. This validation has been added to 4.0. Therefore, any mapper errors must be fixed before project validation can be successful. These errors existed in the 3.x product, though they may not have caused any runtime problems.

**To Resolve the Issue**

To fix the problem, In BusinessEvents Studio double-click those items in the Problems view. The rule editor displays the corresponding rule or rule function. In the editor. Check for red error indicators on lines containing function mapping. Where you see an error indicator on a line containing Mapper code, Ctrl-click the underlined argument text to open the Function Argument Mapper dialog. Click the Mapper Check and Repair (check-mark icon) button.

Some errors can be auto-fixed: Click the validate option (the check mark) in the mapper. You see the Mapper Check and Repair dialog. Select the items you want to fix and click OK. (Using auto-fix is harmless even if the errors can't be auto-fixed.) Then manually fix any errors that can't be autofixed. For example, errors such as undefined variable errors can't be fixed automatically.

**Use of Words Now in Reserved Word List**

As BusinessEvents develops, the number of reserved words increases. Validation shows errors for use of keywords as identifiers.

For the current list of reserved words, check the section Keywords and Other Reserved Words in Chapter 17, Rule Language Grammar, of *TIBCO BusinessEvents Developer's Guide*.

**Error**

Reserved keyword, cannot be used as an identifier

**Action**

If you use any of the listed words as identifiers, resource names, or folder names, change them in your 4.x project

## Other Post Import Actions

---

This section lists other minor actions that may be required to complete the migration.

Backing store actions required may be more extensive. See [Migrate the Backing Store Implementation and Backing Store Data, page 47](#) for guidelines.

### Check Runtime Properties, Remove from TRA, Add to CDD as Needed

See [Runtime Properties are Configured in the CDD File on page 36](#) for background information.

Check that all TRA file properties used in the 3.x project and that are valid in the 4.x project have been migrated. If any valid properties are missing, add them as needed:

- Add runtime engine properties to the CDD file at the appropriate level for the scope of the property:
  - Cluster level for cluster-wide scope.
  - Processing Unit level for engine-wide scope in the specified type of engine (Processing Unit). You will have to think about your engines differently, as running different kinds of agent classes.
  - Agent level to limit the scope to the agent class.
- Properties that were in the TIBCO Designer TRA file generally go in the BusinessEvents Studio TRA file:
 

```
BE_HOME/studio/eclipse/configuration/studio.tra
```
- Remove the runtime properties from the TRA file and ensure that only JVM or system level properties remain.

### Reconfigure Integration with TIBCO ActiveMatrix BusinessWorks

Integration is achieved differently in BusinessEvents 4.x because BusinessEvents is an Eclipse based product now, not a TIBCO Designer-based product. In all cases you'll need to use two projects, one for BusinessEvents and one for ActiveMatrix BusinessWorks. A plug-in for BusinessEvents runs in TIBCO Designer to facilitate the integration.

See Chapter 21, ActiveMatrix BusinessWorks Integration, in *TIBCO BusinessEvents Developer's Guide* for complete details. Below are a few pointers:

## For TIBCO Administrator Deployment, CDD Replaces be-engine.xml

As explained in [Check Runtime Properties, Remove from TRA, Add to CDD as Needed on page 45](#), properties that were formerly set in the TRA and other property files in 3.x are now configured using the CDD file.

In 4.x you can change CDD file values at deploy-time without having to rebuild the EAR file (the CDD file used is stored outside the EAR file).

### Action

Ensure that all properties that were added to the 3.x project's `be-engine.xml` file are present in the CDD file, if the properties are still in use in the 4.0 product.

## Add Project Libraries to the 4.x Project

Version 3.x project libraries containing entities (concepts, events and so on) are not compatible with 4.x because the format for entities has changed. They are not migrated.

(3.x project libraries that contain only shared resources will work in 4.x, but that is not a common use for project libraries. The format of shared resources remains the same in 4.x).

### Action

If you want to continue to use the 3.x project libraries, recreate the libraries and add them to the 4.x project build path after migration. Follow instructions in the section *Creating and Using Project Libraries*, in Chapter 2, *Project Tasks of TIBCO BusinessEvents Developer's Guide*.

## Migrate the Backing Store Implementation and Backing Store Data

---

This section refers you to documentation resources to use, depending on your choices and situation.



If you plan to make any schema changes, make them after the backing store is migrated successfully. Then follow directions in *TIBCO BusinessEvents Administration*.

### Migrating to JDBC Backing Store (Recommended)

To migrate from the legacy backing store to JDBC backing store implementation, first create the new backing store schema. Then migrate the legacy backing store data to the new backing store.

- For instructions on setting up a JDBC backing store, see Chapter 15, JDBC Backing Store Configuration in *TIBCO BusinessEvents Administration*.
- For instructions on migrating data from a 3.x backing store to the JDBC backing store, see [Migrating Data to a Current Backing Store Implementation on page 49](#).

### Upgrading the Legacy Backing Store (Deprecated)

The legacy Oracle-only backing store is still supported, but is deprecated. If it is not possible for you to migrate to the JDBC backing store at this time, then you must upgrade your Oracle-only legacy backing store schema, and migrate the data to the new schema.

- For instructions on upgrading a 3.x Oracle-only backing store, see [Upgrading the Legacy Backing Store from Version 3.0.0 or Earlier on page 48](#)
- For instructions on migrating data from a 3.x backing store to the upgraded Oracle-only backing store, see [Migrating Data to a Current Backing Store Implementation on page 49](#).

## Upgrading the Legacy Backing Store from Version 3.0.0 or Earlier



**The Oracle-only backing store was deprecated in the 4.0 release** It is recommended that you create a JDBC backing store and migrate data from the legacy backing store to the JDBC backing store. See [Migrate the Backing Store Implementation and Backing Store Data on page 47](#) for guidelines.

Upgrade your legacy backing store only if you one of the following is true:

- You have a strong business reason not to migrate to the current backing store implementation at this time.
- Your Oracle-only backing store was set up using an earlier version than 3.0.0. In this case you must upgrade the schema before you can migrate the data to a new JDBC backing store schema.

### Updating Legacy Backing Store for Schema Change in 3.0.1

New BusinessEvents metadata tables were added to the backing store schema in 3.0.1. If you use a backing store in version 3.0.0 or earlier, you must run the `create_tables.sql` script provided in the current release. It adds the new tables to the schema. Running this script does not affect any existing tables (therefore there is no need to run `be-oradeploy.exe`). However it's always a good idea to back up your data before performing any schema changes.

#### To Update an Oracle-Only Backing Store Schema to the 3.0.1 Schema

1. Before you begin do the following:
  - Gracefully shut down the deployed application (all agents and cache servers).
  - Back up your database.
2. Login to the Oracle server as `be_user`, password `be_user` (or whatever username and password you are using, as set in the `initialize_database.sql` script).
3. Navigate to the location of the scripts (by default in `BE_HOME/bin`) and open an SQLPlus prompt. Identify yourself as the user you logged in as.
4. At the SQL prompt, type the following to run the script:

```
@create_tables.sql
```

Your database tables are now configured for use.

## Migrating Data to a Current Backing Store Implementation

---

This section explains how to migrate data from an Oracle-only backing store to a newly created JDBC backing store or to an upgraded legacy Oracle-only backing store. As a result, the BusinessEvents engine can continue running under the new backing store, using historical data.

It is strongly recommended that you migrate to the JDBC backing store implementation. See [Migrate the Backing Store Implementation and Backing Store Data on page 47](#) for guidelines.

The process outlined here migrates the data from an Oracle-only backing store to a newly created JDBC backing store. You can also migrate data from an older Oracle-only backing store to a newer Oracle-only backing store, but that is a less common case.

You must keep the JDBC Connection resource for the existing Oracle-only backing store, and you must be able to connect to it.

The data migration process uses two backing stores. However after migration, you'll have one backing store. Use of two backing stores is limited to migration procedures.

### Task A Set Up the Backing Store Database and Add a JDBC Connection

If you have not yet imported your 3.x project into BusinessEvents Studio, do so before you begin.

The first task is to set up a *new* backing store, including creation of a new JDBC Connection resource.

- If you are migrating to a JDBC backing store, follow all the instructions in Chapter 15, JDBC Backing Store Configuration, which is in *TIBCO BusinessEvents Administration*.
- If you are migrating to an Oracle-only backing store, follow all the instructions in Appendix A, Setting up an Oracle-Only Backing Store, which is in *TIBCO BusinessEvents Administration*.



Do not remove the JDBC Connection resource for the Oracle-only backing store database from your project until you have completed all migration tasks.

When you have set up the new backing store, including the CDD settings, Rebuild the EAR file.

### Task B Set Up the BusinessEvents TRA File

Open the `BE_HOME/bin/be-migration.tra` file and specify appropriate values for the properties shown below (with example values). Notes on the properties follow.

---

```
# Oracle/JDBC Migration Properties
be.migration.batchsize          1000
be.migration.workersize         16
be.migration.objecttable        true
be.migration.target.type        jdbc

# Database URLs
# Source database:
be.oracle.dburi.count 1
be.oracle.dburi.0 /Resources/myORCL.sharedjdbc
be.oracle.dburi.pool.initial.0 5
be.oracle.dburi.pool.min.0 5
be.oracle.dburi.pool.max.0 10

# Target database:
be.jdbc.dburi.count 1
be.jdbc.dburi.0 /Resources/myJDBC.sharedjdbc
be.jdbc.dburi.pool.initial.0 5
be.jdbc.dburi.pool.min.0 5
be.jdbc.dburi.pool.max.0 10
```

---

### Task C Run the Data Migration Process

1. Open a command prompt, navigate to `BE_HOME/bin`, and execute the following command:  

```
be-migration -copy -ear EARFile
```

 Wait until the process is complete
2. If you set the property `be.migration.objecttable=false` in [Task B](#) then you must manually migrate OBJECTTABLE table contents.
3. Start the BusinessEvents engine using the new target repository.



## Backing Store Data Migration Property Reference

Table 5 Oracle-Only to JDBC (or Oracle-Only) Backing Store — Data Migration

Property	Notes
<code>be.migration.batchsize</code>	<p>Defines the database batch size to be used during the migration process. The best size depends on the database configuration.</p> <p>Default is: 200</p>
<code>be.migration.workersize</code>	<p>Defines how many concurrent threads to use during the migration process. Set to the number of processors available.</p> <p>Default is: 10</p>
<code>be.migration.objecttable</code>	<p>If the existing Oracle backing store contains a large amount of data, the migration process can take many hours to complete. If this is the case, you can shorten the process using this property.</p> <p>When this property is set to false, the migration process ignores the data contained in OBJECTTABLE table. Skipping this table can shorten the migration time considerably.</p> <p>If you skip migration of the OBJECTTABLE table, you must then copy this table from the Oracle to the JDBC backing store database using other tools (or simple SQL scripts).</p> <p>Default is true.</p>

Table 5 Oracle-Only to JDBC (or Oracle-Only) Backing Store — Data Migration

Property	Notes
<code>be.migration.target.type</code>	<p>Defines which type of schema to use for the new backing store. Values are:</p> <p><b>jdbc:</b> The JDBC backing store schema. Use this value for migrating from an Oracle backing store to a JDBC backing store (the procedure documented in this section).</p> <p><b>oracle:</b> The Oracle-only backing store schema. The migration utility can also be used to copy data from an Oracle backing store to another Oracle backing store. This is generally done to migrate data from an older to a newer implementation of the Oracle backing store.</p> <p>If you set this property to <code>oracle</code>, then you must create a new Oracle-only backing store in <a href="#">Task A</a>, and you must define the migration TRA file properties as appropriate, for example:</p> <pre>be.oracle.dburi.count=2 be.oracle.dburi.1= newConnectionURI (as in Task C).</pre> <p>Default is <code>jdbc</code>.</p>

## Chapter 6

# Migrating Persistence Data to Backing Store

Procedures in this chapter enable you to migrate data in a persistence data store to a backing store used for Cache object management (OM). These procedures are used when you are changing from the Persistence to a Cache OM option.

You can also use exported data for other purposes. Using the data is outside the scope of this document. However, a reference to the export file column names is provided.

## Topics

---

- [Migrating Data from Persistence Database to Oracle Backing Store, page 54](#)
- [Persistence Migration Utility Usage and Parameters, page 59](#)
- [Persistence Migration Export Reference Tables, page 62](#)

## Migrating Data from Persistence Database to Oracle Backing Store



You must first migrate from the Persistence database to the Oracle backing store database, and then to the JDBC backing store database.

The Oracle-only backing store was deprecated in the 4.0 release. If you are setting up a backing store for the first time, use the JDBC backing store. There is no direct migration path from Persistence OM database to JDBC backing store.

You can change your object management (OM) method from Persistence to Cache with backing store. To do so, you configure the Cache OM options as explained in this guide, and you can optionally migrate the data in your persistence database to a backing store.

This migration utility migrates data from the persistence to the Oracle only backing store.

When you start up your newly configured system, the data from the backing store is loaded into the cache.

This section explains how to migrate your data from the persistence database, or databases if you have a multi-BAR project, to the backing store. Each rule session (BAR) uses a different partition number, which is stored in the `CacheID` column of the backing store.

For each BAR (inference agent) in the project, the steps are as follows:

- First you set up the backing store database schema, following standard procedures given in this guide.
- Then you export ontology object data from the persistence database to text files.
- Finally, you import the data from the text files into the backing store.

When all the data is migrated, and the Cache OM features are fully configured, start the system.

The migration utility supports export from persistence databases in BusinessEvents 1.4 and higher. The utility can then import the data to a 2.x and higher backing store (but not to a persistence database).

You can also use the migration utility to export ontology object data from a persistence database, and then import the files into spread sheets for validating, analyzing or reporting. See [Persistence Migration Export Reference Tables on page 62](#).

## Before you Begin

- As with any procedure that modifies your data, ensure that you have made backups before you begin.
- Stop the BusinessEvents engine (or engines as the case may be).

## Prepare Property Files

You must add information to the `be-migration.tra` file before executing the utility commands.

1. Open the utility property file for editing:

```
BE_HOME/bin/be-migration.tra
```

2. In the `tibco.env.CUSTOM_EXT_PREPEND_CP` property, add the path to your JDBC driver (if it is not already there). For example:

---

```
# JDBC Driver libraries
tibco.env.CUSTOM_EXT_PREPEND_CP C:/myHome/jdbc/lib/ojdbc14.jar
```

---

3. In the JDBC drivers property, `java.property.jdbc.drivers`, add the correct driver string. For example:

---

```
# JDBC drivers
java.property.jdbc.drivers oracle.jdbc.OracleDriver
```

---

4. As needed, add and configure the following properties:
  - `be.migration.import.multithreads`: Default value is `true`
  - `be.migration.import.threads`: Allocates JVM threads to be used by the migration utility. Default value is 20. If `be.migration.import.multithreads` is `false`, this property is not used.
5. As needed, configure the `be.migration.oracle.poolSize` property. This property allocates the connection pool size to be used for importing ontology objects into the backing store. Default value is 10.
6. As needed, configure the `be.migration.oracle.retryInterval` property. This property specifies the interval in seconds. The migration utility tries to reconnect to the backing store database at the specified interval, in case the connection is lost. Default value is 5.

- 7. As desired, configure any command-line options you want to set in the properties file. See [Table 7, Persistence Database Migration Utility Parameters, on page 59](#) for property names.  
  
Note that options set on the command line take precedence over values set in the property file.
- 8. Save the property file.

Table 6 BusinessEvents Engine Properties for Persistence OM Data Migration

Property	Notes
be.migration.import.multithreads	<p>Specifies if the data migration utility uses multithreading.</p> <p>Default value is true.</p> <p>Used by the migration utility, for migrating from the Persistence to the Cache OM option. See <a href="#">Migrating Data from Persistence Database to Oracle Backing Store on page 54</a></p>
be.migration.oracle.poolSize	<p>Allocates the connection pool size to be used for importing ontology objects into the backing store.</p> <p>Default value is 10.</p> <p>Used by the migration utility, for migrating from the Persistence to the Cache OM option. See <a href="#">Migrating Data from Persistence Database to Oracle Backing Store on page 54.</a></p>
be.migration.import.threads	<p>Allocates JVM threads to be used by the migration utility. If be.migration.import.multithreads is false, this property is not used.</p> <p>Default value is 20.</p> <p>Used by the migration utility, for migrating from the Persistence to the Cache OM option. See <a href="#">Migrating Data from Persistence Database to Oracle Backing Store on page 54.</a></p>

## Export Data from the Persistence Database

When you execute the commands below, the `be-migration` utility reads persistence files from `persistence_db_dir` and writes their data to comma-delimited text files in the location specified, using information in the specified EAR file.



Each rule session (inference agent) requires a separate database. Repeat the procedure for each database.

1. Create the directory where you want the text files to be created.
2. Export from persistence database to files using a command that follows this format:

```
BE_HOME/bin/be-migration -export -bdb -input persistence_db_path
-output text_files_path -ear EAR_path or repo_path
```

3. Review the export log file to ensure that the data export was successful. The summary at the end of the log file provides useful information.
4. If the project has multiple BARs, that is multiple rule sessions (inference agents), repeat the procedure once for each BAR.

## Import Data to the Oracle Only Backing Store

Before you can import files to a backing store you must create the schema.



If the project has multiple BARs, that is, multiple rule sessions (inference agents), each BAR requires a separate backing store. Repeat the tasks below once for each BAR.

### Task A Create Backing Store Schema

Complete all the procedures required to set up your Oracle-only backing store database schema. See *TIBCO BusinessEvents Administration* for details.

### Task B Import Ontology Object Data from Files to Database

Run the `be-migration` utility with the import command:

---

```
-import -db -input text_files_path -conn "connection_string" -ear EAR_path or repo_path -partition
BAR_Name:partition_id
```

---

See [Persistence Migration Utility Usage and Parameters on page 59](#) for details on each of the parameters.

Review the import log file to ensure that the data import was successful.

Run your project in a test environment to test if data recovery is successful before deploying to the production environment.



# Persistence Migration Utility Usage and Parameters

## Usage

The general syntax for running the utility at the command line is as follows:

```
be-migration {-export -bdb|-import -db} [-input input_url] [-output output_url] -ear
EAR_path or repo_path [-conn connection_string] [-partition BAR_Name:partition_id] [-help]
```

Example command to export from persistence to text files:

```
-export -bdb -input C:\mydir\bdb\FraudDetection-jdb -output C:\mydir\extract\output
-ear C:\mydir\FraudDetection.ear
```

Example command to import from text files to a backing store.

```
-import -db -input C:\mydir\extract\output -conn
"jdbc:oracle:thin:sa/sa@dbserver:1521:MIGRATION" -ear C:\mydir\FraudDetection.ear
-partition "BusinessEvents Archive:1"
```

## Persistence Database Migration Utility Parameters

Table 7 Persistence Database Migration Utility Parameters (Sheet 1 of 3)

Parameter	Also Used	Property	Description
-bdb persistence_db_dir	/bdb	N/A	Indicates that the export is for a persistence database.  -bdb is the default value.
-conn connection_string	/conn	be.migration.db.connection	<jdbc>:<vendor>:<drivertype>:<user>/<password>@<host>:<port>:<database>  The connection string specifies the JDBC driver string, the user and password, and the JDBC URL.  The user must have sufficient privileges to connect, create tables and write to and read from them.

Table 7 Persistence Database Migration Utility Parameters (Sheet 2 of 3)

Parameter	Also Used	Property	Description
-db	/db	N/A	Indicates that the import is for a backing store.
-ear <i>project_path</i>	/project -repourl /repourl	be.migration. project.path	<p>The value can be either of these:</p> <ul style="list-style-type: none"> <li>The file-based location of the BusinessEvents EAR file.</li> <li>The repo URL for the deployed BusinessEvents application. The URL format depends on the deployment transport used. Supported formats for the URL are <code>tibcr</code>, <code>http</code>, <code>https</code>, and <code>file</code>.</li> </ul> <p>You cannot use the designer project as a value for this property.</p>
-export	-E /E /export	be.migration. mode=export	<p>Use <code>-export -bdb</code> to export data from a persistence database to comma-separated text files.</p> <p><code>-export</code> is the default option if the parameter is not specified</p>
-help	-h /h /help	N/A	Displays parameter usage.
-import	-I /I /import	be.migration. mode=import	Use <code>-import -db</code> to import data from the exported comma-separated text files into a backing store.
-input <i>input_url</i>	-i /i /input	be.migration. input.path	<p>If used in a command with <code>-export -bdb</code> (exporting persistence database files) then the value is the path to the persistence database files (<i>persistence_db_dir</i>) to be exported.</p> <p>If used in a command with <code>-import db</code> then the value is the path to the comma-separated text files for the import (the text files that were exported in a prior command).</p>

Table 7 Persistence Database Migration Utility Parameters (Sheet 3 of 3)

Parameter	Also Used	Property	Description
<code>-output</code> <code>output_url</code>	<code>-o</code> <code>/o</code> <code>/output</code>	<code>be.migration.output.path</code>	If used in a command with <code>-export -bdb</code> (exporting data from a persistence database) then the value is the path to the comma-separated text files to be created. You must create this directory before executing the command.
<code>-partition</code> <code>BAR_Name:partition_id</code>	<code>/partition</code>	<code>be.migration.bar.name</code>  <code>be.migration.partition.id</code>	<p>The value is a BAR resource name, followed by a colon, followed by a partition ID.</p> <p>The partition ID is an arbitrary numeric value to identify a BusinessEvents partition. Each rule session (BAR) uses a different partition number.</p> <p>This partition ID is stored in the <code>CacheID</code> column of the backing store database.</p> <p>If you use engine properties in the TRA file, note that two properties are used to provide the two parts of the value:</p> <ul style="list-style-type: none"> <li>• The value of <code>be.migration.bar.name</code> is the name of the BAR resource.</li> <li>• The value of <code>be.migration.partition.id</code> is the numeric ID.</li> </ul> <p><b>Note</b> Ensure that you use the same partition ID for the BARs here and in the backing store configuration.</p>

## Persistence Migration Export Reference Tables

Information in the following tables is useful for those who will use the exported tables for purposes other than migration. Definitions are not provided for files used only internally by the migration utility.

### Migration Export Table and Column Information

Table 8 Migration Export Table and Column Information (Sheet 1 of 5)

Column Name	Definition	Data Type	Notes
<b>Concept File, Statemachine File, Scorecard File</b>			
File names are based on entity type names. Each file contains details of instances of one entity, excluding properties (see next section).			
id	Internal Id	long	
extId	External Id	long	State machine does not have extId.
status	RTC status	int	Used only in concept and state machines exported from BusinessEvents 1.4.
timestamp	timestamp	long	Used only in concept and state machines exported from BusinessEvents 1.4.
retractedFlag	Whether the instance has been retracted (deleted) from working memory	boolean	
<b>Concept-properties File, Statemachine-properties File, Scorecard-properties File</b>			
The <i>entityname-properties</i> files contain information about the entity properties. (Simple event properties, however, are defined in the SimpleEvent file.)			
conceptId	Internal Id	long	
propertyName	Property name	String	State machine property name is the state name of the state machine.

Table 8 Migration Export Table and Column Information (Sheet 2 of 5)

Column Name	Definition	Data Type	Notes
type	Property type	int	See <a href="#">Table 9, Migration Export—Concept Property Type Code Definitions</a> , on page 66.
isSet	Whether this property value is set	boolean	
arrayIndex	Index of current value in a property array.	int	For properties that are not arrays, the index is -1.
value	Property value	(see Notes column)	Will be converted to the property type defined in the type column.
historysize	Size of property history defined at design-time	int	
currentIndex	Index of current value in a property-history array	int	
[{HistoryTS	history timestamp	long	Repeats <i>historysize</i> times in a pair of [ <i>history timestamp</i> , <i>history property value</i> ] when <i>historysize</i> >=1, starting for <i>history</i> 0, 1, ...  State machine properties do not use history.
HistoryValue}...]	property value at <history timestamp>	(See Notes column)	Will be converted to the property type defined in the type column.
<b>SimpleEvent file</b>			
File names are based on entity type names. Each file contains details of instances of one simple event type, including properties.			
id	Internal Id		
extId	External Id		

Table 8 Migration Export Table and Column Information (Sheet 3 of 5)

Column Name	Definition	Data Type	Notes
status	RTC status	int	Used only in event data exported from BusinessEvents 1.4.
timestamp	timestamp	long	Used only in event data exported from BusinessEvents 1.4.
retractedFlag	Whether the event has been retracted from working memory (consumed)	boolean	
[event property1]	event property value	N/A	Type as defined at design-time
[event property2]	event property value	N/A	Type as defined at design-time
<b>RepeatedTimeEvent File, RuleBasedTimeEvent File, StateTimeoutEvent File</b> Except for StateTimeoutEvent, file names are based on entity type names. The StateTimeoutEvent file is only used by data exported from BusinessEvents 2.0 and above. The name is always StateTimeoutEvent.			
id	Internal Id	long	
extId	External Id	long	Not used
status	RTC status	boolean	Used only in event data exported from BusinessEvents 1.4.
timestamp	Timestamp	long	Used only in event data exported from BusinessEvents 1.4.
retractedFlag	Whether the event has been retracted from working memory (consumed)	boolean	

Table 8 Migration Export Table and Column Information (Sheet 4 of 5)

Column Name	Definition	Data Type	Notes
scheduledTime	Scheduled time the time event will be asserted	long	
closure	The closure string passed in when scheduling a rule-based timeEvent	String	Not used for Repeated timeEvent
TTL	Time to live		Not used for Repeated timeEvent
SMId	Internal Id of the state machine instance this stateTimeout event belongs to	long	Used only in StateTimeoutEvent data exported from BusinessEvents 2.0 and above.
PropertyName	State name of the state machine this stateTimeout event belongs to	String	Used only in StateTimeoutEvent data exported from BusinessEvents 2.0 and above.
<b>Export-control File</b> Used internally by the migration import. Other internal files are propertiesIndex and scorecardIds.			
project-name	Project name of the ear file	String	
project-config-version	BusinessEvents version of the ear file	String	
data-version	BusinessEvents version of the data in Berkeley database	String	
lastInternalId	the last internal Id used by be-engine	long	Used only for data exported from BusinessEvents 1.4
#instances	number of concept instance exported	long	

Table 8 Migration Export Table and Column Information (Sheet 5 of 5)

Column Name	Definition	Data Type	Notes
#events	number of events exported	long	
#error	Number of errors occurred in the export	long	
#warnings	Number of warnings occurred in the export	long	

Concept Property Type Code Definitions

This table shows the property types referenced by the code numbers in the type column (see [Table 8, Migration Export Table and Column Information, on page 62](#)).

Table 9 Migration Export—Concept Property Type Code Definitions

Code	Type
0	PropertyAtomBoolean
1	PropertyAtomChar
2	PropertyAtomConceptReference
3	PropertyAtomDateTime
4	PropertyAtomDouble
5	PropertyAtomInt
6	PropertyAtomLong
7	PropertyAtomString
8	PropertyArrayBoolean
9	PropertyArrayChar
10	PropertyArrayConceptReference
11	PropertyArrayDateTime



*Table 9 Migration Export—Concept Property Type Code Definitions*

Code	Type
12	PropertyArrayDouble
13	PropertyArrayInt
14	PropertyArrayLong
15	PropertyArrayString
16	PropertyAtomContainedConcept
17	PropertyArrayContainedConcept

## Chapter 7

# Property Migration Reference

This chapter contains a reference table to assist you in locating the 4.x properties or UI settings that correspond to 3.x properties.

Note that many logging properties have been replaced and are not directly migrated.

## Topics

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- [Property Migration Reference, page 70](#)

## Property Migration Reference

The main properties used in prior releases are listed on the left, with their 4.0 equivalents on the right. Note that it may be possible for properties listed as going in Cluster tab > Properties to be added to a lower-level property sheet, generally the processing unit property sheet, as appropriate. See *TIBCO BusinessEvents Administration* for more details on configuring the Cluster Definition Descriptor (CDD) file.

Table 10 Property Migration Reference (Sheet 1 of 11)

3.x Property	4.0 CDD Editor
Agent Group Name (in BAR resource)	Agent Classes tab > <i>Agent Class</i> > Agent Class Name
<code>Agent.AgentGroupName.cacheOpsQueueSize</code>	Not used in 4.0
<code>Agent.AgentGroupName.checkDuplicates</code>	Agent Classes Tab > <i>AgentClassName</i> > Properties
<code>Agent.AgentGroupName.concurrentwm</code>	Agent Classes tab > <i>AgentClassName</i> > Concurrent RTC
<code>Agent.AgentGroupName.dbOpsBatchSize</code>	Agent Classes Tab > <i>AgentClassName</i> > Properties
<code>Agent.AgentGroupName.dbOpsQueueSize</code>	Agent Classes Tab > <i>AgentClassName</i> > Properties
<code>Agent.AgentGroupName.dbthreadcount</code>	Agent Classes Tab > <i>AgentClassName</i> > Properties
<code>Agent.AgentGroupName.key</code>	Processing Units tab > <i>PUName</i> > Agents > Key
<code>Agent.AgentGroupName.maxActive</code>	Agent Classes tab > <i>AgentClassName</i> > Properties
<code>Agent.AgentGroupName.priority</code>	Processing Units tab > <i>PUName</i> > Agents table > Priority
<code>Agent.AgentGroupName.recoveryPageSize</code>	Agent Classes Tab > <i>AgentClassName</i> > Properties

Table 10 Property Migration Reference (Sheet 2 of 11)

3.x Property	4.0 CDD Editor
<code>Agent.AgentGroupName.threadcount</code>	Agent Classes Tab > <i>AgentClassName</i> > Properties
<code>Agent.AgentGroupName.llCacheSize</code> <code>be.agent.query.localcache.maxelements</code>	Agent Classes tab > <i>AgentClassName</i> > > Max Size
<code>be.oracle.dburi.0</code> <code>be.jdbc.dburi.0</code>	Cluster tab > [OM Type - Cache] > Backing Store > Connection > URI
<code>be.agent.cache.specialom</code>	Agent Classes tab > Cache Agent > Properties
<code>be.agent.cache.specialom.maxthreads</code>	Agent Classes tab > Cache Agent > Properties
<code>be.agent.query.localcache.evictseconds</code>	Agent Classes tab > <i>AgentClassName</i> > Eviction Time
<code>be.agent.query.localcache.prefetchaggressive</code>	Agent Classes Tab > <i>QueryAgentClassName</i> Properties
<code>be.backingstore.dburi.pool.inactivityTimeout.0</code>	Cluster tab > Properties (Backing store properties)
<code>be.backingstore.dburi.pool.waitTimeout.0</code>	Cluster tab > Properties (Backing store properties)
<code>be.backingstore.dburi.schema.0</code>	Cluster tab > Properties (Backing store properties)
<code>be.backingstore.readtimeout</code>	Cluster tab > Properties
<code>be.oracle.dburi.pool.enforce.0</code> <code>be.jdbc.dburi.pool.enforce.0</code>	Cluster tab > [OM Type - Cache] > Backing Store > Enforce Pools
<code>be.oracle.dburi.pool.initial.0</code> <code>be.jdbc.dburi.pool.initial.0</code>	Cluster tab > [OM Type - Cache] > Backing Store > Connection > Initial Size

Table 10 Property Migration Reference (Sheet 3 of 11)

3.x Property	4.0 CDD Editor
be.oracle.dburi.pool.max.0 be.jdbc.dburi.pool.max.0	Cluster tab > [OM Type - Cache] > Backing Store > Connection > Max Size
be.oracle.dburi.pool.min.0 be.jdbc.dburi.pool.min.0	Cluster tab > [OM Type - Cache] > Backing Store > Connection > Min Size
be.channel.tibjms.queue.disabled	Agent Classes tab > Inference Agent > Properties
be.channel.tibjms.topic.disabled	Agent Classes tab > Inference Agent > Properties
be.dbconcepts.connection.check.interval	Cluster tab > Database Concepts > Check Interval
be.dbconcepts.connection.retry.count	Cluster tab > Database Concepts > Retry Count
be.dbconcepts.dburi	Cluster tab > Database Concepts > Database URIs
be.dbconcepts.query.reuseRefs	Cluster tab > Properties Used in database concepts.
be.dbconcepts.pool.inactivityTimeout	Cluster tab > Database Concepts > Inactivity Timeout
be.dbconcepts.pool.initial	Cluster tab > Database Concepts > Initial Size
be.dbconcepts.pool.max	Cluster tab > Database Concepts > Max Size
be.dbconcepts.pool.min	Cluster tab > Database Concepts > Min Size
be.dbconcepts.pool.PropertyCheckInterval	Cluster tab > Database Concepts > Property Check Interval
be.dbconcepts.pool.waitTimeout	Cluster tab > Database Concepts > Wait Timeout

Table 10 Property Migration Reference (Sheet 4 of 11)

3.x Property	4.0 CDD Editor
<code>be.engine.cacheServer</code>	DEPRECATED. Agent Classes Tab > Agent class type: Cache
<code>be.engine.cacheServer.channel.disable</code>	Processing Units tab > <i>PUname</i> > Properties Not used
<code>be.engine.cluster.cleanup</code>	Cluster tab > Properties Used by Oracle-only legacy backing store
<code>be.engine.cluster.EntityClassName.preload</code>	Cluster tab > Domain Objects > Overrides > <i>URI</i> > Preload Entities
<code>be.engine.cluster.EntityClassName.preload.fetchsize</code>	Cluster tab > Domain Objects > Overrides > <i>URI</i> > Preload Fetch Size
<code>be.engine.cluster.externalClasses.classLoader</code>	Agent Classes > Inference Agent > Properties For TIBCO BusinessEvents Decision Manager
<code>be.engine.cluster.externalClasses.path</code>	Agent Classes tab > Inference Agent > Properties For TIBCO BusinessEvents Decision Manager
<code>be.engine.cluster.hasBackingStore</code>	Cluster tab > [OM Type - Cache] > Backing Store > Enabled
<code>be.engine.cluster.isCacheAside</code>	Cluster tab > [OM Type - Cache] > Backing Store > Cache Aside

Table 10 Property Migration Reference (Sheet 5 of 11)

3.x Property	4.0 CDD Editor
<code>be.engine.cluster.isCacheLimited</code>	Cluster tab > Properties  Limited cache is used by default if backing store is enabled.  Related setting: Entity metadata > Is Cache Limited
<code>be.engine.cluster.isObjectCacheFullyLoaded</code>	Cluster tab > Properties
<code>be.engine.cluster.minCacheServers</code>	Cluster tab > [OM Type - Cache] > cache-agent-quorum
<code>be.engine.cluster.multiEngineOn</code>	DEPRECATED  Processing Unit > Properties  True by default.
<code>be.engine.cluster.multisite</code>	Not used
<code>be.engine.cluster.preload</code> <code>be.engine.cluster.preload.handles</code> <code>be.engine.cluster.preload.caches</code> <code>be.engine.cluster.preload.fetchSize</code>	Cluster tab > [OM Type - Cache] > Domain Objects (Default and override settings)
<code>be.engine.cluster.smtimeout.pollInterval</code>	Cluster tab > Properties
<code>be.engine.cluster.smtimeout.refreshAhead</code>	Cluster tab > Properties
<code>be.engine.coherence.useAutomatedRecovery</code>	Cluster tab > Properties
<code>be.engine.hotDeploy.enabled</code>	Processing Unit > Hot Deploy
<code>be.engine.kernel.unifiedExtIdMap</code>	Agent Classes tab > Inference Agent > Properties
<code>be.engine.limited.cache.back.size.limit</code>	Cluster tab > Properties
<code>be.engine.name</code>	(in <code>be-engine.tra</code> file)
<code>be.engine.om.berkeleydb.cacheweight.agent</code>	Cluster Tab [OM Type - Berkeley DB] > Agent Class > Properties

Table 10 Property Migration Reference (Sheet 6 of 11)

3.x Property	4.0 CDD Editor
<code>be.engine.om.berkeleydb.dbenv</code>	Cluster Tab > [OM Type - Berkeley DB] > Database Environment Directory
<code>be.engine.om.berkeleydb.internalcachepersent</code>	Cluster Tab > [OM Type - Berkeley DB] > Properties
<code>be.engine.om.eventcache.defaultmaxsize</code>	Cluster Tab > [OM Type - Berkeley DB] > Property Cache Size
<code>be.engine.om.eventcache.maxsize.agent</code>	Agent Classes Tab > Inference Agent > Properties
<code>be.engine.profile.delimiter</code>	Cluster tab > Properties
<code>be.engine.tangosol.oracle.prefetch</code>	Cluster tab > Domain Objects > Default > Preload Fetch Size
<code>be.ft.cluster.name</code>	Deprecated.
<code>be.ft.enabled</code>	Deprecated.
<code>be.ft.failback.waitmilliseconds</code>	Deprecated.
<code>be.ft.failover.waitmilliseconds</code>	Deprecated.
<code>be.ft.nodename</code>	Deprecated.
<code>be.ft.priority</code>	Deprecated.
<code>be.hawk.microagent.name</code>	Agent Classes tab > <i>Agent Class</i> > Properties
<code>be.http.maxProcessors</code>	Processing Units tab > <i>AgentClassName</i> > Http Properties > Max Processors
<code>be.jdbc.cacheLoaderClass</code>	Cluster tab > [OM Type - Cache] > Backing Store > Cache Loader Class
<code>be.jdbc.database.type</code>	Cluster tab > [OM Type - Cache] > Backing Store > Type



Table 10 Property Migration Reference (Sheet 7 of 11)

3.x Property	4.0 CDD Editor
<code>be.jdbc.dburi.strategy.0</code>	Cluster tab > [OM Type - Cache] > Backing Store > Strategy
<code>be.jdbc.readtimeout</code>	Cluster tab > Properties (Backing store properties)
<code>be.jms.reconnect.msgCodes</code>	Agent Classes tab > Inference Agent > Properties
<code>be.jms.reconnect.timeout</code>	Agent Classes tab > <i>AgentClassName</i> > Properties
<code>be.locale.country</code>	Not used.
<code>be.locale.language</code>	Not used.
<code>be.locale.variant</code>	Not used.
<code>be.network.mode.standalone</code>	Processing Units tab > <i>PUName</i> > Properties (For query agents)
<code>be.oracle.commitSize</code>	Cluster tab > Properties  See <code>be.backingstore.commitSize</code>
<code>be.oracle.dburi.active.0</code>	Not used
<code>be.oracle.dburi.pool.inactivityTimeout.0</code>	Not used See <code>be.backingstore.dburi.pool.inactivityTimeout.0</code>
<code>be.oracle.dburi.pool.waitTimeout.0</code>	Not used. See <code>be.backingstore.dburi.pool.waitTimeout.0</code>
<code>be.oracle.debug</code>	Cluster tab > Properties  Deprecated

Table 10 Property Migration Reference (Sheet 8 of 11)

3.x Property	4.0 CDD Editor
<code>be.trace.layout.class.arg</code>	Collections > Log Configuration > <i>configname</i> > Custom Line Layout > Arguments
<code>be.trace.layout.class.name</code>	Collections > Log Configuration > <i>configname</i> > Custom Line Layout > Class
<code>be.trace.log.append</code>	Collections tab > Log Configurations> Files section > Append
<code>be.trace.log.enable</code>	Collections tab > Log Configurations> Files section > Enable
<code>be.trace.log.fileName</code>	Collections tab > Log Configurations > Files section > Name
<code>be.trace.roles</code>	Collections tab > Log Configurations > Roles  The format has also changed. See <i>TIBCO BusinessEvents Administration</i> for details.
<code>be.trace.term.enable</code>	Collections tab > Log Configurations > Send to Terminal section > Enable
<code>be.trace.log.maxnum</code> <b>Note:</b> BusinessEvents 3.x used this property and not <code>engine.Log.MaxNum</code> .	Collections tab > Log Configurations > Files section > Max number
<code>be.trace.log.maxsize</code> <b>Note:</b> BusinessEvents 3.x used this property and not <code>engine.Log.MaxSize</code> .	Collections tab > Log Configurations > Max size
<code>Agent.AgentGroupName.cacheTxn.updateCache</code>	Agent Classes tab > <i>AgentClassName</i> > Properties

Table 10 Property Migration Reference (Sheet 9 of 11)

3.x Property	4.0 CDD Editor
Checkpoint Interval (in BAR resource)	Cluster Tab [OM Type - Berkeley DB] > Checkpoint Interval
<code>com.tibco.cep.runtime.channel.payload.validation</code>	Cluster tab > Properties (May be more likely at agent class level)
<code>com.tibco.cep.runtime.scheduler.default.numThreads</code>	Cluster tab > Properties
<code>com.tibco.cep.runtime.scheduler.queueSize</code>	Cluster tab > Properties
<code>com.tibco.tibjms.connect.attempts</code>	Agent Classes tab > <i>AgentClassName</i> > Properties
<code>com.tibco.tibjms.naming.security_protocol</code>	Agent Classes tab > Inference Agent > Properties
Database Environment Directory (in BAR resource)	Cluster Tab [OM Type - Berkeley DB] > Database Environment Directory
Delete Retracted Objects from Database (in BAR resource)	Cluster Tab [OM Type - Berkeley DB] > Delete Retracted Objects from Database
Do not Recover on Restart (in BAR resource)	Cluster Tab [OM Type - Berkeley DB] > Do Not Recover on Restart
<code>Engine.FT.ActivationDelay</code>	Deprecated
<code>Engine.FT.ActivationInterval</code>	Deprecated
<code>Engine.FT.GroupName</code>	Deprecated.
<code>Engine.FT.HeartbeatInterval</code>	Deprecated
<code>Engine.FT.UseFT</code>	Deprecated.
<code>Engine.FT.Weight</code>	Deprecated.
<code>Engine.Log.Dir</code>	Collections tab > Log Configurations
<code>Hawk.AMI.DisplayName</code>	Agent Classes tab > <i>Agent Class</i> > Properties

Table 10 Property Migration Reference (Sheet 10 of 11)

3.x Property	4.0 CDD Editor
<code>java.net.preferIPv4Stack</code>	Cluster tab > Properties
<code>objectTable.back.size.limit</code>	Cluster tab > Properties
Property Cache Size (in BAR resource)	Cluster Tab [OM Type - Berkeley DB] > Property Cache Size
Schedule a checkpoint if outstanding DB ops greater than (in BAR resource)	Cluster Tab [OM Type - Berkeley DB] > Checkpoint Ops Limit
<code>tangosol.coherence.cacheconfig</code>	Cluster tab > Properties
<code>tangosol.coherence.cluster</code>	Cluster tab > General > Cluster Name
<code>tangosol.coherence.clusteraddress</code>	Cluster tab > Properties
<code>tangosol.coherence.clusterport</code>	Cluster tab > Properties.
<code>tangosol.coherence.distributed.backupcount</code>	Cluster tab > Properties
<code>tangosol.coherence.distributed.localstorage</code>	Agent Classes tab > <i>AgentClassName</i> > Properties
<code>tangosol.coherence.distributed.threads</code>	Cluster tab > Properties
<code>tangosol.coherence.localhost</code>	Cluster tab > Properties
<code>tangosol.coherence.localport</code>	Cluster tab > Properties
<code>tangosol.coherence.log</code>	Processing Units tab > <i>PUName</i> > Properties
<code>tangosol.coherence.log.level</code>	Processing Units tab > <i>PUName</i> > Properties
<code>tangosol.coherence.log.limit</code>	Processing Units tab > <i>PUName</i> > Properties
<code>tangosol.coherence.management</code>	Cluster tab > Properties  For BusinessEvents Monitoring and Management

Table 10 Property Migration Reference (Sheet 11 of 11)

3.x Property	4.0 CDD Editor
tangosol.coherence.management.remote	Cluster tab > Properties  For BusinessEvents Monitoring and Management
tangosol.coherence.ttl	Cluster tab > Properties
tangosol.coherence.wkan	Cluster tab > Properties
tangosol.coherence.wkan.port	Cluster tab > Properties
tibco.be.property.datatype.null.value	Cluster tab > Properties.  Used for special handling of null properties and values.
tibco.bwengine.name	Processing Units tab > <i>PUName</i> > Properties
tibco.clientVar.<GlobalVariable>	Cluster/PU/Agent level properties

## Appendix A      **Deprecated and Unused Properties**

The following BusinessEvents engine properties are either deprecated or are not used by BusinessEvents in this release.

*Table 11    Deprecated and Unused Engine Properties (Sheet 1 of 3)*

Property	Description
<code>be.engine.cluster.cacheType</code>	<p><b>Deprecated property.</b> Ignored if present. In 3.0.0, this property specifies which of the following provided caching schemes to use: <code>dist-unlimited-bs</code>, <code>dist-limited-bs</code>, or <code>dist-unlimited-nobs</code> (default)</p> <p>In releases after 3.0.0, various properties are used to internally select the correct caching scheme, for example, <code>be.engine.cluster.isCacheLimited</code> and <code>be.engine.cluster.hasBackingStore</code></p> <p>See <i>TIBCO BusinessEvents Administration</i> for more details.</p>
<code>be.engine.om.recovery.threads</code>	<p>Not used in this release. Ignored if present.</p>
<code>be.ft.cluster.name</code>	<p><b>Deprecated property.</b></p>
<code>be.ft.enabled</code>	<p><b>Deprecated property.</b></p>
<code>be.ft.failback.waitmilliseconds</code> <code>be.ft.failover.waitmilliseconds</code>	<p><b>Deprecated Properties.</b> These properties were introduced in a 2.x release to define a wait period, ensuring that cache was fully initialized before failing over to a secondary or failing back to the recovered primary.</p>
<code>be.ft.node.name</code>	<p><b>Deprecated property.</b></p>

Table 11 Deprecated and Unused Engine Properties (Sheet 2 of 3)

Property	Description
be.ft.priority	<b>Deprecated property.</b>
be.locale.country	<p>Sets the country code to use for localization. Use upper case. Uses the ISO 3166 standard.</p> <p><b>Note:</b> BusinessEvents is not fully localized in this release.</p>
be.locale.language	<p>Sets the language code to use for localization. Uses the ISO 639 standard.</p> <p><b>Note:</b> BusinessEvents is not fully localized in this release.</p>
be.locale.variant	<p>Optional extension to the locale language, for example, if you set be.locale.language to en, you might set be.locale.variant to US, which is interpreted as en_US</p> <p><b>Note:</b> BusinessEvents is not fully localized in this release.</p>
be.trace.log.dir be.trace.enable be.trace.publish.enable be.trace.publish.subject be.trace.publish.daemon be.trace.publish.network be.trace.publish.service Engine.Log.MaxNum Engine.Log.MaxSize	<p>The above properties are ignored in BusinessEvents. See the Collections Tab — Log Configurations Settings section in <i>TIBCO BusinessEvents Administration</i> for the current logging properties.</p>
Engine.FT.UseFT Engine.FT.Groupname Engine.FT.Weight	<p><b>Deprecated properties.</b> Were used for In Memory OM fault tolerance in 3.x. Instead, configure for Cache OM, but use the Memory Only mode for all objects. See also be.ft.nodename which was used for the same purpose.</p>

*Table 11 Deprecated and Unused Engine Properties (Sheet 3 of 3)*

Property	Description
<code>java.property.tangosol.coherence.cacheconfig</code>	Not needed except as advised by TIBCO Support for customization purposes.



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