

TIBCO BusinessEvents™

Installation

*Software Release 3.0.1
November 2008*

The Power to Predict™



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Contents

Preface	vii
Enterprise Suite and Inference Edition Features	viii
Related Documentation	ix
TIBCO Product Documentation	ix
Other TIBCO Product Documentation	x
Typographical Conventions	xi
How to Contact TIBCO Support	xiv
 Chapter 1 Installation Overview	 1
Installer Overview	2
Installer Options	2
Uninstalling TIBCO BusinessEvents	4
Upgrading TIBCO BusinessEvents	5
Standard Upgrade Procedures	5
Required and Optional Products	6
Required and Optional Third-Party Products	6
Required and Optional TIBCO Products	7
 Chapter 2 Installation on Microsoft Windows	 9
Before Installing on Microsoft Windows	10
Supported Windows Platforms	10
Installation Guidelines	11
Installation-Related Files	12
Installing on Microsoft Windows	14
After Installing—Check and Update Properties Files	17
Enable Remote Connection to RMS from Decision Manager	17
Update JVM Settings	17
 Chapter 3 Installation on UNIX	 19
Before Installing on UNIX Systems	20
Supported Platforms	20
Installation Guidelines	21
Installation-Related Files	22
Installing on UNIX	24

Chapter 4 After Installing on UNIX	29
All UNIX Installations—Directory Permissions	30
Permissions for BusinessEvents Directories	30
Permissions for Decision Manager and RMS Directories	31
All UNIX Installations—Check and Update Properties Files	32
Enable Remote Connection to RMS from Decision Manager	32
Update JVM Settings	32
HP-UX Installations—Configuration for Hot Deployment Feature	33
Configuration for 64-bit Mode	35
Before You Begin	35
Configure for 64-bit Mode	36
HP-UX Itanium with JRE 6 (1.6.0)	36
Chapter 5 Installation FAQs and Troubleshooting	37
Frequently Asked Questions	37
Running Out of Disk Space	38
Configuration Errors in 64-bit Environment	39
Installation Errors on HP-UX 11.00 64-bit Platform	39
Chapter 6 Migrating from Earlier Versions	41
Upgrading From Version 3.0.0	42
Before Installing the Current Version	42
After Installing the Current Version	43
New Resources Require Permissions in Project Access Control Files	43
Changes in The RMS Engine Properties File	44
Changes in The Decision Manager Configuration File	45
Changes in the DecisionManager.ini File	45
Upgrading from Version 2.x—Cache Object Management	46
Configure the Caching Scheme and Related Cluster Properties	46
Configure Cache Servers	47
Choose Multi-Engine or Single-Engine Mode	47
Configure Inference Agents	48
Configure Fault Tolerance Settings	48
Migrating From BusinessEvents Version 1.4 (and Earlier)	50
Migrating from 1.4 Persistence OM to 3.0.1—Persistence OM	50
Migrating from 1.4 with Persistence OM to Version 3.0.1 with Cache and Backing Store	50
Chapter 7 Migrating Persistence Data to Backing Store	51
Migrating Data from Persistence Database to Backing Store	52
Prepare Property Files	52
Export Data from the Persistence Database	54
Import Data to the Backing Store	55

Migration Utility Usage and Parameters. 56

 Usage 56

 Persistence Database Migration Utility Parameters 56

Migration Export Reference Tables 59

 Migration Export Table and Column Information. 59

 Concept Property Type Code Definitions 65

Index 67

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 data flowing through your information systems and take appropriate action using business rules. By detecting complex patterns within the real-time flow of simple events, BusinessEvents™ can help you to detect and understand unusual activity, recognize trends, problems, and opportunities. BusinessEvents delivers this business critical information in real time to your critical enterprise systems or custom dashboards. With BusinessEvents you can predict the needs of your customers, make faster decisions, and take faster action.

BusinessEvents
The Power to Predict™

Topics

- *Enterprise Suite and Inference Edition Features, page viii*
- *Related Documentation, page ix*
- *Typographical Conventions, page xi*
- *How to Contact TIBCO Support, page xiv*

Enterprise Suite and Inference Edition Features

BusinessEvents is available in the Inference Edition and in the Enterprise Suite. The components available in each option are listed below.

Inference Edition and Enterprise Suite

Inference Edition provides inferencing features and comprises the following components (also included in Enterprise Suite):

- **Server**—The BusinessEvents runtime engine.
- **Workbench**—A TIBCO Designer[™] palette of BusinessEvents resources.
- **TIBCO ActiveMatrix BusinessWorks 5.x Plug-in**—A TIBCO Designer palette of activities that enables communication between BusinessEvents and ActiveMatrix BusinessWorks. (When you select this option, BusinessEvents Workbench and Server are also automatically selected.)
- **Documentation**—TIBCO 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.

Enterprise Suite Only

All of the above components plus the following:

- **Decision Manager application**—A business user rule-building application.



The Decision Manager application is available only on Windows.

- **Rules Management Server**—A rules server for the Decision Manager application.
- **Query**—A language and set of functions for querying cache data.
- **Database Concepts**—A utility for creating concepts from database metadata, with functions for updating the associated database tables or views.
- **State Modeler**—A component that enables you to model the life cycle of concept instances.

Related Documentation

This section lists documentation resources you may find useful.

TIBCO Product Documentation

- *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 User's Guide*: Read this manual for instructions on using TIBCO BusinessEvents to create, manage, and monitor complex event processing projects.
- *TIBCO BusinessEvents Decision Manager*: This manual explains how to use decision tables to create rules using a spreadsheet-like interface, as well as how to administer the Rules Management Server.
- *TIBCO BusinessEvents Language Reference*: This manual provides reference and usage information for the BusinessEvents rule language and the BusinessEvents query language.
- *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 User's Guide*.
- *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 TIBCO Designer 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.

Other TIBCO Product Documentation

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

- TIBCO ActiveMatrix BusinessWorks™
- TIBCO Rendezvous®
- TIBCO Enterprise Message Service™
- TIBCO Designer™
- TIBCO Hawk™
- TIBCO Runtime Agent™

Typographical Conventions

The following typographical conventions are used in this manual.

Table 1 General Typographical Conventions

Convention	Use
<i>TIBCO_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 installation environment. Incompatible products and multiple instances of the same product are installed into different installation environments. The directory into which such products are installed 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 version-specific directory within <i>TIBCO_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\3.0.</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>
bold code font	<p>Bold code font is used in the following ways:</p> <ul style="list-style-type: none"> • In procedures, to indicate what a user types. For example: Type admin. • In large code samples, to indicate the parts of the sample that are of particular interest. • In command syntax, to indicate the default parameter for a command. For example, if no parameter is specified, MyCommand is enabled: MyCommand [enable disable]

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">• To indicate a document title. For example: See <i>TIBCO BusinessWorks Concepts</i>.• To introduce new terms For example: A portal page may contain several <i>portlets</i>. Portlets are mini-applications that run in a portal.• To indicate a variable in a command or code syntax that you must replace. For example: <code>MyCommand <i>pathname</i></code>
Key combinations	<p>Key name separated by a plus sign indicate keys pressed simultaneously. For example: Ctrl+C.</p> <p>Key names separated by a comma and space indicate keys pressed one after the other. For example: Esc, Ctrl+Q.</p>
	The note icon indicates information that is of special interest or importance, for example, an additional action required only in certain circumstances.
	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.
	The warning icon indicates the potential for a damaging situation, for example, data loss or corruption if certain steps are taken or not taken.

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

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

- *[Installer Overview, page 2](#)*
- *[Uninstalling TIBCO BusinessEvents, page 4](#)*
- *[Upgrading TIBCO BusinessEvents, page 5](#)*
- *[Required and Optional Products, page 6](#)*

Installer Overview

The installer allows you to run in different modes. Each mode is supported on all platforms.

- GUI mode
- Console mode
- Silent mode

GUI Mode

In GUI mode, the installer presents panels that allow you to make choices about product selection, product location, and so on. When you run the installer by double-clicking on the icon, GUI mode is used.

Console Mode

Console mode allows you to run the installer from the command prompt or terminal window. This is useful if your machine does not have a Windows environment.

Silent Mode

Silent mode either installs using default settings or uses a response file that was saved during an earlier installation. Silent mode installs without prompting you for information.

- If no response file has been recorded earlier and you run the installer with the `-silent` argument, the default installation parameters are used.
- If a response file exists, and the installer is started with `-options responseFile` as an argument, the installer uses the values specified by the user when the response file was generated.

Installer Options

Enterprise Suite

Custom installation is not available in this partial installer release. The installer installs the following components:

- Server—The BusinessEvents runtime engine.
- Workbench—A TIBCO Designer palette of BusinessEvents resources.

- Decision Manager Desktop application—A business user rule-building application.



The Decision Manager application is available only on Windows.

- Rules Management Server—A rules server for the Decision Manager application.
- Query—A language and set of functions for querying cache data.
- Database Concepts—A utility for creating concepts from database metadata, with functions for updating the associated database tables or views.
- TIBCO ActiveMatrix BusinessWorks 5.x Plug-in—A TIBCO Designer palette of activities that enables communication between BusinessEvents and ActiveMatrix BusinessWorks. (When you select this option, BusinessEvents Workbench and Server are also automatically selected.)
- State Modeler—A component that enables you to model the life cycle of concept instances.
- Documentation—TIBCO 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.

Inference Edition

Custom installation is not available in this partial installer release. The installer installs the following components:

- Server—The BusinessEvents runtime engine.
- Workbench—A TIBCO Designer palette of BusinessEvents resources.
- TIBCO ActiveMatrix BusinessWorks 5.x Plug-in—A TIBCO Designer palette of activities that enables communication between BusinessEvents and ActiveMatrix BusinessWorks. (When you select this option, BusinessEvents Workbench and Server are also automatically selected.)
- Documentation—TIBCO 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.

Uninstalling TIBCO BusinessEvents

If another product is dependent on the product you wish to uninstall, you are informed that you must uninstall the other product first.

Microsoft Windows

Use one of the following to uninstall TIBCO BusinessEvents:

- Click **Start>Programs>TIBCO>TIBCO BusinessEvents *version* >Uninstall**
- Use Add/Remove Programs from the Control Panel.
- Navigate to the `_uninst` directory located in the TIBCO BusinessEvents home directory and run the `Tibuninstall.exe` program.

UNIX Systems

Navigate to the `_uninst` directory located in the TIBCO BusinessEvents home directory and run the `Tibuninstall.bin` program.

Upgrading TIBCO BusinessEvents



TIBCO BusinessEvents 3.0.1 provides a partial product installation It requires a prior installation of release 3.0.0.

However, a full installer is provided for those installing on Solaris 10 X86, which is a new platform in this release.

Before you install Read [Chapter 6, Migrating from Earlier Versions, on page 41](#)

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.

For a major and minor release, the installer prompts whether you wish to upgrade, and informs you if incompatible products are on your system. If you proceed, major or minor releases are installed under a new directory that is named using the major or minor release numbers.

For example, if you have installed the 5.3.0 release and are upgrading to a 5.4.0 minor release, it will be installed under the 5.4 directory. This allows both the 5.3 and 5.4 releases to coexist on the same machine.

If you are upgrading TIBCO BusinessEvents, 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:

- You are not prompted to supply the installation location. The software is automatically reinstalled where the previous version was installed.
- 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.

Required and Optional Products

Depending on the tasks you wish to perform, you must install one or more third-party products and additional TIBCO products.

Required and Optional Third-Party Products

RDBMS

Backing store is an optional feature. Cache-based object management with a persistent backing store has been tested with Oracle 10g Enterprise Edition Release 10.2.0 using the following drivers:

- TIBCO's Oracle driver
- Oracle Thin Driver

J2SE for JMX and JConsole

The Java Management Extensions (JMX) API is a standard for managing and monitoring applications and services. It is required only if you use Decision Manager. It can be useful even if you don't use Decision Manager. Using JConsole, you can monitor JVMs, and perform operations such as hot-deploying classes from Decision Manager to BusinessEvents applications.

JConsole is a JMX-compliant monitoring tool available in J2SE 5.0 and above. The documentation uses JConsole because it is the standard JMX client, provided with the JDK installation.



It is recommended that you use Java 6 JConsole because of improvements over earlier versions. Its most important enhancement is the definition of descriptors, which can be customized to add relevant user and monitoring information.

Required and Optional TIBCO Products

The next table describes required and optional products and their purpose.

Table 3 *Required and Optional TIBCO Products*

Component	Purpose
TIBCO Runtime Agent 5.5, 5.6	<p>Required for all BusinessEvents installations.</p> <p>TIBCO Runtime Agent supplies a number of TIBCO and third-party libraries used by TIBCO BusinessEvents and other TIBCO products both at design time and runtime. This includes, for example, TIBCO Rendezvous software.</p> <p>Note If you are installing on HP-UX and plan to use the hot deployment feature, you must either download a later version of JRE than the version provided in TIBCO Runtime Agent 5.5.0, or upgrade to TIBCO Runtime Agent 5.5.1 See HP-UX Installations—Configuration for Hot Deployment Feature on page 33 for more details.</p> <p>BusinessEvents requires JRE 1.5 or JRE 6. (JRE is provided with TIBCO Runtime Agent.)</p> <p>Note JRE 6 (also known as 1.6.0) is supported only with TIBCO Runtime Agent 5.6.0. With JRE 6, <code>buildear</code> works only with TIBCO Runtime Agent 5.6.0 Hotfix 2.</p>
TIBCO Designer 5.5, 5.6	<p>TIBCO Designer is an easy to use graphical user interface required for design-time configuration of TIBCO BusinessEvents.</p> <p>TIBCO Designer is installed as part of the TIBCO Runtime Agent installation.</p>

Table 3 Required and Optional TIBCO Products (Cont'd)

Component	Purpose
TIBCO Administrator 5.4, 5.6	<p>Optional. However, TIBCO Administrator provides additional functionality such as monitoring.</p> <p>TIBCO Administrator is available as a separate installation and does not need to be installed on the same machine as BusinessEvents. You can install TIBCO Administrator before or after installing BusinessEvents.</p> <p>TIBCO Administrator includes the following modules:</p> <ul style="list-style-type: none">• User Management. Management of authentication, roles and users, that is, connecting roles (groups) and users to access control lists (ACLs). This includes security for deployed applications at runtime.• Resource Management. Monitoring of machines and of all running applications in a TIBCO administration domain. Alerts can be created, for example, to notify an administrator if the number of processes or disk usage exceed a certain number.• Application Management. Uploading of Enterprise Archive (EAR) files, creation, configuration, deployment, and monitoring of applications. This console is also used to start and stop applications.
TIBCO ActiveMatrix BusinessWorks 5.4, 5.6	<p>TIBCO ActiveMatrix BusinessWorks is a scalable, extensible, and easy to use integration platform that allows you to develop integration projects. BusinessEvents uses ActiveMatrix BusinessWorks mapper features at designtime (in the Function Argument Mapping dialog).</p> <p>BusinessEvents installer requires prior installation of TIBCO ActiveMatrix BusinessWorks on all machines where you will install BusinessEvents.</p> <p>Note If you do not have a fully-licensed version of ActiveMatrix BusinessWorks, you can download TIBCO ActiveMatrix BusinessWorks with a development license, for use at design time only. This license does not entitle you to use ActiveMatrix BusinessWorks at runtime.</p>
TIBCO Enterprise Message Service 4.0 and higher	<p>Optional. TIBCO Enterprise Message Service allows you to use the Java Messaging Services (JMS) as the message transport.</p> <p>TIBCO Enterprise Message Service is available as a separate installation and can be installed after TIBCO BusinessEvents is installed.</p>

Chapter 2 **Installation on Microsoft Windows**

This chapter contains the platform-specific instructions for installing TIBCO BusinessEvents on Windows.

Topics

- *[Before Installing on Microsoft Windows, page 10](#)*
- *[Installing on Microsoft Windows, page 14](#)*
- *[After Installing—Check and Update Properties Files on page 17](#)*

Before Installing on Microsoft Windows



TIBCO BusinessEvents 3.0.1 provides a partial product installation It requires a prior installation of release 3.0.0.

However, a full installer is provided for those installing on Solaris 10 X86, which is a new platform in this release.

Before you install Read [Chapter 6, Migrating from Earlier Versions, on page 41](#)

Before starting the installation procedure, review the topics in this section to determine that your system meets the basic requirements and that you have the prerequisite software installed.

Also read [Chapter 6, Migrating from Earlier Versions, on page 41](#) for important steps you may have to take before upgrading.

The installer places all libraries and other products required by TIBCO BusinessEvents into the *TIBCO_HOME* directory. During installation, the installer checks for the availability of all dependent products in the target system. If any of the dependencies are not available, the installer lists them and gives you the option to cancel or go back (GUI and console modes) or immediately exits (silent mode). Otherwise installation proceeds.

Supported Windows Platforms

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

- Windows 2000 SP 4 (x86)
- Windows Server 2003 SP1 (x86)
- Windows Server 2003 SP1 (x86_64)
- Windows Server 2008 on (x86)
- Windows Server 2008 on (x86_64)
- Windows XP SP 1 (x86)
- Windows Vista Business Edition with latest service packs (x86)

Disk space required in each case is 160MB. See [Installer Disk Space Requirements in Temporary Area, page 22](#) for additional disk space requirements.

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

Installation Guidelines

All Installations—Install Required Software First

Some details below do not apply to the 3.0.1 partial installer. If you are first installing BusinessEvents 3.0.0, however, follow the instructions.

Before you can install TIBCO BusinessEvents, you must install TIBCO Runtime Agent and then TIBCO ActiveMatrix BusinessWorks.

TIBCO ActiveMatrix BusinessWorks is required for design-time work, but is not required for BusinessEvents to function at runtime (unless the design of your projects requires it). However, the installer requires ActiveMatrix BusinessWorks to be installed before BusinessEvents. Runtime use of ActiveMatrix BusinessWorks requires a licensed version of the software.

Runtime Installations

Select custom installation and select only the Server option.

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 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.

Installation-Related Files

Installer Disk Space Requirements in Temporary Area

The entire package is extracted into a temp folder, typically `SystemDrive:\Temp` or `SystemDrive:\Documents and Settings\user_name\Local Settings\Temp`.

The installer requires 160MB of free space in the temp directory.

Installation History

The installer and uninstaller creates a file called `TIBCOInstallationHistory.xml` in the same location where the installation registry is created. Each time an installation and uninstallation is performed, entries are appended to the file.

`%SystemRoot%\TIBCOInstallationHistory.xml`

The file `TIBCOInstallationHistory.xml` therefore contains the record of all installation and uninstallation activities of all products, features and components.



Do not edit, rename, move, or remove the `TIBCOInstallationHistory.xml` file.

Installation Registry

The installer maintains an installation registry. The registry location depends on platform. This section explains where the registry files are located on Windows. The files have `vpd` as a prefix, which stands for Vital Product Database.



Do not edit, modify, rename, move, or remove any of the registry `vpd` files.

TIBCO BusinessEvents maintains the installation registry in the `%SystemRoot%` directory. The following files represent the installation registry:

`%SystemRoot%\vpd.properties`
`%SystemRoot%\vpd.properties.tibco.systemName`

Installation Log Files

Installation and uninstallation log files are created in the *TIBCO_HOME/log* directory.

Installing on Microsoft Windows

You can either download the TIBCO BusinessEvents installation package or install the components from a CD. The installer prompts you to accept the license agreement, then to choose to perform a typical install or custom install (full installer only).

- A typical install has minimal prompts and installs standard components in default locations.
- A custom install prompts you to choose which components of the product suite to install and installs only those components.

Because you have already installed TIBCO products when you install TIBCO BusinessEvents, an installation home directory for all TIBCO products is established and must be used. On Microsoft Windows, the default installation home is `c:\tibco`.

Executable File Names

Executable file names for BusinessEvents vary by edition, version number, and platform. The documentation displays the executable file names using variables where needed:

Enterprise Suite: `TIB_be-epe-simple_version_platform`

or

Inference Edition: `TIB_be-simple_version_platform`

where:

- *version* is the three-digit version number for this BusinessEvents release, for example, `3.0.1`
- *platform* is an abbreviated form of the hardware platform for which the executable is intended, for example, `win_x86`.

The windows executable file names for this release are as follows:

Enterprise Suite: `TIB_be-epe-simple_3.0.1_win_x86.exe`

Inference Edition: `TIB_be-simple_3.0.1_win_x86.exe`

Installation Modes

Use one of the following modes to install TIBCO BusinessEvents:

Install Using GUI Mode

GUI Mode allows you input values in panels. Type the following at the command prompt:

```
TIB_be-epe-simple_3.0.1_w32.exe
```

or

```
TIB_be-simple_3.0.1_w32.exe
```

Install Using Console Mode

Console mode allows you to install the software in a non-windowing environment.

The installer will prompt you for values. Type the following at the command prompt (using Enterprise Suite as an example):

```
TIB_be-epe-simple_3.0.1_w32.exe -is:javaconsole -console
```

When running in console mode you can move through the installation process as described next:

```
Enter Key = Moves forward in the installer
```

```
2 = Goes back to previous screen
```

```
3 = Cancels the Wizard and exits the installation or uninstallation
```

```
4 = Redisplays the current screen
```

Install Using Silent Mode

Silent mode allows you to install the software without prompts. If you do not use a response file, default installation values are used. See next sections for details about generating and using a response file

Type the following at the command prompt (using Enterprise Suite as an example):

```
TIB_be-epe-simple_3.0.1_w32.exe -silent
```

Install and Generate a Response File

You can generate a response file during installation which you can later use to run the installer with the selected values as default values (GUI mode and console mode) or as selected values (silent mode).



The response file does not record selections at the component level. It does record all other selections, for example, which products you wished to install.

To install and generate a response file using GUI mode, use the following (using Enterprise Suite as an example):

```
TIB_be-epe-simple_3.0.1_w32.exe -options-record responseFile
```

To install and generate a response file using Console mode use the following (using Enterprise Suite as an example):

```
TIB_be-epe-simple_3.0.1_w32.exe -is:javaconsole -console -options-record responseFile
```

Install Using a Response File

You can use a previously generated response file for installation. For non-silent modes, the response file determines the defaults that are presented. For silent mode, the response file determines what will be installed.

To install using GUI mode and a response file, use the following (using Enterprise Suite as an example):

```
TIB_be-epe-simple_3.0.1_w32.exe responseFile
```

To install using Console mode and a response file, use the following (using Enterprise Suite as an example):

```
TIB_be-epe-simple_3.0.1_w32.exe -is:javaconsole -console -options responseFile
```

To install using Silent mode and a response file, use the following (using Enterprise Suite as an example):

```
TIB_be-epe-simple_3.0.1_w32.exe -silent -options responseFile
```

After Installing—Check and Update Properties Files

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

Enable Remote Connection to RMS from Decision Manager

1. Open the `BE_HOME/rms/bin/be-rms.tra` file.
2. In the following property specify the host name of the machine where RMS is hosted:

```
tibco.clientVar.RMS/hostname=localhost
```



Decision Manager clients must have direct network connectivity to the RMS server for RMS.

Connections from clients may not work if the RMS server is behind a fire wall.

Update JVM Settings

Some of the JVM settings do not work for all platforms, and some platforms use additional, platform-specific parameters.

For example, 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 version installed and other information using the following simple Java program:

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

The system property `com.ibm.vm.bitmode` enables applications to determine the mode in which JVM is running. It returns the following values:

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

Chapter 3 **Installation on UNIX**

This chapter contains the platform-specific instructions for installing TIBCO BusinessEvents on UNIX platforms.

After you have successfully installed, see [Chapter 4, After Installing on UNIX, on page 29](#) for additional steps that might be required in your environment.

Topics

- [Before Installing on UNIX Systems, page 20](#)
- [Installing on UNIX, page 24](#)

Before Installing on UNIX Systems



TIBCO BusinessEvents 3.0.1 provides a partial product installation It requires a prior installation of release 3.0.0.

However, a full installer is provided for those installing on Solaris 10 X86, which is a new platform in this release.

Before you install Read [Chapter 6, Migrating from Earlier Versions, on page 41](#)

Before starting the installation procedure, review the topics in this section to determine that your system meets the basic requirements and that you have the prerequisite software installed.

Also read [Chapter 4, After Installing on UNIX, on page 29](#) and [Chapter 6, Migrating from Earlier Versions, on page 41](#) for important steps you may have to take before and after upgrading.

The installer places all libraries and other products required by TIBCO BusinessEvents into the `TIBCO_HOME` directory. During installation, the installer checks for the availability of all dependent products in the target system. If any of the dependencies are not available, the installer lists them and gives you the option to cancel or go back (GUI and console modes) or immediately exits (silent mode). Otherwise installation proceeds.

Supported Platforms

The following is a list of supported platforms for UNIX:

IBM (POWER):

- AIX 5.2 with patch 5200-04 (64-bit)
- AIX 5.3 (64-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)

Red Hat (x86)

- Red Hat Enterprise Linux 4
- Red Hat Enterprise Linux 4.5

- Red Hat Enterprise Linux 5
- Red Hat Enterprise Linux 5.1

SUSE (x86)

- SUSE Linux Enterprise 10 SP1

Solaris

- Solaris 10 (SPARC and X86) (64-bit)
- Solaris 9 (SPARC) (32-bit)
- Solaris 8 (SPARC) (32-bit)

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

Disk space required in each case is 160MB. See [Installer Disk Space Requirements in Temporary Area, page 22](#) for additional disk space requirements.



For platforms that support 64-bit mode, post installation configuration is required. See [Configuration for 64-bit Mode on page 35](#).

For HP-UX platforms, also see [HP-UX Installations—Configuration for Hot Deployment Feature on page 33](#)

Installation Guidelines

All Installations—Install Required Software First

Some details below do not apply to the 3.0.1 partial installer. If you are first installing BusinessEvents 3.0.0, however, follow the instructions.

Before you can install TIBCO BusinessEvents, you must install TIBCO Runtime Agent and then TIBCO ActiveMatrix BusinessWorks.

TIBCO ActiveMatrix BusinessWorks is required for design-time work, but is not required for BusinessEvents to function at runtime (unless the design of your projects requires it). However, the installer requires ActiveMatrix BusinessWorks to be installed before BusinessEvents. Runtime use of ActiveMatrix BusinessWorks requires a licensed version of the software.

Runtime Installations

Select custom installation and select only the Server option.

Installer Account

TIBCO 5.x products can be installed by a regular (non-root) user and super-user (root). Different users can install the same product at different locations.

Product dependencies at install time are resolved at user level through the installation registry maintained at user's home directory. See [Installation Registry on page 23](#) for more information.

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-Related Files

Installer Disk Space Requirements in Temporary Area

The installer launcher first extracts a Java Virtual Machine (JVM) in a temporary directory and uses this JVM to launch itself. The size of the extracted JVM differs from platform to platform.

On UNIX platforms the following disk space is required in the temporary area:

- On Solaris, 50 MB of free disk space in /var/tmp
- On HP-UX 95 MB of free disk space in /var/tmp
- On AIX, 50 MB of free disk space in /tmp
- On Linux, 50 MB of free disk space in /tmp

If your system does not have sufficient free disk space in the above temporary area, you can still run the installer with a different temporary area by using the following option when starting the installer:

```
install_package_name.bin -is:tempdir /new_tmp
```

where /new_tmp has sufficient free disk space.

Disk Space Requirement in User's Home Directory

On UNIX platforms when a regular (non-root) user installs a TIBCO product, the installation registry (two vpd files) is maintained in the user's home directory. As more products are installed, entries are added into these vpd files.

The user's home directory must at least have 500 KB of free disk space.

Installation History

The installer and uninstaller creates a file called `TIBCOInstallationHistory.xml` in the same location where the installation registry is created. Each time an installation and uninstallation is performed, entries are appended to the file.

User's_Home_Directory/TIBCOInstallationHistory.xml

The file `TIBCOInstallationHistory.xml` therefore contains the record of all installation and uninstallation activities of all products, features and components.



Do not edit, rename, move, or remove the `TIBCOInstallationHistory.xml` file.

Installation Registry

The installer maintains an installation registry. The registry location depends on platform. This section explains where the registry files are located on UNIX platforms. The files have `vpd` as a prefix, which stands for Vital Product Database.



Do not edit, modify, rename, move, or remove any of the registry `vpd` files.

The installation registry is maintained in the following files in the user's home directory:

`User_Home_Directory/vpd.properties`
`User_Home_Directory/vpd.properties.tibco.systemName`

If installation is performed by super-user (root), the installation registry is maintained as follows:

- On Solaris and HP-UX, in the root user's home directory (which is `/`) as two `vpd` files.
- On Linux, in the `/root` directory as two `vpd` files.
- On AIX, in the `/usr/lib/objrepos` directory as two `vpd` files

Installation Log Files

Installation and uninstallation log files are created in the `TIBCO_HOME/log` directory.

Installing on UNIX

After unpacking the software and accepting the license agreement, you can choose to perform a typical install or custom install (full installer only).

- A typical install has minimal prompts and installs standard components in default locations.
- A custom install prompts you to choose which pieces of the product suite to install and installs only those components.

Because you have already installed TIBCO products when you install TIBCO BusinessEvents, an installation home directory for all TIBCO products is established and must be used. The default installation home 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.



TIBCO BusinessEvents installation must be performed by the same user who installed TIBCO Runtime Agent. (Dependency checking will not work correctly unless the same user installs all dependent products.)

Executable File Names

Executable file names for BusinessEvents vary by edition, version number, and platform. The documentation displays the executable file names using variables where needed:

Enterprise Suite: `TIB_be-epe-simple_version_platform`

or

Inference Edition: `TIB_be-simple_version_platform`

where:

- *version* is the three-digit version number for this BusinessEvents release, for example, `3.0.1`
- *platform* is an abbreviated form of the hardware platform for which the executable is intended, for example, `win_x86`.

The executable file names for UNIX platforms are as follows:

Enterprise Suite

IBM AIX: `TIB_be-epe-simple_3.0.1_aix52_power.bin`
 HP-UX PA-RISC: `TIB_be-epe-simple_3.0.1_hpux111_hppa.bin`
 HP-UX Itanium: `TIB_be-epe-simple_3.0.1_hpux112_ia64.bin`
 Linux: `TIB_be-epe-simple_3.0.1_linux24gl23_x86.bin`
 Solaris 8: `TIB_be-epe-simple_3.0.1_sol8_sparc.bin`
 Solaris 10: `TIB_be-epe-simple_3.0.1_sol10_x86.bin`

Inference Edition

IBM AIX: `TIB_be-simple_3.0.1_aix52_power.bin`
 HP-UX: `TIB_be-simple_3.0.1_hpux111_hppa.bin`
 HP-UX: `TIB_be-simple_3.0.1_hpux112_ia64.bin`
 Linux: `TIB_be-simple_3.0.1_linux24gl23_x86.bin`
 Solaris 8: `TIB_be-simple_3.0.1_sol8_sparc.bin`
 Solaris 10: `TIB_be-simple_3.0.1_sol10_x86.bin`

Installation Modes

Use one of the following modes to install TIBCO BusinessEvents:

Install Using GUI Mode

GUI Mode allows you input values in panels. Type the following in a terminal window:

```
% ./TIB_be-epe-simple_3.0.1_platform.bin
```

or

```
% ./TIB_be-simple_3.0.1_platform.bin
```

Install Using Console Mode

Console mode allows you to install the software in a non-windows environment. The installer prompts you for values. Type the following in a terminal window (using Enterprise Suite as an example):

```
% ./TIB_be-epe-simple_3.0.1_platform.bin -is:javaconsole -console
```

When running in console mode, you can move through the installation process as described next:

Enter Key = Moves forward in the installer
 2 = Goes back to previous screen
 3 = Cancels the Wizard and exits the installation or uninstallation
 4 = Redisplays the current screen

Install Using Silent Mode

Silent mode allows you to install the software without prompts. If you do not use a response file, default installation values are used. See next sections for details about generating and using a response file.

Type the following in a terminal window (using Enterprise Suite as an example):

```
% ./TIB_be-epe-simple_3.0.1_platform.bin -is:javaconsole -silent
```

Install and Generate a Response File

You can generate a response file during installation which you can later use to run the installer with the selected values as default values (GUI mode and console mode) or as selected values (silent mode).



The response file does not record selections at the component level. It does record all other selections, for example, which products you plan to install.

To install and generate a response file using GUI mode, use the following (using Enterprise Suite as an example):

```
% ./TIB_be-epe-simple_3.0.1_platform.bin -options-record responseFile
```

To install and generate a response file using console mode, use the following (using Enterprise Suite as an example):

```
% ./TIB_be-epe-simple_3.0.1_platform.bin -is:javaconsole -options-record responseFile
```

Install Using a Response File

You can use a previously generated response file for installation. For non-silent modes, the response file determines the defaults that are presented. For silent mode, the response file determines what will be installed.

To install using GUI mode and a response file, use the following (using Enterprise Suite as an example):

```
% ./TIB_be-epe-simple_version_platform.bin -options responseFile
```

To install using silent mode and a response file, use the following (using Enterprise Suite as an example):

```
% ./TIB_be-epe-simple_version_platform.bin -silent -options responseFile
```


To install using Console mode and a response file, use the following (using Enterprise Suite as an example):

```
% ./TIB_be-epe-simple_version_platform.bin -is:javaconsole -console -options responseFile
```


Chapter 4 **After Installing on UNIX**

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

Topics

- *All UNIX Installations—Directory Permissions, page 30*
- *All UNIX Installations—Check and Update Properties Files, page 32*
- *HP-UX Installations—Configuration for Hot Deployment Feature, page 33*
- *Configuration for 64-bit Mode, page 35*

All UNIX Installations—Directory Permissions

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

Permissions for BusinessEvents Directories

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

bin and Log Directories

```
$TIBCO_HOME/be/3.0/bin  
$TIBCO_HOME/be/3.0/bin/logs  
$TIBCO_HOME/tra/3.0/logs
```

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/3.0/bin/  
% chmod 777 /opt/tibco/be/3.0/bin/logs  
% chmod 777 /opt/tibco/tra/3.0/logs
```

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

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

Palettes Directory

In addition, the `palettes` directory must be writable by all users who will use TIBCO Designer. Users must have write permission for this directory to be able to use the Java activity's `Compile` button.

```
$TIBCO_HOME/be/3.0/lib/palettes
```

Alternatively, change the Java activity's compilation directory by changing the value of `java.property.javaCode` in the `.tra` file that is used to start TIBCO BusinessEvents (`designer.tra` for the TIBCO Designer GUI or the appropriate `.tra` file for the engine if running from a deployment).

Permissions for Decision Manager and RMS Directories

bin Directory

All Decision Manager and RMS users must have read, write, and execute permissions for the `rms/bin` directory.

`TIBCO_HOME/BE/3.0/rms/bin`

See [Permissions for BusinessEvents Directories on page 30](#) for some helpful tips.

RMS Project Directory

Users must have read, write, and execute permissions for the directory where RMS projects are located. By default, the product ships with multi-project configuration and the base location is set to:

`$TIBCO_HOME/BE/3.0/rms/examples.`

You can configure RMS in single-project or multi-project mode using properties in the `BE_HOME/rms/bin/be-rms.tra` file. Set permissions on the directories specified in the properties:

- **For multi-project configuration** `rms.projects.baselocation` directory
- **For single-project configuration** `rms.project.location` directory

RMS directory

The owner of the `BE_HOME/rms/` directory must be the user who runs the RMS server.

To run the server, execute `BE_HOME/rms/bin/be-rms.exe` (or `be-rms.sh`, depending on your operating system).

All UNIX Installations—Check and Update Properties Files

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

Enable Remote Connection to RMS from Decision Manager

1. Open the `BE_HOME/rms/bin/be-rms.tra` file.
2. In the following property specify the host name of the machine where RMS is hosted:

```
tibco.clientVar.RMS/hostname=localhost
```



Decision Manager clients must have direct network connectivity to the RMS server for RMS.

Connections from clients may not work if the RMS server is behind a firewall.

Update JVM Settings

Some of the JVM settings do not work for all platforms, and some platforms use additional, platform-specific parameters.

For example, 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 version installed and other information using the following simple Java program:

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

The system property `com.ibm.vm.bitmode` enables applications to determine the mode in which JVM is running. It returns the following values:

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

HP-UX Installations—Configuration for Hot Deployment Feature

The BusinessEvents hot deployment feature requires JRE 1.5.0.05 or later. TIBCO Runtime Agent 5.5, however, ships with JRE 1.5.0.04. This section explains how to download and install HP-UX JDK version 1.5.0.05 or later, so you can use the hot deployment feature.



An alternative way to address this issue is to upgrade to TIBCO Runtime Agent 5.5.1 or higher.



In the directory paths provided below, substitute the *platform* variable as follows:

- PA_RISC2.0 if you are running on HP-UX PA-RISC
- IA64N if you are running on HP-UX Itanium

1. Download JDK 5.0.05 or later from
<http://www.hp.com/products1/unix/java>
2. Install the download package. The default installation folder is `/opt/java1.5`
3. Make a backup copy of `be-engine.tra`:
`cp TIBCO_HOME/be/3.0/bin/be-engine.tra`
`TIBCO_HOME/be/3.0/bin/be-engine.tra.bak`
4. Modify `be-engine.tra` to point to the new JRE version by making the following three changes.

Change the following section:

```
tibco.env.JVM_LIB_PATH=TIBCO_HOME/jre/1.5.0/lib/platform/hotspot/libjvm.sl
to this:
```

```
tibco.env.JVM_LIB_PATH=/opt/java1.5/jre/lib/platform/hotspot/libjvm.sl
```

Change the following section:

```
tibco.env.JVM_LIB_DIR=TIBCO_HOME/jre/1.5.0/lib/platform
to this:
```

```
tibco.env.JVM_LIB_DIR=/opt/java1.5/jre/lib/platform
```

Change the following section:

```
tibco.env.TIB_JAVA_HOME=TIBCO_HOME/jre/1.5.0
to this:
```

```
tibco.env.TIB_JAVA_HOME=/opt/java1.5/jre
```

5. Verify that `tools.jar` is in the classpath. You can do this by copying it from JDK lib to JRE lib.

```
cp /opt/java1.5/lib/tools.jar /opt/java1.5/jre/lib
```


Configuration for 64-bit Mode

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

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

See [Supported Platforms on page 20](#) for versions supported.

Note that an additional step is required for the HP-UX Itanium platform, if you use JRE 6 (see [HP-UX Itanium with JRE 6 \(1.6.0\) on page 36](#)).

Before You Begin

Configure TIBCO Runtime Agent for 64-bit Mode

To use BusinessEvents in 64-bit mode, you must have TIBCO Runtime Agent configured for 64-bit mode. TIBCO Runtime Agent offers both 32-bit and 64-bit installers for Linux platforms.

However, TIBCO Runtime Agent only offers 32-bit installers for HP-UX and Solaris platforms. Running in 64-bit mode requires property-file modifications. See the *TIBCO Runtime Agent Installation Guide* for more information.

Verify that TIBCO Runtime Agent and other required TIBCO software is configured for 64-bit mode before you continue.

Back up Your TIBCO BusinessEvents Engine Files

Back up BusinessEvents engine and the Rules Management Server (RMS) files:

- The BusinessEvents engine wrapper file, *BE_HOME/bin/be-engine*
- The BusinessEvents engine property file, *BE_HOME/bin/be-engine.tra*
- The RMS engine wrapper file, *BE_HOME/rms/bin/be-rms*
- The RMS engine property file, *BE_HOME/rms/bin/be-rms.tra*

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. Copy `BE_HOME/bin/be-engine64` to `BE_HOME/bin/be-engine`.
 2. Copy `BE_HOME/bin/be-rms64` to `BE_HOME/rms/bin/be-rms`.
 3. Open the `be-engine.tra` file and the `be-rms.tra` file for editing.
 4. In each file, in the `tibco.env.STD_EXT_CP` property, find `%RV_HOME%/lib` and replace it with `%RV_HOME%/lib/tibrvj.jar`.
 5. In each file, you also may want to increase the heap size and memory usage of the Java VM by changing the `tibco.env.APP_ARGS` and `tibco.env.HEAP_SIZE` properties. 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
```
 6. In each file, if you are using either Solaris or HP-UX, make the changes specified in [Table 5, Changes in the RMS Engine Properties File](#).
 7. Save the file. (Remember to update both the `be-rms.tra` and the `be-engine.tra` files.)

Table 4 Platform-dependent changes to property files

Platform	Find...	Change to...
Solaris 10 on SPARC	sparc	sparcv9
Solaris 10 on x86	sparc	amd64
	and	and
	client	server
HP-UX Itanium	IA64N	IA64W

HP-UX Itanium with JRE 6 (1.6.0)

- If you are using the HP-UX Itanium platform, and you are running BusinessEvents using JRE 6 (also known as 1.6.0), 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.)

## Chapter 5      **Installation FAQs and Troubleshooting**

This section lists some common errors along with their causes and solutions.

### **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 1.4.2 or higher. The syntax is:

---

```
TIB_be-simple_3.0.1.0.exe -is:javahome C:\j2sdk1.4.2
 UNIX_package_name.bin -is:javahome /opt/jre142
```

---

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 uninst2 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 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.

## Configuration Errors in 64-bit Environment

### Error message

If you have not performed configuration for 64-bit environments, and you have installed the 64-bit version of TIBCO Runtime Agent, you see errors such as the following.

---

```
Lib name
/space/users//tra550/tibco/jre/1.5.0/lib/sparc/client/libjvm.so
Failed to load shared library, library name :
/space/users//tra550/tibco/jre/1.5.0/lib/sparc/client/libjvm.so
```

---

### Solution

Perform the configuration explained in [Configuration for 64-bit Mode on page 35](#).

## 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**

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

## Chapter 6

# Migrating from Earlier Versions

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 7, Migrating Persistence Data to Backing Store](#), on page 51.



**To Check for Changes in Configuration Properties** Refer to Appendix H, *Deprecated and Unused Properties*, in *TIBCO BusinessEvents User's Guide* to check for any properties you are using. Deprecated properties will not be used in a future release. Unused properties may or may not be used in a future release.

## Topics

---

- [Upgrading From Version 3.0.0, page 42](#)
- [Upgrading from Version 2.x—Cache Object Management, page 46](#)
- [Migrating From BusinessEvents Version 1.4 \(and Earlier\), page 50](#)

## Upgrading From Version 3.0.0

---

If you are upgrading from version 3.0.0, and you use Decision Manager, you must perform some steps before and after installing BusinessEvents.

### Backing Store Schema Change

Backing store schema changed in 3.0.1. See Updating an Existing Backing Store Database Schema in *TIBCO BusinessEvents User's Guide* for instructions to update the schema.

## Before Installing the Current Version

### Task A Back up Configuration Files

The installer overwrites configuration files for RMS and Decision Manager. Before running the installer, backup these configuration files.

If you have not made changes to the configuration files, you can skip this step.

```
BE_HOME/rms/bin/be-rms.tra
BE_HOME/DecisionManager/config/bui-config.tra
BE_HOME/DecisionManager/DecisionManager.ini
```

Where *BE\_HOME* is the BusinessEvents installation directory. By default the installation directory on Windows is `C:\tibco\be\3.0`

### Task B Back up Project Directories

Existing RMS and decision projects remain untouched during the update process, but, as with all valuable data, it is recommended to keep backups.

### Task C Act on All Decision Table Change Commitments for All Worklists

Before migrating, clear all worklists.

The format of the data files used to track Worklist items has changed in version 3.0.1. These changes are due to newly added Worklist features and additional information associated with each commitment request.

As a result, earlier versions of these data files will not work with the current version of Decision Manager.

The current version of Decision Manager adds additional configuration options to allow you to customize the location of the data files used to track Worklist items in the future. (See [Changes in The RMS Engine Properties File on page 44](#)).



## After Installing the Current Version

Carefully read the following sections and make all changes that are relevant to your situation.

### Save all Decision Tables Created in Earlier Versions Before Exporting

After checking out a decision table created in BusinessEvents version 3.0 or earlier, you cannot immediately export the decision table.

First open the decision table in the Decision Manager editor. This action converts the decision table to the current format.

### Decision Manager and RMS

Configuration Changes in Decision Manager and RMS: Ensure you have updated your configuration to account for the following changes.

- [New Resources Require Permissions in Project Access Control Files, page 43](#)
- [Changes in The RMS Engine Properties File, page 44](#)
- [Changes in The Decision Manager Configuration File, page 45](#)
- [Changes in the DecisionManager.ini File, page 45](#)

## New Resources Require Permissions in Project Access Control Files

You must configure permissions for the following new resources:

- Project
- Folder
- DecisionTable

For Example:

---

```
<resources>
...
 <resource id="TABLE" type="DECISIONTABLE"/>
</resources>
<entries>
 <entry>
 <role name="RULE_ADMINISTRATOR" />
 <permissions>
 ...
 <permission resourceref="#TABLE">
 <action type="read">ALLOW</action>
 </permission>
 </permissions>
 </entry>
```

</entries>

Failure to include these new resources in the access configuration file could result in the following error message:

Project checkout failed. : Insufficient privileges for checkout

For an example of an access configuration file (including these new resources), see the following config directories:

BE\_HOME/rms/examples/CreditCardApplication/config  
BE\_HOME/rms/examples/AirlineFlightSystem/config

Changes in The RMS Engine Properties File

The following properties are changed in or added to theBE\_HOME/rms/bin/be-rms.tra file:

Table 5 Changes in the RMS Engine Properties File

Property	Notes
java.property.rms.projects.baselocation	<p>RMS now supports multiple projects. You can keep all of your RMS projects in a single projects directory. This new property define the path to the projects directory.</p> <p>By default, the path is set to BE_HOME/rms/examples.</p> <p>Either move RMS projects to this location, or update the property to point to a different location.</p> <p><b>Note</b> Single-project mode is still supported. See <i>TIBCO BusinessEvents Decision Manager</i> for configuration details.</p>
tibco.env.HEAP_SIZE	<p>To support large decision tables, the amount of RAM allocated for the heap has increased from 256MB to 1024MB.</p>
tibco.env.STD_EXT_CP	<p>The standard class path for RMS has been updated.</p>
java.property.rms.project.workflow.config.file	<p>This new property defines the location of the workflow configuration file. The concept of a decision project workflow is new in this release.</p>

Table 5 Changes in the RMS Engine Properties File

Property	Notes
<code>tibco.clientVar.RMS/hostname</code>	As mentioned in <a href="#">After Installing—Check and Update Properties Files on page 17</a> and <a href="#">All UNIX Installations—Check and Update Properties Files on page 32</a> , set the value of this property to your actual hostname. The value as shipped is as follows:  <code>tibco.clientVar.RMS/hostname=localhost</code>
<code>tibco.clientVar.RMS/storageLocation</code>	This new property enables you to configure where to store the database that maintains all project Worklist information. The default location is <code>BE_HOME/rms/bdb</code> .
<code>java.property.rms.auth.file.location</code>	When RMS is configured to support multiple projects, the authentication configuration file (which defines users, passwords, and role memberships for RMS) applies to all projects managed by RMS. The value is interpreted differently depending on whether you use multi-project or single project mode: <ul style="list-style-type: none"><li>• In multi-project mode, the configuration setting that defines where the authentication file is located is defined relative to the <code>baseLocation</code> property.</li><li>• In single project mode, the path is defined relative to the project directory.</li></ul>

### Changes in The Decision Manager Configuration File

The `tibco.bui.codegen.prepend_classpath` property in the `bui-config.tra` file has been changed.

An additional parameter has been provided to enable extension of the classpath used to find JAR files containing custom Java functions.

### Changes in the DecisionManager.ini File

The `DecisionManager.ini` file defines custom arguments to the JVM when running Decision Manager.

In order for Decision Manager to handle very large decision projects, the RAM allocated to the application has increased as follows:

```
-Xms1024m
-Xmx1024m
```

## Upgrading from Version 2.x—Cache Object Management

---

Cache OM was improved and simplified in many ways in version 3.0.0 and 3.0.1.

It is strongly recommended that you read relevant sections of the *TIBCO BusinessEvents User's Guide* documentation to understand the new object management options and reconfigure your projects accordingly. The main items that require reconfiguration are presented in this migration guide. However, some impacts of configuration changes may not be documented here.

To learn about the 3.x Cache object management options use the following resources:

- Caching and backing store tutorials in *TIBCO BusinessEvents Getting Started*.
- All object management options documented in *TIBCO BusinessEvents User's Guide*, beginning with Chapter 14, Understanding Object Management and Fault Tolerance.

### Configure the Caching Scheme and Related Cluster Properties

Note that cluster discovery configuration has not changed and does not require migration. However caching scheme configuration has changed.

In 3.x all caching schemes supported out of the box are distributed caching schemes. The best options for most use cases have been determined and much of the need for custom configuration has been removed.

In 2.x you chose the caching scheme using a Cache Name setting in the BAR resource Configuration tab (the field does not exist in 3.x).

In 3.0.0 you chose the caching scheme using the following property:

```
be.engine.cluster.cacheType
```

Remove the above property.

#### To Specify a Caching Scheme

Set the following properties in all engine property files as needed:

```
be.engine.cluster.hasBackingStore
```

```
be.engine.cluster.isCacheLimited
```

```
java.property.be.engine.limited.cache.back.size.limit
```

## Quorum of Cache Servers

To determine how many storage-enabled nodes start before data is loaded from a backing store, and before agents become fully active:

```
be.engine.cluster.minCacheServers
```

See *Configuring Caching Scheme, Multi-Engine, and Cluster Properties* in *TIBCO BusinessEvents User's Guide*.

## If You Use a Custom Cache Configuration File in 2.x

Improvements to caching schemes used in 3.x mean that customizing the cache configuration file is generally not required.

Unless directed by TIBCO Support, there is no need to customize the descriptor in this release.

If you used a customized `coherence-cache-config.xml` file contact TIBCO to determine how to implement the same functionality in the current version.

## Configure Cache Servers

It is recommended that production systems use dedicated cache servers.

To deploy any EAR file that contains at least one BAR resource engine as a cache server, set one engine property:

```
be.engine.cacheServer=true
```

Any other agent-level properties are ignored

## No Cache Loaders in 3.x

In BusinessEvents 2.x, one engine has the role of cache loader. The cache loader was a cache server with an extra job: it loads the objects from the backing store database to the cache at startup.

In BusinessEvents 3.x, any node can take on the role of cache loader at startup and you do not configure one engine to act as the cache loader. Before cache loading begins, a specified number of cache servers and other storage-enabled nodes must be started to hold the data which must be loaded from the backing store.

## Choose Multi-Engine or Single-Engine Mode

With Cache OM, inference agents can be deployed in multi-engine mode to achieve load balancing and ruleset chaining between agents in an agent group.

To use multi-engine mode, set the following property in all engine property files:

```
be.engine.cluster.multiEngineOn=true
```



Carefully read all related content in *TIBCO BusinessEvents User's Guide*. You may need to make some changes to the design of your project to account for concurrently active agents. See *Designing With Multiple Active Inference Agents* in *TIBCO BusinessEvents User's Guide*.

## Configure Inference Agents

From version 3.0 and higher, BusinessEvents BAR resources deploy as inference agents, by default. With Cache OM, you must configure agent settings as follows.

(A new Type field on the BAR resource Configuration tab lets you deploy a BAR as a query agent or an inference agent. Inference agent is the default value. Query agents, available in BusinessEvents Enterprise Suite only, and used only with Cache OM, are new in 3.x and so they won't pose any migration issues.)

**Agent Groups** An agent group created when you deploy the same EAR, containing one or more inference agent BAR files, more than one time. Each instance of an agent in each JVM forms an agent group. Many agent-levels settings require you to specify the agent group name.

### To Configure Inference Agents (Cache OM)

1. Open the project in TIBCO Designer and in the BAR resource Configuration tab, enter a name for the inference agent group. It is recommended that you use BAR resource name as agent group name.
2. in each node's TRA file, uniquely identify each agent in a group using the following property (required for recovery of scorecards).

```
Agent.AgentGroupName.key
```

3. You can also configure the following properties if default values are not suitable:

```
Agent.AgentGroupName.llCacheSize
```

```
Agent.AgentGroupName.threadcount
```

```
Agent.AgentGroupName.recoveryPageSize
```

Configure fault tolerance settings as explained next.

## Configure Fault Tolerance Settings

For In Memory object management, fault tolerance configuration has not changed in 3.x.

If you use Cache OM, you must reconfigure fault tolerance when you configure the inference agents.

Fault tolerance in 3.x is set at the inference agent level. Fault tolerance is provided between agents in an agent group.

### To Configure Fault Tolerance

1. Remove the following properties from your engine properties files (be-engine.tra files or supplementary files you use to set engine properties):

```
be.ft.nodename
Engine.FT.GroupName
Engine.FT.UseFT
Engine.FT.Weight
```

In 3.x, the above FT properties are used for In Memory object management only.

2. If you are using multi-engine mode, configure the following property to the same value in all nodes:

```
Agent.AgentGroupName.maxActive
```

If you deploy more agents in a group than the maxActive number, those agents are deployed in inactive mode.

3. For both multi-engine and single-engine modes, configure the following property using a different value in each node:

```
Agent.AgentGroupName.priority
```

Priority determines which agents start up first and therefore which agents remain inactive. Smaller numbers indicate higher priorities (one is the highest priority).

Each instance of an agent deploys in a different node (engine). Therefore set the priority as needed in each engine's property file to determine failover and fallback behavior. Remember to configure the settings for each agent group, if an EAR file contains more than one BAR.

For example in one TRA file you might have two agent groups configured as follows:

```
Agent.AcmeGroup.maxActive=3
Agent.AcmeGroup.priority=1

Agent.Mygroup.maxActive=2
Agent.Mygroup.priority=1
```

## Migrating From BusinessEvents Version 1.4 (and Earlier)



**Migration From BusinessEvents Versions Earlier than Version 1.4** You can directly upgrade from BusinessEvents 1.4 and higher to 3.0.1. If you are upgrading from an earlier release, first upgrade to 1.4.

BusinessEvents 1.0 and 1.1 required `be-tsm.jar` to be made available to TIBCO Administrator. When you uninstall one of these versions, also delete `be-tsm.jar` from `TRA_HOME/5.x/lib` both on the machines that run BusinessEvents and the machine that runs Administrator.

Your migration path from 1.4 to the current version depends on whether you want to use Persistence object management or Cache object management in the current version.

### Migrating from 1.4 Persistence OM to 3.0.1—Persistence OM

If you use Persistence OM and want to continue to do so in 3.0.1, do not uninstall version 1.4 until you have completed migration procedures.

First upgrade to 2.2 and migrate your persistence database, and then upgrade to 3.0.1.

You'll need a BusinessEvents 1.4 installation, a BusinessEvents 2.2 installation, and an SQL database to perform the data migration. You'll also need your 1.4 project files, and a copy of your 1.4 project files saved in BusinessEvents 2.2.

To migrate to version 2.2, carefully follow instructions provided in the *TIBCO BusinessEvents Installation* guide for version 2.2, Chapter 5, Persistence Data Migration.

### Migrating from 1.4 with Persistence OM to Version 3.0.1 with Cache and Backing Store

If you use Persistence OM and want use Cache OM in 3.0.1, you can upgrade directly to 3.0.1. There is no need to upgrade to an intermediate version.

Keep the persistence database for each BAR available for migration. As with any operation that affects data, also keep a backup copy.

For complete instructions for migrating from the persistence database to a backing store database, see [Chapter 7, Migrating Persistence Data to Backing Store](#), on page 51.



## Chapter 7

# 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 Backing Store, page 52\*](#)
- [\*Migration Utility Usage and Parameters, page 56\*](#)
- [\*Migration Export Reference Tables, page 59\*](#)

## Migrating Data from Persistence Database to 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. 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 [Migration Export Reference Tables on page 59](#).

### 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 56](#) 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
<code>be.migration.import.multithreads</code>	<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 Backing Store on page 52</a></p>
<code>be.migration.oracle.poolSize</code>	<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 Backing Store on page 52</a>.</p>
<code>be.migration.import.threads</code>	<p>Allocates JVM threads to be used by the migration utility. If <code>be.migration.import.multithreads</code> 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 Backing Store on page 52</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 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 backing store database schema. See Backing Store Database Configuration Tasks in *TIBCO BusinessEvents User's Guide*.

It is recommended that you read all of Chapter 24, Setting up a Backing Store Database.

### 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 [Migration Utility Usage and Parameters on page 56](#) 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.

## 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 <i>persistence_db_dir</i>	/bdb	N/A	Indicates that the export is for a persistence database.  -bdb is the default value.
-conn <i>connection_string</i>	/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>tibco</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> <p>See Determining the TIBCO Repo URL for BusinessEvents in <i>TIBCO BusinessEvents User's Guide</i> for a way to determine the repo URL.</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>



## 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</i> -properties 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 65.
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 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 65.
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 59](#)).

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



# Index

## Numerics

64-bit mode, configuration [35](#)

## A

AIX, configuring for 64-bit mode [36](#)

## B

BE\_HOME [xi](#)

before installing BusinessEvents

UNIX [20](#)

Windows [10](#)

## C

console mode installation [2](#)

UNIX [25](#)

Windows [15](#)

customer support [xiv](#)

## D

DISPLAY variable [37](#)

## G

GUI mode installation [2](#)

UNIX [25](#)

Windows [15](#)

GUI mode installation (Windows) [15](#)

## H

history

installation on UNIX [23](#)

installation on Windows [12](#)

hot deployment

configuration for on HP-UX installations [33](#)

HP-UX

configuration for hot deployment feature [33](#)

configuring for 64-bit mode [36](#)

HP-UX 64 bit installation error and solution [39](#)

## I

installation

console mode [2](#)

frequently asked questions [37](#)

GUI mode [2](#)

on Windows 2000 Terminal Server [11](#)

required and optional TIBCO products [6](#)

running out of disk space [38](#)

See also installer

silent mode [2](#)

installation on UNIX

64-bit configuration [35](#)

after installing on HP-UX, hot deployment

- feature 33
- after installing, all UNIX Platforms 30
- DISPLAY variable 37
- executable file names 24
- files 22
- guidelines 21
- history 23
- HP-UX 64 bit error and solution 39
- installer account 22
- log files 23
- modes 25
- registry 23
- response file 26
- using console mode 25
- using GUI mode 25
- using silent mode 26
- installation on Windows
  - executable file names 14
  - files 12
  - guidelines 11
  - history 12
  - installer account 11
  - log files 13
  - modes 15
  - registry 12
  - response file 16
  - using console mode 15
  - using GUI mode 15, 15
- installer
  - installer account (UNIX) 22
  - installer account (Windows 11
  - options 2
  - overview 2
- installer (UNIX)
  - disk space requirements 22
  - disk space requirements in user's home directory 22
- installer (Windows)
  - disk space requirements 12
- installing BusinessEvents on UNIX 24
- installing BusinessEvents on Windows 14

## J

### JVM

- if crashes during installation 37

## L

Linux, configuring for 64-bit mode 36, 36

### log files

- installation log files on UNIX 23
- installation log files on Windows 13

## M

### Microsoft Windows

- before installing BusinessEvents 10
- installing BusinessEvents 14
- See also installation on Windows
- supported platforms 10
- uninstalling BusinessEvents 4

## N

network drive, installing from (Windows) 11

## R

### registry

- installation on UNIX 23
- installation on Windows 12

required TIBCO products for BusinessEvents  
installation 6

### response file

- UNIX 26
- Windows 16

## S

- silent mode installation [2](#)
  - UNIX [26](#)
- Solaris 10
  - configuring for 64-bit mode [36](#)
- support, contacting [xiv](#)
- supported UNIX platforms [20](#)
- supported Windows platforms [10](#)

## T

- technical support [xiv](#)
- TIBCO BusinessEvents
  - uninstalling [4](#)
  - upgrading [5](#)
- TIBCO Runtime Agent
  - configuring for 64-bit mode [35](#)
- TIBCO Runtime Agent, install first (Windows) [11](#), [21](#)
- TIBCO\_HOME [xi](#)

## U

- uninst2 directory [38](#)
- uninstalling BusinessEvents [4](#)
- UNIX
  - before installing BusinessEvents [20](#)
  - installing BusinessEvents [24](#)
  - supported platforms [20](#)
  - uninstalling BusinessEvents [4](#)
  - windowing environment for installation [22](#)
- upgrading BusinessEvents [5](#)

## W

- Windows 2000 Terminal Server, installing on [11](#)
- windows. See Microsoft Windows