

IBM WebSphere Business Integration Adapters



# Adapter for PeopleSoft (Version 7.x) User Guide

*Version 3.5.x*

**Note!**

Before using this information and the product it supports, read the information in "Notices" on page 59.

**25June2004**

This edition of this document applies to the adapter for PeopleSoft 7.x version 3.5.0 and to all subsequent releases and modifications until otherwise indicated in new editions.

To send us your comments about this documentation, e-mail [doc-comments@us.ibm.com](mailto:doc-comments@us.ibm.com). We look forward to hearing from you.

When you send information to IBM, you grant IBM a nonexclusive right to use or distribute the information in any way it believes appropriate without incurring any obligation to you.

© **Copyright International Business Machines Corporation 2000, 2003. All rights reserved.**

US Government Users Restricted Rights – Use, duplication or disclosure restricted by GSA ADP Schedule Contract with IBM Corp.

---

# Contents

<b>About this document</b> . . . . .	<b>v</b>
Audience . . . . .	v
Related documents . . . . .	v
Typographic conventions . . . . .	vi
<b>New in this release</b> . . . . .	<b>vii</b>
New in Release 3.5.x . . . . .	vii
New in Release 3.4.x . . . . .	vii
New in Release 3.3.x . . . . .	viii
<b>Chapter 1. Overview of the connector</b> . . . . .	<b>1</b>
Communication between the connector and PeopleSoft . . . . .	1
<b>Chapter 2. Installing and configuring the connector</b> . . . . .	<b>3</b>
Adapter environment . . . . .	3
Prerequisites . . . . .	4
Installing the connector . . . . .	5
Required modifications . . . . .	5
Event table structure . . . . .	7
Configuring the connector . . . . .	8
Creating multiple versions of the connector . . . . .	10
Starting the connector . . . . .	11
Stopping the connector . . . . .	12
Loss of connection to the application . . . . .	13
<b>Chapter 3. Developing business objects for the connector</b> . . . . .	<b>15</b>
Business object application-specific text . . . . .	15
Modifying business objects for the connector . . . . .	16
Transaction processing for hierarchical business objects . . . . .	19
Sample business object definition file . . . . .	19
BO_PsftEmployee business object . . . . .	20
<b>Appendix A. Standard Configuration Properties for Connectors</b> . . . . .	<b>25</b>
New and deleted properties . . . . .	25
Configuring standard connector properties . . . . .	25
Summary of standard properties . . . . .	26
Standard configuration properties . . . . .	31
<b>Appendix B. Connector Configurator</b> . . . . .	<b>43</b>
Overview of Connector Configurator . . . . .	43
Starting Connector Configurator . . . . .	44
Running Configurator from System Manager . . . . .	44
Creating a connector-specific property template . . . . .	45
Creating a new configuration file . . . . .	47
Using an existing file . . . . .	48
Completing a configuration file . . . . .	49
Setting the configuration file properties . . . . .	50
Saving your configuration file . . . . .	55
Changing a configuration file . . . . .	56
Completing the configuration . . . . .	56
Using Connector Configurator in a globalized environment . . . . .	56
<b>Notices</b> . . . . .	<b>59</b>
Programming interface information . . . . .	60

Trademarks and service marks . . . . . 61

---

## About this document

The IBM<sup>®</sup> WebSphere<sup>®</sup> Business Integration Adapter portfolio supplies integration connectivity for leading e-business technologies, enterprise applications, and legacy and mainframe systems. The product set includes tools and templates for customizing, creating, and managing components for business process integration.

This document describes the installation, configuration, and business object development for the IBM WebSphere Business Integration Adapter for PeopleSoft 7.x.

---

## Audience

This document is for IBM WebSphere Business Integration Adapter Framework consultants and customers. To use the information in this document, you should be knowledgeable in the following areas:

- Connector development
- Business object development
- PeopleSoft application architecture
- PeopleSoft Tools

---

## Related documents

The complete set of documentation available with this product describes the features and components common to all WebSphere Business Integration Adapters installations, and includes reference material on specific components.

You can install related documentation from the following sites:

- For general adapter information; for using adapters with WebSphere message brokers (WebSphere MQ Integrator, WebSphere MQ Integrator Broker, WebSphere Business Integration Message Broker); and for using adapters with WebSphere Application Server, see the IBM WebSphere Business Integration Adapters InfoCenter:  
<http://www.ibm.com/websphere/integration/wbiadapters/infocenter>
- For using adapters with WebSphere InterChange Server, see the IBM WebSphere InterChange Server InfoCenters:  
<http://www.ibm.com/websphere/integration/wicserver/infocenter>  
<http://www.ibm.com/websphere/integration/wbicollaborations/infocenter>
- For more information about WebSphere message brokers:  
<http://www.ibm.com/software/integration/mqfamily/library/manualsa/>
- For more information about WebSphere Application Server:  
<http://www.ibm.com/software/webservers/appserv/library.html>

These sites contain simple directions for downloading, installing, and viewing the documentation.

---

## Typographic conventions

This document uses the following conventions:

---

<code>courier font</code>	Indicates a literal value, such as a command name, file name, information that you type, or information that the system prints on the screen.
<b>bold</b>	Indicates a new term the first time that it appears. Indicates a variable name or a cross-reference.
<i>blue text</i>	Blue text, which is visible only when you view the manual online, indicates a cross-reference hyperlink. Click any blue text to jump to the object of the reference.

---

---

## New in this release

---

### New in Release 3.5.x

Updated in June, 2004.

The adapter now supports PeopleTools version 7.63.

---

### New in Release 3.4.x

Updated in December, 2003.

Adapter installation information has been moved from this guide. See Chapter 2 for the new location of this information.

The adapter for PeopleSoft 7.x is no longer supported on Microsoft Windows NT.

Updated in March, 2003.

The “CrossWorlds” name is no longer used to describe an entire system or to modify the names of components or tools, which are otherwise mostly the same as before. For example “CrossWorlds System Manager” is now “System Manager,” and “CrossWorlds InterChange Server” is now “WebSphere InterChange Server.”

The IBM WebSphere Business Integration Adapter for PeopleSoft 7.x includes the connector for PeopleSoft 7.x. This adapter operates with both the InterChange Server (ICS) and WebSphere MQ Integrator integration brokers. An integration broker, which is an application that performs integration of heterogeneous sets of applications, provides services that include data routing.

This adapter includes:

- An application component specific to PeopleSoft
- PeopleSoft ODA
- A sample business object , included in the \connectors\PeopleSoft7\samples directory
- IBM WebSphere Adapter Framework, which consists of:
  - Connector Framework
  - Development tools (including Business Object Designer and Connector Configurator)
  - APIs (including ODK, JCDK, and CDK)

This manual provides information about using this adapter with both integration brokers: InterChange Server (ICS) and WebSphere MQ Integrator.

**Important:** Because the connector has not been internationalized, do not run it against InterChange Server version 4.1.1 if you cannot guarantee that only ISO Latin-1 data will be processed.

---

## New in Release 3.3.x

Version 3.3.1 of the IBM CrossWorlds Connector for PeopleSoft 7.x includes the following new features and changes:

- Two new field mappings have been added to the Message Agent queues: `keylist` and `poll_delay`.



---

## Chapter 1. Overview of the connector

This chapter describes the connector component of the IBM WebSphere Business Integration Adapter for PeopleSoft 7.x. The connector enables a supported integration broker to exchange business objects with PeopleSoft 7.55 and 7.57 applications.

Connectors consist of two parts: the connector framework and the application-specific component. The connector framework, whose code is common to all connectors, acts as an intermediary between the integration broker and the application-specific component. The application-specific component contains code tailor to a particular application. The connector framework provides the following services between the integration broker and the application-specific component:

- Receives and sends business objects
- Manages the exchange of startup and administrative messages

This document contains information about the connector framework and the application-specific component. It refers to both of these components as the connector.

For more information about the relationship of the integration broker to the connector, see the System Administration Guide, or the WebSphere Business Integration Adapters Implementation Guide for MQ Integrator.

The connector works with the following databases: Informix, SQLBase, Oracle, Sybase, Microsoft, DB2, DB2ODBC, DB2MDI, DB2400, DB2Unix.

---

## Communication between the connector and PeopleSoft

### Business object operations

The connector inserts data into PeopleSoft by using the PeopleSoft Message Agent API and a set of message definitions for each business object.

### Event notification

For event notification, the connector uses PeopleCode to populate an event queue table when an event of interest to the integration broker occurs in PeopleSoft. The connector polls the event queue table at a configurable interval, retrieves the events by using the PeopleSoft Message Agent API, processes the events, and archives the events.

Processed events and unsubscribed events are archived by means of PeopleCode on the event work table. The code removes events from the event table and copies them to an archive table. The event and archive tables are installed with database upgrades for each database supported by the connector. See “Performing a selective application upgrade” on page 5 for information on the event queue table.



---

## Chapter 2. Installing and configuring the connector

This chapter describes how to install the IBM WebSphere Business Integration Adapter for PeopleSoft 7.x and how to configure the PeopleSoft application to work with the connector. It contains the following sections:

- “Adapter environment”
- “Prerequisites” on page 4
- “Installing the connector” on page 5
- “Required modifications” on page 5
- “Event table structure” on page 7
- “Configuring the connector” on page 8
- “Creating multiple versions of the connector” on page 10
- “Starting the connector” on page 11
- “Stopping the connector” on page 12
- “Loss of connection to the application” on page 13

---

### Adapter environment

Before installing, configuring, and using the adapter, you must understand its environment requirements. They are listed in the following section.

- “Broker compatibility”
- “Adapter platforms” on page 4
- “Globalization” on page 4

### Broker compatibility

The adapter framework that an adapter uses must be compatible with the version of the integration broker (or brokers) with which the adapter is communicating. Version 3.5.0 of the adapter for PeopleSoft 7 is supported on the following adapter framework and integration brokers:

- **Adapter framework:**  
WebSphere Business Integration Adapter Framework versions 2.1, 2.2, 2.3.x, and 2.4.
- **Integration brokers:**
  - WebSphere InterChange Server, versions 4.1.1, 4.2, 4.2.1, 4.2.2
  - WebSphere MQ Integrator, version 2.1.0
  - WebSphere MQ Integrator Broker, version 2.1.0
  - WebSphere Business Integration Message Broker, version 5.0

See *Release Notes* for any exceptions.

**Note:** For instructions on installing your integration broker and its prerequisites, see the following guides.

For WebSphere InterChange Server (ICS), see *IBM WebSphere InterChange Server System Installation Guide for UNIX or for Windows*.

For WebSphere message brokers, see *Implementing Adapters with WebSphere Message Brokers*.

## Adapter platforms

The adapter is supported on the following software.

### Operating systems:

- Windows 2000

### Third-party software

- PeopleTools 7.55 and 7.57, and PeopleTools 7.63

## Globalization

This adapter is not DBCS (double-byte character set)-enabled or translated.

---

## Prerequisites

This section describes the software components you must install and the tasks you must perform before installing and running the connector.

### User account setup

You must create a user account in PeopleSoft for the connector. The user account can have any valid PeopleSoft username and password. It must have privileges to retrieve, insert, update and delete data from the appropriate application panels and the cw event panel in the PeopleSoft system. For example, if the connector handles customer data, the connector's user account must have privileges to access and modify data in all relevant customer panels.

The user account must be configured so that it never times out. Since the connector uses the Message Agent to insert and extract business objects from the PeopleSoft server, the Message Agent must be running when the connector accesses the PeopleSoft system. If the connector times out, the Message Agent closes. As a result, the connector logs an error message every time it accesses the PeopleSoft system — at every poll, retrieve, create, and update.

To configure the user account so that it never times out:

1. Open the People Tools Security Administrator.
2. Open the class which contains the user account.
3. Select the Never Time-Out radio button in the Time-Out Minutes group box.

### Upgrading from a previous version

If you are upgrading from a previous version of the product, the configuration properties in the repository definition file may have changed. See "Configuring the connector" on page 8.

#### Deleting the previously installed connector

If you have an earlier version of the connector installed, you must delete the connector and as well as its customized components in the PeopleSoft environment. This includes all supporting menus, panels, records, event and archive tables, and the IBM WebSphere business integration adaptor business process.

---

## Installing the connector

For information on installing WebSphere Business Integration adapter products, refer to the *Installation Guide for WebSphere Business Integration Adapters*, located in the WebSphere Business Integration Adapters Infocenter at the following site:

<http://www.ibm.com/websphere/integration/wbiadapters/infocenter>

---

## Required modifications

The connector installation includes a set of Data Mover data files containing menu definitions, panel definitions, record definitions, and PeopleCode required to support the connector. These files are used to create the following:

- Event queue tables that store event notifications, and an archive table that stores processed events.
- An Application Engine used to move events between event tables.
- A derived work record for storing temporary values and PeopleCode.
- A set of PeopleSoft message definitions for each business object/verb combination. Message definitions are stored either in the Connector Integration activity in the IBM WebSphere business integration adaptor business process or, when ICS is the integration broker, in the activities and business processes associated with supported collaborations. For example, message definitions for Employee object/verb combinations are found in the CWEmployee activity in the CWEMPLOYEE business process.

## Performing a selective application upgrade

To copy the required business-integration objects into the PeopleSoft database, you must perform a selective application upgrade. The upgrade process involves copying the objects from a source database, the application upgrade database (AUIDB), to the target database in the PeopleSoft environment. For detailed information on Application Upgrader, see the PeopleSoft Administration Tools guide.

Before performing the application upgrade you must create and prepare the AUIDB by performing the following steps:

1. Create a new database to use as the upgrade database.
2. Launch the PeopleTools Data Mover by double clicking the PSDMT.EXE file. The Data Mover window appears.
3. Import the file  
%ProductDir%\connectors\PeopleSoft\PeopleSoft7\dependencies\DataMover\CWUpPrj.dat into the upgrade database.
4. In Data Mover, open the script %PeopleSoft%\script\auimport.dms.
5. Run the script by selecting File>Run Script, or by clicking the Run Script button. The message definition data is imported. Ensure that the Successful Completion message appears.

At this point, it is a good idea to run a comparison report between the AUIDB and the target database. However, if you are certain that there are no business-integration objects in the target database, you can skip this report and perform the application upgrade.

Perform the application upgrade as follows:

1. Log on to the AUIDB.

2. In the Application Designer, open the CWUpgPrj project.
3. From the Tools menu, select Copy>Upgrade.
4. Sign on to the target database by clicking Signon. The Signon screen is displayed. Enter the name of the target database, operator ID, and password.
5. In the Copy dialog box, select the Export Project check box. Make sure that all other items in the list box are also selected, then click Copy.  
If PeopleSoft is the source application, you may skip the next two steps.
6. To complete the installation of the event tables, go to Data Designer and perform a SQL Table Create against XR\_EVENT, XR\_FUTURE\_EVENT, TMP\_FUTURE\_EVENT, and XR\_ARCHIVE.
7. Go to Data Designer and perform a SQL View Create against XR\_SRCH.
8. In the PeopleSoft Security Administrator, open the Operator class for the connector and give this class the privileges to use all items in the EVENT\_NOTIFICATION menu group.

To test that the application upgrade executed successfully:

1. Close all PeopleSoft windows.
2. Log out of the application, then log back in.
3. Select the Start Menu, and confirm that the Event Notification menu is displayed.

## Importing the application engine

**Note:** The Application Engine is not required if the connector does not support PeopleSoft as a target application.

The Application Engine is a batch process that moves events from the future events table to the event table. To import the Application Engine follow these steps:

1. In your Data Mover window, import the file  
%ProductDirS%\connectors\PeopleSoft\PeopleSoft7\dependencies\DataMover\CWAE.dat into the production database.
2. In Data Mover, open the script CWAEIn.dms.
3. Run the script by selecting File>Run Script or by clicking the Run Script button.
4. When the script runs successfully, open the Process Scheduler and schedule XR\_MOVE to run at midnight every night. For information on using the Process Scheduler, see the PeopleSoft Administration Tools manual.

## Installing message definitions

Next you must import message definitions to support WebSphere Business Integration Adapter Framework business objects. The message definitions enable the connector to communicate with the PeopleSoft system via the Message Agent API. The import script file, CWBPIn.dms, is located in %ProductDirS%\connectors\PeopleSoft\PeopleSoft7\dependencies\DataMover. This file contains the following scripts:

*Table 1. Message definition scripts*

Script	Message definitions
CWBP.dat	Event notification message definitions
CWEMPL.dat	Employee message definitions
CWDEPT.dat	Department message definitions

Table 1. Message definition scripts (continued)

Script	Message definitions
CWEMPL_757.dat	Employee message definitions for use with PeopleTools 7.57

To import the message definitions into the PeopleSoft system, follow these steps:

1. In the Data Mover window, open the .dms scripts for the business objects you need to support.
2. Run the scripts by selecting File>Run Script or by clicking the Run Script button. Ensure that the Successful Completion message is displayed. The message definition data is imported.

**Note:** If the message definition import fails, use delbp.sql to delete all WebSphere Business Integration Adapter Framework message definitions, then repeat the import steps. The delbp.sql file is located in %ProductDir%\connectors\PeopleSoft\PeopleSoft7\dependencies\DataMover.

## Embedding PeopleCode into panels

To enable triggering for Department and Employee business objects, you must embed fields in certain panels. Table 2 details which embedded fields are required for each business object.

Table 2. Business object triggering fields

Business object	Use for	Field name	Panel	Level
Department	Event notification	DEPT_TRIGGER	DEPT_TBLGBL_SBP	Level 0
Employee	Event notification	EMPL_PERS_TRIGGER	PERSONAL_DATA2	Level 0
Employee	Event notification	EMPL_JOB_TRIGGER	JOB_DATA1	Level 0
Employee	Request	EMPL_OTHERPHONE	PERSONAL_DATA2	Level 1 (phone scrollbar)

To embed fields in the appropriate panels:

1. In Panel Designer, open the panel for the appropriate business object listed in Table 2.
2. On the menu bar, select Add >Edit Box.
3. Click on the panel to drop an edit box on the panel.
4. Right click on the field and select Record from the popup menu.
5. In the Edit Box Record dialog box, enter XR\_EVENT\_WRK for Record Name, and enter the related Field Name from the table above.
6. Click OK and right click on the Edit Box again.
7. Select Use from the popup menu.
8. Select the Invisible check box, and click OK.

## Event table structure

When an event occurs in the PeopleSoft application, the event is placed in an event queue table named XR\_EVENT. The connector polls this table at a configurable interval and processes the events sequentially.

The event queue table and archive queue table have the following structure. However, only the archive table has the PROCESS\_KEY field.

*Table 3. Event queue and archive queue table structure*

Name	Type	Constraint	Description
PROCESS_KEY	Datetime	Not NULL	Unique key for the event result set. The key is the date and time stamp when the event was processed. Used by the archive table only.
CWPRIORITY	char 3		Event priority.
EVENT_KEY	Datetime	Not NULL	Unique key for the event. The key is the date and time stamp when the event was processed.
OBJ_SETID	char 5		TableSetID for the PeopleSoft object.
OBJECT_ID	char 18		Unique ID for the PeopleSoft object.
OBJECT	char 18		Name of the PeopleSoft object.
DOVERB	char 15		Name of the action taken on the PeopleSoft object.
KEYLIST	char 51		List of non-primary object keys. Keys are listed in name=value format and delimited by a colon (:).
PRCS_FLG	char 3		Process flag to indicate the state of the event. The values can be: <ul style="list-style-type: none"> <li>• N = Not processed</li> <li>• P = Successfully processed</li> <li>• NS = Event not subscribed to</li> <li>• E = Error</li> </ul>

## Configuring the connector

Connectors have two types of configuration properties: standard configuration properties and connector-specific configuration properties. You must set the values of these properties before running the connector.

A connector obtains its configuration values at startup. During a run-time session, you might want to change the values of one or more connector properties. Changes to some connector configuration properties, such as AgentTraceLevel, take effect immediately. Changes to other connector properties require component restart or system restart after a change. To determine whether a property is dynamic (taking effect immediately) or static (requiring either connector component restart or system restart), refer to your integration broker's administration utility. For instance, if you are using ICS, see the Update Method column in the Connector Properties window of the System Manager.

### Standard connector properties

Standard configuration properties provide information that all connectors use. See Appendix A, "Standard Configuration Properties for Connectors," on page 25 for documentation of these properties.

**Important:** Because this connector supports all integration brokers, configuration properties for all brokers are relevant to it.

**Note:** Because this connector is single-threaded, it cannot take advantage of the AgentConnections property.



## Connector-specific properties

Connector-specific configuration properties provide information needed by the connector at run time. Connector-specific properties also provide a way of changing static information or logic within the connector without having to recode and rebuild the connector.

Table 4 lists the connector-specific configuration properties for the connector. See the sections that follow for explanations of the properties.

Table 4. Connector-specific configuration properties

Name	Possible values	Default value
ApplicationPassword		PS
ApplicationUserName		PS
AppServerMachineNameOrIP		
ConnectErrors		Unable to connect to destination:ORACLE not available:TNS:listener failed:Could not connect to application server:Database access is not allowed:Failed to establish MsgAPI service context for operator
disableCrossReferencing	True/False	Enables or disables cross referencing. The default is false, cross referencing is enabled.
PollQuantity	1 to 500 (maximum)	25
PortNumber		7000
PeopleToolsVersion		7.57
Priority	0-n	0
UseDefaults		false

### ApplicationPassword

The Password for the connector's user account.

### ApplicationUserName

The Name of the connector's user account. ApplicationUserName is the OperatorID in PeopleSoft.

### AppServerMachineNameOrIP

The Machine name or IP address of the machine name.

### ConnectErrors

The List of strings that cause the connector to terminate when the connection to the PeopleSoft application or database is lost. These strings are written to the connector log when the connection is lost. Additional strings can be specified; separate strings with colon (:) delimiters.

### disableCrossReferencing

Turns cross referencing on and off. The default value is False, cross-referencing is enabled.

### PollQuantity

The number of events in the database table that the connector retrieves per polling interval.

### PortNumber

The Port number for Message Agent requests.

## PeopleToolsVersion

The version of PeopleTools, for example, 7.52.

## Priority

The priority level from 0-n, with 0 being the highest level. At each poll interval, the connector picks up events starting with the highest priority events and continuing with lower priority events until the number of events specified in the PollQuantity configuration property is met, or until there are no events in the event table. The connector currently does not decrement priority.

## UseDefaults

On a Create operation, if UseDefaults is set to true or not set, the connector checks whether a valid value or a default value is provided for each isRequired business object attribute. If a value is provided, the Create succeeds; otherwise, it fails. If the parameter is set to false, the connector checks only for valid values; the Create operation fails if valid values are not provided.

---

## Creating multiple versions of the connector

Creating multiple instances of a connector is in many ways the same as creating a custom connector. You can set your system up to create and run multiple instances of a connector by following the steps below. You must:

- Create a new directory for the connector instance
- Make sure you have the requisite business object definitions
- Create a new connector definition file
- Create a new start-up script

### Create a new directory

You must create a connector directory for each connector instance. This connector directory should be named:

```
ProductDir\connectors\connectorInstance
```

where connectorInstance uniquely identifies the connector instance.

If the connector has any connector-specific meta-objects, you must create a meta-object for the connector instance. If you save the meta-object as a file, create this directory and store the file here:

```
ProductDir\Repository\connectorInstance
```

### Create business object definitions

If the business object definitions for each connector instance do not already exist within the project, you must create them.

1. If you need to modify business object definitions that are associated with the initial connector, copy the appropriate files and use Business Object Designer to import them. You can copy any of the files for the initial connector. Just rename them if you make changes to them.
2. Files for the initial connector should reside in the following directory:

```
ProductDir\Repository\initialConnectorInstance
```

Any additional files you create should be in the appropriate connectorInstance subdirectory of ProductDir\Repository.

## Create a connector definition

You create a configuration file (connector definition) for the connector instance in Connector Configurator. To do so:

1. Copy the initial connector's configuration file (connector definition) and rename it.
2. Make sure each connector instance correctly lists its supported business objects (and any associated meta-objects).
3. Customize any connector properties as appropriate.

## Create a start-up script

To create a startup script:

1. Copy the initial connector's startup script and name it to include the name of the connector directory:  
dirname
2. Put this startup script in the connector directory you created in "Create a new directory" on page 10.
3. Create a startup script shortcut (Windows only).
4. Copy the initial connector's shortcut text and change the name of the initial connector (in the command line) to match the name of the new connector instance.

You can now run both instances of the connector on your integration server at the same time.

For more information on creating custom connectors, refer to the *Connector Development Guide for C++ or for Java*.

---

## Starting the connector

A connector must be explicitly started using its **connector start-up script**. The startup script should reside in the connector's runtime directory:

*ProductDir*\connectors\*connName*

where *connName* identifies the connector. The name of the startup script depends on the operating-system platform, as Table 5 shows.

Table 5. Startup scripts for a connector

Operating system	Startup script
UNIX-based systems	connector_manager_ <i>connName</i>
Windows	start_ <i>connName</i> .bat

You can invoke the connector startup script in any of the following ways:

- On Windows systems, from the **Start** menu  
Select **Programs>IBM WebSphere Business Integration Adapters>Adapters>Connectors**. By default, the program name is "IBM WebSphere Business Integration Adapters". However, it can be customized. Alternatively, you can create a desktop shortcut to your connector.
- From the command line
  - On Windows systems:  
start\_*connName* *connName* *brokerName* [-*cconfigFile* ]
  - On UNIX-based systems:

```
connector_manager_connName -start
```

where *connName* is the name of the connector and *brokerName* identifies your integration broker, as follows:

- For WebSphere InterChange Server, specify for *brokerName* the name of the ICS instance.
- For WebSphere message brokers (WebSphere MQ Integrator, WebSphere MQ Integrator Broker, or WebSphere Business Integration Message Broker) or WebSphere Application Server, specify for *brokerName* a string that identifies the broker.

**Note:** For a WebSphere message broker or WebSphere Application Server on a Windows system, you *must* include the *-c* option followed by the name of the connector configuration file. For ICS, the *-c* is optional.

- From Adapter Monitor (WebSphere Business Integration Adapters product only), which is launched when you start System Manager  
You can load, activate, deactivate, pause, shutdown or delete a connector using this tool.
- From System Monitor (WebSphere InterChange Server product only)  
You can load, activate, deactivate, pause, shutdown or delete a connector using this tool.
- On Windows systems, you can configure the connector to start as a Windows service. In this case, the connector starts when the Windows system boots (for an Auto service) or when you start the service through the Windows Services window (for a Manual service).

For more information on how to start a connector, including the command-line startup options, refer to one of the following documents:

- For WebSphere InterChange Server, refer to the *System Administration Guide*.
- For WebSphere message brokers, refer to *Implementing Adapters with WebSphere Message Brokers*.
- For WebSphere Application Server, refer to *Implementing Adapters with WebSphere Application Server*.

---

## Stopping the connector

The way to stop a connector depends on the way that the connector was started, as follows:

- If you started the connector from the command line, with its connector startup script:
  - On Windows systems, invoking the startup script creates a separate “console” window for the connector. In this window, type “Q” and press Enter to stop the connector.
  - On UNIX-based systems, connectors run in the background so they have no separate window. Instead, run the following command to stop the connector:

```
connector_manager_connName -stop
```

where *connName* is the name of the connector.
- From Adapter Monitor (WebSphere Business Integration Adapters product only), which is launched when you start System Manager  
You can load, activate, deactivate, pause, shutdown or delete a connector using this tool.
- From System Monitor (WebSphere InterChange Server product only)

You can load, activate, deactivate, pause, shutdown or delete a connector using this tool.

- On Windows systems, you can configure the connector to start as a Windows service. In this case, the connector stops when the Windows system shuts down.

---

## Loss of connection to the application

If the connector determines that the connection with the application has been lost, the connector terminates and returns a status to the integration broker. The `ConnectErrors` property specifies which error strings cause the connector to terminate. For more information see “Connector-specific properties” on page 9.



---

## Chapter 3. Developing business objects for the connector

This chapter describes how the WebSphere Business Integration Adapter for PeopleSoft 7.x processes business objects, and provides suggestions for developing and modifying business objects for the connector. It contains the following sections:

“Business object application-specific text”

---

### Business object application-specific text

The application-specific text in a business object is used to identify where data is located in the application database. This section describes the application-specific text format that the connector expects.

#### Object application-specific text format

The connector uses application-specific text at the business-object level to determine which PeopleSoft activity the connector uses for that business object. To specify this in application-specific text, use the name-value pair `Activity= name`. The naming convention for activities is *CWbusiness object name*. For example, for the Employee business object, the PeopleSoft activity is named `CWEmployee`. The application-specific text for this is:

```
[BusinessObjectDefinition]
Name = Psft_Employee
Version = 1.0.0
AppSpecificInfo = Activity=CWEmployee
...
```

The name parameter in the application-specific text must match the name of the activity in PeopleSoft. This name-value pair is needed only for a top-level business object. The connector also uses application-specific text at the business-object level to determine whether a business object will be processed by the connector. If the `AppSpecificInfo` field for the business object contains the string `NoOp`, the business object is not processed.

When using the `NoOp` string, the `Activity` name-value pair also needs to be specified. In this case, the `Activity` name-value pair precedes the `NoOp` string and is delimited by a colon. For example:

```
[BusinessObjectDefinition]
Name = Psft_Department
Version = 1.0.0
AppSpecificInfo = Activity=CWDepartment:NoOp
...
```

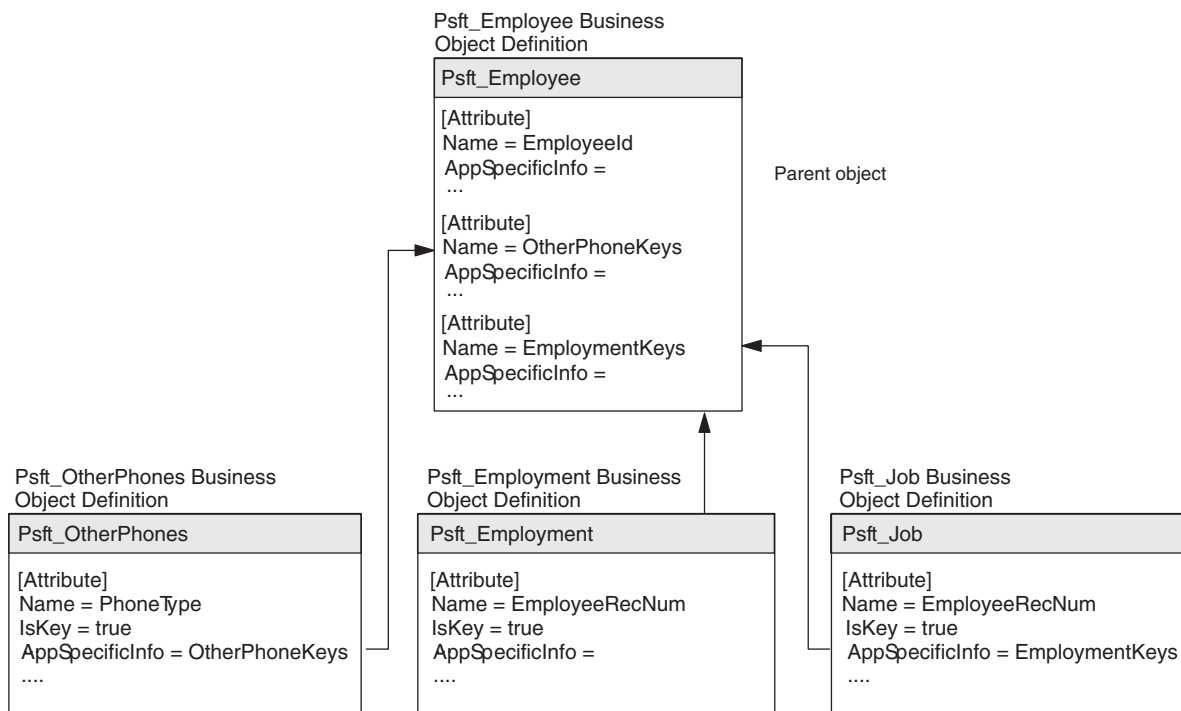
#### Attribute application-specific text format

The connector uses attribute application-specific text to retrieve keys for child objects in hierarchical business objects.

As part of the connector installation, message definitions that support business object/verb combinations are imported into the PeopleSoft system. These message definitions can contain one or more special fields that correspond to attributes in a top-level business object. Each special field is associated with `PeopleCode` that gathers the keys to child objects.

When the connector receives an event notification and queries for the complete set of data for a business object, the PeopleCode executes to dynamically assemble the child keys in the special fields. The connector then retrieves the value of each special field, which is a list of child keys, into the attribute corresponding to the special field. The connector can parse the list to identify the specific key for a particular attribute in a child object. The content of the special fields is not stored in the PeopleSoft database.

The following illustration shows example parent and child business objects and the format of the application-specific text. The Psft\_Employee parent business object includes the attribute OtherPhoneKeys, which corresponds to the special field defined in the message definition for this business object. The child object includes the name of the special attribute in application-specific text for the key attribute. The connector identifies the key for the child object attribute from within the application-specific text.



When modifying business objects for the connector, key attributes in child objects must have application-specific text that points to a special attribute in the parent object.

## Verb application-specific text format

The connector does not currently use the application-specific property for verbs. Leave this field blank when creating business object definitions.

---

## Modifying business objects for the connector

**Note:** The connector does not support specifying an attribute that represents a child business object or an array of child business objects as a key attribute.

When modifying or extending a business object for the connector, if PeopleCode is used to assemble keys, you must modify the PeopleCode in the XR\_EVENT\_WRK



table and the message definitions that were installed with the product. For example, to add a child business object to a hierarchical business object, you must perform the following general steps:

1. Modify the top-level business object to add two new attributes: the container attribute for the child business object and an attribute to hold the child keys.
2. Add the child business object. The key in the child business object must have application-specific text that points to the attribute at the top-level object. For example, in the Psft\_Employee business object, the child object Psft\_OtherPhones has the AppSpecificInfo field for the PhoneType attribute set to OtherPhoneKeys to point back to the top-level business object attribute OtherPhoneKeys.
3. Modify the PeopleCode in the XR\_EVENT\_WRK table to add a section that concatenates all the keys for the child objects. For the Psft\_Employee business object, the PeopleCode for Psft\_OtherPhones creates the string CELL:FAX:HOME, where the keys are separated by colons.
4. Add a message definition for the child business object and modify the message definition for the top-level business object. For example, the Psft\_Employee business object has the following message definitions for the child object:
  - Retrieve OtherPhones
  - Create OtherPhones
  - Update OtherPhones
5. Add OtherPhonesKeys to the Retrieve Employee message definition for the top-level business object.

## Rules for modifying business objects

Follow these rules when modifying business objects for the connector:

### Objects spanning multiple panel groups

If a top-level business object or child business object spans two different panel groups, split the business object or child object into two business objects.

### Effective dated and effective sequenced rows

1. PeopleSoft application objects are designed to model the way the panel processes data. A panel with effective dated information identifies the database record that the effective dated information is stored in. This table/record must have the EFFDT as one of its keys. For an example of this, compare the Psft\_EffDtEmployee object to the record PS\_PERS\_DATA\_EFFDT. This is the main record referenced on the effective dated subpanel within the employee panel groups.
2. EffectiveSequence is part of the Job record key, which enables you to track events by sequence on the same effective date. Effective Sequence is a manual input field used to track the multiple actions that occur on the same effective date. It does not have any automated database sequencing. For example, if you entered a "Posn Chg" action for an employee on 4/25/00, and no other action had been performed on that date, leave the Effective Sequence field at 0. If you later entered a "Pay Rt Chg" action for the same employee on 4/25/00, set the Effective Sequence field to 1.
3. For all effective dated and effective sequenced rows, you must repeat effective date field or effective sequence twice in the message definition. This is necessary only for Create operations in the message definition--for example, CreateJob.
4. For effective dated rows, list all fields that show up on the panel as attributes in the business object. When inserting new rows into the database, the

connector follows the same behavior as if the user is online inserting a row by pressing the F7 key. In both cases, all the attributes in the scroll are copied into the new scroll. If you do not specify all the attributes in the business object, you run the risk of unintentionally copying data from a previous row into the new row.

5. For effective dated rows, you need to specify the attribute application-specific text to be EFFDT in the Business Object.
6. For effective dated rows, you need an extra message definition. The name of the message definition has to be the business object name + EFFDT. The attributes are the keys (input) and EFFDT (output). For example:

```
Message Definition = RetrieveJobEFFDT
Attributes = EmployeeId (input)
            EmployeeRecNum (input)
            JobEffectiveOnDate (output)
```

### Message definitions

1. Because the Message Agent processes data in the same order as the online panels, the order of fields in the message definition is important only for fields requiring validation from previously entered data. Otherwise, the order of the fields listed on the Message Definition is not important.
2. In the message definitions, the message Output All Occurrences works only for Level 1 fields. See Create Message Definitions in the Peoplebooks Development Tools for more information. If you need to retrieve a Level 2 or Level 3 row, you must create a new panel to move the Level 2 or Level 3 fields to Level 1.

### Business object attributes

Attributes must exist in both the business object and the message definition. Attribute names must be spelled consistently. The order of attributes in the business object is not important.

### Child business object keys

Child business objects do not need to repeat the keys that already exist in the parent business objects. When the connector processes a hierarchical business object, the connector first obtains the keys that are stored in the parent business objects, then processes the child business objects. However, the keys must be repeated in the Message Agent definition.

### Attribute names

Do not use EFFDT or EFFSEQ as the attribute name.

### AppSpecificInfo

You can have only two identifiers for AppSpecificInfo. They must be delimited by a colon (:). For example:

```
AppSpecificInfo = EFFDT:Additional PayKeys
```

### Event notifications

To process event notifications, the connector takes the value of OBJECT\_ID in the event table and stores it in a field called [*business object name*]Id. This field name might differ from the actual name of the key in PeopleSoft. For example, in PeopleSoft 7.5, the key for the Item table is InvItemId, but the connector requires that the name of the key in the Item business object be ItemId.

## Attribute names in business objects and message definitions

The connector requires that there be an exact match in attribute names between the business object and the message definitions for each verb for that object. For

example, there must be an exact match between the attribute names in Psft\_Item and the attribute names in the following message definitions:

- Create Item
- Retrieve Item
- Update Item

As you update message definitions, make sure that the spelling and capitalization of the attribute names matches the attributes in the business object. These message definitions can be found in the IBM WebSphere business integration business process and the Connector Integration activity.

---

## Transaction processing for hierarchical business objects

If a failure occurs when the connector is processing a hierarchical business object with a Create or Update verb, one or more child business objects may not be processed.

The connector does not define a transaction as an operation on a complete hierarchical business object. Instead, the connector defines a separate transaction for each operation on individual parent or child business objects in a hierarchical business object. When the connector receives a business object with a Create verb, it first processes the parent business object and then processes each individual child business object. Under normal conditions, it begins a transaction for each business object in the hierarchy, creates the entity in the application, and commits the transaction.

If the connector succeeds in creating one or more child entities, and a failure occurs during the creation of another child entity, the connector rolls back the Create operation for this particular business object by backing out the entity. The connector continues processing child business objects until all the remaining entities have been created. Because there was a failure, the connector returns BON\_FAIL to the integration broker for the overall operation on the business object. In addition, the Create or Update operation in the application may be incomplete. This scenario is similar for an Update transaction.

When the connector returns BON\_FAIL, the complete hierarchical business object is placed in the unprocessed events queue. A system administrator needs to check the destination application and resolve the problem that caused the failure. Then the system administrator needs to resubmit the business object to the connector. Because the connector checks for the existence of application entities before creating them, the connector does not create duplicate data on a business object resubmission for those child business objects that have already been created.

---

## Sample business object definition file

There are three sample business object definition files included with the product:

- BO\_Psft\_DEPT
- BO\_PsftEmployee
- SavePostChange

### **BO\_Psft\_DEPT business object**

The following example is the BO\_Psft DEPT business object.

```

[BusinessObjectDefinition] Name = DeptTbl Version = 1.0.0 AppSpecificInfo =
CiName=DEPT [Attribute] Name = Company Type = String
MaxLength = 255 IsKey = true IsForeignKey = false IsRequired =
false AppSpecificInfo = get=getCompany:set=setCompany
IsRequiredServerBound = false [End] [Attribute] Name =
BudgetLvl Type = String MaxLength = 1 IsKey = false
IsForeignKey = false IsRequired = false AppSpecificInfo =
get=getBudgetLvl:set=setBudgetLvl IsRequiredServerBound = false
[End] [Attribute] Name = Descr Type = String MaxLength = 1
IsKey = false IsForeignKey = false IsRequired = false
AppSpecificInfo = get=getDescr:set=setDescr IsRequiredServerBound =
false [End] [Attribute] Name = DescrShort Type = String
MaxLength = 1 IsKey = false IsForeignKey = false IsRequired =
false AppSpecificInfo = get=getDescrshort:set=setDescrshort
IsRequiredServerBound = false [End] [Attribute] Name =
ObjectEventId Type = String MaxLength = 255 IsKey = false
IsForeignKey = false IsRequired = false IsRequiredServerBound =
false [End] [Verb] Name = Create [End] [Verb] Name
= Delete [End] [Verb] Name = Retrieve [End] [Verb]
Name = Update [End] [End] [BusinessObjectDefinition] Name = Psft_dept
Version = 1.0.0 AppSpecificInfo = CiName=DEPT [Attribute] Name =
Deptid Type = String MaxLength = 255 IsKey = true
IsForeignKey = false IsRequired = true AppSpecificInfo =
get=getDeptid:set=setDeptid:GetKey=true IsRequiredServerBound = false
[End] [Attribute] Name = Setid Type = String MaxLength
= 1 IsKey = true IsForeignKey = false IsRequired = true
AppSpecificInfo = get=getSetid:set=setSetid:GetKey=true
IsRequiredServerBound = false [End] [Attribute] Name = DptTbl
Type = DeptTbl ContainedObjectVersion = 1.0.0 Relationship =
Containment Cardinality = n MaxLength = 1 IsKey = false
IsForeignKey = false IsRequired = true AppSpecificInfo =
get=getDeptTbl:KEEPRELATIONSHIP=true IsRequiredServerBound = false
[End] [Attribute] Name = ObjectEventId Type = String
MaxLength = 255 IsKey = false IsForeignKey = false IsRequired =
false IsRequiredServerBound = false [End] [Verb] Name =
Create [End] [Verb] Name = Delete [End] [Verb] Name
= Retrieve [End] [Verb] Name = Update [End] [End]

```

---

## BO\_PsftEmployee business object

The following example is the BO\_PsftEmployee business object.

```

[BusinessObjectDefinition] Name = PSFTEmployee Version = 1.0.0
AppSpecificInfo = cIName=Emp [Attribute] Name = EMPID Type =
String Cardinality = 1 MaxLength = 255 IsKey = true
IsForeignKey = false IsRequired = true AppSpecificInfo =
get=getEmpId:set=setEmpId:keepRelationship=false:uid=true:
findKey=true:getKey=true:createKey=true IsRequiredServerBound = false
[End] [Attribute] Name = EMPL_RCD Type = String
Cardinality = 1 MaxLength = 1 IsKey = true IsForeignKey = false
IsRequired = true AppSpecificInfo =
get=getEmpRcd:set=setEmpRcd:keepRelationship=false:uid=true:
findKey=true:getKey=true:createKey=true IsRequiredServerBound = false
[End] [Attribute] Name = NAME Type = String Cardinality
= 1 MaxLength = 1 IsKey = true IsForeignKey = false
IsRequired = true AppSpecificInfo =

```

```

get=getName:set=setName:keepRelationship=false:uid=false:
findKey=true:getKey=false:createKey=false      IsRequiredServerBound = false
  [End]      [Attribute]      Name = LAST_NAME_SRCH      Type = String
Cardinality = 1 MaxLength = 1      IsKey = true      IsForeignKey = false
IsRequired = true      AppSpecificInfo =
get=getLastNameSrch:set=setLastNameSrch:keepRelationship=false:uid=false:
  findKey=true:getKey=false:createKey=false      IsRequiredServerBound =
false      [End]      [Attribute]      Name = NAME_AC      Type = String
Cardinality = 1      MaxLength = 1      IsKey = true      IsForeignKey = false
  IsRequired = true      AppSpecificInfo =
get=getNameAc:set=setNameAc:keepRelationship=false:uid=false:
findKey=true:getKey=false:createKey=false      IsRequiredServerBound = false
  [End]      [Attribute]      Name = PER_STATUS      Type = String
Cardinality = 1      MaxLength = 1      IsKey = true      IsForeignKey = false
  IsRequired = true      AppSpecificInfo =
get=getPerStatus:set=setPerStatus:keepRelationship=false:uid=false:
findKey=true:getKey=false:createKey=false      IsRequiredServerBound = false
  [End]      [Attribute]      Name = EMPLID_0      Type = String
Cardinality = 1      MaxLength = 1      IsKey = false      IsForeignKey =
false      IsRequired = false      AppSpecificInfo =
get=getEmplid0:set=setEmplid0:keepRelationship=false:uid=false:
findKey=false:getKey=false:createKey=false      IsRequiredServerBound =
false      [End]      [Attribute]      Name = ORIG_HIRE_DT      Type = String
  Cardinality = 1      MaxLength = 1      IsKey = false      IsForeignKey =
false      IsRequired = false      AppSpecificInfo =
get=getOrigHireDt:set=setOrigHireDt:keepRelationship=false:uid=false:
findKey=false:getKey=false:createKey=false      IsRequiredServerBound =
false      [End]      [Attribute]      Name = SEX      Type = String
Cardinality = 1      MaxLength = 1      IsKey = false      IsForeignKey =
false      IsRequired = true      AppSpecificInfo =
get=getSex:set=setSex:keepRelationship=false:uid=false:findKey=false:
getKey=false:createKey=false      IsRequiredServerBound = false      [End]
  [Attribute]      Name = BIRTHDATE      Type = String      Cardinality = 1
  MaxLength = 1      IsKey = false      IsForeignKey = false      IsRequired
= false      AppSpecificInfo =
get=getBirthdate:set=setBirthdate:keepRelationship=false:
uid=false:findKey=false:getKey=false:createKey=false
IsRequiredServerBound = false      [End]      [Attribute]      Name =
FT_STUDENT      Type = String      Cardinality = 1      MaxLength = 1
IsKey = false      IsForeignKey = false      IsRequired = true
AppSpecificInfo = get=getFtStudent:set=setFtStudent:keepRelationship=false:
  uid=false:findKey=false:getKey=false:createKey=false
IsRequiredServerBound = false      [End]      [Attribute]      Name =
BENEFIT_RCD_NBR      Type = String      Cardinality = 1      MaxLength = 1
IsKey = false      IsForeignKey = false      IsRequired = false
AppSpecificInfo = get=getBenefitRcdNbr:set=setBenefitRcdNbr:
keepRelationship=false:uid=false:findKey=false:getKey=false:createKey=false
  IsRequiredServerBound = false      [End]      [Attribute]      Name =
HOME_HOST_CLASS      Type = String      Cardinality = 1      MaxLength = 1
IsKey = false      IsForeignKey = false      IsRequired = true
AppSpecificInfo = get=getHomeHostClass:set=setHomeHostClass:
keepRelationship=false:uid=false:findKey=false:getKey=false:createKey=false
  IsRequiredServerBound = false      [End]      [Attribute]      Name =
HIRE_DT      Type = String      Cardinality = 1      MaxLength = 1      IsKey =
false      IsForeignKey = false      IsRequired = false      AppSpecificInfo =
get=getHireDt:set=setHireDt:keepRelationship=false:

```

```

uid=false:findKey=false:getKey=false:createKey=false
IsRequiredServerBound = false      [End]      [Attribute]      Name =
CMPNY_SENIORITY_DT      Type = String      Cardinality = 1      MaxLength = 1
      IsKey = false      IsForeignKey = false      IsRequired = false
AppSpecificInfo = get=getCmpnySeniorityDt:
set=setCmpnySeniorityDt:keepRelationship=false:uid=false:
findKey=false:getKey=false:createKey=false      IsRequiredServerBound =
false      [End]      [Attribute]      Name = SERVICE_DT      Type = String
Cardinality = 1      MaxLength = 1      IsKey = false      IsForeignKey =
false      IsRequired = false      AppSpecificInfo =
get=getServiceDt:set=setServiceDt:
keepRelationship=false:uid=false:findKey=false:getKey=false:createKey=false
      IsRequiredServerBound = false      [End]      [Attribute]      Name =
PROF_EXPERIENCE_DT      Type = String      Cardinality = 1      MaxLength = 1
      IsKey = false      IsForeignKey = false      IsRequired = false
AppSpecificInfo = get=getProfExperienceDt:
set=setProfExperienceDt:keepRelationship=false:uid=false:
findKey=false:getKey=false:createKey=false      IsRequiredServerBound =
false      [End]      [Attribute]      Name = LAST_VERIFICATN_DT      Type =
String      Cardinality = 1      MaxLength = 1      IsKey = false
IsForeignKey = false      IsRequired = false      AppSpecificInfo =
get=getLastVerificatnDt:set=setLastVerificatnDt:
keepRelationship=false:uid=false:findKey=false:getKey=false:createKey=false
      IsRequiredServerBound = false      [End]      [Attribute]      Name =
EXPECTED_RETURN_DT      Type = String      Cardinality = 1      MaxLength = 1
      IsKey = false      IsForeignKey = false      IsRequired = false
AppSpecificInfo = get=getExpectedReturnDt:set=
setExpectedReturnDt:keepRelationship=false:
uid=false:findKey=false:getKey=false:createKey=false
IsRequiredServerBound = false      [End]      [Attribute]      Name =
LAST_DATE_WORKED      Type = String      Cardinality = 1      MaxLength = 1
      IsKey = false      IsForeignKey = false      IsRequired = false
AppSpecificInfo = get=getLastDateWorked:
set=setLastDateWorked:keepRelationship=false:uid=false:
findKey=false:getKey=false:createKey=false      IsRequiredServerBound =
false      [End]      [Attribute]      Name = LAST_INCREASE_DT      Type =
String      Cardinality = 1      MaxLength = 1      IsKey = false
IsForeignKey = false      IsRequired = false      AppSpecificInfo =
get=getLastIncreaseDt:      set=setLastIncreaseDt:keepRelationship=false:
      uid=false:findKey=false:getKey=false:createKey=false
IsRequiredServerBound = false      [End]      [Attribute]      Name =
OWN_5PERCENT_CO      Type = String      Cardinality = 1      MaxLength = 1
IsKey = false      IsForeignKey = false      IsRequired = true
AppSpecificInfo = get=getOwn5percentCo:
set=setOwn5percentCo:keepRelationship=false:
uid=false:findKey=false:getKey=false:createKey=false
IsRequiredServerBound = false      [End]      [Attribute]      Name =
BUSINESS_TITLE      Type = String      Cardinality = 1      MaxLength = 1
IsKey = true      IsForeignKey = false      IsRequired = true
AppSpecificInfo = get=getBusinessTitle:
set=setBusinessTitle:keepRelationship=false:
uid=false:findKey=false:getKey=true:createKey=false
IsRequiredServerBound = false      [End]      [Attribute]      Name =
REPORTS_TO      Type = String      Cardinality = 1      MaxLength = 1
IsKey = false      IsForeignKey = false      IsRequired = false
AppSpecificInfo = get=getReportsTo:set=setReportsTo:

```

```

keepRelationship=false:uid=false:findKey=false:getKey=false:createKey=false
  IsRequiredServerBound = false      [End]      [Attribute]      Name =
SUPERVISOR_ID      Type = String      Cardinality = 1      MaxLength = 1
IsKey = false      IsForeignKey = false      IsRequired = false
AppSpecificInfo = get=getSupervisorId:set=setSupervisorId:
keepRelationship=false:uid=false:findKey=false:getKey=false:createKey=false
  IsRequiredServerBound = false      [End]      [Attribute]      Name =
PROBATION_DT      Type = String      Cardinality = 1      MaxLength = 1
IsKey = false      IsForeignKey = false      IsRequired = false
AppSpecificInfo = get=getProbationDt:set=setProbationDt:
keepRelationship=false:uid=false:findKey=false:getKey=false:createKey=false
  IsRequiredServerBound = false      [End]      [Attribute]      Name =
SECURITY_CLEARANCE      Type = String      Cardinality = 1      MaxLength = 1
  IsKey = false      IsForeignKey = false      IsRequired = false
AppSpecificInfo = get=getSecurityClearance:
set=setSecurityClearance:keepRelationship=false:
uid=false:findKey=false:getKey=false:createKey=false
IsRequiredServerBound = false      [End]      [Attribute]      Name = PHONE
  Type = String      Cardinality = 1      MaxLength = 1      IsKey = false
  IsForeignKey = false      IsRequired = false      AppSpecificInfo =
get=getPhone:set=setPhone:      keepRelationship=false:uid=false:
findKey=false:getKey=false:createKey=false      IsRequiredServerBound =
false      [End]      [Attribute]      Name = TIME_RPT_LOCK      Type = String
  Cardinality = 1      MaxLength = 1      IsKey = false      IsForeignKey =
false      IsRequired = false      AppSpecificInfo =
get=getTimeRptLock:set=setTimeRptLock:
keepRelationship=false:uid=false:findKey=false:getKey=false:createKey=false
  IsRequiredServerBound = false      [End]      [Attribute]      Name =
JOB_REPORTING      Type = String      Cardinality = 1      MaxLength = 1
IsKey = false      IsForeignKey = false      IsRequired = true
AppSpecificInfo = get=getJobReporting:set=setJobReporting:
keepRelationship=false:uid=false:findKey=false:getKey=false:createKey=false
  IsRequiredServerBound = false      [End]      [Attribute]      Name =
DED_TAKEN      Type = String      Cardinality = 1      MaxLength = 1      IsKey
= false      IsForeignKey = false      IsRequired = true      AppSpecificInfo
= get=getDedTaken:set=setDedTaken:
keepRelationship=false:uid=false:findKey=false:getKey=false:createKey=false
  IsRequiredServerBound = false      [End]      [Attribute]      Name =
DED_SUBSET_ID      Type = String      Cardinality = 1      MaxLength = 1
IsKey = false      IsForeignKey = false      IsRequired = false
AppSpecificInfo = get=getDedSubsetId:set=setDedSubsetId:
keepRelationship=false:uid=false:findKey=false:getKey=false:createKey=false
  IsRequiredServerBound = false      [End]      [Attribute]      Name =
CAN_ABORIGINAL      Type = String      Cardinality = 1      MaxLength = 1
IsKey = false      IsForeignKey = false      IsRequired = false
AppSpecificInfo = get=getCanAboriginal:set=setCanAboriginal:
keepRelationship=false:uid=false:findKey=false:getKey=false:createKey=false
  IsRequiredServerBound = false      [End]      [Attribute]      Name =
CAN_VISBL_MINORITY      Type = String      Cardinality = 1      MaxLength = 1
  IsKey = false      IsForeignKey = false      IsRequired = true
AppSpecificInfo = get=getCanVisblMinority:set=setCanVisblMinority:
keepRelationship=false:uid=false:findKey=false:getKey=false:createKey=false
  IsRequiredServerBound = false      [End]      [Attribute]      Name =
CURRENT_SEQ      Type = String      Cardinality = 1      MaxLength = 1
IsKey = false      IsForeignKey = false      IsRequired = false
AppSpecificInfo = get=getCurrentSeq:set=setCurrentSeq:

```

```

keepRelationship=false:uid=false:findKey=false:getKey=false:createKey=false
  IsRequiredServerBound = false      [End]      [Attribute]      Name =
PERS_DATA_EFFDT      Type = PERS_DATA_EFFDT      ContainedObjectVersion =
1.0.0      Relationship = Containment      Cardinality = n      MaxLength = 1
  IsKey = false      IsForeignKey = false      IsRequired = false
AppSpecificInfo = get=getPersDataEffdt:keepRelationship=false:
uid=false:findKey=false:getKey=false:createKey=false
IsRequiredServerBound = false      [End]      [Attribute]      Name =
EMAIL_ADDRESSES      Type = EMAIL_ADDRESSES      ContainedObjectVersion =
1.0.0      Relationship = Containment      Cardinality = n      MaxLength = 1
  IsKey = false      IsForeignKey = false      IsRequired = false
AppSpecificInfo = get=getEmailAddresses:keepRelationship=false:
uid=false:findKey=false:getKey=false:createKey=false
IsRequiredServerBound = false      [End]      [Attribute]      Name =
PERSONAL_PHONE      Type = PERSONAL_PHONE      ContainedObjectVersion = 1.0.0
  Relationship = Containment      Cardinality = n      MaxLength = 1
IsKey = false      IsForeignKey = false      IsRequired = false
AppSpecificInfo = get=getPersonalPhone:keepRelationship=false:
uid=false:findKey=false:getKey=false:createKey=false
IsRequiredServerBound = false      [End]      [Attribute]      Name = PERS_NID
  Type = PERS_NID      ContainedObjectVersion = 1.0.0      Relationship =
Containment      Cardinality = n      MaxLength = 1      IsKey = false
IsForeignKey = false      IsRequired = false      IsRequiredServerBound =
false      [End]      [Attribute]      Name = JOB      Type = JOB
ContainedObjectVersion = 1.0.0      Relationship = Containment
Cardinality = n      MaxLength = 1      IsKey = false      IsForeignKey =
false      IsRequired = false      IsRequiredServerBound = false      [End]
  [Attribute]      Name = ObjectEventId      Type = String      MaxLength =
255      IsKey = false      IsForeignKey = false      IsRequired = false
IsRequiredServerBound = false      [End]      [Verb]      Name = Create
[End]      [Verb]      Name = Delete      [End]      [Verb]      Name = Retrieve
  [End]      [Verb]      Name = Update      [End] [End]

```



---

## Appendix A. Standard Configuration Properties for Connectors

This appendix describes the standard configuration properties for the connector component of WebSphere Business Integration adapters. The information covers connectors running on the following integration brokers:

- WebSphere InterChange Server (ICS)
- WebSphere MQ Integrator, WebSphere MQ Integrator Broker, and WebSphere Business Integration Message Broker, collectively referred to as the WebSphere Message Brokers (WMQI).
- WebSphere Application Server (WAS)

Not every connector makes use of all these standard properties. When you select an integration broker from Connector Configurator, you will see a list of the standard properties that you need to configure for your adapter running with that broker.

For information about properties specific to the connector, see the relevant adapter user guide.

**Note:** In this document, backslashes (\) are used as the convention for directory paths. For UNIX installations, substitute slashes (/) for backslashes and follow the conventions for each operating system.

---

### New and deleted properties

These standard properties have been added in this release.

#### New properties

- XMLNameSpaceFormat

#### Deleted properties

- RestartCount

---

### Configuring standard connector properties

Adapter connectors have two types of configuration properties:

- Standard configuration properties
- Connector-specific configuration properties

This section describes the standard configuration properties. For information on configuration properties specific to a connector, see its adapter user guide.

### Using Connector Configurator

You configure connector properties from Connector Configurator, which you access from System Manager. For more information on using Connector Configurator, refer to the sections on Connector Configurator in this guide.

**Note:** Connector Configurator and System Manager run only on the Windows system. If you are running the connector on a UNIX system, you must have

a Windows machine with these tools installed. To set connector properties for a connector that runs on UNIX, you must start up System Manager on the Windows machine, connect to the UNIX integration broker, and bring up Connector Configurator for the connector.

## Setting and updating property values

The default length of a property field is 255 characters.

The connector uses the following order to determine a property's value (where the highest number overrides other values):

1. Default
2. Repository (only if WebSphere InterChange Server is the integration broker)
3. Local configuration file
4. Command line

A connector obtains its configuration values at startup. If you change the value of one or more connector properties during a run-time session, the property's **Update Method** determines how the change takes effect. There are four different update methods for standard connector properties:

- **Dynamic**  
The change takes effect immediately after it is saved in System Manager. If the connector is working in stand-alone mode (independently of System Manager), for example with one of the WebSphere message brokers, you can only change properties through the configuration file. In this case, a dynamic update is not possible.
- **Agent restart (ICS only)**  
The change takes effect only after you stop and restart the application-specific component.
- **Component restart**  
The change takes effect only after the connector is stopped and then restarted in System Manager. You do not need to stop and restart the application-specific component or the integration broker.
- **Server restart**  
The change takes effect only after you stop and restart the application-specific component and the integration broker.

To determine how a specific property is updated, refer to the **Update Method** column in the Connector Configurator window, or see the Update Method column in Table 6 on page 27 below.

---

## Summary of standard properties

Table 6 on page 27 provides a quick reference to the standard connector configuration properties. Not all the connectors make use of all these properties, and property settings may differ from integration broker to integration broker, as standard property dependencies are based on RepositoryDirectory.

You must set the values of some of these properties before running the connector. See the following section for an explanation of each property.

**Note:** In the "Notes" column in Table 6 on page 27, the phrase "Repository directory is REMOTE" indicates that the broker is the InterChange Server. When the broker is WMQI or WAS, the repository directory is set to LOCAL

Table 6. Summary of standard configuration properties

Property name	Possible values	Default value	Update method	Notes
AdminInQueue	Valid JMS queue name	CONNECTORNAME /ADMININQUEUE	Component restart	Delivery Transport is JMS
AdminOutQueue	Valid JMS queue name	CONNECTORNAME/ADMINOUTQUEUE	Component restart	Delivery Transport is JMS
AgentConnections	1-4	1	Component restart	Delivery Transport is MQ or IDL: Repository directory is <REMOTE> (broker is ICS)
AgentTraceLevel	0-5	0	Dynamic	
ApplicationName	Application name	Value specified for the connector application name	Component restart	
BrokerType	ICS, WMQI, WAS		Component restart	
CharacterEncoding	ascii7, ascii8, SJIS, Cp949, GBK, Big5, Cp297, Cp273, Cp280, Cp284, Cp037, Cp437 <b>Note:</b> This is a subset of supported values.	ascii7	Component restart	
ConcurrentEventTriggeredFlows	1 to 32,767	1	Component restart	Repository directory is <REMOTE> (broker is ICS)
ContainerManagedEvents	No value or JMS	No value	Component restart	Delivery Transport is JMS
ControllerStoreAndForwardMode	true or false	true	Dynamic	Repository directory is <REMOTE> (broker is ICS)
ControllerTraceLevel	0-5	0	Dynamic	Repository directory is <REMOTE> (broker is ICS)
DeliveryQueue		CONNECTORNAME/DELIVERYQUEUE	Component restart	JMS transport only
DeliveryTransport	MQ, IDL, or JMS	JMS	Component restart	If Repository directory is local, then value is JMS only

Table 6. Summary of standard configuration properties (continued)

Property name	Possible values	Default value	Update method	Notes
DuplicateEventElimination	true or false	false	Component restart	JMS transport only: Container Managed Events must be <NONE>
FaultQueue		CONNECTORNAME / FAULTQUEUE	Component restart	JMS transport only
jms.FactoryClassName	CxCommon.Messaging.jms.IBMMQSeriesFactory or CxCommon.Messaging.jms.SonicMQFactory or any Java class name	CxCommon.Messaging.jms.IBMMQSeriesFactory	Component restart	JMS transport only
jms.MessageBrokerName	If FactoryClassName is IBM, use crossworlds.queue.manager. If FactoryClassName is Sonic, use localhost:2506.	crossworlds.queue.manager	Component restart	JMS transport only
jms.NumConcurrentRequests	Positive integer	10	Component restart	JMS transport only
jms.Password	Any valid password		Component restart	JMS transport only
jms.UserName	Any valid name		Component restart	JMS transport only
JvmMaxHeapSize	Heap size in megabytes	128m	Component restart	Repository directory is <REMOTE> (broker is ICS)
JvmMaxNativeStackSize	Size of stack in kilobytes	128k	Component restart	Repository directory is <REMOTE> (broker is ICS)
JvmMinHeapSize	Heap size in megabytes	1m	Component restart	Repository directory is <REMOTE> (broker is ICS)
ListenerConcurrency	1- 100	1	Component restart	Delivery Transport must be MQ
Locale	en_US, ja_JP, ko_KR, zh_CN, zh_TW, fr_FR, de_DE, it_IT, es_ES, pt_BR <b>Note:</b> This is a subset of the supported locales.	en_US	Component restart	

Table 6. Summary of standard configuration properties (continued)

Property name	Possible values	Default value	Update method	Notes
LogAtInterchangeEnd	true or false	false	Component restart	Repository Directory must be <REMOTE> (broker is ICS)
MaxEventCapacity	1-2147483647	2147483647	Dynamic	Repository Directory must be <REMOTE> (broker is ICS)
MessageFileName	Path or filename	CONNECTORNAMEConnector.txt	Component restart	
MonitorQueue	Any valid queue name	CONNECTORNAME/MONITORQUEUE	Component restart	JMS transport only: DuplicateEvent Elimination must be true
OADAutoRestartAgent	true or false	false	Dynamic	Repository Directory must be <REMOTE> (broker is ICS)
OADMaxNumRetry	A positive number	1000	Dynamic	Repository Directory must be <REMOTE> (broker is ICS)
OADRetryTimeInterval	A positive number in minutes	10	Dynamic	Repository Directory must be <REMOTE> (broker is ICS)
PollEndTime	HH:MM	HH:MM	Component restart	
PollFrequency	A positive integer in milliseconds  no (to disable polling)  key (to poll only when the letter p is entered in the connector's Command Prompt window)	10000	Dynamic	
PollQuantity	1-500	1	Agent restart	JMS transport only: Container Managed Events is specified
PollStartTime	HH:MM(HH is 0-23, MM is 0-59)	HH:MM	Component restart	

Table 6. Summary of standard configuration properties (continued)

Property name	Possible values	Default value	Update method	Notes
RepositoryDirectory	Location of metadata repository		Agent restart	For ICS: set to <REMOTE> For WebSphere MQ message brokers and WAS: set to C:\crossworlds\repository
RequestQueue	Valid JMS queue name	CONNECTORNAME/REQUESTQUEUE	Component restart	Delivery Transport is JMS
ResponseQueue	Valid JMS queue name	CONNECTORNAME/RESPONSEQUEUE	Component restart	Delivery Transport is JMS: required only if Repository directory is <REMOTE>
RestartRetryCount	0-99	3	Dynamic	
RestartRetryInterval	A sensible positive value in minutes: 1 - 2147483547	1	Dynamic	
RHF2MessageDomain	mrm, xml	mrm	Component restart	Only if Delivery Transport is JMS and WireFormat is CwXML.
SourceQueue	Valid WebSphere MQ name	CONNECTORNAME/SOURCEQUEUE	Agent restart	Only if Delivery Transport is JMS and Container Managed Events is specified
SynchronousRequestQueue		CONNECTORNAME/ SYNCHRONOUSREQUESTQUEUE	Component restart	Delivery Transport is JMS
SynchronousRequestTimeout	0 - any number (milliseconds)	0	Component restart	Delivery Transport is JMS
SynchronousResponseQueue		CONNECTORNAME/ SYNCHRONOUSRESPONSEQUEUE	Component restart	Delivery Transport is JMS
WireFormat	CwXML, CwBO	CwXML	Agent restart	CwXML if Repository Directory is not <REMOTE>: CwBO if Repository Directory is <REMOTE>
WsifSynchronousRequestTimeout	0 - any number (milliseconds)	0	Component restart	WAS only
XMLNamespaceFormat	short, long	short	Agent restart	WebSphere MQ message brokers and WAS only

---

## Standard configuration properties

This section lists and defines each of the standard connector configuration properties.

### AdminInQueue

The queue that is used by the integration broker to send administrative messages to the connector.

The default value is `CONNECTORNAME/ADMININQUEUE`.

### AdminOutQueue

The queue that is used by the connector to send administrative messages to the integration broker.

The default value is `CONNECTORNAME/ADMINOUTQUEUE`.

### AgentConnections

Applicable only if `RepositoryDirectory` is `<REMOTE>`.

The `AgentConnections` property controls the number of ORB (Object Request Broker) connections opened by `orb.init[]`.

The default value of this property is set to 1. You can change it as required.

### AgentTraceLevel

Level of trace messages for the application-specific component. The default is 0. The connector delivers all trace messages applicable at the tracing level set or lower.

### ApplicationName

Name that uniquely identifies the connector's application. This name is used by the system administrator to monitor the WebSphere business integration system environment. This property must have a value before you can run the connector.

### BrokerType

Identifies the integration broker type that you are using. The options are ICS, WebSphere message brokers (WMQI, WMQIB or WBIMB) or WAS.

### CharacterEncoding

Specifies the character code set used to map from a character (such as a letter of the alphabet, a numeric representation, or a punctuation mark) to a numeric value.

**Note:** Java-based connectors do not use this property. A C++ connector currently uses the value `ascii7` for this property.

By default, a subset of supported character encodings only is displayed in the drop-down list. To add other supported values to the drop-down list, you must manually modify the `\Data\Std\stdConnProps.xml` file in the product directory. For more information, see the sections on Connector Configurator in this guide.

## ConcurrentEventTriggeredFlows

Applicable only if RepositoryDirectory is <REMOTE>.

Determines how many business objects can be concurrently processed by the connector for event delivery. Set the value of this attribute to the number of business objects you want concurrently mapped and delivered. For example, set the value of this property to 5 to cause five business objects to be concurrently processed. The default value is 1.

Setting this property to a value greater than 1 allows a connector for a source application to map multiple event business objects at the same time and deliver them to multiple collaboration instances simultaneously. This speeds delivery of business objects to the integration broker, particularly if the business objects use complex maps. Increasing the arrival rate of business objects to collaborations can improve overall performance in the system.

To implement concurrent processing for an entire flow (from a source application to a destination application), you must:

- Configure the collaboration to use multiple threads by setting its Maximum number of concurrent events property high enough to use multiple threads.
- Ensure that the destination application's application-specific component can process requests concurrently. That is, it must be multi-threaded, or be able to use connector agent parallelism and be configured for multiple processes. Set the Parallel Process Degree configuration property to a value greater than 1.

The ConcurrentEventTriggeredFlows property has no effect on connector polling, which is single-threaded and performed serially.

## ContainerManagedEvents

This property allows a JMS-enabled connector with a JMS event store to provide guaranteed event delivery, in which an event is removed from the source queue and placed on the destination queue as a single JMS transaction.

There is no default value.

When ContainerManagedEvents is set to JMS, you must configure the following properties to enable guaranteed event delivery:

- PollQuantity = 1 to 500
- SourceQueue = /SOURCEQUEUE

You must also configure a data handler with the MimeType, DHClass (data handler class), and DataHandlerConfigMOName (the meta-object name, which is optional) properties. To set those values, use the **Data Handler** tab in Connector Configurator.

These properties are adapter-specific, but **example** values are:

- MimeType = text/xml
- DHClass = com.crossworlds.DataHandlers.text.xml
- DataHandlerConfigMOName = MO\_DataHandler\_Default

The fields for these values in the Data Handler tab will be displayed only if you have set ContainerManagedEvents to JMS.



**Note:** When `ContainerManagedEvents` is set to `JMS`, the connector does *not* call its `pollForEvents()` method, thereby disabling that method's functionality.

This property only appears if the `DeliveryTransport` property is set to the value `JMS`.

## ControllerStoreAndForwardMode

Applicable only if `RepositoryDirectory` is `<REMOTE>`.

Sets the behavior of the connector controller after it detects that the destination application-specific component is unavailable.

If this property is set to `true` and the destination application-specific component is unavailable when an event reaches ICS, the connector controller blocks the request to the application-specific component. When the application-specific component becomes operational, the controller forwards the request to it.

However, if the destination application's application-specific component becomes unavailable **after** the connector controller forwards a service call request to it, the connector controller fails the request.

If this property is set to `false`, the connector controller begins failing all service call requests as soon as it detects that the destination application-specific component is unavailable.

The default is `true`.

## ControllerTraceLevel

Applicable only if `RepositoryDirectory` is `<REMOTE>`.

Level of trace messages for the connector controller. The default is `0`.

## DeliveryQueue

Applicable only if `DeliveryTransport` is `JMS`.

The queue that is used by the connector to send business objects to the integration broker.

The default value is `CONNECTORNAME/DELIVERYQUEUE`.

## DeliveryTransport

Specifies the transport mechanism for the delivery of events. Possible values are `MQ` for WebSphere MQ, `IDL` for CORBA IIOP, or `JMS` for Java Messaging Service.

- If the `RepositoryDirectory` is remote, the value of the `DeliveryTransport` property can be `MQ`, `IDL`, or `JMS`, and the default is `IDL`.
- If the `RepositoryDirectory` is a local directory, the value may only be `JMS`.

The connector sends service call requests and administrative messages over CORBA IIOP if the value configured for the `DeliveryTransport` property is `MQ` or `IDL`.

### WebSphere MQ and IDL

Use WebSphere MQ rather than IDL for event delivery transport, unless you must have only one product. WebSphere MQ offers the following advantages over IDL:

- Asynchronous communication:  
WebSphere MQ allows the application-specific component to poll and persistently store events even when the server is not available.
- Server side performance:  
WebSphere MQ provides faster performance on the server side. In optimized mode, WebSphere MQ stores only the pointer to an event in the repository database, while the actual event remains in the WebSphere MQ queue. This saves having to write potentially large events to the repository database.
- Agent side performance:  
WebSphere MQ provides faster performance on the application-specific component side. Using WebSphere MQ, the connector's polling thread picks up an event, places it in the connector's queue, then picks up the next event. This is faster than IDL, which requires the connector's polling thread to pick up an event, go over the network into the server process, store the event persistently in the repository database, then pick up the next event.

## JMS

Enables communication between the connector and client connector framework using Java Messaging Service (JMS).

If you select JMS as the delivery transport, additional JMS properties such as `jms.MessageBrokerName`, `jms.FactoryClassName`, `jms.Password`, and `jms.UserName`, appear in Connector Configurator. The first two of these properties are required for this transport.

**Important:** There may be a memory limitation if you use the JMS transport mechanism for a connector in the following environment:

- AIX 5.0
- WebSphere MQ 5.3.0.1
- When ICS is the integration broker

In this environment, you may experience difficulty starting both the connector controller (on the server side) and the connector (on the client side) due to memory use within the WebSphere MQ client. If your installation uses less than 768M of process heap size, IBM recommends that you set:

- The `LDR_CNTRL` environment variable in the `CWSharedEnv.sh` script.

This script resides in the `\bin` directory below the product directory. With a text editor, add the following line as the first line in the `CWSharedEnv.sh` script:

```
export LDR_CNTRL=MAXDATA=0x30000000
```

This line restricts heap memory usage to a maximum of 768 MB (3 segments \* 256 MB). If the process memory grows more than this limit, page swapping can occur, which can adversely affect the performance of your system.

- The `IPCCBaseAddress` property to a value of 11 or 12. For more information on this property, see the *System Installation Guide for UNIX*.

## DuplicateEventElimination

When you set this property to true, a JMS-enabled connector can ensure that duplicate events are not delivered to the delivery queue. To use this feature, the connector must have a unique event identifier set as the business object's **ObjectEventId** attribute in the application-specific code. This is done during connector development.

This property can also be set to false.

**Note:** When `DuplicateEventElimination` is set to `true`, you must also configure the `MonitorQueue` property to enable guaranteed event delivery.

## FaultQueue

If the connector experiences an error while processing a message then the connector moves the message to the queue specified in this property, along with a status indicator and a description of the problem.

The default value is `CONNECTORNAME/FAULTQUEUE`.

## JvmMaxHeapSize

The maximum heap size for the agent (in megabytes). This property is applicable only if the `RepositoryDirectory` value is `<REMOTE>`.

The default value is `128m`.

## JvmMaxNativeStackSize

The maximum native stack size for the agent (in kilobytes). This property is applicable only if the `RepositoryDirectory` value is `<REMOTE>`.

The default value is `128k`.

## JvmMinHeapSize

The minimum heap size for the agent (in megabytes). This property is applicable only if the `RepositoryDirectory` value is `<REMOTE>`.

The default value is `1m`.

## jms.FactoryClassName

Specifies the class name to instantiate for a JMS provider. You *must* set this connector property when you choose JMS as your delivery transport mechanism (`DeliveryTransport`).

The default is `CxCommon.Messaging.jms.IBMMQSeriesFactory`.

## jms.MessageBrokerName

Specifies the broker name to use for the JMS provider. You *must* set this connector property when you choose JMS as your delivery transport mechanism (`DeliveryTransport`).

The default is `crossworlds.queue.manager`. Use the default when connecting to a local message broker.

When you connect to a remote message broker, this property takes the following (mandatory) values:

`QueueMgrName:<Channel>:<HostName>:<PortNumber>`,

where the variables are:

`QueueMgrName`: The name of the queue manager.

`Channel`: The channel used by the client.

`HostName`: The name of the machine where the queue manager is to reside.

`PortNumber`: The port number to be used by the queue manager for listening.

For example:

```
jms.MessageBrokerName = WBIMB.Queue.Manager:CHANNEL1:RemoteMachine:1456
```

## **jms.NumConcurrentRequests**

Specifies the maximum number of concurrent service call requests that can be sent to a connector at the same time. Once that maximum is reached, new service calls block and wait for another request to complete before proceeding.

The default value is 10.

## **jms.Password**

Specifies the password for the JMS provider. A value for this property is optional.

There is no default.

## **jms.UserName**

Specifies the user name for the JMS provider. A value for this property is optional.

There is no default.

## **ListenerConcurrency**

This property supports multi-threading in MQ Listener when ICS is the integration broker. It enables batch writing of multiple events to the database, thus improving system performance. The default value is 1.

This property applies only to connectors using MQ transport. The `DeliveryTransport` property must be set to MQ.

## **Locale**

Specifies the language code, country or territory, and, optionally, the associated character code set. The value of this property determines such cultural conventions as collation and sort order of data, date and time formats, and the symbols used in monetary specifications.

A locale name has the following format:

```
ll_TT.codeset
```

where:

<i>ll</i>	a two-character language code (usually in lower case)
<i>TT</i>	a two-letter country or territory code (usually in upper case)
<i>codeset</i>	the name of the associated character code set; this portion of the name is often optional.

By default, only a subset of supported locales appears in the drop-down list. To add other supported values to the drop-down list, you must manually modify the `\Data\Std\stdConnProps.xml` file in the product directory. For more information, refer to the sections on Connector Configurator in this guide.

The default value is en\_US. If the connector has not been globalized, the only valid value for this property is en\_US. To determine whether a specific connector has been globalized, see the connector version list on these websites:

<http://www.ibm.com/software/websphere/wbiadapters/infocenter>, or  
<http://www.ibm.com/websphere/integration/wicsserver/infocenter>

## LogAtInterchangeEnd

Applicable only if RepositoryDirectory is <REMOTE>.

Specifies whether to log errors to the integration broker's log destination. Logging to the broker's log destination also turns on e-mail notification, which generates e-mail messages for the MESSAGE\_RECIPIENT specified in the InterchangeSystem.cfg file when errors or fatal errors occur.

For example, when a connector loses its connection to its application, if LogAtInterChangeEnd is set to true, an e-mail message is sent to the specified message recipient. The default is false.

## MaxEventCapacity

The maximum number of events in the controller buffer. This property is used by flow control and is applicable only if the value of the RepositoryDirectory property is <REMOTE>.

The value can be a positive integer between 1 and 2147483647. The default value is 2147483647.

## MessageFileName

The name of the connector message file. The standard location for the message file is \connectors\messages in the product directory. Specify the message filename in an absolute path if the message file is not located in the standard location.

If a connector message file does not exist, the connector uses InterchangeSystem.txt as the message file. This file is located in the product directory.

**Note:** To determine whether a specific connector has its own message file, see the individual adapter user guide.

## MonitorQueue

The logical queue that the connector uses to monitor duplicate events. It is used only if the DeliveryTransport property value is JMS and DuplicateEventElimination is set to TRUE.

The default value is CONNECTORNAME/MONITORQUEUE

## OADAutoRestartAgent

Valid only when the RepositoryDirectory is <REMOTE>.

Specifies whether the connector uses the automatic and remote restart feature. This feature uses the MQ-triggered Object Activation Daemon (OAD) to restart the connector after an abnormal shutdown, or to start a remote connector from System Monitor.

This property must be set to true to enable the automatic and remote restart feature. For information on how to configure the MQ-triggered OAD feature, see the *Installation Guide for Windows* or *for UNIX*.

The default value is false.

## **OADMaxNumRetry**

Valid only when the RepositoryDirectory is <REMOTE>.

Specifies the maximum number of times that the MQ-triggered OAD automatically attempts to restart the connector after an abnormal shutdown. The OADAutoRestartAgent property must be set to true for this property to take effect.

The default value is 1000.

## **OADRetryTimeInterval**

Valid only when the RepositoryDirectory is <REMOTE>.

Specifies the number of minutes in the retry-time interval for the MQ-triggered OAD. If the connector agent does not restart within this retry-time interval, the connector controller asks the OAD to restart the connector agent again. The OAD repeats this retry process as many times as specified by the OADMaxNumRetry property. The OADAutoRestartAgent property must be set to true for this property to take effect.

The default is 10.

## **PollEndTime**

Time to stop polling the event queue. The format is HH:MM, where *HH* represents 0-23 hours, and *MM* represents 0-59 seconds.

You must provide a valid value for this property. The default value is HH:MM, but must be changed.

## **PollFrequency**

This is the interval between the end of the last poll and the start of the next poll. PollFrequency specifies the amount of time (in milliseconds) between the end of one polling action, and the start of the next polling action. This is not the interval between polling actions. Rather, the logic is as follows:

- Poll to obtain the number of objects specified by the value of PollQuantity.
- Process these objects. For some adapters, this may be partly done on separate threads, which execute asynchronously to the next polling action.
- Delay for the interval specified by PollFrequency.
- Repeat the cycle.

Set PollFrequency to one of the following values:

- The number of milliseconds between polling actions (an integer).
- The word *key*, which causes the connector to poll only when you type the letter *p* in the connector's Command Prompt window. Enter the word in lowercase.
- The word *no*, which causes the connector not to poll. Enter the word in lowercase.

The default is 10000.

**Important:** Some connectors have restrictions on the use of this property. Where they exist, these restrictions are documented in the chapter on installing and configuring the adapter.

## PollQuantity

Designates the number of items from the application that the connector should poll for. If the adapter has a connector-specific property for setting the poll quantity, the value set in the connector-specific property will override the standard property value.

FIX

An email message is also considered an event. The connector behaves as follows when it is polled for email.

Polled once - connector goes to pick 1. the body of the message as it is also considered an attachment also. Since no DH was specified for this mime type, it will ignore the body. 2. connector process first PO attachment. DH is available for this mime type so it sends the business object to the Visual Test Connector. If the 3. accept in VTC again no BO should come thru Polled second time 1. connector process second PO attachment. DH is available for this mime type so it sends the BO to VTC2. accept in VTC again now the third PO attachment should come through. This is the correct behaviour.

## PollStartTime

The time to start polling the event queue. The format is *HH:MM*, where *HH* represents 0-23 hours, and *MM* represents 0-59 seconds.

You must provide a valid value for this property. The default value is *HH:MM*, but must be changed.

## RequestQueue

The queue that is used by the integration broker to send business objects to the connector.

The default value is `CONNECTOR/REQUESTQUEUE`.

## RepositoryDirectory

The location of the repository from which the connector reads the XML schema documents that store the meta-data for business object definitions.

When the integration broker is ICS, this value must be set to `<REMOTE>` because the connector obtains this information from the InterChange Server repository.

When the integration broker is a WebSphere message broker or WAS, this value must be set to `<local directory>`.

## ResponseQueue

Applicable only if `DeliveryTransport` is JMS and required only if `RepositoryDirectory` is `<REMOTE>`.

Designates the JMS response queue, which delivers a response message from the connector framework to the integration broker. When the integration broker is ICS, the server sends the request and waits for a response message in the JMS response queue.

## RestartRetryCount

Specifies the number of times the connector attempts to restart itself. When used for a parallel connector, specifies the number of times the master connector application-specific component attempts to restart the slave connector application-specific component.

The default is 3.

## RestartRetryInterval

Specifies the interval in minutes at which the connector attempts to restart itself. When used for a parallel connector, specifies the interval at which the master connector application-specific component attempts to restart the slave connector application-specific component. Possible values ranges from 1 to 2147483647.

The default is 1.

## RHF2MessageDomain

WebSphere message brokers and WAS only.

This property allows you to configure the value of the field domain name in the JMS header. When data is sent to WMQI over JMS transport, the adapter framework writes JMS header information, with a domain name and a fixed value of `mrm`. A configurable domain name enables users to track how the WMQI broker processes the message data.

A sample header would look like this:

```
<mcd><Msd>mrm</Msd><Set>3</Set><Type>
Retek_POPhyDesc</Type><Fmt>CwXML</Fmt></mcd>
```

The default value is `mrm`, but it may also be set to `xml`. This property only appears when `DeliveryTransport` is set to `JMSand` and `WireFormat` is set to `CwXML`.

## SourceQueue

Applicable only if `DeliveryTransport` is `JMS` and `ContainerManagedEvents` is specified.

Designates the JMS source queue for the connector framework in support of guaranteed event delivery for JMS-enabled connectors that use a JMS event store. For further information, see “`ContainerManagedEvents`” on page 32.

The default value is `CONNECTOR/SOURCEQUEUE`.

## SynchronousRequestQueue

Applicable only if `DeliveryTransport` is `JMS`.

Delivers request messages that require a synchronous response from the connector framework to the broker. This queue is necessary only if the connector uses synchronous execution. With synchronous execution, the connector framework



sends a message to the SynchronousRequestQueue and waits for a response back from the broker on the SynchronousResponseQueue. The response message sent to the connector bears a correlation ID that matches the ID of the original message.

The default is CONNECTORNAME/SYNCHRONOUSREQUESTQUEUE

## SynchronousResponseQueue

Applicable only if DeliveryTransport is JMS.

Delivers response messages sent in reply to a synchronous request from the broker to the connector framework. This queue is necessary only if the connector uses synchronous execution.

The default is CONNECTORNAME/SYNCHRONOUSRESPONSEQUEUE

## SynchronousRequestTimeout

Applicable only if DeliveryTransport is JMS.

Specifies the time in minutes that the connector waits for a response to a synchronous request. If the response is not received within the specified time, then the connector moves the original synchronous request message into the fault queue along with an error message.

The default value is 0.

## WireFormat

Message format on the transport.

- If the RepositoryDirectory is a local directory, the setting is CwXML.
- If the value of RepositoryDirectory is <REMOTE>, the setting is CwB0.

## WsifSynchronousRequestTimeout

WAS integration broker only.

Specifies the time in minutes that the connector waits for a response to a synchronous request. If the response is not received within the specified, time then the connector moves the original synchronous request message into the fault queue along with an error message.

The default value is 0.

## XMLNameSpaceFormat

WebSphere message brokers and WAS integration broker only.

A strong property that allows the user to specify short and long name spaces in the XML format of business object definitions.

The default value is short.



---

## Appendix B. Connector Configurator

This appendix describes how to use Connector Configurator to set configuration property values for your adapter.

You use Connector Configurator to:

- Create a connector-specific property template for configuring your connector
- Create a configuration file
- Set properties in a configuration file

**Note:**

In this document, backslashes (\) are used as the convention for directory paths. For UNIX installations, substitute slashes (/) for backslashes and follow the conventions for each operating system.

The topics covered in this appendix are:

- “Overview of Connector Configurator” on page 43
- “Starting Connector Configurator” on page 44
- “Creating a connector-specific property template” on page 45
- “Creating a new configuration file” on page 47
- “Setting the configuration file properties” on page 50
- “Using Connector Configurator in a globalized environment” on page 56

---

### Overview of Connector Configurator

Connector Configurator allows you to configure the connector component of your adapter for use with these integration brokers:

- WebSphere InterChange Server (ICS)
- WebSphere MQ Integrator, WebSphere MQ Integrator Broker, and WebSphere Business Integration Message Broker, collectively referred to as the WebSphere Message Brokers (WMQI)
- WebSphere Application Server (WAS)

You use Connector Configurator to:

- Create a **connector-specific property template** for configuring your connector.
- Create a **connector configuration file**; you must create one configuration file for each connector you install.
- Set properties in a configuration file.

You may need to modify the default values that are set for properties in the connector templates. You must also designate supported business object definitions and, with ICS, maps for use with collaborations as well as specify messaging, logging and tracing, and data handler parameters, as required.

The mode in which you run Connector Configurator, and the configuration file type you use, may differ according to which integration broker you are running. For example, if WMQI is your broker, you run Connector Configurator directly, and not from within System Manager (see “Running Configurator in stand-alone mode” on page 44).

Connector configuration properties include both standard configuration properties (the properties that all connectors have) and connector-specific properties (properties that are needed by the connector for a specific application or technology).

Because **standard properties** are used by all connectors, you do not need to define those properties from scratch; Connector Configurator incorporates them into your configuration file as soon as you create the file. However, you do need to set the value of each standard property in Connector Configurator.

The range of standard properties may not be the same for all brokers and all configurations. Some properties are available only if other properties are given a specific value. The Standard Properties window in Connector Configurator will show the properties available for your particular configuration.

For **connector-specific properties**, however, you need first to define the properties and then set their values. You do this by creating a connector-specific property template for your particular adapter. There may already be a template set up in your system, in which case, you simply use that. If not, follow the steps in “Creating a new template” on page 45 to set up a new one.

**Note:** Connector Configurator runs only in a Windows environment. If you are running the connector in a UNIX environment, use Connector Configurator in Windows to modify the configuration file and then copy the file to your UNIX environment.

---

## Starting Connector Configurator

You can start and run Connector Configurator in either of two modes:

- Independently, in stand-alone mode
- From System Manager

### Running Configurator in stand-alone mode

You can run Connector Configurator independently and work with connector configuration files, irrespective of your broker.

To do so:

- From **Start>Programs**, click **IBM WebSphere InterChange Server>IBM WebSphere Business Integration Tools>Connector Configurator**.
- Select **File>New>Connector Configuration**.
- When you click the pull-down menu next to **System Connectivity Integration Broker**, you can select ICS, WebSphere Message Brokers or WAS, depending on your broker.

You may choose to run Connector Configurator independently to generate the file, and then connect to System Manager to save it in a System Manager project (see “Completing a configuration file” on page 49.)

---

## Running Configurator from System Manager

You can run Connector Configurator from System Manager.

To run Connector Configurator:

1. Open the System Manager.

2. In the System Manager window, expand the **Integration Component Libraries** icon and highlight **Connectors**.
3. From the System Manager menu bar, click **Tools>Connector Configurator**. The Connector Configurator window opens and displays a **New Connector** dialog box.
4. When you click the pull-down menu next to **System Connectivity Integration Broker**, you can select ICS, WebSphere Message Brokers or WAS, depending on your broker.

To edit an existing configuration file:

- In the System Manager window, select any of the configuration files listed in the Connector folder and right-click on it. Connector Configurator opens and displays the configuration file with the integration broker type and file name at the top.
- From Connector Configurator, select **File>Open**. Select the name of the connector configuration file from a project or from the directory in which it is stored.
- Click the Standard Properties tab to see which properties are included in this configuration file.

---

## Creating a connector-specific property template

To create a configuration file for your connector, you need a connector-specific property template as well as the system-supplied standard properties.

You can create a brand-new template for the connector-specific properties of your connector, or you can use an existing connector definition as the template.

- To create a new template, see “Creating a new template” on page 45.
- To use an existing file, simply modify an existing template and save it under the new name. You can find existing templates in your `\WebSphereAdapters\bin\Data\App` directory.

## Creating a new template

This section describes how you create properties in the template, define general characteristics and values for those properties, and specify any dependencies between the properties. Then you save the template and use it as the base for creating a new connector configuration file.

To create a template in Connector Configurator:

1. Click **File>New>Connector-Specific Property Template**.
2. The **Connector-Specific Property Template** dialog box appears.
  - Enter a name for the new template in the **Name** field below **Input a New Template Name**. You will see this name again when you open the dialog box for creating a new configuration file from a template.
  - To see the connector-specific property definitions in any template, select that template’s name in the **Template Name** display. A list of the property definitions contained in that template appears in the **Template Preview** display.
3. You can use an existing template whose property definitions are similar to those required by your connector as a starting point for your template. If you do not see any template that displays the connector-specific properties used by your connector, you will need to create one.

- If you are planning to modify an existing template, select the name of the template from the list in the **Template Name** table below **Select the Existing Template to Modify: Find Template**.
- This table displays the names of all currently available templates. You can also search for a template.

### Specifying general characteristics

When you click **Next** to select a template, the **Properties - Connector-Specific Property Template** dialog box appears. The dialog box has tabs for General characteristics of the defined properties and for Value restrictions. The General display has the following fields:

- **General:**  
Property Type  
Updated Method  
Description
- **Flags**  
Standard flags
- **Custom Flag**  
Flag

After you have made selections for the general characteristics of the property, click the **Value** tab.

### Specifying values

The **Value** tab enables you to set the maximum length, the maximum multiple values, a default value, or a value range for the property. It also allows editable values. To do so:

1. Click the **Value** tab. The display panel for Value replaces the display panel for General.
2. Select the name of the property in the **Edit properties** display.
3. In the fields for **Max Length** and **Max Multiple Values**, enter your values.

To create a new property value:

1. Select the property in the **Edit properties** list and right-click on it.
2. From the dialog box, select **Add**.
3. Enter the name of the new property value and click OK. The value appears in the **Value** panel on the right.

The **Value** panel displays a table with three columns:

The **Value** column shows the value that you entered in the **Property Value** dialog box, and any previous values that you created.

The **Default Value** column allows you to designate any of the values as the default.

The **Value Range** shows the range that you entered in the **Property Value** dialog box.

After a value has been created and appears in the grid, it can be edited from within the table display.

To make a change in an existing value in the table, select an entire row by clicking on the row number. Then right-click in the **Value** field and click **Edit Value**.

## Setting dependencies

When you have made your changes to the **General** and **Value** tabs, click **Next**. The **Dependencies - Connector-Specific Property Template** dialog box appears.

A dependent property is a property that is included in the template and used in the configuration file *only if* the value of another property meets a specific condition. For example, `PollQuantity` appears in the template only if `JMS` is the transport mechanism and `DuplicateEventElimination` is set to `True`.

To designate a property as dependent and to set the condition upon which it depends, do this:

1. In the **Available Properties** display, select the property that will be made dependent.
2. In the **Select Property** field, use the drop-down menu to select the property that will hold the conditional value.
3. In the **Condition Operator** field, select one of the following:
  - == (equal to)
  - != (not equal to)
  - > (greater than)
  - < (less than)
  - >= (greater than or equal to)
  - <=(less than or equal to)
4. In the **Conditional Value** field, enter the value that is required in order for the dependent property to be included in the template.
5. With the dependent property highlighted in the **Available Properties** display, click an arrow to move it to the **Dependent Property** display.
6. Click **Finish**. Connector Configurator stores the information you have entered as an XML document, under `\data\app` in the `\bin` directory where you have installed Connector Configurator.

---

## Creating a new configuration file

When you create a new configuration file, you must name it and select an integration broker.

- In the System Manager window, right-click on the **Connectors** folder and select **Create New Connector**. Connector Configurator opens and displays the **New Connector** dialog box.
- In stand-alone mode: from Connector Configurator, select **File>New>Connector Configuration**. In the New Connector window, enter the name of the new connector.

You also need to select an integration broker. The broker you select determines the properties that will appear in the configuration file. To select a broker:

- In the **Integration Broker** field, select `ICS`, `WebSphere Message Brokers` or `WAS connectivity`.
- drop-down the remaining fields in the **New Connector** window, as described later in this chapter.

## Creating a configuration file from a connector-specific template

Once a connector-specific template has been created, you can use it to create a configuration file:

1. Click **File>New>Connector Configuration**.
2. The **New Connector** dialog box appears, with the following fields:
  - **Name**

Enter the name of the connector. Names are case-sensitive. The name you enter must be unique, and must be consistent with the file name for a connector that is installed on the system.

**Important:** Connector Configurator does not check the spelling of the name that you enter. You must ensure that the name is correct.
  - **System Connectivity**

Click ICS or WebSphere Message Brokers or WAS.
  - **Select Connector-Specific Property Template**

Type the name of the template that has been designed for your connector. The available templates are shown in the **Template Name** display. When you select a name in the Template Name display, the **Property Template Preview** display shows the connector-specific properties that have been defined in that template.

Select the template you want to use and click **OK**.
3. A configuration screen appears for the connector that you are configuring. The title bar shows the integration broker and connector name. You can fill in all the field values to drop-down the definition now, or you can save the file and complete the fields later.
4. To save the file, click **File>Save>To File** or **File>Save>To Project**. To save to a project, System Manager must be running.

If you save as a file, the **Save File Connector** dialog box appears. Choose \*.cfg as the file type, verify in the File Name field that the name is spelled correctly and has the correct case, navigate to the directory where you want to locate the file, and click **Save**. The status display in the message panel of Connector Configurator indicates that the configuration file was successfully created.

**Important:** The directory path and name that you establish here must match the connector configuration file path and name that you supply in the startup file for the connector.
5. To complete the connector definition, enter values in the fields for each of the tabs of the Connector Configurator window, as described later in this chapter.

---

## Using an existing file

You may have an existing file available in one or more of the following formats:

- A connector definition file.

This is a text file that lists properties and applicable default values for a specific connector. Some connectors include such a file in a `\repository` directory in their delivery package (the file typically has the extension `.txt`; for example, `CN_XML.txt` for the XML connector).
- An ICS repository file.

Definitions used in a previous ICS implementation of the connector may be available to you in a repository file that was used in the configuration of that connector. Such a file typically has the extension `.in` or `.out`.
- A previous configuration file for the connector.

Such a file typically has the extension `*.cfg`.



Although any of these file sources may contain most or all of the connector-specific properties for your connector, the connector configuration file will not be complete until you have opened the file and set properties, as described later in this chapter.

To use an existing file to configure a connector, you must open the file in Connector Configurator, revise the configuration, and then resave the file.

Follow these steps to open a \*.txt, \*.cfg, or \*.in file from a directory:

1. In Connector Configurator, click **File>Open>From File**.
2. In the **Open File Connector** dialog box, select one of the following file types to see the available files:
  - Configuration (\*.cfg)
  - ICS Repository (\*.in, \*.out)  
Choose this option if a repository file was used to configure the connector in an ICS environment. A repository file may include multiple connector definitions, all of which will appear when you open the file.
  - All files (\*.\*)  
Choose this option if a \*.txt file was delivered in the adapter package for the connector, or if a definition file is available under another extension.
3. In the directory display, navigate to the appropriate connector definition file, select it, and click **Open**.

Follow these steps to open a connector configuration from a System Manager project:

1. Start System Manager. A configuration can be opened from or saved to System Manager only if System Manager has been started.
2. Start Connector Configurator.
3. Click **File>Open>From Project**.

---

## Completing a configuration file

When you open a configuration file or a connector from a project, the Connector Configurator window displays the configuration screen, with the current attributes and values.

The title of the configuration screen displays the integration broker and connector name as specified in the file. Make sure you have the correct broker. If not, change the broker value before you configure the connector. To do so:

1. Under the **Standard Properties** tab, select the value field for the BrokerType property. In the drop-down menu, select the value ICS, WMQI, or WAS.
2. The Standard Properties tab will display the properties associated with the selected broker. You can save the file now or complete the remaining configuration fields, as described in “Specifying supported business object definitions” on page 52..
3. When you have finished your configuration, click **File>Save>To Project** or **File>Save>To File**.

If you are saving to file, select \*.cfg as the extension, select the correct location for the file and click **Save**.

If multiple connector configurations are open, click **Save All to File** to save all of the configurations to file, or click **Save All to Project** to save all connector configurations to a System Manager project.

Before it saves the file, Connector Configurator checks that values have been set for all required standard properties. If a required standard property is missing a value, Connector Configurator displays a message that the validation failed. You must supply a value for the property in order to save the configuration file.

---

## Setting the configuration file properties

When you create and name a new connector configuration file, or when you open an existing connector configuration file, Connector Configurator displays a configuration screen with tabs for the categories of required configuration values.

Connector Configurator requires values for properties in these categories for connectors running on all brokers:

- Standard Properties
- Connector-specific Properties
- Supported Business Objects
- Trace/Log File values
- Data Handler (applicable for connectors that use JMS messaging with guaranteed event delivery)

**Note:** For connectors that use JMS messaging, an additional category may display, for configuration of data handlers that convert the data to business objects.

For connectors running on **ICS**, values for these properties are also required:

- Associated Maps
- Resources
- Messaging (where applicable)

**Important:** Connector Configurator accepts property values in either English or non-English character sets. However, the names of both standard and connector-specific properties, and the names of supported business objects, must use the English character set only.

Standard properties differ from connector-specific properties as follows:

- Standard properties of a connector are shared by both the application-specific component of a connector and its broker component. All connectors have the same set of standard properties. These properties are described in Appendix A of each adapter guide. You can change some but not all of these values.
- Application-specific properties apply only to the application-specific component of a connector, that is, the component that interacts directly with the application. Each connector has application-specific properties that are unique to its application. Some of these properties provide default values and some do not; you can modify some of the default values. The installation and configuration chapters of each adapter guide describe the application-specific properties and the recommended values.

The fields for **Standard Properties** and **Connector-Specific Properties** are color-coded to show which are configurable:

- A field with a grey background indicates a standard property. You can change the value but cannot change the name or remove the property.

- A field with a white background indicates an application-specific property. These properties vary according to the specific needs of the application or connector. You can change the value and delete these properties.
- Value fields are configurable.
- The **Update Method** field is displayed for each property. It indicates whether a component or agent restart is necessary to activate changed values. You cannot configure this setting.

## Setting standard connector properties

To change the value of a standard property:

1. Click in the field whose value you want to set.
2. Either enter a value, or select one from the drop-down menu if it appears.
3. After entering all the values for the standard properties, you can do one of the following:
  - To discard the changes, preserve the original values, and exit Connector Configurator, click **File>Exit** (or close the window), and click **No** when prompted to save changes.
  - To enter values for other categories in Connector Configurator, select the tab for the category. The values you enter for **Standard Properties** (or any other category) are retained when you move to the next category. When you close the window, you are prompted to either save or discard the values that you entered in all the categories as a whole.
  - To save the revised values, click **File>Exit** (or close the window) and click **Yes** when prompted to save changes. Alternatively, click **Save>To File** from either the File menu or the toolbar.

## Setting application-specific configuration properties

For application-specific configuration properties, you can add or change property names, configure values, delete a property, and encrypt a property. The default property length is 255 characters.

1. Right-click in the top left portion of the grid. A pop-up menu bar will appear. Click **Add** to add a property. To add a child property, right-click on the parent row number and click **Add child**.
2. Enter a value for the property or child property.
3. To encrypt a property, select the **Encrypt** box.
4. Choose to save or discard changes, as described for “Setting standard connector properties.”

The Update Method displayed for each property indicates whether a component or agent restart is necessary to activate changed values.

**Important:** Changing a preset application-specific connector property name may cause a connector to fail. Certain property names may be needed by the connector to connect to an application or to run properly.

## Encryption for connector properties

Application-specific properties can be encrypted by selecting the **Encrypt** check box in the Connector-specific Properties window. To decrypt a value, click to clear the **Encrypt** check box, enter the correct value in the **Verification** dialog box, and click **OK**. If the entered value is correct, the value is decrypted and displays.

The adapter user guide for each connector contains a list and description of each property and its default value.

If a property has multiple values, the **Encrypt** check box will appear for the first value of the property. When you select **Encrypt**, all values of the property will be encrypted. To decrypt multiple values of a property, click to clear the **Encrypt** check box for the first value of the property, and then enter the new value in the **Verification** dialog box. If the input value is a match, all multiple values will decrypt.

### Update method

Refer to the descriptions of update methods found in the *Standard configuration properties for connectors* appendix, under “Setting and updating property values” on page 26.

## Specifying supported business object definitions

Use the **Supported Business Objects** tab in Connector Configurator to specify the business objects that the connector will use. You must specify both generic business objects and application-specific business objects, and you must specify associations for the maps between the business objects.

**Note:** Some connectors require that certain business objects be specified as supported in order to perform event notification or additional configuration (using meta-objects) with their applications. For more information, see the *Connector Development Guide for C++* or the *Connector Development Guide for Java*.

### If ICS is your broker

To specify that a business object definition is supported by the connector, or to change the support settings for an existing business object definition, click the **Supported Business Objects** tab and use the following fields.

**Business object name:** To designate that a business object definition is supported by the connector, with System Manager running:

1. Click an empty field in the **Business Object Name** list. A drop-down list displays, showing all the business object definitions that exist in the System Manager project.
2. Click on a business object to add it.
3. Set the **Agent Support** (described below) for the business object.
4. In the File menu of the Connector Configurator window, click **Save to Project**. The revised connector definition, including designated support for the added business object definition, is saved to an ICL (Integration Component Library) project in System Manager.

To delete a business object from the supported list:

1. To select a business object field, click the number to the left of the business object.
2. From the **Edit** menu of the Connector Configurator window, click **Delete Row**. The business object is removed from the list display.
3. From the **File** menu, click **Save to Project**.

Deleting a business object from the supported list changes the connector definition and makes the deleted business object unavailable for use in this implementation

of this connector. It does not affect the connector code, nor does it remove the business object definition itself from System Manager.

**Agent support:** If a business object has Agent Support, the system will attempt to use that business object for delivering data to an application via the connector agent.

Typically, application-specific business objects for a connector are supported by that connector's agent, but generic business objects are not.

To indicate that the business object is supported by the connector agent, check the **Agent Support** box. The Connector Configurator window does not validate your Agent Support selections.

**Maximum transaction level:** The maximum transaction level for a connector is the highest transaction level that the connector supports.

For most connectors, Best Effort is the only possible choice.

You must restart the server for changes in transaction level to take effect.

### **If a WebSphere Message Broker is your broker**

If you are working in stand-alone mode (not connected to System Manager), you must enter the business object name manually.

If you have System Manager running, you can select the empty box under the **Business Object Name** column in the **Supported Business Objects** tab. A combo box appears with a list of the business object available from the Integration Component Library project to which the connector belongs. Select the business object you want from the list.

The **Message Set ID** is an optional field for WebSphere Business Integration Message Broker 5.0, and need not be unique if supplied. However, for WebSphere MQ Integrator and Integrator Broker 2.1, you must supply a unique **ID**.

### **If WAS is your broker**

When WebSphere Application Server is selected as your broker type, Connector Configurator does not require message set IDs. The **Supported Business Objects** tab shows a **Business Object Name** column only for supported business objects.

If you are working in stand-alone mode (not connected to System Manager), you must enter the business object name manually.

If you have System Manager running, you can select the empty box under the Business Object Name column in the Supported Business Objects tab. A combo box appears with a list of the business objects available from the Integration Component Library project to which the connector belongs. Select the business object you want from this list.

## **Associated maps (ICS only)**

Each connector supports a list of business object definitions and their associated maps that are currently active in WebSphere InterChange Server. This list appears when you select the **Associated Maps** tab.

The list of business objects contains the application-specific business object which the agent supports and the corresponding generic object that the controller sends

to the subscribing collaboration. The association of a map determines which map will be used to transform the application-specific business object to the generic business object or the generic business object to the application-specific business object.

If you are using maps that are uniquely defined for specific source and destination business objects, the maps will already be associated with their appropriate business objects when you open the display, and you will not need (or be able) to change them.

If more than one map is available for use by a supported business object, you will need to explicitly bind the business object with the map that it should use.

The **Associated Maps** tab displays the following fields:

- **Business Object Name**

These are the business objects supported by this connector, as designated in the **Supported Business Objects** tab. If you designate additional business objects under the Supported Business Objects tab, they will be reflected in this list after you save the changes by choosing **Save to Project** from the **File** menu of the Connector Configurator window.

- **Associated Maps**

The display shows all the maps that have been installed to the system for use with the supported business objects of the connector. The source business object for each map is shown to the left of the map name, in the **Business Object Name** display.

- **Explicit**

In some cases, you may need to explicitly bind an associated map.

Explicit binding is required only when more than one map exists for a particular supported business object. When ICS boots, it tries to automatically bind a map to each supported business object for each connector. If more than one map takes as its input the same business object, the server attempts to locate and bind one map that is the superset of the others.

If there is no map that is the superset of the others, the server will not be able to bind the business object to a single map, and you will need to set the binding explicitly.

To explicitly bind a map:

1. In the **Explicit** column, place a check in the check box for the map you want to bind.
2. Select the map that you intend to associate with the business object.
3. In the **File** menu of the Connector Configurator window, click **Save to Project**.
4. Deploy the project to ICS.
5. Reboot the server for the changes to take effect.

## Resources (ICS)

The **Resource** tab allows you to set a value that determines whether and to what extent the connector agent will handle multiple processes concurrently, using connector agent parallelism.

Not all connectors support this feature. If you are running a connector agent that was designed in Java to be multi-threaded, you are advised not to use this feature, since it is usually more efficient to use multiple threads than multiple processes.

## Messaging (ICS)

The messaging properties are available only if you have set MQ as the value of the `DeliveryTransport` standard property and ICS as the broker type. These properties affect how your connector will use queues.

## Setting trace/log file values

When you open a connector configuration file or a connector definition file, Connector Configurator uses the logging and tracing values of that file as default values. You can change those values in Connector Configurator.

To change the logging and tracing values:

1. Click the **Trace/Log Files** tab.
2. For either logging or tracing, you can choose to write messages to one or both of the following:

- To console (STDOUT):  
Writes logging or tracing messages to the STDOUT display.

**Note:** You can only use the STDOUT option from the **Trace/Log Files** tab for connectors running on the Windows platform.

- To File:  
Writes logging or tracing messages to a file that you specify. To specify the file, click the directory button (ellipsis), navigate to the preferred location, provide a file name, and click **Save**. Logging or tracing message are written to the file and location that you specify.

**Note:** Both logging and tracing files are simple text files. You can use the file extension that you prefer when you set their file names. For tracing files, however, it is advisable to use the extension `.trace` rather than `.trc`, to avoid confusion with other files that might reside on the system. For logging files, `.log` and `.txt` are typical file extensions.

## Data handlers

The data handlers section is available for configuration only if you have designated a value of JMS for `DeliveryTransport` and a value of JMS for `ContainerManagedEvents`. Not all adapters make use of data handlers.

See the descriptions under `ContainerManagedEvents` in Appendix A, Standard Properties, for values to use for these properties. For additional details, see the *Connector Development Guide for C++* or the *Connector Development Guide for Java*.

---

## Saving your configuration file

When you have finished configuring your connector, save the connector configuration file. Connector Configurator saves the file in the broker mode that you selected during configuration. The title bar of Connector Configurator always displays the broker mode (ICS, WMQI or WAS) that it is currently using.

The file is saved as an XML document. You can save the XML document in three ways:

- From System Manager, as a file with a `*.con` extension in an Integration Component Library, or
- In a directory that you specify.

- In stand-alone mode, as a file with a \*.cfg extension in a directory folder. By default, the file is saved to \WebSphereAdapters\bin\Data\App.
- You can also save it to a WebSphere Application Server project if you have set one up.

For details about using projects in System Manager, and for further information about deployment, see the following implementation guides:

- For ICS: *Implementation Guide for WebSphere InterChange Server*
- For WebSphere Message Brokers: *Implementing Adapters with WebSphere Message Brokers*
- For WAS: *Implementing Adapters with WebSphere Application Server*

---

## Changing a configuration file

You can change the integration broker setting for an existing configuration file. This enables you to use the file as a template for creating a new configuration file, which can be used with a different broker.

**Note:** You will need to change other configuration properties as well as the broker mode property if you switch integration brokers.

To change your broker selection within an existing configuration file (optional):

- Open the existing configuration file in Connector Configurator.
- Select the **Standard Properties** tab.
- In the **BrokerType** field of the Standard Properties tab, select the value that is appropriate for your broker.

When you change the current value, the available tabs and field selections on the properties screen will immediately change, to show only those tabs and fields that pertain to the new broker you have selected.

---

## Completing the configuration

After you have created a configuration file for a connector and modified it, make sure that the connector can locate the configuration file when the connector starts up.

To do so, open the startup file used for the connector, and verify that the location and file name used for the connector configuration file match exactly the name you have given the file and the directory or path where you have placed it.

---

## Using Connector Configurator in a globalized environment

Connector Configurator is globalized and can handle character conversion between the configuration file and the integration broker. Connector Configurator uses native encoding. When it writes to the configuration file, it uses UTF-8 encoding.

Connector Configurator supports non-English characters in:

- All value fields
- Log file and trace file path (specified in the **Trace/Log files** tab)

The drop list for the CharacterEncoding and Locale standard configuration properties displays only a subset of supported values. To add other values to the drop list, you must manually modify the \Data\Std\stdConnProps.xml file in the product directory.



For example, to add the locale en\_GB to the list of values for the Locale property, open the stdConnProps.xml file and add the line in boldface type below:

```
<Property name="Locale"
isRequired="true"
updateMethod="component restart">
  <ValidType>String</ValidType>
  <ValidValues>
    <Value>ja_JP</Value>
    <Value>ko_KR</Value>
    <Value>zh_CN</Value>
    <Value>zh_TW</Value>
    <Value>fr_FR</Value>
    <Value>de_DE</Value>
    <Value>it_IT</Value>
    <Value>es_ES</Value>
    <Value>pt_BR</Value>
    <Value>en_US</Value>
    <Value>en_GB</Value>
  <DefaultValue>en_US</DefaultValue>
</ValidValues>
</Property>
```



---

## Notices

IBM may not offer the products, services, or features discussed in this document in all countries. Consult your local IBM representative for information on the products and services currently available in your area. Any reference to an IBM product, program, or service is not intended to state or imply that only that IBM product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any IBM intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any non-IBM product, program, or service.

IBM may have patents or pending patent applications covering subject matter described in this document. The furnishing of this document does not give you any license to these patents. You can send license inquiries, in writing, to:

IBM Director of Licensing  
IBM Corporation  
North Castle Drive  
Armonk, NY 10504-1785  
U.S.A.

The following paragraph does not apply to the United Kingdom or any other country where such provisions are inconsistent with local law:

INTERNATIONAL BUSINESS MACHINES CORPORATION PROVIDES THIS PUBLICATION "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some states do not allow disclaimer of express or implied warranties in certain transactions, therefore, this statement may not apply to you.

This information could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. IBM may make improvements and/or changes in the product(s) and/or program(s) described in this publication at any time without notice.

Any references in this information to non-IBM Web sites are provided for convenience only and do not in any manner serve as an endorsement of those Web sites. The materials at those Web sites are not part of the materials for this IBM product and use of those Web sites is at your own risk.

IBM may use or distribute any of the information you supply in any way it believes appropriate without incurring any obligation to you.

Licensees of this program who wish to have information about it for the purpose of enabling: (i) the exchange of information between independently created programs and other programs (including this one) and (ii) the mutual use of the information which has been exchanged, should contact:

IBM Burlingame Laboratory Director  
IBM Burlingame Laboratory  
577 Airport Blvd., Suite 800

Burlingame, CA 94010  
U.S.A

Such information may be available, subject to appropriate terms and conditions, including in some cases, payment of a fee.

The licensed program described in this document and all licensed material available for it are provided by IBM under terms of the IBM Customer Agreement, IBM International Program License Agreement, or any equivalent agreement between us.

Any performance data contained herein was determined in a controlled environment. Therefore, the results obtained in other operating environments may vary significantly. Some measurements may have been made on development-level systems and there is no guarantee that these measurements will be the same on generally available systems. Furthermore, some measurement may have been estimated through extrapolation. Actual results may vary. Users of this document should verify the applicable data for their specific environment.

Information concerning non-IBM products was obtained from the suppliers of those products, their published announcements or other publicly available sources. IBM has not necessarily tested those products and cannot confirm the accuracy of performance, compatibility or any other claims related to non-IBM products. Questions on the capabilities of non-IBM products should be addressed to the suppliers of those products.

This information may contain examples of data and reports used in daily business operations. To illustrate them as completely as possible, the examples may include the names of individuals, companies, brands, and products. All of these names are fictitious and any similarity to the names and addresses used by an actual business enterprise is entirely coincidental.

All statements regarding IBM's future direction or intent are subject to change or withdrawal without notice, and represent goals and objectives only.

#### COPYRIGHT LICENSE

This information may contain sample application programs in source language, which illustrates programming techniques on various operating platforms. You may copy, modify, and distribute these sample programs in any form without payment to IBM, for the purposes of developing, using, marketing or distributing application programs conforming to the application programming interface for the operating platform for which the sample programs are written. These examples have not been thoroughly tested under all conditions. IBM, therefore, cannot guarantee or imply reliability, serviceability, or function of these programs.

---

## Programming interface information

Programming interface information, if provided, is intended to help you create application software using this program.

General-use programming interfaces allow you to write application software that obtain the services of this program's tools.

However, this information may also contain diagnosis, modification, and tuning information. Diagnosis, modification and tuning information is provided to help you debug your application software.

**Warning:** Do not use this diagnosis, modification, and tuning information as a programming interface because it is subject to change.

---

## Trademarks and service marks

The following terms are trademarks or registered trademarks of International Business Machines Corporation in the United States or other countries, or both:

IBM  
the IBM logo  
AIX  
CrossWorlds  
DB2  
DB2 Universal Database  
Domino  
Lotus  
Lotus Notes  
MQIntegrator  
MQSeries  
Tivoli  
WebSphere

Microsoft, Windows, Windows NT, and the Windows logo are trademarks of Microsoft Corporation in the United States, other countries, or both.

MMX, Pentium, and ProShare are trademarks or registered trademarks of Intel Corporation in the United States, other countries, or both.

Java and all Java-based trademarks are trademarks of Sun Microsystems, Inc. in the United States, other countries, or both.

Other company, product or service names may be trademarks or service marks of others.



IBM WebSphere Business Integration Adapter FrameworkV2.4.