

HP Business Availability Center

for the Windows and Solaris operating systems

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Business Process Insight Deployment Guide

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1 Welcome to This Guide

This guide describes how to install the HP Business Process Insight (BPI) Server, which is an HP Business Availability Center (BAC) application, before installing the BPI Server component, you must already have installed HP Business Availability Center.

The guide provides some detail of how the BPI Server installation fits within your BAC implementation and what you need to consider when installing the BPI Server for the first time. The guide also provides instructions for upgrading your BPI system from version 7.50.

This chapter includes:

- [How This Guide Is Organized](#) on page 9
- [Who Should Read This Guide](#) on page 10
- [Getting More Information](#) on page 11

How This Guide Is Organized

This guide covers the following topics:

- [Chapter 2, Overview](#)

This chapter provides a description of the options you have for installing the BPI Server. In particular, it describes the differing installation options for development and pilot implementations, and enterprise systems.

- [Chapter 3, Before Starting the Installation](#)

This chapter lists the information that you need to be aware of and data that you need to have available before starting the installation. This chapter also covers database requirements for BPI that you must read. BPI uses significant database resources and has specific requirements on the database configuration that you need to be aware of before installing BPI.

- [Chapter 4, Installing the BPI Server](#)

This chapter describes the installation procedure for the BPI Server.

- [Chapter 5, Re-installing BPI Server Components](#)

This chapter describes the procedure for re-installing the BPI Server.

- [Chapter 6, Uninstalling BPI Server Components](#)

This chapter describes the procedure for removing the BPI Server components from the systems where they are installed.

- [Chapter 7, Upgrading to BPI Version 8.00](#)

This chapter describes the procedure for upgrading from a BPI version 7.50 system to a BPI Server version 8.00 system.

The BPI installation requirements have changed significantly since BPI version 7.50 and you are strongly advised to read this chapter before starting your BPI upgrade.

- [Appendix A, Database Tables Defined for BPI](#)

This appendix lists the database tables that are defined for BPI in order that you can check to ensure there are no clashes with other database tables that you have defined.

- [Appendix B, Reporting Problems to Hewlett-Packard](#)

This chapter provides guidance on the data that you can collect and make available to the support organization when reporting a problem related to your BPI system.

Who Should Read This Guide

This guide is intended for all types of HP Business Availability Center administrators.

Readers of this guide should be knowledgeable and highly skilled in enterprise system administration and knowledgeable about BAC and BPI.

Getting More Information

For a complete list of all online documentation included with BAC, additional online resources, information on acquiring documentation updates, and typographical conventions used in this guide, see the Business Availability Center Deployment Guide.

2 Overview

Business Process Insight (BPI) is an HP Business Availability Center (BAC) application. Some components of BPI are installed as part of your BAC implementation, and some components need to be installed separately.

The BPI components installed as part of BAC enable you to:

- model Business Processes using the BPI Modeler.
- link your Business Process Steps to IT operational resources, which are represented as CIs within the UCMDB.
- set KPI objectives on your Business Process and Business Process Steps in order to monitor the progress of your Business Processes against the defined objectives.
- View the health of your Business Processes using `Dashboard > Flow Map`

This chapter covers the following topics:

- A description of the features available when you install the BPI Server; see section [BPI Server](#) on page 14.
- An overview of the relationship between the BPI Server and TransactionVision; see section [BPI and TransactionVision](#) on page 15.
- An overview of the BPI components installed and the options for installing the BPI Server components; see section [BPI Components](#) on page 16.
- Details of the BPI licensing requirement; see section [Licensing](#) on page 19
- Microsoft Server Cluster support; see section [High Availability Using Microsoft Server Clusters](#) on page 21.

If you want to skip the preliminary descriptions and see a summary of the installation steps, continue at section [Summary of BPI Server Installation Steps](#) on page 22.

BPI Server

You can then, additionally, install the BPI Server, which adds Business Process Insight as an Application into BAC. Installing the BPI Server enables you to understand the business impact of system failures, and degraded service performance, on your operations and customers. It also enables you to monitor and report on the status of your business.

The following is a list of some of the additional features that are available when you have installed and configured the BPI Server:

- BPI Modeler, which is enhanced to enable you to model and link individual Business Process Steps to business events.
- Monitor Definer, which you use to define instance thresholds. You can configure the system to alert you when individual process instances violate these instance thresholds.
- Business Process Insight Application, which you use to monitor the health of the individual instances of your processes. This is accessed from the following menu option:

Application > Business Process Insight > Health

- Reporting capabilities, which enable you to create reports from the data that is created and stored by the Business Process Insight Application.

If you are interested only in monitoring the effect of IT operational resources on your processes, you do not need to install the BPI Server, and you do not need to read this document.

For a more complete overview of BPI and a detailed description of the BPI components, refer to *Business Process Insight Reference Information*.

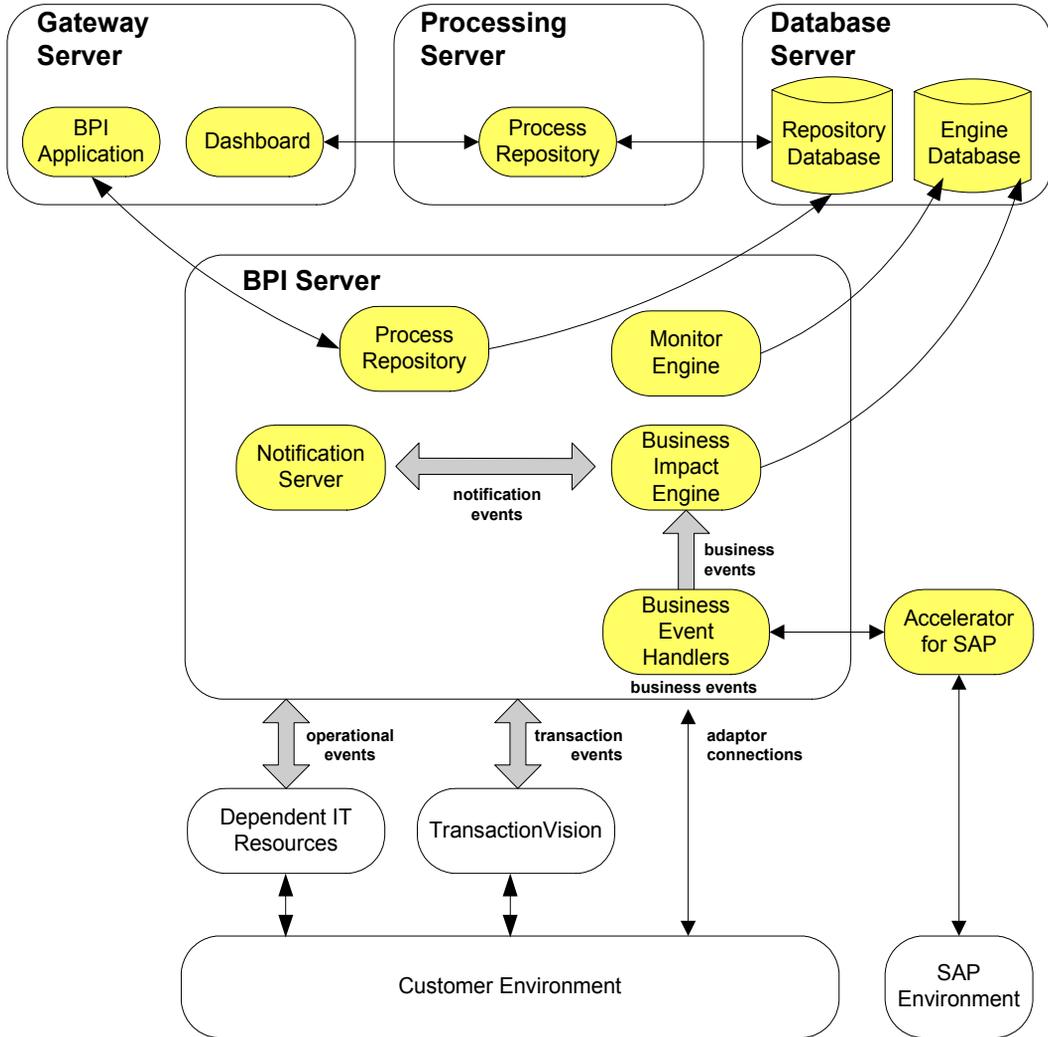
BPI and TransactionVision

As part of the HP Business Transaction Management solution, BPI can be configured to link Process Steps to TransactionVision transactions; instructions for enabling this feature are also provided in the *Business Process Insight Reference Information*. For information relating to how to create processes that link to Transaction Vision transaction, refer to the *Business Process Insight Integration Training Guide - Modeling Processes* and the *Business Process Insight Modeler Online Help*.

BPI Components

The following is a high level diagram of the BPI components that you are installing and their connectivity to other components.

Figure 1 BPI Components



In addition to the BPI components, some third-party products are installed with BPI, one of which is the Tomcat Servlet Engine. Tomcat is used to manage the Java Server Pages (JSPs), which provide the dynamic web content for some of the BPI Web pages.

BPI Installation Program

BPI has the following installation programs:

- BPI Server
- BPI Accelerator for SAP

There is an installation file for the BPI Accelerator for SAP, which contains the files and information required to install the Accelerator. Refer to the *HP Business Process Insight Accelerator for SAP Guide* for details of installing and using the Accelerator.



Note that only one copy of the BPI Server can be run on any one machine. You cannot install and run multiple copies of the BPI Server component, or any install option that contains the Server component.

In the case of the Accelerator installation, it can be installed at any time, before or after the BPI Server; however, you need to have installed BAC and the BPI Server needs to be running before you can use the Accelerator.

The questions asked during the installation programs are detailed in [Chapter 4, Installing the BPI Server](#).

Installation Options and Component Distribution for the BPI Server

You can install the BPI Server on the same machine as the BAC Processing Server, or you can install the BPI Server on a separate machine. Where you install BPI depends on your requirements, the purpose of the installation and the number of business events that you anticipate the BPI Server will be processing. BPI uses a significant amount of database resource to process data, so unless you are using BPI for development or for a pilot, you need to make sure that the BPI Server has a dedicated database instance, or dedicated database server installation.

The following are the recommended options for installing the BPI Server:

1. on the machine where the Data Processing Server is installed and using the same database instance as BAC.

This option is suitable only for a development or a pilot implementation purposes. You should not run an enterprise system using this option. Using this option means you can rely on the existing configuration of the database and you can just install the BPI Server without any further configuration of the database.

2. on a different, dedicated, machine and with a separate database instance, within the same database server, for the BPI data.

This option is suitable for a enterprise system, but relies on the fact that it is possible to configure another database, or database instance on the existing database server; see also option 3.

3. on a different, dedicated, machine using a separate database server.

This option is required for a enterprise system, in cases where it is not possible to create an additional database or database instance within the existing database server.

Both option 2 and option 3 require you to set up and configure a database server, or an instance within an existing database server for the BPI Server. Section [BPI Instance Database Requirements](#) on page 32 provides details of the database configuration requirements for the BPI Server.

Licensing

You must have a license key password to use the BPI Server. Following your initial installation, you are automatically assigned a 60-day trial license. This license covers both the BPI Server and the BPI Accelerator for SAP applications. Within this 60 day period, you must obtain either a trial license extension, or a permanent license key password for the BPI Server.

The BPI Server uses a Nodelocked license based on the short hostname (not the fully-qualified hostname) of the machine where the BPI Server is installed. You must supply a short hostname for the machine where you intend to run BPI when completing your license request form. You can obtain the short hostname using the following command from a Windows Command Prompt:

```
hostname
```



Do not supply an IP Address when applying for your license key as you will not be able to use the generated password to unlock your BPI installation.

The following is an example of a short host name:

```
server1
```

The following is an example of a fully-qualified hostname:

```
server1.hp.com
```

The following is an example of an IP Address:

```
111.111.222.222
```

Trial License Extension

If you need to request an trial (or evaluation) license extension, access the HP BTO Software license and password delivery web site and navigate to the page for evaluation extension licenses.

<http://www.webware.hp.com>

Be aware that evaluation license extensions are granted only once, after which time a permanent license must be purchased. Full details of the process can be found on the Web site.

Permanent License Key Password

If you have purchased the BPI software and received your entitlement certificate, you need enter your permanent license key password into the licensing configuration software. The licensing configuration utility is installed as part of the BPI server as an option on the BPI Administration Console. Section [When the partitioning is complete, restart the BPI components using the BPI Administration Console.](#) on page 70 explains how to access this utility following a successful BPI Server installation.

High Availability Using Microsoft Server Clusters

You can install BPI in a Microsoft Server Cluster environment in order to provide a high-availability solution for any of the BPI components that can be installed on a Microsoft Windows platform. When using BPI within a Microsoft Cluster, BPI must be deployed in Active/Passive mode.

By supporting Microsoft Server Clusters in an Active/Passive mode, BPI components are automatically restarted on an alternative node in the cluster, if the node they are currently running on fails for any reason.

Information about how to configure your BPI machine to operate within a Microsoft Server Cluster environment is provided in *Using Business Process Insight*. If you intend to operate BPI within a Microsoft Server Cluster environment, you must read the information provided in *Using Business Process Insight* before starting the BPI installation. This Installation Guide makes no reference to the cluster environment when installing the BPI components for the first time.

Summary of BPI Server Installation Steps

This section provides a summary of the installation steps for the BPI Server installation. The summary is for a new installation and is not appropriate for upgrade or reinstallation. If you are reinstalling or upgrading follow the instructions appropriate to these tasks; see [Chapter 5, Re-installing BPI Server Components](#) and [Chapter 7, Upgrading to BPI Version 8.00](#) respectively.

This summary provides pointers to sections later in the guide where the full instructions for the specified installation type are described.

1. Make sure that you have installed the correct version of Business Availability Center; see section [BPI Server Installation Requirements](#) on page 26.
2. Check the BPI Server section of the BAC Readme for any required pre-installation tasks.
3. Make sure that you have reviewed the database requirements for the BPI Server and that you have the database configuration appropriate to your implementation.
4. Verify all the hardware and software requirements for the BPI Server installation; see section [BPI Server Installation Requirements](#) on page 26.
5. Ensure that the database you are planning to use for the BPI Server is correctly configured and is running and accessible to the machine where the BPI Server is to be installed; see section [BPI Instance Database Requirements](#) on page 32.
6. Collect the data that you need for the installation; see section [Information Required for the BPI Server Installation](#) on page 44
7. Install BPI Server; see section [Installing the BPI Server](#) on page 56.
8. Start the BPI Server; see section [Starting BPI Server Components](#) on page 68.
9. Install a valid license key for BPI; see section [When the partitioning is complete, restart the BPI components using the BPI Administration Console.](#) on page 70.
10. Run the verification procedure to check the installation as described in section [Verifying Your Installation Using the Integrity Checker](#) on page 72.

What to do Next

Read the chapter appropriate to the task that you want to complete:

- [Chapter 3, Before Starting the Installation](#) describes the tasks that you need to complete before starting a new, or an upgrade installation.
- [Chapter 4, Installing the BPI Server](#) provides details of the tasks to install Business Process Insight for the first time.
- [Chapter 5, Re-installing BPI Server Components](#) describes the tasks that you need to complete to re-install Business Process Insight components.
- [Chapter 6, Uninstalling BPI Server Components](#) describes the tasks that you need to complete to remove the Business Process Insight components from your machines.
- [Chapter 7, Upgrading to BPI Version 8.00](#) describes how to upgrade from BPI version 02.0n, or later, to BPI version 07.50.
- [Chapter B](#), describes how to report problems to Hewlett-Packard.

List of BPI Guides

The following BPI guides are available on the distribution media, in both PDF and HTML format:

- *Business Availability Center, Business Process Insight Deployment Guide*
- *Business Availability Center, Using Business Process Insight*
- *Business Availability Center, Business Process Insight Reference Information*
- *Business Availability Center, Business Process Insight Accelerator for SAP Guide*
- *Business Availability Center, Business Process Insight Integration Training Guide - Business Events*
- *Business Availability Center, Business Process Insight Integration Training Guide - Modeling Processes*
- *Business Availability Center, Business Process Insight Integration Training Guide - Defining Business Monitors.*

3 Before Starting the Installation

This chapter describes the tasks that you must complete in order to install the BPI Server.

In addition to the information relating to these installation options, there is also information that you need regarding the requirements that BPI has on the database installation. These database requirements are described in section [BPI Instance Database Requirements](#) on page 32.

Before completing any of the tasks described in this chapter, read the *Business Availability Center Readme* to check if there are additional requirements for your installation.

If you are re-installing the BPI components, follow the instructions in [Chapter 5, Re-installing BPI Server Components](#).

If you are upgrading from BPI version 7.50, follow the instructions in [Chapter 7, Upgrading to BPI Version 8.00](#).

BPI Server Installation Requirements

The following sections describe the system, database and software requirements for a BPI Server Installation.



Note that the exact system requirements depend on the number of processes that you need to define, the number of business events that you intend to process, the Business Process Monitors that you define and the load on your system. This section provides the minimum system requirements. You will need to tune your system at regular intervals to take account of any increased load.

BPI Server System Requirements

The following table lists the minimum system requirements for the BPI Server installation.

Table 1 Minimum System Requirements for an BPI Server Installation on Windows

Requirement	Value	How to Check
System Processor	Intel Pentium (at least 2Ghz)	Use: Programs > Accessories > System Tools > System Information
Windows version	<ul style="list-style-type: none">• Windows 2003 Enterprise Server, plus SP1• Windows 2003 Enterprise Server, plus SP2• Windows 2003 64 bit,	
Physical memory	1024MB	
Virtual memory	1536MB	

Disk Space Requirements

The following table describes the disk space requirements.

Table 2 BPI Server Installation Disk Space Requirements

Free Disk Space	How to Check
1GB for static data, plus an allocation for dynamic data; see the note below.	Use <code>My Computer</code> to check disk space. Click on the drive name where you intend to install BPI and check the available capacity.



In addition to the disk space requirements for the BPI Server components, you also need to consider the requirements for a local database installation and take into account the disk space required for the database files and log files. 6GB is the initial recommendation for the dynamic data.

Software Requirements

The BPI Server installation requires the following software versions to be installed before the installation is started.

Table 3 BPI Server Software Requirements

Software Component	Version
HP Business Availability Center	HP Business Availability Center 8.00 must be installed before you can install the BPI Server.
J2SE ^a	Sun J2SE/JDK 5.0. This version of the J2SE can also be described as JDK version 1.5 and jdk1.5.0. The correct version of the J2SE is provided as part of the BPI Server installation.
Databases^b:	
<ul style="list-style-type: none">• Microsoft SQL Server	Microsoft SQL Server 2005 standard edition, plus SP2. You must configure Microsoft SQL Server to use static port numbers with BPI and not dynamic port numbers.
<ul style="list-style-type: none">• Oracle Server	<ul style="list-style-type: none">• Oracle9i Enterprise Edition Release 9.2.0.7 (when database is on a system remote to the BPI Server)• Oracle Database 10g Enterprise Edition Release 10.2.0.3• Oracle Real Application Cluster (RAC) 10g
Tomcat ^c	5.0.19
Internet Explorer	6 or 7
Firefox	2.0 (for user access and not for administrative access)
Flash Player (to view charts and dials)	Acrobat Flash 8.0, or later.

- a. BAC does not support the use of JDK versions prior to 1.5.0_12 or version 1.5.0_13.
- b. The database can be on the local system where you intend to install the BPI Server, or it can be on a remote system.
- c. Tomcat is installed as part of the BPI Server component.

In addition to the above, you might also need:

- to install HP SOA Manager 2.10 if you want to use HP SOA Manager as a source of Business Events.
- to install HP Performance Insight version 5.30 or 5.31, if you want to use Performance Insight to report on BPI processes and monitors.
- access to an SMTP Server if you want to be notified of BPI violations through email.

J2SE

This component is required by BPI to run the java classes and to compile the Business Processes. You must use the Sun version of the JDK with BPI. The correct J2SE is installed as part of the BPI Server installation.

If JDK version 1.5 is already installed on your system, and you have multiple versions of the J2SE, you must make sure that the prerequisite version of the J2SE is the first one on your system environment variable `PATH` list. To check that this is the case, in a command window, enter the following command to check that the correct version is on your system `PATH`:

```
java -version
```

Business Availability Center

BPI requires that Business Availability Center is installed. You cannot install the BPI Server unless you have already installed Business Availability Center.

If you intend to use a Load Balancer in your BAC configuration, do not install the BPI Server on the same system as the Gateway Server. This is because the Load Balance does not accept connections from Gateway Server and, as a result, if you install the BPI Server on the Gateway Server, it is unable to synchronize, send data samples or access infrastructure settings.

If you intend to use a Load Balancer, you must install the BPI Server on a different system.



If you have previously installed Business Availability Center and BPI and subsequently removed the BAC installation, including all the BAC data, you must also remove the BPI data before attempting to reconfigure BPI to connect to BAC.

If you do not, some of the BPI data has no parent CI data within the BAC database and there are inconsistencies in your Business Process models.

HP SOA Manager

You can optionally configure BPI to receive business events from SOA Manager, which can then be used to progress your BPI Business Processes.

Performance Insight

You can optionally use the Process Insight Pack to maintain historical reports for BPI using the process and monitor data in the BPI database.

SMTP Mail Server

Access to an SMTP mail server is required for the Notification Server component of BPI. This component is responsible for sending business violations as email messages to the users who are configured to receive them.

TransactionVision

As part of the HP Business Transaction Management solution, BPI can integrate with HP TransactionVision to view the life cycle and associated data for specific business transactions within your organization. TransactionVision discovers transaction flows within your business, analyses the steps within these flows and the displays reports based on the results of the analysis.

Email Client

An email client is required in order that the users configured to receive email notifications can access them.

BPI Instance Database Requirements

The BPI Server requires a database to store data for process instances, process monitors and for administration. This database information needs to be accessible to the BPI Server and can be configured within either a Microsoft SQL Server or Oracle Server.

This database is not the same as the BPI Process Repository database (BPI Schema) that was created as part of the BAC installation and which stores information relating to your Business Process Definitions and related CIs.

The following sections describe information that you need to be aware of, which relates to the BPI Server's use of the database. You must read these sections and use the information to tailor your database configuration where appropriate. Be aware that some of the tasks described must be completed before you start the BPI installation; this might impact whether or not you can use an existing database, or whether you need to install a database specifically for your BPI Server.

The following sections describe what you need to consider for the BPI Server's use of the database and includes:

- Configuration requirements for the Microsoft SQL Server database, which are specific to the BPI Server; see section [Microsoft SQL Server Database Configuration](#) on page 33.
- Configuration requirements for the Oracle Server database, which are specific to the BPI Server; see section [Oracle Database Configuration](#) on page 38.

It is strongly recommended that you allow the BPI Server installation to create a new database user (and a new database in the case of Microsoft SQL Server) rather than using an existing User or Database.

There are a number of reasons for this:

- it removes the possibility of name clashes for tables that the BPI Server needs to create in the database.
- it enables you to backup and recover the BPI Instance database tables in isolation from other data in the database, if required.
- you can copy (archive) the BPI Server data independently of other data in the database.
- if there is a problem with the installation, you can clean out the Microsoft SQL Server Database or Oracle User data and restart the procedure without impacting data for other database applications.

In the case of Microsoft SQL Server, the Database should be reserved for the exclusive use of the BPI Server. In the case of an Oracle Server, the User should be reserved for the exclusive use of the BPI Server.

The BPI Server installation assumes that the Microsoft SQL Server Database and Oracle User are exclusive to BAC and BPI, and therefore the installer can safely delete and recreate database schema objects, including tables, views, stored procedures. If this is not the case, there is a risk that existing database objects could be overwritten by BPI and their contents lost. [Appendix A, Database Tables Defined for BPI](#) lists all the instance database tables used by BPI. If your database is not for the exclusive use of BAC and the BPI Server, you need to check that there the tables, views and stored procedure names are unique and not duplicates of existing ones.

Microsoft SQL Server Database Configuration

The following sections describe the BPI requirements on the Microsoft SQL Server database that you need to be aware of before starting the BPI installation. These requirements need to be addressed before installing any of the BPI components that use the BPI instance database.

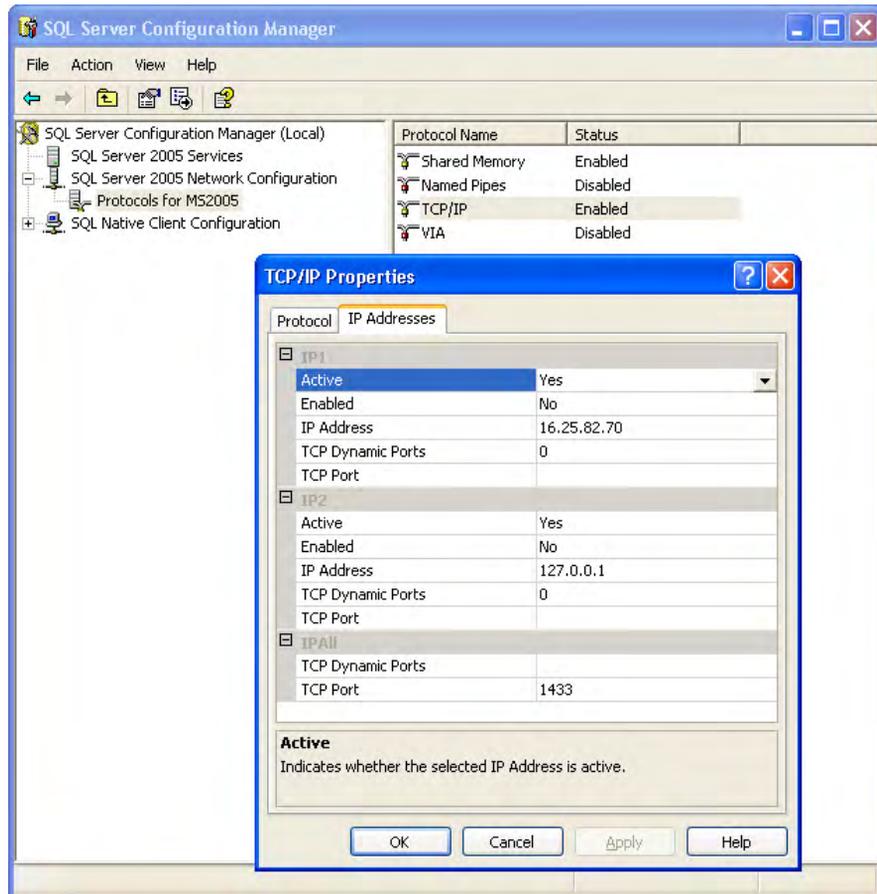
If you plan to use Oracle as your database, refer to section [Oracle Database Configuration](#) on page 38.

Static Port Number Required for Use with BPI

When installing and configuring Microsoft SQL Server for use with BPI, you must configure it to use a static and not a TCP dynamic port. If you configure a dynamic port for SQL Server, it can result in a different port number being assigned each time SQL Server is started. You cannot change the port number used by BPI following the initial installation, therefore, dynamic port numbers cannot be used.

You configure the port number used by Microsoft SQL Server using the SQL Server Configuration Manager as shown in [Figure 2](#).

Figure 2 SQL Server Static Port Configuration



Restricting the Size of the Transaction Log File

You might also need to limit the size of the database transaction log files as these can get very large. By default, the transaction log files are not restricted to a particular size. To modify the settings for the transaction log file, select the `Transaction Log` tab from the database `Properties` option.



The size of the transaction log files need to be large enough to accept the largest possible transaction that BPI can generate, in order to ensure that you can recover data following a failure. Refer to the *Business Process Insight System Management Guide* for details of the backup and recovery considerations that you need to be aware of for BPI and how these impact the size of the transaction log.

Database Case Sensitivity

If you intend to allow the BPI installer to create the BPI database instance it requires, you do not need to read this section. When the BPI installer creates its database instance, it creates an instance with the characteristics that it requires, including the case sensitivity setting.

If you intend to use an existing instance of the SQL Server database and then provide the details of this database instance to the BPI installer, you need to be aware that the SQL Server database can be set up to be case insensitive or case sensitive. BPI does not operate with a database that is case sensitive.

If you are creating the database instance for BPI data, you must create the instance with the `Collation Name` set to `Case Insensitive`.

If your database instance has already been created, you can find out whether it is case insensitive or case sensitive by checking the properties of the database instance from within SQL Server Enterprise Manager. The `Collation Name` property contains a string, which is one way of identifying the case sensitivity of the database instance, as follows:

- `_CI`, if the database instance is configured to be Case Insensitive.
- `_CS`, if the database instance is configured to be Cases Sensitive.
- `_BIN`, if the database instance is configured for a binary collation, which is always case sensitive.

If there is no `Collation` value set for the database instance, the database instance inherits its `Collation` from the Database Server settings. If the Database Server `Collation` is set to be case insensitive, the BPI installation

can proceed. If the Database Server Collation is set to be case sensitive, the BPI installation fails and reports the error shown above. The inherited collation is shown through the Collation Name parameter as described above.

Database Accent Sensitivity

If you configure the database to be accent insensitive, you must advise the BPI users not to create definitions that differ only by accent; for example:

Property: Propa

Property: Propä

If you do not, and users create processes that differ only by accent, the Process definition fails to deploy as the database does not consider the two data items to be unique.

Database Authentication Mode

When using Microsoft SQL Server with BPI, you need to ensure that when prompted (during the SQL Server installation) for the Authentication Mode to use within SQL Server that you select the option for SQL Server and Windows Authentication mode, and not Windows Authentication Mode. This is because the JDBC interface needs the SQL Server Authentication Mode activated.

You can modify the authentication mode from Windows Authentication to be SQL Server and Windows Authentication without affecting other applications that use the database.

Check the authentication mode for your installation of Microsoft SQL Server as follows:

1. Start SQL Server Management Studio and log on using your Windows account details. The Windows account that you use must have SQL Server Administrator rights.
2. Select the appropriate server, and then click `Properties`. (make sure you select the server and not the database from the navigation pane).
3. From the Server Properties dialog, select the Security page. There is a `Server authentication` option where you can check which authentication mode is being used.

4. If SQL Server and Windows Authentication mode is not set, you can change the selection in this dialog and click OK. If your configuration is correct, you can exit from the Management Studio without making any changes.
5. If you do change the configuration, click OK when prompted to restart SQL Server.

SQL Server Database User Properties

The BPI installation procedure creates a database user, with all the correct properties; however, if you have an existing database user that you want to use for the BPI database, you can do this. You are strongly advised to let the installation procedure create the database user that is specific to BPI.

If you allow the installation procedure to create the database User, you do not need to take any action as the database User is created with all the required roles. If you intend to specify an already defined User for BPI within the installation procedure, you need to ensure that the following are completed before starting the BPI installation:

- the existing database User has access to the database where the BPI tables are created.
- the database used by BPI should ideally be the default database for machine; this is not mandatory, but preferred.
- the following database roles are permitted for the BPI database User:
 - public
 - db_ddladmin
 - db_datareader
 - db_datawriter
- the following database roles are not permitted for the BPI database User:
 - db_denydatareader
 - db_denydatawriter

When you run the BPI installation procedure and specify the database User, the installation procedure then configures the User to be a member of the following database roles:

- public
- db_ddladmin
- db_datareader
- db_datawriter

If you create your own database user, you are advised to check for the following log file after the BPI installation is complete to make sure that the SQL Server database tables have all been created correctly:

bpi-install-dir\HP_Business_Process_Insight_DbSetupLog.log

This file is created when there are errors to report after BPI has made a successful connection to the database. If there are errors reported in the file, you need to investigate them and make any necessary corrections. You must then uninstall and reinstall BPI to reconfigure the database options.

If this log file does not exist, there are no errors.

Oracle Database Configuration

The following sections describe the BPI requirements on the Oracle database that you need to be aware of before starting the BPI installation. These requirements need to be understood before installing any of the BPI components that use the BPI database.

- [Configuring an Oracle Database Server on an HP-UX System](#) on page 39
- [Character Set for Oracle Database](#) on page 39
- [Oracle Server Database User Permissions](#) on page 40

If you plan to use a Microsoft SQL Server database, refer to section [Microsoft SQL Server Database Configuration](#) on page 33.

Configuring an Oracle Database Server on an HP-UX System

If you intend to use an Oracle Database Server that is installed on an HP-UX system, you must create an Oracle User for BPI before starting the installation. If you do not, the BPI installation fails.

The Oracle User that you create must be configured to have both a default and a temporary tablespace. You are strongly advised to assign a default tablespace that is specific to BPI and not shared by other applications.

In addition, you need to make sure that an `INDX` tablespace is assigned to the Oracle User that you create for BPI. Depending on the version of Oracle that you are using, you might have to create this `INDX` tablespace.

There are also permission requirements for the Oracle User that you create; these are described in section [Oracle Server Database User Permissions](#) on page 40.

Character Set for Oracle Database

BPI does not have any specific requirements for a database character set; however, if you want to support multiple languages simultaneously, from the same data, you are recommended to use a Unicode standard for the encoding form in the Oracle Database. UTF8 is the recommendation for BPI.

Using other database character sets can result in characters being lost during conversion between the user input and how the data is stored in the database; For example, using a database character set of ISO Latin1, does not enable you to store Korean language characters in the database. Using a character set such as UTF8 does enable you to store Korean characters in the database.

In addition:

- the BPI database clients use JDBC; therefore using UTF8 as the database character set has performance benefits as it reduces the amount of conversion between character sets.
- the Oracle database drivers always convert between character sets using UTF8.

If your database currently uses a form of encoding other than UTF8, then you need to make yourself aware of the restrictions of the encoding method and any potential loss of characters during conversion.

Oracle Server Database User Permissions

The BPI installation procedure creates a database user, with the correct profile, however, if you have an existing database user that you want to use for the BPI database, you can specify this User during the BPI installation.

Where possible, you are advised to let the installation procedure create the database user, unless there is a strong reason for using your own defined database user.

If you allow the installation procedure to create the Oracle User, you do not need to take any action as the database User is created with all the required privileges. If you intend to specify an already defined User for BPI within the installation procedure, you need to ensure that the following are completed before starting the BPI installation:

- the User has `QUOTA UNLIMITED` defined on its default tablespace (this is the tablespace where the BPI data is created).
- the User has the `CREATE SESSION` privilege granted.

When you run the BPI installation, the installation procedure then completes the following for the User that you specify:

- defines `QUOTA UNLIMITED` for the `INDX` tablespace. BPI uses the `INDX` tablespace to hold indexes for some of the tables in the BPI User's default tablespace. This is done for reasons of performance.
- grants the following privileges to the User:
 - `CREATE SESSION`
 - `CREATE SEQUENCE`
 - `CREATE TABLE`
 - `CREATE VIEW`
 - `CREATE PROCEDURE`
 - `CREATE TRIGGER`
 - `CREATE ANY INDEX`
- creates a role called `OA_HOSPITAL_ACCESS_ROLE` and grants itself this role.

If you create your own database user, you are advised to check for the following log file following the BPI installation to make sure that the Oracle database tables have all been created correctly:

bpi-install-dir\HP_Business_Process_Insight_DbSetupLog.log

This file is created when there are errors to report after BPI has made a successful connection to the database. If there are errors reported in the file, you need to investigate them and make any necessary corrections. You must then uninstall and reinstall BPI to reconfigure the database options.

If this file does not exist, there are no errors with the connection.

What to do Next

When you have completed all the checks and tasks listed in this chapter, continue at [Chapter 4, Installing the BPI Server](#) to install the BPI components.

4 Installing the BPI Server

This chapter describes how to install the BPI Server.

The following topics are covered in this chapter:

- [Tasks to complete before starting the installation; see section *Collecting Required Information for Installer* on page 44](#)
- [The location of the BPI installation log files; see section *Installation Log Files* on page 55](#)
- [Installing the BPI Server on page 56](#)
- [Verifying Your Installation Using the Integrity Checker on page 72](#)
- [License Key Password Redemption on page 76](#)

Collecting Required Information for Installer

Before starting the installation, make sure that you have completed the following steps:

- Checked the *Business Process Insight Release Notes* for any additional tasks that you need to complete before and after the installation. The Release Notes are located on the distribution media.
- Worked through the required preinstallation checks listed in [Chapter 3, Before Starting the Installation](#).
- Checked that the Database Server that you plan to use for BPI is configured and running (Microsoft SQL Server or Oracle Enterprise Server). The database can be on the same machine as the BPI Server or on a different machine.
- Made a note of the information that you need during the installation as follows. There is a column for you to note the relevant information in the tables in section [Information Required for the BPI Server Installation](#) on page 44.

Information Required for the BPI Server Installation

The information in this section describes what you need to supply for the BPI Server Installation.

General Information

Table 4 lists the general information requested by the BPI Server Installation.

Table 4 General Information Required for a Server Installation

Information	Notes	Values
Name of BPI installation directory	<p>A default is offered by the installer, which you can override.</p> <p>You must not use a non-ASCII directory name for your BPI installation directory; the home directory for BPI must consist only of ASCII characters.</p> <p>If you do install BPI into a non-ASCII directory, the BPI installation procedure is successful, but the BPI components fail to start.</p>	

BPI Instance Database Information

Table 5 lists the information related to the Microsoft SQL Server Database Server.

If you plan to configure BPI to use an Oracle Server, you can skip this table and continue at Table 6 on page 48.

Table 5 Microsoft SQL Server Information Required for a Server Installation

Information	Notes	Values
Database type	This defines the database that you plan to use for BPI process data. It is either, Oracle Server or Microsoft SQL Server.	Microsoft SQL Server
Hostname of the machine where the database is running. This can be a local or remote machine.	The default of localhost is offered by the installer. Accept the default if you are using a local database, or enter the fully-qualified domain name of the machine where the database is running if you are using a remote database.	
SQL Server Database Port Number	This is the static port number that Microsoft SQL Server uses to communicate with applications; by default this is port 1433. You must configure Microsoft SQL Server to use static port numbers with BPI and not dynamic port numbers.	
User name and password for a database user that has permission to create schemas and users, plus assign privileges to users.	The BPI schema is created as part of the installation process, as is the database user. The installer needs a user with sufficient privileges to create the schema and the new database user. Obtain the credentials for a suitable user from your database administrator. By default the installer offers the sa account.	

Table 5 Microsoft SQL Server Information Required for a Server Installation

Information	Notes	Values
Name for the SQL Server database	<p>This is the name of the SQL Server database created for BPI. By default you are offered the name hbpischema. If you want a different name, you can replace the default offered during installation.</p> <p>You are strongly recommended to assign a database name that is specific to BPI.</p>	
User name and password details of the BPI database user.	<p>The BPI machine needs a database account that it can use to create and modify the BPI database tables. This might be a user that you have already created through SQL Server, in which case you need to enter the correct credentials. Alternatively, you can provide a new user name and the installation procedure will create the user.</p> <p>If you have created a user, you need to make sure that the user has the correct permissions set; see SQL Server Database User Properties on page 37.</p> <p>The database username must be between 1 and 128 characters and comprise letters, digits, and the underscore character (_); it must start with either a letter, or the underscore character.</p> <p>Make sure that the password obeys the password policy for the database. As an example, Microsoft SQL Server 2005 requires a password to include some numbers. The install fails if the password policy is not adhered to.</p>	
Directory where the database data files are stored	<p>The installation needs to know where to create the database files. A default is offered by the BPI installation. If the location of the database files has not been changed within SQL Server, accept the default.</p>	

Table 6 lists the information related to the Oracle Database Server. If you plan to configure BPI to use an Microsoft SQL Server, refer to the questions listed in Table 5 on page 46.

Table 6 Oracle Server Information Required for a Server Installation

Information	Notes	Values
Database type	This defines the database that you plan to use for BPI process data. It is either, Oracle Server or Microsoft SQL Server.	Oracle
Hostname of the machine where the database is running. This can be a local or remote machine.	The default of localhost is offered by the installer. Accept the default if you are using a local database, or enter the fully-qualified domain name of the machine where the database is running if you are using a remote database.	
Oracle Server Database Port Number	This is the port number that the Oracle Server uses to communicate with applications. By default it uses port 1521.	
Oracle database instance identifier	The installation requests a value for the Oracle database instance identifier (SID), which is where the BPI tables are created. Check with your database administrator for the correct value of the SID for BPI. There might be a SID that is specific to BPI.	

Table 6 Oracle Server Information Required for a Server Installation

Information	Notes	Values
User name and password for a database user that has permission to create the tablespace and user for BPI.	<p>The BPI tablespace is created as part of the installation process, as is the database user. The user name entered to create these needs the privileges to: create the BPI schema, create the BPI user and set up permission to read from the System tables. Obtain the credentials for a suitable user from your database administrator.</p> <p>You are strongly recommended to assign a User that is specific to BPI.</p>	
User name and password details of the BPI database user. ^a	<p>The BPI machine needs a database account that it can use to create and modify the BPI database tables. This might be a user that you have already created through Oracle Server, in which case you need to enter the correct credentials. Alternatively, you can provide a new user name and the installation procedure creates the user.</p> <p>If you have created a user, you need to make sure that the user has the correct permissions; see Oracle Server Database User Permissions on page 40.</p> <p>The database username must be between 1 and 27 characters and can comprise letters, digits and the underscore (_) character; it must start with either a letter or the underscore character.</p> <p>The database password must be between 1 and 30 characters and can comprise letters, digits and any punctuation characters, with the exception of the space () and the brace ({ }) characters.</p>	

Table 6 Oracle Server Information Required for a Server Installation

Information	Notes	Values
Directory where the database data files are stored	The installation needs to know where to create the database files. A default is offered by the BPI installation, but you need to check with your database administrator for confirmation about where the database files should be created.	

- a. If you intend to use an Oracle Database Server that is installed on an HP-UX machine, you must create a database user for BPI before starting the installation; if you do not, the installation cannot proceed. Refer to section [BPI Instance Database Requirements](#) on page 32 for more details.

You enter the database details when you install BPI; however, once BPI is installed and configured with these details, none of the database details can be changed, with the exception of the password for the BPI Database or User. The database configuration details are shown through the BPI Administration Console for your reference, however, you cannot modify them.

Business Availability Center Information

Table 7 lists the installation information required for the BPI Server installation, which is related to the location of Business Availability Center. You can also enter and modify these details after the installation is complete, using the BPI Administration Console.

Table 7 Business Availability Center Details

Information	Notes	Values
Hostname for BAC Gateway Server or Load Balancer	<p>The fully qualified DNS name of the machine where the Business Availability Center Gateway Server is installed. This is the server that you want BPI to use as a source for Service Status information, as the destination for data samples and for UCMDB synchronization. If you have configured a Load Balancer, you can specify the name of the Load Balancer in place of the Gateway Server.</p> <p>If you plan to the BPI Server in a domain that is different to the domain where the Gateway Server is installed, make sure that you add the BPI domain to the list of Protected Domains, under:</p> <p>Admin > Platform > Users and Permissions > Authentication</p>	

Table 7 Business Availability Center Details

Information	Notes	Values
Port number for the machine where the Gateway Server is running.	The port number used by the Web Server on the Business Availability Center Gateway Server. Usually this is port 80, or port 443 if you have configured SSL.	
Use of SSL	An indication of whether or not you are using of SSL when connecting to the Gateway Server.	
BAC user name and password for BPI Server.	The user name that you have defined to be used by BPI server components when connecting to Business Availability Center. This is the account used by BPI to obtain the Service Status information from Business Availability Center and for synchronization.	

Process Repository Database Information

The BPI Server needs the location and login details of the system where the Process Repository database is installed. If you enter the correct details for the BAC Gateway Server, these details are determined automatically. If the BPI Server fails to contact the BAC Gateway Server for any reason, these details cannot be determined and you need to enter them as part of the installation.

Table 8 lists the information required in cases where the Process Repository schema is installed on a Microsoft SQL Server Database.

Table 8 Microsoft SQL Server Information Required Process Repository Database

Information	Notes	Values
Database type	This defines the database that you plan to use for BPI process data. It is either, Oracle or Microsoft SQL Server.	Microsoft SQL Server
Hostname of the machine where the Process Repository database is running.	The fully-qualified domain name of the machine where the Process Repository database is installed. You configured the Process Repository database as part of the BAC installation and configuration.	
Database Port Number	The port number for the database where the Process Repository database is installed.	
Process Repository database name	Name given to the Process Repository database when you installed and configured BAC.	
Authentication type	Type of authentication provided for the Process Repository database. This can be either SQL Server authentication or Windows authentication.	
User name and password assigned to the Process Repository database.	The user name and password details as configured for the Process Repository database for BAC.	

Table 9 lists the information required in cases where the Process Repository Schema is installed on an Oracle Server Database.

Table 9 Oracle Server Information Required Process Repository Database

Information	Notes	Values
Database type	This defines the database that you plan to use for BPI process data. It is either, Oracle or Microsoft SQL Server.	Oracle
Hostname of the machine where the Process Repository database is running.	The fully-qualified domain name of the machine where the Process Repository database is installed. You configured the Process Repository database as part of the BAC installation and configuration.	
Database Port Number	The port number for the database where the Process Repository database is installed.	
Process Repository SID	Oracle SID given to the Process Repository database when you installed and configured BAC.	
User name and password assigned to the Process Repository database.	The user name and password details as configured for the Process Repository database for BAC.	

Installation Log Files

The following sections describe the installation log files that are created when the BPI components are installed.

BPI Server Installation Log Files

The log file for the BPI Server installation is located in the BPI root installation directory as follows:

```
bpi-install-dir\HP_Business_Process_Insight_InstallLog.log
```

Database Log Files

The installation is also creates a log file created for problems encountered by the BPI installer when creating, or migrating, the database, database user and database tables. This file is called:

```
bpi-install-dir\HP_Business_Process_Insight_DBSetupLog.log
```

This file is created when there are errors to report after BPI has made a successful connection to the database. This log file contains errors relating to the SQL scripts that the BPI installer runs, and not database connection errors.

If there are no problems encountered during the installation, this log file is not created.

Installing the BPI Server

This section describes the steps for installing the all the BPI components on a Windows machine. Before starting the installation, make sure that you have:

- shut down all applications that use HP License Manager (Autopass) on the machine where you intend to install BPI. If you do not, you might not be able to use these applications or BPI following the BPI installation.
- read section [Information Required for the BPI Server Installation](#) on page 44
- the system environment variable for `JAVA_HOME` is set.

If you intend to use an Oracle Database Server that is installed on an HP-UX machine, you must create a Database User for BPI before starting the installation; if you do not, the installation fails. Refer to section [BPI Instance Database Requirements](#) on page 32 for more details.

Complete the steps described in the following sections to install the BPI Server components for the first time. The steps are subdivided into logical areas so they are easier to follow. You need to complete the steps that are related to the choices that you make during the installation.

Introduction

Starting the installation:

1. From an account with Administration privileges, download the installation procedure for Business Process Insight, which you access from the Admin > Platforms > Setup and Maintenance > Downloads page. Select the Category for Business Process Insight on the system Windows.
2. Download the software to a location of your choice and run the setup file for the installation.

You are presented with an Introduction page to introduce you to the installation. Click Next to start the installation.

General BPI Settings

Answer the following questions relating to installation directory and installation type:

1. From the `Choose Install Folder` dialog, click `Next` to accept the default installation directory, or select the `Choose` button, to navigate to a directory of your choice. There might be a short delay before a navigation window is presented. Click `Next` to continue.



You can install only one BPI Server on each machine. You must not install and configure multiple BPI Servers on a single machine.

Section [BPI Instance Database Settings](#) on page 59 describes the questions relating the database that you intend to use to use to store the BPI process instance data.

BPI Instance Database Settings

The BPI Server uses a database to store process instance and violation information. This is a different database to the Process Repository database, which you configure later, and which holds data relating to process definitions and their data. The BPI Instance database is created and configured specifically for the BPI Server, as part of the BPI Server installation, it is not previously installed as part of BAC.

You need to answer questions relating to the configuration of the BPI Server instance database as part of the installation.

1. From the **BPI Database Type** dialog, select the database type that you intend to configure for BPI. This can be either **Microsoft SQL Server** or **Oracle**.

For **Microsoft SQL Server**, select **Microsoft SQL Server**, click **Next** and continue at section **Microsoft SQL Server Database** on page 59.

For an **Oracle Server**, select **Oracle**, click **Next** and continue at section **Oracle Server Database** on page 62.

Microsoft SQL Server Database

The following questions relate to the Microsoft SQL Server database questions for the BPI Server.

These questions relate to values that you have entered when installing the Microsoft SQL Server. If you do not know the answers to these questions, talk to the person who installed Microsoft SQL Server for the information that you need.

1. From the **Microsoft SQL Server connection details for BPI Instance database** dialog, enter the details for the **Microsoft SQL Server** database as follows:

- **MS SQL Server hostname**

Enter the fully qualified domain name of the machine where the Microsoft SQL Server database is installed. You can use `localhost` to specify the machine name if appropriate.

- **MS SQL Server port number**

Enter the port number for the database if the default offered is not correct.

- MS SQL Server admin username
Enter the login username for a database user that has permission to create the BPI Instance database, and where appropriate the BPI Server user; for example, the system administrator user (*sa*).
- MS SQL Server admin password
Enter the password for the database user specified in the previous step.

When you have entered all the required information, click *Next*.

2. From the *Microsoft SQL User details for BPI Instance Database* dialog, enter the details to create the BPI Instance database tables as follows:

- MS SQL Server Instance Db name
Enter the name that you want to give to the BPI Instance database, or accept the default name offered.
- MS SQL Server username
Enter the username that the BPI Server can use to log into the database to access its tables. A default name is offered for the username, which you can accept.
- MS SQL Server password
Enter a password for the user entered in the previous step.
- Confirm password
Reenter the password for the user as confirmation.
Make sure that you remember these user name and password details as you will need them in the future.
- Database file directory
Enter the location of the database directory files. The installer offers a directory name based on the location following a default Microsoft SQL Server installation. Check the directory details are correct (that the directory exists and has the correct permissions set) and either accept the directory offered, or enter new directory details. If you enter new directory details and they are incorrect, the installation will fail at a later stage.

When you have entered all the required information, click **Next**; you are then presented with the pre-installation summary.

If you are presented with a warning dialog labeled **Database Tables Exist**, the installer has detected database tables already defined in the database with the same names as the tables it needs to create for BPI. This message is also displayed in the case for other database functions, such as **Views**, **Stored Procedure**, **Triggers** and so on.

These database functions might be left from a previous installation, where you have uninstalled BPI and selected not to remove the BPI data; they could be tables from another application that have the same name as the default BPI tables; or they could be user-defined.

If you click **Delete**, the installer continues with the installation and deletes and recreates the all the database functions that BPI requires. Alternatively, you can click **Back** and:

- enter an alternative database name.

Click **New Database User** to dismiss the error dialog and the installer returns you to the **Microsoft SQL Server user details** dialog where you can enter a different name for the database.

- cancel the installation, remove or rename the BPI tables that already exist and then restart the installation.

Select either **Delete** or **Back** and you will then either restart the installation, or continue at section [Pre-Installation Summary](#) on page 67 as appropriate.

If you are presented with an error indicating that the database collation setting is incorrect, you need to exit from the installation and refer to section [Database Case Sensitivity](#) on page 35. When you have resolved the problem, you can restart the installation.

Oracle Server Database

The following questions relate to the Oracle Server database that you have configured for the BPI Server. These questions relate to values that you have entered when installing the Oracle Server. If you do not know the answers to these questions, talk to the person who installed the Oracle Server for the information that you need.

1. From the Oracle connection details for the BPI Instance database dialog, enter the following database details:

- Oracle Server host

Enter the fully qualified domain name of the machine where the Oracle server is installed. You can use `localhost` to specify the machine name if appropriate.

- Oracle Server port

Enter the port number for the database if the default offered is not correct. The default offered is the standard port number used by Oracle, you do not need to change this unless you have configured Oracle to use an alternative port number.

- Oracle Server SID

Enter the SID that you want to use for the BPI Instance database tables.

- Oracle Server admin username

Enter the login username for a database user that has permission to create the BPI database, and where appropriate the BPI Server user; for example, the system user (`system`).

- Oracle Server admin password

Enter the password for the database user specified in the previous step.

When you have entered all the required information, click `Next`.

2. From the Oracle User details for BPI Instance database dialog, enter the details to create the BPI database tables as follows:
 - Oracle Server username

Enter the username that the BPI Server can use to log into the database to access its tables. A default name is offered for the username, which you can accept. You need to make sure that you keep a record of this username as you will need to use it later.
 - Oracle Server password

Enter a password for the user entered in the previous step.
 - Confirm password

Reenter the password for the user as confirmation.

Make sure that you remember these user name and password details as you will need them in the future.
 - Database file directory

Enter the location of the database directory files. The installer offers a directory name based on the location following a default Oracle Server installation. Check the directory details are correct and either accept the directory offered, or enter new directory details. If you enter new directory details and they are incorrect, the installation will fail at a later stage.

When you have entered all the required information, click **Next**.

If you are presented with an error dialog labeled *Database Tables Exist*, the installer has detected database tables already defined in the database with the same names as the tables it needs to create for the BPI Server. This message is also displayed in the case for other database functions, such as Views, Stored Procedure, Triggers and so on.

These database functions might be left from a previous installation, where you have uninstalled BPI and selected not to remove the BPI data; they could be tables from another application that have the same name as the default BPI tables; or they could be user-defined.

If you click `Delete`, the installer continues with the installation and deletes and recreates the tables that BPI requires. Alternatively, you can click `Back` and:

- enter an alternative database name.

Click `New Database User` to dismiss the error dialog. The installer returns you to the `Oracle user details` dialog where you can enter a different name for the database.

- cancel the installation, remove or rename the BPI tables that already exist and then restart the installation.

Select either `Delete` or `Back` and you will then either restart the installation, or continue at section [Process Repository Database Settings](#) on page 65 as appropriate.

Business Availability Center Details

The BPI Server needs to know where the BAC Gateway Server (or Load Balancer) is located in order to send data samples to BAC.

You therefore need to provide the following details of the BAC Gateway Server:

- Hostname of Gateway Server (or Load Balancer)
- Use SSL?
- HTTP(S) port of Gateway Server (or Load Balancer)
- User name
- Password

If you receive a warning message indicating that the BPI Server failed to connect to the UCMDB, you can select the `Modify Settings` button, in which case you are returned to the `Business Availability Center Details` dialog to modify your settings, or you can continue and allow the installation to continue. In this case, you can modify the settings for the BAC connection using the BPI Administration Console when the installation is complete.

Select either `Delete` or `Back` and you will then either restart the installation, or continue at section [Pre-Installation Summary](#) on page 67 as appropriate.

Process Repository Database Settings

A Process Repository database was installed and configured as part of the BAC installation. The BPI Server needs to know the location of the Process Repository database; you therefore need to provide the details of the Process Repository that was configured on the BAC system. This change has no effect on your existing Business Process definitions, which will continue to work as before.

If the BPI Server successfully connected to the BAC Gateway Server in the previous step, these details are obtained by the installer from the BAC system.

From the BPI Process Repository Database Type dialog, select the database type that was configured for the Process Repository. This is either Microsoft SQL Server or Oracle.

For Microsoft SQL Server, select Microsoft SQL Server, click Next and continue at section [Microsoft SQL Server Database](#) on page 65.

For an Oracle Server, select Oracle, click Next and continue at section [Oracle Server Database](#) on page 66.

Microsoft SQL Server Database

The following are the questions relating to the Microsoft SQL Server connection details dialog and are completed in cases where the Process Repository is installed in a Microsoft SQL Server database:

- MS SQL Server hostname
- MS SQL Server port
- MS SQL Server database name
- MS SQL authentication
- MS SQL Server username
Required only for SQL Server authentication.
- MS SQL Server password
Required only for SQL Server authentication.

If you receive a warning message indicating that the BPI Server is not able to connect to the Process Repository database, you can select `Retry`, in which case you are returned to the connection details dialog to modify your settings. Alternatively, you can ignore the warning and allow the installation to continue. In this case, you can modify the settings for the Process Repository using the BPI Administration Console when the installation is complete.

Select either `Delete` or `Back` and you will then either restart the installation, or continue at section [Business Availability Center Details](#) on page 64 as appropriate.

Oracle Server Database

The following are the questions relating to the Oracle Server connection details dialog and are completed in cases where the Process Repository is installed in an Oracle Server database:

- Oracle Server host
- Oracle Server port
- Oracle Server SID
- Oracle Server schema name
- Oracle Server schema password

If you receive a warning message indicating that the BPI Server is not able to connect to the Process Repository database, you can select `Retry`, in which case you are returned to the connection details dialog to modify your settings, or you can ignore the warning and allow the installation to continue. In this case, you can modify the settings for the Process Repository using the BPI Administration Console when the installation is complete.

Select either `Delete` or `Back` and you will then either restart the installation, or continue at section [Business Availability Center Details](#) on page 64 as appropriate.

Automatic Start of Business Process Insight

You need to decide whether or not you want the BPI Server Windows Services to be started automatically when the system reboots.

If you have a machine where it takes some time for the BPI Server components to start, consider selecting the `No` option for this question, as the automatic restart is likely to time out. This might be the case if you are in the process of developing a BPI solution or running a pilot.

If you answer `No`, you need to manually start the BPI Server components, following a system restart. You do this using the BPI Administration Console.

If your machine starts up reasonably quickly, select `Yes`.

Pre-Installation Summary

From the `Pre-Installation Summary` dialog, check the details on the summary. If they are correct, click `Install`, if they are not, click `Previous` to correct them.

The installation procedure continues and installs the BPI Server directories and files. When the installation is complete, click `Done` to exit the installation procedure.

Configure the BAC Infrastructure Settings

You need to make sure that the Business Process Insight Infrastructure settings are correct for your BPI version 8.00 installation. If the installation program successfully connected to the Gateway Server as part of the installation, the Business Process Insight settings are updated as part of the installation. If the installation program was unable to contact the Gateway Server, you need to set the required Business Process Insight settings as described in *Using Business Process Insight* where there is a chapter detailing the integration requirements.

The infrastructure settings are accessible from:

```
Admin > Platform > Infrastructure settings > Business Process  
Insight
```

Starting BPI Server Components

You can start the BPI Server components in one of two ways:

- Using the BPI Administration console:
 - a. Start the BPI components using the BPI Administration Console by selecting:

Start > Programs > HP > Business Process Insight > Administration

- b. Click the Start All button to start all the BPI server components.
- From the Services option from the Control Panel:

- a. Select:

Start > Control Panel > Administrative Tools > Services

The BPI Server components are listed as the following Windows services:

- OVBPIAdaptorFramework
- OVBPIAdminServer
- OVBPIBacDataSamplesProvider
- OVBPIEngine
- OVBPIEventHandler
- OVBPIJmsEventHandler
- OVBPIMetricEngine
- OVBPIModelRepository
- OVBPINotificationServer
- OVBPIServiceAdapters
- OVBPIServletEngine
- OVBPIWebServicesProvider

- b. Start all the BPI Services as you would for any Microsoft Windows Service.

You can also configure further properties for these BPI Services, which are specific for your implementation. As an example, you can configure the Windows Service to restart automatically following a failure. As installed, the Services do not restart following a failure.

If you are using an Oracle Server it can take a minute or so for BPI components to make a connection (on some systems). There is a retry mechanism for connecting to an Oracle Server when BPI is starting, but this retry interval eventually times out. In this case, you might need to have a second attempt at starting some of the BPI components that use the database.

When you have successfully completed the installation and started the BPI components, you need to check you license status and enter your permanent license key password as described in section [License Key Password Redemption](#) on page 76.

Enabling Oracle Database Table and Index Partitioning

When you have completed the BPI installation, you can enable database table and index partitioning for the BPI database tables.

Some of the BPI database tables and indexes are designed to enable you to take advantage of Oracle partitioning; however, you can do this only if you have purchased a suitable Oracle License.

If you have a license to use Oracle Database and Index Partitioning, and you consider that your database performance can be improved by using it with BPI, you can configure BPI to make use of this Oracle feature.

If you do have the correct license terms, you can enable Oracle Database table and index partitioning for BPI as follows:

1. From the BPI Administration Console, stop all the BPI components.
2. Open a Command Prompt Window.
3. Change directory to:

```
bpi-install-dir\bin
```

4. Run the following script:

```
OraclePartitioningSwitcher switch
```

where *switch* can be either `true` or `false`.

`true` enables partitioning for some BPI database tables and indexes and `false` disables any partitioning for BPI.

Be aware that when you enable Oracle partitioning, there can be a significant delay while Oracle makes the required changes. The delay depends on the size of the database tables and indexes that are being partitioned and can be more than one hour.

5. When the partitioning is complete, restart the BPI components using the BPI Administration Console.



You must make sure that you have the appropriate license if you decide to enable Oracle Database table and index partitioning.

Problems During the Installation

Installation Procedure Fails with Error Indicating a Service is Still Running

If the BPI installer notifies you that there is a service running that you cannot detect using the Administration Console, it is most likely because you have stopped the HPBPI components individually using the BPI Administration Console Status page. To resolve this problem, select the `Stop All` option on the Status page and make sure that you close the Administration Console when the components have stopped.

Verifying Your Installation Using the Integrity Checker

All the BPI Server components produce logging and tracing files that you can use to identify problems within your BPI system; however, these log and trace files do not detect changes to the characteristics and file permissions of the BPI files and directories, nor do they inform you of missing files. The Integrity Checker utility is designed to check for problems that cannot be detected by the logging and tracing mechanisms and is a useful tool for validating your system following an installation.

The Integrity Checker:

- Generates the files required as the benchmark for a future integrity check.

These files are created as part of the installation process and are tailored to each installation type. These files enable the Integrity Checker to be used to validate that all the installation files exist, are in the correct location, have the correct file permissions set and are complete.

- Uses the BPI configuration files to detail the current BPI configuration, when required. For example, the Integrity Checker can:
 - Confirm port numbers that are currently configured for use
 - Validate that all the database objects required by BPI have been created successfully; for example, functions, indexes and tables.
- Makes available the version numbers of all the BPI Server component JAR files (from the implementation version field from within the file). This does not include the third-party JAR files.
- Checks that BPI Server can connect to the BPI Instance database, and that all the database tables exist.
- Determines the version of J2SE (Java Virtual Machine) installed on the machine where BPI Server is running.

Running the Integrity Checker

If the log and tracing files seem to be providing misleading information, or you want to check the status of your BPI system for other reasons, you can run the Integrity Checker as follows:

1. On the machine where you have installed the BPI Server, change directory to:

```
bpi-install-dir\lbin\bia
```

2. Execute the following file:

```
integritychecker.bat
```

3. Examine the contents of the report file generated by the Integrity Checker. This file is located as follows:

```
bpi-install-dir/data/log
```

The file name is in the form *integrity_report_systemtime* and has a .TXT file extension. *systemtime* is the system time, which makes the file name unique.

Errors generated by the Integrity Checker, if it fails to run, are written to *stderr*.

Check the errors in the log file generated by the Integrity Checker and then find the problem statement in this chapter and follow the instructions to recover from the error.

Integrity Report

The Integrity Checker creates a log file, which reports on information about the status of the BPI system and configuration. The Integrity Checker reports on:

- files that have incorrect checksums

Following a new installation, the Integrity Checker calculates a checksum value for all the files installed. When you run the Integrity Checker, it re-evaluates these checksums and reports the files where the checksums are different.

There might be valid reasons why the checksums have changed, in which case you can ignore the problem, for example, you might have modified the content of one or more files.

- Java environment

The Integrity Checker checks the version numbers for the J2SE installed on your system to ensure that it is compatible with the BPI requirements.

If the Integrity Checker reports an error with the Java environment, you should correct the error before using BPI.

- master configuration properties

The configuration options presented through the BPI Server Administration Console are held in a file called `masterconfig.properties`. The property values in this file are the properties currently being used by the BPI Server system. The Integrity Checker reports on the current values being used by BPI, so you can confirm that the values are as you expect.

If the values are not as you expect, you need to modify them using the BPI Administration Console.

If `masterconfig.properties` has been deleted, the Integrity Checker returns an error on the command line.

- installed jar files

BPI has a number of jar files and the Integrity Checker reports on the implementation version of these files. This implementation version shows whether or not patches have been applied to BPI.

- port numbers

All BPI port numbers need to be within the range of a number greater than zero (0) or a number less than 65535. The Integrity Checker reports on the port numbers and informs you if any are out of this range.

If the Integrity Checker reports that the port numbers are not valid, you need to change them as described in *Using Business Process Insight*.

License Key Password Redemption

When initially installed, BPI is running under a 60-day Instant On license. You need to obtain your permanent password before the 60-day period has expired. To obtain your permanent password, you need to access the Autopass License Management utility, which is available through the BPI Administration Console.

BPI uses a Nodelocked license based on the fully qualified hostname of the machine where the BPI Server is installed. Do not request your permanent password using the IP address of the machine where BPI is installed; if you do, BPI is not able to start.

When you purchased BPI you received one, or more, entitlement certificates. An entitlement certificate is issued for each licensed product that you purchase, for example:

```
BB185AA           HP BPI Enterprise Foundation LTU
BB186AA           HP BPI 1 Process SW LTU
```

Use the information on your entitlement certificates and the Autopass License Management utility to retrieve and install the software license keys for BPI. The following are the instructions for accessing the Autopass License Management utility for BPI:

1. Open the BPI Administration Console
2. Select the following menu option:

```
Admin > License Manager
```

The Autopass License Management Retrieve/Install License Key pane is displayed.

3. Follow the License Management instructions for retrieving and installing your license key. You need to make sure that you have the information from your entitlement certificates when answering the licensing questions.

For detailed information about using HP License Manager (Autopass), refer to the License Management online help.

If you have any difficulty with HP License Manager, use the contact details on your License Entitlement Certificate. You can also access the HP Password delivery service at the following URL:

<http://www.webware.hp.com>

When you have installed your permanent license, continue and verify your BPI installation as described in section [Verifying Your Installation Using the Integrity Checker](#) on page 72. You can complete the verification using the 60-day Instant On license if you prefer and install the permanent license at a later date.

If you do not want to verify your installation, you have completed the installation.

5 Re-installing BPI Server Components

You can use the BPI Server installation procedure to re-install existing BPI Server components. This enables you to install new components and replace missing or corrupt BPI Server software files. You can use the Installation Integrity Checker to determine if there are missing installation files; see section [Verifying Your Installation Using the Integrity Checker](#) on page 72.

If you want to replace BPI data files, you should recover these files from a backup. You cannot use the reinstallation program to change details of the database configuration for BPI.

If you want to upgrade from an BPI Server version 7.50 system to an BPI Server 8.00 system, do not read this chapter, you must refer to [Chapter 7, Upgrading to BPI Version 8.00](#).

This chapter covers the following topics:

- [Before Starting the Re-installation Procedure](#) on page 80
- [Re-installing the BPI Server](#) on page 81



If you want to create a new BPI Instance database and remove all the data associated with the current BPI Server installation, use the uninstall instructions provided in [Chapter 6, Uninstalling BPI Server Components](#). This involves removing all the installed BPI Server components and deleting the database used by the BPI Server. Be aware that by uninstalling BPI you are removing all your BPI Server files and data.

Note that the schema for the Process Repository is not affected by the installation, re-installation or removal of the BPI Server components and data.

Before Starting the Re-installation Procedure

Before starting the re-installation process make sure that you have taken a full backup of your machine, and make sure that it includes copies of any configuration files that you have modified for your current installation.

The reinstallation procedure will overinstall, makes copies of configuration files, or preserves relevant configuration changes as follows:

- changes made to configuration parameters through the BPI Administration Console are preserved and are used to present the BPI configuration parameter values during the reinstallation.
- changes made to other changed configuration files, require you to make sure the files are copied and any changes are reapplied after the reinstallation is complete. Examples of files that you might have changed are the SQL script for archiving Active and Deleted instances, or the Tomcat configuration file (`server.xml`).

The instructions for re-installing are described in the following sections.

Re-installing the BPI Server

This section covers the tasks that you need to complete to re-install the BPI Server.

Stop the BPI Server Components and Backup the Machine

Complete the following steps before running the installation script to re-install any BPI Server components:

1. Make sure that you shut down the BPI Server components and close the BPI Administration Console.

If the installer detects any of the BPI Server components still running, the installation is aborted until the components are stopped.

2. Make sure that you have shut down all applications that use HP License Manager (Autopass) on the machine where you intend to reinstall the BPI Server. If you do not, you might not be able to use these applications or the BPI Server following the BPI Server installation.
3. Complete a full backup the BPI Server installation directory and all the BPI database files.

You can now continue and start the installation.

4. From an account with Administrator privileges, download the installation procedure for Business Process Insight, which you access from the Admin > Platforms > Setup and Maintenance > Downloads page. Select the Category for Business Process Insight on the system Windows.
5. Download the software to a location of your choice and run the setup file for the installation.

You are presented with an installation GUI that leads you through the steps to install you BPI components.

6. Click **Next** to start the installation and then follow the instructions presented by the installation GUI.

The installation procedure continues and installs the BPI component directories and files. When the installation is complete, click **Done** to exit the installation procedure.

7. Reapply any changes that you made to the BPI configuration files that you saved before starting the reinstallation procedure.
8. Restart the BPI components that you stopped using the BPI Administration Console.

What to do Next

When you have re-installed the BPI Server, and reapplied your changes, you have completed the re-installation tasks and you can continue using your BPI Server machine.

6 Uninstalling BPI Server Components

This chapter describes how to remove the BPI Server components from your Windows machine.

You can choose to remove all the BPI Server schema objects, including the database tables, or you can preserve them. You might want to preserve them if they contain data that you want to use for other applications.



Note that the schema for the Process Repository is not affected by the installation, re-installation or removal of the BPI Server components and data.

If you select to remove all the schema objects, the uninstall procedure deletes the table, but it does not delete:

- the tablespace (Oracle Server)
- Database (SQL Server)
- Database user

If you want to keep your data for reporting purposes, select the *Keep Data* option when you run the uninstall program. Keep the data and then move it to a suitable location when the uninstaller completes. When you have moved the data, you must delete the BPI schema objects and database User using your database management tools. You also need to delete the BPI files under the installation directory when you have made a copy of the data that you need from them.

The BPI uninstall procedure does not delete any CIs, or other related data that was created within Business Availability Center. This data for BPI Processes, Steps, or Monitors needs to be manually deleted using the Business Availability Center UCMDB management tools.

Tasks to Complete Before Removing the BPI Server

Before removing the BPI Server components, you must first remove the settings within Business Processes, which are used to track individual process instances and all the Data and Event definitions. If you do not remove these processed before uninstalling the BPI Server:

- the Modeler might not be able to synchronize CIs with the UCMDDB for any Business Processes, including those not configured to track individual process instances.
- undeploying Business Process configured to track individual process instances cause the Modeler to close as it cannot access the required information in the Process Repository.

You can remove the required processes by exporting and then deleting all your Business Processes and subsequently importing the Business Processes that you want to keep.

Complete the following steps to remove Business Processes that are configured to track individual process instances:

1. Open the Process Repository Explorer:

```
Admin > Business Process Insight > Process Repository Explorer
```

2. Use the Process Repository Explorer option to export all definitions:

```
File > Export All
```

3. Select the Download button, to export and save the definitions to a .zip archive file. See *Using Business Process Insight* for more information about exporting and importing definition files.

You now have a complete backup of your definitions.

4. Move to the Modeler

```
Admin > Business Process Insight > Modeling
```

5. Delete all your Process, Data and Event definitions,

6. Move back to the Process Repository Explorer.

7. Remove all the definitions listed under Recycled:

```
File > Clean-up Recycled
```

8. Open the BPI Administration Console on the system where the BPI Server is installed:

Start > Programs > HP > HP Business Process Insight > Administration

9. From the Status pane, click the Stop All button to stop all the BPI Server components.

10. Modify the BPI- related configuration parameters in the BAC Infrastructure settings and remove the entries that list the details for the BPI Server and BPI database:

Admin > Platform > Setup and Maintenance > Infrastructure Setting

11. Move back to the Modeler. (It needs to be reopened as it shut down when the BPI Server components were stopped).

Admin > Business Process Insight > Modeling

12. Import the previously exported .zip archive file containing all the definitions into the Modeler:

File > Import Definitions...

The Modeler imports the definitions in the correct context for the new configuration and none of the processes is now configured to track individual process instances.

13. Redeploy all the Process definitions.

You can now continue and remove (uninstall) the BPI Server components as described in [Removing BPI Server Components](#) on page 86.



It is very important that you do not attempt to restart the BPI Server components after completing these steps. If you do, the system will reconfigure the Infrastructure settings, leaving the system in an indeterminate state. You must remove the BPI Server components when you have completed these steps, or reconfigure the Windows Services for the BPI Server components and makes sure they are not being started automatically.

Removing BPI Server Components

You remove the BPI components from your machine using the Add/Remove Programs option from the Control Panel.

To remove the BPI components complete the following steps:

1. Make sure that all the BPI Server components on the Windows machine are shut down:
 - a. Use the BPI Administration Console to shutdown all the BPI Server components.
 - b. Close the BPI Administration Console.
2. Make sure that all the BPI Windows Services are stopped.
3. When all the BPI components are shut down and BPI Windows Services are stopped, you can continue and remove the BPI software as follows:

Select:

Start > Settings > Control Panel > Add/Remove Programs

4. Select HP Business Process Insight from the currently installed programs.
5. Click Change/Remove to start the uninstall program.

You are presented with an introduction screen labeled Uninstall HP Business Process Insight.

6. Click Next to continue.

You are asked to confirm that all the BPI components are shut down.

7. When all the BPI Server components are shut down, click Uninstall to continue.
8. You are presented with the Delete Data dialog where you are asked if you want to delete the contents of the BPI Instance database.

If you select this option, it affects only the data created by the BPI Server, that is the process instance and violation information. Data in the BPI Process Repository and any related CIs defined in BAC are not deleted. This means that the Business Process that you have created remain and can be accessed using the Modeler and you can view your Business Processes using Dashboard > Flow Map. However, all Monitor, Event and Data definitions associated with these processes are deleted.

9. Select the option to `Delete BPI data`, if you want to delete all the data from the database; otherwise, select the option to `Keep BPI data`.

If you choose to `Keep the BPI Server data`, be aware that if you want to install another copy of BPI Server in the future, the new installation will not progress if it detects the existence of an existing BPI Instance database. To reinstall in the future, any existing BPI Instance database tables need to be removed, or copied to another location.

Select the option that you want and click `Uninstall` to continue with the uninstallation procedure.

If you have chosen to keep the BPI Server data, continue at step 11; otherwise continue at the next step.

10. If you have chosen to delete the BPI Server data, you are presented with the database user password dialog, where you are asked to enter the password for the specified BPI Instance database user. Enter the password and click `Uninstall` to complete the uninstall procedure.

11. The Uninstaller continues and removes the BPI Server components.

The uninstaller reports any files that it cannot delete as part of the uninstallation process and recommends that you restart your Windows machine to complete the installation.

Click `Done` to complete the uninstallation procedure.

If you have chosen to keep the BPI Server data, continue at step 13.

12. Restart your Windows machine.

After the machine is restarted, you need to make sure that all the BPI Server files and directories have been removed.

13. Delete any remaining BPI files from the following directory, including the directory `HP Business Process Insight`:

`C:\Program Files\HP\HP Business Process Insight`

14. Delete any unwanted entries on the `Start > Programs` menu.

If you are uninstalling, following an upgrade from earlier versions of BPI, there might be additional options on the `Start > Programs` menu for HP Business Process Insight; you need to delete these manually.

15. Delete the database user created for the BPI Server if it was used solely for the BPI Server. The uninstall program does not remove the database user as it might be used for other purposes.

You have now completed the tasks to remove the BPI Server components from your Windows machine.

Post Uninstall Tasks

The following are tasks that you might need to complete after you have removed the BPI components from your machine.

Make a Copy of Data in Database

If you have chosen to keep the BPI Server data, you can make a copy of the data that you want to keep and then delete the BPI Server files and directories, BPI Instance database files and the BPI Instance database User.

If you are using Oracle 10g, you can also purge the BPI Database User's Recycle Bin using the Oracle `PURGE RECYCLEBIN` command. This Oracle database command purges all the database tables, and their dependent objects, for the specified user, plus any other indexes owned by the user.

Remove BPI Options from Start Menu

If your BPI installation was previously an upgrade from earlier versions of BPI, you might have some residual options remaining on the Start Menu. You can delete all the `HP > HP Business Process Insight` menu options from the Start Menu when the uninstall is complete.

Remove Database User

The uninstall program removes all the BPI-related database tables; however, it does not remove the database user that owns these tables. This is because the database user could be used for other database objects.

If you know that the database user is required only for the BPI Instance database tables, you can delete it after the uninstall program has completed successfully.

Problems Removing BPI Components

The following are problems that you might experience when attempting to uninstall the BPI Server components:

- Java error, could not find a valid Java virtual machine; see section [Uninstall Fails Due to Missing Java Virtual Machine](#) on page 90.

Uninstall Fails Due to Missing Java Virtual Machine

The installation program `InstallAnywhere` requires a JRE to be available for use in order to run and looks for the location of the JRE on the System Variable `Path`.

If you remove this JRE on your system for any reason, and subsequently attempt to use `InstallAnywhere` to uninstall the BPI Server, you see an error indicating that the installer could not find a valid virtual machine to load as follows:

```
Could not find a valid Java virtual machine to load.  
You may need to reinstall a supported Java virtual machine.
```

If you see this error, you need to install a JRE and then run the uninstall program for BPI again.

7 Upgrading to BPI Version 8.00

This chapter describes how to upgrade from your existing BPI 7.50 installation to BPI Server version 8.00. If you want to install the same version of BPI to repair your installation, you need to follow the instructions in [Chapter 5, Re-installing BPI Server Components](#) that cover re-installation for the correct version of BPI. Do not follow the instructions in this chapter.

Upgrades from versions of BPI prior to 7.50 are not supported. You must upgrade your BPI system to version 7.50 before proceeding with the upgrade to version 8.00.

If you are installing the BPI Server for the first time, you do not need to read this chapter.

The following topics are covered in this chapter:

- [Read Before Starting the Upgrade](#) on page 92.
- [Tasks to Complete Before Starting the Upgrade](#) on page 97.
- [Overview of Upgrade](#) on page 99.
- [Upgrading BPI](#) on page 101
- [Post Upgrade Tasks](#) on page 104

Read Before Starting the Upgrade

Before you start the upgrade, you need to understand how BPI is integrated with HP Business Availability Center (BAC) version 8.00 and the BAC installation process for 8.00.

BPI is now a BAC Application and requires BAC version 8.00 to be installed before you can continue with the BPI upgrade procedure.

The BAC installation and upgrade process is described in the *HP Business Availability Center Deployment Guide*. The architecture of the BAC and BPI integration is described in *Reference Information for Business Process Insight*. You will also find it helpful to read [Chapter 2, Overview](#) in this guide as it provides useful information regarding the combined BAC and BPI installation.

Before starting any BPI upgrade process, you need to complete the actions described in the *BAC Deployment Guide* and then follow the instructions described in this chapter, when advised to, from within the BAC Deployment Guide.

Upgrade in Staging Mode

If you are completing a upgrade from BAC 7.50 to BAC 8.00 in staging mode, you need to:

1. wait until the BAC upgrade to version 8.00 is complete and the BAC 7.50 system has been shutdown
2. shutdown your BPI 7.50 system.
3. continue with the upgrade from BPI 7.50 to BPI 8.00, making sure that you reconfigure the connection details between BPI and the newly installed BAC 8.00 Gateway Server.

You cannot use BPI version 7.50 with a BAC version 8.00 system.



Following a BAC upgrade in staging mode, there are no BPI components available within BAC version 8.00 until you have upgraded BPI and configured it to access the BAC 8.00 Gateway Server. The Modeler, Process Repository and the BPI Flow Map are disabled as part of the BAC upgrade to 8.00 to protect your BPI 7.50 data.

Changes Introduced in BPI 8.00

The following changes and features have been introduced in BPI Version 8.00:

- BPI is no longer a separate component, it is now a Business Availability Center Application. The BPI Server remains a separately licensed component; however, BPI requires BAC version 8.00 in order to operate.

As a result of this integration, changes have been made to the user interfaces for BPI. The significant changes are referenced specifically below.

- The BPI Business Process Dashboard functions have been integrated into BAC where they can be accessed from the following menu option:

Applications > Business Process Insight

Select the Health tab to access the instance data previously displayed using the Dashboard.



All customizations of the appearance of the BPI Application pages are made using the My BSM.

- The following BPI clients are now accessible from Business Availability Center, you no longer access them using the BPI Administration Console or directly using a URL:

- Modeler
- Monitor Definer
- Process Repository (formerly Repository Server)
- Process Intervention (formerly Intervention Client)
- Process Repository Explorer (formerly Repository Explorer)

These clients are accessed from the following BAC menu option:

Admin > Business Process Insight

- You can now define progression rules, within the BPI Modeler, which enable you to progress a Business Process on receipt of a particular Business Event, or when a property within a Business Event changes its value or status

The following can be defined within an Advanced progression rule:

```
— onEvent ("event-name" )
— event.Status == "property-of-event" ;
```

There is also a new progression rule that you can use:

Start and complete on TransactionVision events

Refer to the BPI Modeler Online Help and the *Business Process Insight Integration Training Guide - Modeling Processes* for more details,

- You are unable to upgrade any customizations that you have made to the Business Process Dashboard version 7.50 to version 8.00. However, you can reapply customizations for Step annotations and Step graphics; refer to *Using Business Process Insight* for more information.
- Following the upgrade from BPI version 7.50 to BPI Server version 8.00, you can no longer define statistical thresholds using the Monitor Definer, you add these as KPI objectives from:

```
admin > Dashboard > KPI
```

In addition, Value thresholds on Monitors with a type of Duration, and durations on thresholds for Monitors with a type of Value, can no longer be defined.

If you had thresholds of these types in BPI 7.50 they are not removed as a result of the upgrade; however, any violations associated with them are not included in BAC reports for BPI version 8.00.

When the upgrade is complete, you can delete these Threshold Definitions using the Monitor Definer if you want to.

- KPI changes
 - The Business Health KPI in BAC 7.50 has been renamed to Business Impact in BAC 8.00; this is KPI number 602 and 604.
 - There is a new KPI called Business Health for BAC 8.00; this is KPI number 620.

This new KPI indicates the worst status of all business KPIs for the `business_process` CI and its child CIs.

A KPI in this context is any of Backlog (600), Duration (601), Business Impact (602), Value (1311) and Volume (1050).

The new KPI also uses a new rule. This is the BPI Business Health Status Rule and calculates the worst status of all business KPIs for the `business_process` and its child CIs.

- You can no longer configure a direct integration between BPI and HP Operations Manager or SOA Manager. In BPI version 8.00, you access all IT operational resources, including those CIs modeled for HP Operations Manager and SOA Manager through the UCMDB.

Following the upgrade, any Services that were defined using the BPI Modeler, are removed and a newer version of the Business Processes is created within the Modeler. The 7.50 version of the Business Process is still deployed within the Business Impact Engine, but there is revised version of the Business Process ready to deploy within the Modeler. You can also link the Steps in the Business Process to the CIs that represent the Services that you want to reference. You do this using the new `Related CI` option on the `Step` property.

Note that this does not affect any Business Events that you have defined, which are integrated from SOA Manager. These are still configured directly from BPI as described in the *Integration Training Guide - Business Events*.

- Security Options

The BPI Server version 8.00 uses the BAC lightweight single-signon mechanism for securing access to the BPI Application. The properties for this are set automatically.

Whenever you start a BPI Server component, the BPI Server obtains the lightweight-single signon setting from BAC and applies them to the BPI configuration, overwriting any changes that you have made.

These settings can be viewed from the Administration Console Security settings.

- The database tables used by BPI have been split between:

- Process Repository

This data contains the details of the Business Processes that you define using the BPI Modeler.

- Business Impact Engine Data

This is the instance and violation data that is created when you configure Event, Data and Monitor definitions using the Modeler. The options to create Event, Data and Monitor definitions are not enabled, unless you have installed the BPI Server.

Tasks to Complete Before Starting the Upgrade

Before starting the upgrade, make sure that you have completed the steps described in the following sections, where they are appropriate:

- [Check Versions of Prerequisite Software](#) on page 97
- [Check Database Table Use](#) on page 97
- [Copy Changed Component Configuration Files](#) on page 98
- [Back Up Your System](#) on page 98

Check Versions of Prerequisite Software

BPI version 8.00, might require different versions of the prerequisite software. Check the tables in [Chapter 3, Before Starting the Installation](#) for the system and software requirements.



You must install, configure and start HP Business Availability Center version 8.00 before you start the upgrade procedure for BPI.

Check Database Table Use

If you have created a database exclusively for your BPI Server data, then you can skip this section.



You are strongly advised to have a Database or Database User specifically for BPI to prevent any possibility of table name clashes.

If the database used by BPI Server is also used for other applications, you need to check the list of table names that are created for BPI version 07.50 before starting the upgrade process. If you have user-defined, or application, tables that have the same name as the BPI tables defined for version 07.50, you need to remove them from the BPI schema, or database, before starting the upgrade. If you do not, the upgrade process is likely to fail.

The full list of schema objects created by BPI version 07.50 is listed in [Appendix A, Database Tables Defined for BPI](#).

Copy Changed Component Configuration Files

Before starting the upgrade process make sure that you have taken a copy of any files that you have modified whilst using the existing version of BPI and before starting the procedure. You can then reapply the changes to the files after the upgrade is complete.

Examples of files that you might have changed are configuration files and the SQL script for archiving Active and Deleted instances.

Back Up Your System

Before starting the upgrade, you are strongly advised to back up your machine and database. Make sure that you shut down all the BPI components, using the BPI Administration Console, and then close the BPI Administration Console, before backing up your machine and starting the upgrade process.

Upgrading with Significant Amounts of Data in Database

If you have a significant amount of process and business process monitor data in your database, be aware that the upgrade to HPBPI version 8.00 can take some time.

The amount of time the upgrade takes, depends on the database type (Oracle Server, or Microsoft SQL Server), your machine type and the amount of data; however, with hundreds of thousands of business monitor instances, it could take hours, rather than minutes, for the upgrade to complete.

Overview of Upgrade

You complete the BPI Server upgrade by over installing your existing version 7.50 of BPI with BPI Server version 8.00.

The following is information that you need to be aware of before you start the upgrade process:

- Installation question defaults

With a couple of exceptions, all existing settings for your BPI configuration are used as a default for the installation.

If you have previously configured Business Availability Center, you might also be presented with questions that relate to its configuration; see later steps in this list for more details.

- Following the upgrade to BPI version 8.00, any processes that were being tracked in the Business Impact Engine continue to be tracked and any CIs that you have linked to your Business Process continue to be monitored.
- Following the upgrade to BPI version 8.00, all processes in the Modeler remain in the same state (deployed and undeployed) as they were before the upgrade.
- When the BPI Server is started for the first time, after the upgrade to version 8.00 is complete, superseded processes and any associated instances of Data definitions are deleted. When the deleted processes have been removed from the BPI Server, any superseded definitions are then also removed, including their associated Business Process Monitors.

These definitions are deleted because the concept of superseded processes does not exist in BPI version 8.00. When you redeploy a new version of a Business Process in version 8.00, you have the following options:

- Replace the existing definition.

This replaces the definition and removes all the instance of the definition. Any statistical information collected for the instance is retained.

- Deploy under a different name.

This enables you to deploy the definition using a different name, and therefore preserving the instance information for the existing definition.

You can now continue and upgrade your BPI components as described in section [Upgrading BPI](#) on page 101

When the BPI upgrade is complete, continue and follow the remaining upgrade instructions, starting at section [Post Upgrade Tasks](#) on page 104.

Upgrading BPI

This section covers the following topics:

- [Upgrade Procedure](#) on page 101
- [Configure the BAC Infrastructure Settings](#) on page 102
- [Restart Your BPI Systems](#) on page 102
- [Running the Process Repository Script](#) on page 103

Upgrade Procedure

This section covers the steps that you need to complete to upgrade any combination of BPI components.

To run the upgrade program, complete the following steps:

1. Make sure that all the BPI Server components are stopped. Use the BPI Administration Console to stop the components.

If the installer detects any of the BPI components still running, the installation is aborted until the components are stopped.
2. From an account with Administration privileges, download the installation procedure for Business Process Insight, which you access from the Admin > Platforms > Setup and Maintenance > Downloads page. Select the Category for Business Process Insight on the system Windows.
3. Download the software to a location of your choice and run the setup file for the installation.

You are presented with an installation GUI that leads you through the steps to install your BPI components.

4. Click **Next** to start the installation and then follow the instructions presented by the installation GUI.

5. There are some additional questions in the BPI Server installation; refer to section [Collecting Required Information for Installer](#) on page 44 for details of these questions and the information you need to complete them.
6. The installation procedure continues and installs the BPI directories and files. When the installation is complete, click Done to exit the installation procedure.

You have now upgraded the BPI software, but there are still some additional steps that need to be completed to move BPI data into the correct database.

Configure the BAC Infrastructure Settings

You need to make sure that the Business Process Insight Infrastructure settings are correct for your BPI 8.00 installation.

The infrastructure settings are accessible from:

Admin > Platform > Infrastructure settings > Business Process Insight

Restart Your BPI Systems

You restart the BPI components using the BPI Administration Console, or you can use the Windows Services for starting the BPI Server components.

You can also verify the installation using the example Business Process described in section [Verifying Your Installation Using the Integrity Checker](#) on page 72.

Running the Process Repository Script

You now need to run a migration script to migrate the data contained in the BPI 7.50 Repository Server database into the new Process Repository database that was created when you installed BAC and configured the BPI Schema:

To do this, complete the following steps:

1. Open the BPI Administration Console
2. Stop the Process Repository component.

This is the BPI process that communicates with the Process Repository database.

3. Run the following script from a Command Window:

```
bpi-install-dir\bin\repositoryschemamigrator.bat
```

4. Restart the Process Repository Component.

The BPI upgrade is now complete.

You can now complete any relevant post upgrade tasks described in section [Post Upgrade Tasks](#) on page 104.

Post Upgrade Tasks

The following sections describe tasks that you might need to complete following the BPI Server upgrade.

If you do not take the actions described in these sections, you might not have a fully operational BPI system.

- [Licensing](#) on page 104
- [Reinstating Changes to BPI Configuration Files](#) on page 104
- [Servlet Engine Configuration File](#) on page 104
- [Removing Start Options That are No Longer Required](#) on page 106
- [Using Contributed Processes and Components](#) on page 106

Licensing

BPI Server version 8.00 is a fully licensed product; refer to section [License Key Password Redemption](#) on page 76 for details of how to obtain and install your license key.

Reinstating Changes to BPI Configuration Files

If you have made any changes to configuration files not specifically listed in this chapter, these changes need to be reapplied to the newly installed files.

When you have completed these changes, and completed any other applicable post upgrade tasks described in this section, you can continue and restart the BPI components that you stopped.

Servlet Engine Configuration File

Following an BPI upgrade, a new version of the Servlet Engine configuration file (`tomcat-users.xml`) is installed. The original file is left in place and is not modified.

The location of the Servlet Engine configuration file is:

```
bpi-install-dir\nonOV\jakarta-tomcat-5.0.19\conf
```

The name of the file is the same as the original file, and appended to the file name is a string, which indicates the version of BPI that the file is associated with for example:

```
tomcat-users.xml.07.50.000
```

You need to compare the new file with your existing configuration file and copy the BPI-related changes into the existing file.

The reason that the BPI installation procedure does not replace the file is because you might have made your own changes to the file, which you do not want to be overwritten.

Servlet Engine and System Restart

Very occasionally and following a system restart, the Servlet Engine appears not to have started, both within the BPI Administration Console and as a Windows Service.

The Servlet Engine service is actually in the processes of starting, but is taking a long time, possibly due to other applications causing delay; for example, the database can take a long time to start when it is very full.

If you think that you are experiencing this problem:

- Click the `Start` button for the Servlet Engine from the `Status` screen on the Administration Console.
- Click the `Stop` button for the Servlet Engine as soon as it is enabled.

Your Servlet Engine services are now synchronized and the Servlet Engine is not started.

- Restart the Servlet Engine as normal.

Removing Start Options That are No Longer Required

When the upgrade of the BPI Server installation is complete, you have a number of options available from the start menu for BPI:

Start > Programs > HP > HP Business Process Insight

The following is the option available when you install BPI version 8.00 for the first time:

- Administration

You can remove all other options.

Using Contributed Processes and Components

Some of the contributed components have been removed in BPI version 8.00 and the customized JSP supplied as part of the contributed components do not work with the BPI Server version 8.00.

The contributed processes that are available with the BPI Server version 8.00 can continue to be used with BPI version 8.00. However, if you are using a version of a contributed process from BPI version 7.50, you must use the correct version of the test script for the process. You cannot use any of the BPI version 8.00 test scripts with previous versions of the Business Processes and you cannot use previous versions of test scripts with version 8.00 Business Processes.

If you intend to use any of the contributed component programs; for example, the Process Simulator, you must use the version 8.00 programs with BPI version 8.00, you cannot use previous versions of the contributes programs with BPI version 8.00.

What to do Next

When you have upgraded BPI and reapplied your changes, you have completed the upgrade tasks and you can continue using your BPI machine.

A Database Tables Defined for BPI

The following tables list the all the database tables and views that are created for BPI. Many of these tables are for internal use only and should not be modified.

This list is provided in order that you can make sure that all the tables are included in any backup and recovery procedures and for you to check for any potential database table name clashes.

The capitalization used in the table is for ease of reference only. How the table names are represented in your database is database specific; for example, for an Oracle Server all table and view names are upper case.

[Table 10](#) on page 107 lists all the BPI database tables and [Table 11](#) on page 110 lists all the views.

Table 10 Complete List of BPI Database Tables

Table Name	Internal Use Only (yes/no)
AdaptorConfig	yes
Arcs	no
BACDataSampleQueue	yes
BACDataSampleDestinations	yes
BACSynchronizeStatus	yes
Data_Objects	no
DBusmh_Attribute	yes
DBusmh_EditableAttribute	yes
DBusmh_Patient	no
DBusmh_Role	yes

Table 10 Complete List of BPI Database Tables

Table Name	Internal Use Only (yes/no)
DBusmh_User	yes
DBusmh_UserRole	yes
EventQueue	yes
Event_Store	no
FlowDataFilters	yes
FlowNodeZones	yes
Flows	no
Flow_Instance_Table	yes
FlowZoneMaps	
ImpactThreshold	yes
Metric_CustomTypes	no
Metric_Definitions	yes
Metric_Dim_Dates	no
Metric_Dim_Flows	no
Metric_Dim_Flow_Instances	no
Metric_Dim_Groups	no
Metric_Dim_Metrics	no
Metric_Dim_Thresholds	no
Metric_Event_Seq	yes
Metric_Events	yes
Metric_Events_Engine_Status	yes
Metric_Events_Seqs_To_Remark	
Metric_Events0 (to 18)	

Table 10 Complete List of BPI Database Tables

Table Name	Internal Use Only (yes/no)
Metric_Fact_Alerts0 (to 18)	no
Metric_Fact_Statistics0 (to 18)	no
Metric_Fact_Values0 (to18)	no
Metric_Generate_Errors	yes
Metric_Notification_Check_Time	yes
Metric_Staging_Statistics0 (to 18)	yes
Metric_Staging_Stats_Modified0 (to 18)	yes
Metric_Stored_Procedures ^a	yes
NodeIdAndResourceStatus	yes
NodeInstToBeDeleted	yes
Nodes	no
Nodes2Resources	no
Node_Instance_Table	yes
Node_Instance_CompletedTimes	no
Node_Instance_StartedTimes	no
NS_Digesterstore	yes
NS_DigesterSubscriptions	yes
NS_EmailRetry	yes
NS_EmailSubscriptions	yes
NS_EmailUsers	yes
NS_OVORetry	yes
NS_OVOSubscriptions	yes

Table 10 Complete List of BPI Database Tables

Table Name	Internal Use Only (yes/no)
NS_ScriptRetry	yes
NS_ScriptSubscriptions	yes
NS_SLAEmailSubscriptions	yes
NS_SLOEmailSubscriptions	yes
OVIS_AlarmStatus	yes
OVISTimeStamps	yes
Resources	no
RMIEventRetry	yes
SOAPEventRetry	yes
UcmdbIdToMonitorId	yes
UcmdbIdToOProcessId	yes
UcmdbToStepId	yes
Version	yes

a. this table is available only with Microsoft SQL Server.

The following table lists all the BPI database views.

Table 11 Complete List of BPI Database Views

View Name	Internal Use Only (yes/no)
Dbusmh_View	yes
Flow_Instance	no
Metric_Events	yes
Metric_Fact_Alerts	yes
Metric_Fact_Statistics	yes

Table 11 Complete List of BPI Database Views

View Name	Internal Use Only (yes/no)
Metric_Fact_Values	yes
Metric_Staging_Statistics	yes
Metric_Staging_Stats_Modified	yes
Metrics	no
Metric_Values	no
Node_Instance	no

The following table lists the BPI database indexes.

Table 12 Complete List of BPI Database Indexes

Index Name	Internal Use Only (yes/no)
Flow_Instance_Idx_nnn	yes
Idxn	yes
Metric_Dim_Dates_Idx_nnn	yes
Metric_Dim_Groups_Idx_nnn	yes
Metric_Events_Idx_nnn	yes
Metric_Fact_Groups_Idx_nnn	yes
Metric_Fact_Alerts_Idx_nnn	yes
Metric_Fact_Statistics_Idx_nnn	yes
Metric_Fact_Values_Idx_nnn	yes
Metric_Staging_Statistics_Idx_nnn	yes
Node_Instance_Comple_Idx_nnn	yes

Table 12 Complete List of BPI Database Indexes

Index Name	Internal Use Only (yes/no)
<i>Node_Instance_Idx_nnn</i>	yes
<i>Node_Instance_Starte_Idx_nnn</i>	yes
<i>Sys_string</i>	yes

There are also stored procedures, database triggers and other database scripts defined by BPI and potentially defined by you. These also need to be taken into account for backup purposes or if you need to move the BPI data.

It is strongly recommended that you create an Oracle User or Microsoft SQL Server Database specifically for BPI as it makes the task of identifying this BPI data much easier.

B Reporting Problems to Hewlett-Packard

Before reporting problems to Hewlett-Packard, make sure that you have the following information available.

If the problem is with the BPI Server:

- The hostname and host ID of the machine where the BPI component is running.
- The operating system, and its version, plus patches on all the systems where the BPI components are running.
- A copy of the log files for all the BPI Server components.
- A copy of any relevant trace files.
- A note of any error messages reported with the problem.
- A copy of your installation log files, which are located at:
 - *bpi-install-dir*\HP_Business_Process_Insight_InstallLog.log
 - *bpi-install-dir*\HP_Business_Process_Insight_DBSetupLog.log
- A copy of the latest InstallAnywhere installation log files, which are located at the root directory of the drive where you installed BPI; for example C:\. The InstallAnywhere installation log files for BPI components all start with the string `hpovpbi . . .`
- All BPI install and uninstall files in the root directory where you have installed BPI.
- A copy of the database log file.
- A copy of the BPI database tables at the time of the problem; see [Appendix A, Database Tables Defined for BPI](#) for a complete list of the database tables used by BPI.
- Screen captures of any error dialog boxes.

- A copy of the output from running the Integrity Checker. Using the Integrity Checker is described in section [Verifying Your Installation Using the Integrity Checker](#) on page 72.

If the problem is with the BPI Modeler, supply the following information to HP:

- A copy of `modelclasses.cfg`, which is located in the `bpi-install-dir\data\conf\bia` directory.
- A copy of any Process, Data and Event definitions from the Modeler. These can be exported from the Modeler as described in *Using Business Process Insight*.

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