HP Business Availability Center

for the Windows and Solaris operating systems

Software Version: 8.02

Business Process Insight Problem Solving

This guide is not being updated for Business Process Insight, from version 8.02 and later.

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Contents

1 Introduction

This chapter introduces the topics covered in this guide and provides information about how to contact HP if you are unable to resolve the problem. The chapter also describes the tools that are available to you to help identify and resolve problems, which are described in this guide.

The following topics are covered in this chapter:

- Contacting HP on page 10
- Tools for Problem Solving on page 10
- Problem Areas on page 15

Contacting HP

If you cannot find a solution to your problem, contact your local support representative, or visit the HP BTO Software Website at:

www.hp.com/go/hpsoftwaresupport

From this site you can find contact information and details about the products, services, and support that HP Software offers.

Make sure that you have read the BPI Release Notes, which are located on your distribution media. The Release Notes contain information about any restrictions that might impact your BPI system, and also related products where these have an impact on BPI.

Deploying Business Process Insight lists the information that you are advised to collate for, and submit with, your support call.

Tools for Problem Solving

The following BPI components can be used for identifying problems, and in some cases can be used to resolve problems:

• BPI Administration Console

The BPI Administration Console presents the parameters that you can modify to change some of the configuration for your BPI system. *Using Business Process Insight* describes these parameters; however, you should change the parameter values only when requested to do so, or as the result of a change in your configuration.

Using the BPI Administration Console, you can view BPI component log files and temporarily change the level of detail logged by one or all BPI components. Changing the level of detail enables you to obtain more information about the problem; however, you should set the level of detail on a temporary basis only, as the log files consume a large amount of disk space.

- Intervention

  Use the Intervention pages to delete instances and definitions within your BPI system. The Intervention pages can also be used to make modifications to instances. *Using Business Process Insight* describes using the Intervention pages in more detail.

- Engine and Monitor Instance Cleaner parameters

  Use these parameters to manage the amount of completed and active process data that is stored in the database. You can archive this data to another location if you want to preserve it. *Using Business Process Insight* provides details of how to do this.

- Integrity Checker

  Use the Integrity Checker to check that your BPI system is installed correctly. For example, you can check that the J2SE version is correct. See Using the Integrity Checker for Problem Solving on page 12 for details about how to use the Integrity Checker.

- Process Repository Explorer

  Use the Process Repository Explorer to view the contents of the Process Repository. You can view all elements of your definitions on one page. You can also print your business Process definitions. This overview of your business process definitions, including progression rules, is very helpful when trying to identify problems with your Business Processes.

- Log Files

  Errors and warnings related to the BPI system are written to the log files. These log files can then be viewed through the BPI Administration Console. Chapter 12, Logging Problems describes the format of the log files.

- Database tools

  You can use the database tools provided with your database server to view the BPI database tables and their content.

- Contributed tool, Adaptor Console

  Contributed tools are not part of the supported product, but are included since you might find them useful for isolating and identifying problems. You can use the contributed tool, Adaptor Console, to monitor your Event adaptors from a central location.

The Adaptor Console is located on the distribution media under the following directory:

`bpi-install-dir\contrib\openadaptorConsole`

`openadaptor` provides the ability for an adaptor to be controlled remotely using the Adaptor Console. There is a contributed component called the JSP Adaptor Console to help monitor and control your adaptors.

See the `readme` file located in the same directory as the Adaptor Console for instructions on using the Adaptor Console. Also see the disclaimer text in the `contrib` directory for details of the terms of use for contributed components.

Using the Integrity Checker for Problem Solving

All the BPI components produce log files that you can use to identify problems within your BPI system; however, these log 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.

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 component JAR files (from the implementation version field from within the file). This does not include the third-party JAR files.

- checks that BPI can connect to its database, and that all the database tables exist.

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. However, if you do not know why the checksum is different, refer to Chapter 11, Files and System Problems.

- master configuration properties

    The configuration options presented through the BPI 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 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 must be between 0 and 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 "Modifying BPI Port Numbers" in *Using Business Process Insight*.

Problem Areas

Specific problem areas are described in the following chapters of this guide:

— Chapter 2, Problems Installing and Removing BPI Components.

— Chapter 3, Problems Starting and Stopping Your BPI Components

— Chapter 6, Problems Using the BPI Clients and BPI Application

— Chapter 4, Problems with Performance

— Chapter 5, Problems Using the Administration Console

— Chapter 8, Problems with Processes and Business Events

— Chapter 9, Problems with BPI Integrations

— Chapter 10, Problems with openadaptor

— Chapter 7, Problems When Creating Data in the BPI Database

— Chapter 11, Files and System Problems

— Chapter 12, Logging Problems — use the log files and trace files to identify problems with the BPI system.

2 Problems Installing and Removing BPI Components

This chapter describes problems that you might encounter when installing BPI components. The chapter covers the following topics:

- BPI Server Installation Problems on page 18.

- Licensing Problems on page 22

- Error Creating Database for Microsoft SQL Server on page 24

If the problem you are experiencing is not covered in this chapter, use the Integrity Checker to analyze your system. It might be that you have the incorrect version of a prerequisite component, for example, the J2SE. The Integrity Checker also reports on missing files, which can cause an installation failure. Using the Integrity Checker is described in section Using the Integrity Checker for Problem Solving on page 12.

BPI Server Installation Problems

The following sections describe problems that can occur during the BPI Server, or Server and Modeler installation.

- Error creating SQL Server Database during installation; see section Error Creating Microsoft SQL Server Database on Installation on page 19.

- Installation fails during database creation; see section Recovering a Failed Installation During Database Creation Phase on page 20.

- Unexpected behavior when installing on machines where the language settings are not English; see Regional Settings for Windows on page 84.

- Database connection problems as follows:

  — Port number inconsistencies

    Check that the port number that you quoted for the database during the installation process is correct. If it is not, re-run the installation with the correct port number.

    You also need to check that Microsoft SQL Server is configured to use static and not dynamic port numbers; see "Microsoft SQL Server Database Configuration" in the *Business Process Insight Deployment Guide* for more details.

  — Database not started

    It is possible that the database server has been shut down for some reason. Check with your database administrator, and if the database is not running, ask them to restart it.

  — BPI database user permission problems, which mean the BPI database tables cannot be created at installation; see section Database User Permission and Quota Errors on page 21.

  — BPI database user quota problems when using an Oracle Server. Quota problems prevent database tables being created at installation; see section Database User Permission and Quota Errors on page 21.

— Database login problems, where you have entered incorrect credentials for a BPI database user or for the user that has privileges to create other users, or you have not adhered to the password policies required by Microsoft SQL Server.

— Network problems, in cases where the BPI Server is connecting to a database that is installed on a different machine.

• Database setup problems as follows:

— Problems creating the BPI database tables.

If you have previously installed and removed the BPI Server from the machine that is exhibiting the problem, and you opted to keep the BPI database, you cannot reinstall BPI until you have cleared out the existing database tables. You need to delete the existing data from the database, or move it, in order to reinstall BPI.

Alternatively, this could be due to database user permission or quota problems; see section Database User Permission and Quota Errors on page 21.

— Database tables from a previous Microsoft SQL Server installation not deleted or not deleted cleanly; see section Error Creating Microsoft SQL Server Database on Installation on page 19.

You can also find additional information about database problems that you can experience in Chapter 7, Problems When Creating Data in the BPI Database.

Error Creating Microsoft SQL Server Database on Installation

If you receive an error message indicating that the installation is unable to create the database because hpbpiSchema.mdf files are still present, it might be due to the SQL Server having an inconsistent view of BPI database files.

If you have removed BPI and selected to delete the database tables, there might be BPI-related database files still present on your machine that need to be removed before you can continue.

You see this problem only if you have previously installed, and subsequently removed BPI from the machine where you are attempting to reinstall.

If the BPI installation reports that `.mdf` files are still present do the following:

1. Use SQL Server Enterprise Manager to check if the BPI database exists.

   If the database exists within Enterprise Manager, you do not have a problem with inconsistencies.

   If the database does not exist within Enterprise Manager, you might have a problem with `.mdf` files that cannot be used.

2. Check whether the `hpbpiSchema.mdf` and the `hpbpiSchema_log.LDF` files are present. `hpbpiSchema` is the default name given to the BPI database during installation. By default, these files are located at:

   sql-server-install`\MSSQL\Data`

   where *sql-server-install* is the installation directory for Microsoft SQL Server.

   If the files exist, and the database file is not present within Enterprise Manager, your SQL Server installation has an inconsistent view of whether the BPI database is present or not, which needs to be corrected.

3. Delete the `.mdf` files relating to BPI and restart the installation.

▶   You need to stop and restart the Microsoft SQL Server database services in order to delete these files as SQL Server locks the files, and therefore prevents you from deleting them.

If this is does not solve your problem, there could be database files left from a previous installation of BPI. These database files cannot be used and need to be moved or deleted and the installation can then be restarted; see also Recovering a Failed Installation During Database Creation Phase on page 20.

Recovering a Failed Installation During Database Creation Phase

If your BPI installation fails during the database creation phase, you need to resolve the problem that caused the failure and then restart the installation. An example of why the database creation phase of the installation might fail is because there is insufficient disk space for the installation.

If you are installing BPI for the first time, when you have resolved the problem, you can restart the installation. The installer asks whether you want to delete and recreate all the database functions (tables, stored procedures and so on) and then completes the installation.

If you are upgrading from a previous version of BPI, when you have resolved the problem, you can restart the upgrade. The upgrade procedure works out how much of the database migration process is still to be completed and continues with the migration from the point where the failure occurred.

Database User Permission and Quota Errors

If you have created the database user manually rather than through the BPI installation procedure, it is possible that the user does not have sufficient privileges or quota to create the BPI database tables.

Check the following log file to make sure that the 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 reinstall BPI and the installer continues as described in section Recovering a Failed Installation During Database Creation Phase on page 20.

The *Business Process Insight Deployment Guide* describes the permissions required for the database user for both Microsoft SQL Server and for Oracle Server, and the quotas required for the database user for the Oracle Server.

Licensing Problems

The following are licensing problems that you might experience with BPI:

Failed to Update License Registry Settings

If the BPI installation is unable to proceed, or fails, with an error similar to the following, it is due to a problem with the License Manager (HP Autopass):

```
Licensing Install Failure - Failed to update Licensing
Registry Settings
```

The License Manager software is installed with HP BTO Software products, including BPI.

This error could be due to an incomplete, or a corrupt, installation. The problem with the Licensing Manager must be resolved before the BPI installation can continue.

Contact your support organization as described in section Support on page 4 to identify the problems with the License Manager installation.

License Errors Reported From BPI

If you are receiving errors such as the following, it could be because you have not used the correct information when requesting your license key:

From the Administration Console, you receive an error stating that your temporary license for HP Business Process Insight has expired.

BPI 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:

```
11.22.33.44
```

If you have not supplied a short node name when requesting your license key, you need to contact the support organization in order to request a revised license key.

Error Creating Database for Microsoft SQL Server

If you are using a Microsoft SQL Server database and you receive the following error during the BPI installation, it is because the database instance that you are attempting to use is configured to be case sensitive.

```
The database specified cannot be used for HPBPI data as it
does not have case-insensitive collation set. You must
reconfigure the specified database for case-insensitive
collation, or select a different database that is already
case-insensitive.
```

It is possible to create instances of the SQL Server database that are case insensitive or case sensitive; however, BPI does not operate with a database that is case sensitive. If you attempt to install BPI using a case sensitive database instance, the installation fails and reports an error.

If BPI creates the database instance as part of the installation process, it creates it with the Server Collation set to Case Insensitive. If you are creating the database instance for BPI data, you must also create the instance with the Server Collation set to Case Insensitive.

If you receive this error, you need to:

- create an instance of the database that has the Server Collation set to be case insensitive.

- allow the BPI installer to create an instance of the database, in which case, the installer creates the database with the correct settings.

3 Problems Starting and Stopping Your BPI Components

This chapter covers the problems that you might find when starting and stopping the BPI components. The chapter covers the following topics:

BPI Administration Console Startup

There are a number of reasons why the BPI Administration Console fails to start; for example, when any one of the following files are missing:

- `masterconfig.properties`
- `bia-common.jar`
- `bia-admin.jar`

Use the Installation Integrity Checker to check the status of your BPI Server system. The Installation Integrity Checker is described in Using the Integrity Checker for Problem Solving on page 12.

When you have identified which files are missing, or possibly corrupted, you can recover the files from a backup copy if you have one. If you do not have a backup copy of the file, or if there are a significant number of files missing, you are advised to reinstall the BPI Server as described in the *Business Process Insight Deployment Guide*. Do not make any changes to the BPI configuration as part of this reinstallation; you are reinstalling only to update the installed files.

▶ If you have made changes to any component configuration files directly, not using the BPI Administration Console, these changes are overwritten by the reinstallation process. If you want to preserve these changes, copy the modified files to another location before starting the installation and reapply the changes when the installation is complete. Database data files can be recovered from a backup copy. Refer to *Using Business Process Insight* for more information about backup and recovery.

BPI Server Startup

There are a number of reasons why the BPI Server components can fail to start:

- Port number clash
- Corrupt or missing files
- Cannot connect to database

Port Number Clash

It is possible that the RMI port number that the BPI component is requesting for startup is already allocated. In this case, the BPI Server port number clash prevents the components starting up. All BPI port numbers need to be within the range of a number greater than zero (0) or a number less than 65535. The BPI Administration Console checks that the port numbers entered are within this range. You can also use the Installation Integrity Checker to report on the port numbers that are being used by your BPI system (see section Using the Integrity Checker for Problem Solving on page 12).

In addition, the port numbers must be unique on the system where BPI is running. It is possible that the port numbers assigned to one or more of the BPI components have already been taken by another component running on the system. You can check if the port numbers are already in use using the following command from a Command Prompt dialog:

```
netstat -a
```

When changing the port number you need to make sure that you stop all the BPI components, exit from the BPI Administration Console and then restart the Administration Console and the BPI components, otherwise, the new port number is not used when making new connections.

If you continue to see a problem with port numbers, try setting them to a high number for example, above 10,000.

Corrupt or Missing Files

It is possible that your BPI files are corrupt or have been inadvertently deleted. You can run the Integrity Checker to check the status of your system; see Using the Integrity Checker for Problem Solving on page 12 for details of using the Integrity Checker. However, if a number of files are corrupt or have been deleted, then the Integrity Checker might also be impacted and therefore unable to run.

If you suspect that this could be a problem, following the instructions to reinstall the BPI components as described in the *Business Process Insight Deployment Guide*.

▶ If you have made changes to any component configuration files directly and not using the BPI Administration Console, these changes are overwritten by the reinstallation process. If you want to preserve these changes, copy the modified files to another location before starting the installation and reapply the changes when the installation is complete.

Cannot Connect to Database

If a BPI Server component cannot connect to the BPI Server database, it does not start. Check the log file for errors indicating a possible connection failure. The error should provide more information about the reason for the failure.

In the case of a failure to connect to the database, you can also:

- check that the database services are running and restart them if necessary.

- check that the database password has not been changed. If it has, you can re-synchronize the database login password used by BPI through the BPI Administration Console.

Integrity Checker Fails to Run

It is possible that the configuration files for the Integrity Checker have been removed or are corrupt. In this case, the Integrity Checker fails to run.

The following are error messages that might indicate that the Integrity Checker validation files are missing or corrupt:

- `System cannot locate file` `bpi-install-dir\misc\bia\hpbpi_install_type.xml to use for validation`

  where `hpbpi_install_type` is the type of installation that you have completed on the system; for example, `bia_full_install_windows`, is the file name when you have completed a full installation on the system.

- `Error parsing validation file ...`

If this is the case, it is likely that other files in your BPI system have been removed or are also corrupt. Follow the instructions in the *Business Process Insight Deployment Guide* to reinstall the BPI Server, including the Integrity Checker. Do not make any changes to the BPI configuration as part of the reinstallation. You are reinstalling only to update the installed files.

▶ If you have made changes to any component configuration files directly and not using the BPI Administration Console, these changes are overwritten by the reinstallation process. If you want to preserve these changes, copy the files that you have modified to another location before starting the installation and reapply the changes when the installation is complete.

Problems Stopping the Business Event Handler

If you use the BPI Administration Console to stop all the BPI Server components, using the Stop All button, you might see the Business Event Handler takes some time to stop.

This occurs in situations where the Business Event Handler is sending events into the Business Impact Engine at the point where the Engine shuts down. As a result the Business Event Handler retries its connection, according to its configuration settings. This means the Business Event Handler can take some time to shut down and is expected behavior.

Problems Stopping the Business Impact Engine

Occasionally the Business Impact Engine does not completely shut down when you use the Stop command in the BPI Administration Console.

If this is the case, select the Stop command for the Business Impact Engine again, and the Engine shuts down. Be aware that it can take up to two minutes for the Business Impact Engine to shut down.

4 Problems with Performance

This chapter describes specific problems with performance that you might experience using your BPI system. The chapter covers the following topics:

- BPI Server Performance on page 32
- Modeler Performance on page 36

BPI Server Performance

The following sections describe possible reasons why your BPI system is not responding as expected:

- Incorrectly Configured Database Parameters on page 32
- Optimizing Use of Your Oracle Database Server on page 33
- Build Up of Process and Monitor Instances on page 34
- Excessive Numbers of Notifications Generated on page 35

Incorrectly Configured Database Parameters

If your BPI system is not responding as you would expect, it could be due to incorrectly configured database parameters.

To determine whether there are any specific errors in the database configuration, check the following log file:

> *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.

Other possible reasons why your database configuration might have an effect on performance are:

- Incorrect quotas for the *username*_TS and INDX tables in the database. The *Business Process Insight Deployment Guide* provides details of the quotas required for these tables.

- Insufficient cursors available for the database; see section Oracle Cursor Setting on page 68.

- Oracle or Microsoft SQL Server database data files are configured to grow automatically, which can have a detrimental effect on database performance if you are storing a lot of data. Refer to the *Business Process Insight Deployment Guide* for details of how to set up the Oracle and Microsoft SQL Server user accounts.

If you need more advice on improving performance, contact your local support representative, or visit the HP Software Web site for additional information.

Optimizing Use of Your Oracle Database Server

The following are possible reasons why your Oracle Server might not be optimally configured for BPI:

- The Oracle Server Redo log file size is set too low.
- The Oracle Server is not using the right optimizer for its queries.
- Customized database partitioning is not enabled.

Redo Logs

The Oracle Redo log files should be set to at least 1GB to reduce the frequency at which new Redo logs are switched, which results in costly database CHECKPOINT activities. Refer to your Oracle Server documentation for details of how to increase the size of the Redo log file.

Database Table and Index Partitioning in Oracle

Oracle provides a number of features that you can take advantage of to improve the performance of your BPI implementation. One of these is database table and index partitioning.

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.

You enable table and index partitioning for BPI as follows:

1. From the 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 Administration Console.

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

Build Up of Process and Monitor Instances

If you find that the performance of your BPI Server system deteriorates over time, this could be due to the build up of any or all of the following in the database:

- Completed process instance data

- Business Monitor instance data

- Business Monitor violation data

- Business Process Monitor statistics data can also build up in your database, particularly if you have set a low `Collection Interval`.

Using Business Process Insight describes how you can use the Instance Cleaner parameters to delete and archive process and monitor data from the database at different intervals according to your implementation requirements.

If you select the option to delete completed process as soon as the instance has completed, you do not have completed instance data to view through the Business Process Application. In this case, you might be experiencing the problem described in Chapter 6, Problems Using the BPI Clients and BPI Application. This might also result in Active instances that have no parent. In this case you can use the Instance Cleaners to remove these Active instances.

Excessive Numbers of Notifications Generated

If you have a significant failure in your business, for example, an application becomes unavailable, you can end up in the situation where thousands of instance thresholds are violated. This can result in large numbers (or a storm) of notifications being generated.

If you receive excessively large numbers of notifications relating to instance threshold violations, you can modify the Monitor Engine configuration parameters to provide summary information in order to reduce the number of individual messages that are delivered.

These Monitor Engine Threshold settings enable you to control the number of, and frequency at which, notifications are sent out when monitor threshold violations occur.

Refer to *Using Business Process Insight* for details of the `Monitor Engine Threshold Violation Notification Settings` that you can modify.

Modeler Performance

If you notice that the BPI Modeler starts to respond more slowly when you are using it, it could be because you have a large number of editors open for your Process definitions. You can see how many Process editors that you have open from the `Window` menu option and the Status Bar. If there are more than 10 Process editors open, try closing those editors that you are not using. This should improve the Modeler's performance.

5 Problems Using the Administration Console

This chapter describes problems that you might see when using the BPI Administration Console. The chapter covers the following topics:

BPI Administration Console Fails to Open

There are a number of reasons why the Administration Console can fail to open. If you see any of the following error messages it could be due to missing files:

- `Unable to apply configuration`

  This is due to a missing `masterconfig.properties` file.

- `Could not find the main class. Program will exit`

  This is due to a missing `bia-admin.jar` file.

- `ApplicationConfiguration.getInstallDir:OV_INSTALL_DIR not defined`

  This is due to a missing `OV_INSTALL_DIR` from `setenv.bat`

The Administration Console also fails if the `bia-common.jar` file is missing.

To determine if one or more of these files are missing, run the Integrity Checker to obtain a report on your system; see Chapter 1, Introduction.

If this is the case, it is likely that other files in your BPI system have been removed or are corrupt. Follow the instructions in the *Business Process Insight Deployment Guide* to reinstall the BPI Server, including the Integrity Checker. Do not make any changes to the BPI configuration as part of the reinstallation. You are reinstalling only to update the installed files.

➤ If you have made changes to any component configuration files directly and not using the BPI Administration Console, these changes are overwritten by the reinstallation process. If you want to preserve these changes, copy the modified files to another location before starting the installation and reapply the changes when the installation is complete.

Administration Console Start and Stop Commands Do Not Appear to Be Working

If you use the BPI Administration Console to stop BPI components very quickly after starting them, you can find that the component shutdown might fail.

The command to stop a component is not executed until after the component has successfully started; for some components startup can take a few minutes. If the stop command is issued before the start command has completed, it is ignored.

Make sure that the component that you want to stop has successfully started before you attempt to shut it down.

This behavior is the same when you are attempting to start a component very quickly after stopping it.

Changes Made to Configurations Not Having Expected Effect

If you make changes to configuration parameters using the BPI Administration Console and these changes are not applied to your running system, make sure that you have followed the instructions in *Using Business Process Insight* for the parameter that you are modifying.

The most likely reason for the changes not being accepted is that you have not stopped and restarted the BPI components after making the change. Configuration changes are not applied dynamically to the BPI system. You typically need to stop and restart the BPI Server components for the changes to take effect.

Read the section relating to the configuration parameter that you want to change in *Using Business Process Insight*.

Administration Console Fails When Trying to Start or Stop Components

If your system is running slowly for any reason, the Administration Console can erroneously report that a component has failed to start or stop. The Administration Console waits for 30 seconds before assuming that a component has failed to start and it waits for 10 seconds before assuming that a component has failed to stop.

Following is the error message reported when a component fails to start:

```
Failed to connect to the Administration Console Server on
{hostname} due to a remote exception. Possibly due to an RMI
port number conflict or a slow starting Administration
Console Server.
```

Following is the error message reported when a component fails to stop:

```
Failed to stop component Engine. Possibly due to a slow
stopping component.
```

This example shows a problem with the `Engine` component.

If this is happening regularly, check that you are using a recommended system configuration. If you have the recommended configuration, but have a large number of applications running on the system where BPI is installed you might need to move some applications to other systems.

Server Components Fail to Start and Do Not Write Log File Entries

If you are attempting to start the BPI Server components using the Administration Console and these components both fail to start and do not generate any log file entries, it could be a problem with the Windows Services Wrappers.

If there is a problem that causes the Windows Services to fail before any of the BPI components have started, information regarding the problem can be written to the Service Wrapper log file for the service that is failing to start.

There are configuration files for each of the BPI components that also has a Windows Service. In most circumstances, you do not need to modify these configuration files; however, in this case you can alter the setting for logging errors in order to collect logging data relevant to the problem. By default, logging is disabled as the amount of logging information generated can grow excessively. You are therefore advised to enable logging only when you need to collect data for a specific problem scenario.

To enable logging for one, or more, of the Windows Services (for BPI Server components), complete the following steps:

1. Locate the appropriate component configuration file for the Windows Service Wrapper configuration.

   These configuration files are located in two places; an active file and a template file. Each time you make a configuration change using the BPI Administration Console, the active files are regenerated based on the content of the template files. For this reason, you need to modify the template file, to ensure that your modifications are preserved following future configuration changes.

   Do not modify any of the remaining content of the file, unless otherwise requested by the support organization, or elsewhere in the BPI documentation.

The template configuration files are located at:

bpi-install-dir\newConfig\DataDir\conf\bia

The configuration files have the following naming convention:

HPBPI*component-name*Wrapper.cfg

where *component-name* is the name of the BPI Server component; for example: MetricEngine.

2. Locate the following section in the configuration file:

```
# Log file to use for wrapper output logging.
# Make sure that one of the following wrapper.logfile settings is enabled.
# A wrapper.logfile setting with no value disables logging. A
# wrapper.logfile value specifying a valid directory and file name
# causes logging information to be written to the specified file. If
# both lines are disabled, logging information is written to the
# wrapper.log file in the same directory as the wrapper executable.
#wrapper.logfile={{ESC_BIAROOT}}{{ESC_FILE_SEPARATOR}}data{{ESC_FILE_SEPARATO
R}}log{{ESC_FILE_SEPARATOR}}OVBPIAdminServerWrapper.log
wrapper.logfile=
```

3. As indicated in the comments, remove the comment character (#) from the start of the line that defines an output log file for the Service Wrappers and add a comment character to the following line:

wrapper.logfile=

Make the change for each of the Service Wrapper configuration files that you want to log errors for.

Do not add a comment character to both lines. If you do, logging information is written to a log file in the same directory as the service wrapper executable file (.exe). This is because a default filename and directory specification are used when no logging parameters are provided.

4. You now need to run the following file to make the changes to the configuration file, or files, active on your BPI system:

bpi-install-dir\bin\biaadmin.bat applyconfig

Running this command causes all template configuration files to replace the active configuration files with any new or revised settings. There is also a significant number of messages written to the Command Window. Some of these messages are Warning messages, which can be ignored.

When you next attempt to start the BPI Service and the Service fails, logging information is written to the following file:

bpi-install-dir\data\log\HPBPI*component-name*Wrapper.log

where *component-name* is the name of the BPI Server component; for example: `MetricEngine`.

5. When you have collected the required logging information, make sure that you reset the configuration files and disable the logging that you have enabled.

▶ Note that if you reinstall BPI for any reason, the template logging property files are overwritten and you therefore need to reapply your changes.

6 Problems Using the BPI Clients and BPI Application

This chapter describes problems encountered through the following BPI clients:

- BPI Application
- Modeler
- Notification Server Administration Console

The chapter covers the following topics:

- BPI Application Fails to Show Custom Annotations for Process Diagrams on page 46
- Invalid KPI Objectives on page 47
- Cannot Access BPI Application Pages on page 48
- Modeler Unable to Link a CI to a Process Step on page 49
- Problems Deploying a Process on page 50
- Problems Importing a Definition in the Modeler on page 52
- Problems Using the Business Process Application on page 53
- Problems With the Notification Server on page 57

If you are having problems using the Administration Console, refer to Chapter 5, Problems Using the Administration Console.

BPI Application Fails to Show Custom Annotations for Process Diagrams

If you have created a new annotations file to configure the annotations shown on your process diagrams and these changes are not shown through the BPI Application pages, you might need to restart the Business Availability Center Application Server.

When you add a new XML file for annotations for BPI, the Application Server does not know the file exists until it has been restarted.

When you have created the Annotations XML file for the first time and copied into the location described in *Using Business Process Insight*, you then need to stop and restart the Business Availability Center Application Server.

If you subsequently make changes to the file, these changes are detected automatically.

If this does not solve your problem, make sure that you have not made an error when creating the file content.

Invalid KPI Objectives

If the dials that you expect to be shown on the `Business Health` tab are not displayed, and you are presented with the following error, it could be due to a problem when defining KPI Objectives for BPI Monitors:

```
Invalid KPI Objectives
```

When you enter a KPI Objective using `Admin > Dashboard`, the input data is not validated. This means you can enter duplicate and overlapping values, which then result in an undefined result that cannot be presented on a dial.

A valid KPI Objective is one where:

- there are no duplicate values

- `less than` objective values are in an ascending order from `OK` to `Major`.

- `greater than` objective values are in a descending order from `OK` to `Major`.

Cannot Access BPI Application Pages

When you install and configure the BPI Server the following option is made available within BAC:

Application > Business Process Insight

If the option becomes unavailable at any time, check the following:

- You have correctly configured both the BPI Server and the Infrastructure settings for the BPI Server integration.

- BPI Server components are all started.

- License for the BPI Server has not expired.

  You can check the license from the BPI Server Administration Console.

Modeler Unable to Link a CI to a Process Step

If you receive a error message stating that the Modeler was unable to add CIs, when trying to link a CI to a Business Process Step, it could be because the CI does not have a name, or has a null value for the CI name.

When you create a CI in the UCMDB, you are not required to add a name for the CI, you required only to add the key attribute, which is a unique identifier. However, if you do not enter a name for the Name data property, for the CI, the Modeler is unable to recognize the CI and fails.

➤   When you select a CI from the CI Selector, it is not clear whether a CI has a Name property defined or not. This is because the CI Selector displays a name for all CIs using the name from the display label in cases where a Name property is not present.

You need to check the definition of the CI to find out whether a Name property has been defined.

To resolve the problem, make sure that any CI referenced from within the Modeler has the Name data property.

Problems Deploying a Process

The following sections cover problems that you might encounter when attempting to deploy a process:

- Code Too Large on page 50
- Compilation Errors for Data Definition on page 50

Code Too Large

If you are trying to deploy a Process, the deployment is failing and you see the following error message in the Process Repository log file, it could be because you are attempting to deploy a Data definition that has a Subscription with too many assignments:

```
code too large for try statement
catch (Expression.ExpressionException e)
```

Do not exceed 350 assignments in all the subscriptions for a particular Data definition, or the definition cannot deploy successfully. For example, if the Data definition subscribes to one event, do not exceed 350 assignments. If the Data definition subscribes to ten events, do not exceed 350 assignments across the ten event subscriptions.

Compilation Errors for Data Definition

If the BPI Modeler returns a compilation error for the Data definition you are attempting to deploy, it could be because you are using reserved words as property names.

Your database has a number of reserved words. In the case of Oracle, these include: ALTER, CREATE and ORDER. The full list of reserved words can be found in your database documentation.

If you use a reserved word, BPI modifies the name by adding an underscore (_) to the end of the name when processing it. BPI does not modify the user presentation of the name. If you subsequently create a property with the same name that also ends in an underscore (_), there is an internal name clash and the deployment fails with compilation errors.

As an example, if you create a property with the name ORDER, BPI adds an underscore the name as follows: ORDER_. If you then create a property with the name ORDER_, BPI reports a compilation error when you try and deploy the definition as it clashes with an existing definition.

To avoid this problem, do not use words that are reserved for use by your database.

Problems Importing a Definition in the Modeler

You might encounter the following problem when attempting to import a definition into the BPI Modeler:

Import Option within the BPI Modeler does not display characters correctly.

If you are experiencing problems importing definitions into the BPI Modeler, it could be due to the regional and language settings on your system. Regional Settings for Windows on page 84 describes how to set the regional and language settings for your implementation.

Problems Using the Business Process Application

The following are problems that can occur when using the Business Process Application:

- Business Process Application does not display the processes that you have configured it to display; see section No Data Available for Reporting on page 53.

- No data is available for reporting through the Business Process Application.

  This could be because the database had been stopped for some reason. Check why the database has been stopped and request that it is restarted. Section No Data Available for Reporting on page 53 describes other reasons why the Dashboard might not have data available for reporting.

- There are a large number of completed instances in the database, which can have a severe impact on Business Process Application performance; see Chapter 8, Problems with Processes and Business Events.

- Annotations are not displayed as expected; see section Annotations Not Displayed as Expected on page 54.

No Data Available for Reporting

If you start the Business Process Application and there is no data to view, it is possible that you have set the Engine Instance Cleaner parameters to delete completed process instances as soon as they have completed. In this case, there is no (or minimal) historical information available to view through the Business Process Application.

If this is the case, you should modify the values that you have set for the Engine Instance Cleaner parameters as described in *Using Business Process Insight*.

Annotations Not Displayed as Expected

This section describes some of the problems that you may encounter when trying to set up annotations for your process:

Settings in annotations.xml File Have No Effect

When the Business Process Application displays a process diagram, the file annotations.xml is processed. If there are any problems with the file, the settings are ignored and no errors are logged. As a result, if you have configured settings for an annotations file and the business process is drawn using defaults, there must be something wrong with your annotations.xml file.

If your Business Process does not display annotations as you expect it to, check the following:

- Step name or names are spelled correctly.

- Syntax of your XML.

  You can use an XML editor, or you can view the XML file within a Web browser; a Web browser checks the XML for consistency.

- Character set encoding within the XML file.

  The encoding= attribute within the initial xml directive (the first line) specifies the encoding that is to be used for this file. You need to make sure that your XML file contains characters that are within the specified character set; see Character Set Encoding on page 56 for some further tips about character set issues.

Step Images are Red Boxes

If your Process Diagram display red boxes and not the graphics that you expect, as shown in Figure 1, you need to check that your images are located in the correct directory.

Figure 1   Red Boxes for Step Images
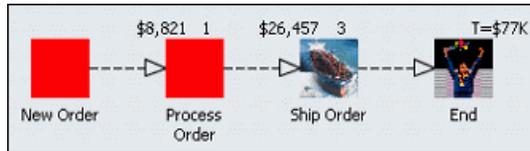
A red box is displayed as the step image when an image that you have specified, within the `<image>` element, cannot be found or cannot be accessed.

Check that the image file name you specified is spelled correctly, and also check that the directory you specified exists. The directory for your images needs to be created under the following directory structure

bpi-install-dir\nonOV\jakarta-tomcat-5.0.19\webapps\hpbpi-bpd

For example, if you specify an `image` element as follows:

```
<image>myImages/image1.gif</image>
```

You need to make sure that the following directory exists and that it contains an image file called `image1.gif`:

bpi-install-dir\nonOV\jakarta-tomcat-5.0.19\webapps\
hpbpi-bpd\myImages

Character Set Encoding

If you want to create an annotations file that contains a specific character set encoding, for example, UTF-8, you need to ensure that you do the following:

- Use an editor that supports UTF-8.

- Specify the first line of your XML as follows:

```
<?xml version="1.0" encoding="UTF-8"?>
```

In the UTF-8 example, if you specify UTF-8 as the XML encoding and do not use a corresponding UTF-8 editor when entering the UTF-8 characters, the BPI Application fails to parse the file annotations.xml and therefore ignores your settings.

You need to make sure that you use an editor that supports the character set encoding that you specify in your annotations file.

Problems With the Notification Server

The following sections describe the problems that you might encounter when using the Notification Server:

Velocity Template Not Recognized by BPI

If you have created or modified a Velocity template for use within the Notification Server, and the template fails to parse, it could be due to how it is encoded.

If you have saved the Velocity template using a UTF8 encoding, you must make sure that the file is saved without the UTF8 byte order mark (BOM).

A byte order mark (BOM) is a character code at the beginning of a file and can be used to define the byte order and encoding form for the file. BOMs are primarily used for text files, which have been created using applications such as Notepad or Wordpad (on Windows). Some protocols, such as XML, do not allow the use of a BOM. As XML is the protocol used for the Velocity templates, this can cause problems. If you have included the BOM within the template file, the XML parser fails to parse the file as it does not recognize the content as being XML.

Make sure that you create and modify your Velocity templates using an editor that does not add a BOM to the file.

Problems with Email Notifications

If you have configured BPI to send email notifications for violations, and you are seeing `Access Denied` errors in the Notification Server log file, it could be because the SMTP Server has been configured to require authentication.

When you set up the configuration for the Notification Server and its connection to the SMTP Server using the Administration Console, the assumption is that there is no authentication required for the SMTP Server.

If the SMTP Server requires authentication to be configured for users, there is some additional BPI configuration required. There is an authentication file for the SMTP Server (`SMTPSetup.properties`), which is located in the following directory:

```
bpi-install-dir\misc\bia\
```

This file contains the following three parameters, which, on an initial installation are disabled. These parameters are applicable to the authentication settings.

```
#mail.smtp.auth=true
#mail.smtp.user=myuser
#password=
```

You need to enter the appropriate values for these parameters and remove the comment character (#) to add SMTP authentication to your BPI implementation.

You need to add the SMTP username, and a password for the username specified, to the file. These are the username and password that relate to the SMTP Sender address (`Sender email address:`). You configured the `Sender email address:` on the Notification Server Configuration page of the Administration Console.

The value of the password must be encoded within the `SMTPSetup.properties` file; you can encode the password using the following script:

```
java -classpath bpi-install-dir\java\bia-event.jar
org.openadaptor.adaptor.util.Encoder password-value
```

You need to stop and restart the Notification Server for the new parameter values to take effect.

This script file is overwritten when you reinstall BPI. The installation procedure makes a copy of the file and renames it as follows:

bpi-install-dir\misc\bia\SMTPSetup.properties.bak.*n*

where *n* is a number.

If you complete multiple installations *n* is incremented with each reinstallation. The most recent copy of the file is named as follows:

```
SMTPSetup.properties.bak.0
```

7 Problems When Creating Data in the BPI Database

This chapter describes database problems where they are directly related to BPI. For more general information on database problems, refer to the documentation relating to the database that you have installed.

This chapter covers the following topics:

- Tablespace Error - Out of Space on page 60
- Invalid Value Reported in BIE Log File on page 61

See also Chapter 2, Problems Installing and Removing BPI Components, which contains information about installation failures relating to the database.

Tablespace Error - Out of Space

If you see errors in the log files indicating that the data files or tablespace is out of space and BPI is unable to write new records to it, it could be because the data file, or tablespace, is too small.

To solve this problem, you should use your database management tools to increase the size of the data files (MS SQL Server), or Tablespace (Oracle).

At installation, the tablespace size is set initially to 50MB and to automatically increase in size in steps of 100MBs. The initial 50MB is sufficient for approximately 1,000 instances of a five-step business process.

As the database file size is set to automatically increase it is possible that there is no more disk space available to increase the file size. Alternatively, you might have modified the database parameters and set a defined database size, which has been exceeded.

You need to investigate increasing the amount of space available to your implementation. Refer to the *Business Process Insight Deployment Guide* for information relating to space requirements for the database data, specifically for BPI.

Use the following tools to modify the size of your data file or Tablespace, according to the database software that you are using:

- Enterprise Manager, for Microsoft SQL Server
- Enterprise Manager for Oracle

Invalid Value Reported in BIE Log File

If you see an error message similar to the following in the Business Impact Engine log file, it could be due to the fact that Event data is outside the range, or precision, supported by the database.

```
The incoming tabular data stream (TDS) remote procedure call
(RPC) protocol stream is incorrect. Parameter 15 (""): The
supplied value is not a valid instance of data type float. Check
the source data for invalid values. An example of an invalid
value is data of numeric type with scale greater than precision.
```

In this case, value has been used that is outside the precision defined for the data type float.

When defining data for business events, you need to check that the data being supplied in the event does not exceed the range, or precision, defined by the database that you are using.

8 Problems with Processes and Business Events

This chapter provides information on some of the most common problems that you can encounter when developing processes.

When developing processes and configuring events, make sure that you use the following training documents. These documents contain information about how to use the BPI Modeler to develop business processes and how to make sure that the correct business events are received by the BPI system:

- *Business Process Insight Integration Training Guide - Modeling Processes*
- *Business Process Insight Integration Training Guide - Business Events*

You are advised to read these documents as they contain information that helps minimize the number of problems that you can encounter when developing business processes. They contain several examples and tips on best practice. The documents also contain information about the tools that you can use to debug your processes.

The chapter covers the following topics:

Diagnosing Problems

There are a number of reasons why your Business Processes might not be progressing and in order to isolate the problem, you should work through the component log files as follows:

1. Log file for the Adapter that should be receiving the business events to progress the process. You need to check that the Adapter has successfully sent the event to the Business Impact Engine.

2. Log file for the Business Event Handler to check whether the business event was received and subsequently rejected and placed in the event hospital.

3. Log file for Business Impact Engine log to check whether it accepted the Business Event from the Adapter.

If the log files are all as expected and the event was received by the Business Impact Engine, continue as follows:

4. Use the Business Process Application to determine if a process instance has been created, or progressed.

5. Use the Intervention Client to identify the Data Definition for the event. You need to check whether a definition has been created and if its state has changed.

If the process instance has been created and the Data definition exists and is in the correct state, temporarily modify the logging levels to FINER and check how the event is being passed from component to component.

Make sure that you reset the logging levels after you have collected the data that you need.

When you have diagnosed the problem, refer to the remaining sections in this chapter for more information on how to resolve the problem.

Processes Completing with One or More Steps Still Active

If you have a business process that is completed, but still shows active steps, the following may have occurred:

- Events required to complete the steps have not been received by the Business Impact Engine; see section Business Events Not Processed as Expected on page 68.

- Events are received out of sequence, or have an incorrect Generated Date.

  Check the date on the event and make sure that the system time settings for all your systems are synchronized.

- Progression rules for the complete conditions are not correct.

  Use the Process Repository Explorer to check the progression rules for the process.

- Multiple or duplicate events are received.

Processes Not Progressing

There are a number of reasons why your processes might not progress:

- You have deleted the data instance for the process instance; see section Data Instance Deleted on page 67.

- Progression rules are not correct.

  Use the BPI Modeler, or the Process Repository Explorer to check the progression rules for the process.

- Events are not being received; see section Events Not Received by Engine on page 69.

- Data in the Event does not have a corresponding Data definition within the BPI Modeler.

  Check that the data in the Event is correctly represented as a Data definition within the BPI Modeler. If it is not, the business process does not have the data to satisfy the start and complete conditions defined for the steps.

- Events received for data instances with no parent process instance.

  If you have the scenario where a Process instance is completed and subsequently deleted, but the associated data instances are not set to be terminated, you might see this problem, particularly during development, or if your system receives out-of-sequence events.

  This occurs specifically if you have configured the Process instance to be created when the data instance is created. In this case, the data instance already exists, so the process instance cannot be created and progressed.

  Make sure that all data instances associated with a particular process instance are deleted when the process instance is deleted.

Data Instance Deleted

If you have deleted a data instance, or a process instance, including all its data using the Intervention Client, it is possible that you have deleted a data instance used by more than one process instance. In this case, the process no longer has a reference to its data, and none of its instances can progress.

If you suspect that this is the case, and you have removed a data instance that has other dependencies, there is no way of reinstating the data instance for the process.

To solve this problem, you need to remove the process instance from the system using the Intervention Client.

Business Events Not Processed as Expected

If your processes are not progressing as expected, it could be because your business events are not received by your BPI system.

There are a number of reasons why this might be the case:

- Cursor errors

  If you see an error containing the following text in the Business Impact Engine log file, you may need to increase the value assigned to the number of cursors that are available to BPI.

  ```
  ORA - 01000 maximum open cursors exceeded
  ```

  If this is the case, refer to section Oracle Cursor Setting on page 68.

- Event adaptor property files have incorrect settings; see section Event Adaptor Property Files on page 69.

- Events are not being received by the Business Impact Engine; see section Events Not Received by Engine on page 69.

- Events are received by Business Impact Engine but not progressing the process; see section Business Events Not Progressing Processes on page 71.

Oracle Cursor Setting

Cursors are used by Oracle to identify objects that are managed through the System Global Area. In the case of BPI, one of the uses of cursors is to identify Prepared Statements. For this reason, you need to configure the number of cursors to be equivalent to the number of pooled connections and Prepared Statements that are configured for BPI.

The number of Prepared Statements defined for Business Impact Engine is set through the value of Maximum number of active JDBC Prepared Statements. This value is set through the Business Impact Engine configuration settings in the BPI Administration Consoles; see *Using Business Process Insight*.

For Oracle version 9.2.0.5.0 and later, the maximum number of cursors that can be cached is determined by the parameter session_cached_cursors and not open_cursors.

After installing BPI for the first time, the value of `Maximum number of active JDBC Prepared Statements` is set to 10,000. This figure is deliberately high and the number you need is lower than this figure. You can modify the value of `session_open_cursor` in the `spfile` (Server Parameter file). To modify the value, use a command similar to the following:

```
ALTER SYSTEM session_open_cursors=1000 SCOPE=BOTH
```

This sets the value of `session_open_cursors` for the running database instance and also sets it in the `spfile`. The number of `session_open_cursors` can be between 200 and 1000, depending on the number of deployed Data Definitions.

Event Adaptor Property Files

You typically create a property file (or configuration file) for each event adaptor that you need for your implementation. The *Business Process Insight Training Guide - Business Events* describes event adaptors and their property files in detail.

Make sure that the values in the property files are correct for your implementation, for example, check database (or tablespace name) and database user name. If any of the properties in the file is incorrect, the adaptor might not be able to communicate with the Business Event Handler and send business events into the Business Impact Engine.

You can also set the log levels for the Business Event Handler to the `Trace` level to find out whether or not it is receiving business events from the adaptor.

Events Not Received by Engine

If you suspect that the Business Impact Engine is not receiving business events, you can check by setting the `Log BIE events` log level and checking the resultant log file.

The Business Impact Engine might not be receiving business events for the following reasons:

• Event adaptor is incorrectly configured; see section Event Adaptor Property Files on page 69.

- Incorrect SQL commands.

  If you have configured database adaptors to take data from an SQL table, it is possible that the SQL commands for the Event adaptors are incorrect.

  If possible test the SQL commands manually to make sure that they return the information that you expect. You can then incorporate them into your BPI implementation when they have been tested.

  You can also consider running the adaptor so that it does not delete records from the data tables immediately after processing them. This enables you to work out which events have been processed.

- Incorrectly configured adaptor source

  Check that the source information for your adaptors is correct and returning the data that the adaptors are expecting. Try running the adaptors manually to determine whether or not they are returning the correct information.

- Business Impact Engine is shut down, or failed, while the adaptor is running.

  If the Business Impact Engine component is shutdown and unable to receive events, the Business Event Handler component manages the queued events and attempts to send them at a later time.

- Event names are incorrect, or contain data that is not valid. In this case, check to see if the Event has been copied to the Event Hospital.

- Business Event Handler not started.

  Check the status of the Business Event Handler using the BPI Administration Console, and restart it if necessary.

The *Business Process Insight Training Guide - Business Events* provides information on developing and debugging Event adaptors, plus information on Event Hospitals.

Business Events Not Progressing Processes

If you know that the Business Impact Engine is receiving business events, but the process is not progressing, or not progressing as you expect, check the following:

- Your progression rules and subscription rules are correct. You can use the Repository Explorer to show details of your business processes, including all the progression rules defined for the process.

- Whether the events are being received out of sequence and are not updating the business process as anticipated.

  Where possible, you should write your progression rules to be independent of Event order. Refer to the following training guide for guidelines on developing processes:

  Business Process Insight Integration Training Guide - Modeling Processes

- Whether Events are showing the correct data and time.

  It is possible that you are not operating with consistent times across the machines in your BPI implementation. Check the system times for all the machines and make sure that they are synchronized.

- Whether all the required events have been defined.

  It is possible that the Events that you have defined do not provide all the data required by the process. Check that all the Data definitions are being populated from your Event definitions.

- Event name received by the Business Impact Engine matches the Event definition within the BPI Modeler.

  If the Event name does not match the Event definition, the process cannot progress. Make sure that the Event name is used consistently across your implementation. Event names are not case sensitive.

- Business Impact Engine has rejected the business event for a particular reason, for example, the process has been received out of sequence and there is no process instance to progress at the point when the event is received. In this case, the Business Impact Engine sends the business event to the event Hospital and marks it to be automatically discharged. This allows time for the relevant process instance to be started before the business event is sent back to the Business Impact Engine for processing.

Errors Reporting that Process and Data Instances Do Not Exist

If you are receiving regular error messages indicating Process or Data instances do not exist, you need to check how you have configured your Process definitions, Data definitions and Engine Instance Cleaner.

These error messages are reported in the Business Impact Engine log file when an event is received for a Process or Data instance that does not exist, and the system is configured such that the Process or Data instance is not created if it does not already exist.

The following are the errors that the Business Impact Engine reports when a Process or Data instance does not exist:

```
Nov 19, 2004 1:09:13 PM
com.hp.ov.bia.bce.model.AbstractFlowObject doNodeEntryCriteria
WARNING: Entering a flow instance at node "NodeID" when the
instance did not already exist.
```

```
Nov 19, 2004 1:09:17 PM
com.hp.ov.bia.bce.model.AbstractDataModel onEvent WARNING: Data
object with name: DataInstanceName and identifier:
DataInstanceID, identified by event EventName, does not exist.
Filter is Property."PropertyName" == Event."EventPropertyName"
```

The reasons why these errors might be occurring are:

- The instance has completed and has been deleted. Subsequently, an out-of-sequence event has been received for the instance.

  If this occurs frequently, consider extending the time period that you have set before completed instances are deleted.

- The Engine Instance Cleaner is set too aggressively and is deleting active instances prematurely.

  If this occurs frequently, consider extending the time period that you have set before active instances are deleted.

- The instance has not yet been created and an out-of-sequence event has been received that updates it.

    In the case of a Process instance, make sure that all steps close to the start point for a process are configured to enable a Process instance to be created if it does not already exist.

    In the case of a data instance, make sure that the data instance can be created for all likely scenarios of event arrivals.

    Events received under these circumstances are sent to the event Hospital and marked to be discharged automatically. This allows time for the Process or Data instance to be created before the event is sent back to the Business Impact Engine.

- The instance has been deleted using `BPI Application > Intervention`.

9 Problems with BPI Integrations

This chapter describes problems that you might see when integrating BPI with other BTO products.

The chapter covers the following topic:

- Modeler Error When Synchronizing with UCMDB on page 76

Modeler Error When Synchronizing with UCMDB

If the BPI Modeler displays an error such as the following, it could be due to the fact that the setting for `Maximum retries for synchronization deadlock` is not suitable for your implementation:

```
Error during uCMDB synchronization
```

The error occurs when BPI attempts to synchronize with Business Availability Center. You also see a warning message in the log file for the Process Repository as follows:

```
WARNING: Synchronization with BAC CMDB failed after process
deployment or undeployment. A successful synchronization is
required for the changes to be reflected in BAC.
The synchronization will be periodically retried and the
status written to the Admin Server log.
```

The most common reason for the message is where you have deployed and undeployed two, or more, processes in quick succession. As a result, the synchronization for the first request is started, and still ongoing, when the synchronization for the second request is attempted. As the requests are synchronous, the second request has to wait for the first request to complete. The request is retried, each second, for the number of times specified in the property: `Maximum retries for synchronization deadlock`. This is a property listed under `HP Business Availability Center` in the BPI Administration Console.

If the synchronization cannot be completed in the time allowed by this property, a flag is set and there is an in-built retry mechanism for the synchronization process. This retry mechanism has a wait time of five minutes. If you are prepared to wait for up to five minutes for all your process data to be synchronized, you do not need to make any changes.

Usually it is better to wait for the background synchronization; however, in some cases you might want to ensure your BPI data is synchronized more frequently, in which case, you need to reconfigure the property `Maximum retries for synchronization deadlock`. The value that you need to set for this parameter is related to your particular environment. You can view the log file for the Process Repository and use the times listed in the log file for the synchronization as a guide. You need to allow more time than that listed for synchronization in the log file.

10 Problems with openadaptor

This chapter describes problems that you might encounter with openadaptor components, where they are directly related to BPI.

For more general information on openadaptor problems, refer to the openadaptor web site:

http://www.openadaptor.org/

This chapter covers the following topic:

-

openadaptor HAT Security Permissions

If you cannot edit or access the User Roles or the `Editable Attributes Admin` menu options, it is probably due to the fact that the BPI user no longer has the `HATSecurity` role assigned to it.

To add the required permissions to the BPI user, complete the following steps:

1. Start a database management tool that enables you to read and insert records into a database table, for example, Oracle Enterprise Manager Console.

2. Locate the BPI user database tables.

   If you accepted the default database User during the installation, this is the `hpbpiuser`.

3. View the contents of the `DBUSMH_USER` table (the capitalization varies according to the database type).

   Note the value of the user identifier for the BPI database user.

4. Open the following table:

   `DBUSMH_USERROLE`

5. Insert a row into the table, where the user identifier is the value noted in step 3, and the role identifier is 5.

   A role identifier of 5 specifies the HATSecurity role; see the table `DBUSMH_ROLE`.

6. Close the database management tool.

7. Select the openadaptor HAT `Admin` menu option.

   You can now access the User Roles and `Editable Attributes` options.

11 Files and System Problems

This chapter describes problems that you might encounter with the system where BPI is installed and with the BPI files. These system problems might be the cause of other issues you are experiencing with your BPI system.

The chapter covers the following topics:

Excessive Disk Space Usage

If your BPI is consuming a significant amount of disk space, check that the correct logging levels are set for the BPI components.

It is possible that someone has reset the logging level for one or more BPI components. If this is the case, the log files can get very large and consume large amounts of disk space. Refer to section BPI Server Log Files on page 88 for more information about the log levels.

Missing Files and Directories

You might be alerted to the fact that you have missing files and directories if you have run the Integrity Checker and it has reported that one or more files is missing or corrupt.

If the number of missing files is small and contained, you can recover the files from a backup copy. However, if the number of missing files is significant, you are advised to reinstall the BPI components to reinstate all files as described in the *Business Process Insight Deployment Guide*.

Do not make any changes to the BPI configuration as part of the reinstallation. You are reinstalling only to update the installed files.

▶ If you have made changes to any component configuration files directly and not using the BPI Administration Console, these changes are overwritten by the reinstallation process. If you want to preserve these changes, copy the modified files to another location before starting the installation and reapply the changes when the installation is complete.

Checksum Errors in Integrity Checker

There are a number of reasons why you might see checksum errors, some of which can be ignored. Examples of reasons for these errors are:

- Modified files

  If you have modified files, for example, configuration files, you will see checksum errors for these files. These errors can be ignored.

- Replaced files

  You might have been asked to replace files by your support representative, in which case these files will report checksum errors. These errors can be ignored.

- Corrupt files

  If a file has not been modified or replaced, you could be seeing checksum errors because the file is corrupt. In this case, follow the instructions for missing files and directories; see section Missing Files and Directories on page 81.

Firewalls and BPI

Be aware that some firewall software can block RMI socket ports and therefore interfere and potentially stop BPI operating. This is because some firewall software does not successfully track temporary RMI ports that are created as a result of spawned RMI connections.

If you are using firewall software on the system where BPI is installed and BPI is not operating correctly, it could be because the RMI communication port is being blocked by the firewall software. If this is the case, you might need to reconfigure the firewall software to ensure that the BPI components can successfully communicate with each other.

Regional Settings for Windows

If you are experiencing problems such as the following, it could be because the regional settings are not set correctly on your Windows system:

- You cannot install BPI successfully.

- Log files do not display correctly.

- The Import option within the BPI Modeler does not display characters correctly.

When setting the Regional and Language options through the Control Panel, make sure that the language that you choose is mapped so that it can execute non-unicode programs. If you do not, you might see unpredictable results, particularly with Asia Pacific languages.

The following are examples of how to set the regional settings for Windows XP:

- Open the `Regional and Language Options` dialog from the `Control Panel`.

- Make sure that the language selected in the `Advanced` tab matches the language selected in the `Regional Options` tab. The `Advanced` tab is where you are matching the language version of the non-unicode programs that you want to use.

Displaying Asia Pacific Characters

Some properties of your BPI definitions can include Asia Pacific characters; for example, definition names and descriptions. If you display these properties on a system that does not have an Asia Pacific locale configured, these properties are not displayed correctly, if at all.

In order to view these Asia Pacific characters on a system that is not configured with an Asia Pacific locale you need to configure your system to recognize the specific fonts that are being used. The configuration required depends on the interface that is exhibiting the problem:

- BPI Web-Based Clients on page 85
- BPI Modeler on page 86

BPI Web-Based Clients

In the case of the BPI Web-based clients, you must install the Windows files for East Asian languages. The BPI Web-based clients are:

- Monitor definer
- Notification Server Administration Console
- Repository Explorer
- Intervention Client

To install these languages, complete the following steps:

1. Open the Control Panel.
2. Select `Regional and Language Options`.
3. From the `Regional and Language Options` dialog, select the `Language` tab.
4. Select the `Install files for East Asian Languages` checkbox.
5. Click `OK`.

The installation of the languages continues; you might be prompted for the Windows installation disks for a copy of the relevant files.

BPI Modeler

In the BPI Modeler, the language settings are managed by the Java Runtime Environment installed on the BPI system. Specifically, you need to configure the font property file (`font.properties`) in order to display characters in the specific Asia Pacific languages that you need. Details of this file and how to configure it can be found on the Sun Website, a possible URL is:

http://java.sun.com/j2se/1.3/docs/guide/intl/fontprop.html

Note that URLs are likely to change, so you might have to search the Sun Website if the above URL is out of date.

The font property files are located on your system at the following location:

    bpi-install-dir\nonOV\jdk\jre\lib

In the case of Asia Pacific languages, you can select from a number of `font.properties` files that corresponds to your particular environment. These files are identified by the country or locale suffix that is appended to the file name:

    bpi-install-dir\nonOV\jdk\jre\lib\font.properties.locale

where `locale` indicates the language; for example:

- ja for Japanese
- ko for Korean

You need to copy the entries from the language-specific files to `font.properties` to add the support for the additional languages that you require.

12 Logging Problems

This chapter describes the log files for the BPI components. If your log files are not displayed correctly it could be due to the language settings on your Windows system; see section Regional Settings for Windows on page 84.

The chapter covers the following topics:

- BPI Server Log Files on page 88
- BPI Modeler Log Files on page 89
- openadaptor Log Files on page 89
- BPI Service Wrapper Log Files on page 89
- Logging Properties Structure and Description on page 90

BPI Server Log Files

The BPI Server log files are accessible through the BPI Administration Console. For information about the BPI Modeler log files, refer to section BPI Modeler Log Files on page 89.

The log files for the Administration Console are called `bia_adminserver`*n_n*`.log` and `bia_adminclient`*n_n*`.log`, and are located in the following directory on the system where BPI components are installed:

> *bpi-install-dir*`\data\log` (Windows)

The BPI log files are text files that you can open using a text editor. The structure and naming of the BPI log files can be configured and are described in section Logging Properties Structure and Description on page 90.

There are a number of logging levels available that change the volume and level of logging information provided by each BPI component; for most components these levels are:

- `Info`
- `Fine`
- `Finer`

These logging levels are in descending order of level and volume of data reported. These log levels complement the levels used by other HP BTO Software products, to provide a consistent level of logging across your HP Software product portfolio.

By default the log levels are set at the `INFO` level. This level includes `WARNING` and `SEVERE` log levels.

In the case of components using Log4J, for example, the Business Event Handler, the levels are:

- `Info`
- `Trace`

You can set the levels of logging through the BPI Administration Console using the `Logging` option.

The generated log files can be viewed through the BPI Administration Console, or from the following location:

> `bpi-install-dir`\data\log (**Windows**)

In the case of a failure in the BPI Administration Console, you might need to open the log file directly as you cannot access it through the console.

BPI Modeler Log Files

The Modeler log files are not accessible using the BPI Administration Console.

The location of the Modeler log files is described in *Using Business Process Insight*. The properties of the BPI Modeler log files is described in section Logging Properties Structure and Description on page 90.

openadaptor Log Files

The openadaptor log files are not accessible using the BPI Administration Console.

The location of the log files for adaptors developed using openadaptor depend on how your adaptors are configured and are described in the *Business Process Insight Integration Training Guide - Business Events*.

BPI Service Wrapper Log Files

The Windows Service Wrapper log files are located at:

> `bpi-install-dir`\bin\bia\wrapper.log

Logging Properties Structure and Description

Most of the BPI logging property files all have a similar structure; the following is an extract from the Business Impact Engine property file:

```
############################################################

# File output is in BIA's log directory.
java.util.logging.FileHandler.pattern=C:\\Program Files\\HP \\HP Business
Process Insight\\data\\log\\bia_bce%u_%g.log
java.util.logging.FileHandler.limit=10000000
java.util.logging.FileHandler.count=100
java.util.logging.FileHandler.formatter=java.util.logging.SimpleFormatter

############################################################
# Logging levels
############################################################

# Available levels are OFF, SEVERE, WARNING, INFO, FINE, FINER, FINEST, ALL

# Default global logging level.
.level=INFO

# BIA logging level.  Recommended setting is INFO.
# The handling of Events is logged at FINE.  The contents of Events are logged
at FINER.
# However these settings will produce a large amount of logging which may
consume disk space.
com.hp.ov.bia.level=INFO

# This is intended to turn off INFO and below in Hibernate.
net.sf.hibernate.level=WARNING

# This is intended to turn off RMI logging.
sun.rmi.level=OFF
```

The Business Event Handler log files have a different structure, which is described in the *Business Process Insight Integration Training Guide - Business Events*.

In the case of the Business Impact Engine example, the following parameters affect how information for the Business Impact Engine component is logged:

- `java.util.logging.FileHandler.pattern`

  This parameter determines the location and name of the log files. The following tags are used within this parameter:

  — `%g`

    This is a file generation number and is used as the log files are rotated. When the maximum number of bytes that should be written to a file is reached, or the BPI component is restarted, a new log file is opened and named `bia_bce0_0.log`. The previous log file is then renamed, for example, `bia_bce0_1.log`.

  — `%u`

    This is a unique number that is used to resolve conflicts. This is the second part of the number in the log file name, for example: `0_0`, `0_1` or `0_2`. `%u` generates the `0`, `1` or `2` in these file names.

- `java.util.logging.FileHandler.limit`

  This parameter specifies an approximate maximum amount to write (in bytes) to a log file. If this is zero, then there is no limit. If this parameter is not set, the BPI system default is zero, no limit.

- `java.util.logging.FileHandler.count`

  This parameter specifies how many output log files to cycle through. If this parameter is not set, the BPI system default is one file.

- `java.util.logging.FileHandler.formatter`

  This parameter specifies the name of a Formatter class to use for the log files. If this parameter is not set, the BPI system defaults to using the `java.util.logging.XMLFormatter`.

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