WebSphere® Process Server

IBM

Version 6.0

Troubleshooting and support

Contents

Troubleshooting and support

Resources for troubleshooting IBM WebSphere Process Server include a strategy for troubleshooting and diagnosing problems, links to technical support Web sites, documentation about WebSphere Process Server tools that help you track and monitor errors, and specific troubleshooting documentation organized by the tasks you are performing in WebSphere Process Server.

WebSphere Process Server documentation (PDF files)

Troubleshooting overview

Troubleshooting is the process of finding and eliminating the cause of a problem. Whenever you have a problem with your IBM software, the troubleshooting process begins as soon as you ask yourself what happened.

A basic troubleshooting strategy at a high level involves:

1. Recording the symptoms.
2. Recreating the problem.
3. Eliminating possible causes.
4. Using diagnostic tools.

Recording the symptoms of the problem

Depending on the type of problem you have, whether it be with your application, your server, or your tools, you might receive a message that indicates something is wrong. Always record the error message that you see. As simple as this sounds, error messages sometimes contain codes that might make more sense as you investigate your problem further. You might also receive multiple error messages that look similar but have subtle differences. By recording the details of each one, you can learn more about where your problem exists.

Recreating the problem

Think back to what steps you were doing that led you to this problem. Try those steps again to see if you can easily recreate this problem. If you have a consistently repeatable test case, you will have an easier time determining what solutions are necessary.

- How did you first notice the problem?
- Did you do anything different that made you notice the problem?
- If this worked before what has changed? The change can refer to any type of change made to the system, ranging from adding new hardware or software, to configuration changes to existing software.
- What was the first symptom of the problem you witnessed? Were there other symptoms occurring around that point of time?
- Does the same problem occur elsewhere? Is only one machine experiencing the problem or are multiple machines experiencing the same problem?
- What messages are being generated that could indicate what the problem is?

Eliminating possible causes

Narrow the scope of your problem by eliminating components that are not causing the problem. By using a process of elimination, you can simplify your problem and avoid wasting time in areas that are not culprits. Consult the information in this product and other available resources to help you with your elimination process.

- Has anyone else experienced this problem? See "Searching knowledge bases" on page 72.
- Is there a fix or a download? See "Getting fixes" on page 72.

Using diagnostic tools

As a more advanced task, there are various tools that you can use to analyze and diagnose problems with your system. To learn how to use these tools see "Diagnosing problems" on page 34.

Additional troubleshooting information

For specific troubleshooting issues and fixes, refer to the information below:

Troubleshoot problems based on function that occur during a task

> Troubleshoot problems that crop up during a main task such as migrating, installing, administering, securing, or deploying applications. For more information, see "Troubleshooting by function" on page 37.

Debug applications during development

> To debug applications that run on IBM^(R) WebSphere^(R) Process Server, version 6.0, you must use your application development tool. For more information, select **Debugging components** in the WebSphere Integration Developer, Version 6.0, information center or in the online documentation installed with IBM WebSphere Integration Developer, version 6.0.

Add tracing and logging to your applications

> Designers and developers of applications that run on the application server might find it useful to use Java logging for generating their application logging. This approach has advantages over simply adding System.out.println statements to your code. For more information, see "Adding logging and tracing to your application" on page 33.

Use WebSphere Application Server troubleshooting capabilities

> WebSphere Process Server is built on IBM WebSphere Application Server, Network Deployment, version 6.0. WebSphere Process Server also works with infrastructure and platform services from IBM WebSphere Application Server, version 6.0. For more information about troubleshooting in WebSphere Application Server, select **Troubleshooting and support** in the WebSphere Application Server Network Deployment, Version 6.0, information center.

Applying service

You can use the IBM Update Installer for WebSphere Software to install interim fixes, fix packs, and refresh packs. The Update Installer for WebSphere Software is also known as the update installer program, the UpdateInstaller program, and the Update Installation Wizard.

Use the proper authorizations to successfully install product updates. Use the update installer program as the root user on a Linux or UNIX platform, or as the Administrator on a Windows platform.

The Update Installer Wizard is an InstallShield for Multiplatforms Wizard that runs with either a graphical user interface or in silent mode with or without a response file. When you omit the response file in silent mode, the wizard installs the last maintenance package that you downloaded to the default maintenance directory.

Important: Throughout this topic, certain directory paths are shown only in Linux and UNIX format for simplicity. The equivalent Windows paths are identical except for the direction of the slashes.

The following descriptions contain reference information about installing interim fixes, fix packs, and refresh packs on WebSphere Process Server products:

Overview of the installation procedure

To install an interim fix:

1. To update an existing copy of the update installer, back up and delete the updateinstaller directory of the existing update installer before downloading the new zipped or TAR file into the *install_root* directory.
2. Download the most current version of the update installer, fix pack, or refresh pack zipped or TAR file from the Support site into the *install_root* directory.
3. Unpack the zipped or TAR file that you downloaded to create the updateinstaller directory and several subdirectories, including the maintenance directory.
4. **Interim fix only:** Download the interim fix from the Support Web site into the maintenance directory.
5. Use the update installer to install the interim fix, fix pack, or refresh pack. The update installer creates a backup file in the *install_root*/properties/version/update/backup directory. IBM does not support user modifications to backup files.

Updating existing profiles in WebSphere Process Server products

The update installer updates the core product files in a WebSphere Process Server product. Service in a maintenance package might update the following core product files in the installation root directory:

- JAR files in the lib directory
- Scripts in the bin directory
- Profile templates

Some maintenance packages provide required service for existing profiles in addition to service for the core product files. Each maintenance package that has profile maintenance provides a script that changes the profile. The update installer prompts you to back up your configuration when installing a maintenance package that has required maintenance for profiles.

Some maintenance packages provide optional service for existing profiles. The readme file for the maintenance package describes whether the maintenance package contains optional service for existing profiles. If so, the readme file describes how to use the script provided with the maintenance package.

Use the backupConfig command to back up the configuration of each profile that the maintenance package can update. Or archive the *install_root*/profiles directory to back up all of the profiles at once.

If you uninstall a maintenance package, the update installer does not uninstall the maintenance package from profiles. The reason for not removing the maintenance is that you might have configured the profile after installing the maintenance. To restore an original profile, use the restoreConfig command or copy the profile from the archived profiles directory to replace the changed profile.

Viewing the fix level of the node

You can use the versionInfo command in the *install_root*/bin directory to display the exact fix and version level of the product. However, do not use the versionInfo command while installing or uninstalling a maintenance package.

Do not launch multiple copies of the Update Installer Wizard at one time: Concurrent launches of the update installer program are not supported. Performing more than one update at the same time can produce unpredictable results, which might include a failed or faulty installation.

Required information

The graphical interface requires the following information that you must supply:

Table 1. Information required when installing a maintenance package

Field	Valid values	Description
File path of the installation root directory of the WebSphere product and the Update Installer	Identify the installation root directory for IBM WebSphere Process Server	Download and unpack the Update Installer for WebSphere Software within each set of core product files that you intend to update. The Update Installer application selects the product in its parent directory by default.
File name of the maintenance package to install.	Select a maintenance package to install from the maintenance directory.	The default maintenance package is the package with the latest date stamp and time stamp.

Important: For information about known problems, see *Known problems and workarounds for the update command* in the WebSphere Application Server Network Deployment, Version 6.0, information center.

The following procedure describes how to install a maintenance package. For a description of how to remove a maintenance package, see "Uninstalling service" on page 11.

1. Log on as root on a Linux or UNIX operating system, or as a member of the Administrator group on a Windows system.

   ▶ **AIX**   **On AIX platforms:** In addition, verify that the umask setting is 0022. To verify the umask setting, issue the following command:

   `umask`

   To set the umask setting to 0022, issue the following command:

   `umask 0022`

Linux **On HP-UX, Linux and Solaris platforms:** In addition, verify that the umask setting is 022. To verify the umask setting, issue the following command:

```
umask
```

To set the umask setting to 022, issue the following command:

```
umask 022
```

2. Install the product that you intend to update.

   You have very likely already installed the software that you are now updating. But if not, install the software now.

3. Back up and delete any older copy of the update installer before downloading the current update installer. To use a newer version of the update installer, you must first remove the older version.

   a. Back up any files and subdirectories in the *install_root*/updateinstaller/maintenance directory, if necessary.

   b. Delete the *install_root*/updateinstaller/maintenance directory and all of its subdirectories.

4. **Refresh packs and fix packs only:** Download the fix pack or refresh pack zipped file or TAR file from the Support site into a temporary directory.

   The zipped file or TAR file for a refresh pack or a fix pack contains the update installer. You can check for a newer version of the update installer code. Download the latest version of the Update Installer for WebSphere Software as a zipped file or a TAR file from the following IBM Web site:

   Update Installer for WebSphere Software

5. **Interim fixes only:** Download the update installer from the Support site into a temporary directory.

   Download the zipped file or TAR file for the Update Installer for WebSphere Software from the following IBM Web site:

   Update Installer for WebSphere Software

6. Unpack the zipped file or the TAR file.

   Unzip or untar the file into one of the following directories in a WebSphere Process Server environment (directories shown are the common default directories for WebSphere Process Server):

   - **AIX** **On AIX platforms:** *install_root*, which can be either /usr/IBM/WebSphere/AppServer or /usr/IBM/WebSphere/ProcServer

   - **Linux** **On HP-UX, Linux, and Solaris platforms:** *install_root*, which can be either /opt/IBM/WebSphere/AppServer or /opt/IBM/WebSphere/ProcServer

   - **Windows** **On Windows platforms:** *install_root*, which can be either C:\Program Files\IBM\WebSphere\AppServer or C:\Program Files\IBM\WebSphere\ProcServer

   Unpacking the file creates the following directory structure:

```
install_root   /updateinstaller
      /framework
      /lib
      /maintenance
      /responsefiles
```

   Version information is stored in the version.txt file in the updateinstaller directory. A new version might ship to correspond to any new fix. Information in the version.txt file is displayed prominently in the title bar of the wizard and is also recorded in the updatelog.txt file.

Always download and use the latest version of the Update Installer Wizard when installing an interim fix.

7. **Interim fixes only:** Download the maintenance package *.pak file from the Support Web site into the maintenance directory.

   Download maintenance packages for WebSphere Process Server from the following IBM Web page:

   IBM Support site for WebSphere Process Server

   Tip: Do not attempt to unzip or unpack the *.pak file.

8. ▶ **Windows** **On Windows platforms:** Use the Windows Services panel to stop all services for WebSphere Process Server processes.

9. Stop all Java processes that use the IBM Software Developer Kit (SDK) that the WebSphere Process Server product provides.

   Before installing or uninstalling interim fixes, fix packs, and refresh packs on a machine, stop all Java processes on the machine that use the IBM SDK, Java Technology Edition that WebSphere Process Server provides.

   WebSphere Process Server processes include:

   - Process server processes
   - The nodeagent process on a node when the node is federated into a deployment manager cell
   - The dmgr process for the deployment manager server

   The update installer program requires you to stop all WebSphere Process Server-related Java processes that are running on the system where you are using the update installer program. For example, Java processes can include:

   - All Java Virtual Machines (JVMs)
   - WebSphere Process Server processes, including:
     - Process server processes
     - The nodeagent process on a node when the node is federated into a deployment manager cell
     - The dmgr process for the deployment manager server
   - IBM HTTP Server processes
   - First steps consoles
   - Installation verification test (IVT) processes
   - The Profile Wizard
   - Other InstallShield for Multiplatforms (ISMP) installation programs
   - InstallShield for Multiplatforms uninstallation programs
   - IBM WebSphere Integration Developer Java processes
   - The IBM Agent Controller

   Stop all Java processes, if necessary. If you install an interim fix while a WebSphere Process Server-related Java process runs, IBM does not guarantee that the product can continue to run successfully, or without error.

10. The Update Installer for WebSphere software requires a valid Java run time that is provided with WebSphere software. If the update installer program cannot locate a valid IBM or Sun SDK, such as the one shipped with WebSphere Process Server, the update installer cannot install maintenance packages. The Update Installer for WebSphere Software searches known locations for a suitable IBM SDK to use.

    In order, the Update Installer Wizard looks for a valid Java Virtual Machine (JVM) in the following locations:

a. The *install_root*/updateinstaller/java/jre directory (when updating the product SDK)

b. The *install_root*/java/jre directory (which is the preferred SDK to use)

c. > **Linux**. **On Linux and UNIX platforms:** The directory identified by one of the following environment variables on a Linux or UNIX system:

   1) *JAVA_HOME*

   2) *JAVAHOME*

   3) *JRE_HOME*

   4) *JREHOME*

   When no JVM is present in one of the first two locations, set one of the environment variables to point the Update Installer Wizard to a valid JVM.

The preferred method of setting the *JAVA_HOME* environment variable is using the setupCmdLine script provided with the WebSphere Process Server product. In some cases, failure to run setupCmdLine can result in the update installer program matching an SDK in an order that is different than the order described.

You can also force the installation to use the correct SDK with the following command:

`./update -is:javahome` *install_root*`/java/jre`

To use the setupCmdLine script to set the *JAVA_HOME* variable, perform the following procedure that is appropriate for your operating system:

> **Linux**. **On Linux and UNIX platforms:**

a. Open a command shell window.

b. Change directories to the *install_root*/bin directory.

c. Issue the . ./setupCmdLine.sh command. Notice the space between the periods. The special format for this command sources the command to make the setting active for all processes started from the command shell.

d. Use the same command shell window to start the update installer, as described in a later step.

> **Windows** **On Windows platforms:**

a. Open a command prompt window.

b. Change directories to the *install_root*\bin directory.

c. Issue the setupCmdLine.bat command.

d. Use the same command prompt window to start the update installer, as described in a later step.

See the following technote for more information: Using the setupCmdLine script to set JAVA_HOME before running the Update Installer for WebSphere software.

11. Verify that the following prerequisite conditions are met:

   • All of the product hardware and software prerequisites exist.

     To view the official statement of supported hardware and software for WebSphere Process Server, go to the WebSphere Process Server system requirements Web site.

   • The WebSphere software that you are updating is correctly installed and is not corrupt.

   • The WebSphere SDK, Java technology edition is not corrupt.

   • The user is root on a Linux or UNIX system or a member of the Administrator group on a Windows system.

12. Change directories to the updateinstaller directory and use the update command to install the maintenance package.

   Install the maintenance package on the deployment manager node before installing the maintenance package on each process server node that you intend to update.

   Use the following command syntax to install the last maintenance package that you downloaded. The Update Installer Wizard runs as a background process and does not display the graphical user interface when running in silent mode:

   ```
   update -silent
   ```

   Or, issue the update command to start the graphical user interface:

   ```
   update
   ```

   To view tables that show all of the options available when using the update command, see "update command" on page 18.

This procedure results in installing maintenance packages to update WebSphere software.

After installing an maintenance package, continue to use your WebSphere software.

Sample options response file: install.txt

You can install an update silently using the options response file.

The install.txt file has one directive that identifies the backup file for installing a service update. Comments in the file describe how to set the string value.

The Update Installer for WebSphere Software Wizard reads the options file to determine responses and does not display the graphical user interface. The following command uses a copy of the options file named myresponsefile.txt for a silent installation:

```
./update -options "responsefiles/myresponsefile.txt" -silent
```

If you do not use the -silent option, the response file provides initial values for the graphical interface.

Important: Throughout this topic, certain directory paths are shown only in Linux and UNIX format for simplicity. The equivalent Windows paths are identical except for the direction of the slashes.

Location of the response file

The sample options response file is named install.txt. The file is in the *install_root*/updateinstaller/responsefiles directory after you unzip the Update Installer for WebSphere Software into the installation root directory of the WebSphere software product.

Installing silently

The options file supplies the values to the Update Installer Wizard when installing silently. The wizard reads the options file to determine responses and does not display the graphical user interface. The following command uses a copy of the options file named myresponsefile.txt for a silent installation:

```
update -options "myresponsefile.txt" -silent
```

Response file user entry validation

In a silent installation, response file validation is coded into the installation. If the validation does not pass, the failure is recorded in the log files in the *install_root*/logs/update/tmp directory.

Location of the maintenance package to be installed

> **Default directive setting**
> > -W maintenance.package=""
>
> **Valid setting**
> > You must set this directive to the location of the PAK file. For example, you might specify the following location on a Linux system:
> >
> > *install_root*/updateinstaller/maintenance/PQ20029.pak
>
> **Error identifiers:**
> > - Maintenance package *maintenance_package_name* is already installed on the system.
> > - Selected product is not supported.
> > - Configuration failed. The config action that failed was: *configuration_action*.
> > - Install the following prerequisite APARs before installing the current maintenance to the target product: *list_ of_ prerequisite_ maintenance_ packages_ to_ install*
> > - Install the following prerequisite maintenance packages before installing the package you are currently attempting to install: *list_ of_ prerequisite_ maintenance_ packages_ to_ install*
> > - Uninstall the following APARs before applying the current maintenance to the target product: *list_ of_ prerequisite_ maintenance_ packages_ to_ uninstall*
> > - Uninstall the following maintenance packages before applying the current maintenance to the target product: *list_ of_ prerequisite_ maintenance_ packages_ to_ uninstall*
> > - Unable to locate the correct version of *the_update_installer*. Looking for version *version_identifier*.
> > - *Maintenance_package* is not a valid maintenance package.

Alternate product location

> Although applying maintenance to another product is possible, always use the Update Installer Wizard within the directory structure of the product that you are updating. Do not use this directive unless absolutely necessary.
>
> **Default directive setting**
> > -W product.location=""
>
> **Valid setting**
> > You must set this directive to the installation root directory of the alternate product. For example, you might specify the following location on a Linux system:
> >
> > /opt/IBM/WebSphere/ProcServer2
>
> **Error identifiers:**
> > - Maintenance package *maintenance_package_name* is already installed on the system.

- Selected product is not supported.
- Configuration failed. The config action that failed was: *configuration_action*.
- Install the following prerequisite APARs before installing the current maintenance to the target product: *list_ of_ prerequisite_ maintenance_ packages_ to_ install*
- Install the following prerequisite maintenance packages before installing the package you are currently attempting to install: *list_ of_ prerequisite_ maintenance_ packages_ to_ install*
- Uninstall the following APARs before applying the current maintenance to the target product: *list_ of_ prerequisite_ maintenance_ packages_ to_ uninstall*
- Uninstall the following maintenance packages before applying the current maintenance to the target product: *list_ of_ prerequisite_ maintenance_ packages_ to_ uninstall*
- Unable to locate the correct version of *the_update_installer*. Looking for version *version_identifier*.
- *Maintenance_package* is not a valid maintenance package.
- *Alternate_product_directory* could not be validated as an existing directory.

Usage notes
- The file is not a read-only file.
- Edit this file directly with your flat-file editor of choice, such as Kate on SUSE Linux Enterprise Server or WordPad on a Windows platform.
- The file must exist to perform a silent installation. The Update Installer Wizard reads this file to determine installation parameters. Provide the fully qualified file path to the backup file.
- Save the copy of the options file in the responsefiles directory for best results.

Example install.txt file
Edit the version of the file that is included in the Update Installer for WebSphere Software zipped file. The following example is not guaranteed to be an accurate representation of the actual file.

```
#############################################################################
#
# This is the silent install response file for installing maintenance packages
# using the update installer.
#
# A common use of an options file is to run the wizard in silent mode. This lets
# the options file author specify wizard settings without having to run the
# wizard in graphical or console mode. To use this options file for silent mode
# execution, *uncomment* and modify the parameters defined within.
#
# Use the following command line when running the wizard from the update
# installer directory:
#
#    update -options responsefiles/install.txt -silent
#
#############################################################################
#############################################################################
#
# Used to input the maintenance package full filename specification to be installed.
# Edit as appropriate.
#
# ie. -W maintenance.package="C:\Program Files\IBM\WebSphere\ProcServer\
#          updateinstaller\maintenance\PQ20029.pak"
#
```

```
# Note: If no package is specified, a default of the last downloaded maintenance
# package will be used (based on timestamp).
#
#-W maintenance.package=
#############################################################################
#
# Used to modify the product install location that will be updated.
# This value should be left commented out if the Update Installer is
# being run from the recommended location
#
# ie. -W product.location="C:\Program Files\IBM\WebSphere\ProcServer"
#
# Note: If no location is specified, the parent directory to update installer
# will be used as default
#
#-W product.location=""
#############################################################################
#
# Do not edit these values.
#
#
-W update.type="install"
```

Uninstalling service

You can use the Update Installer for WebSphere Software to uninstall interim fixes, fix packs, and refresh packs. The Update Installer for WebSphere Software is also known as the update installer program, the updateInstaller program, and the Update Installation Wizard.

Use the proper authorizations to successfully uninstall product updates. Use the update installer program as the root user on a Linux or UNIX platform, or as the Administrator on a Windows platform.

The Update Installer Wizard is an InstallShield for Multiplatforms Wizard that runs with either a graphical user interface or in silent mode with a response file.

Important: For information about known problems, see *Known problems and workarounds for the update command* in the WebSphere Application Server Network Deployment, Version 6.0, information center.

Important: Throughout this topic, certain directory paths are shown only in Linux and UNIX format for simplicity. The equivalent Windows paths are identical except for the direction of the slashes.

The following descriptions contain reference information about uninstalling interim fixes, fix packs, and refresh packs on WebSphere Process Server:

Overview of the uninstallation procedure

 To uninstall a maintenance package:

1. Use the update installer to install the maintenance package, which creates a backup file in the *install_root*/properties/version/update/backup directory. IBM does not support user modifications to backup files.
2. Use the update installer program to remove the maintenance package as described in this topic.

Viewing the fix level of the node

 You can use the versionInfo command in the *install_root*/bin directory to display the exact fix and version level of the product. However, do not use the versionInfo command while installing or uninstalling a maintenance package.

Do not launch multiple copies of the Update Installer Wizard at one time:
Concurrent launches of the update installer program are not supported.
Performing more than one update at the same time can produce unpredictable
results, which might include a failed or faulty installation.

Required information

The graphical interface requires the following information that you must supply:

Table 2. Information required when uninstalling a maintenance package

Field	Valid values	Description
File path of the installation root directory of the WebSphere product and the Update Installer	Identify the installation root directory for IBM WebSphere Process Server.	The Update Installer application defaults to select the product in its parent directory.
File name of the maintenance package to uninstall.	Select a maintenance package to uninstall from the *install_root*/properties/version/ update/backup directory.	The default maintenance package is the package with the latest date stamp and time stamp in the *install_root*/properties/version/ update/backup directory.

The following procedure describes how to uninstall a maintenance package.

1. Log on as root on a Linux or UNIX operating system, or as a member of the Administrator group on a Windows system.

   AIX **On AIX platforms:** In addition, verify that the umask setting is 0022. To verify the umask setting, issue the following command:

   `umask`

   To set the umask setting to 0022, issue the following command:

   `umask 0022`

   Linux **On HP-UX, Linux and Solaris platforms:** In addition, verify that the umask setting is 022. To verify the umask setting, issue the following command:

   `umask`

   To set the umask setting to 022, issue the following command:

   `umask 022`

2. Change directories to the updateinstaller directory in the installation root directory.

   For example, change directories to one of the following directories (common default directories for the WebSphere Process Server product are shown):

   - **AIX** **On AIX platforms:** /usr/IBM/WebSphere/AppServer/updateinstaller or /usr/IBM/WebSphere/ProcServer/updateinstaller

   - **Linux** **On HP-UX, Linux, and Solaris platforms:** /opt/IBM/WebSphere/AppServer/updateinstaller or /opt/IBM/WebSphere/ProcServer/updateinstaller

   - **Windows** **On Windows platforms:** C:\Program Files\IBM\WebSphere\AppServer\updateinstaller or C:\Program Files\IBM\WebSphere\ProcServer\updateinstaller

3. **Windows** **On Windows platforms:** Use the Windows Services panel to stop all services for WebSphere Process Server and WebSphere Application Server processes.

4. Stop all Java processes that use the IBM Software Developer Kit (SDK).

   Before uninstalling interim fixes, fix packs, and refresh packs on a machine, stop all Java processes on the machine that use the IBM SDK, Java Technology Edition.

   WebSphere Process Server processes include:

   - Process server processes
   - The nodeagent process on a node when the node is federated into a deployment manager cell
   - The dmgr process for the deployment manager server

   Stop all Java processes, if necessary. If you uninstall a maintenance package while a WebSphere Process Server-related Java process runs, IBM does not guarantee that the product can continue to run successfully, or without error.

5. Determine if you are removing a maintenance package that updated the IBM SDK, Java Technology Edition. If so, you can clone the IBM SDK from the parent product to the Update Installer Wizard directory. Cloning the SDK copies the *install_root*/java/jre directory to the *install_root*/updateinstaller/java/jre directory.

   The Update Installer for WebSphere Software searches known locations for a suitable IBM SDK to use. In order, the Update Installer Wizard looks for a valid Java Virtual Machine (JVM) in the following locations:

   a. The *install_root*/updateinstaller/java/jre directory (when updating the product SDK)

   b. The *install_root*/java/jre directory (preferred SDK to use)

   c. **Linux** . **On Linux and UNIX platforms:** The directory identified by one of the following environment variables on a Linux or UNIX system:

      1) JAVA_HOME
      2) JAVAHOME
      3) JRE_HOME
      4) JREHOME

      When no JVM is present in one of the first two locations, set one of the environment variables to point the Update Installer Wizard to a valid JVM.

   The preferred SDK for starting the Update Installer Wizard is the SDK in the parent product. Always use the product SDK when possible.

   Important: To uninstall a fix pack or interim fix for the IBM SDK in the parent product, do not start the Update Installer Wizard using the product SDK that you intend to update. Using the SDK locks the SDK and prevents the update. Copy the SDK from the *install_root*/java/jre directory to the *install_root*/updateinstaller/java/jre directory. The Update Installer Wizard uses the SDK in the *install_root*/updateinstaller/java/jre directory if it is present.

   Alternatively, copy the IBM SDK from the parent product to a temporary location and use the **-is:javahome** ISMP parameter to identify the location as you run the update installer command: update -is:javahome="my_fully_qualified_temp_SDK_location"

6. Use the update installer to uninstall the maintenance package.

Uninstall the interim fix on each application server node in a cell before uninstalling the maintenance package from the process server node.

Issue one of the following commands to uninstall with the graphical interface:

Table 3. Update installer commands for uninstalling with the graphical interface

Command example	Type of installation	Description
`update -W update.type="uninstall"`	Graphical interface mode	Initializes the maintenance package field with the name of the maintenance package that was most recently installed. Accept all of the default values to uninstall the maintenance package with the most recent date stamp and time stamp.

`update -W`
`product.location="C:\Program Files`
`\IBM\WebSphere\ProcServer" -W`
`update.type="uninstall"`
	Graphical interface mode	Overrides the graphical interface with the location of the WebSphere software to update. The default maintenance package to uninstall is the most recently installed maintenance package for that software.

`update -W`
`backup.package="PQ20029.pak" -W`
`update.type="uninstall"`
	Graphical interface mode	Overrides the maintenance package field with the name of the maintenance package to uninstall.

`update -W`
`product.location="C:\Program Files`
`\IBM\WebSphere\ProcServer" -W`
`backup.package="PQ20029.pak" -W`
`update.type="uninstall"`
	Graphical interface mode	Overrides the location of the WebSphere software to update and the name of the maintenance package to uninstall.

`update -options` `"responsefiles\`*`file_name`*`"`	Graphical interface mode with an options file	Overrides all default values with values that you specified in the options response file. If you omit either value from the response file, the default maintenance package is the installed package with the most recent date stamp and time stamp. The default software is the software installed in the parent directory.

Issue one of the following commands to use the silent interface:

Table 4. Update installer commands for uninstalling in silent mode

Command example	Type of installation	Description
`update -W update.type="uninstall" -silent`	Silent mode	Uninstalls the maintenance package with the most recent date stamp and time stamp to update the software that is installed in the parent directory.
`update -W product.location="C:\Program Files \IBM\WebSphere\ProcServer" -W update.type="uninstall" -silent`	Silent mode	Overrides the default location of the WebSphere software to update. The default maintenance package to uninstall is the most recently installed maintenance package for that software.
`update -W backup.package="PQ20029.pak" -W update.type="uninstall" -silent`	Silent mode	Overrides the interim fix field with the name of the maintenance package to uninstall.
`update -W product.location="C:\Program Files \IBM\WebSphere\ProcServer" -W backup.package="PQ20029.pak" -W update.type="uninstall"`	Silent mode	Overrides the location of the WebSphere software to update and the name of the maintenance package to uninstall.
`update -silent -options "responsefiles\`*`file_name`*`"`	Silent mode with an options file	Overrides all default values with values that you specified in the options response file. If you omit either value from the response file, the default maintenance package is the installed package with the most recent date stamp and time stamp. The default software is the software installed in the parent directory.

This procedure results in uninstalling maintenance packages to update WebSphere software.

After uninstalling maintenance packages, you can continue to use the WebSphere software.

Sample options response file: uninstall.txt

You can use the response file for uninstalling service using the Update Installer for WebSphere Software.

Uninstall an update silently using the options response file.

The uninstall.txt file has one directive that identifies the backup file for uninstalling a service update. Comments in the file describe how to set the string value.

The Update Installer for WebSphere Software Wizard reads the options file to determine responses and does not display the graphical user interface. The following command uses a copy of the options file named myresponsefile.txt for a silent uninstallation:

```
./update -options "responsefiles/myresponsefile.txt" -silent
```

If you do not use the -silent option, the response file provides initial values for the graphical interface.

Important: Throughout this topic, certain directory paths are shown only in Linux and UNIX format for simplicity. The equivalent Windows paths are identical except for the direction of the slashes.

Location of the response file: The sample options response file is named uninstall.txt. The file is in the *install_root*/updateinstaller/responsefiles directory after you unzip the Update Installer for WebSphere Software into the installation root directory of the WebSphere software product.

Uninstalling silently: The options file supplies the values to the Update Installer Wizard when uninstalling silently. The wizard reads the options file to determine responses and does not display the graphical user interface. The following command uses a copy of the options file named myresponsefile.txt for a silent uninstallation:

```
update -options "myresponsefile.txt" -silent
```

Response file user entry validation: In a silent uninstallation, response file validation has been coded into the installation. If the validation does not pass, the failure is recorded in the log files in the *install_root*/logs/update/tmp directory.

Location of the maintenance package to be uninstalled

> **Default directive setting**
> -W backup.package=""

> **Valid setting**
> You must set this directive to the location of the backup file. The backup file reverses the application of the maintenance. For example, you might specify the following location on a Linux system:
>
> opt/properties/version/update/backup/*maintenance_package_to_install*

> **Error identifiers:**
> - The maintenance package cannot be uninstalled. Uninstalling the maintenance would break the following superseding maintenance packages. Uninstall the superseding maintenance packages first: *list_of_superseding_maintenance_packages*
> - This maintenance package cannot be uninstalled. The following maintenance packages are dependent on the package that you are attempting to uninstall: *list_of_dependent_maintenance_packages*
> - This maintenance package cannot be uninstalled. The following maintenance packages are dependent on the APARs you are attempting to uninstall: *list_of_dependent_maintenance_packages*

- No installation backup packages are available for uninstalling maintenance.

Alternate product location

Although uninstalling maintenance from another product is possible, always use the Update Installer Wizard from the directory structure of the product that you are updating. Do not use this directive unless absolutely necessary.

Default directive setting
-W product.location=""""

Valid setting
You must set this directive to the installation root directory of the alternate product. For example, you might specify the following location on a Linux system:

/opt/IBM/WebSphere/ProcServer2

Error identifiers:

- The maintenance package cannot be uninstalled. Uninstalling the maintenance would break the following superseding maintenance packages. Uninstall the superseding maintenance packages first: *list_of_superseding_maintenance_packages*
- This maintenance package cannot be uninstalled. The following maintenance packages are dependent on the package that you are attempting to uninstall: *list_of_dependent_maintenance_packages*
- This maintenance package cannot be uninstalled. The following maintenance packages are dependent on the APARs you are attempting to uninstall: *list_of_dependent_maintenance_packages*
- No installation backup packages are available for uninstalling maintenance.

Usage notes:
- The file is not a read-only file.
- Edit this file directly with your flat file editor of choice, such as Kate on SUSE Linux Enterprise Server or WordPad on a Windows platform.
- The file must exist to perform a silent uninstallation. The Update Installer Wizard reads this file to determine uninstallation parameters. Provide the fully qualified file path to the backup file.
- Save the copy of the options file in the responsefiles directory for best results.

Example uninstall.txt file: Edit the version of the file that is included in the Update Installer for WebSphere Software zipped file. The following example is not guaranteed to be an accurate representation of the actual file.

```
##############################################################################
#
# This is the silent install response file for uninstalling maintenance packages
# using the update installer.
#
# A common use of an options file is to run the wizard in silent mode. This lets
# the options file author specify wizard settings without having to run the
# wizard in graphical or console mode. To use this options file for silent mode
# execution, *uncomment* and modify the parameters defined within.
#
# Use the following command line when running the wizard from the update
# installer directory:
#
#    update -options responsefiles/uninstall.txt -silent
#
```

```
#############################################################################
#############################################################################
#
# Used to input the maintenance backup package filename to be uninstalled.
# This is the same filename as the package that was originally installed.
# A maintenance package can only be uninstalled if a backup package exists.
#
# ie. -W backup.package="PQ20029.pak"
#
# Note: If no package is specified, a default of the last installed maintenance
# package will be used.
#
#-W backup.package=""
#############################################################################
#
# Used to modify the product install location that will be updated.
# This value should be left commented out if the Update Installer is
# being run from the recommended location
#
# ie. -W product.location="C:\Program Files\IBM\WebSphere\ProcServer"
#
# Note: If no location is specified, the parent directory to update installer
# will be used as default
#
#-W product.location=""
#############################################################################
#
# Do not edit these values.
#
-W update.type="uninstall"
```

update command

The update command is the Update Installer for WebSphere Software program.
The Update Installer Wizard is also known as the Update Installation Wizard, the
update installer program, and the updateInstaller program.

The update installer program installs and uninstalls interim fixes, fix packs, and
refresh packs to update WebSphere software.

Important: Throughout this topic, certain directory paths are shown only in Linux
and UNIX format for simplicity. The equivalent Windows paths are
identical except for the direction of the slashes.

Overview

The update command calls the update installer program to install and uninstall
service to update WebSphere software. This topic describes the update installer
command and its command-line parameters.

The following descriptions contain reference information about the command.

See "Applying service" on page 2 and "Uninstalling service" on page 11 for
information about using the command.

Important: For information about known problems, see *Known problems and
workarounds for the update command* in the WebSphere Application
Server Network Deployment, Version 6.0, information center.

Command options

The following table list commands for installing and uninstalling interim fixes.

Commands for installing interim fixes: Issue one of the following commands to use the graphical interface:

Table 5. Update installer commands for installing with the graphical interface

Command example	Type of installation	Description
`update`	Graphical interface mode	Initializes the interim fix field with the name of the interim fix that has the most recent date stamp and time stamp. Accept all of the default values to install the interim fix with the most recent time stamp.

`update -W`
`prereqsfailedpanelInstallWizardBean.active=`
`"false"`
	Graphical interface mode that bypasses prerequisites checking	Initializes the interim fix field with the name of the interim fix that has the most recent date stamp and time stamp. Bypasses prerequisites checking.

`update -options "responsefiles\`*`file_name`*`"`	Graphical interface mode with an options file	Overrides all graphical interface values with values that you specified in the options response file. If you omit either value, the default maintenance package is the one with the most recent date stamp and time stamp. The default software is the software installed in the parent directory.

`update -W maintenance.package="C:\Program`
`Files\IBM\WebSphere\ProcServer`
`\updateinstaller\maintenance\PQ20029.pak"`
	Graphical interface mode	Overrides the name of the maintenance package to apply.

`update -W product.location="C:\Program` `Files\IBM\WebSphere\ProcServer"`	Graphical interface mode	Overrides the location of the WebSphere software to update.

`update -W product.location="C:\Program`
`Files\IBM\WebSphere\ProcServer" -W`
`maintenance.package="C:\Program`
`Files\IBM\WebSphere\ProcServer`
`\updateinstaller\maintenance \PQ20029.pak"`
	Graphical interface mode	Overrides the location of the WebSphere software to update and the name of the maintenance package to apply.

Issue one of the following commands to use the silent interface:

Table 6. Update installer commands for installing in silent mode

Command example	Type of installation	Description
`update -silent`	Silent mode	Installs the interim fix with the most recent time stamp to update the software that is installed in the parent directory.

`update -silent -W`
`prereqsfailedpanelInstallWizardBean.active=`
`"false"`
	Silent mode that bypasses prerequisites checking	Installs the interim fix with the most recent time stamp to update the software that is installed in the parent directory. Bypasses prerequisites checking.

Table 6. Update installer commands for installing in silent mode (continued)

Command example	Type of installation	Description
`update -W maintenance.package="C:\Program Files\IBM\WebSphere\ProcServer\updateinstaller \maintenance\PQ20029.pak" -silent`	Silent mode	By default, the wizard installs the interim fix with the most recent date stamp and time stamp. Use the package override to install another maintenance package. You do not need a response file. The default software is the software installed in the parent directory.
`update -silent -options "responsefiles\`*file_name*`"`	Silent mode with an options file	Overrides all default values with values that you specified in the options response file. If you omit either value from the response file, the default maintenance package is the one with the most recent date stamp and time stamp. The default software is the software installed in the parent directory.
`update -W product.location="C:\Program Files\IBM\WebSphere\ProcServer" -silent`	Silent mode	Updates the WebSphere software specified in the command with the maintenance package that has the most recent date stamp and time stamp. The silent installation does not refer to a response file.
`update -W product.location="C:\Program Files\IBM\WebSphere\ProcServer" -W maintenance.package="C:\Program Files\IBM\WebSphere\ProcServer\updateinstaller \maintenance\PQ20029.pak" -silent`	Silent mode	Updates the WebSphere software specified in the command with the maintenance package specified in the command. The silent installation does not refer to a response file.

Commands for uninstalling interim fixes: Issue one of the following commands to uninstall with the graphical interface:

Table 7. Update installer commands for uninstalling with the graphical interface

Command example	Type of installation	Description
`update -W update.type="uninstall"`	Graphical interface mode	Initializes the interim fix field with the name of the interim fix that was most recently installed. Accept all of the default values to uninstall the interim fix with the most recent date stamp and time stamp.
`update -W product.location="C:\Program Files\IBM\WebSphere\ProcServer" -W update.type="uninstall"`	Graphical interface mode	Overrides the graphical interface with the location of the WebSphere software to update. The default interim fix to uninstall is the most recently installed interim fix for that software.
`update -W backup.package="PQ20029.pak" -W update.type="uninstall"`	Graphical interface mode	Overrides the interim fix field with the name of the maintenance package to uninstall.

Table 7. Update installer commands for uninstalling with the graphical interface (continued)

Command example	Type of installation	Description
`update -W product.location="C:\Program Files\IBM\WebSphere\ProcServer" -W backup.package="PQ20029.pak" -W update.type="uninstall"`	Graphical interface mode	Overrides the location of the WebSphere software to update and the name of the maintenance package to uninstall.
`update -options "responsefiles\`*file_name*`"`	Graphical interface mode with an options file	Overrides all default values with values that you specified in the options response file. If you omit either value from the response file, the default maintenance package is the installed package with the most recent date stamp and time stamp. The default software is the software installed in the parent directory.

Issue one of the following commands to use the silent interface:

Table 8. Update installer commands for uninstalling in silent mode

Command example	Type of installation	Description
`update -W update.type="uninstall" -silent`	Silent mode	Uninstalls the interim fix with the most recent date stamp and time stamp to update the software that is installed in the parent directory.
`update -W product.location="C:\Program Files\IBM\WebSphere\ProcServer" -W update.type="uninstall" -silent`	Silent mode	Overrides the default location of the WebSphere software to update. The default interim fix to uninstall is the most recently installed interim fix for that software.
`update -W backup.package="PQ20029.pak" -W update.type="uninstall" -silent`	Silent mode	Overrides the interim fix field with the name of the maintenance package to uninstall.
`update -W product.location="C:\Program Files\IBM\WebSphere\ProcServer" -W backup.package="PQ20029.pak" -W update.type="uninstall"`	Silent mode	Overrides the location of the WebSphere software to update and the name of the maintenance package to uninstall.
`update -silent -options "responsefiles\`*file_name*`"`	Silent mode with an options file	Overrides all default values with values that you specified in the options response file. If you omit either value from the response file, the default maintenance package is the installed package with the most recent date stamp and time stamp. The default software is the software installed in the parent directory.

Installing multiple interim fixes

Use a script to issue more than one command. Each command identifies one maintenance package to install. For example:

```
update -W maintenance.package="C:\Program
Files\IBM\WebSphere\ProcServer\updateinstaller\maintenance\PQ20028.pak"
-silentupdate -W maintenance.package="C:\Program
Files\IBM\WebSphere\ProcServer\updateinstaller\maintenance\PQ20029.pak"
-silent
```

Automating maintenance operations

Most fix packs and refresh packs include some maintenance for the IBM SDK, Java technology edition in the *install_root*/java/jre directory. When a refresh pack, fix pack, or interim fix updates the SDK, the Update Installer for WebSphere Software program clones the SDK in the product by starting an ISMP process to copy the SDK to the *install_root*/updateinstaller/java/jre directory:

```
install_root    /updateinstaller
     /java
         /jre
```

To use a script to perform a silent maintenance installation, you must launch the update installer program twice. The first command clones the SDK only and does not automatically relaunch the update installer program. The second command uses the cloned SDK to update the product and the SDK in the product.

The Update Installer for WebSphere always uses the SDK in the *install_root*/updateinstaller directory if the SDK is present.

Issue the following commands from the script:

1. `update -silent [other_options] -W`
   `relaunchwizardexecInstallWizardBean.active=false`

   For example, use the following command to clone the SDK:

   ```
   /opt/IBM/WebSphere/ProcServer/updateinstaller/update \
       -silent \
       -W relaunchwizardexecInstallWizardBean.active=false \
   ```

   Identify the interim fix in the first command if the interim fix is not the last maintenance package that you downloaded. {Omit the Linux and UNIX line-continuation characters (\) when issuing the command on one line.}

2. `update -silent`

   The update installer program uses the cloned copy of the SDK in the *install_root*/updateinstaller directory at the next invocation of the command. For example, use the following command to install the update using the cloned SDK:

   ```
   /opt/IBM/WebSphere/ProcServer/updateinstaller/update \
       -silent -W maintenance.package=  \
       "/opt/IBM/WebSphere/ProcServer/updateinstaller/maintenance/  \
       6.0.1.0-WS-WPS-LinuxIA32-RP0000001.pak" \
       -W update.type="install" \
       -W product.location="/opt/IBM/WebSphere/ProcServer"
   ```

   {Omit the Linux and UNIX line-continuation characters (\) when issuing the command on one line.}

Logging

The following sections describe logging that occurs when installing and uninstalling service.

Logs created when installing service: If no installation log file exists, refer to the temporary log file in the *install_root*/logs/update/tmp directory. If all validations pass, the installation occurs.

Then the update installer program creates the
install_root/logs/update/*maintenance_package*.install directory.

Within the directory are the updatelog.txt file, the compressed updatetrace.log.gz
file, and the compressed updateconfig.log.gz file. The updateconfig.log.gz file exists
only when the installation of service uses the internal configuration manager utility
to run ANT scripts.

Logs created when uninstalling service: If no log file exists after uninstalling an
interim fix, refer to the temporary log file in the *install_root*/logs/update/tmp
directory. If all validations pass, the uninstallation procedure occurs.

Then the update installer program creates the
install_root/logs/update/*maintenance_package*.uninstall directory.

Within the directory are the updatelog.txt file, the compressed updatetrace.log.gz
file, and the compressed updateconfig.log.gz file. The updateconfig.log.gz file exists
only when the removal of service uses the internal configuration manager utility to
run ANT scripts.

Indicators of success: The log file includes an indicator of success:

INSTCONFSUCCESS
>The current operation was successful. You do not need to review the log
>file any further.

INSTCONFPARTIALSUCCESS
>The current operation was partially successful. System should still be in a
>usable state, however some non-critical actions have failed. Consult the log
>file to determine what has failed and how to recover from the failure, if
>possible.

INSTCONFFAILED
>The current operation failed. The system is no longer in a usable state.
>Consult the log file for more information.

Known problems and workarounds for the update command

You can review known problems and issues associated with the Update Installer
for WebSphere Software programs.

For more information about known problems with the Update Installer that is used
with WebSphere Process Server and WebSphere Application Server, refer to *Known
problems and workarounds for the update command* in the WebSphere Application
Server Network Deployment, Version 6.0, information center.

Debugging applications

In order to debug applications, you must use your application development tool.

For more information about debugging applications, select **Debugging
components** in the WebSphere Integration Developer, Version 6.0, information
center or in the online documentation installed with IBM[(R)] WebSphere[(R)]
Integration Developer, version 6.0.

Managing WebSphere Process Server failed events

What is a failed event?

In the context of WebSphere® Process Server, an event is a request that is received by a WebSphere Process Server application. It can come from an external source (such as an inbound application adapter) or an external invocation to a web service. The event is comprised of a reference to the business logic it wants to operate and its data, stored in a Service Data Object (a business object). When an event is received, it is processed by the appropriate WebSphere Process Server application business logic.

A single thread of execution can branch off into multiple branches (or threads); the individual branches are linked to the main invoking event by the same session context.

If this business logic in one of these branches cannot execute completely due to system failure, component failure, or component unavailability, the event moves into the failed state. If multiple branches fail, a failed event is created for each. The WebSphere Process Server Recovery subsystem handles the following types of failed events:

- Event failures that occur during an asynchronous invocation of a Service Component Architecture (SCA) operation
- Event failures that are caused by a runtime exception (in other words, any exception that is not declared in the methods used by the business logic)

The Recovery subsystem collects these types of failed events and makes them available for administrative purposes through the failed event manager interface.

How are failed events managed?

An administrator uses the failed event manager available in the administrative console to browse and manage all WebSphere Process Server failed events. Failed events can be resubmitted or deleted from the system.

Common tasks for managing failed events include:
- Browsing all failed events
- Searching for failed events by specific criteria
- Editing data for a failed event
- Resubmitting failed events
- Deleting failed events

To access the failed event manager, click **Integration Applications > Failed Event Manager**.

> **Related concepts**
> "Working with data in failed events" on page 29
> "Resubmitting failed events" on page 32
> **Related tasks**
> Finding failed events
> Deleting failed events

Role-based access for failed event manager

The failed event manager uses role-based access control to the failed event data and tasks. Only the administrator and operator roles are authorized to perform tasks within the failed event manager. Users logged in as either administrator or operator can view all data associated with failed events and can perform all tasks.

Note: This security infrastructure is inherited from the base WebSphere Application Server product. For more information about security, see the information centers for WebSphere Application Server and WebSphere Process Server.

Finding failed events

Before you can edit, resubmit, or delete failed events, you must identify them. Use the search functionality in the failed event manager to find all failed events on the server, or to find a specific subset of failed events.

This topic provides instructions for finding all failed events on the server, with references to topics for conducting other searches based on source, destination, date, business object type, exception text, or a combination of those criteria.

Security role required: You must be logged in as administrator or operator to perform this task.

1. Ensure the administrative console is running.
2. Click **Integration Applications > Failed Event Manager** to enter the failed event manager.
3. From the **Failed events on this server** box, click **Get all failed events**.

   The Search Results page opens, displaying a list of all the WebSphere Process Server failed events on the server.

   Related concepts

   "Working with data in failed events" on page 29

   "Resubmitting failed events" on page 32

   Related tasks

   "Searching for failed events by source" on page 26

   Searching for failed events by destination

   Searching for failed events by date

   Searching for failed events by business object type

   Searching for failed events by exception

   Performing an advanced search for failed events

   Deleting failed events

Searching for failed events by destination

Use the Search page's **By Destination** tab to find only those failed events that are associated with a specific destination module, component, or method.

When performing a search, note the following:
- The values for the fields are case sensitive.
- The fields accept the asterisk (*) wildcard character.
- If you leave any field on this tab blank, the blank field is treated as a wild card. The failed event manager will search in all components, modules, or methods.
- You can search on a single destination criteria or on multiple criteria. Searching on two or more of the destination criteria provides a more refined list of failed events.

Security Role Required: You must be logged in as administrator or operator to perform this task.

1. Ensure the administrative console is running, and then click **Integration Applications > Failed Event Manager** to enter the failed event manager.
2. From the main failed event manager page, click **Search by destination**.

   The Search page opens with the **By Destination** tab selected.
3. Specify the search criteria you want to use. You can use any combination of the following fields to customize your search:
   - The **Destination module** field—Use this field to specify the failed event's destination module.
   - The **Destination component** field—Use this field to specify the failed event's destination component.
   - The **Destination method** field—Use this field to specify the failed event's destination method.
4. Click **OK** to begin the search.

   The Search Results page opens and displays a list of all failed events that were destined for the specified module, component, or method.

Searching for failed events by source

Use the Search page's **By Source** tab to find only those failed events that originated from a specific source module, component, or both.

When performing a search, note the following:
- The values for the fields are case sensitive.
- The fields accept the asterisk (*) wildcard character.
- If you leave either field on this tab blank, the blank field is treated as a wild card. The failed event manager will search in all components or modules.
- To get the most refined list of failed events, use both the **Source module** and **Source component** fields.

Security Role Required: You must be logged in as administrator or operator to perform this task.
1. Ensure the administrative console is running, and then click **Integration Applications > Failed Event Manager** to enter the failed event manager.
2. From the main failed event manager page, click **Search by source**.

   The Search page opens with the **By Source** tab selected.
3. Specify the search criteria. You can use one or both of the following fields:
   - The **Source module** field—Use this field to specify the module that the failed event originated from.
   - The **Source component** field—Use this field to specify the component that the failed event originated from.
4. Click **OK** to begin the search.

   The Search Results page opens and displays a list of all failed events that originated from the specified module, component, or both.

Searching for failed events by date

Use the Search page's **By Date** tab to find only those events that failed during a specific time period.

When performing a search, note the following:

- The format for the date and time are locale-specific. An example of the appropriate format is provided with each field.
- The time is always local to the server. It is not updated to reflect the local time of individual machines running the administrative console.
- If you leave either field on this tab blank, the blank field is treated as a wild card. For example, if you specify a starting date but not an ending date, the failed event manager finds failed events that occurred between the specified start date and the current date.

Security Role Required: You must be logged in as administrator or operator to perform this task.

1. Ensure the administrative console is running, and then click **Integration Applications > Failed Event Manager** to enter the failed event manager.
2. From the main failed event manager page, click **Search by date**.
   The Search page opens with the **By Date** tab selected.
3. Specify the search criteria you want to use. You can use one or both of the fields on this tab:
   - The **From Date** field—Use this field to specify the starting date and time. The **From Date** field automatically defaults to 4:00 PM on December 31, 1969, formatted appropriately for the computer's specified locale (for example, 12/31/69 4:00 PM on a computer with a locale set for United States English).
   - The **To Date** field—Use this field to specify the ending date and time.
4. Click **OK** to begin the search.
   The Search Results page opens and displays a list of all failed events that originated during the specified time period.

Searching for failed events by business object type

Use the Search page's **By Type** tab to find only those failed events that are associated with a specific business object.

Security Role Required: You must be logged in as administrator or operator to perform this task.

1. Ensure the administrative console is running, and then click **Integration Applications > Failed Event Manager** to enter the failed event manager.
2. From the main failed event manager page, click **Search by business object type**.
   The Search page opens with the **By Type** tab selected.
3. Specify the business object type you want to search against by using one of the following:
   - The **Select the business object type** menu—Use this drop-down menu to select the type of business object associated with the failed events. This menu contains a list of all business object types found in the failed events on the server.
   - The **Other business object type** field—Use this field to specify the type of business object associated with the failed events. The field accepts the asterisk (*) wildcard character. All values are case sensitive.
4. Click **OK** to begin the search.
   The Search Results page opens and displays a list of all failed events that are associated with the specified business object type.

Searching for failed events by exception

Use the Search page's **By Exception** tab to find only those failed events that are associated with a specific exception. You can specify part or all of the exception text.

Security Role Required: You must be logged in as administrator or operator to perform this task.

1. Ensure the administrative console is running, and then click **Integration Applications > Failed Event Manager** to enter the failed event manager.
2. From the main failed event manager page, click **Search by exception text**.

   The Search page opens with the **By exception** tab selected.
3. In the **Exception text** field, type the text associated with the exception you want to search against.

   You can specify all or part of the exception text, as well as the asterisk (*) wildcard character to make the search easier. The values in this field are case sensitive.

   Note: If you leave the **Exception text** field blank, it is treated as a wild card; all failed events are returned.
4. Click **OK** to begin the search.

   The Search Results page opens and displays a list of all failed events that are associated with the specified exception text.

Performing an advanced search for failed events

Use the Search page's **Advanced** tab to perform a more refined search for failed events by using a combination of the criteria found on the other search tabs: source, destination, date, business object type, and exception text.

Note the following:

* Unless otherwise noted below, all fields accept the asterisk (*) wildcard character.
* Leaving a field blank causes it to be treated as a wild card.

The advanced search is not optimized; executing an advanced search on a large set of failed events can reduce performance.

Security Role Required: You must be logged in as administrator or operator to perform this task.

1. Ensure the administrative console is running, and then click **Integration Applications > Failed Event Manager** to enter the failed event manager.
2. From the main failed event manager page, click **Advanced search**.

   The Search page opens with the **Advanced** tab selected.
3. Specify the search criteria you want to use. You can use any combination of the following fields to customize your search:
   * The **Destination module** field—Use this field to specify the failed event's destination module.
   * The **Destination component** field—Use this field to specify the failed event's destination component.
   * The **Destination method** field—Use this field to specify the failed event's destination method.

- The **Source module** field—Use this field to specify the module that the failed event originated from.
- The **Source component** field—Use this field to specify the component that the failed event originated from.
- The **From Date** field—Use this field to specify the starting date and time if you want to search within a specific time period. This field does not accept the asterisk (*) wildcard character.
- The **To Date** field—Use this field to specify the ending date and time if you want to search within a specific time period. This field does not accept the asterisk (*) wildcard character.
- The **Business object type** field—Use this field to specify the type of business object associated with the failed events.
- The **Exception text** field—Use this field to specify the text associated with the exception you want to search against.

4. Click **OK** to begin the search.

The Search Results page opens and displays a list of all failed events that meet the specified criteria.

Working with data in failed events

Each failed event has data associated with it; often, that data can be edited before an event is resubmitted. There are two basic types of data for a failed event: data about the event, and business data.

Data about the failed event

Each failed event has the following data associated with it:
- The unique message ID and session ID for the event
- The service invocation type between SCA components
- The names of the module and component from which the event originated (the source)
- The names of the destination module, component and method for the event
- The time the event failed
- The exception thrown when the event failed

This data cannot be edited. In addition, failed events can have associated trace and expiration data, both of which can be edited.

Business data

Events typically include business data. Business data can be encapsulated in a business object, or it can be simple data that is not part of a business object. Business data is edited with the business data editor available in the failed event manager.

> **Related tasks**
> Browsing data in failed events
> Editing trace or expiration data in a failed event
> "Finding failed events" on page 25

Browsing data in failed events

Each failed event has two types of data associated with it:

- Failed event data—Information about the failed event itself, including the source and destination for the event, the time it failed, the exception it failed with, its message and session IDs, and its trace and expiration settings.
- Business data—Information contained in the event. The business data can be encapsulated in a business object, or it can be simple data that is not part of a business object.

Security role required: You must be logged as administrator or operator to perform this task.

1. Ensure that the failed event manager is open and that you have retrieved a list of the failed events on your system.
2. From the failed event manager's Search Results page, click the ID (found in the Message ID column) of the failed event whose data you want to browse.

   The Failed Event Details page opens and displays all of the information about the event.
3. If you want to browse the business data associated with the failed event, click **Edit business data**.

   The Business Data Editor collection page opens, displaying the business data associated with the failed event. Each parameter name in the hierarchy is a link. If the parameter is a simple data type, clicking its name will open up a form so you can edit the parameter's value. If the paramter is a complex data type, clicking its name will expand the hierachy further.

   Related tasks

   Finding failed events

   Editing trace or expiration data in a failed event

   "Finding failed events" on page 25

Editing trace or expiration data in a failed event

The Failed Event Details page enables you to set or modify values for the trace control and expiration date associated with a failed event.

Important: Any edits you make to the trace or expiration data are only saved locally until you resubmit the event. If you perform any other action before resubmitting the event, all edits are lost.

Failed events can be resubmitted with trace to help you monitor the event processing. When you view the failed event data on the Failed Event Details page, the default trace value `SCA.LOG.INFO;COMP.LOG.INFO` is shown for the event. If you resubmit the event with this default setting, no trace occurs when the session calls an SCA service or executes a component.

Some failed events also have an expiration. If a user has specified an expiration with the asynchronous call that sends the event, that data persists even if the event fails, and the expiration time appears in the **Resubmit Expiration Time** field on the Failed Event Details page. Expired failed events cannot be resubmitted successfully. To prevent a second failure, you can edit the expiration date for the event to ensure that it is not expired when it is resubmitted.

Security role required: You must be logged in as administrator or operator to perform this task.

1. Ensure that the failed event manager is open and that you have retrieved a list of the failed events on your system.

2. From the failed event manager's Search Results page, click the ID (found in the Message ID column) of the failed event whose data you want to edit.

   The Failed Event Details page opens.

3. If the event has an expiration date that causes it to expire before it is resubmitted, edit the expiration in the **Resubmit expiration time** field.

   The expiration time shown is local to the server. The value for this field must be formatted according to your specified locale. An example of the correct format for your locale is provided above the field.

4. If you want to enable tracing for the failed event, specify a new value in the **Trace Control** field.

5. Do one of the following:

   - If the edited data is correct and you want to resubmit the event, click **Resubmit** to make the changes at a server level.

   - If you want to remove the changes you made, click **Undo local changes**.

   The edited failed event is resubmitted for processing and is removed from the failed event manager.

   Related tasks

   Finding failed events

Editing business data in a failed event

The failed event manager provides a business data editor so you can edit the business data associated with a failed event before you resubmit it. For each failed event, the editor displays the associated business data in a hierarchical format; the navigation tree at the top of the table is updated as you navigate through the parameters to give you a clear picture of where you are in the hierarchy.

Business data can be encapsulated into a business object, or it can be simple data that is not part of a business object. A failed event can have both simple data and a business object associated with it.

You can edit only simple data types (for example, String, Long, Integer, Date, Boolean). If a data type is complex (for example, an array or a business object), you must navigate through the business data hierarchy until you reach the simple data types that make up the array or business object. Complex data is denoted by an ellipsis (...) in the Parameter Value column.

Important: Any edits you make to business data are saved locally. Changes are not made to the corresponding business data in the server until you resubmit the failed event.

Security role required: You must be logged in as administrator or operator to perform this task.

1. Ensure that the failed event manager is open and that you have retrieved a list of the failed events on your system.

2. From the failed event manager's Search Results page, click the ID (found in the Message ID column) of the failed event whose data you want to edit.

   The Failed Event Details page opens.

3. From the Failed Event Details page, click **Edit business data** to access the Business Data Editor collection page.

   This page displays a hierarchical view of all of the data associated with the failed event.

4. Navigate through the business data hierarchy by clicking on the name of each parameter (these appear as links in the Parameter Name column). When you have located the parameter whose value you want to edit, click its name.

   If the parameter has an editable value, the Business Data Editor page opens.

5. In the **Parameter value** field, specify the new value for the parameter.

6. Click **OK**.

   The change is saved locally and you are returned to the Business Data Editor collection page.

7. If you want to remove the changes you made, click **Undo local business data changes**.

   All of the edits are removed and the business data is returned to its original state.

8. If the edited business data is correct, click **Resubmit** to make the changes at a server level.

   The edited failed event is resubmitted for processing and is removed from the failed event manager.

Resubmitting failed events

If you want to try to execute the event again, you must resubmit it from the failed event manager. You can resubmit an event without changes, or you can edit the business data parameters before resubmitting it.

When a failed event is resubmitted, the processing resumes only for the failed branch, not for the entire event.

Tracing is available for resubmitted events to help monitor the event's processing. You can also use the event's unique message ID to track its success or failure. If a resubmitted event fails again, it is returned to the failed event manager with its original message ID and an updated failure time.

See the following topics for specific instructions on resubmitting failed events:

- Resubmitting an unchanged failed event
- Resubmitting a failed event with trace

Resubmitting an unchanged failed event

You can resubmit one or more unchanged failed events to be processed again. Processing resumes only for the failed branch, not for the entire event.

Security role required: You must be logged in as administrator or operator to perform this task.

1. Ensure that the failed event manager is open and that you have retrieved a list of the failed events on your system.

2. From the Search Results page, select the check box next to each failed event you want to resubmit.

3. Click **Resubmit**.

Each selected event is resubmitted for processing and is removed from the failed event manager.

Resubmitting a failed event with trace

You can monitor the resubmission of a failed event to determine whether it executes successfully. The failed event manager provides optional tracing for all failed events.

Security role required: You must be logged in as administrator or operator to perform this task.

1. Ensure that the failed event manager is open and that you have retrieved a list of the failed events on your system.
2. From the Search Results page, select the check box next to each failed event you want to resubmit.
3. Click **Resubmit with trace**.

   The Resubmit With Trace page opens.
4. Specify the level of trace you want to use in the **Trace control** field.

   By default, the value is SCA.LOG.INFO;COMP.LOG.INFO. With this setting, no trace occurs when the session calls an SCA service or executes a component.
5. Click **OK** to resubmit the failed event and return to the Search Results page.

To view the trace log for a resubmitted event, open the corresponding component logger or use the CEI log viewer.

Deleting failed events

If you do not want to resubmit a failed event, or if you have failed events that have expired, use the failed event manager to delete them from the server. The failed event manager provides three options for deleting failed events.

Security role required: You must be logged in as administrator or operator to perform this task.

1. Ensure that the failed event manager is open and that you have retrieved a list of the failed events on your system.
2. From the failed event manager's Search Results page, do one of the following:
   - If you want to delete one or more specific failed events, select the check box next to each event and then click **Delete**.
   - If you want to delete only those failed events that have expired, click **Delete expired events**.
   - If you want to delete all failed events on the server, click **Clear all on server**.

Adding logging and tracing to your application

Designers and developers of applications that run on IBM WebSphere Process Server may find it useful to use Java logging for generating their application logging.

IBM[R] WebSphere[R] Process Server is built on IBM WebSphere Application Server, Network Deployment, version 6.0. and also works with infrastructure and platform services from IBM WebSphere Application Server, version 6.0. Refer to the **Logging and tracing with Java logging** and **The Common Base Event in WebSphere Application Server** topics in the WebSphere Application Server Network Deployment, Version 6.0, information center.

1. Follow the instructions in Logging and tracing with Java logging.

2. Follow the instructions in The Common Base Event in WebSphere Application Server.
3. In addition, WebSphere Process Server monitoring capabilities use logging. For more information, refer to the WebSphere Process Server *Monitoring* PDF file.

Diagnosing problems

You can use problem determination to understand why your application, or server is not working.

The following topic can aid you in understanding why your enterprise application or server is not working, and they can help you resolve problems. Unlike performance tuning, which focuses on solving problems associated with slow processes and un-optimized performance, problem determination focuses on finding solutions to functional problems. For more information about diagnosing problems, see the **Diagnosing problems (using diagnosis tools)** section in the WebSphere Application Server Network Deployment, Version 6.0, information center.

1. Investigate common problems organized according to functional areas within IBM(R) WebSphere(R) Process Server in Troubleshooting by function.
2. If you already have an error message and want to quickly look up its explanation and recommended response, look up the message by selecting **Reference** in the information center navigation and expanding **Messages**.
3. For help in knowing where to find error and warning messages, interpreting messages, and configuring log files, expand the **Diagnosing problems (using diagnosis tools)** section in the WebSphere Application Server Network Deployment, Version 6.0, information center navigation and select **Working with message logs**.
4. Difficult problems can require the use of tracing, which exposes the low-level flow of control and interactions between components. For help in understanding and using traces, expand the **Diagnosing problems (using diagnosis tools)** section in the WebSphere Application Server Network Deployment, Version 6.0, information center navigation and select **Working with trace**.
5. For help in adding log and trace capability to your own application, see Adding logging and tracing to your application.
6. For help in using settings or tools to help you diagnose the problem, expand **Diagnosing problems (using diagnosis tools)** section in the WebSphere Application Server Network Deployment, Version 6.0, information center navigation and select **Working with troubleshooting tools**. Some of these tools are bundled with the product, and others are downloadable.
7. To find out how to look up documented problems, common mistakes, WebSphere Process Server prerequisites, and other problem-determination information on the WebSphere Process Server public Web site, or to obtain technical support from IBM, see Obtaining help from IBM.
8. The IBM Developer Kit and Runtime Environment, Java 2 Technology Edition, Version 1.4.1 Diagnostics Guide describes debugging techniques and the diagnostic tools that are available to help you solve problems with Java. It also gives guidance on how to submit problems to IBM. You can find the guide at IBM developer kits: Diagnosis documentation Web site.
9. For current information available from IBM Support on known problems and their resolution, see the IBM Support page.

10. IBM Support has documents that can save you time gathering information needed to resolve this problem. Before opening a PMR, see the IBM Support page for WebSphere products.

IBM Support Assistant

The IBM Support Assistant is a tool that helps you use various IBM Support resources.

The IBM$^{(R)}$ Support Assistant offers four components to help you with software questions:
- a Search component, which helps you access pertinent Support information in multiple locations.
- a Support Links component, which provides a convenient location to access various IBM Web resources such as IBM product sites, IBM support sites and links to IBM news groups.
- an Education component, which provides guided access to IBM product education web sites, including IBM Education Assistant modules.
- a Service component, which helps you submit an enhanced problem report that includes key system data to IBM.

Using the IBM Support Assistant with IBM WebSphere$^{(R)}$ Process Server, version 6.0, requires installing IBM Support Assistant, version 2.0, and then installing plug-ins for WebSphere Process Server.

To download IBM Support Assistant:

IBM Support Assistant, version 2.0, is a stand-alone utility. It includes an installation program and guide. Download the IBM Support Assistant from the IBM Support Assistant download page. Some IBM products include the IBM Support Assistant on their installation media. For the latest information on IBM Support Assistant, see the IBM Support Assistant technote on the IBM Software Support site.

After the IBM Support Assistant is installed, you can start it with the **Start** menu option on Windows operating systems or with the startisa.sh shell script on all other platforms. On Windows operating systems, the IBM Support Assistant opens in its own window. On all other platforms, it opens in a Web browser.

To download an IBM Support Assistant plug-in for WebSphere Process Server:

After IBM Support Assistant is installed and running, click **Find Plug-ins** to view search links that can be used to find plug-ins for specific IBM products. Select **WebSphere** to initiate a search for all WebSphere product plug-ins. This list is also available from the IBM Support search page. Select **WebSphere Process Server** to open the download page for the plug-in.

To learn more about how to use the IBM Support Assistant, click the **User Guide** tab in the IBM Support Assistant window.

Obtaining help from IBM

If you are not able to resolve a problem with IBM WebSphere Process Server by following the steps described in the Troubleshooting documentation, by looking up error messages in the message reference, or by looking for related documentation on the online help, contact IBM Technical Support.

Purchase of IBM^(R) WebSphere^(R) Process Server entitles you to one year of telephone support under the Passport Advantage^(R) program. For details on the Passport Advantage program, visit Passport Advantage Web site.

The number for Passport Advantage members to call for WebSphere Process Server support is 1-800-237-5511. Have the following information available when you call:
- Your Contract or Passport Advantage number.
- Your WebSphere Process Server version and revision level, plus any installed fixes.
- Your operating system name and version.
- Your database type and version.
- Basic topology data: how many machines are running how many application servers, and so on.
- Any error or warning messages related to your problem.

IBM Support has documents that can save you time gathering information needed to resolve this problem. Before opening a PMR, see the IBM Support page for WebSphere Process Server.

1. Run the Collector Tool. WebSphere Process Server comes with a built-in utility that collects logs and configuration information into one file, the Collector Tool. IBM Technical Support may ask you to run this tool and submit the output.

2. Enable tracing. WebSphere Process Server support engineers might ask you to enable tracing on a particular component of the product to diagnose a difficult problem.

3. Use consulting services. For complex issues such as high availability and integration with legacy systems, education, and help in getting started quickly with the WebSphere product family, consider using IBM consulting services. To learn about these services, browse the IBM Global Services Web site.

Resources for diagnosing and fixing problems

In addition to the information center, there are several Web-based resources for researching and resolving problems related to IBM WebSphere Process Server, version 6.0.

Product support page: The official site for providing tools and sharing knowledge about problems with IBM^(R) WebSphere^(R) Process Server, version 6.0, is the WebSphere Process Server support page.

The support page includes the following resources and capabilities:
- A search field for searching the entire support site for documentation and fixes related to a specific exception, error message, or other problem. Use this search function before contacting IBM Support directly.
- **Hints and Tips**, **Technotes**, and **Solutions** links take you to specific problems and resolutions documented by WebSphere Process Server technical support personnel.
- A link **All fixes, fix packs, refresh packs, and tools** provides free WebSphere Process Server maintenance upgrades and problem determination tools.
  - Fixes are software patches which address specific WebSphere Process Server defects. Selecting a specific defect from the list in the **All fixes, fix packs, refresh packs, and tools** page takes you to a description of what problem the fix addresses.
  - Fix packs are bundles of multiple fixes, tested together and released as a maintenance upgrade to WebSphere Process Server. Refresh packs are fix packs that also contain new function. If you select a fix pack from this page, you are taken to a page describing the target platform, WebSphere Process

Server prerequisite level, and other related information. Selecting the **list defects** link on that page displays a list of the fixes which the fix pack includes. If you intend to install a fix which is part of a fix pack, it is usually better to upgrade to the complete fix pack rather than to just install the individual fix.

– Tools are free programs that help you analyze the configuration, behavior and performance of your WebSphere Process Server installation.

Note: Some resources on the WebSphere Process Server support page are marked with a key icon. To access these resources, you must supply a user ID and password, or to register if do not already have an ID. When registering, you are asked for your contract number, which is supplied as part of a WebSphere Process Server purchase.

WebSphere Developer Domain: The Developer Domains are IBM-supported sites for enabling developers to learn about IBM software products and how to use them. They contain resources such as articles, tutorials, and links to newsgroups and user groups. You can reach the WebSphere Developer Domain on the IBM developerWorks Web site. Additional information about WebSphere Process Server can be found on the IBM developerWorks Business Integration Zone.

IBM Support page: IBM Support provides documents that can save you time gathering information needed to resolve this problem. Before opening a PMR, see the IBM Support page.

Troubleshooting by function

Depending on the specific problem that you have encountered, it may be necessary to troubleshoot by function. You can troubleshoot based on different issues that are common in installation, configuration, deployment, and administration.

Read the "Troubleshooting overview" on page 1 section before you troubleshoot IBM(R) WebSphere(R) Process Server.

Troubleshooting installation

How to troubleshoot an unsuccessful installation of WebSphere Process Server.

Use this topic to diagnose possible problems when the installation is unsuccessful. The installer program records the following indicators of success at the end of the primary log file, which can be found in *install_root*/logs/wbi/log.txt on Linux and UNIX platforms or *install_root*\logs\wbi\log.txt on Windows platforms:

* INSTCONFSUCCESS: installation was successful

* INSTCONFPARTIALSUCCESS: installation was partly successful. Some installation actions failed but can be retried.

* INSTCONFFAILED: installation was not successful. Recovery is not possible.

If the result is INSTCONFPARTIALSUCCESS or INSTCONFFAILED, continue analyzing the problem by following these steps:

1. If the installation process displayed any error messages, check "Error messages: installation and profile creation and augmentation" on page 41 for an explanation.

   If the message corresponds to any of those described, correct the problem, clean up any installed portions, and try to reinstall.

For details on uninstalling any installed portions before reinstalling, refer to the WebSphere Process Server, Version 6.0, online information center at http://publib.boulder.ibm.com/infocenter/dmndhelp/v6rxmx/index.jsp, and make the following selection in the navigation panel: **WebSphere Process Server 6.0 > Installing > Uninstalling the product > Preparing for reinstallation after a failed uninstallation**.

2. Determine if the installation of WebSphere Application Server Network Deployment was successful. If the installation of WebSphere Process Server was not successful, first check *install_root*/logs/log.txt on Linux and UNIX platforms or *install_root*\logs\log.txt on Windows platforms for errors to determine if the installation of WebSphere Application Network Deployment was successful. If the installation of WebSphere Application Server Network Deployment failed, refer to the installation troubleshooting information for WebSphere Application Server Network Deployment, at the WebSphere Application Server Network Deployment, Version 6.0, Information Center and use the information found there to correct the problems before attempting to reinstall WebSphere Process Server. If the installation of WebSphere Application Server Network Deployment succeeded and the installation of WebSphere Process Server failed, use the troubleshooting information below to correct the problems.

3. Check the WebSphere Process Server installation log files for errors after installing.

   Refer to "Log files" on page 49 for the names, locations, and descriptions of the various log files that are created. Check the log files in this sequence:

   Linux **On Linux and UNIX platforms:**

   a. *install_root*/logs/wbi

   b. %tmp% if no files are found in *install_root*/logs/wbi

   c. *install_root*/logs/wasprofile/wasprofile_create_ *profile_name*.log or *install_root*/logs/wasprofile/wasprofile_augment_ *profile_name*.log. If you performed a Complete installation, which creates a stand-alone server named default, the value for *profile_name* will be default.

   d. Any additional log or trace files generated by installation actions. Look in *install_root*/logs/wbi for trace files generated during the installation (or uninstallation) process. Look in *profile_root*/logs for those generated by profile creation or augmentation, where *profile_root* represents the installation location of the WebSphere Process Server profile (by default, *install_root*/profiles/*profile_name* on Linux and UNIX platforms). These files are primarily intended for use by IBM technical support.

   Windows **On Windows platforms:**

   a. *install_root*\logs\wbi

   b. %tmp% if no files are found in *install_root*\logs\wbi

   c. *install_root*\logs\wasprofile\wasprofile_create_ *profile_name*.log or *install_root*\logs\wasprofile\wasprofile_augment_ *profile_name*.log. If you performed a Complete installation, which creates a stand-alone server named default, the value for *profile_name* will be default.

   d. Any additional log files generated by installation actions. Look in *install_root*\logs\wbi for trace files generated during the installation (or uninstallation) process. Look in *profile_root*\logs for those generated by profile creation or augmentation, where *profile_root* represents the installation location of the WebSphere Process Server profile (by default, *install_root*\profiles*profile_name* on Windows platforms). These files are primarily intended for use by IBM technical support.

4. If there is no information in the installation logs, use the `-log` parameter with a response file.

   Certain events can prevent the InstallShield for Multiplatforms (ISMP) from starting the Installation Wizard. Such an event is not enough disk space to launch the Installation Wizard, for example. If your installation fails and there is no information in the installation logs, use the `-log` parameter with a response file to record entries for events that cause the ISMP program to fail to start the Installation Wizard. This will work with any one of the following response files:

   - `responsefile.wps.txt`
   - `responsefile.pcaw.standAloneProfile.txt`
   - `responsefile.pcaw.dmgrProfile.txt`
   - `responsefile.pcaw.managedProfile.txt`

   For more information about response files, refer to the WebSphere Process Server, Version 6.0, online information center at http://publib.boulder.ibm.com/infocenter/dmndhelp/v6rxmx/index.jsp, and make the following selection in the navigation panel: **WebSphere Process Server 6.0 > Installing > Installing the product > Installing the product silently**.

   You will need to copy a response file from *WebSphere Process Server CD 1* to your system's hard drive to use it. The syntax of the **install** command for logging such events is as in the following examples (your paths to the response file and the log file, and the actual name of the response file might differ):

   AIX **On AIX platforms:**
   ```
   install -options "/usr/IBM/WebSphere/silentFiles/myresponsefile.txt"
           -silent -log # !/usr/IBM/WebSphere/myOptionFiles/log.txt  @ALL
   ```

   Linux **On HP-UX, Linux, and Solaris platforms:**
   ```
   install -options "/opt/IBM/WebSphere/silentFiles/myresponsefile.txt"
           -silent -log # !/opt/IBM/WebSphere/myOptionFiles/log.txt  @ALL
   ```

   Windows **On Windows platforms:**
   ```
   install.exe -options "C:\IBM\WebSphere\silentFiles\myresponsefile.txt"
               -silent -log # !C:\IBM\WebSphere\silentFiles\log.txt  @ALL
   ```

5. Determine whether the installation problem is caused by a configuration script that failed.

   The *install_root*/`logs/wbi/instconfig.log` file on Linux and UNIX platforms or *install_root*\`logs\wbi\instconfig.log` file on Windows platforms indicates configuration problems that can prevent the product from working correctly. Search on the string `action failed` to find the name of the configuration script that failed.

6. Verify that no files exist in the *install_root*/`classes` directory.

   IBM Support sometimes queues work for customers and provides test or debugging fixes. A common location for the fixes is in the *install_root*/`classes` directory.

   By default, the *install_root*/`classes` directory is picked up first in the WebSphere Process Server class path to let it override other classes.

   Putting a fix in the directory lets you verify that the fix does indeed solve your problem. After verifying that the fix solves the problem, you should delete the fix from the *install_root*/`classes` directory to return the system to a working state.

If you do not remove such fixes from the *install_root*/classes directory, you can experience errors.

7. Uninstall the product, clean up any log files or other artifacts that are left behind, and reinstall after turning on tracing if the error logs do not contain enough information to determine the cause of the problem.

   - Report the stdout and stderr logs to the console window, by adding the -is:javaconsole parameter to the **install** command:

     – `Linux` **On Linux and UNIX platforms:**

       install -is:javaconsole

       Capture the stream to a file with the following commands:

       install -is:javaconsole > *captureFileName*.txt 2>&1

     – `Windows` **On Windows platforms:**

       install.exe -is:javaconsole

       Capture the stream to a file with the following commands:

       install.exe -is:javaconsole > *drive*:*captureFileName*.txt

   - Capture additional information to a log of your choice with the -is:log *file_name* option.

   - Turn on additional installation logging by passing the -W Setup.product.install.logAllEvents="true" parameter to the **install** command:

     – `Linux` **On Linux and UNIX platforms:**

       install -W Setup.product.install.logAllEvents="true"

     – `Windows` **On Windows platforms:**

       install.exe -W Setup.product.install.logAllEvents="true"

8. If you have successfully created a process server profile, use the First steps console or the command line method to start the process server.

   Start the First steps console for a particular node (where *profile_root* represents the installation location of the WebSphere Process Server profile (by default, *install_root*/profiles/*profile_name* on Linux and UNIX platforms and *install_root*\profiles*profile_name* on Windows platforms):

   - `Linux` **On Linux and UNIX platforms:**
     profile_root/firststeps/wbi/firststeps.sh

   - `Windows` **On Windows platforms:**
     profile_root\firststeps\wbi\firststeps.bat

   Start the server from the command line:

   a. Change directories to the *profile_root*/bin directory in the profile.

   b. Start the server process.

      - `Linux` **On Linux and UNIX platforms:** ./startServer.sh *server_name*

      - `Windows` **On Windows platforms:** startServer.bat *server_name*

9. Verify that the server starts and loads properly by looking for a running Java process and the *Open for e-business* message in the SystemOut.log and SystemErr.log files.

   If no Java process exists or if the message does not appear, examine the same logs for any miscellaneous errors. Correct any errors and retry.

   You can find the SystemOut.log and SystemErr.log files in the following platform-specific directories:

   - `Linux` **On Linux and UNIX platforms:** *profile_root*/logs/*server_name*

- **Windows** **On Windows platforms:**

  profile_root\profiles\logs*server_name*

10. Use the First steps console or the command line method to stop the process server *server_name*, if it is running, and to start the deployment manager if one exists.

    To stop *server_name* from the command line:

    - **Linux** . **On Linux and UNIX platforms:** *profile_root*/bin/stopServer.sh *server_name*
    - **Windows** **On Windows platforms:** *profile_root*\bin\stopServer.bat *server_name*

    If you enable security, specify the -user and the -password parameters of the command.

    To start the deployment manager from the command line:

    - **Linux** . **On Linux and UNIX platforms:** *profile_root*/bin/startManager.sh
    - **Windows** **On Windows platforms:** *profile_root*\bin\startManager.bat

11. Verify that the server starts and loads properly by looking for a running Java process and the *Server dmgr open for e-business* message in the *profile_root*/logs/*server_name*/SystemOut.log file.

    Linux . **On Linux and UNIX platforms:** Open a command window and issue the **top** command to see a display of running processes. If the top command is not available on your system, use the **ps** command:

    ps -ef | grep java

    Windows **On Windows platforms:** Press **Ctrl+Alt+Delete** and type **T** to open the Task Manager. Click the **Processes** tab and the **Image Name** column header to sort by image name. Look for processes named java.exe.

    If no Java process exists or if the message does not appear, examine the same logs for any miscellaneous errors. Correct any errors and try again to start the deployment manager.

For current information available from IBM Support on known problems and their resolution, see the IBM WebSphere Process Server support page.

IBM Support has documents that can save you time gathering the information that you need to resolve a problem. Before opening a PMR, see the IBM WebSphere Process Server support page.

Error messages: installation and profile creation and augmentation

The following lists some of the most commonly found error messages encountered when installing WebSphere Process Server.

Note: For information about messages that might be generated by the installation of WebSphere Application Server Network Deployment, refer to the troubleshooting information available at the WebSphere Application Server Network Deployment, Version 6.0, information center.

- "Invalid node name/Invalid host name/Invalid cell name: The name starts with an invalid character." on page 42
- "The Location of JDBC driver classpath files is invalid." on page 42
- "You have chosen a database other than DB2." on page 42
- "Profile is in use. Stop the server before continuing." on page 43

- "Concurrent profile creation, augmentation, or deletion is not supported." on page 43
- "The Installation Wizard cannot install WebSphere Process Server." on page 43
- "Supported IBM JDK was not found." on page 43
- "A supported version of IBM WebSphere Application Server was not found." on page 43
- **Linux** **On Linux and UNIX platforms:** "There is insufficient free disk space on the system." on page 44
- "Previous WebSphere Process Server uninstallation failed." on page 44
- "WebSphere Process Server installation not valid" on page 44
- "INFO: The Common Event Infrastructure application was not uninstalled because it is being used by other products." on page 44
- "INFO: WebSphere Application Server was not uninstalled because it is being used by the Common Event Infrastructure application." on page 45
- **Windows** **On Windows platforms:** "Error: The input line is too long" on page 45
- **AIX** **On AIX platforms:** "Note: The following file systems will be expanded during the installation" on page 46
- **Linux** **On Linux and UNIX platforms:** "The disk space is nn Mbyte less than required. The installation cannot continue." on page 46
- "Specify a different directory or perform a manual uninstall" on page 46
- "Error writing file = There may not be enough temporary disk space." on page 47
- "Error: localhost is not a valid host name for remote access" on page 47
- **Linux** **On Linux platforms:** "The installer could not successfully add the product information into the RPM database." on page 48
- **Linux** **On Linux and UNIX platforms:** "Error: java.io.IOException: konqueror: not found" on page 48

If you do not see a problem that resembles yours, or if the information provided does not solve your problem, contact IBM WebSphere Process Server support for further assistance.

Invalid node name/Invalid host name/Invalid cell name: The name starts with an invalid character.:   Check that the node name, host name, and cell name contain a valid sequence of characters. Use the IBM defaults provided or make sure that your names do not use disallowed characters, as described below:

A node name or a cell name cannot have any spaces, and the following characters are not allowed: / \ * , : ; = + ? | < > & % ' ". A host name cannot have any spaces, cannot start with any of the above characters, and cannot be surrounded by brackets ([ ]).

The Location of JDBC driver classpath files is invalid.:   The remainder of this message says: `The following files could not be found.` *`list of files`* `Please reenter the directory for the Location of the JDBC driver classpath files.` For the given panel's database configuration, the Profile Wizard will verify that the necessary jar files exist for the JDBC driver. If the Profile Wizard can't verify that the files exist (each database type has a different set), it will present you with this message along with the list of files. This should help you find the correct directory to specify.

You have chosen a database other than DB2.:   The remainder of this message says: `Business rules and selectors only support DB2 as a repository. If you`

intend to use business rules or selectors, then you must configure their repository database manually. Refer to the Information Center documentation for instructions. For deployment manager and managed (custom) profiles, you will need to perform additional configuration steps if a database other than IBM DB2 Universal, DB2 Universal OS/390 V7.1, DB2 Universal OS/390 V8.1, or DB2 CLI is selected. For more information, refer to "Installing business rules for network deployment" in the WebSphere Process Server information center.

Profile is in use. Stop the server before continuing.:   The Profile Wizard will not augment an existing profile if it is currently running. You do not need to exit the Profile Wizard; shut down the server and then continue with the Profile Wizard.

Concurrent profile creation, augmentation, or deletion is not supported.:   The remainder of this message says: `Wait until the current creation or deletion operation is complete before continuing.` When a profile is being created, augmented, or deleted, a global lock is made on the Profile Registry. This lock prevents other changes (create/augment/delete) from occurring at the same time.

Solution: Run only one instance of any Profile Wizard at a time. Wait until the other creation, augmentation, or deletion process is finished before continuing. If you determine that no other creation, augmentation, or deletion process is running, manually release the `profileRegistry.xml` lock, which might have been left over from the prior installation attempt. To release this lock, delete the file *install_root*/properties/profileregistry.xml_LOCK.

The Installation Wizard cannot install WebSphere Process Server.:   The log file entry is: `The Installation Wizard cannot install WebSphere Process Server. The installation response file for WebSphere Application Server Network Deployment, responsefile.nd.txt, was not found.`

Possible solution: If the installation image was copied from one location to another (for example, from a product CD to your C:\ drive, on Windows) make sure you also copy the `WAS` directory (containing the file `responsefile.nd.txt`) and that it exists in the same root directory as the `WBI`directory for the installation image.

Supported IBM JDK was not found.:   The log file entry is: `Supported IBM JDK was not found. The IBM JDK shipped with this product must be located at <install_image_root>/JDK. Please correct this problem and try again.`

Possible solution: If the installation image was copied from one location to another (for example, from a product CD to your C:\ drive, on Windows) make sure you also copy the JDK directory and that it exists in the same root directory as the `WBI` directory for the installation image. Then launch the installation program again (`WBI/install` on Linux or UNIX operating systems or `WBI\install.exe` on Windows operating systems).

A supported version of IBM WebSphere Application Server was not found.:
The log file entry is: `A supported version of IBM WebSphere Application Server was not found. The installation files for the version of IBM WebSphere Application Server Network Deployment shipped with this product must be located at <install_image_root>/WAS. Please correct this problem and try again.`

This error occurs if the version of WebSphere Application Server Network Deployment shipped with WebSphere Process Server is not detected in the installation image root directory, and either you are trying to install a new instance

of WebSphere Application Server Network Deployment for use with WebSphere Process Server or the Installation Wizard is attempting to upgrade your existing WebSphere Application Server installation to the supported level.

If the installation image was copied from one location to another (for example, from a product CD to your C:\ drive, on Windows) make sure you also copy the WAS directory and that it exists in the same root directory as the WBI directory for the installation image.

There is insufficient free disk space on the system.: **On Linux and UNIX platforms:** The log file entry is: `There is insufficient free disk space on the system. /tmp Required: 535 MB. Available: n MB. Please ensure there is enough free disk space on all required filesystems and retry the operation.`

A total of 535 MB of /tmp disk space is required on Linux and UNIX platforms when the WebSphere Process Server Installation Wizard silently installs WebSphere Application Server or WebSphere Application Server Network Deployment or needs to upgrade an existing installation of WebSphere Application Server or WebSphere Application Server Network Deployment to the supported level.

Previous WebSphere Process Server uninstallation failed.: The log file entry is: `A previous attempt to uninstall WebSphere Process Server failed for the following installation location: <install_root>. Follow the instructions on preparing for reinstallation after a failed uninstallation in the product information center to uninstall WebSphere Process Server and then reinstall the product before attempting to use it.`

This error occurs in the Installation Wizard if you attempt to add features or launch the Profile Wizard for an installation of WebSphere Process Server that is no longer valid.

For more information, refer to the WebSphere Process Server, Version 6.0, online information center at http://publib.boulder.ibm.com/infocenter/dmndhelp/v6rxmx/index.jsp, and make the following selection in the navigation panel: **WebSphere Process Server 6.0 > Installing > Uninstalling the product > Preparing for reinstallation after a failed uninstallation**.

WebSphere Process Server installation not valid: The log file entry is: `The selected installation of WebSphere Process Server is no longer valid since the underlying WebSphere Application Server product has been uninstalled. Please uninstall WebSphere Process Server from the following location: <install_root>. You must then reinstall WebSphere Process Server before attempting to use the product.`

This error occurs in the Installation Wizard if you attempt to add features or launch the Profile Wizard for an installation of WebSphere Process Server that is no longer valid because the underlying WebSphere Application Server product is uninstalled.

INFO: The Common Event Infrastructure application was not uninstalled because it is being used by other products.: When uninstalling WebSphere Process Server, this message will be logged if the Common Event Infrastructure application is in use by products other than the instance of WebSphere Process Server that you are uninstalling.

INFO: WebSphere Application Server was not uninstalled because it is being used by the Common Event Infrastructure application.: When uninstalling WebSphere Process Server, this message will be logged if the underlying WebSphere Application Server product is still in use by another product using the Common Event Infrastructure and therefore cannot be uninstalled.

A suitable JVM could not be found.: If you get the message "A suitable JVM could not be found. Please run the program again using the option `-is:javahome <JAVA HOME DIR>`," it is because the JDK shipped with WebSphere Process Server could not be found. If the installation image was copied from one location to another (for example, from the product CD to your C:\ drive, on Windows) make sure you also copy the `JDK` directory and that it exists in the same root directory as the `WBI` directory for the installation image.

Error: The input line is too long: ![Windows] **On Windows platforms:** This is a profile creation error. It can occur during installation or when using the Profile Wizard.

Installation problem (Complete installation only)

The following error within a log in the *install_root*`\profiles\default\logs` directory indicates that a wsadmin action has failed to create a profile for a Complete installation. The failure is because the length of the file path and the node name on the command string has caused the entire command to exceed the operating system limit for command length.

```
The input line is too long.
```

The installation directory path must be no longer than 60 characters.

- **Option 1:** If the installation failed, reinstall the WebSphere Process Server using a shorter directory path and a shorter node name.

  The node name field is available during a custom installation. The length of the default node name is usually short enough. Avoid using a node name that is longer than 10 characters if possible.

- **Option 2:** If the installation was successful but the ISMPWSProfileLaunchAction failed, use the Profile Wizard to create the profile. Use a shorter profile directory path, a shorter profile name, and a shorter node name when creating the profile.

  You can select your own profiles path, which could be `C:\profiles`, for example.

  You can select your own profile name.

  Verify from the *install_root*`/logs/wbi/log.txt` file that the ISMPConfigManagerLaunchAction is successful.

  Examine the following messages in the `log.txt` file to determine whether the installation was successful. If so, you can run the Profile Wizard to create the default profile.

```
(date time), Install,
     com.ibm.ws.install.ni.ismp.actions.ISMPConfigManagerLaunchAction,
     msg1, INSTCONFSUCCESS: Post-installation configuration is successful.
(date time), Install,
     com.ibm.ws.install.ni.ismp.actions.ISMPWSProfileLaunchAction,
     err, INSTCONFFAILED: Cannot complete required configuration actions
     after the installation. The configuration failed. The installation is
     not successful. Refer to
     C:\Program Files\IBM\WebSphere\ProcServer\logs\wasprofile\
        wasprofile_create_default.log for more details.
(date time), Install,
     com.ibm.ws.install.ni.ismp.actions.ISMPLogFileAction,
```

```
      msg1, Profile Creation is finished.
  (date time), Install,
      com.ibm.ws.install.ni.ismp.actions.ISMPLogSuccessMessageAction,
      msg1, INSTCONFFAILED
```

Profile Wizard problem

The following error within a log in the *profile_root*\logs directory indicates that a
wsadmin action has failed to create a profile. The variable *profile_root* represents
the installation location of the WebSphere Process Server profile (by default,
install_root/profiles/*profile_name* on Linux and UNIX platforms and
install_root\profiles*profile_name* on Windows platforms). The failure is because
the length of the file path, the cell name, and the node name on the command
string has caused the entire command to exceed the operating system limit for
command length.

```
The input line is too long.
```

The number of characters in the *profile_root* must be no more than 80 characters.

If your directory path is 80 characters or less and you still have a problem, edit the
install_root\bin\setupCmdLine.bat file to make it use the Windows **subst** command.
The **subst** command maps an entire path to a virtual drive. After editing the file,
run the Profile Wizard again. If changing the setupCmdLine.bat file does not fix the
problem, you can install the WebSphere Process Server product using a shorter
installation path, such as C:\WPS.

See "The input line is too long" section of "Problems starting or using the wsadmin
command" on the WebSphere Application Server Network Deployment, Version
6.0, information center for a description of how to edit the setupCmdLine.bat file.

Note: The following file systems will be expanded during the installation:
▶ **AIX** **On AIX platforms:** You can allocate expansion space for directories on
AIX. If the Installation Wizard does not have enough space, InstallShield for
MultiPlatforms (ISMP) issues a system call for more space that increases the space
allocation dynamically. The message you might see when this occurs for the /usr
directory is similar to the following example:

```
NOTE: The following file systems will be expanded during the installation:
/usr
```

The disk space is nn Mbyte less than required. The installation cannot

continue.: ▶ **Linux** . **On Linux and UNIX platforms:** If the file system is not
dynamically expandable, an insufficient amount of disk space results in a message
that is similar to the following example:

```
The disk space is 33 Mbyte less than required. The installation cannot
continue.
```

Specify a different directory or perform a manual uninstall: This error indicates
that you deleted the installation root directory before using the uninstaller program
to remove the product. Now you are attempting to reinstall into the same
directory.

To correct the problem, you must remove registry entries that can prevent you
from reinstalling the product into the original directory.

To "clean" your system in this way, refer to the WebSphere Process Server, Version 6.0, online information center at http://publib.boulder.ibm.com/infocenter/dmndhelp/v6rxmx/index.jsp, and make the following selection in the navigation panel: **WebSphere Process Server 6.0 > Installing > Uninstalling the product > Preparing for reinstallation after a failed uninstallation**.

The warning entry in the $TMP/log.txt file is:

```
(Month day, year time), Install,
   com.ibm.ws.install.ni.ismp.actions.ISMPWarningDialogAction,
   wrn, Specify a different directory or perform a manual uninstall
   to remove all packages before reinstalling to the same directory.
```

Error writing file = There may not be enough temporary disk space.:

```
Error writing file =  There may not be enough temporary disk space.
Try using -is:tempdir to use a temporary directory on a partition
 with more disk space.
```

This error can occur when you have not provided enough temp space to create a profile. Verify that you have a minimum of 40 MB of temp space available before creating a profile.

For more information about creating profiles, refer to the WebSphere Process Server, Version 6.0, online information center at http://publib.boulder.ibm.com/infocenter/dmndhelp/v6rxmx/index.jsp, and make the following selection in the navigation panel: **WebSphere Process Server 6.0 > Installing > Configuring the product after installation > Creating and augmenting profiles by using the Profile Wizard**.

Error: localhost is not a valid host name for remote access: This error occurs when you enter localhost as the value for the Host name field in the Profile Wizard.

The host name is the network name for the physical machine on which the node is installed. The host name must resolve to a physical network node on the server. When multiple network cards exist in the server, the host name or IP address must resolve to one of the network cards. Remote nodes use the host name to connect to and to communicate with this node. Selecting a host name that other machines can reach within your network is extremely important. Do not use the generic localhost identifier for this value.

If you define coexisting nodes on the same computer with unique IP addresses, define each IP address in a domain name server (DNS) look-up table. Configuration files for stand-alone process servers do not provide domain name resolution for multiple IP addresses on a machine with a single network address.

The value that you specify for the host name is used as the value of the hostName property in configuration documents for the stand-alone process server. Specify the host name value in one of the following formats:

- Fully qualified domain name servers (DNS) host name string, such as xmachine.manhattan.ibm.com
- The default short DNS host name string, such as xmachine
- Numeric IP address, such as 127.1.255.3

The fully qualified DNS host name has the advantage of being totally unambiguous and also flexible. You have the flexibility of changing the actual IP

address for the host system without having to change the process server configuration. This value for host name is particularly useful if you plan to change the IP address frequently when using Dynamic Host Configuration Protocol (DHCP) to assign IP addresses. A format disadvantage is being dependent on DNS. If DNS is not available, then connectivity is compromised.

The short host name is also dynamically resolvable. A short name format has the added ability of being redefined in the local hosts file so that the system can run the process server even when disconnected from the network. Define the short name to 127.0.0.1 (local loopback) in the hosts file to run disconnected. A format disadvantage is being dependent on DNS for remote access. If DNS is not available, then connectivity is compromised.

A numeric IP address has the advantage of not requiring name resolution through DNS. A remote node can connect to the node you name with a numeric IP address without DNS being available. A format disadvantage is that the numeric IP address is fixed. You must change the setting of the hostName property in configuration documents whenever you change the machine IP address. Therefore, do not use a numeric IP address if you use DHCP, or if you change IP addresses regularly. Another format disadvantage is that you cannot use the node if the host is disconnected from the network.

The installer could not successfully add the product information into the RPM database.: **On Linux platforms:** If the last line in the *install_root*/logs/wbi/log.txt file is something similar to the following example, the problem might be a corrupt RedHat Package Manager (RPM) database:

```
(date, time),
Plugin.Install,
com.ibm.wizard.platform.linux.LinuxProductServiceImpl,
wrn, The installer could not successfully add the product
information into the RPM database. Installation will continue
as this is not critical to the installation of the product.
```

Run the following command to verify that the problem is a corrupt RPM database:

```
rpm -q --all
```

If the command hangs, the problem is a corrupt RPM database.

Error: java.io.IOException: konqueror: not found: **On Linux and UNIX platforms:** The ISMP Launch Browser action throws the following exception on Linux and UNIX systems:

```
com.installshield.wizardx.actions.LaunchBrowserAction, err, java.io.IOException:
konqueror: not found
STACK_TRACE: 11
java.io.IOException: konqueror: not found
      at java.lang.UNIXProcess.forkAndExec(Native Method)
      at java.lang.UNIXProcess.<init>(UNIXProcess.java:72)
      at java.lang.Runtime.execInternal(Native Method)
      at java.lang.Runtime.exec(Runtime.java:602)
      at java.lang.Runtime.exec(Runtime.java:524)
      at java.lang.Runtime.exec(Runtime.java:490)
      at com.installshield.util.BrowserLauncher.openURL
(BrowserLauncher.java:578)
      at com.installshield.wizardx.actions.LaunchBrowserAction.execute
(LaunchBrowserAction
```

```
.java:62)
        at com.installshield.wizard.RunnableWizardBeanContext.run
RunnableWizardBeanContext.
java:21)
```

This action searches for a Netscape, Mozilla, or Konqueror browser for displaying an HTML page or a Web site. In the case of the Web server plug-ins for WebSphere Application Server, the target page is the Plug-ins roadmap. Even though the ISMP Launch Browser action might find Mozilla or Netscape, the exception is thrown and a log entry occurs.

You can safely ignore this error.

Log files

This topic describes the various log files that are created during installation and uninstallation of IBM WebSphere Process Server, Version 6.0, and during profile creation and augmentation.

Consult the applicable logs if problems occur during installation, uninstallation, or during profile creation or augmentation. Table 9 on page 50 shows the logs, content, and indicators of success and failure for WebSphere Process Server, Version 6.0.

Log files for WebSphere Process Server components

Attention:

- If the `logs` directory does not exist on your system, the installation failed very early in the process. In this case, review the `/tmp/log.txt` file on Linux and UNIX platforms or the `%TEMP%\log.txt` file on Windows platforms.

  Important: On Windows platforms, the %TEMP% directory can be hidden from the Windows GUI. It usually resolves to `C:\Documents and Settings\`*username*`\Local Settings\Temp`. To find the %TEMP% directory, do one of the following:
  - At a command prompt, type `cd %TEMP%`.
  - At a command prompt, type `echo %TEMP%` and copy and paste the result into Windows Explorer.

- Some directory paths, file names, and indicator values in Table 9 contain spaces to allow the entries to fit in the table cells. The actual directory paths, file names, and indicator values do not contain spaces.

- The variable *install_root* represents the installation directory of WebSphere Process Server. The variable *profile_root* represents the root location of a profile, by default, `install_root/profiles/profile_name` on Linux and UNIX platforms or `install_root\profiles\profile_name` on Windows platforms.

Table 9. Installation and profile logs for WebSphere Process Server components

Log	Content	Indicators
- **Linux** **On Linux and UNIX platforms:** *install_root*/logs/wbi/log.txt - **Windows** **On Windows platforms:** *install_root* \logs\wbi\log.txt	Logs all installation events relating to WebSphere Process Server.	**INSTCONFFAILED** Total installation failure. **INSTCONFSUCCESS** Successful installation. **INSTCONFPARTIALSUCCESS** Installation errors occurred but the installation is still usable. Additional information in other log files identifies the errors.

Table 9. Installation and profile logs for WebSphere Process Server components (continued)

Log	Content	Indicators

• **Linux** **On Linux and UNIX platforms:** *install_root*/logs/wbi/instconfig.log
 	
• **Windows** **On Windows platforms:** *install_root*\logs\wbi\instconfig.log
	Logs configuration actions that run at the end of the installation process to configure components, install system applications, and create Windows shortcuts and registry entries.	Contains a series of <record> elements that document the configuration actions. If a post-installation configuration action fails, text like the following appears in the log:
		
		`<record>`
		`<date>2005-05-26T11:41:17</date>`
		`<millis>1117132877344</millis>`
		`<sequence>742</sequence>`
		`<logger>com.ibm.ws.install.configmanager.`
		`ConfigManager</logger>`
		`<level>WARNING</level>`
		`<class>com.ibm.ws.install.configmanager`
		`.ConfigManager</class>`
		`<method>executeAllActionsFound</method>`
		`<thread>12</thread>`
		`<message>Configuration action failed: com.`
		`ibm.ws.install.configmanager.actionengine.`
		`ANTAction-D:\WBI\AS\properties\version`
		`\install.wbi\6.0.0.0\config\`
		`full\install\90SInstallCEI.ant</message>`
		`</record>`
		
		If no actions fail, the following message is the last log entry:
		
		`<record>`
		`   . . .`
		`<message>No errors were encountered while`
		`executing the repository actions</message>`
		`</record>`

• **Linux** **On Linux and UNIX platforms:** *profile_root*/logs/pcatLog<*timestamp*>.txt • **Windows** **On Windows platforms:** *profile_root*\logs\pcatLog<*timestamp*>.txt **Important:** If this file does not exist in this directory on your system, profile creation failed early in the process. In this case, review the `pcatLog.txt` file in the *user_home* directory, where *user_home* represents the directory /root on Linux and UNIX platforms or `C:\Documents and Settings\Administrator` on Windows platforms.	Logs all events that occur when a default profile is created during a Complete installation, when the Profile Wizard is run, or when the **wasprofile** command is used.	**INSTCONFFAILED** 　Total profile creation failure. **INSTCONFSUCCESS** 　Successful profile creation. **INSTCONFPARTIALSUCCESS** 　Profile creation errors occurred but the profile is still functional. Additional information in other log files identifies the errors.

Table 9. Installation and profile logs for WebSphere Process Server components (continued)

Log	Content	Indicators
• **Linux** . **On Linux and UNIX platforms:** *install_root*/logs/wasprofile /wasprofile_create_ *profile_name*.log • **Windows** **On Windows platforms:** *install_root*\logs \wasprofile \wasprofile_create_ *profile_name*.log	• Traces all events that occur during the creation of the named profile. • Created during a Complete installation, when using the Profile Wizard, or when using the **wasprofile** command.	**INSTCONFFAILED** Total profile creation failure. **INSTCONFSUCCESS** Successful profile creation. **INSTCONFPARTIALSUCCESS** Profile creation errors occurred but the profile is still functional. Additional information in other log files identifies the errors.
• **Linux** . On Linux and **UNIX platforms:** *install_root*/logs/wasprofile /wasprofile_augment_ *profile_name*.log • **Windows** On Windows **platforms:** *install_root*\logs\wasprofile \wasprofile_augment_ *profile_name*.log This directory path must be less than 256 characters in length. **Important:** This file name might also appear as was_profile_augment_ *profile_name*_<timestamp>.log	• Traces all events that occur during the augmentation of the named profile. • Created during a Complete installation, when using the Profile Wizard, or when using the **wasprofile** command.	**INSTCONFFAILED** Total profile augmentation failure. **INSTCONFSUCCESS** Successful profile augmentation. **INSTCONFPARTIALSUCCESS** Profile augmentation errors occurred but the profile is still functional. Additional information in other log files identifies the errors.
• **Linux** . **On Linux and UNIX platforms:** *install_root*/logs/wasprofile /wasprofile_delete_ *profile_name*.log • **Windows** On Windows **platforms:** *install_root*\logs\wasprofile \wasprofile_delete_ *profile_name*.log	• Traces all events that occur during the deletion of the named profile. • Created when profile deletion is performed with the **wasprofile** command.	**INSTCONFFAILED** Total profile deletion failure. **INSTCONFSUCCESS** Successful profile deletion. **INSTCONFPARTIALSUCCESS** Profile deletion errors occurred but the profile is still deleted. Additional information in other log files identifies the errors.
• **Linux** . **On Linux and UNIX platforms:** *install_root*/logs /wasprofile.log • **Windows** On Windows **platforms:** *install_root*\logs \wasprofile.log	• Traces all events that occur during the deletion of profiles. • Created during uninstallation if you choose to uninstall the underlying WebSphere Application Server Network Deployment.	**INSTCONFFAILED** Total profile deletion failure. **INSTCONFSUCCESS** Successful profile deletion. **INSTCONFPARTIALSUCCESS** Profile deletion errors occurred but the profile is still deleted. Additional information in other log files identifies the errors.

Table 9. Installation and profile logs for WebSphere Process Server components (continued)

Log	Content	Indicators

• **Linux** **On Linux and UNIX platforms:** *install_root*/logs/log.txt
 	
• **Windows** **On Windows platforms:** *install_root*\logs\log.txt
	• Logs all installation events relating to WebSphere Application Server Network Deployment.
	
	• Created when WebSphere Application Server Network Deployment is silently installed.
		INSTCONFFAILED
		    Total installation failure.
		
		INSTCONFSUCCESS
		    Successful installation.
		
		INSTCONFPARTIALSUCCESS
		    Installation errors occurred but the installation is still usable. Additional information in other log files identifies the errors.

• **Linux** **On Linux and UNIX platforms:** *install_root* /logs/instconfig.log • **Windows** **On Windows platforms:** *install_root* \logs\instconfig.log	• Logs configuration actions that run at the end of the installation process to configure components, install system applications, and create Windows shortcuts and registry entries. • Created when WebSphere Application Server Network Deployment is silently installed.	Contains a series of <record> elements that document the configuration actions.

• **Linux** **On Linux and UNIX platforms:** *install_root* /logs/wbi/uninstlog.txt
 	
• **Windows** **On Windows platforms:** *install_root* \logs\wbi\uninstlog.txt
	Logs all uninstallation events relating to WebSphere Process Server.	**INSTCONFFAILED**
		    Total uninstallation failure.
		
		INSTCONFSUCCESS
		    Successful uninstallation.
		
		INSTCONFPARTIALSUCCESS
		    The Uninstallation Wizard successfully removed the core product files, but errors occurred during configuration. Additional information in other log files identifies the errors.

• **Linux** **On Linux and UNIX platforms:** *install_root* /logs/wbi/uninstconfig.log • **Windows** **On Windows platforms:** *install_root* \logs\wbi\uninstconfig.log	Logs configuration actions that run at the end of the uninstallation process.	Contains a series of <record> elements that document the configuration actions.

Troubleshooting the Business Process Choreographer configuration

Use this topic to solve problems relating to the configuration of the business process container, or the human task container.

The purpose of this section is to aid you in understanding why the configuration of your business process container or human task container is not working as expected and to help you resolve the problem. The following tasks focus on problem determination and finding solutions to problems that might occur during the configuration of the business process container or the human task container.

• Troubleshoot the Business Process Choreographer database and data source.

- Troubleshoot the Business Process Choreographer queue manager and JMS provider

Troubleshooting the Business Process Choreographer database and data source

Use this task to solve problems with the Business Process Choreographer database and data source.

Both the business process container and the human-task container need a database. Without the database, enterprise applications that contain business processes and human tasks will not work.

- If you are using DB2®:
  - If the `db2diag.log` file of your DB2 instance contains messages like ADM5503E as illustrated below:

    ```
    2004-06-25-15.53.42.078000   Instance:DB2   Node:000
    PID:2352(db2syscs.exe)   TID:4360   Appid:*LOCAL.DB2.027785142343
    data management  sqldEscalateLocks Probe:4   Database:BPEDB

    ADM5503E  The escalation of "10" locks on table "GRAALFS .ACTIVITY_INSTANCE_T"
              to lock intent "X" has failed.  The SQLCODE is "-911"
    ```

    Increase the `LOCKLIST` value. For example to set the value to 500, enter the following DB2 command:

    ```
    db2 UPDATE DB CFG FOR BPEDB USING LOCKLIST 500
    ```

    This can improve performance significantly.
  - To avoid deadlocks, make sure your database system is configured to use sufficient memory, especially for the bufferpool. For DB2, use the DB2 Configuration Advisor to determine reasonable values for your configuration.
  - If you get errors mentioning the data source implementation class `COM.ibm.db2.jdbc.DB2XADataSource`:
    - Check that the values stored for `DB2_INSTALL_ROOT` and `DB2_JDBC_DRIVER_PATH` are set correctly.
    - Check that the class path definition for your JDBC provider is correct, and does not have two entries.
    - Check that the component-managed authentication alias is set to the `Emb` alias.
  - If you are using a remote DB2 for z/OS® database, and you get SQL code 30090N in the `SystemOut.log` file when the application server attempts to start the first XA transaction with the remote database, perform the following:
    - Make sure that the instance configuration variable `SPM_NAME` points to the local machine with a host name not longer than eight characters. If the host name is longer than eight characters, define a short alias in the `etc/hosts` file.
    - Otherwise, you might have invalid syncpoint manager log entries in the `sqllib/spmlog` directory. Try clearing the entries in the `sqllib/spmlog` directory and restart.
    - Consider increasing the value of `SPM_LOG_FILE_SZ`.
- If you are using Cloudscape™:
  - If you get a "Too many open files" error on Linux or UNIX systems, increase the number of file handles available, for example, to 4000 or more. For more information about how to increase the number of available file handles, refer to the documentation for your operating system.

– If you get a "Java™" class not found" exception when trying to invoke Cloudscape tools, make sure that you have set up the Java environment, and that your `classpath` environment variable includes the following JAR files:

  - `db2j.jar`
  - `db2jtools.jar`
  - `db2jcc.jar`
  - `db2jcview.jar`

– If you cannot connect to your Cloudscape database using the Cloudscape tools (like ij or cview) and you get the following exception:

```
ERROR XJ040: Failed to start database 'C:\WebSphere\AppServer\ProcessChoreographer\BPEDB',
   see the next exception for details.
ERROR XSDB6: Another instance of Cloudscape may have already booted the database
   C:\WebSphere\AppServer\ProcessChoreographer\BPEDB.
```

you must stop your WebSphere Application Server before using these tools because only one application can access the Cloudscape database at a time.

- If you installed a process application on a cluster, but get errors relating to the data source. Check that the data source JNDI name includes the cluster name. If it is like the default data source JNDI name `jdbc/BPEDB`, change the JNDI name for the data source for the application to `jdbc/BPEDB_cluster_name`, where *cluster_name* is the name of the cluster where the application is installed.

- If you get a database error when installing an enterprise application that contains a process. When an enterprise application is installed, any process templates are written into the Business Process Choreographer database. Make sure that the database system used by the business process container is running and accessible.

- If you have problems using national characters. Make sure that your database was created with support for Unicode character sets.

- If tables or views cannot be found in the database. When configuring the authentication alias for the data source, you must specify the same user ID that was used to create the database tables (or to run the scripts to create them).

Troubleshooting the Business Process Choreographer queue manager and JMS provider

Use this to solve problems with Business Process Choreographer relating to queues, the queue manager, and the Java Message Service (JMS) provider.

Business Process Choreographer uses reliable messaging. The messaging service can either be the JMS provider embedded in WebSphere, or the separately installed product WebSphere MQ. Here are some solutions to possible problems:

- If you do not want to stop the whole application server just to be able to stop a local WebSphere MQ queue manager on Windows® and UNIX® systems: Change the Transport Type from 'bindings' to 'client'. Compared to using local bindings, the extra overheads associated with using the client transport type will reduce the maximum workload throughput by approximately 5%.

- Problem on UNIX connecting to the queue manager. Edit the file `/var/mqm/mqs.ini`, and add one of the following properties to the definition for your queue manager:

```
IPCCBaseAddress=12
IPCCBaseAddress=4
```

- Restarting the business process container causes Business Process Choreographer Explorer to throw an exception. You must also restart Business Process Choreographer Explorer because it uses local bindings to the messaging service.

Troubleshooting a failed deployment

This topic describes the steps to take to determine the cause of a problem when deploying an application. It also presents some possible solutions.

This topic assumes the following things:
- You have a basic understanding of debugging a module.
- Logging and tracing is active while the module is being deployed.

The task of troubleshooting a deployment begins after you receive notification of an error. There are various symptoms of a failed deployment that you have to inspect before taking action.

1. Determine if the application installation failed.

   Examine the system.out file for messages that specify the cause of failure. Some of the reasons an application might not install include the following:
   - You are attempting to install an application on multiple servers in the same Network Deployment cell.
   - An application has the same name as an existing module on the Network Deployment cell to which you are installing the application.
   - You are attempting to deploy J2EE modules within an EAR file to different target servers.

2. If the application is installed correctly, examine it to determine if it started.

   If the application is not running, the failure occurred when the server attempted to initiate the resources for the application.

   a. Examine the system.out file for messages that will direct you on how to proceed.

   b. Determine if the resources are started.

      Resources that are not started prevent an application from running to protect against lost information. The reasons for a resource not starting include:
      - Bindings are specified incorrectly
      - Resources are not configured correctly
      - Resources are not included in the resource archive (RAR) file
      - Web resources not included in the Web services archive (WAR) file

   c. Determine if any components are missing.

      The reason for missing a component is an incorrectly built enterprise archive (EAR) file. Make sure that the all of the components required by the module are in the correct folders on the test system on which you built the Java archive (JAR) file. Preparing to deploy to a server contains additional information.

3. Examine the application to see if there is information flowing through it.

   Even a running application can fail to process information. Reasons for this are similar to those mentioned in step 2b.

4. Correct the problem and restart the application.

Troubleshooting business process and human tasks

Use this topic to solve problems relating to business processes and human tasks.

The purpose of this section is to aid you in understanding why your business process or human task is not working as expected and to help you resolve the problem. Business Process Choreographer uses the WebSphere Application Server

framework for traces, messages, and audit logs. The following tasks focus on problem determination and finding solutions to problems that might during the execution of a business process or task.

- Troubleshoot CWWB messages.
- Troubleshoot Business Process Choreographer Explorer.
- Troubleshoot the administration of business processes and human tasks.
- Troubleshoot the staff service and the staff plug-ins.
- Query and replay failed messages, using the administrative console.
- If none of the above information helps you to solve the problem, you might have to perform a more in-depth analysis of the problem using one or more of the following sources of information:
  - Use process-related audit trail information.
  - Use process-related messages.

Working with process-related or task-related messages

Messages that belong to Business Process Choreographer are prefixed with either *CWWB* for process-related messages, or *CWTK* for task-related messages. The format of these messages is *PrefixComponentNumberTypeCode*. The type code can be:

I   Information message

W   Warning message

E   Error message

When processes and tasks run, messages are either displayed in Business Process Choreographer Explorer, or they are added to the `SystemOut.log` file and traces. If the message text provided in these files is not enough to help you solve your problem, you can use the WebSphere Application Server symptom database to find more information. To view Business Process Choreographer messages, check the `activity.log` file by using the WebSphere log analyzer.

1. Start the WebSphere log analyzer.

   Run one of the following scripts:
   - On Windows systems, *install_root*/bin/waslogbr.bat
   - On Linux® and UNIX systems, *install_root*/bin/waslogbr.sh

2. **Optional:** Click **File > Update database > WebSphere Application Server Symptom Database** to check for the newest version of the symptom database.

3. **Optional:** Load the activity log. Load the log from the:
   - *install_root*\profiles*profile_name*\logs\activity.log file on Windows systems
   - *install_root*/profiles/*profile_name*/logs/activity.log file on Linux and UNIX systems

4. Select the activity log file and click **Open**.

Troubleshooting CWWB messages:

This describes the solutions for specific messages.

The following messages starting with the prefix `CWWB` are described in more detail:
- "Message: CWWBE0057I" on page 59
- "Message: CWWBA0010E" on page 58
- "Message: CWWBU0024E" on page 58

- "Message: CWWBE0037E"
- "Message: CWWBA0140E" on page 59
- If your error is not listed above, you can search for the error code on the IBM®
  technical support pages.
  - On the error page in the Web client, click the **Search for more information**
    link. This starts a search for the error code on the IBM technical support site.
    This site only provides information in English.
  - Copy the error message code that is shown on the Business Process
    Choreographer Explorer Error page to the clipboard. The error code has the
    format CWWBcnnnnc, where each c is a character and nnnn is a 4-digit number.
    Go to the WebSphere Process Server technical support page. Paste the error
    code into the **Additional search terms** field and click **Go**.

Message: CWWBA0010E:

This describes possible causes and solutions for this message.

This error message can appear to the user on an error page in Business Process
Choreographer Explorer.
- CWWBA0010E: Unexpected exception during execution. Error Class class
  com.ibm.bpe.api.UnexpectedFailureException Check the systemout.log file for
  "javax.jms.JMSException: MQJMS2005: failed to create MQQueueManager for
  '..._server1'" - which indicates that the queue manager was not running. Try
  starting the queue manager.
- CWWBA0010E: Unexpected exception during execution. This can happen if the
  wrong database password is used, which prevents Business Process
  Choreographer accessing the database. This can happen if, for example, you
  change the password for db2admin when you configure the business process
  container, but you do not also change it in DB2. Verify that the database
  administrator password stored in the Business Process Choreographer
  configuration matches the actual one set in the database. Restart the business
  process container.

Message: CWWBU0024E:

This describes possible causes and solutions for this message.

This error message can appear to the user on an error page in Business Process
Choreographer Explorer.

CWWBU0024E: Could not establish a connection to local business process EJB.
Reason: ″Naming Exception″ This error can indicate that the business process
container has been stopped. Verify that the application BPEContainer_*InstallScope*
is running, where *InstallScope* is either the *cluster_name* or *hostname_servername*.

Message: CWWBE0037E:

This describes possible causes and solutions for this message.

A common reason for this error is that a message is sent to a process (which is
identified using the values that are passed with the message for the correlation set
used by the receive or pick activity this message is addressed to) and the receive or
pick activity has already been navigated. That is, the message cannot be consumed
by this process instance anymore. To correct this problem you need to pass

correlation set values that match an existing process instance which has not yet navigated the corresponding receive or pick activity.

For more information about using correlation sets in business processes, see technote 1171649.

Message: CWWBA0140E:

This describes possible causes and solutions for this message.

CWWBA0140E: Instance not found, and create instance was false for this operation.

A common reason for this error is that a message is sent to a receive or pick activity (which cannot instantiate a new process instance because its `createInstance` attribute is set to `no`) and the values that are passed with the message for the correlation set which is used by this activity do not match any existing process instances. To correct this problem you must pass a correlation set value that matches an existing process instance.

For more information about using correlation sets in business processes, see Correlation sets in BPEL processes .

Message: CWWBE0057I:

This describes possible causes and solutions for this message.

This error message can appear to the user on an error page in Business Process Choreographer Explorer because an activity goes into the stopped state.

If you have an expiration time or date defined for your activity, check that the definition has the correct format, in particular make sure that there is no blank between the number and the unit of time. For example, the following are valid values:
• 1minute
• 2hours 4minutes 1second
• 1day 1hour

Troubleshooting Business Process Choreographer Explorer
Use this to solve problems relating to the Business Process Choreographer Explorer.

Use the following information to solve problems relating to Business Process Choreographer Explorer.
• If restarting the business process container causes an error in Business Process Choreographer Explorer. Business Process Choreographer Explorer uses local bindings, and must also be restarted.
• If you try to access Business Process Choreographer Explorer with a browser, but get the error message 'HTTP 404 - File not found', try the following:
  – Use the administrative console to make sure that the Web client application `BPEWebClient_hostname_servername` is actually deployed and running on the server.
  – In the administrative console, on the page for the application, under "View Deployment Descriptor", verify that the context root is `/bpe/webclient`.

- If you get an `EngineMissingReplyException` message, this is a symptom of a problem with your process model. For more information about solving this, see "Troubleshooting the administration of business processes and human tasks."
- If you get an error message when using Business Process Choreographer Explorer, click the link to the technical support search page to see if there is extra help abut the message. "Troubleshooting CWWB messages" on page 57
- If you can log onto Business Process Choreographer Explorer, but some items are not displayed, or if certain buttons are not enabled, this indicates a problem with your authorization.

  Possible solutions to this problem include:
  - Use the administrative console to turn security on.
  - Check that you are logged onto Business Process Choreographer Explorer using the correct identity. If you log on with a user ID that is not a process administrator, all administrative views and options will be invisible or not enabled.
  - Use WebSphere Integration Developer to check or modify the authorization settings defined in the business process.

Troubleshooting the administration of business processes and human tasks

This article describes how to solve some common problems with business processes.

The following information can help you to debug problems with your business processes.

- If you get the error `EngineMissingReplyException`, this means that a process ended without performing a reply activity. This happens if the process throws an exception, but does not handle it. Such exceptions are not passed up to the calling process, but the `EngineMissingReplyException` is passed up as far as Business Process Choreographer Explorer, the original exception that your process threw is not visible because it is masked by what is effectively an unhandled-exception exception. In a non-interruptible process, this error triggers compensation if compensation is enabled for the process. This is a modeling problem, you must catch all of the possible exceptions and perform a reply activity before the process ends. You can do this by adding a `Catch All` fault handler that always performs a reply.
- The administrative console stops responding if you try to stop a business process application while it still has process instances. Before you try to stop the application, you must stop the business processes so that no new instances are created, and do one of the following:
  - Wait for all of the existing process instances to end in an orderly way.
  - Terminate and delete all of the process instances.

  Only then, can you stop the process application. For more information about preventing this problem, refer to technote 1166009.
- Message "CWWBE0037E: Event unknown" can be caused by using invalid correlation sets.

Using process-related and task-related audit trail information

Logging must be enabled for the business process container, the task container, or both.

When logging is enabled, information is written to the audit trail when a significant step during the running of a task or a process occurs.
- "Structure of the audit trail database view for business processes" describes the structure of the audit trail database view for business process events.
- "Audit event types for business processes" on page 64 contains a list and description of all of the available event type codes that can occur during the processing of business processes.
- "Structure of the audit trail database view for human tasks" on page 66 describes the structure of the audit trail database views human task events.
- "Audit event types for human tasks" on page 68 contains a list and description of all of the available event type codes that can occur during the processing of human tasks.

Structure of the audit trail database view for business processes:

The AUDIT_LOG_B database view provides audit log information about business processes.

To read the content of the audit trail, use SQL or any other administration tool that supports the reading of database tables and views.

Audit events are related to process entities. The audit event types depend on the entity to which the event refers. The audit event types include:
- Process instance events (PIE)
- Activity instance events (AIE)
- Events related to variables (VAR)
- Control link events (CLE)
- Process template events (PTE)
- Scope-related events (SIE).

For a list of the audit event type codes, see "Audit event types for business processes" on page 64.

The following table describes the structure of the AUDIT_LOG_B audit trail view. It lists the names of the columns, the event types, and gives a short description for the column.

Inline tasks are logged in the AUDIT_LOG_B audit trail view and not in the TASK_LOG audit trail view. For example, claiming an inline participating task results in an ACTIVITY_CLAIMED event; a task-related event is not generated.

Table 10. Structure of AUDIT_LOG_B audit trail view

Name	PTE	PIE	AIE	VAR	CLE	SIE	Description
ALID	x	x	x	x	x	x	Identifier of the audit log entry.
EVENT_TIME	x	x	x	x	x	x	Timestamp of when the event occurred in Coordinated Universal Time (UTC) format.
AUDIT_EVENT	x	x	x	x	x	x	The type of event that occurred. For a list of audit event codes, see "Audit event types for business processes" on page 64
PTID	x	x	x	x	x	x	Process template ID of the process that is related to the current event.

Table 10. Structure of AUDIT_LOG_B audit trail view (continued)

Name	PTE	PIE	AIE	VAR	CLE	SIE	Description
PIID		x	x	x	x	x	Process instance ID of the process instance that is related to the current event.
PROCESS_TEMPL_ NAME	x	x	x	x	x	x	Process template name of the process template that is related to the current event.
TOP_LEVEL_PIID		x	x	x	x	x	Identifier of the top-level process that is related to the current event.
PARENT_PIID		x	x	x	x	x	Process instance ID of the parent process, or `null` if no parent exists.
VALID_FROM	x	x	x	x	x	x	Valid-from date of the process template that is related to the current event.
ACTIVITY_NAME			x			x	Name of the activity on which the event occurred.
ACTIVITY_KIND			x				Kind of the activity on which the activity occurred. Possible values are: KIND_INVOKE 21 KIND_RECEIVE 23 KIND_ REPLY 25 KIND_TERMINATE 26 KIND_WAIT 27 KIND_EMPTY 28 KIND_COMPENSATE 29 KIND_WHILE 34 KIND_PICK 36 KIND_FLOW 38 KIND_SCRIPT 42 KIND_STAFF 43 KIND_ASSIGN 44 KIND_RETHROW 46 These are the constants defined for ActivityInstanceData.KIND_*
ACTIVITY_STATE			x				State of the activity that is related to the event. Possible values are: STATE_INACTIVE 1 STATE_ READY 2 STATE_RUNNING 3 STATE_SKIPPED 4 STATE_FINISHED 5 STATE_FAILED 6 STATE_TERMINATED 7 STATE_CLAIMED 8 STATE_TERMINATING 9 STATE_FAILING 10 STATE_WAITING 11 STATE_EXPIRED 12 STATE_STOPPED 13 These are the constants defined for ActivityInstanceData.STATE_*

Table 10. Structure of AUDIT_LOG_B audit trail view (continued)

Name	PTE	PIE	AIE	VAR	CLE	SIE	Description
CONTROL_LINK_ NAME					x		Name of the link that is related to the current link event.
PRINCIPAL		x	x	x	x	x	Name of the principal.
VARIABLE_DATA				x			Data for variables for `variable updated` events.
EXCEPTION_TEXT		x	x			x	Exception message that caused an activity or process to fail. Applicable for: PROCESS_FAILED ACTIVITY_FAILED SCOPE_FAILED
DESCRIPTION		x	x	x	x	x	Description of activity or process, containing potentially resolved replacement variables.
CORR_SET_INFOR		x					The stringified form of the correlation set that was initialized at process start time.
USER_NAME		x	x				The name of the user whose work item has been changed. This is applicable for the following events: • process instance work item deleted • activity instance work item deleted • process instance work item created • activity instance work item created
VARIABLE_NAME				x			The name of the variable related to the current event.
SIID						x	The ID of the scope instance related to the event.
ATID			x				The ID of the activity template related to the current event.

Table 10. Structure of AUDIT_LOG_B audit trail view (continued)

Name	PTE	PIE	AIE	VAR	CLE	SIE	Description
ADDITIONAL_INFO	x		x			x	The contents of this field depends on the type of the event: **ACTIVITY_WORKITEM_ TRANSFERRED, PROCESS_WORK_ITEM_ TRANSFERRED** The name of the user that received the work item. **ACTIVITY_WORKITEM_CREATED, ACTIVITY_WORKITEM_ REFRESHED, ACTIVITY_ESCALATED** The list of all of the users for which the work item was created or refreshed, separated by ','. If the list contains only one user, USER_NAME field is filled with the user name of this user. **PROCESS_EVENT_RECEIVED, SCOPE_EVENT_RECEIVED** The type of operation that was received by an event handler. The following format is used: '{' port type namespace '}' port type name ':' operation name

Audit event types for business processes:

The following tables list the types of audit events that can occur while processes are running. These events can be written to the audit log and the Common Event Infrastructure. For an event to be logged, the following conditions must be met:

- The corresponding logging type is enabled for the business process container
- The event must be enabled for the corresponding entity in the process model

Table 11. Process instance events

Audit event	Event code
PROCESS_STARTED	21000
PROCESS_COMPLETED	21004
PROCESS_TERMINATED	21005
PROCESS_DELETED	21020
PROCESS_FAILED	42001
PROCESS_COMPENSATING	42003
PROCESS_COMPENSATED	42004
PROCESS_TERMINATING	42009
PROCESS_FAILING	42010
PROCESS_CORRELATION_SET_INITIALIZED	42027

Table 11. Process instance events (continued)

Audit event	Event code
PROCESS_COMPENSATION_INDOUBT	42030
PROCESS_WORKITEM_DELETED	42041
PROCESS_WORKITEM_CREATED	42042
PROCESS_COMPENSATION_FAILED	42046
PROCESS_EVENT_RECEIVED	42047
PROCESS_EVENT_ESCALATED	42049
PROCESS_WORKITEM_TRANSFERRED	42056

Table 12. Activity events

Audit event	Event code
ACTIVITY_READY	21006
ACTIVITY_STARTED	21007
ACTIVITY_COMPLETED	21011
ACTIVITY_CLAIM_CANCELED	21021
ACTIVITY_CLAIMED	21022
ACTIVITY_TERMINATED	21027
ACTIVITY_FAILED	21080
ACTIVITY_EXPIRED	21081
ACTIVITY_LOOPED	42002
ACTIVITY_TERMINATING	42008
ACTIVITY_FAILING	42011
ACTIVITY_OUTPUT_MESSAGE_SET	42012
ACTIVITY_FAULT_MESSAGE_SET	42013
ACTIVITY_STOPPED	42015
ACTIVITY_FORCE_RETRIED	42031
ACTIVITY_FORCE_COMPLETED	42032
ACTIVITY_UNDO_STARTED	42033
ACTIVITY_UNDO_SKIPPED	42034
ACTIVITY_UNDO_COMPLETED	42035
ACTIVITY_MESSAGE_RECEIVED	42036
ACTIVITY_LOOP_CONDITION_TRUE	42037
ACTIVITY_LOOP_CONDITION_FALSE	42038
ACTIVITY_WORKITEM_DELETED	42039
ACTIVITY_WORKITEM_CREATED	42040
ACTIVITY_ESCALATED	42050
ACTIVITY_WORKITEM_REFRESHED	42054
ACTIVITY_WORKITEM_TRANSFERRED	42055

Table 13. Events related to variables

Audit event	Event code
VARIABLE_UPDATED	21090

Table 14. Control link events

Audit event	Event code
LINK_EVALUATED_TO_TRUE	21034
LINK_EVALUATED_TO_FALSE	42000

Table 15. Process template events

Audit event	Event code
PROCESS_INSTALLED	42006
PROCESS_UNINSTALLED	42007

Table 16. Scope instance events

Audit event	Event code
SCOPE_STARTED	42020
SCOPE_FAILED	42021
SCOPE_FAILING	42023
SCOPE_TERMINATED	42024
SCOPE_COMPLETED	42026
SCOPE_COMPENSATING	42043
SCOPE_COMPENSATED	42044
SCOPE_COMPENSATION_FAILED	42045
SCOPE_EVENT_RECEIVED	42048
SCOPE_EVENT_ESCALATED	42051

Structure of the audit trail database view for human tasks:

The TASK_AUDIT_LOG database view provides audit log information about human tasks.

To read the content of the audit trail, use SQL or any other administration tool that supports the reading of database tables and views.

Audit events are related to task entities. The audit event types depend on the entity to which the event refers. The audit event types include:
• Task instance events (TIE)
• Task template events (TTE)
• Escalation instance events (EIE)

The following table describes the structure of the TASK_AUDIT_LOG audit trail view. It lists the names of the columns, the event types, and gives a short description for the column.

Inline tasks are logged in the`AUDIT_LOG_B` audit trail view and not in the `TASK_AUDIT_LOG` audit trail view. For example, claiming an inline participating task results in an ACTIVITY_CLAIMED event; a task-related event is not generated.

Table 17. Structure TASK_AUDIT_LOG audit trail view

Name	TIE	TTE	EIE	Description
ALID	x	x	x	The identifier of the audit log entry.
AUDIT_EVENT	x	x	x	The type of event that occurred. For a list of audit event codes, see "Audit event types for human tasks" on page 68.
CONTAINMENT_CTX_ID	x	x		The identifier of the containing context, for example, PTID, TKTID, or TKIID.
ESIID			x	The identifier of the escalation instance that is related to the current event.
ESTID			x	The identifier of the escalation template that is related to the current event.
EVENT_TIME	x	x	x	The time when the event occurred in Coordinated Universal Time (UTC) format.
FAULT_NAME	x			The name of the fault message. This attribute is applicable to the following events: TASK_FAILED TASK_FAULT_MESSAGE_UPDATED
FAULT_NAME_SPACE	x			The namespace of the fault message.
FOLLOW_ON_TKIID	x			The ID of the follow-on task instance.
NAME	x	x	x	The name of the task instance, task template, or escalation instance that is associated with the event.
NAMESPACE	x	x		The namespace of the task instance, task template, or escalation instance that is associated with the event.
NEW_USER	x		x	The new owner of a transferred work item. This attribute is applicable to the following events: TASK_WORKITEM_CREATED TASK_WORKITEM_DELETED TASK_WORKITEM_TRANSFERRED ESCALATION_WORKITEM_CREATED ESCALATION_WORKITEM_DELETED ESCALATION_WORKITEM_TRANSFERRED
OLD_USER	x		x	The previous owner of a transferred work item. This attribute is applicable to the following events: TASK_WORKITEM_TRANSFERRED ESCALATION_WORKITEM_TRANSFERRED
PARENT_CONTEXT_ID	x			The ID of the parent context of the task, for example, an activity template or a task instance.
PARENT_TASK_NAME	x			The name of the parent task instance or template.
PARENT_TASK_NAMESP	x			The namespace of the parent task instance or template.
PARENT_TKIID	x			The identifier of the parent task instance.
PRINCIPAL	x	x	x	The name of the principal whose request triggered the event.

Table 17. Structure TASK_AUDIT_LOG audit trail view (continued)

Name	TIE	TTE	EIE	Description
TASK_KIND	x	x		The kind of the task. Possible values are: KIND_HUMAN 101 KIND_ORIGINATING 103 KIND_PARTICIPATING 105 KIND_ADMINISTRATIVE 106
TASK_STATE	x			The state of the task. Possible values are: STATE_STARTED 1 STATE_STOPPED 2
TKIID	x	x		The identifier of the task instance.
TKTID	x	x		The identifier of the task template.
TOP_TKIID	x			The identifier of the top task instance.
VALID_FROM		x		Valid-from date of the task template that is related to the current event.
WORK_ITEM_REASON	x			The reason for the assignment of the work item. Possible values are: REASON_POTENTIAL_OWNER REASON_EDITOR REASON_READER REASON_OWNER REASON_POTENTIAL_STARTER REASON_STARTER REASON_ADMINISTRATOR REASON_POTENTIAL_SENDER REASON_ORIGINATOR REASON_ESCALATION_RECEIVER REASON_POTENTIAL_INSTANCE_CREATOR

Audit event types for human tasks:

The following tables list the codes for audit events that can occur while human tasks are running. For an event to be logged, the following conditions must be met:

- The corresponding logging type is enabled for the human task container
- The event must be enabled for the corresponding entity in the task model

Table 18. Task instance events

Audit event	Event code
TASK_CREATED	51001
TASK_DELETED	51002
TASK_STARTED	51003
TASK_COMPLETED	51004
TASK_CLAIM_CANCELLED	51005
TASK_CLAIMED	51006
TASK_TERMINATED	51007
TASK_FAILED	51008
TASK_EXPIRED	51009
TASK_WAITING_FOR_SUBTASK	51010

Table 18. Task instance events (continued)

Audit event	Event code
TASK_SUBTASKS_COMPLETED	51011
TASK_RESTARTED	51012
TASK_SUSPENDED	51013
TASK_RESUMED	51014
TASK_COMPLETED_WITH_FOLLOW_ON	51015
TASK_UPDATED	51101
TASK_OUTPUT_MESSAGE_UPDATED	51103
TASK_FAULT_MESSAGE_UPDATED	51104
TASK_WORKITEM_DELETED	51201
TASK_WORKITEM_CREATED	51202
TASK_WORKITEM_TRANSFERRED	51204
TASK_WORKITEMS_TRANSFERRED	51205

Table 19. Task template events

Audit event	Event code
TASK_TEMPLATE_INSTALLED	52001
TASK_TEMPLATE_UNINSTALLED	52002

Table 20. Escalation instance events

Audit event	Event code
ESCALATION_FIRED	53001
ESCALATION_WORKITEM_DELETED	53201
ESCALATION_WORKITEM_CREATED	53202
ESCALATION_WORKITEM_TRANSFERRED	53203
ESCALATION_WORKITEM_REFRESHED	53204

Troubleshooting business rules manager

Some areas to examine if you experience problems with business rules manager are: login error, login conflict, and access conflict.

Login error

Upon logging in, you receive a login error message.

The login error message:

```
Unable to process login. Please check User ID and password and try again.
```

This error occurs when global security is enabled and either the userid, the password, or both, are incorrect.

Note: Login errors occur only when global security is enabled.

1. Click **OK** on the error message.

   You return to the login page.

2. Enter valid **User ID** and **Password**.

Make sure that Caps Lock key is not on, if passwords are case sensitive.

Make sure the userid and password are spelled correctly.

Check with the system administrator to see that the userid and password are correct.

3. Click the **Login** button.

If you resolve the login error, you will now be able to login to the business rules manager. If the error is not resolved, contact your system administrator.

Login conflict error

This event occurs when another user with the same userid is already logged in to the application.

The login conflict message is:

```
Another user is currently logged in with the same User ID. Select from the
following options:
```

Usually this error occurs when a user closed the browser without logging out. When this condition occurs, the next attempted login before the session timeout expires results in a login conflict.

Note: Login conflict occurs only when global security is enabled.

There are three options that you can choose.
- Return to the login page.
  Use this option if you want to open the application with a different userid.
- Logout the other user with the same userid.
  Use this option to logout the other user and start a new session.

  Note: Any unpublished local changes made in the other session are lost.
- Inherit the context of the other user with the same userid and logout that user.
  Use this option to continue work already in progress. All unpublished local changes in the previous session that have been saved are not lost. The business rules manager opens to the last page displayed in the previous session.

Access conflict errors

Access conflicts occur when a business rule is updated in the database by one user at the same time another user is updating the same rule.

This error is reported when you publish your local changes to the database.

These are the actions to correct access conflict errors.
- Publish the Rule page.
- Find the source of the business rule that is causing the error and check if your changes on the local machine are still valid. Your change may no longer be required after the changes done by another user.
- If you choose to continue working in the business rule manager, you must reload Rule Pages in the error from the database as your local changes of Rule pages in error are no longer usable. You can still use local changes in other Rule pages that are not in error.

- Reload a Rule page, by clicking **Reload** in the Publish and Revert page of the rule for which the error was reported. See Publishing business rules for more information.

Troubleshooting the Common Base Event browser

There are four primary conditions under which you will be unable to access the Common Base Event browser.

Conditions

″**Cannot find server**″
  WebSphere Process Server (or network server) is unavailable. When you attempt to launch the event browser URI, a ″Cannot find server″ browser page will be returned, which indicates that the server is unavailable. In this case, you need to contact the IBM Help Desk to determine the cause of the problem.

″**File not found**″
  WebSphere Process Server is available; however, the event browser application may not be installed or started on the server. When you attempt to launch the event browser URI, a ″File not found″ browser page will be returned, which indicates that the server is available, but the URI is not available on that server. In this case, you need to contact the IBM Help Desk to determine the cause of the problem.

Logon panel appears
  The WebSphere Process Server and the event browser are available; however, you have not been mapped to the proper role to allow access to the event browser. You will be prompted with a logon panel. When you enter your userID and password, attempting to log in, the login will fail. In this case, you need to contact the IBM Help Desk to get the proper authorization to launch the event browser.

Error message on ″**Get event data**″ **panel**
  The WebSphere Process Server and the event browser are available, and you have the proper authority to gain access; however, the Common Event Infrastructure server is unavailable. An error message will be displayed on the event browser **Get Events** panel, when you click the **Get Events** button. The error information will be logged to the message log.

WebSphere Application Server troubleshooting

Because IBM WebSphere Process Server is built on IBM WebSphere Application Server Network Deployment, version 6.0, you may want to consult troubleshooting information in the WebSphere Application Server documentation.

IBM$^{(R)}$ WebSphere$^{(R)}$ Process Server is built on WebSphere Application Server Network Deployment, version 6.0. WebSphere Process Server also works with infrastructure and platform services from IBM WebSphere Application Server, version 6.0.

For more information about troubleshooting in WebSphere Application Server, refer to Troubleshooting and support in the WebSphere Application Server Network Deployment Version 6.0, information center. To view the topic, expand **Troubleshooting and support > Troubleshooting WebSphere applications** in the table of contents.

Searching knowledge bases

If you have a problem with your IBM software, you want it resolved quickly. Begin by searching the available knowledge bases to determine whether the resolution to your problem is already documented.

1. Search the information center.

   IBM[(R)] provides extensive documentation in the form of online information centers. An information center can be installed on your local machine or on a local intranet. An information center can also be viewed on the IBM Web site. You can use the powerful search function of the information center to query conceptual and reference information as well as detailed instructions for completing tasks.

2. Search the Internet.

   If you cannot find an answer to your question in the information center, search the Internet for the latest, most complete information that might help you resolve your problem. To search multiple Internet resources for your product, open the IBM Support Assistant and select the **Web Search** tab. From this page, you can search a variety of resources including:

   - IBM technotes
   - IBM downloads
   - IBM Redbooks
   - IBM developerWorks
   - Forums and newsgroups
   - Google

Getting fixes

A product fix may be available to resolve your problem.

You can determine what fixes are available by running a query from the IBM[(R)] Support Assistant.

1. Open the IBM Support Assistant.
2. From the search page, type **fix** in the Search phrase entry.
3. Select **IBM Software Support Documents**, **specific document type**, **IBM downloads** and the product name.
4. Click the **Search** button. The search results are returned as a link in the left frame.

You can search for recommended updates on the IBM Support page for WebSphere Process Server to view a comprehensive list of recommended updates for WebSphere Process Server releases, along with a list of previously delivered updates.

Tip: Receive a custom e-mail each week with important news about the IBM products you select. My Support e-mail can now include technotes, release notes, education, and more. If you already receive weekly e-mails, update your profile today with the new options.

About My Support:

- Go to the My Support Web site. It is available from any IBM Support page.
- If you are new to My Support, go to My Support and click **register now**.

- Update your profile to select new products or include new content by clicking the **Edit profile** tab.
- Register for other useful e-mails by clicking the **Subscribe to email** link.

For information on installing interim fixes, fix packs, and refresh packs, see "Applying service" on page 2.

Contacting IBM Software Support

IBM Software Support provides assistance with product defects.

To take advantage of unique Support features go to the IBM developerWorks WebSphere Business Integration Zone Web site and select **WebSphere Process Server**.

Before contacting IBM[(R)] Software Support, your company must have an active IBM software maintenance contract, and you must be authorized to submit problems to IBM. The type of software maintenance contract that you need depends on the type of product you have.

- For IBM eServer software products (including, but not limited to, DB2[(R)] and WebSphere[(R)] products that run in zSeries[(R)], pSeries[(R)], and iSeries[(TM)] environments), you can purchase a software maintenance agreement by working directly with an IBM sales representative or an IBM Business Partner. For more information about support for eServer software products, refer to the IBM Technical support advantage Web site.
- For IBMLink[(TM)], CATIA, Linux[(TM)], S390[(R)], iSeries, pSeries, zSeries and other support agreements, refer to the IBM Support Line Web site.
- For Subscription and Support (S & S) contracts, refer to the IBM Software Service Request Web site.
- For IBM distributed software products (including, but not limited to, Tivoli[(R)], Lotus[(R)], and Rational[(R)] products, as well as DB2 and WebSphere products that run on Windows[(R)] or UNIX[(R)] operating systems), enroll in Passport Advantage[(R)] in one of the following ways:
  - Online: Go to the Passport Advantage Web site and click **How to Enroll**.
  - By phone: For the phone number to call in your country, go to the contacts page of the and click the name of your geographic region.

If you are not sure what type of software maintenance contract you need, call 1-800-IBMSERV (1-800-426-7378) in the United States or, from other countries, go to the contacts page of the IBM Software Support Handbook on the Web and click the name of your geographic region for phone numbers of people who provide support for your location.

1. Determine the business impact of your problem. When you report a problem to IBM, you are asked to supply a severity level. Therefore, you need to understand and assess the business impact of the problem you are reporting. Use the following criteria:

Table 21.

Severity level	Description
Severity 1	Critical business impact: You are unable to use the program, resulting in a critical impact on operations. This condition requires an immediate solution.

Table 21. (continued)

Severity level	Description
Severity 2	Significant business impact: The program is usable but is severely limited.
Severity 3	Some business impact: The program is usable with less significant features (not critical to operations) unavailable.
Severity 4	Minimal business impact: The problem causes little impact on operations, or a reasonable circumvention to the problem has been implemented.

2. Describe your problem and gather background information. When explaining a problem to IBM, be as specific as possible. Include all relevant background information so that IBM Software Support specialists can help you solve the problem efficiently. To save time, know the answers to these questions:
   - What software versions were you running when the problem occurred?
   - Do you have logs, traces, and messages that are related to the problem symptoms? IBM Software Support is likely to ask for this information.
   - Can the problem be recreated? If so, what steps led to the failure?
   - Have any changes been made to the system? (For example, hardware, operating system, networking software, and so on.)
   - Are you currently using a workaround for this problem? If so, please be prepared to explain it when you report the problem.
3. Submit your problem to IBM Software Support. You can submit your problem in one of two ways:
   - Online: Go to the Submit and track problems page on the IBM Software Support site. Enter your information into the appropriate problem submission tool.
   - By phone: For the phone number to call in your country, go to the contacts page of the IBM Software Support Handbook on the Web and click the name of your geographic region.

If the problem you submit is for a software defect or for missing or inaccurate documentation, IBM Software Support creates an Authorized Program Analysis Report (APAR). The APAR describes the problem in detail. Whenever possible, IBM Software Support provides a workaround for you to implement until the APAR is resolved and a fix is delivered.

IBM publishes resolved APARs on the IBM product support Web pages daily, so that others who experience the same problem can benefit from the same resolutions.

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