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PeopleTools 8.51 PeopleBook: Change Assistant

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PeopleSoft Change Assistant Preface

This preface describes the content of the PeopleSoft Change Assistant PeopleBook and discusses PeopleBooks and the Online PeopleSoft Library.

PeopleSoft Change Assistant and Environment Management Framework

This PeopleBook contains overview information and describes how to:

- Install, configure, and use the PeopleSoft Environment Management Framework (EMF).
- Install, configure, and use the PeopleSoft Change Assistant.
- Apply PeopleSoft application "maintenance" (change packages) using PeopleSoft Change Assistant and the PeopleSoft Environment Management Framework.
- Use PeopleSoft Change Assistant and the PeopleSoft Environment Management Framework within the context of a full, PeopleSoft upgrade.

PeopleBooks and the PeopleSoft Online Library

A companion PeopleBook called *PeopleBooks and the PeopleSoft Online Library* contains general information, including:

- Understanding the PeopleSoft online library and related documentation.
- How to send PeopleSoft documentation comments and suggestions to Oracle.
- How to access hosted PeopleBooks, downloadable HTML PeopleBooks, and downloadable PDF PeopleBooks as well as documentation updates.
- Understanding PeopleBook structure.
- Typographical conventions and visual cues used in PeopleBooks.
- ISO country codes and currency codes.
- PeopleBooks that are common across multiple applications.
- Common elements used in PeopleBooks.
- Navigating the PeopleBooks interface and searching the PeopleSoft online library.
- Displaying and printing screen shots and graphics in PeopleBooks.
- How to manage the locally installed PeopleSoft online library, including web site folders.
- Understanding documentation integration and how to integrate customized documentation into the library.

- Application abbreviations found in application fields.

You can find this companion PeopleBook in your PeopleSoft online library.

Part 1

Configuring and Working With Change Assistant

Chapter 1

Getting Started with PeopleSoft Change Assistant

This chapter provides a high-level overview and describes:

- What needs to be in place before you can configure and use PeopleSoft Change Assistant.
- A 'quick start' list to help you understand the technology and get you up and running with Change Assistant.
- Where you can look for other sources of information.

PeopleSoft Change Assistant Overview

Oracle's PeopleSoft Change Assistant is a standalone, Windows based, Java program that expedites the process of a PeopleSoft software update or upgrade by automating most of the steps. Change Assistant utilizes all of the elements included in the Environment Management Framework to monitor information specific to your PeopleSoft implementation and deploy the necessary updates throughout your system.

Change Assistant provides these main benefits:

- Automates many of the steps in an upgrade or update process.
- Provides a clear step-by-step definition of the process for applying maintenance or performing an upgrade. Whether the process is automated or manual, as long as you complete each step, you will successfully apply the application maintenance or perform the upgrade.
- Provides in-line documentation for each of the steps in the process.

The Environment Management Framework performs these key tasks:

- Crawls a PS_HOME to discover and validate the components associated with a given PeopleSoft environment. Change Assistant uploads this environment information to the Update Gateway in order to produce a list of maintenance required for the given environment.
- Facilitate the deployment of files to various components in the PeopleSoft environment.

See Also

Chapter 2, "Understanding The Environment Management Framework and PeopleSoft Change Assistant," page 7

Installation

Prior to using Change Assistant the following items must be in place:

Step	Reference
Install PeopleTools	*PeopleTools 8.50 Installation for your platform*
Install the elements required for the Environment Management Framework and Change Assistant	*PeopleTools 8.50 Installation: Installing PeopleSoft Change Assistant*
Install your PeopleSoft application	Your PeopleSoft application installation guide

Quick Start

The following items provide a quick start reference for the main steps and concepts related to the implementation and use of Change Assistant. This list is designed to help get you up and running with Change Assistant as well to help you to understand the main functions for which Change Assistant was designed.

The steps appear in the logical order that you would perform them, and the links point to the location where the information for a specific item exists within this PeopleBook.

Step	Reference
1. Configure and start the PSEMHUB within your PeopleSoft environment.	See Chapter 3, "Configuring and Running Environment Management Components," Configuring the Environment Management Hub, page 15.
2. Configure and start the PSEMAgent on every server within your PeopleSoft environment.	See Chapter 3, "Configuring and Running Environment Management Components," Configuring an Environment Management Agent, page 19.
3. Install and configure Change Assistant, specifying the proper directories for file download and storage, and ensuring it can connect to the PSEMHUB.	See Chapter 4, "Configuring Change Assistant," page 33.
4. Upload your PeopleSoft environment information to Oracle.	See Chapter 6, "Discovering and Downloading Updates," Uploading Environment Data, page 61.
5. Use Change Assistant to access My Oracle Support and identify the bundles and updates that need to be applied to your specific environment.	See Chapter 6, "Discovering and Downloading Updates," Discovering Updates, page 63.
6. Download the required bundles and updates.	See Chapter 6, "Discovering and Downloading Updates," page 61.
7. Use Change Assistant to apply the bundles and updates.	See Chapter 7, "Applying Updates," page 69.

Other Sources of Information

This section provides information to consider before you begin to use PeopleSoft Change Assistant. In addition to implementation considerations presented in this section, take advantage of all PeopleSoft sources of information, including the installation guides, release notes, PeopleBooks, and training courses.

See Also

Your PeopleSoft application upgrade documentation

PeopleTools 8.50 PeopleBook: Application Designer Developer's Guide

PeopleTools 8.50 PeopleBook: Application Designer Lifecycle Management Guide

PeopleTools 8.50 PeopleBook: Change Impact Analyzer

Chapter 2

Understanding The Environment Management Framework and PeopleSoft Change Assistant

This section provide overview information regarding:

- Environment Management Framework
- Change Assistant
- Software update process
- Software upgrade process
- Source and target databases

Environment Management Framework

Environment management framework-Environment Management Framework (EMF) is a collection of software elements that gathers and publishes PeopleSoft installation, configuration, and update information. It enables you to identify and view data about PeopleSoft environments. You can use EMF to obtain a snapshot of configuration and setup information about the file servers, the web servers, the application servers, the individual hosts, and the PeopleSoft Process Scheduler servers that comprise your PeopleSoft system. EMF also provides a vehicle to carry out commands remotely on different machines on the network, directed by Change Assistant, which uses EMF to apply updates to PeopleSoft installations and configurations.

EMF consists of the following core elements:

- The Environment Management hub (PSEMHUB
- Environment Management Agent (PSEMAgent)
- The Environment Management viewer

Environment Management Hub

The Environment Management hub is a web application that is installed with the PeopleSoft Internet Architecture and portal. It is started along with the rest of the web applications when the user boots the web server. The hub is the broker for all communication between peers.

The Environment Management hub handles:

- Peer registration.

  The hub registers all of the information that is published by the agents. It also assigns a unique peer ID for every peer that engages in a dialogue with the hub.

- Maintenance of configuration information.

  The hub handles updates to configuration information, the correlation of information, and the grouping into environments based on the information that is published by the agents.

- Agent health monitoring.

  The hub keeps track of the state or "health" information of the managed components. It shows whether a peer is still running remotely or not.

- Message brokering.

  The hub services message service requests and responses from peers. The messages can be delivered to the respective peers even if the peers are not currently running. They are picked up the next time the peers "call in" to the hub. Typical messages include requests to deploy files to managed servers. It's recommended that the managed server agents be left up and running at all times to listen for messages from the hub. This is critical when applying software updates.

The Environment Management hub is installed as part of the standard PeopleSoft Internet Architecture installation. It supports both single-server and multi-server installations. The Environment Management hub is deployed in the J2EE containers as web application modules. They can be managed like any of the standard web application modules.

The following Environment Management hub directories are created on the J2EE container for the hub:

- With Oracle WebLogic:

  PIA_HOME\webserv*domain*\applications\peoplesoft\PSEMHUB

- With IBM WebSphere:

  PIA_HOME\webserv*server*\installedApps*domain*NodeCell/*domain*.ear\PSEMHUB.war

The required JAR files for the Environment Management hub are installed in the WEB-INF\lib subdirectory.

Agents

An Environment Management agent is a Java executable installed on the servers in a PeopleSoft environment, such as application servers, Process Scheduler servers, web servers, and so on. The Environment Management agent initiates communication with the hub and is assigned a unique peer ID. This ID persists and is reused for later connections by the agent.

The primary function of the agent is crawling the managed servers to identify manageable components. The metadata of the search results of the crawling are saved to the local hard disk. On startup, if the agent detects missing metadata, it recrawls the hard disk for manageable components. You can configure the drives and directory paths used for crawling.

The agent also publishes managed server information to the hub. After detecting a manageable component, the agent reads the non-sensitive information from configuration files of the component. Some relevant information that is related to environment and patch levels is also fetched from the database with which the application server or Process Scheduler communicates. The agent publishes this information to the hub upon initial connection and upon a recrawl or revalidate.

The agent also determines heartbeat and command execution. On every heartbeat, the agent pings the server to determine whether it has any pending messages. If there are pending messages for the agent, the messages are retrieved from the hub and carried out locally on the agent machine.

Note. You install the Environment Management agent by running the PeopleTools CD installation. The Environment Management agent is installed in the PSEMAgent directory in your *PS_HOME* with the server installation. If additional components are installed in the same *PS_HOME* location, the installer warns you that existing software may be overwritten.

Note. It is advisable to run only one agent at a time per physical machine.

See PeopleTools installation documentation for your database platform.

Viewer

The Environment Management viewer is a command-line tool enabling you to view data stored on the Environment Management hub. This data is saved in an XML file that contains data that is specific to individual customer sites—such as, information about environments, software updates, hosts, file servers, application servers, PeopleSoft Process Scheduler servers, and web servers. Users can view this static data in HTML.

The Environment Management viewer may only be executed on PeopleSoft web servers, from its installed location in *PS_HOME*\PSEMViewer. You don't have to carry out any additional installation steps to install the viewer.

EMF Terminology

The following terms relate to Environment Management:

Manageable component	A component that can be individually managed from the Environment Management hub. A manageable component for PeopleSoft is typically a file server, an application server, a web server, individual hosts, or a PeopleSoft Process Scheduler server.
Peer	A manageable component that is involved in a transaction with one or more peers in the Environment Management by using the hub as the intermediary. A peer may also be responsible for delegation of management responsibility to a collection of manageable components. Examples of peers are agents, Change Assistant, and the Environment Management viewer.
Heartbeat	"I am alive messages" sent by every peer to the hub. The default interval is configurable. On every heartbeat, the peer pings the server to see if it has any pending messages. If it does, the messages are taken and carried out.

Environment All of the manageable components in the enterprise that share the same globally unique identifier (GUID) in the database. There can be more than one instances of a type of managed component in an environment. For example, development environments can contain several application servers, Process Schedulers, and web servers.

GUID Uniquely identifies a particular PeopleSoft system. PeopleSoft assigns a unique value, referred to as a GUID, to each PeopleSoft application installation. This value can't be customized. When an Environment Management agent notifies the hub that it has found a manageable component belonging to an environment, if the GUID of the environment is not recognized, the hub creates a new environment representation.

Crawling The process of scanning the hard disk for known PeopleSoft patterns for manageable components. The hub has a set of configurable parameters by which the recrawl intervals can be altered. Based on this, the hub can issue a recrawl command to the agents to discover information about newly installed or changed configurations.

Note. During crawling, the Environment Management Framework uses the psserver property in the peopletools.properties file within each PS_HOME installation to determine the type of server(s) installed. For example, APP is application server, BATCH is Process Scheduler, DB is database server, WEB is web server, and FILE is file server.

Note. Recrawling includes revalidating.

Revalidate The process of checking whether the last set of managed components that have been discovered is still valid. The agent iterates through the list of components that have been discovered from the last recrawl. It then checks whether the current set of configuration parameters for the managed components have changed the management scope for the component. If so, the information is updated. If the new set of configuration options has made the component not usable, it is removed from the list of managed components. This information is updated in the hub the next time the agent communicates with the hub.

Change Assistant

Change Assistant is a standalone application that enables you to assemble and organize the steps necessary to apply updates and fixes for PeopleSoft application maintenance updates as well as performing upgrades. Change Assistant automates many of the steps, but will prompt you and guide you through any manual steps with embedded documentation.

You use Change Assistant for these situations:

- Applying maintenance packs, bundles, and individual updates related to PeopleSoft application maintenance. Maintenance packs, bundles, and updates all come in the form of change packages.
- Performing upgrades, which includes PeopleTools-only upgrades, PeopleSoft application-only upgrades, and combined PeopleTools and application upgrades.

Note. You *do not* use Change Assistant to apply PeopleTools patches.

Note. You use Change Assistant to apply updates that have a .ZIP extension. You *do not* use Change Assistant to apply updates that have an .EXE extension.

In order to perform reliable and accurate updates, Change Assistant gathers all the necessary information including the change log from the Environment Management hub and uploads it to Oracle. With the environment data available, Oracle can determine what updates apply to your environment.

You can obtain a list of all updates that have not been applied for a given application environment including all prerequisites. You can then download a set of change packages associated with the update IDs and install the patches and fixes with minimal effort.

Understanding Change Assistant Versions

You can use a newer version of Change Assistant than the version of PeopleTools you are using. However, the environment management agents and hub must be at the same version level as Change Assistant.

For example, your PeopleTools version could be at 8.50.09, but you can run Change Assistant at the 8.50.14 level as long as the agents and hub are also at the 8.50.14 level.

Maintaining Change Assistant

Periodically, Oracle provides patches for PeopleTools that supply fixes to critical defects. With each PeopleTools patch version, Oracle provides the following updates in executable format:

Executable	***Description***
version.exe For example, 85014.exe	Contains all current fixes to the entire PeopleTools product, including those fixes to the software update technology, which includes Change Assistant and all environment management elements (agents, hub, and so on).
version-PSCA.exe For example, 85014-PSCA.exe	Contains *only* the current fixes to apply to the software update technology, which includes Change Assistant and all environment management elements (agents, hub, and so on). The software update technology runs independently from the rest of PeopleTools.

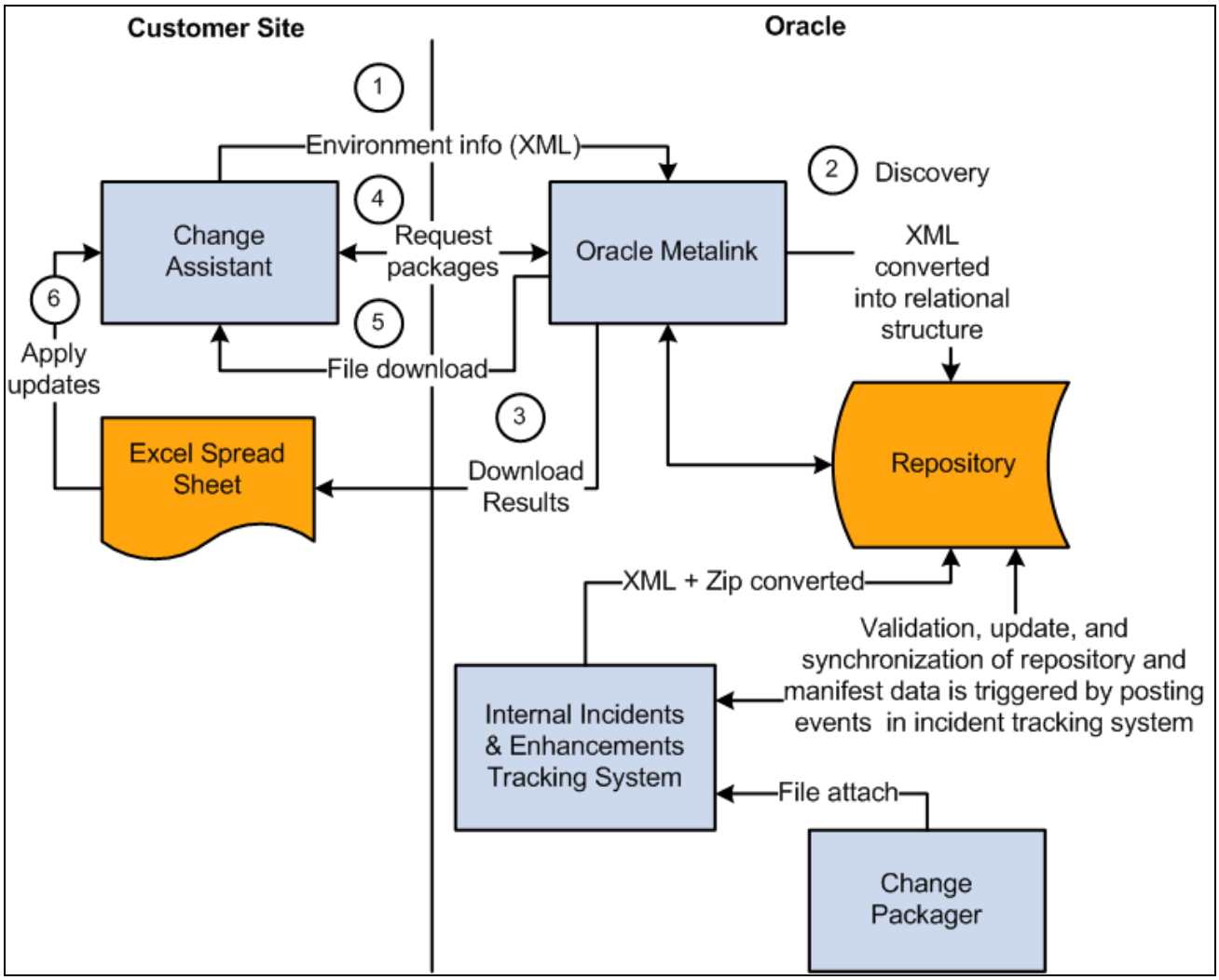
Note. If you install a complete PeopleTools patch, you do not need to apply the -PSCA patch individually. Apply the -PSCA patch individually only if you are interested in just the fixes for the software update tools and not the fixes for the entire PeopleTools product.

The -PSCA patch enables you to apply only the latest fixes to Change Assistant and the environment management framework without applying the latest full PeopleTools patch. By doing so, you can avoid the regression testing that typically occurs after applying a full PeopleTools patch.

Software Update Process

The software *update* process refers to applying change packages, bundles, and maintenance packs to your current PeopleSoft application. For example, PeopleSoft application development teams periodically post change packages containing fixes to various application elements, such as pages and PeopleCode programs, that you can download and apply to your PeopleSoft system. You use Change Assistant to apply software updates.

The following diagram shows the software update process. Descriptions of each steps and relationships between the elements in the diagram appear below.



Steps and elements involved in the software update process

Step	*Description*
1	After installing and configuring Change Assistant and the Environment Management components, you upload the environment data, including the patch history, to Oracle.

Step	*Description*
2	Using the application environment data provided by Change Assistant, Oracle can identify all the required updates in a given environment. This is the discovery phase.
3	As a Change Assistant user, you can access Oracle to obtain a list of update IDs. You can download those update IDs to an Excel spreadsheet and review them offline.
4	Once you have determined which updates you want to apply, then use Change Assistant to request all the change packages associated with the selected update IDs to be downloaded.
5	You can download an individual change package or multiple change packages.
6	After you have downloaded the change packages, you can then apply them in a batch or individually. If prerequisites or post-requisites are required, they will be included in the list as well.

Note. Change Assistant is *not* used to apply maintenance builds or patches to PeopleTools releases.

Software Upgrade Process

The software *upgrade* process refers to moving from one release level to a newer release. This typically involves installing a new version of PeopleTools and a new version of an existing PeopleSoft application.

This process uses Change Assistant, and the Environment Management Framework when running remote upgrade processes. If you are upgrading from one release of a PeopleSoft application to another application release, also consult your specific application's install and upgrade documentation.

Source and Target Databases

In various places within this PeopleBook, as well as any PeopleSoft documentation related to upgrades or database compares, the terms *source* and *target* are used. Knowing the meanings of these terms helps you to understand the context of a description or step.

During a PeopleSoft update or upgrade, in most cases, you copy application definitions (such as pages and records) from a *source* database to a *target* database. The definitions of these terms are:

source database The source database is the database *from which* the new changes are coming.

target database The target database is the database *to which* you are moving the new changes.

Note. Depending on whether you are performing an upgrade or update, and the stage within the process you are, these terms are relative and can refer to different databases.

For example, in a typical upgrade, you install the new version to a demonstration database, referred to as Demo. Then, you create a copy of your production database, referred to as Copy of Production. You then copy the modified definitions from the Demo database into the Copy of Production. In this context, your Demo database is your *source* and the Copy of Production is the *target.* Likewise, after you complete the initial copy and perform the required compares and tests, you begin a Move to Production pass. In this pass you take the Copy of Production database and incorporate the modified definitions into the Production database. In this context, the Copy of Production is your *source* and the Production database is your *target.*

When applying an update using the "Apply with Database Compare/Copy" option, the source database is the Demo database where the update (change package) has already been applied.

Chapter 3

Configuring and Running Environment Management Components

This chapter discusses how to:

- Configure the Environment Management hub.
- Run the Environment Management hub.
- Configure an Environment Management agent.
- Run an Environment Management agent.
- Run the viewer.
- Handle common error conditions.
- Configure and start an Environment Agent on z/OS.

Configuring the Environment Management Hub

Before you can run the Environment Management hub, you must ensure that it's properly configured.

The hub issues automatic recrawl and revalidate commands to the agents, and it can be configured to accept automatic updates from Change Assistant. You configure the hub by setting appropriate parameters in its configuration file, which is located as follows:

- WebLogic:

  PIA_HOME\webserv*domain*
  \applications\peoplesoft\PSEMHUB\envmetadata\config\configuration.properties

- WebSphere:

  PIA_HOME\webserv*server*\installedApps*domain*NodeCell/*domain.*
  ear\PSEMHUB.war/envmetadata/config\configuration.properties

The following table describes the primary configuration.properties parameters for the hub:

Configuration Parameter	Description	Default Value
recrawlinterval	The interval, in hours, between two successive recrawl commands that have been issued to a peer. The server issues recrawl commands only to agents that are connected to the hub and have no pending messages in the queue. This configuration parameter is ignored by the agent.	*24* hours **Note.** A *0* value means that it will not recrawl. Recrawling includes a revalidating.
revalidateinterval	The maximum time, in hours, between two successive automatic revalidates that the hub issues.	*6* hours **Note.** A *0* value means that it will not revalidate.

Hub Security Considerations

Environment Management framework does not support HTTPS connections. The agent and hub communicate using standard HTTP only.

On WebSphere, or for a single server configuration on WebLogic, PSEMHUB is a web application running within PIA. If PIA is configured to be accessed using HTTPS, you need to configure a separate server instance for the hub to enable the HTTP connections between agents and hub.

Configuring Hub Logging

The Environment Management hub logs are located as follows:

- WebLogic: *PIA_HOME*\webserv*domain*\applications\peoplesoft\PSEMHUB\envmetadata\logs
- WebSphere: *PIA_HOME* \webserv\ps1\installedApps\<domain>NodeCell/<domain>.ear\PSEMHUB.war/envmetadata/logs

Edit the .....\PSEMHUB\envmetadata\config\Logconfig.properties to configure logging for the hub. The following two Logconfig.properties parameters, which determine the maximum size of each log file, and the amount of log files rolled over, can be changed:

- log4j.appender.R.MaxFileSize=1024KB
- log4j.appender.R.MaxBackupIndex=1"

Running the Environment Management Hub

This section discusses how to:

- Run the hub on a single server.
- Run the hub on multiple servers.

Before you run the Environment Management agent, you must first ensure that it's properly configured in the hub's configuration.properties file.

Running the Hub on a Single Server

On a single server, the PSEMHUB starts within PIA, so use the command you use for your web server to start PIA.

Running the Hub on Multiple Servers

Environment Management also supports multi-server installs. However, the Environment Management hub does not support clustering. The Environment Management hub persists metadata into the file system on the J2EE container. This is not replicated in a clustered environment. You experience erroneous behavior when you attempt to run the Environment Management hub in a clustered environment.

The Environment Management hub deals with large binary files that Change Assistant sends to the agents by using the hub as the intermediary dispatcher. This can create significant overhead to a production system that is running on a multi-server clustered environment. Therefore, PSEMHUB must always run on separate servers dedicated to the Environment Management hub requests.

Starting PSEMHUB on Multiple Servers on WebLogic

In a multiple server configuration, the PSEMHUB server listens on port *8081*, by default.

Use the following steps to start the WebLogic hub:

1. Configure the Environment Management hub to run on a server that is different from the PeopleSoft Internet Architecture servers.

2. Configure the reverse proxy to redirect any network traffic with a uniform resource identifier (URI) of PSEMHUB to the server running the Environment Management hub.

   On the machine from which the RPS application runs, access the HttpProxyServlet folder.

   Select PSEMHUBHttpProxyServlet and click the Init Params tab. Replace WebLogicHost , WebLogicPort with the host and port from which your PSEMHUB server listens.

   Note. Save your new configuration.

Use the following commands in sequence to start the Environment Management hub in a multi-server installation:

```
...\StartWebLogicAdmin.cmd (start the admin server)
...\StartManagedWebLogic.cmd RPS
...\StartManagedWebLogic.cmd PSEMHUB
```

Then use the following URL to access PSEMHUB: http://*RPS host*:*RPS port*/PSEMHUB/hub.

Note. For a single server install using a reverse proxy, this additional step needs to be performed in order for the Environment Management hub to be able to process the PSEMHUB requests. You need to edit: *PIA_HOME*\webserv*domain*\applications\HttpProxyServlet\WEB-INF\web.xml. In the PSEMHUBHttpProxyServlet section, change the default port from 8001 to 80.

The following is a sample configuration:

```
- <servlet>
  <servlet-name>PSEMHUBHttpProxyServlet</servlet-name>
  <servlet-class>weblogic.servlet.proxy.HttpProxyServlet</servlet-class>
- <init-param>
  <param-name>WebLogicHost</param-name>
  <param-value>localhost</param-value>
  </init-param>
- <init-param>
  <param-name>WebLogicPort</param-name>
  <param-value>80</param-value>
  </init-param>
 </servlet>
```

Start the WebSphere Hub on Multiple Servers

If you are using multiple servers, then you need to dedicate one of them to handle PSEMHUB requests. All PSEMHUB requests should be routed to the same server instance. The following steps show the configuration changes that are required for this purpose:

1. Edit your reverse proxy's plug-in configuration file (plugin-cfg.xml) then make sure that only one server is dedicated to PSEMHUB.

2. Remove this line from all other servers: <Uri AffinityCookie="JSESSIONID" AffinityURLIdentifier="jsessionid" Name="/PSEMHUB/*" />. The server you chose for PSEMHUB should only service PSEMHUB requests so that it can run independently and can be shut down without affecting the rest of the system.

3. Restart the reverse proxy using : *IBM_proxy_base_directory*\bin\apachectl restart.

4. Restart all the servers. For Windows, the directory is: *WebSphere_Appserver_directory*\bin\startServer.bat serverX. For UNIX, the directory is: *WebSphere_Appserver_directory*/bin/startServer.sh serverX.

5. Use the following URL to access PSEMHUB http://*reverse_proxy_host*:*reverse_proxy_port* /PSEMHUB/hub.

   The reverse proxy's listen port is defined in *IBM_reverse_proxy_base_directory*\conf\httpd.conf.

Stopping the PSEMHUB on Multiple Servers on WebLogic

In a multiple server environment, target the server which is dedicated to PSEMHUB then execute *PIA_HOME*\webserv*domain*\stopWebLogic.cmd PSEMHUB on Windows and *PS_HOME*/webserv/*domain* /stopWebLogic.sh PSEMHUB on UNIX. This will only stop the server servicing PSEMHUB requests. The other servers will still be up processing PIA requests.

The following is a sample XML configuration file for the WebLogic multi-server installation:


```
1.1 Sample XML configuration file for WebLogic Multiserver installation
<UriGroup Name="default_host_server1_st-lnx06_Cluster_URIs">
  <Uri AffinityCookie="JSESSIONID" AffinityURLIdentifier="jsessionid" Name="/*" />
  <Uri AffinityCookie="JSESSIONID" AffinityURLIdentifier="jsessionid"
Name="/PSIGW/*" />
  <Uri AffinityCookie="JSESSIONID" AffinityURLIdentifier="jsessionid"
Name="/PSINTERLINKS/*" />
  <Uri AffinityCookie="JSESSIONID" AffinityURLIdentifier="jsessionid"
Name="/PSOL/*" />
</UriGroup>
- <UriGroup Name="default_host_server1_pt-lnx03_Cluster_URIs">
  <Uri AffinityCookie="JSESSIONID" AffinityURLIdentifier="jsessionid" Name="/*" />
  <Uri AffinityCookie="JSESSIONID" AffinityURLIdentifier="jsessionid"
Name="/PSIGW/*" />
  <Uri AffinityCookie="JSESSIONID" AffinityURLIdentifier="jsessionid"
Name="/PSINTERLINKS/*" />
  <Uri AffinityCookie="JSESSIONID" AffinityURLIdentifier="jsessionid"
Name="/PSOL/*" />
</UriGroup>
- <UriGroup Name="default_host_server1_pt-ibm15_Cluster_URIs">
  <Uri AffinityCookie="JSESSIONID" AffinityURLIdentifier="jsessionid"
Name="/PSEMHUB/*" />
</UriGroup>
```

Stopping PSEMHUB on Multiple Servers on WebSphere

In a multiple server environment, target the server which is dedicated to PSEMHUB then execute *WebSphere_Appserver_directory*\bin\stopServer.bat serverX on Windows and *WebSphere_Appserver_directory*/bin/stopServer.sh serverX on UNIX. This will only stop the server servicing PSEMHUB requests. The other servers will still be up processing PIA requests

Configuring an Environment Management Agent

Before you can run an environment management agent, you must ensure that it's properly configured. You configure the agent by making appropriate entries in its configuration.properties file, which is located under:

PS_HOME\PSEMAgent\envmetadata\config

The following table describes the configuration.properties parameters for the Environment Management agent:

Configuration Parameter	*Description*	*Default Value*
hubURL	The URL that contains the host name and the port number of the machine on which the Environment Management hub is running (inside a J2EE container).	http://*hostname*:*port*/PSEMHUB/hub.
agentport	A port that the agent uses for internal life cycle management.	5283.

Configuration Parameter	*Description*	*Default Value*
pinginterval	The interval, in milliseconds, between two successive attempts that the peer makes to contact the hub. All peers that access this configuration file have the same ping interval.	10000 (in milliseconds for the heartbeat) **Note.** The minimum required pinginterval value is 1000.
windowsdrivestocrawl	On Microsoft Windows, the set of local drives or directory paths where PS_HOME, PS_CFG_HOME and PIA_HOME are located. Separate the drive letters or directory paths with spaces and a pipe symbol (|).	c: | d: **Note.** Do not leave a trailing '/' or '\' character at the end of the path.
unixdrivestocrawl	On UNIX, the set of local drives or directory paths where PS_HOME, PS_CFG_HOME, and PIA_HOME are located.	$HOME **Note.** Do not leave a trailing '/' or '\' character at the end of the path.
chunksize	Only applicable to large files, which may be chunked when sent. The chunksize represents the maximum size in bytes of each chunk.	1048576 (1 MB) (used for large file transfers).

Configuring Agent Logging

The Environment Management agent's logs are located under *PS_HOME*\PSEMAgent\envmetadata\logs.

Edit *PS_HOME*\PSEMAgent\envmetadata\config\Logconfig.properties to configure the logging for the agent.

The following parameters determine the maximum size of each log file and the amount of log files rolled over. You can change the values of these parameters.

- log4j.appender.R.MaxFileSize=1024KB
- log4j.appender.R.MaxBackupIndex=1"

Configuring Agents With a Secure PS_HOME

Change Assistant deploys the updates to the PS_HOME using the agents running on the managed servers. Therefore, the agent running on a server should have write access to the PS_HOME and its subdirectories.

Note. While specifying the crawl path in configuration.properties, make sure that the decoupled configuration home (PS_CFG_HOME) is also included.

See Also

PeopleTools 8.51 PeopleBook: System and Server Administration, "Working with Server Domain Configurations"

PeopleTools 8.51 PeopleBook: System and Server Administration, "Securing PS_HOME and PS_CFG_HOME"

Running an Environment Management Agent

This section discusses how to:

- Run an agent.
- Start an agent automatically in Windows.

Running an Agent

Before you run an Environment Management agent, you must ensure that it's properly configured in the agent's configuration.properties file.

Starting the Agent

At a command prompt, navigate to *PS_HOME*\PSEMAgent.

Use one of these scripts to start the Environment Management agent:

- On Microsoft Windows, run *PS_HOME*\PSEMAgent\StartAgent.bat.

  Note. If you want the agent to start automatically when the machine starts, use the Microsoft Windows service that's delivered as part of PeopleTools. Or, you can add the script to the startup applications.

- On UNIX, run *PS_HOME*/PSEMAgent/StartAgent.sh.

  Note. If you want the Environment Management agent to start automatically on UNIX when the machine starts, add StartAgent.sh to the login/boot scripts.

The first time an agent starts, it crawls the machine to locate PeopleSoft elements on that machine. The results of searching the hard disk are saved in the envmetadata\data\search-results.xml file.

Note. When starting an agent manually from the command prompt or from a script, the command prompt will continue to stay open, and it is normal to see the output of the periodic heartbeat events ("sending pulse") in the command prompt as the agent communicates with the hub. By default these "pulses" are every 10 seconds, except when environment information is being uploaded to the hub. You can configure the agent to run in the background using the provided Windows service, and on UNIX by using the `nohup` command. These options are documented in other sections of this PeopleBook.

Note. Only one Environment Management agent can be started per machine. If an agent is already started, you may receive error messages indicating that the agent cannot be started because there is already one running on the machine.

See Chapter 3, "Configuring and Running Environment Management Components," Starting an Agent in the Background on UNIX, page 24.

See Chapter 3, "Configuring and Running Environment Management Components," Starting an Agent With PSEMAgent Windows Service, page 25.

Starting the Agent on a Secure PS_HOME

On Microsoft Windows:

1. Create a new shortcut from the desktop (right-click, New, Shortcut).
2. In the Type the location of the item enter:

   <PS_HOME>\PSEMAgent\StartAgent.bat -u :<domainname>\<username>

   For example:

   c:\ptinstalls\pt851\PSEMAgent\StartAgent.bat -u :bigcompany.com\tsawyer

   Where the user specified has write access to PS_HOME.

   Note. When you run <PS_HOME>\PSEMAgent\StartAgent.bat -u :<domainname>\<username>, the %TEMP% directory is used. Both the user that runs the command and the "runas" user need write/execute access to the %TEMP% directory.
3. Click Next, and enter a name for the shortcut.
4. Use this shortcut to start the agent.

On UNIX:

1. Log in as the user who has write access to the PS_HOME.
2. PS_HOME/PSEMAgent/StartAgent.sh.

See *PeopleTools 8.51 PeopleBook: System and Server Administration*, "Securing PS_HOME and PS_CFG_HOME."

Stopping the Agent

Use one of these scripts to stop the Environment Management agent:

- On Microsoft Windows, run *PS_HOME*\PSEMAgent\StopAgent.bat.
- On UNIX, run *PS_HOME*/PSEMAgent/StopAgent.sh.

Recrawl

If you install new software components, the running Environment Management agent doesn't automatically detect them. This is because, to improve performance, the agent doesn't crawl every time it starts up. Instead it crawls only if the search-results.xml file does not exist.

You can force a recrawl and make the new components manageable by reissuing the StartAgent command with the recrawl option:

1. Open a new command line window.
2. Change directories to *PS_HOME*\PSEMAgent.
3. Issue the following command:

   ```
   StartAgent recrawl
   ```

   This forces a recrawl and creates a new search-results.xml file. If an agent is already running, it publishes the results to the hub.

If the running Environment Management agent is connected to the hub constantly, the recrawl interval occurs every 24 hours by default. If the agent has not been connected to the hub for a few days, the hub requests the agent to recrawl when the agent contacts the hub the next time.

Note. Recrawling includes revalidating.

Note. The recrawl process assumes the Environment Management agent is running. If it is not running, you may see error messages in the output. It is recommended that before running a recrawl, you make sure the agent is running.

Revalidate

If the Environment Management agent does not recognize any of the installed components, the search-results.xml file may not exist or may contain only an entry for Host. The problem may be that the agent needs to have permission to read directories as well as execute programs. Grant these permission for the agent. Also check whether the agent has permission to create a file on the local file system. Finally, check whether the disk is full. The agent might have no disk space to create a search-results.xml file.

If the hub is not running, you may receive the following error messages in the agent log or console:

- Broken connection - attempting to reconnect
- RemoteException while connecting to server - retrying attempt 1
- RemoteException while connecting to server - retrying attempt 2
- RemoteException while connecting to server - retrying attempt 3

  Once the Environment Management hub is back up, the agent will successfully connect. There's no need to stop and restart the agent.

Note. If you are performing a recrawl, you don't need to separately revalidate.

Command-Line Arguments for the Agent

You can run these command-line arguments with the startAgent.bat (or startAgent.sh) script.

Argument	*Description*	*Sample Output*
version	Returns the version of the agent.	Version:8.45 Build Number: 109

shutdown	Shuts down a previous instance of the agent if it is running.	If the agent does not exist:
		`Shutting down Agent....`
		`Unable to detect a running agent...`
		`Instance does not exist`
		If the agent exists:
		`Shutting down Agent....`
		`Shut down normally`

url	Prints the URL of the hub with which the agent is configured to communicate.	http:// 216.131.222.227:80/PSEMHUB/hub
validate	Validates the current set of managed components that have been discovered from the last crawling by the agent.	Not applicable (NA)
recrawl	Recrawls the hard disk to detect new configurations. Recrawls the detected database environments to update database information. The current search-results.xml file is backed up. **Note.** Recrawling includes revalidating.	NA
isrunning	Returns true if an agent is already running and false if an agent is not already running.	NA
remove	Removes the peer and all its registered components from the hub.	Removal Completed- PeerID 2 has been removed. Removal Failed- PeerID 2 could not be removed from the hub.

Starting an Agent in the Background on UNIX

Use the UNIX `nohup` command with the StartAgent.sh script to start an agent automatically and run in the background. This enables you to avoid having a command prompt open at all times showing the constant heartbeat of the agent. You can specify an output file to store heartbeat information.

For example,

```
nohup ./StartAgent.sh > agent_output.log &
```

Starting an Agent With PSEMAgent Windows Service

You can set an Environment Management agent to start automatically when your Environment Management machine boots and run in the background. This enables you to avoid having a command prompt open at all times showing the constant heartbeat of the agent.

For this option, use the *PSEMAgent* Windows service that's delivered as part of PeopleTools.

Installing the PSEMAgent Service

You install the PSEMAgent service from a command prompt. Copies of the install program are located in two places:

PS_HOME\bin\client\winx86

PS_HOME\bin\server\winx86

To install the PSEMAgent service:

1. At a command prompt, change to either location of the install program.
2. Enter the following command:

   PSEMAgentService /install *PS_HOME*\PSEMAgent

   Where *PS_HOME* is the PeopleTools installed location.

   The PSEMAgent service is now installed, but not started. It's configured by default to start automatically when the system boots, and to log on using the local system account. You can start it manually, or wait for the next reboot.

Note. The PSEMAgent service is configured to start as an automatic service, by default. However, the Hub must be running prior to the PSEMAgent service attempting to start, or the PSEMAgent service will not start successfully. It is recommended to set the PSEMAgent service to manual start in the Windows Services interface. Then, to start the PSEMAgent service, start it manually from the Services interface.

Starting the PSEMAgent Service

You can start the PSEMAgent service from a command prompt, or from the Windows Services control panel. The name of the service follows this convention: *PeopleSoft Environment Management Agent-<release>*.

- To start the PSEMAgent service from a command prompt, use the NET START command. For example:

  ```
  NET START "PeopleSoft Environment Management Agent-8.50"
  ```

- To start the PSEMAgent service from the Windows Services control panel:

  1. Open the Windows Control Panel, then double-click Administrative Tools, then Services.
  2. In the Services control panel, right-click the *PeopleSoft Environment Management Agent* entry and select Start.

Stopping the PSEMAgent Service

You can stop the PSEMAgent service from a command prompt, or from the Windows Services control panel.

- To stop the PSEMAgent service from a command prompt, use the NET STOP command. For example:

  ```
  NET STOP "PeopleSoft Environment Management Agent-8.50"
  ```

- To stop the PSEMAgent service from the Windows Services control panel:

  1. Open the Windows control panel, then double-click Administrative Tools, then Services.
  2. In the Services control panel, right-click the PeopleSoft Environment Management Agent entry and select Stop.

Uninstalling the PSEMAgent Service

You uninstall the PSEMAgent service from a command prompt.

To uninstall the PSEMAgent service:

1. At a command prompt, change to either location of the uninstall program.

   Copies of the uninstall program are located in two places:

   PS_HOME\bin\client\winx86

   PS_HOME\bin\server\winx86

2. Enter the following command:

   PSEMAgentService /uninstall

   PSEMAgentService determines if the service is currently started, and automatically stops it before completing the uninstall operation. You'll see messages reporting on the status of the operation.

   Note. If the service is currently stopped, you'll see an error message indicating that it can't be stopped. Regardless of this, the uninstall operation completes normally.

Monitoring Agent Status

If the Hub does not receive status from a peer for three ping cycles ("I am alive" messages) then it changes the state of the peer from *Running* to *Not Running.* Information related to agent status can be accessed from a browser using the following URL:

http://*hub_host*:*hub_port*/PSEMHUB/hub

Running the Viewer

To view data from the Environment Management hub:

1. Run a Java program to connect to the hub and retrieve the information in XML format.

   Run the appropriate script for your environment in from *PS_HOME*\PSEMViewer. You will be prompted for the web server's listening port.

   - UNIX: ./GetEnvInfo.sh
   - Windows: GetEnvInfo.bat

   Note. For security reasons, the Java program connects only to the local host.

2. Open *PS_HOME*\PSEMViewer\envmetadata\data\viewer.html to view the information in the generated XML file.

Configuring and Starting an Environment Management Agent on z/OS

To run an agent on z/OS, you must have installed JRE delivered with PeopleTools on the z/OS machine.

To configure and start the agent on z/OS:

1. Edit the configuration.properties file *(PS_HOME*/PSEMAgent/envmetadata/config).
2. Edit hubURL and define the hub machine name and hub port.
3. Edit unixdrivestocrawl and set it to the set of directories that need to be crawled.
4. Edit StartAgent.sh.

   On the first line, replace PS_HOME with your *PS_HOME* location.

   Edit the last line to point to your JRE location.
5. Edit StopAgent.sh.

   On the first line, replace PS_HOME with your *PS_HOME* location.

   Edit the last line to point to your JRE location.

The default charset on z/OS is EBCDIC. If you wish to view the content of *PS_HOME* /PSEMAgent/envmetadata/data/search-results.xml, you need to run the following commands:

```
cd PS_HOME/PSEMAgent/envmetatda/data
. PS_HOME/psconfig.sh
PS_HOME/bin/psuniconv utf-8 search-results.xml ccsid1047 result.txt
```

This comment is also true for *PS_HOME*/PSEMAgent/envmetadata/data/matchers.xml.

You can find a viewable version of the results in result.txt. You can also FTP (binary) these files to a different machine running a different operating system and view them in any editor.

Integrating with Oracle Configuration Manager

This section contains an overview and discusses how to instrument PeopleTools for Oracle Configuration Manager data collection.

Understanding Oracle Configuration Manager for PeopleSoft

Oracle Configuration Manager (OCM) is used to collect configuration data from customer environments and upload that data to a Customer Configuration Repository (CCR) stored and managed by Oracle. OCM works in tandem with PeopleSoft EMF for collecting configuration data from a PeopleSoft environment. The OCM data collection agents collect configuration data using the feed provided by the PeopleSoft EMF agents.

The PSEMAgent has to be running on the instance so that configuration data can be collected. After crawling the environment, PSEMAgent writes the environment data in XML format (with a .psft extension) to the *PS_HOME*/ccr/state directory.

OCM is installed and configured on a PeopleTools environment as part of the application server, Process Scheduler server, and web server PeopleTools installation. You can also install and configure OCM by directly downloading the standalone install kit from My Oracle Support.

See Also

PeopleTools 8.50 Installation <for your platform>, "Using the PeopleSoft Installer"

http://www.oracle.com/technology/documentation/ocm.html

Instrumenting PeopleTools for Configuration Data Collection

This section provides an overview of the data collection and discusses:

- Setting up Integration Broker for OCM.
- Deploying Services for OCM.
- Setting up security for OCM.
- Publishing queries for OCM.

Understanding PeopleTools Instrumentation for OCM

The optional configuration information collected from a PeopleSoft system for Oracle Configuration Manager (OCM) are defined as queries and shipped with OCM collectors. The query definitions need to be instrumented after the installation and configuration of OCM on a PeopleSoft environment. The instrumentation step publishes the queries that are required to gather configuration information from a PeopleSoft system using Intergration Broker. The queries can be instrumented by a Java program "psft_qrypub" and are part of the OCM collector. The publishing of queries is a one-time activity performed after the configuration of CCR collectors.

The Integration Broker services and interfaces used by the publishing engine are:

Service Name	*Operation Name*	*Description*
QAS_QRY_SERVICE	QAS_EXECUTEQRYSYNC_OPER	Discovers application type.
	QAS_LISTQUERY_OPER	Determines whether data already exists.
	QAS_QUERY_DELETE_OPER	Deletes query for republishing.
	QAS_SAVE_QUERY_OPER	Saves query definition.
PT_CCR_QUERY	CCR_TREE_ADD_REC	Adds participating records of a query to QUERY_TREE_CCR.

Setting Up Integration Broker for OCM

Setting up Integration Broker is discussed in the Integration Broker documentation.

When setting up Integration Broker for OCM, make sure that:

- your gateway is configured and pointing to the appropriate gateway URL, such as http://<webserver_machinename>:<httpport>/PSIGW/PeoplesoftListeningConnector.
- all other connectors are loaded.
- on the PeopleSoft Node Configuration page you specify the appropriate Gateway Default App. Server values and PeopleSoft Nodes values.
- you can ping the node successfully.
- on the Service Configuration page (PeopleTools, Integration Broker, Service Configuration) that the target location http://<webserver>:<httpport>/PSIGW/PeopleSoftServiceListeningConnector.

See *PeopleTools 8.51 PeopleBook: PeopleSoft Integration Broker Administration.*

Deploying Services for OCM

To publish QAS services:

1. Select PeopleTools, Integration Broker, Web Services, Provide Web Service.
2. Search and select the QAS_QRY_SERVICE service, and click Next.
3. Select View All to see all operations in the grid.

4. Choose the following operations:
    - QAS_EXECUTEQRYSYNC_OPER
    - QAS_LISTQUERY_OPER
    - QAS_QUERY_DELETE_OPER
    - QAS_SAVE_QUERY_OPER
5. Click Next until the final step and click Finish.
6. Make note of the WSDL URL generated, and open the wsdl in a new browser and make sure it was generated successfully.

To publish CCR services:

1. Select PeopleTools, Integration Broker, Web Services, Provide Web Service.
2. Search for and select PT_CCR_QUERY, and click Next.
3. Choose the following operation. CCR_TREE_ADD_REC.v1.
4. Click Next until the final step and click Finish.
5. Make note of the WSDL URL generated, and pen the wsdl in a new browser and make sure it was generated successfully.

To verify permissions for service PT_CCR_QUERY and operation CCR_TREE_ADD_REC:

1. Select PeopleTools, Integration Broker, Integration Setup, Service Operations.
2. For search criteria enter: for:
    - Service: PT_CCR_QUERY
    - Service Operation: CCR_TREE_ADD_REC
    - Operation Type: Synchronous
3. Click CCR_TREE_ADD_REC and select Service Operation Security.
4. Make sure that the permission list PTPT1000 has Full Access is set.

Setting Up Security for OCM

This section defines setting up of two user accounts

User Account	***Description***
Publisher	Used by the client publisher Java program to publish queries using Integration Broker. To set up this user profile, add the CCR Publisher role to the user profile.

User Account	*Description*
PSEMAgent	Used for configuring your application server and Process Scheduler. PEMAgent uses the same credentials to run the queries for publishing the configuration information to OCM. To set up this user profile, add the CCR Execution role to the user profile.

See *PeopleTools 8.51 PeopleBook: Security Administration*, "Administering User Profiles."

See *PeopleTools 8.51 PeopleBook: Security Administration*, "Setting Up Roles."

Publishing Queries

The publisher program can be invoked by running psft_qrypub.bat in <PS_HOME>/ccr/sysman/admin/util.

Chapter 4

Configuring Change Assistant

This chapter provides an overview and discusses:

- Setting Up Change Assistant.
- Specifying Change Assistant Options.
- Validating Change Assistant Settings.

Setting Up Change Assistant

This section covers topics related to setting up Change Assistant, including how to:

- Install Change Assistant.
- Confirm the path variable.
- Scan the workstation.
- Define environment identification.

Installing Change Assistant

Change Assistant runs only on supported Microsoft Windows workstations. Change Assistant is not automatically installed when you install PeopleTools. You install Change Assistant by running a separate setup.exe program in:

PS_HOME\setup\PsCA

After installing Change Assistant, you open it by selecting Start, Programs, Peoplesoft 8.x, Change Assistant.

Note. If there are any PeopleTools Required for Install patches posted, make sure that those are applied first before running the setup program.

Note. The user who runs Change Assistant does not need to have Administrator privileges on the Windows workstation, but the user needs to have read/write access to the directory (and all subdirectories) in which Change Assistant is installed, such as C:\Program Files\PeopleSoft\Change Assistant.

Complete installation instructions for Change Assistant appear in your PeopleTools installation guide.

See Also

PeopleTools 8.50 Installation: Installing PeopleSoft Change Assistant

PeopleTools 8.50 PeopleSoft Hardware and Software Requirements

Confirming the Path Variable

After installing Change Assistant, ensure that the PATH system variable has been set. The following locations need to appear as the *first* entries in the PATH string:

- *PS_HOME*\bin\client\winx86
- *PS_HOME*\jre\bin

Where *PS_HOME* is the location where you installed PeopleTools.

To verify Path settings:

1. Select Start, Settings, Control Panel.
2. Double-click the System icon.
3. Select the Advanced tab on the System Properties dialog box.
4. Click Environment Variables.
5. Select the *Path* variable in the System Variables section, then click the Edit button.

   The Edit System Variables screen appears.
6. On the Edit System Variables dialog box, ensure that in the Variable Value field, the following directory locations appear as the *first* entries in the Path string:

   ```
   C:\PS_HOME\bin\client\winx86;c:\PS_HOME\jre\bin;
   ```
7. If you've made any modifications, click OK to save your settings.

Scanning the Workstation

The first time you use Change Assistant, it automatically scans your workstation for applications that it will use in order to automate the steps. For example, it automatically finds your SQL Query tool and uses it to run SQL commands or scripts. To perform this scan, select Tools, Scan Configuration.

If you add a new application or update an existing application, Change Assistant must perform a scan of the system in order to discover the changes.

Define Environment Identification

In the browser, navigate to the PeopleTools Options page (PeopleTools, Utilities, Administration, PeopleTools Options) and make sure that the Environment Long Name and Environment Short Name are specified correctly.

The Environment Management Framework and Change Assistant use these values, along with the GUID, to identify an environment and associate environment information with a particular named environment. Likewise, it enables you to search for updates for a specific environment.

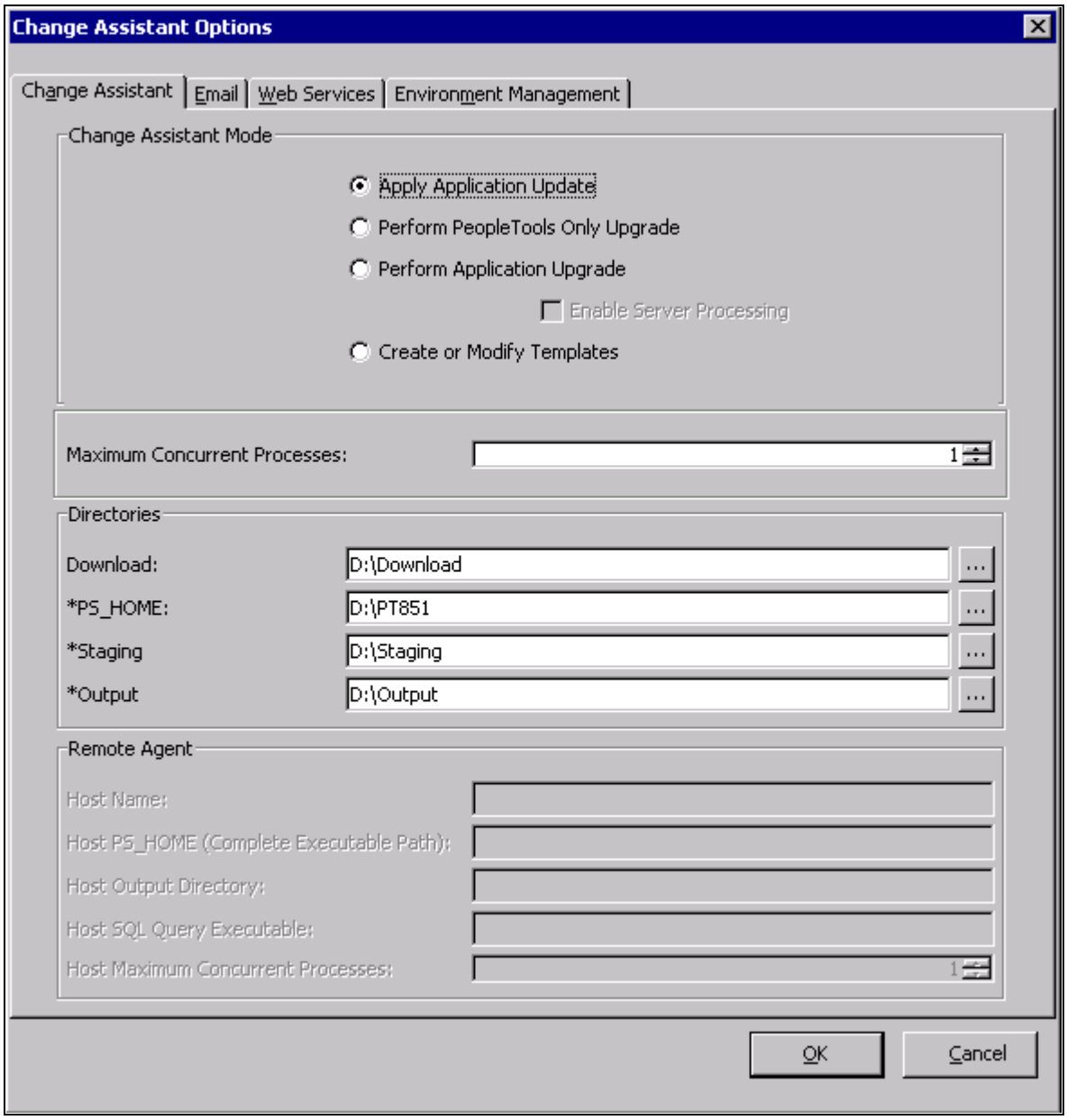
See Also

Appendix D, "Troubleshooting Change Assistant and EMF," Cloned Databases Not Being Unique, page 130

Specifying Change Assistant Options

This section describes options to set in Change Assistant.

Select Tools, Options, Change Assistant.



Change Assistant tab

Change Assistant Mode Select the mode that reflects how you will be using Change Assistant. The menu items that will appear when you use Change Assistant are enabled and disabled based on the mode selected.

- Apply Application Update
- Perform PeopleTools Only Upgrade
- Perform Application Upgrade
- Create or Modify Templates

Enable Server Processing (Applies only in Perform Application Upgrade mode) Enables Change Assistant to run select step types on a host server through a remote EMF Agent. Selecting this option enables the options in the Remote Agent group box for specifying the remote agent.

The details of setting up this option are documented in the upgrade portion of this PeopleBook.

Maximum Concurrent Processes Specifies the maximum number of processes that can be executed concurrently on the local machine. The default is 1.

Directories

Download Directory Enter the full path of the location to which you want to download your change packages.

***PS_HOME** Enter the full path in which you installed PeopleTools.

Note. Specify the PS_HOME location that is the same version of PeopleTools that the target database is running on. For PeopleTools scripts and executable to run successfully against a database, they must be at equivalent versions. The PeopleTools version of the PS_HOME does not necessarily need to be the same version as the Change Assistant session you are running. Change Assistant may be at a higher version.

***Staging Directory** Enter the directory in which you would like to stage all the Change Assistant update files. This is the location that Change Assistant will store files to be used during the apply update process.

***Output Directory** Enter the directory in which you want the log files generated by the update process to reside.

Remote Agent

These options apply only when performing an application upgrade, not for applying change packages. For application upgrades, Change Assistant can run select step types through an EMF Agent running on a remote host. This can improve performance and processing times.

To enable these options, you need to select Enable Server Processing under the Perform Application Upgrade mode.

The details of setting up this option are documented in the upgrade portion of this PeopleBook.

Setting Email Options

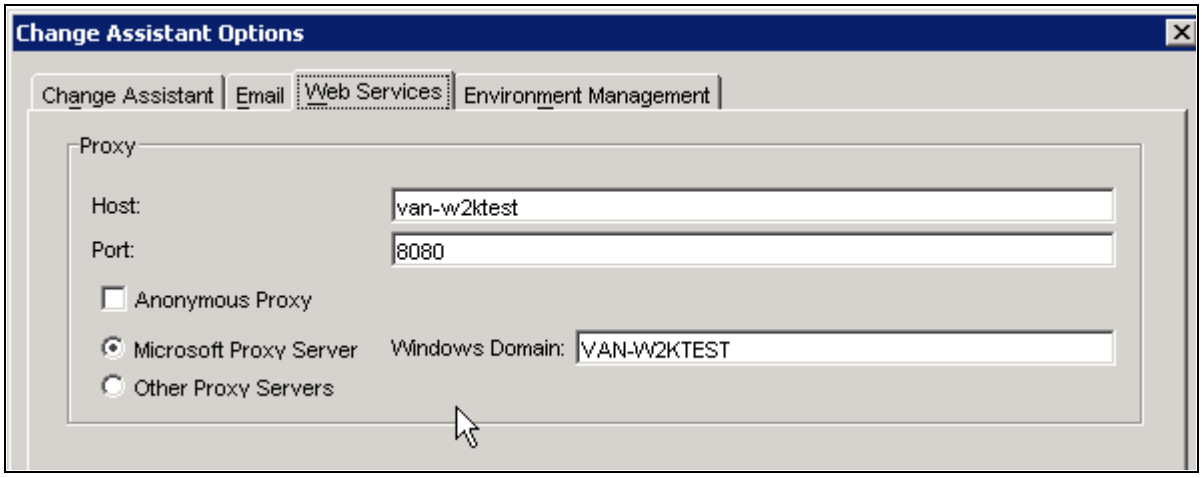
Select Tools, Options, Email.

Send Email Notifications	Select this check box to receive email notifications if there are errors in the update process. Change Assistant also sends you a completion message when it encounters a *Stop* in the update process.
SMTP Server	Enter the SMTP mail server from which you receive the error or completion messages.
Port	Enter the port from which you want to access the email.
Send To	Enter the address to which you want the email sent.
Return Address	Enter the email address of the sender. Use this to identify who sent the notification.
Test	Validates that email is sent to the designated recipients and is working correctly.

Note. Ensure that your SMTP server is installed and configured correctly.

Setting Up Web Services Options

Select Tools, Options, Web Services.



Change Assistant Options, Web Services

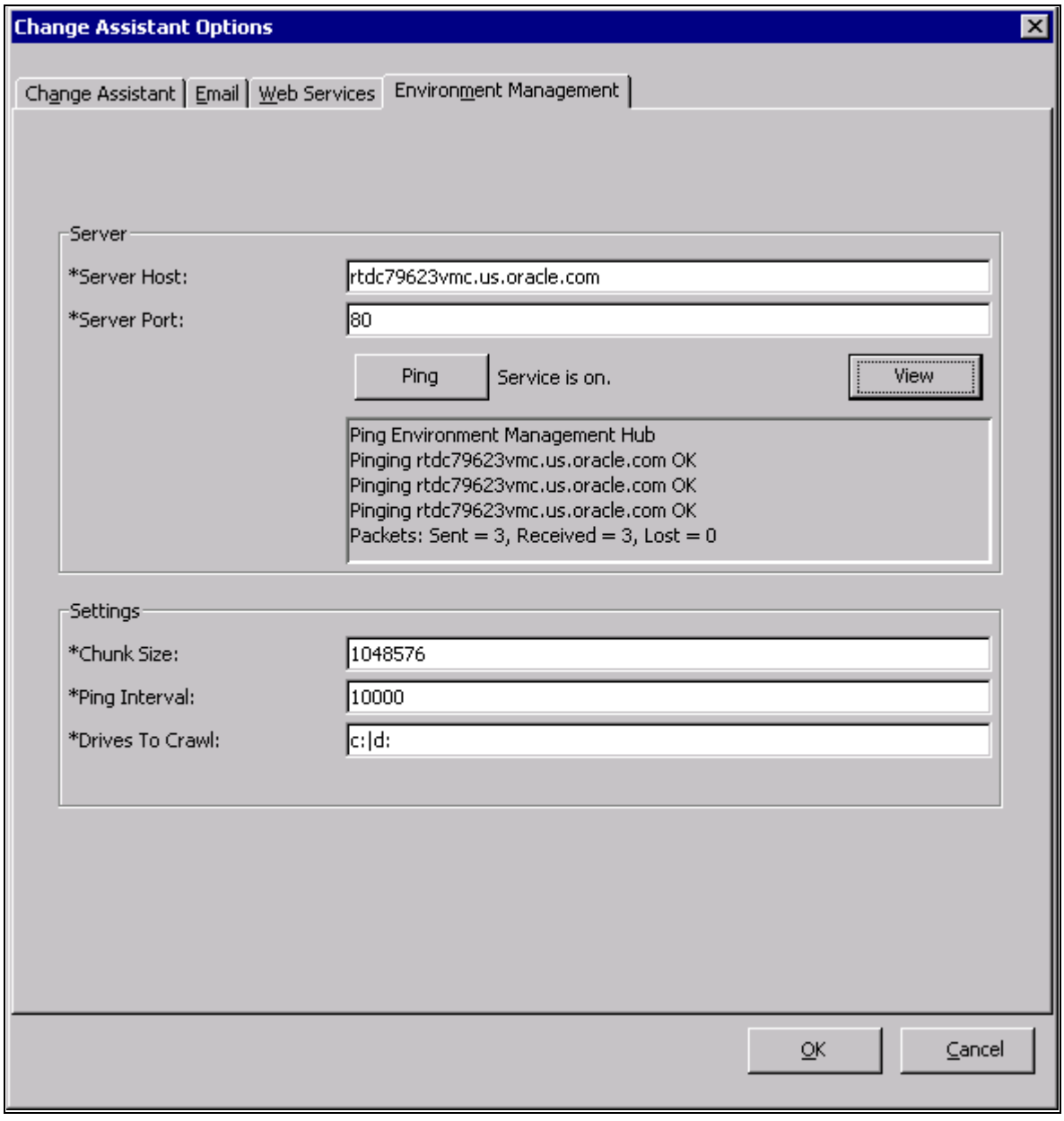
Host	(Optional) Enter the name of the proxy server if you want to run Change Assistant behind the firewall using a proxy server.
Port	(Optional) Enter the port number for the proxy server.
Anonymous Proxy	Indicates that you are using a proxy server that does not require authenticated connections.
Microsoft Proxy Server	Indicates that you are using a proxy server with Windows authentication.

Windows Domain The network domain in which the system runs.

Other Proxy Servers Indicates you are using non-Microsoft proxy servers.

Setting Environment Management Options

Select Tools, Options, Environment Management.



Environment Management tab

Server Hostname The hostname of the server in which the Environment Management HUB resides.

Server Port	Indicates the port in which to connect to the Environment Management hub.
Ping	Click to verify a valid server URL. If you see *Service is off* to the right of this button, then you must correct the server URL and ping again until you see *Service is on.* **Note.** This button is visible only if your display is set to Windows Classic style. To change the Windows display, select Programs, Control Panel, Display. Select the Appearance tab and choose Windows Classic style from the Windows and buttons drop-down list.
View	Click to display the list of all PeopleSoft components discovered and registered in the Environment Management hub. **Note.** This button is visible only if your display is set to Windows Classic style.
Chunk Size	Used for deploying files during a software update. Default is 1024 * 1024 bytes. Typically this does not need to be changed unless there are a significant number of files greater that 1024KB in a software update.
Ping Interval	Ping interval is in milliseconds for Change Assistant to contact the hub for new messages.
Drives to Crawl	Setting of drives to crawl to identify the configuration of the Change Assistant machine. Windows directories need to use the forward slash (/) character. Include your local drive in this setting so that Change Assistant can locate the SQL Query tool used for automating steps. Also include the path of the SQL Query tool.

Validating Change Assistant Settings

After you have set up and configured Change Assistant and the Environment Management components, you should validate your Change Assistant and environment settings.

Change Assistant validates settings by:

- Locating valid SQL query tools required to run SQL scripts.
- Testing the Environment Management hub and ensuring that Change Assistant can communicate with it.
- Testing the update gateway URL and ensuring that Change Assistant can communicate with it.

You can also print a summary of your environment, which can facilitates the diagnosis of problems by Oracle Global Customer Support.

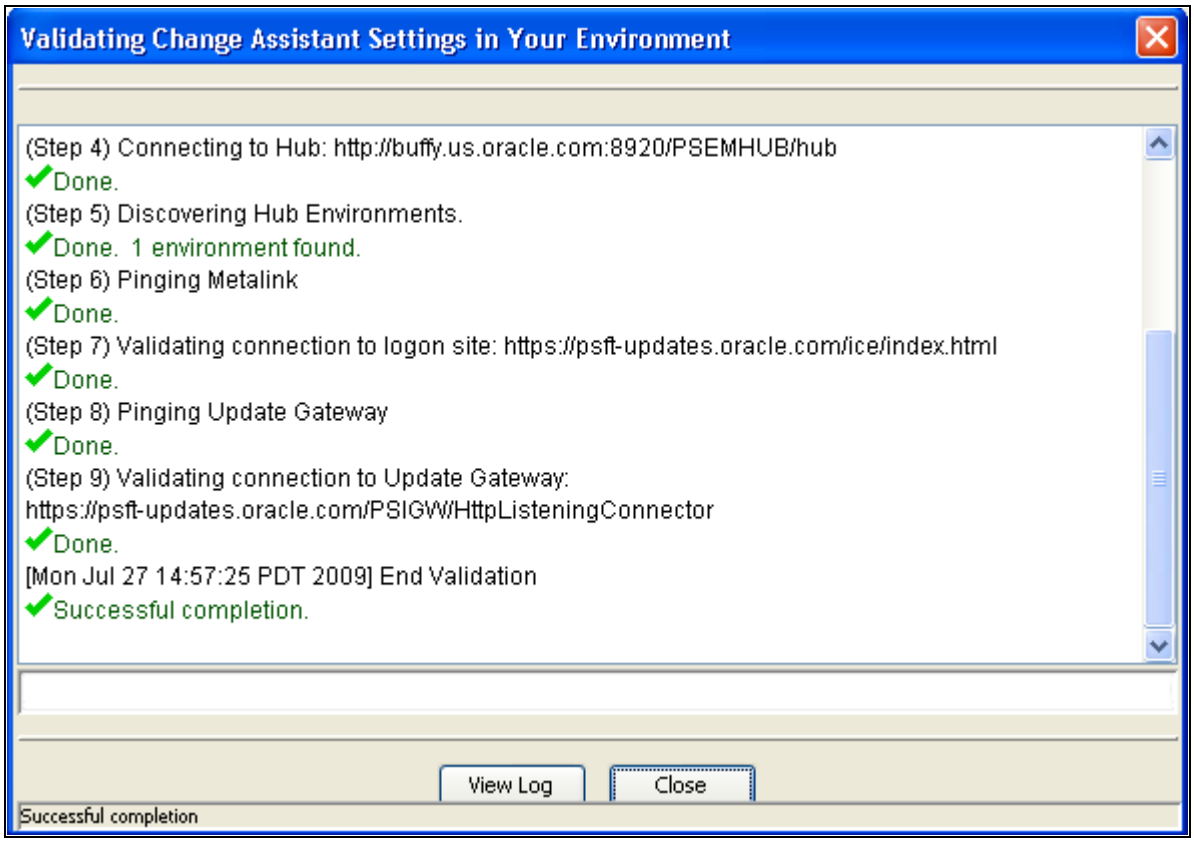
To validate your environment:

1. Select Tools, Validate.
2. Click Start Validation.

The validation processing of the example runs in this order:

- When the validation process has completed, a completion message appears.
- If any of the steps were unable to complete successfully, open the log file to determine the cause.

Click View Log in the lower part of the screen to see more details regarding individual steps of the validation.



Validating Change Assistant Settings in Your Environment

Note. If you use proxy servers, the system will ping those and prompt for proxy server user ID and password. In this case, the validation step numbers would be different from the example.

Chapter 5

Working With Change Assistant

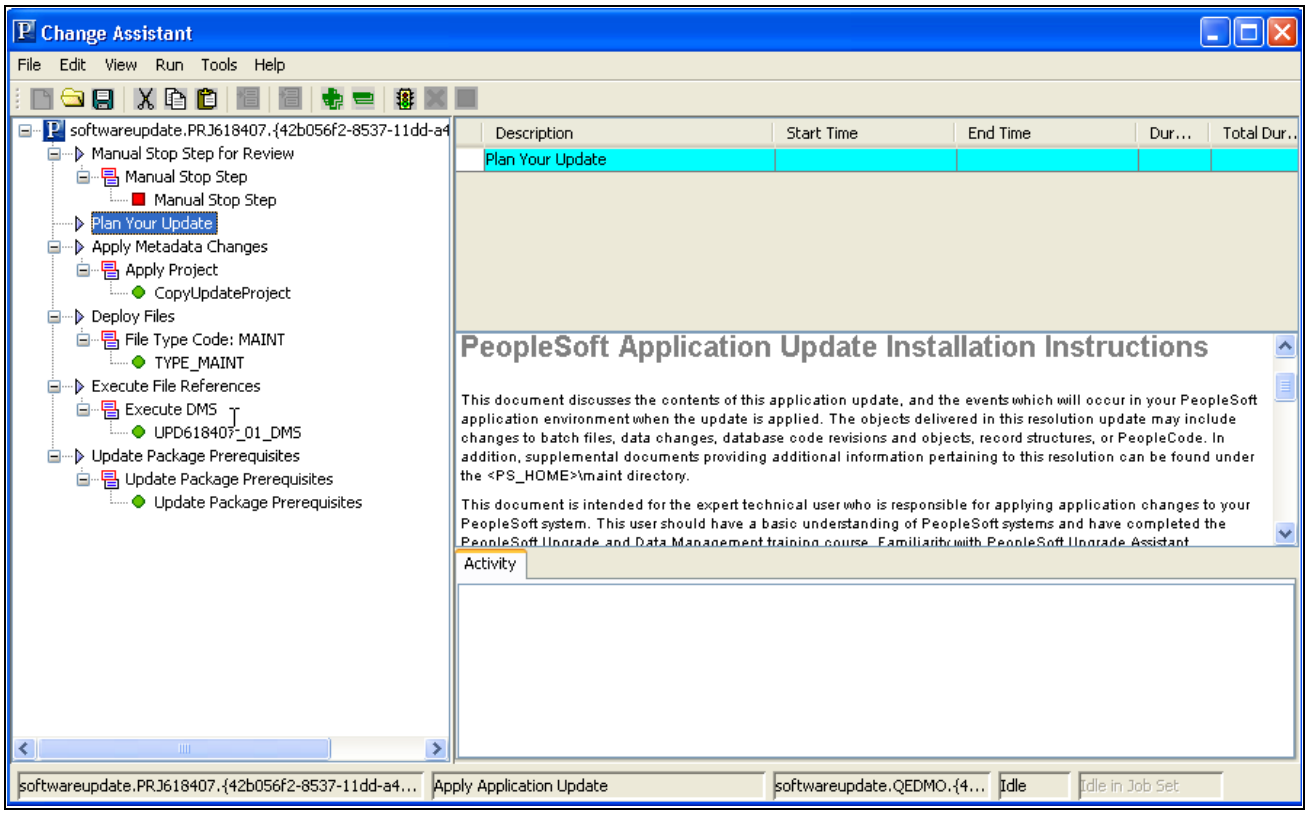
This section introduces you to the Change Assistant interface and describes how to:

- Work with Change Assistant menu options.
- Work with templates and jobs.
- Work with steps.
- Work with embedded documentation.
- Maintain Change Assistant directories.

Understanding The Change Assistant Interface

Change Assistant enables you to run, view, and modify Change Assistant templates. You open Change Assistant on a Windows workstation by selecting Start, Programs, PeopleSoft, Change Assistant.

Note. Before starting and running Change Assistant, application servers, Process Scheduler servers, and PIA. Also, ensure all agents running on the servers are running and sending pulses.



Template open in Change Assistant

Change Assistant enables you to:

- View, modify, and create Change Assistant templates.
- Run PeopleSoft update and update jobs.

When you have a Change Assistant template open, you use these areas in the project workspace:

Interface Area	***Description***
Template tree	The template tree section displays distinct nodes for the chapters, tasks, and steps within a template. • Chapters are section dividers that group and display the tasks. • Tasks are section levels that contain one or more steps. • Steps are the actual update actions that complete the processing of your update job. **Note.** When you run your update job, you assign and configure properties at the step level, not the task or chapter level.

Interface Area	*Description*
Properties box	Depending on what is selected in the template tree, the properties box displays the properties associated with that node. What is displayed for properties is also determined by what mode you are in. For example, if you are in the Apply Application Updates mode, the properties box displays information related to the progress of a step, such as start time, end time, total duration, and so on. If you are in Create or Modify Templates mode, the properties box displays the properties assigned to the step when it was defined. See Chapter 4, "Configuring Change Assistant," Specifying Change Assistant Options, page 35.
Documentation box	Each template contains its own built-in documentation to provide guidance for a chapter, task, or step. The documentation exists in separate HTML files, but it appears in this box for each selected node on the template tree.
Activity box	The Activity box displays the processing and status messages associated with a step, similar to the Output window in the Application Designer workspace.

Working With Change Assistant Menu Options

This section describes the menu options available when using Change Assistant.

Note. Some menu options are enabled only during a specific Change Assistant mode, which is determined in the Change Assistant Options dialog box.

File Menu

The File menu contains some generic Windows options, plus these specific Change Assistant options:

Menu Option	*Description*
New Template/Job	Creates a new Change Assistant template or job.
Open Template/Job	Opens a template of job from the Change Assistant storage (internal database).
Save Template/Job	Saves the template or job into the Change Assistant storage (internal database).
Save Template/Job As	Saves the new template or job with the name you specify.
Close	Closes the current template.

Menu Option	Description
Import Template	Imports an existing template into Change Assistant. **Note.** Any modifications to the current template will not affect the original template that you imported. If you want others to obtain a copy of your modified template, you need to export it out of Change Assistant.
Delete Template	Removes the template from Change Assistant. When you delete a template, you also delete all the jobs associated with the template.
Export Template	Exports a copy of the template out of Change Assistant so others can use it.
Delete Job	Removes a job associated with the current template.
New Environment	Launches the Database Configuration wizard for creating a new upgrade environment. Change Assistant uses these settings to set the upgrade path, locate previous and new *PS_HOME* directories, connect to the Target database, and so on.
Open Environment	Opens a defined environment.
Import Environment	Imports an existing environment.
Export Environment	Exports an existing environment.
Delete Environment	Deletes an existing environment.
Exit	Exits Change Assistant. **Note.** This option is disabled when a Change Assistant step is running. To exit Change Assistant while a process is running, you must first kill the process (select Run, Kill). When you relaunch Change Assistant you can resume at the point where you killed the process.

Edit Menu

The Edit menu contains some generic Windows options, plus these specific Change Assistant options:

Menu Option	Description
Insert Chapter	Inserts a new chapter. A chapter serves as a section head for multiple tasks.
Insert Task	Inserts a new task within a chapter. A task serves as a section head for one or more steps.
Insert Step	Inserts a new step within a task.
Step Properties	When a step is selected, launches the Step Properties dialog.
Rename	Renames an existing chapter, task, or step.

Menu Option	Description
Run	Runs the selected step.
Stop	Stops the selected step.
Restart	Restarts certain types of steps that you have stopped or have failed. Restart is supported for these step types: • Application Engine • SQL Application Engine programs can keep track of the state of a program run, and when restarted, they can pick up where a previous run stopped. When restarting SQL steps, Change Assistant generates a separate log file and numbers them incrementatlly, as in *logfile*_2, *logfile* 3, and so on.
Complete	Marks the selected step as complete. Often used when setting a manual step to complete, indicating that the manual work is done.
View Log	Opens the current job processing log.
View Script	Opens the script associated with the selected step.
Job Properties	Enables you to set properties for the upgrade job created.
Set Documentation Directory	Specifies the directory into which your upgrade documentation is saved. Change Assistant loads the documentation for viewing when you open a template or job.
Edit Documentation	Enables you to modify the documentation associated with the selected chapter, task, or step.
Finalize Documentation	Generates the HTML files

View Menu

The View menu contains these specific Change Assistant options:

Menu Option	Description
Step Details	Displays the step properties box in the Change Assistant workspace.
Documentation	Displays the documentation box in the Change Assistant workspace.
Activity	Displays the Activity box in the Change Assistant workspace.

Run Menu

The Run menu contains these specific Change Assistant options:

Menu Option	Description
Run	Begins the execution of a Change Assistant job.
Cancel	Stops the processing of a Change Assistant job *after* the currently running process completes.
Kill	Stops the processing of a Change Assistant job completely and immediately, *including* the step that's currently running.

Tools Menu

The Tools menu contains these specific Change Assistant options:

Menu Option	Description
Upload Environment	Uploads your environment information to Oracle Metalink.
Go to Metalink	Connects you to Oracle Metalink for the purpose of searching for and downloading change packages.
Download Change Packages	Downloads the change packages you specify.
Apply Change Packages	Runs the Apply Change Package wizard so that you can automatically apply the downloaded change packages.
Validate	Validates the Change Assistant settings in your environment, that the required elements are up and running, and that Change Assistant can connect to them.
Scan Configuration	Searches the Change Assistant workstation for tools and utilities required to perform updates and upgrades. For example, this process locates the local SQL tool, Data Mover, Application Designer, and so on.
Options	Opens the Change Assistant Options dialog box, enabling you to select Change Assistant configuration options.

Working with Change Assistant Templates and Jobs

Whether you are performing an update or an upgrade, you work with Change Assistant templates and jobs. When performing an update, the Change Assistant template comes in the downloaded change package, and when you are performing an upgrade, you download from Oracle a specific Change Assistant template for your upgrade path. The *templates* are composites of all possible steps that apply to an update or upgrade, whether they apply to your environment or not.

After you specify the required settings in Change Assistant regarding your environment, you use Change Assistant to build a *job* tailored to your environment. When building the job, Change Assistant filters the steps so that the job contains only the steps applicable to your implementation. For example, the resulting Change Assistant job will have only steps that apply to your database type, your installed applications, your languages, and so on.

When you apply updates or run an upgrade, Change Assistant automatically loads the template into the Change Assistant internal storage system. You can add additional chapters, tasks, and steps to the template, if needed. To edit a template, you must be in the Create or Modify Templates mode, specified on the Change Assistant Options dialog box.

Examples of custom steps that might be added include, dropping indexes, adding indexes, backing up a database, and so on.

Note. In most cases, it is not necessary (or recommended) to modify a delivered template. Any changes that you make to the imported template won't affect the original template that you downloaded. However, if you choose to edit a template, keep a backup of the original.

Creating New Template Elements

You can add chapters, tasks and steps to an existing template.

To insert a template element:

1. Highlight the location where you want to add the element.

   If you want to add a chapter above the existing first chapter in the template, highlight the template root node (template name) at the top of the template tree.

2. From the Edit menu (or toolbar) select the appropriate option: Insert Chapter,Insert Task,Insert Step.

3. Enter a unique name for your new element.

   Note. Each chapter in the update template must have a unique name, each task within a chapter must have a unique name, and each step within a task must have a unique name.

   ---

4. Click OK.

   When creating new steps, Change Assistant displays the Step Properties dialog box for specifying step options.

Deleting Template Elements

To delete a chapter, task, or step:

1. Highlight the chapter, task, or step that you want to delete.

   Warning! If you delete a chapter, Change Assistant deletes all the tasks and steps within the chapter. If you delete a task, Change Assistant deletes all the steps within the task.

   ---

2. Select from the following:

   a. If you want to delete a chapter, select Edit, Delete Chapter.

   b. If you want to delete a task, select Edit, Delete Task.

   c. If you want to delete a step, select Edit, Delete Step.

3. Change Assistant deletes the chapter, task, or step and updates the template.
4. Save the template.

Exporting Templates

In order for others to use the template that you create or modify, you need to export it from Change Assistant. If you want to overwrite an existing template file, enter the name of the original template.

To export a template:

1. Open the template in Change Assistant by selecting File, Open Template.
2. Select File, Export Template.

   The Export Template dialog box appears.
3. Navigate to the folder in which you want to save the template.
4. Enter the name of the template.

   Note. If you want to overwrite the original template that you downloaded, enter the original name of the template.
5. Click Save.

Exporting Jobs to XML, HTML, or Microsoft Excel Format

Change Assistant allows you to export jobs to XML, HTML, or Microsoft Excel file formats.

To export a job:

1. Select File, Export Job.
2. Enter the desired exported filename and the select the desired file type format.

You can use this option to enable other implementation team members, who do not have access to the machine on which Change Assistant is running, to *view* the job. Exporting the job to Microsoft Excel enables you to view the timings in a spreadsheet format.

Note. You can not export a Change Assistant job and either import it or open it on another machine with Change Assistant installed and then run or modify the job on that other machine.

Working with Steps

This section discusses how to:

- Set step properties.
- View step status.

Setting Step Properties

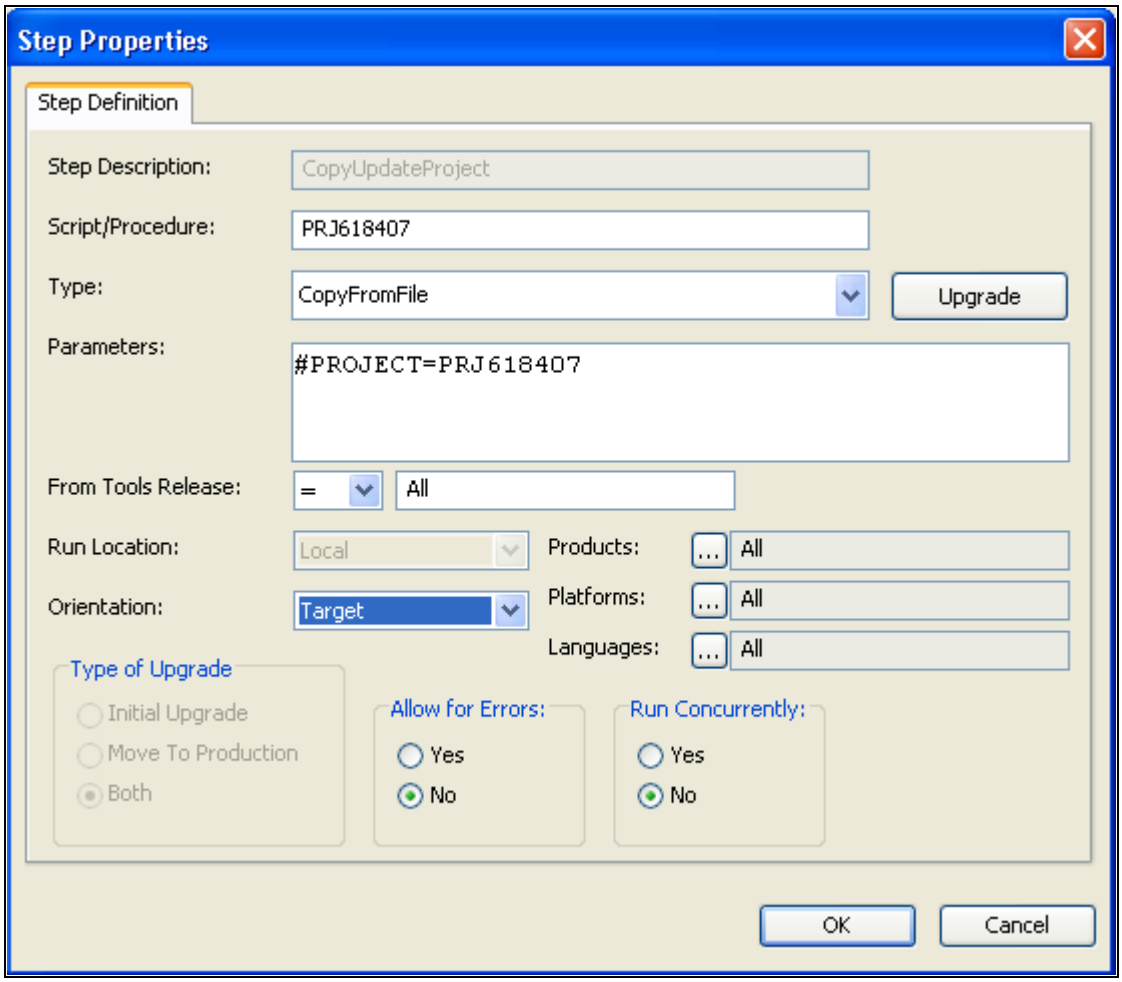
PeopleSoft delivers update templates with default settings and steps to perform updates. If needed, you can modify the steps, or create new steps, based on the conditions that apply when you run the update process.

To modify the step properties, highlight the step for which you want to modify the step properties, then double-click on the step or select Edit, Step Properties. After making any changes to step properties, click OK, and save your template.

Note. Depending on what mode you are in, some of the fields may be disabled.

Note. Under normal circumstances, it is recommended that you do not modify or edit the step properties in your delivered template.

This section describes fields and options on the Step Properties dialog box. You can modify step properties for a step when adding or editing steps in the template.



Step Properties dialog box

Step Description This field displays the current step.

Script/Procedure

Enter the name of the script, procedure, project, or program name to which you want to assign the properties of the step. For example, enter *SYSAUDIT*.

This field is required for all step types except manual stop.

Type

Select a step type. This selection defines the type of action to be performed by the step. For example, if you are running the SYSAUDIT SQR report, select *SQRReport.*

Detailed information related to each step type appears elsewhere in this PeopleBook.

See Appendix A, "Modifying Step Properties and Parameters," page 111.

Parameters

Enter additional parameters that you may need to run the step. For example, for SQL commands, you enter the actual SQL command in this field. In other cases, you use this edit box to override various environment settings or other parameters so that the step completes successfully.

Detailed information related to the parameter options for each step type appears elsewhere in this PeopleBook.

See Appendix A, "Modifying Step Properties and Parameters," page 111.

From Tools Release

Specify the PeopleTools releases to which a step applies. Use the associated operator dropdown list to indicate ranges of releases. The default values are *All* with the = operator.

The operator dropdown list enables you to express greater than, less than, equal to, and 'in' relationships.

The *in* operator enables you to specify more specific ranges, such as 'in' 8.48 and 8.49, as opposed to 'greater than' 8.48. When adding multiple release numbers, separate the values with a comma (,). For example:

8.48,8.49

Note. If you enter more than one From Tools Release value, the system assumes the 'in' operator.

Change Assistant uses these values to filter the steps when creating the upgrade job so that only the steps necessary for a particular environment remain.

Run Location

Select one of these run location options:

- *Local*: runs a step's process on the local machine: the Windows workstation where Change Assistant is running. For Application updates and PeopleTools-only upgrades, steps run locally. However, for full upgrades, steps can run locally or remotely.
- *Remote Agent*: runs the step on a remote server. During a full upgrade, some steps are data intensive and, for performance reasons, can be run on a remote server. If you select *Remote Agent*, before running the step you need to configure the Remote Agent options on the Change Assistant Options dialog.

  The details of setting up this option are documented in the upgrade portion of this PeopleBook.

  See Chapter 10, "Configuring Change Assistant for Upgrades," Configuring Remote Agent Processing, page 102.

Orientation

Specify which database the step needs to be run against. Options are:

- *Source*
- *Target*
- *Copy of Current Demo*
- *Production*

Step type and type of upgrade determine valid orientation settings.

See Chapter 2, "Understanding The Environment Management Framework and PeopleSoft Change Assistant," Source and Target Databases, page 13.

Products

Click the Products icon. Change Assistant displays the Select Products dialog box, which enables you to select the product line, the industry, and the products to which your step should be run against (for example, FIN/SCM, Commercial, Asset Management).

Note. This feature is used primarily for data conversion processes. You must select at least one product.

Type of Upgrade

Specify the type of upgrade to which this step applies:

- *Initial Upgrade*: refers to the initial application of a change package or new release to your demonstration database.
- *Move to Production*: refers to the upgrade between your demonstration database and your production system.
- *Both*: refers to steps that need to be run in both upgrade types.

Note. Depending on the type of upgrade, the system filters out steps that do not apply. For example, if *Move to Production* is set for a step and you are performing an initial upgrade, that step will be filtered out of the job run.

Allow for Errors

Indicates how the system should react to any errors that may arise during a step run. If set to *Yes,* if the step encounters errors the system does not perform any error handling and continues on to the next step.

Default is set to *No.*

Run Concurrently

Enables you to set multiple steps (programs, processes, and so on) to run simultaneously.

If you select this option for two or more consecutive steps, Change Assistant starts those processes concurrently, until the job reaches:

- a step with Run Concurrently set to *No.*
- a step type of *Manual Stop.*
- the Maximum Concurrent Processes value, as set on the Change Assistant Options dialog box.

See Chapter 4, "Configuring Change Assistant," Specifying Change Assistant Options, page 35.

By setting Run Concurrently to *Yes,* you are indicating to Change Assistant that this step can run concurrently with the following step. The total number of processes that can run concurrently is determined by the Maximum Concurrent Processes setting on the Change Assistant Options dialog box.

For example, assume there are four steps set to run concurrently, followed by a fifth step set *not* to run concurrently, with the Maximum Concurrent Processes value set to *3.* In this scenario, Change Assistant launches the first three steps to run concurrently. When one of the first three steps completes, the fourth step starts processing, and as soon as another step completes, the fifth step begins processing. The step after the fifth step does not start until the fifth step completes.

Running steps concurrently is a strategy reserved for application upgrades to save time when running the following step types on a remote host through a remote EMF agent or Process Scheduler:

- Application Engine
- SQL
- Data Mover

Concurrent processing is not enabled in any circumstances for these step types:

- DBTSFIX
- Load Base Data
- Upgrade PeopleTools
- Manual Stop

Note. If a step is dependent on a previous step, it is not recommended to set it to run concurrently with that step.

Note. Steps set to run concurrently can span across multiple consecutive tasks or chapters, and can be of different step types.

Note. In an application upgrade, do not run the "Update PeopleTools System Tables" step concurrently, and, unless specifically instructed to do so, do not run any of the steps in the "Apply PeopleTools Changes" chapter concurrently.

See the upgrade documentation for your specific upgrade for recommendations on specific steps within that upgrade that can be run concurrently.

Viewing Step Status

When working with templates and jobs, you see these status icons to the left of steps:

Run	Indicates that Change Assistant runs this step or process automatically without manual intervention.
Stop	Indicates that Change Assistant stops on this process. It also indicates that there may be manual steps to perform for this step. Review the documentation window for further instructions. After completing the work described in a manual step, you must set the status to *Complete*.
Restart	Indicates a restart process. If a step failed and you corrected the problem, you can set the step to restart from the point of failure.
Processing	Indicates that the process is running.
Failure	Indicates a failure has occurred that needs immediate attention. This appears if a Data Mover script, SQL script , or project copy step fails. Resolve the error before continuing with processing.
Warning	Indicates a warning for this step which does not need immediate attention. The job continues processing with no adverse affects. After the job completes, review the steps in a warning state and evaluate for further action.
Complete	Indicates that the step is complete.

Working with Embedded Documentation

Each delivered Change Assistant template comes with embedded documentation to help guide you through an update or upgrade job, especially for manual steps. Typically, full upgrades have significantly more documentation than updates.

The documentation for any chapter, task, or step resides in a separate HTM file with the same name as the template element. A master HTML file stores the compilation of the separate HTM files displayed in an order matching the template.

When working with Change Assistant documentation, you:

- Set the documentation directory.

- View documentation.
- Create and edit documentation.
- Finalize documentation.

Setting the Documentation Directory

You set the documentation directory before an upgrade and prior to customizing documentation. The documentation directory contains the documentation HTM files.

To set the documentation directory:

1. Select Edit, Set Documentation Directory.
2. Navigate to the directory where you want to store the documentation.
3. Click Open.

Viewing the Documentation

To view the embedded documentation associated with a particular template element:

1. Select the template node.
2. View the documentation in the documentation box.

To view the compiled documentation:

1. Navigate to the documentation directory.
2. Open the *template_name*.HTM file.

Creating and Editing Documentation

To create or edit documentation:

1. Select the desired element node.
2. Select Edit, Edit Documentation.
3. In the edit box on the Edit Documentation dialog box, insert your cursor, and add new content or modify existing content.

   Click Attach to incorporate additional files, such as graphics or additional text files. Attaching files moves that file into the documentation directory and inserts a link to that file in the embedded documentation.
4. Click OK.

Finalizing Documentation

After modifying any documentation for individual template elements, select Edit, Finalize Documentation to compile the individual documentation changes into the master HTM file.

Maintaining Change Assistant Directories

After you download and apply change packages, it's not uncommon for there to be a number of files left in the local Change Assistant directories. This section describes when it's safe to remove the files and what to consider if you want to remove any of the files.

Directory	***Maintenance Consideration***
Download	Location where the system stores your downloaded bundles and change packages. After the updates have been applied to all environments, you may delete the updates from this directory. This can be advantageous when applying change packages by keeping the list of change packages on the Select Change Packages page of the Apply Change Packages wizard at a manageable length. However, keep in mind that if you delete the updates, and then you need to recreate another environment, you will need to download the update again.
Staging	A temporary holding place for files needed during the application of a change package. It is safe to delete files in this directory after a change package has been successfully applied.
Output	Contains all the logs related to the processing of a change package. The files in this directory should be kept as long as it is feasible in case problems are detected later. The logs contain valuable information for troubleshooting.
PS_HOME\Maint	Contains script files and other files that are only required during the application of the change package. It is safe to delete files in this directory after a change package has been successfully applied.

Part 2

Using Change Assistant For Software Updates

Chapter 6

Discovering and Downloading Updates

This chapter discusses how to:

- Upload environment data.
- Discover the updates.
- Download updates.

Uploading Environment Data

Before you can automatically download updates with Change Assistant, you need to upload information about your environment to Oracle. Using the Environment Management hub, Change Assistant sends the essential environment information, including license codes, update history (change log), and environment configurations.

Initiating the Upload Environment Process

To perform the upload environment operation:

1. Select Tools, Upload Environment.
2. Select the check box at the lower left of the screen to agree to the terms of the Privacy Policy consent notice.

   If you do not select the check box, you cannot continue the upload process.
3. You are prompted to launch the update search after the upload is completed, or you can choose to access it later. Select one of these options, then click Next.
4. Enter your customer ID and password.

   Note. Each customer user ID is associated with a customer name and ID. Oracle stores the uploaded application environment data with the customer ID of the user performing the upload. If a user is authorized to represent more than one customer, this user must verify that the customer ID to which he or she is currently associated, is the correct customer for which the upload is performed.
5. Select the View XML link to view all the environment data to be uploaded to Oracle. Each environment is displayed in a tab identified by its short name, or a unique environment ID if no short name has been defined.

6. When the Confirm Customer screen appears, review the Authorized User,Company Name, and Customer ID fields before you click Upload.

Environment Information Uploaded to Oracle

This section lists the environment data collected by the Environment Management hub and sent to Oracle through Change Assistant. The data is sent in an XML file.

Summary File

The following specific environment information is included in the XML file:

Specific Environment Data	DATETIME (Date and Time) GUID (Globally Unique ID) LONGNAME MAINTLOG_VALID SHORTNAME SYSTEMTYPE TIMEZONE
Application Data	LICENSE_CODE LICENSE_GROUP RELEASELABEL (Release Label) TOOLSREL (Tools Release) UNICODE_ENABLED LANGUAGES SIZE LANGUAGE_CD NAME (Language Code Name)
	Note. The RELEASELABEL value is retrieved from the PSRELEASE table, and the retrieved value will be used as the release while selecting the updates pertaining to the environment. If the PSRELEASE table is stamped incorrectly, Change Assistant will not recognize the correct application release when searching the Update Gateway for updates.
Server Data	HOSTS SIZE (number of hosts in the current environment) HOST NAME OS (Operating System) RELEASELABEL (Release Label) SIZE (number of servers) SERVER NAME TOOLSREL (Tools Release)

Applied Updates

The following change log information shows all the applied updates in the environment:

- MAINTENANCE_LOG SIZE
- UPDATE FIXOPRID (update fix operator ID)
- MAINTLOGTYPE (change log type)
- UPDATE_ID

Discovering Updates

This section provides overviews of the Update Wizard and discusses how to identify the updates.

Understanding The Update Wizard

While you are using Change Assistant, you can access the Update Wizard at any time by selecting Tools, Go to Metalink.

Using the update wizard, you can discover the change packages that you need to download based on the update IDs. Change packages are zip files that contain the update project and all the associated files for the update.

Note. Do not unzip a change package, unless you intend to modify it. Change Assistant uses the zipped change package when applying updates.

See Chapter 8, "Working with Change Packages," page 79.

Identifying Software Updates and Change Packages That You Need

To identify the software updates or change packages that you need:

1. If you are not logged onto Oracle Metalink, log on by selecting Tools, Go to Metalink.

2. Select a scope from the following options:

Find all updates that have not yet been installed	Searches for all updates that meet the environment and time frame criteria, including bundles, tax updates and updates required for upgrade and install. By default, this search returns the requisites of every update that meets the search criteria.
Find specific updates by Update ID	Searches for specific updates by update ID. Update IDs appear only if they match the user's environment information. By default, this search returns the requisites of each update ID that is found.
Verify prerequisites and post-requisites for specific updates	Searches for all unapplied requisites for specific updates. Use this search to verify that for any unapplied update ID, you have the current list of requisites .

Note. Updates appear based on whether an update is a translated update or not. If it's a translated update, then the Update Wizard determines whether the update should include English data.

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3. Click Next.

4. Select an environment, then click Next.

   You can select only one environment at a time.

   If you want to enter the environment information manually, click the *Manually enter environment information* link to access a screen where you can enter environment information and languages. Keep in mind that if you choose to manually enter environment information, you won't be able to filter updates for the environment based on patch history.

Note. The environment information that appears is what has been uploaded through Change Assistant; likewise, if nothing has been uploaded, there will be no environments available on this page from which to select. The information displayed here is the description of the environment, the type of environment, and the time of the upload. Other information stored (but not displayed) include the license code, the list of all update IDs applied, the database type, and the installed languages of this environment.

---

5. Select the applications to which you want to apply the updates, then click Next.

   If you are not using the applications or have not installed the applications, clear them.

Note. If you selected to search for updates not yet applied in step 1 of the Update Wizard, then the select applications page will appear.

---

6. Select from the following options:

Update Type

If you selected to search for updates not yet applied in step 1 of the Update Wizard, a page requesting information on the type of updates to search for appears.

Select the type of update to search.

- *All Updates* Returns all updates meeting the search criteria, regardless of the type of update. Updates that are included in bundles will not appear in the search results (if the bundle is displayed in the search results). Also, updates that are required for upgrade, will not appear in this type of search.
- *Bundled Updates only* Returns bundles that meet the search criteria. If requisites are included in the search results, it is possible that a requisite is not a bundle. Even though the requisite is not a bundle, it will appear in the search results.
- *Tax or regulatory updates only* Returns any tax or regulatory updates that meet the search criteria.
- *Required for completing a fresh install*Returns any updates required for install that meet the search criteria.
- *Documentation updates only* Returns any documentation updates that meet the search criteria.
- *Required for completing an upgrade* Returns any updates required for upgrade that meet the search criteria. Updates *required* for upgrade only appear with this search option.

Date Posted

Select *Anytime* to search for all posting dates. If you select *Within this time period,* then select a From and To date using the date selector.

Include prerequisites and postrequisites not already applied to selected environment

Select to include all the requisites that have not been applied to the selected environment for the date and time criteria.

7. Click Next.

8. When the Candidate Updates screen appears, you may do the following:

   - Review and analyze the list of update IDs and evaluate the associated prerequisites and post-requisites.
   - Select the update ID link to view the details of the update. The update ID column indicates the updates that were found during the search.
   - Click Exclude if you want to remove the update ID from the list. By doing this, these are removed: 1) any updates that are required by the excluded update; and 2) any update that is only part of the search results, because it is a requisite of the excluded update.

     A confirmation page appears, listing all updates that will be excluded by this action. You can choose to accept or cancel any exclusion.

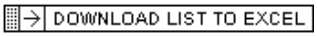
     Note. PeopleSoft recommends that you include all update IDs. Excluding some update IDs may cause problems because of the dependencies between updates.

     ---

9. Click Next to see a preview of what will be downloaded.

   You can click Download List to Microsoft Excel to populate an Excel spreadsheet with all of the update IDs. You can then review and analyze the Excel spreadsheet offline. The search results grid has several columns that help you review the results.

Update ID	Displays the update ID associated with the change package. You can click the related link to obtain a detailed description of each update.
Type	Indicates whether the update is a primary update or a requisite of another update. A primary update indicates that the update ID meets the search criteria. An update can be both a primary and a requisite. The grid default sort order places all primary updates first, followed by updates that are both primary and requisite, and finally requisite updates. All are sorted in descending order by the post date. The icon adjacent to the type indicates whether the update is a *Bundle, Standalone Update,* or a *Standalone Update within a Bundle.*
 **Bundle**	Indicates that the update is a bundle. When a bundle is applied, all updates contained in the bundle are applied.
 **Standalone**	Indicates a stand-alone update, not included in a bundle.
 **Standalone Update within a Bundle**	Indicates a standalone update contained in a bundle; however, the bundle is not included in the search results.
	Click to exclude the update ID from the results list. Any updates that are required by the excluded update and any update that is only part of the search results, because it is a requisite of the excluded update, are also removed.



Click to download a list of update IDs into a Microsoft Excel file.

When downloading the list of update IDs to Microsoft Excel from the Update Gateway, Oracle recommends selecting the following configuration options for your browser:

- Make your PeopleSoft application a trusted site, as in, add https://update.peoplesoft.com and https://peoplesoft.com to the 'trusted sites' list.
- Enable your browser to prompt you automatically for downloads.

Description Displays the description of the update.

Posted Displays the date that the update was originally posted.

Pre/Post-requisites Displays the update IDs for the associated prerequisites and post-requisites. The requisites column displays the list of requests for the update. This column only displays the first level of requisites for the update. Each requisite in this list also appears in the update ID column, thus being included in the search results. This list shows those requisites which have not already been applied. It always displays the appropriate requisite for multilingual users and the appropriate requisite if a supersede occurred. This list does not appear if you have selected not to include requisites.

Note. There can be situations where a requisite in this list is not displayed in the update ID column. For example, if the requisite is contained in a bundle that is already included in the search results (appearing in the update ID column).

Note. Maintenance packs and Tax updates will not be available as part of the search described in this section. Maintenance packs and Tax updates are available to be downloaded separately. On My Oracle Support, select Patches and Downloads and click the PeopleSoft Products link. You can view maintenance pack and tax update schedules by selecting the Knowledge tab in My Oracle Support and on the Knowledge Base for PeopleSoft Enterprise Customers page scroll down to view the "Roadmaps and Maintenance Schedules" and "Tax Update Schedules sections."

If You Manually Enter Environment Information

If you selected to manually enter environment information, the Update Wizard does not know the license code of your environment. In this case, every application for the specified product line appears. Therefore, you will have to determine which applications are appropriate for your environment.

You will not be prompted to select applications in step 1 of the Update Wizard. Instead, a page appears that allows you to search for a specific update ID. When you are searching for specific updates, the check box in the lower part of the page labeled "Include prerequisites and post-requisites not already applied to selected environment", is selected by default. Select this check box (clear it) if you do not want to see requisites included in the search results. Leave the check box activated if you want the tree of requisites that have not yet been applied to display in the search results.

Downloading Change Packages

Once you've downloaded the Excel file with all the update IDs, including those for prerequisite and post-requisite change packages, review each update ID before you download the associated change packages. You may decide not to download certain updates upon further review.

Note. When a change package becomes obsolete, the page for the change package remains in place, however, the change package is removed. If you are downloading manually, the page for the obsolete change package displays a link to the change package that supersedes it. If you are downloading through Change Assistant, the update gateway detects when a change package has been superseded, and it automatically downloads the superseding change package. This applies to post-requisites and prerequisites also.

To perform the download process:

1. Select the Tools, Download Change Packages.

   The system prompts you to select the download directory.

   Note. If the Environment Management hub is unavailable, an error appears and the download is canceled. If the appropriate URL options data is missing, an error stating that this option data is required appears and the download is canceled. Verify that these values are specified and the Environment Management hub is up and running.

2. Accept the default download directory that you set up in Change Assistant options, or select a different directory for your download.

3. Click Next to display a screen where you enter the update IDs.

   You may enter multiple update IDs by separating them with spaces, commas, or returns.

   Note. To avoid mistakes, PeopleSoft recommends that you copy and paste the desired update ID values from the spreadsheet created during the update discovery process.

4. Click Next to display a screen where you enter your user name and password to access posted updates.

5. When the Confirm Selections screen appears, review the list of update IDs that you want to download before clicking Next.

6. When you are prompted to launch the Apply Change Package upon the completion of the download process, you may elect to accept or decline.

7. Click Close when the download is complete.

Chapter 7

Applying Updates

This chapter discusses how to:

- Review the update change log.
- Work with templates.
- Apply updates to a target environment.

Reviewing the Updates Change Log

In order for Oracle to identify the prerequisites and post-requisites for an update, Change Assistant must upload a reliable and valid change log. The change log keeps track of all the change packages that you have applied.

Using the Environment Management hub, Change Assistant evaluates the change log status of the available environments to identify if prerequisites have already been applied before allowing you to apply a new change package.

To review the change log for an environment, or to confirm whether particular update has been applied, you use the following PeopleTools utilities:

Utility	***Navigation***
Updates - View All	PeopleTools, Utilities, Administration, Updates - View All
Updates by Release Label	PeopleTools, Utilities, Administration, Updates by Release Label
Updates by Update ID	PeopleTools, Utilities, Administration, Updates by Update ID

Only those application releases in which *all* of their application updates were delivered in change packages are considered to have reliable change log data. Application updates that you applied that were not delivered as change packages are probably not included in your change log. Therefore it's possible that your change log does not match your actual maintenance history. In these cases, you should apply change packages individually—select only one change package in the Update Wizard. Then, you can verify whether the list of missing prerequisites reported by Change Assistant accurately reflects your maintenance history.

If your target environment is at an application release level that is not considered to have reliable change log data, Change Assistant may falsely report that a prerequisite is missing from this environment. If this is the case, do*not* add the supposed missing update to your current apply list, as this would reinstall the update (not recommended).

Therefore, if your target environment may have unreliable change log data, review the list of missing prerequisites found by Change Assistant and if any of these updates are known to have been previously applied to your target environment, manually enter these updates to your change log first so that Change Assistant can accurately determine that these prerequisites have been satisfied. If you need to add entries to your change log, you will have to restart the apply change packages process.

Working with Templates

When applying a change package, Change Assistant uses the update template embedded in the PeopleSoft-provided change package. You can use the update template to automate the majority of the job steps. The primary difference between a template and a job is that a template is a composite of the update process, whereas a job is a set of filtered steps for a given target environment within a template.

PeopleSoft delivers update templates for each update in PeopleSoft change packages. When you apply updates by using the Apply Change Packages option, Change Assistant automatically loads the template into the Change Assistant internal storage system. You can add additional chapters, tasks, and steps to the template.

Note. Any changes that you make to the imported template won't affect the original template that you downloaded with the change package. If you want to overwrite the original template with your changes, save the template and select File, Export to export it to the directory from which you downloaded it. You can also use the export function to make this modified template available to others.

In order for others to use the template that you create or modify, you need to export it from Change Assistant.

To export a template:

1. Select File, Open Template.
2. Select File, Export Template.

   The Export Template dialog box appears.
3. Navigate to the folder in which you want to save the template.
4. Enter the name of the template.

   Note. If you want to overwrite the original template that you downloaded, enter the original name of the template.
5. Click Save.

   Note. To ensure consistency with shared templates, the system includes all template and step properties in the exported XML file, regardless of whether the property value differs from the default value.

See Chapter 9, "Getting Started with Software Upgrades," Using Templates in Upgrades, page 94.

Applying Updates To A Target Environment

To apply change packages to the target environment select Tools, Apply Change Packages.

The apply process enables you to apply one or more change packages to the target environment. A typical change package apply process, would be as follows:

1. Apply the change package without compare to your demonstration environment.

   Since the demonstration environment does not contain any customizations, there is no need to compare. This brings the demonstration environment current on the specific maintenance, overwriting the new maintenance into the demonstration environment.

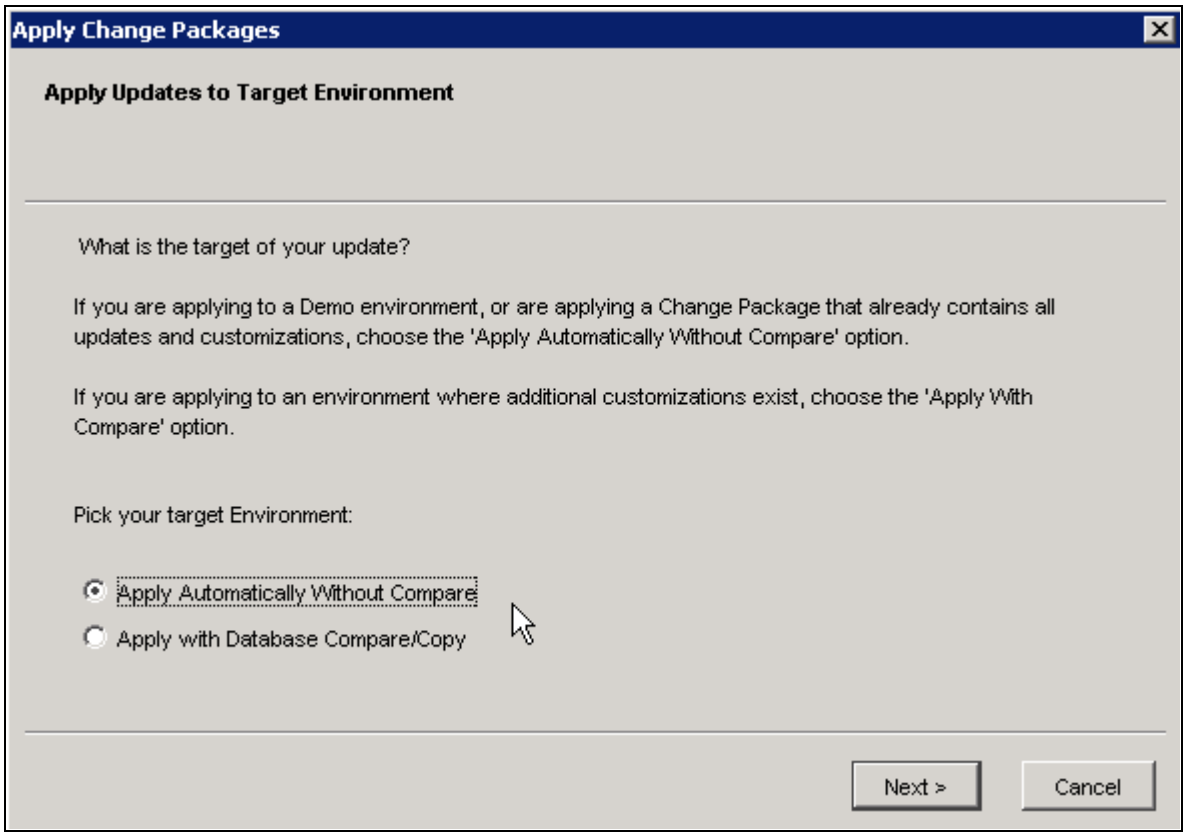
2. Apply the change package to the first customized environment by using the 'Apply with Database Compare/Copy' option.

   This uses your demonstration database as the source and this customized environment as the target. This process augments the normal Change Assistant template/job in order to compare the change project from the demonstration database to the target database.

3. Use the PeopleTools database compare and copy utilities to reconcile the new changes from PeopleSoft with your customizations, just as you do during an upgrade.

4. Once the reconciled or modified change package is created, it can then be applied without compare into all other customized environments, assuming these customized environments are the same.

You use the Apply Change Packages wizard to select the appropriate settings for a change package.



Apply Updates to Target Environment

Apply Automatically Without Compare

Applies the change package to the target environment and copies the project without initiating any compare reports or analysis.

Select this option if you are:

- Applying a PeopleSoft-delivered change package to a PeopleSoft demo environment.

  Because you have not made any customizations to a demonstration environment, there is no need to compare objects.

- Applying a modified change package to your own environments, as in development, test, or production environments.

  The "modified change package" refers to a new change package created using the Apply with Database Compare/Copy option. This modified change package is the result of the Change Management process where you have reconciled changes made in the PeopleSoft maintenance with your customizations. Once the modified change package has been created for the first customized environment, there is no need to compare additional environments. This assumes that the additional environments contain the same metadata. Once you have created this modified change package, it can be applied without compare to the remaining customized environments.

Apply With Database Compare/Copy	Select this if you are beginning the process of migrating a PeopleSoft-delivered change package to your customized environments. In this case, you are applying to a customized environment, and this will require the use of PeopleTools' change management tools, such as compare and copy.

Note. When applying multiple updates, a job set may not move on to the next update if there are steps in the current update with a status of *Warning* rather than *Success.* In this situation, review the logs for the steps with warnings and take any corrective measures, as needed. Then change the status of these steps from *Warning* to *Complete* to proceed to the next change package in the job set.

Apply Without Compare

This section describes the apply process after you have selected the Apply Automatically without Compare option.

To apply a change package without compare:

1. On the Apply Updates Using the Change Impact Analyzer screen indicate whether you want to include Change Impact Analyzer analysis.

   Typically, system administrators use Change Impact Analyzer to help devise a test plan based on the impact of changes.

2. On the Select a product line release screen indicate product line associated with the target environment.

3. On the Select Target Environment screen, select the database name associated with the target environment.

   All PeopleSoft web servers, application servers, Process Scheduler servers, and so on, are associated with one, and only one, environment, which is determined by the database.

4. On the Environment Preparation screen acknowledge that you have performed the recommended pre-update procedures.

5. On the Select File Servers screen, select the file servers that are used in conjunction with the target environment.

   Note. The system uses this file server selection only as a destination to deploy files during the apply process. The file server specified is not used for execution purposes. The executables used to run steps during the apply process are those specified in the PS_HOME edit box on the Change Assistant Options page.

   File server installations are not necessarily tied to any one environment, unlike application servers, web servers, Process Scheduler servers and database servers, which are associated with one, and only one, database environment. On the other hand, a single file server could be used for multiple databases, and likewise, there could be multiple file servers in your PeopleSoft implementation all supporting different application versions. So, it is necessary to prompt you to select the appropriate file server installation.

6. On the Enter user name and password screen, enter the user credentials required for Change Assistant to be authenticated.

7. On the Select apply directory screen, confirm the location of the change packages you intend to apply.

8. On the Select Change Packages screen, select change packages to install.

   You can use Select All to select all the available change packages listed on the screen.

9. Click Next after you've selected your change packages.

   At this time, Change Assistant examines all the selected change packages to determine if any of them have previously been applied.

   Note. If an *Unable to read change package* error appears because of an unsupported change package version number, then you must install the latest release of Change Assistant.

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10. If the change package has already been installed, you will be prompted to select one of the following options:

    - Do not reapply the change package.
    - Review each change package individually, with option to apply.

      If you choose to review each change package individually, you will be prompted either not to reapply the change package or to reapply the change package (not recommended).

11. Select the options, then click Next.

    If none of the translated languages included in a change package applies to the languages installed in the target environment, you will be prompted to select one of the following options:

    - Remove these change packages from my installation list.
    - Review each of these change packages individually, with option to apply.

      If you elect to review each change package individually, you will be prompted either not to apply the change package or to apply the change package (not recommended).

12. After you've made your selection, Change Assistant searches for post-requisites. If there are post-requisites that are not listed in the apply list, you will be prompted to select one of the following options:

    - Apply these additional change packages.

      The additional change packages are added to the list of selected change packages.

      Note. This option is enabled only if the additional change packages are already present in your apply directory.

    - Remove the change packages that require post-requisites from my installation list.

13. Click Next.

    Change Assistant searches for any missing prerequisites required by the selected change packages, and you will be prompted to make the same selections as in the previous step.

    Note. If your target environment is at an application release level that is not considered to have reliable change log data, Change Assistant may falsely report that a prerequisite is missing from this environment. If this is the case, it is very important that you *not* elect to add the supposed missing update to your current apply list, because this would reinstall the update, which is not recommended. Therefore, if your target environment is considered to have unreliable change log data, it is very important that you review the list of missing prerequisites found by Change Assistant. If any of these updates are known to have been previously applied to your target environment, you must first manually enter these updates to your change log so that Change Assistant can accurately determine that these prerequisites have been satisfied. If you need to add entries to your change log, you will have to restart the Apply Change Packages process.

14. After you have selected your option, click Next.

    If one or more of the change packages you are applying includes the Build and Alter template steps, you will be prompted to select one of the following methods to apply the database changes.

    - Automatically: Enables build scripts to be run as an automated template step.
    - Manually: Enables the build script to be run as a manual template step.

15. If one of your selected changes packages will be executing a script that includes embedded question syntax that is supported by Change Assistant, you will be prompted to enter a runtime value for the script variables.

16. Click Next to display a screen where you confirm your selections–target environment and change packages to apply and number of manual steps, if any, for each change package.

17. On the Apply Now screen, consider the options presented before applying the change project.

Validate Now	**Note.** Before you initiate the apply update process, you can validate your environment connections to ensure all components are active.
Review and Apply	Enables you to review the entire job to make sure it is correct before running it against an environment.
	Note. If there are steps you don't want run or have already completed manually, you could set them to Complete while reviewing the job. For example, if you have already deployed some files manually to a certain PS_HOME, you could set that step to Complete to save time and avoid overwriting any custom settings.
Begin Apply	Starts the update job.

Apply With Compare or Copy

The interface of the Apply Change Packages wizard is similar to what you see with the Apply Without Compare option, however, the following steps are included.

- Compare project from the demo database to the development or copy of production database.

  Change Assistant will compare this project between the source database and the currently selected environment (target database).

- Examine the compare report step (a manual step).

  You must examine the compare reports generated to determine the appropriate action (for example, whether or not to copy the object from the source database to the target database)

- Copy project from the source database.

  Change Assistant copies the objects from the source database to the target database, based on the actions chosen.

- Extract the files from the delivered change package.

  Change Assistant will extract the current change package to a temporary location (<<staging directory>>/~ExtractedCP).

- Re-apply customizations.

  This is a manual step.

- Compare and merge files.

  This is a manual step.

- Export the project from the target database.

  Change Assistant will export (from the target database) the project containing customize objects to a temporary location (<<staging directory>>/~ExportedProject)

- Change Assistant creates a new change package in the download directory. The original change package is renamed to xxxxx.zip_datetimestamp.

Automatically Deploying Files to Different Servers

Change Assistant can automatically deploy files in a change package to different servers within an environment. If the job that is running while applying the change package includes a Deploy Files chapter and contains tasks and steps, that indicates to Change Assistant to deploy the files to the agents that are running in the environment.

While Change Assistant runs deploy file steps within the job, it will query the hub for the location to deploy the files. The query is based on the server, operating system, and database platform. If the query returned from the hub matches what was defined for the file reference in the change package, Change Assistant attempts to deploy the files to the agent running on the host machine.

Change packages provided by PeopleSoft applications, are configured to deploy multiple files of the same type within one step. This can improve performance, especially when a change package contains hundreds of updated files.

When files are deployed, the step's log file lists the host name and the type of server that match the file reference and the target path on the remote host.

If the Environment Management agent is not running at the time when Change Assistant is trying to deploy files, a warning message appears stating the inability to deploy the files. Other types of problems that may occur, such as lack of disk storage space, will result in step failure.

Resuming Running Jobs

If there is a current apply job set, the Resume Running Jobs dialog box appears automatically when you start Change Assistant, run a job, or apply change packages (start a new apply).

Select Cancel to:

- Remove all jobs associated with the current apply job set that have not been run.
- If a job definition is open in Change Assistant and it does not belong in the current apply job set, the job definition remains open.
- If a template definition is open in the Change Assistant, regardless of whether or not it's used in the current job set, it will remain open.

Select No to keep the current apply job set and its associated jobs as they are, so that you can resume this apply job set later.

Select Delete Job Set to delete the current apply job set.

Chapter 8

Working with Change Packages

This chapter provides an overview of change packages and discusses how to:

- Create a change project.
- Create a change package.

Note. Change Packager is only available for PeopleSoft application updates, not PeopleTools updates.

Understanding Change Packages

Once you have your change project completed, you create a change packages in Application Designer. Change packages are used to enable:

- PeopleSoft developers to package software updates and any prerequisites associated with PeopleSoft application updates
- You to package your own system customizations into a change project, which is then used by the Change Packager and Change Assistant when migrating from one release or one environment to the next.

The process of using a change package is to:

1. Create a new project adding all new items for the application changes to the database for the update, identifying the project as a change project and setting the appropriate update IDs and prerequisites, if applicable.
2. Define the file reference definition(s), if necessary, for the individual files that need to be packaged with the project and the file type code.

   Note. Only projects that contain physical files (such as SQR or Excel files) need to include a file reference definition.

   ---
3. Generate the change package, which copies the project to a file, generates a Change Assistant template and documentation, creates the Data Mover scripts for non-managed objects, and packages the referenced files.
4. Manually update the Change Assistant template, if necessary, that is generated by the Change Packager.
5. Finalize the change package using the Finalize Change Package option, which performs validations on the package and produces the zip file.

   The zipped archive files contain the change project and all its associated files.

6. Test the newly created change package.

Creating a Change Project

In addition to identifying the project as a change project, if necessary, you will need to add a file reference definition to the project, which requires a file type code definition. A file reference is only necessary if there is a physical file that you want to execute or deploy or both when the change package is applied by Change Assistant.

This section discusses how to:

- Set project properties for a change package.
- Define the file type code.
- Create a file reference definition.
- Modify the upgrade definition type.

Setting Project Properties for a Change Package

Before beginning to work with the Change Packager, you must identify the project you want to use as a change project. You do this in the Project Properties dialog box.

To create a change project and set project properties:

1. Create a new project.
2. Open the Project Properties dialog box.
3. Enter a Project Description and any pertinent comments for your internal tracking system on the General tab.

   The system populates the information you enter here into the change log and the manifest.
4. Select Change Project on the General tab.

   This enables the Update IDs and the Pre-Requisites tabs. Here you identify the lead incidents from your incident tracking system, if applicable, that identify the updates to the database.
5. Select the Update IDs tab.

6. Enter the primary incident tracking ID associated with the update you want to implement in the Update ID field.

   This field may contain both numeric and alphanumeric characters. The system considers the first value in the list to be the primary ID for the project. When entering your own incidents:

   a. Enter the names of the fixes or the update IDs fixed in this project. The system logs them to the manifest and includes them when Change Packager copies the project.

   b. Click Add to add it to the list.

   Note. In order for Change Packager to create the change package successfully, you must enter a value in the Update ID field.

7. Select the Pre-Requisites tab.

   List any prerequisites that this project might have. Change Assistant checks those incidents that you enter here against those listed in the target environment's change log to verify whether the fix has been applied.

Defining the File Type Code

Each file reference definition that you create for the project must be associated with a file type code. The file type code stores generic information that is applicable to a group of files within the same target directory.

Access the file type code definition from Tools, Miscellaneous Definitions, File Type Codes.

To define the file type code for the file reference definition:

1. Click New to access the New File Type Code dialog box.
2. Enter a file type code and click OK.

   The file type code can be up to 30 characters in length. This action opens the File Type Code dialog box.

3. Enter the Path.

   This notifies Change Assistant where the file belonging to this type code should be deployed. The only supported environment variable for use is *%ps_home%*.

4. Enter a description for the file type code.

   This field is required in order to save the definition.

Creating a File Reference Definition

If you have individual files that need to be packaged with the project, you can create file reference definitions to identify them. Create one file reference definition for each file. You create a file reference definition in the same manner as all other PeopleTools definitions in Application Designer, by selecting File, New from the menu.

File Name and Path	Enter the path and file name for the file you want to reference. Use the browse button to search the proper path. This is the source location and file from which Change Packager selects the definition for packaging. This field supports the use of environment variables. If you want to create a file reference with a variable path, prepend %FILEREFPATH% to the filename.
Change Assistant Template Text	Enter the text you want to display in the Change Assistant template for this change package. This field has a 20 character limit.
Binary	Check if the file is a binary file. This information is necessary to properly transfer the file to the target platform.
Database Platform	Select the database platform for the target database.
Operating System	Select the operating system for the target database.
PeopleSoft Server	Select the applicable server for your system.
Unix Target Directory Security	Specify the file permissions the file should have once it is copied if operating on a UNIX system.

For each of the drop-down list boxes in this dialog box, you may select multiple entries by using the Shift/Ctrl keystroke combinations.

The file reference properties contain only the General tab where you can enter any comments about the file reference as well as select the Owner ID. This tab also tells you when the definition was last updated and by whom.

When you save the file reference definition, the definition name defaults to the file name you entered in the File Name and Path field. The Save As dialog box prompts you for the File Type Code, which is a requirement for every file reference definition.

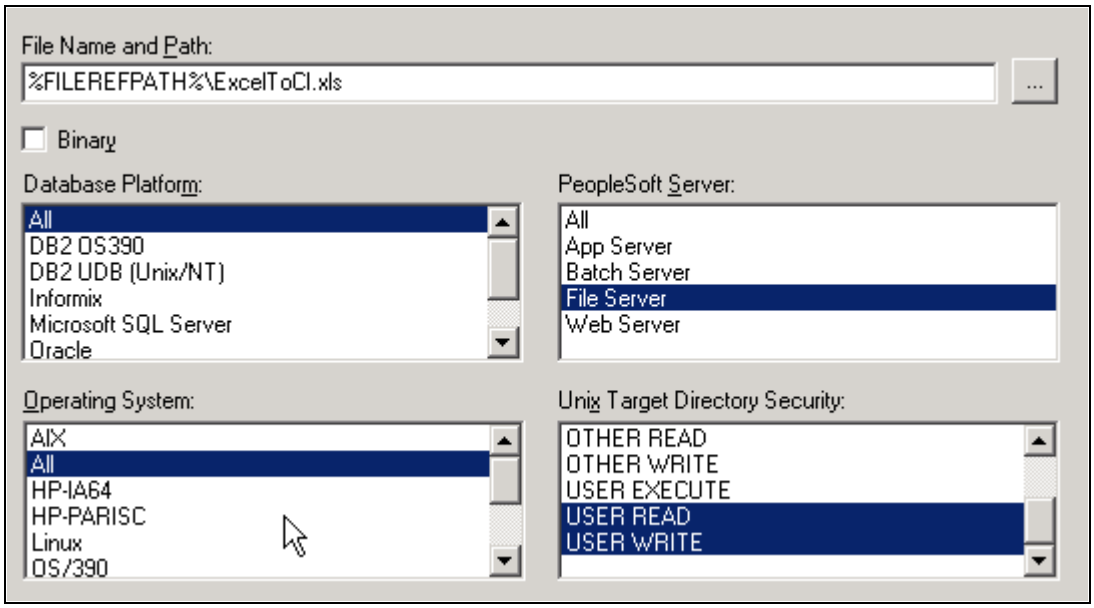
Variable File Reference Path

You can use a variable path as a file reference. To do this, in addition to the steps for creating an absolute path:

- In the File Name and Path edit box, enter the name of the file and prepend the filename with %FILEREFPATH%.

  For example: %FILEREFPATH%\ExcelToCI.xls

- Add this file reference to a change project.



Example of Variable Path File Reference

Using variables in the file reference definition eases the repackaging of a change package. When you create a change package with a variable file reference, the File Reference Path edit box in Create Change Package dialog expands the %FILEREFPATH% variable in the file reference definition. However, the file reference definition itself is not updated in the process.

This enable you to repackage change packages without having to modify the file reference definitions. The value in the File Reference Path field is stored in the registry and displays the last value.

When the change package is recreated, the update ID automatically expands the file reference paths according to the following construct:

file reference path + upd + *update ID* + \ +upd + *update ID* +_batch\filereferences\ + *file type code* + *filename*

For example:

c:\temp\upd999999\ upd999999_batch\filereferences\XLS\ExcelToCI.xls

c:\temp\upd999999\ upd999999_batch\filereferences\SQR\xrfwin.sqr

If the file does not exist in the directory, the system searches for the file reference path. If the file isn't found in this directory, then an error will be displayed and the Change Packager fails to create a change package.

See Chapter 8, "Working with Change Packages," Creating a Change Package, page 84.

Modifying the Upgrade Definition Type

After creating the file reference definitions and inserting them into the change project, the next step is to modify the upgrade definition type to instruct whether Change Assistant should deploy or execute the file reference. Deploying the file copies it to the location specified in the File Type Code defined in the target environment. Executing the referenced file means it will be run on the Change Assistant machine.

Note. File references and application engine programs are the only definition types that can be executed.

To modify the upgrade definition type:

1. Open the change project.
2. Select the Upgrade tab in the project workspace.
3. Double-click the File References folder.

   This action opens the upgrade definition type listing all file reference definitions for that project.
4. Choose the appropriate upgrade attributes for each of the file references listed.

   Refer to this table to ensure the desired results:

Desired Result	*Execute Check Box*	*Upgrade Check Box*	*Action Option*
Deploy and Execute	Selected	Selected	Copy
Deploy only	Cleared	Selected	Copy
Execute only	Selected	Cleared	Copy
No Step*	Cleared	Cleared	Copy
No Action**	Either	Either	Delete

   * No step indicates that the generated Change Assistant template will not have a step corresponding to that file reference definition.

   ** No action means that the file is neither deployed or executed in the target machine.

   The default settings for the upgrade definition type are set for deploy only.
5. Save the project.

Creating Change Packages

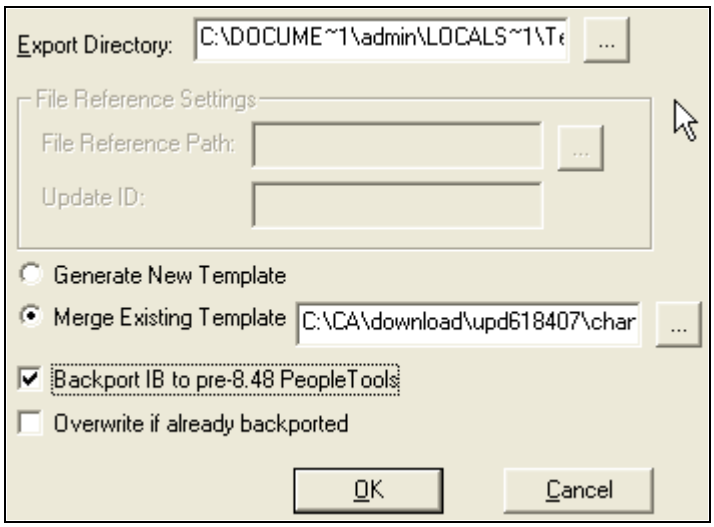
This section discusses how to:

- Create a change package.
- Modify the Change Assistant template.
- Finalize the change package.

Creating a Change Package

Once you have created your change project you can build the change package using the Change Packager feature in Application Designer.

To create a change package, select Tools, Create Change Package, which invokes the Create Change Package dialog box.



Create Change Package dialog box

Export Directory The Change Packager feature copies the project into the directory you identify. Use the browse button to search for the desired directory. If you already created a change package for this project in the same directory, the system prompts you to delete the existing file.

File Reference Settings These settings apply only if your change package contains file references, otherwise these settings are disabled.

- File Reference Path: Enter the path for the file reference.
- Update ID: Enter the associated update ID.

See Chapter 8, "Working with Change Packages," Variable File Reference Path, page 82.

Generate New Template Select this option if you intend to generate a new Change Assistant template with your change package that *does not* incorporate any manual changes made to an existing template.

Merge Existing Template Select this option if you intend to incorporate any manual changes you have made to an existing Change Assistant template. Enter the file path or navigate to the location of the existing Change Assistant template you want to merge with the updated template.

Backport IB to pre-8.48 PeopleTools Select if your changes affect Integration Broker (IB) definitions and need to be applied to versions of PeopleTools before PeopleTools 8.48. In PeopleTools 8.48, the metadata surrounding Integration Broker changed significantly

Overwrite if already backported Only appears if Backport IB to pre-8.48 PeopleTools is selected. Select this option to overwrite any Integration Broker changes that have already been backported.

The progress dialog boxes indicate the definitions that the system is copying into the change package. The system then confirms that the change package was created successfully. The Results tab of the output window displays a list of the definitions in the project by definition type, as well as any errors encountered.

Open the staging directory to confirm the change package was created successfully. The destination directory now includes a new folder named after the project and appended with the word *Package*

Change Packager Output

The Change Packager feature generates several folders and a manifest, placing them in the output directory you specified previously. The manifest from the change package is an XML document containing data that may need to be accessed quickly by Change Assistant. This manifest information includes:

- Update ID(s) from the project properties.
- Prerequisite ID(s) from the project properties.
- Update summary text from the project properties.
- The user who created the update.

  This is the user ID for the individual that last updated the project based on the *By User* field in the Project Properties dialog box.

- Post date.

  This date is generated from last updated *Date/Time* field from the Project Properties dialog box. Change Assistant uses this date to determine the order in which to apply a selection of change packages.

- The number of manual steps included in the Change Assistant template.
- A count of the definition types included in the project.

In addition to the manifest are six folders that include:

- The Change Assistant template

  The template contents for the update are tailored to the specific contents of the change project, including all relevant file deployment steps for each file reference definition given the file type code and the file reference attributes.

- Documentation

  The change package documentation is an HTML file. This document contains general information on the installation as well as instructions that are customized to your specific customizations. When you open the change package in Change Assistant, it displays the proper documentation for the current step in which you are currently working.

- File references

  The File References folder contains folders for each file type code associated with each file reference definition in the project. Each file type code folder contains a copy of the actual file referenced by the project's file reference definitions associated with this file type code.

- Project folder

  This folder contains an XML file of all project information.

- Pre 8.44 project folder

  This folder is applicable only to customers operating on a pre-8.44 PeopleTools release and are therefore not using Change Assistant to deploy change packages.

Modifying the Change Assistant Template

In most cases, the Change Assistant template generated by the Change Packager is exactly what you need to begin working with Change Assistant. However, in rare instances it may be necessary to manually add or update the steps in the Change Assistant template. The template is located in the Change Assistant package directory as an XML file.

Finalizing a Change Package

Once you create the change package and are satisfied with the Change Assistant template, finalize the change package. The finalization process validates the files to confirm that all of the necessary pieces to produce the change package are present and generates a zip file for the entire change package. The zip file enables you to easily migrate your change sets to multiple environments.

To finalize a change project:

1. Open the change project to finalize.
2. Select Tools, Finalize Change Package from the menu.
3. Enter the location of the staging directory that you would like zipped up for the change package and click OK.

   Use the browse button to search for the proper directory.

   Change Packager places the zip file in the "<project name>Package" file, using the project name for the file name.

Working With Change Package Automation

This section provides an overview, and discusses:

- Working with ReleaseAdaptor.
- Working with ProjectFilter.
- Working with ProjectInspector.

Understanding Change Package Automation

PeopleTools provides a set of standalone utilities that automate the manipulation of change packages, ensuring that only the appropriate changes get included in change packages and applied to your system. For the most part, these utilities improve the process of creating change packages within Oracle for distribution to customer sites. However, they can also be useful at customer sites, where development teams create custom change packages to apply to their implementations.

These utilities address situations in previous releases, where during upgrades, manual steps were required and multiple change packages need to be applied, such as in the cases where Integration Broker metadata needed to be applied to pre-PeopleTools 8.48 releases. In most cases, these utilities run in the background when you create change packages or perform an upgrade while using Change Assistant. To run these utilities manually, they can be invoked from the command line, or added to automation shell scripts, for example.

When these utilities are used within an upgrade process, the documentation in your Change Assistant job and your upgrade documentation will provide the necessary details.

See Your PeopleSoft application upgrade documentation

Working with ReleaseAdaptor

ReleaseAdaptor is invoked by Change Assistant to remove:

- contents from the project that are not consumable by the target PeopleTools release.
- unneeded steps from the change package template.

ReleaseAdaptor appears as a Change Packager step, and automatically examines the project to determine if it is applicable to the current PeopleTools release. For example, it determines whether a project contains Integration Broker content, and, if the PeopleSoft application release is pre-PeopleSoft 9.0. If the project meets these criteria it generates and includes the additional pre-PeopleTools 8.48 Integration Broker elements without any manual intervention. The resulting change package will contain all elements required for consumption by all applicable releases of PeopleTools.

A set of command-line transformation programs enables this processing. Which programs need to be run for a specific release is determined by the TRANSFORM_PROGRAMS.XML file. TRANSFORM_PROGRAMS.XML has two sections:

- a list of <release> tags that map various pillar and release identifiers into <InitialToolsRelease> elements
- and a list of <transform> tags that specify which transforms to apply for each <InitialToolsRelease> element

The TRANSFORM_PROGRAMS.XML file is located in *PS_HOME*\BIN\CLIENT\WINX86.

The final, consolidated project will contain all required elements for all release targets.

Working With ProjectFilter

ProjectFilter enables you to remove the specified project contents from the specified project.

Use the following syntax:


```
ProjectFilter [[-PRJ <projectFile> [-TY|-TX <type name[;type name*]>]
[-N <instance name[;instance name*]>]] | [-TL]] [-LOG <log filepath>] [-?]
```

Parameter	*Description*
-PRJ	Specify the project file to be scanned. No default value assumed.
-TY | -TX	-TY specifies one or more object type names to be removed, delimited by a semicolon character (;). -TX specifies one or more type names to be retained, delimited by a semicolon character (;). -TY and -TX are mutually exclusive. If neither TY nor TX are specified, all types are removed.
-N	A list of names of instances to be removed or retained in the form type:name0.name1.name2.name3 where each name is delimited by a semicolon (;) character. If not specified, all instances are removed or retained consistent with any -TY or -TX specification.
-TL	Lists the valid type identifiers, names, and descriptions.
-LOG	Absolute path to log file.
-?	Shows usage details.

Example: ProjectFilter

Entering the following removes record and field type objects from the project C:\PRJ151141.xml, and writes a log file to C:\ProjectFilter151141.log.

```
ProjectFilter -PRJ C:\PRJ151141.xml -TY Record;Field
-LOG C:\ProjectFilter151141.log
```

Entering the following lists valid object types, and writes a log file to C:\ProjectFilterObjTypes.log

```
ProjectFilter -TL -LOG C:\ProjectFilterObjTypes.log
```

Working With ProjectInspector

ProjectInspector enables you to query the contents of projects. It does not require signon and it does not make a database connection. ProjectInspector is designed to be incorporated in automation shell scripts and for ad hoc queries. If can be run against projects created using previous releases of PeopleTools.

Use the following syntax: This has the command line:

```
ProjectInspector -PRJ <project file> [-TY <type name [';' type name]* >]
[-N <instance name [';' instance name]* >][-L N | C | T][-TL] [?]
```

Parameter	*Description*
-PRJ	Path name of the project file to be scanned. There is no default. If just a name is specified, the program checks in the current directory.
-TY	One or more object type names to be listed, delimited by a semicolon character (;). If not specified, all types are removed.
-N	A list of names of instances to be removed or retained in the form type:name0.name1.name2.name3 where each name is delimited by a semicolon (;) character. If not specified, all instances are removed or retained consistent with any -TY value.
-L	Specifies the listing format and can be either N, T or C. • N means list the types and names of all objects with one object per line. • T means list the types and counts of all objects with one type per line. • (Default) C means list just the number of objects as a single integer. The –N and –T arguments can be used in the same command provided the types do not overlap. Specifying the same types in an –N name argument as in a –T argument causes an error.
-TL	Lists the valid type names, numeric identifiers, and descriptions.
-?	Shows usage details.

Example: ProjectInspector

Entering the following lists the number of subscription PeopleCode and message channel definitions in the project, or a null string if there were none.

```
ProjectInspector -PRG PRJ8979874.XML -TY SubscriptionPPC ; MessageChannel -T T
```

Part 3

Using Change Assistant for Software Upgrades

Chapter 9

Getting Started with Software Upgrades

This section provides an overview of Change Assistant, and discusses:

- The Upgrade Process Using Change Assistant.
- Using Templates in Upgrades.

Understanding Change Assistant For Upgrades

You use Change Assistant to help automate and customize the PeopleSoft upgrade process. A PeopleSoft upgrade typically includes a PeopleTools and a PeopleSoft application upgrade. Full application upgrades are delivered with detailed templates and documentation tailored to your specific upgrade path. Be sure to review all documentation, release notes, and templates prior to beginning your upgrade.

The Upgrade Process Using Change Assistant

The following list describes the major steps within an upgrade when using Change Assistant.

- Download the Change Assistant template and documentation for the specific upgrade process that you will be performing.
- Import the template into Change Assistant.
- Use the Database Configuration wizard to define your database environment and identify the databases to be used during the upgrade.
- Create an upgrade job tailored to your specific environment, defining all the steps required to perform the upgrade.
- Set the documentation directory.
- Use Change Assistant to guide you step-by-step through the upgrade processes. Change Assistant shows you documentation for each step, automates many of the steps, and keeps track of the upgrade progress.

Using Templates in Upgrades

The interface for using upgrade templates is identical to that used for update templates. However, certain options, such as those used to configure upgrade environments, are only used when performing a full upgrade.

See Chapter 5, "Working With Change Assistant," Working with Change Assistant Templates and Jobs, page 48.

Chapter 10

Configuring Change Assistant for Upgrades

This chapter discusses how to:

- Download the upgrade template and documentation.
- Import and open an upgrade template.
- Confirm the PATH variable.
- Set the documentation directory.

Downloading The Upgrade Template and Documentation

You can download the templates and documentation for your application from the upgrade documentation from Oracle.

Download the upgrade template and the HTML upgrade documentation to the same machine on which Change Assistant is installed. After the upgrade template file and documentation have been downloaded, detached, and unzipped, you can import the template to Change Assistant.

Note. Change Assistant uses HTML documentation. If you want to print the documentation, there is a .pdf file available that has the same information.

Importing and Opening a Template

To import and open the upgrade template:

1. Start Change Assistant.
2. Select File,Import Template.

   The Import Template dialog box appears.
3. Select the directory where you stored the upgrade template that you downloaded from.
4. Select the template for your product and path.

5. Select File, Open Template..

   The Open Template dialog box appears, which lists all of the templates stored in Change Assistant.

   Note. If this menu option is disabled, make sure you have Create or Modify Templates selected as the mode in the Change Assistant Options dialog box.

   See Chapter 4, "Configuring Change Assistant," Specifying Change Assistant Options, page 35.

6. Select the template for your product and path.

   Change Assistant loads the template for your upgrade product.

Confirming The PATH Variable

When performing PeopleSoft application upgrades, you make a copy of your production database, and it is the Copy of Production database (not the New Release Demo database) against which you run many of the upgrade tasks. Unless instructed otherwise, any tasks run against the Copy of Production database during Chapter 1 of your PeopleSoft application upgrade need to use the previous installation of PeopleTools, not the new installation of PeopleTools supporting the new PeopleSoft release.

During the tasks in Chapter 1 of the application upgrade, make sure the PATH variable on the machine running Change Assistant references the PS_HOME of your previous PeopleTools installation instead of the PS_HOME of your new PeopleTools installation *(OLD_PS_HOME*binclientwinx86). When starting Chapter 2 of your application upgrade, edit your PATH variable to point to the new PS_HOME (*NEW_PS_HOME* \bin\client\winx86).

See Also

Chapter 4, "Configuring Change Assistant," Confirming the Path Variable, page 34

Setting the Documentation Directory

To view the documentation associated with a template, you need to set the documentation directory first, so that Change Assistant can locate the files. Once set, you select a chapter, task, or step in the template or job tree, and Change Assistant displays the corresponding upgrade documentation in the documentation pane.

Note. Setting the documentation directory for a template requires that the template be saved.

To set the documentation directory:

1. Select Edit, Set Documentation Directory.
2. Enter or browse to the folder where you placed your upgrade documentation HTML files.
3. Click OK.

See Chapter 5, "Working With Change Assistant," Working with Embedded Documentation, page 56.

Configuring and Working With The Upgrade Environment

Before you begin performing an upgrade using Change Assistant, you must define your upgrade environment, which consists of all of the databases used to perform the upgrade and any Process Scheduler servers you intend to use. Change Assistant uses your configuration information to:

- filter the template so steps in the job apply only to your environment.
- set the upgrade path.
- locate necessary upgrade tools, like SQL query tools, PeopleTools installations, Process Scheduler servers.
- connect to the databases.

Creating An Upgrade Environment

To create an upgrade environment:

1. Select File, New Environment.
2. On the New Environment dialog box, enter a name for your upgrade environment, and click OK.

   This launches the Database Configuration Wizard.
3. On the General Settings page, specify the high-level settings for your environment.

   Other settings within the environment are determined by selections on this page.
4. Click Next to define databases and Process Scheduler servers as needed.
5. On the Confirm Selections screen, make sure you have entered all the required information correctly.

Specifying Upgrade Environment General Settings

The settings on the Database Configuration Wizard, General page are:

Unicode	Select if you use a Unicode database. If not selected, the system assumes an ANSI database.
Products	Browse and select all installed products affected by this upgrade.
Languages	Browse and select all languages that apply to this upgrade.
Database Type	Select a database platform from the list. Based on signon requirements for the database platform that you select in this field, other fields will be disabled or become available for entry.

SQL Query Executable Select the correct executable for the database platform. Valid SQL query executables for each platform are:

- DB2: db2cmd.exe
- Informix: dbaccess.exe
- Microsoft SQL Server: osql.exe
- Oracle: sqlplus.exe
- Sybase: isql.exe

Note. Change Assistant uses the command line version of the .exe, not the GUI version. For example, sqlplus.exe is used for an Oracle database, rather than sqlplusw.exe.

Important! *Oracle Database Customers:* For systems running on the Oracle database, by default, Change Assistant copies the generated SQL script files to the location specified as the TEMP User variable on the Environment Variables dialog box. So, on Oracle, the generated SQL script files will actually exist in two locations: the specified Change Assistant output directory, and the TEMP directory. This behavior is in place because some versions of Oracle SQL Plus do not support pathnames longer than 79 characters. It is recommended that you ensure that the value specified for the TEMP User variable is set to a path short enough so that the string comprising the path and generated SQL file will not exceed 79 characters.

Old Release PS_HOME Enter the location of your previous PS_HOME.

Note. Oracle recommends using a mapped drive.

New Release PS_HOME Enter the location of your current PS_HOME (the PS_HOME of the application to which you are upgrading).

Note. Oracle recommends using a mapped drive.

Enable Copy of Current Demo Database Enables a third database, *Copy of Current Demo,* to be specified in the environment, in addition to *Source* and *Target.*

In some cases, during application upgrades only, templates contain steps to be run against the *Copy of Current Demo* database. The database orientation of *Copy of Current Demo* is available only for select step types, such as compare and Data Mover steps.

Note. This option is applicable for upgrades to PeopleSoft Financials and Supply Chain 8.9 and above and PeopleSoft applications 9.0 and above.

Note. This check box applies only to application upgrades.

Enable Production Database Enable Production Database is not valid for any existing upgrade. It is reserved for future use. This option should normally be unselected.

Specifying Upgrade Environment Database Settings

An upgrade environment includes these database types:

- Source
- Target
- Copy of Current Demo
- Production

Which database types you specify in your environment depends on the type of upgrade you are performing and the types of steps that need to be run.

Database Type	*Required/Optional*	*Used in PeopleTools Upgrade?*	*Used in Application Upgrade?*
Source	Required (for Application Upgrades)	No	Yes
Target	Required	Yes	Yes
Copy of Current Demo	Optional	No	Yes
Production	Optional	No	Yes

The Database Configuration Wizard provides a separate configuration page for each database type, containing these settings:

Database Name Enter a name of up to 8 characters for the database.

User IDand **Password** Enter the PeopleSoft user ID and password for the database that will be used to perform the upgrade. Examples of user IDs are VP1 and PS.

SQL Server Host Name (Used for Microsoft SQL Server only). Enter the name of the host machine that runs the SQL Server database. It is used to run SQL commands and scripts in the command line.

Database Server Name If applicable, enter a name of up to 256 characters for the database server name.

Access ID The access ID has full access to all objects in the database.

Your access ID is *not* a PeopleSoft user ID, such as *VP1* or *PS.* Examples of access IDs are *sa* or *sysadm.*

Note. The IDs and passwords are case-sensitive.

Note. The access ID is often the database owner. It is not normally the same value as the connect ID, which has limited access to the database.

See *PeopleTools 8.51 PeopleBook: Security Administration,* "Understanding PeopleSoft Security," Access IDs.

Owner ID (Used for DB2 z/OS only). Enter the owner ID used for the tables.

Test Connection Click to confirm the database connection information you have entered.

Enable Process Scheduler Select this option to define up to two Process Scheduler servers to run ProcessScheduler steps during the upgrade job run.

This option applies only to Source and Target databases in an application upgrade environment.

Specifying Upgrade Environment Process Scheduler Settings

If you have selected the Enable Process Scheduler check box for an applicable database definition, you must enter the required information for the host machine and the Process Scheduler server definitions associated with that database that will be running the ProcessScheduler steps. You assign an existing Process Scheduler server to either the SERVER1 or SERVER2 slots. When defining a ProcessScheduler step type, you specify which server will run the step, SERVER1 or SERVER2.

Host Machine or IP Enter the host name or the IP address of the application server where the appropriate Process Scheduler server domain is running (PSPRCSRV.EXE and so on).

JSL Port Enter the domain's JSL port (listener port).

Server Name Enter the name of the Process Scheduler server definition, such as PSUNIX.

Method of retrieving Process Scheduler logs

You can download view the Process Scheduler logs from within Change Assistant so that you don't need to monitor the processes separately using Process Scheduler monitoring and logging. Similar to other Change Assistant log files, the downloaded Process Scheduler log files are saved to the Change Assistant output directory.

- None: Disables the ability to view Process Scheduler log information from within Change Assistant.
- FTP: Select if Process Scheduler is running on a UNIX server.
- File Copy: Select if Process Scheduler is running on a Windows server.

Note. If you have configured multiple Process Scheduler servers within your upgrade environment, and they each run processes within the job, as needed, note that the log information will reside in two locations, with each location containing the log information associated with the processes run on that server.

Machine Name or IP

(Applies only to FTP option). Enter the machine name or IP address of the FTP server where the Process Scheduler logs are located.

Log/output Directory

(Applies to File Copy and FTP option). Enter the path to where the Process Scheduler logs are located on the server.

- For the FTP option, enter the absolute path on the FTP server.
- For the File Copy option, this is the (mapped) path on the Change Assistant workstation.

User IDand**User Password**

(Applies only to FTP option). Enter the user ID and password required for connecting to the UNIX server (as if an FTP client were connecting).

Importing and Exporting Upgrade Environments

To save time when creating other jobs or if you are accessing Change Assistant from multiple machines, you can export the environment configuration to a file after you've saved it. Change Assistant generates an XML file to store the upgrade environment information.

To export an environment:

1. Select File, Export Environment.
2. On the Environments screen, select the environment to export.
3. On the Export Environments dialog box, navigate to the directory where you want to store the exported XML file.

   By default, the exported file assumes the name of the environment that you specified when you created it.
4. Click Export.

To import an environment:

1. Select File, Import Environment.
2. On the Import Environments dialog box, navigate to and select the XML file storing an exported upgrade environment.
3. Click Import.

Deleting Upgrade Environments

If you decide to delete an upgrade environment, consider that all the job instances associated with that environment that you created will also be deleted.

To delete an upgrade environment:

1. Select File, Delete Environment.
2. On the Delete Environment dialog box, select the name of the environment to delete, and click OK.
3. Confirm that you are aware that all the jobs associated with the environment will also be deleted.

Creating Upgrade Jobs

You can create new upgrade jobs or use existing jobs.

To create a new upgrade job:

1. Select File, New Upgrade Job.
2. On the Use Template dialog box, select the template you want to use for the upgrade job, and click OK.
3. On the Environments dialog box, select the environment you want to use for the upgrade job, and click OK.
4. On the Type of Upgrade dialog box, select the type of upgrade to match the phase of your upgrade process.

   For example, if you are running a test upgrade against a Copy of Production database or a Demo database, select *Initial Upgrade,* but if this job is running against your Production database, select *Move to Production.* This filters steps based on the Type of Upgrade step property.

   See Chapter 4, "Configuring Change Assistant," Specifying Change Assistant Options, page 35.

Note. You can create multiple upgrade jobs from each upgrade template.

Configuring Remote Agent Processing

To improve performance and processing time for data intensive steps associated with, for example, data conversion, Build, and Alter scripts during the move to production upgrades, Change Assistant can run these step types through an EMF Agent running on a remote host:

- Application Engine
- Data Mover (User and Bootstrap)
- SQL (Script and Command)

Note. Remote agent processing applies only to upgrades.

In many cases, test runs against the Copy of Production database should provide reliable metrics with which you can determine which processes are candidates for remote processing. If a step appears to require a lot of time to complete, rather than running the process on the Windows workstation where Change Assistant is installed, you can elect to have the processes run on a high-powered server, where a PS_HOME (and thereby an EMF Agent) is also installed. For optimal results using this option, make sure that the EMF Agent resides on the same server machine as the database, or on a high-powered server on the same backbone network.

To configure remote agent processing:

1. On the Change Assistant Options dialog box, select Enable Server Processing beneath Perform Application Upgrade.
2. On the Change Assistant Options dialog box, set the Remote Agent options.

   The Remote Agent options are available only if you have selected both Perform Application Upgrade mode and Enable Server Processing.

Host Name	Name of the server machine where the agent to perform the remote processing is installed. **Note.** Use a fully-qualified machine name.
Host PS_HOME (Complete Executable Path)	The complete path to Data Mover (psdmtx) and Application Engine (psae) executeables. For example: Windows: c:\PT85\bin\client\winx86\ UNIX: /ds1/pt85/bin/
Host Output Directory	Enter the directory in which you want the log files generated by the update process to reside.
Host SQL Query Executable	The complete path and filename of the SQL query executable. For example: Windows: c:\oracle10\bin\sqlplus.exe UNIX: /ds1/oracle/bin/sqlplus
Host Maximum Concurrent Processes	The maximum number of process that can be executed concurrently on the remote host.

3. Set the PS_SERVER_CFG environment variable to point to the PSPRCS.CFG file of the user ID starting the agent, using a fully-qualified machine name.

4. For the steps that you want to run on the remote host through the remote EMF Agent, in the Step Properties dialog, set Run Location to *Remote Agent*.

Chapter 11

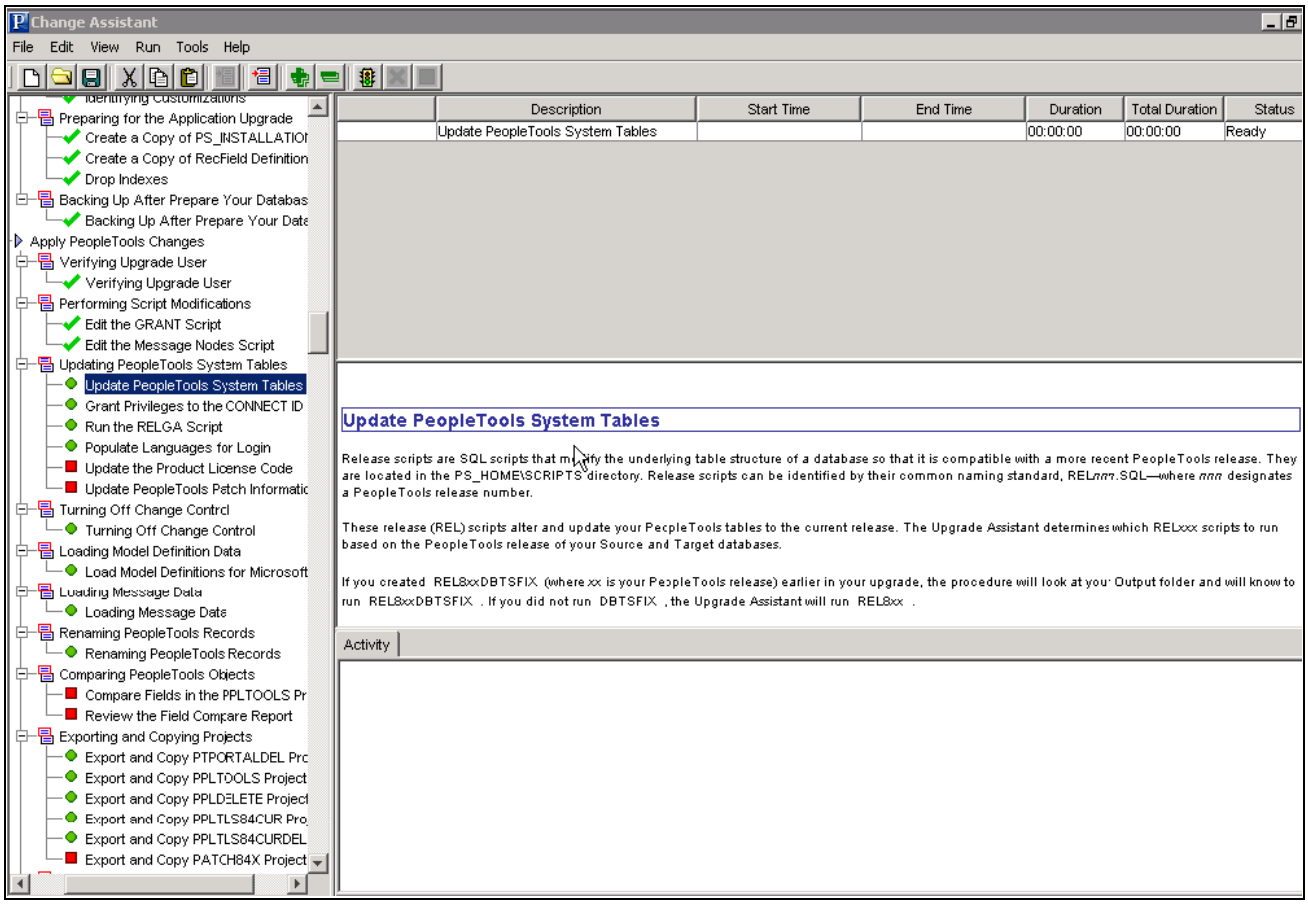
Running Upgrade Jobs with Change Assistant

This chapter introduces you to running upgrade jobs in Change Assistant.

Note. When performing an upgrade, the majority of the documentation for your upgrade is in your specific upgrade documentation that you downloaded with your upgrade template. It contains detailed instructions for each step of your job.

Running the Upgrade Job

When you create a new upgrade job, you will see a job view similar to the following example:



Upgrade View

In the job area on the left-hand side of the screen, you'll see one of the following icons next to the steps.

■	Indicates each step that must be performed manually. The status of manual steps can be set only to Stop or Complete.
●	Indicates that Change Assistant can automatically run this step. You can set the status to Stop, Run, Restart, or Complete. If you set the status to Stop, this indicates that you want to stop the upgrade job at that step or that a milestone has been reached. The status can be reset to Run when desired.

When you are ready to run your upgrade job, select Run from the Change Assistant toolbar. Monitor the status of the automated upgrade steps in the Step Details box. After a automated step is completed running in Change Assistant, you can view logs, scripts and update job properties for individual steps.

Note. Change Assistant uses Application Designer and Data Mover in the background to perform many of the tasks. When using Change Assistant, make sure that any current Application Designer and Data Mover sessions running on the same workstation as Change Assistant are closed before running Change Assistant.

Viewing Upgrade Logs

You can view all the logs generated by the automated processes. After the process runs, you can select a step to view.

To view a log:

1. Highlight or select the step.
2. Select Edit, View Log.
3. Click OK

Note. If a step encounters an error, Change Assistant will automatically display the View Log.

Note. On the left side of the file list, Change Assistant displays both error and success symbols. These indicate which step logs contain errors to help you troubleshoot.

Viewing Scripts

You can view SQL and Data Mover scripts that are used to automate processes. Before the step that contains the script runs, you can view or modify the original script. After the process runs, you can view or modify the updated script and then restart the step.

To view a script:

1. Highlight or select the step.
2. Select Edit, View Script.
3. On the View Script dialog box, select the script you wish to view and click OK.

Modifying Job Properties

You may want to maintain a record of how long your upgrade takes. In that case, you can view and change the dates and durations for steps in the View/Edit Job Properties dialog box.

Change Assistant allows you to set the status for these sub-steps: DBTSFIX, UpgradePeopleTools and LoadBaseData.

To modify job properties:

1. Highlight or select the step.
2. Select Edit, Job Properties.

3. Enter changes to a specific job property, or add comments, and click OK.

Running ProcessScheduler Steps

This section discusses how to:

- determine when to run Process Scheduler steps.
- prepare to run Process Scheduler steps.
- work with Process Scheduler steps.
- ensure Process Scheduler security authentication.

Determining When to Run Process Scheduler Steps

Running the ProcessScheduler step type is designed to improve performance and quicken completion times of long-running, data-intensive steps, that can be run in parallel in an application upgrade. In most cases, the steps that would require Process Scheduler processing are delivered in your upgrade template configured to run on a Process Scheduler server. However, if you are creating a custom template, decide that improved performance can be gained by running a step through Process Scheduler, as opposed to running through a remote agent, you can configure a process to be run by a ProcessScheduler step.

Before setting up an upgrade process to be run through Process Scheduler:

- always consult your specific upgrade documentation for any recommendations, considerations, or restrictions.
- make sure Process Scheduler is configured and defined within your upgrade environment.

See Also

PeopleSoft upgrade documentation for your upgrade path

Preparing to Run Process Scheduler Steps

Before running an upgrade process though Process Scheduler, the following items need to addressed:

Task	***Documentation Reference***
Set up Process Scheduler.	See *PeopleTools 8.51 PeopleBook: PeopleSoft Process Scheduler*, "Setting Server Definitions."
Define Process Scheduler servers in your upgrade environment.	See Chapter 10, "Configuring Change Assistant for Upgrades," Configuring and Working With The Upgrade Environment, page 97.

Task	*Documentation Reference*
Include a ProcessScheduler step type in your upgrade template.	See Appendix A, "Modifying Step Properties and Parameters," page 111.

Working With Process Scheduler Steps

This section discusses how to:

- View Process Scheduler logs.
- Restart Process Scheduler steps.
- Cancel Process Scheduler steps.

Viewing Process Scheduler Logs

If in your upgrade environment you have configured Change Assistant to be able to access Process Scheduler logging information, you can view the Process Scheduler processing information from within Change Assistant just as you would for any other step (click on the step and select Edit, View Log).

Restarting Process Scheduler Steps

If a Process Scheduler step has failed or has been stopped, you can restart the process by setting the step to Restart. This is most useful for restart-aware process definitions using Application Engine. When a step has been set to Restart, Change Assistant resubmits the process requests to Process Scheduler.

Canceling Process Scheduler Steps

While Change Assistant is executing the ProcessScheduler step, you can kill the step, by clicking on the step and selecting Run, Kill. This is equivalent to stopping or cancelling scheduled processes on the Process Scheduler. When you 'kill' the step, Change Assistant connects to the Process Scheduler, which issues "cancel" commands to the appropriate processes.

Ensuring Process Scheduler Security Authentication

PeopleSoft Change Assistant uses the PROCESSREQUEST component interface object to submit jobs to run on the PeopleSoft Process Scheduler server. You must ensure the user submitting the process has the appropriate authentication set for the PROCESSREQUEST object in the database the process runs against. You must edit security permissions to run the PROCESSREQUEST object.

To set up PROCESSREQUEST component interface security:

1. Log in to PeopleSoft through the browser.
2. Select PeopleTools, Security, Permissions & Roles, Permission Lists.
3. Select the permission list for which you want to set security. The Permission List component appears.
4. Access the component interfaces page and select the PROCESSREQUEST component interface.

5. Click Edit.

   The Component Interface Permissions page appears, showing all of the methods (both standard and user-defined) in the component interface and their method access.

6. Set the access permission for each method.

   Select Full Access or No Access. You must grant full access to at least one method to make the component interface available for testing and other online use.

7. Click OK, and then Save.

Appendix A

Modifying Step Properties and Parameters

This appendix discusses:

- Step types.
- Step parameters.

Note. In most situations, you do not need to modify steps delivered in an a change package or upgrade.

Step Types

When creating custom steps, select one of these step types.

Note. When creating step types that Application Designer executes, such as Build Project or Compare and Report, if there are specific settings that need to be set for Application Designer, make sure to specify those using the Build,Upgrade, or Object Types buttons that appear to the right of the Step Type dropdown list. Use these buttons to save any necessary settings to the Change Assistant template. At run time, any Application Designer settings saved in the template override the current settings for Application Designer on the machine where an Application Designer process runs.

Step Type	***Definition***
Application Engine	Runs the Application Engine process indicated by the Script/Procedure value under Step Properties.
Build Project	Builds the project specified in the step properties parameter as #Project= (for example, #Project=ALLTABS). The project is built through the PeopleTools command line. Use the Build button to select options based on the instructions in the update documentation for your product and path. **Note.** The Build dialog box that appears displays identical options to Application Designer. See *PeopleTools 8.51 PeopleBook: PeopleSoft Application Designer Developer's Guide*, "Administering Data," Selecting Build Options and Running the Build Process.

Step Type	*Definition*
Compare And Report	Runs the project compare (which produces compare reports) process using the project specified in the step properties parameter as #Project= (for example, #Project=ALLTABS). The compare is performed through the PeopleTools command line. For the Compare and Report and all Copy ... step types, use the Upgrade button to select the appropriate options, which are identical to those provided for Upgrade Options in Application Designer. See *PeopleTools 8.51 PeopleBook: PeopleSoft Application Designer Lifecycle Management Guide*, "Upgrading with PeopleSoft Application Designer," Setting Upgrade Options.
Copy Database	Copies a project from the source database to the target database as specified under the Step Properties. The project used is the one specified in the step properties parameter as #Project= (for example, #Project=ALLTABS). The copy is performed through the PeopleTools command line.
Copy from file	Copies a project from a file. This is used in conjunction with the Copy To File. It uses the project specified in the Step Properties parameter as #Project= (for example #Project=ALLTABS).
Copy to file	Copies a project to a file. This is used in conjunction with the Copy From File option. It uses the project specified in the Step Properties parameter as #Project= (for example #Project=ALLTABS).
Create project	Creates a project within Change Assistant. Use the Object Type button to launch the Create Project dialog box where you can select any combination of definition types to include in the project, such as pages, records, fields and so on. **Note.** If you select Pages, the system inserts all the page types into the project, including pages, subpage and secondary pages.
Merge project	Merges two project definitions. For example, this is used in upgrades during the "Merge IB Project" step, which merges pre and post-PeopleTools 8.48 Integration Broker metadata.
Data Mover-Bootstrap	Runs Data Mover scripts as the access ID specified in the credentials panel in the Apply Wizard (bootstrap mode).

Step Type	*Definition*
Data Mover-User	Runs Data Mover scripts as the user ID specified in the credentials panel in the Apply Wizard (non-bootstrap mode).
DBTSFIX	(Applies to DB2 z/OS, DB2 UDB, Oracle, and Informix). Change Assistant determines the source and target releases of the databases defined under Step Properties as Source and Target. Once this is completed, Change Assistant determines which release scripts need to be generated by the DBTSFIX sqr to produce release scripts for your environment.
Deploy file	Deploys files in change packages to different servers.
Execute process	Enables you to include custom processes, such as bat files, that you can run as part of a Change Assistant job. Enter the file path to the file in the Parameters edit box. For example, if you want to run backup.bat, enter the following in the Parameters edit box: *c:\bat\backup.bat* **Note.** Your custom file needs to be able to close without needing human interaction. Change Assistant does not officially recognize the step as being successfully completed until the processes ran by the bat file have been closed.
Load Base Data	Change Assistant determines the source and target releases when running either the DBTSFIX or UpgradePeopleTools steps (depending on your database type). Once these are determined, Change Assistant will dynamically define which Load Base Data scripts need to be run for the original target release and the languages that you have installed.
Manual Stop	Defined as a step you must run manually. Change Assistant automatically sets the run status to Stop. After you have manually completed the step, you must change the Job Status to Complete.

Step Type	*Definition*

ProcessScheduler	Runs the specified upgrade process through Process Scheduler. To further define the step, you use these *required* parameters:
	#USE_PRCS_SERVER=
	#PROCESS_TYPE=
	#PROCESS_NAME=
	#RUNCONTROLID=
	#NUM_INSTANCES=
	Note. If you don't specify the value to each parameter correctly, the step will fail.
	Example: To run one instance of an Application Engine program on SERVER1, specify parameters as:
	`#USE_PRCS_SERVER=SERVER1`
	`#PROCESS_TYPE=Application Engine`
	`#PROCESS_NAME=MYAE`
	`#RUNCONTROLID=TEST`
	`#NUM_INSTANCES=1`
	Example: To run three instances of an SQR report (XRFWIN) on SERVER2, specify parameters as:
	`#USE_PRCS_SERVER=SERVER2`
	`#PROCESS_TYPE=SQR Report`
	`#PROCESS_NAME=XRFWIN`
	`#RUNCONTROLID=MYID`
	`#NUM_INSTANCES=3`
	See Appendix A, "Modifying Step Properties and Parameters," Step Parameters, page 115.

SQL Command	Runs the SQL command defined in the Parameters value under the Step Properties. Change Assistant runs the command using the SQL Query tool specified in the Database Configuration dialog box. For most SQL Query Tools, Change Assistant stops on an error.
SQL Script	Runs the SQL script defined in the Script/Procedure value under the Step Properties. Change Assistant runs the script using the SQL Query tools specified on the Database Configuration. For most SQL Query Tools, Change Assistant stops on an error.
SQR Report	Runs SQRs using the pssqr command line. If parameters are included in the Parameters section of the step properties, Change Assistant will obtain the SQR settings from Configuration Manager for the Profile selected in the Job Database Configuration.

Step Type	*Definition*
UpgradePeopleTools	Change Assistant determines the source and target releases of the databases defined under Step Properties as Source and Target. Once this is completed, Change Assistant then determines which Release scripts to run in order to upgrade your PeopleTools release from the original source release to the new target release.

Note. There is no limitation to the number of steps you can add to a template.

Step Parameters

Depending on the step type, you may need to include additional parameters in the Parameter edit box of the Step Properties dialog box.

Parameter	*Description*
#Project=	Used primarily for functions that require a project name, like Build Project, Create Project, and Merge Project. For the Merge Project step type, you can specify two projects separated by a comma. For example, `#PROJECT=PRJ656265,PRJ656265_IB_PRE848`
#Directory=	Used when you need to run a script that is not located in the <PS_HOME>\scripts directory, for example, STOREPT. In this case, you could enter: `#Directory=#PTPS_HOME\src\cbl\base\`
#P1= through #P5=	Used to pass parameters to SQR reports, for example, TEST.sqr. In this case, you would pass the necessary value, such as: `#P1=#OutputDirectory`
#PS_HOME=	Used to specify the *PS_HOME* variable that is defined on the Directory tab of the Change Assistant options (for Updates) or the Environment Configuration Wizard (for Upgrades) (Options, Change Assistant, Directories tab).
#SOURCE_HOME=	Used to specify the <PS_HOME> variable that is defined on the Environment Configuration Wizard (for Upgrades). Change Assistant will use the Source <PS_HOME> instead of the targets per the value specified under Step Properties.

Parameter	*Description*
#OutputDirectory=	Used to specify the Output Directory variable that is defined in the Options, Change Assistant, Directories screen.
#NT=	Used for DB2 Command Center, for Non-Terminated SQL Scripts. **Note.** The #NT parameter applies to DB2 UDB only. It is ignored for DB2 zOS.
#Type=	Enables you to specify the type of record to insert into the project. Choose from the following record types: All Records, Table, View/Query, View/Derived, SubRecord, Stored Procedure, Temporary Table, Dynamic View.
#RCID=	Enables the user to override the run control ID used for Application Engine processes.
#CI =	Connect ID (Used for Data Mover – Tools).
#CW =	Connect password (Used for Data Mover – Tools).
#EXTRACT_DMS=	Extracts DMS export script from file (Used for Data Mover – Tools).
#DBSETUP=	Extracts dbsetup DMS import script from file and database connectivity parameters (Used for Data Mover – Tools).
#UNICODE=	Generates DMS script for UNICODE database (default is NON-UNICODE) (Used for Data Mover – Tools).
#TABLESPACE=	Default tablespace (PTMINITS) (Used for Data Mover – Tools, DB2 UDB, Oracle and Informix only).
#DBSPACE=	Physical dbname.tablespace (PTMINIDB.TABLESPACE)) (Used for Data Mover – Tools, DB2 z/OS only).
#STOGROUP_TS=	Storage group for tablespace (Used for Data Mover – Tools, DB2 z/OS only).

Parameter	*Description*
#STOGROUP_IDX=	Storage group for index (Used for Data Mover – Tools, DB2 z/OS only).
#TABLEOWNER=	Database owner ID (same as sqlid and tableowner) (Used for Data Mover – Tools, DB2 z/OS only).
#INDEXSPC=	Default tablespace (PTMINITS) (Used for Data Mover – Tools, Informix only).
#USE_PRCS_SERVER=	(Used only for ProcessScheduler step types). Enter the name of the Process Scheduler server to run the step. Valid values are SERVER1 or SERVER2, which correlate to the Process Scheduler server definitions you have defined in your upgrade environment.
#PROCESS_TYPE=	(Used only for ProcessScheduler step types). Enter the process type, as defined in Process Scheduler. For example, Application Engine, SQR Report, Data Mover, and so on.
#PROCESS_NAME=	(Used only for ProcessScheduler step types). Enter the process name, such as DDDAUDIT.
#RUNCONTROLID=	(Used only for ProcessScheduler step types). Enter the appropriate run control ID. **Note.** Change Assistant appends unique sequence numbers to the end of the Run Control ID before requests are submitted to the Process Scheduler. This is required for submitting multiple instances of the same process.
#NUM_INSTANCES=	(Used only for ProcessScheduler step types). Used by Change Assistant to schedule multiple processes through Process Scheduler as individual process requests. However, the actual number of instances simultaneously executed on the Process Server is controlled by the Max Concurrent setting for the process type in the Process Scheduler server definition.

Appendix B

Clearing Environment Management Framework Cache

To ensure consistent behavior across all the elements of the Environment Management Framework, at times, it is necessary to clear the cache stored within each element. Clearing the cache just on the web server for the Hub, for example, is not sufficient. To re-initialize the entire framework, you need to perform this cleanup on:

- All agents
- Change Assistant
- Viewer
- Hub

When to Clear Environment Management Framework Cache

After analyzing customer environments and consulting PeopleSoft support, the following list reflects the most common situations in which it is recommended that you clear cache files:

- After applying a maintenance pack. Maintenance packs deliver a large number of files. Clearing the cache after applying a maintenance pack may increase performance for applying future updates.
- After applying a PeopleTools patch. Information related to previous PeopleTools releases stored in the cached directories can cause a variety of issues for Change Assistant.
- After receiving a warning during file deploys or during the validate process (Tools, Validate). This is typically related to cached references to peer IDs that are no longer used. Clearing the cache removes references to unused peer IDs.
- After Change Assistant hangs during re-validation. This is often a sign of cache issues.
- After receiving notifications that you need to apply prerequisites that have already been applied.

Note. The above list reflects the most common situations when cache should be cleared, not every possible situation. If you are encountering unexpected behavior, one element of your troubleshooting should be clearing the cache.

Clearing EMF Cache

To clear EMF cache:

1. Close the Change Assistant, stop all agents, and stop PSEMHUB.
2. Delete cache files from Change Assistant, agents, and Viewer.
   a. Navigate to the following EMF locations:

EMF Element	***Location***
Change Assistant	Change Assistant installation location. For example, c:\Program Files\PeopleSoft\Change Assistant\envmetadata
Agents	PS_HOME\PSEMAgent\envmetadata
Viewer	PS_HOME\PSEMViewer\envmetadata

   b. Delete the following directories:

      \PersistentStorage

      \ScratchPad

      \transactions (if it exists)

      \data\ids

   c. For Change Assistant and agents only, delete the following file:

      \data\search-results.xml

3. Delete cached files on PSEMHUB.
   a. On the web server, navigate to PIA_HOME\webserv\peoplesoft\applications*domain* \PSEMHUB\envmetadata.
   b. Delete the files stored in these directories:

      \scratchpad

      \PersistentStorage

      \transactions (if it exists)

   c. Delete all objects in \data (files and subdirectories, but not the \data directory).

      For example,

      \data*.*

4. Restart PSEMHUB.

5. Restart all agents.
6. Restart Change Assistant and Environment Management Viewer as needed.

Appendix C

Working With Scripts

This section discusses:

- Understanding process, scripts, and syntax
- Running scripts outside of Change Assistant.

Understanding Process, Scripts, and Syntax

Before Change Assistant runs SQL and Data Mover scripts, it determines whether the scripts need updating. This ensures that logs are sent to directories that are known to Change Assistant and that the scripts run properly.

The following table shows the processes, what scripts are updated, and the updated syntax.

Process	***Script Files***	***Updated Syntax***
DataMoverBootstrap DataMoverUser LoadBaseData	<process name>.dms	SET LOG statements
DB2 z/OS SQL Commands SQL Scripts UpdatePeopleTools	<process name>.sql	CONNECT TO … SET CURRENT SQLID =
Oracle SQL Commands SQL Scripts UpdatePeopleTools	<process name>.sql	WHENEVER SQLERROR EXIT SET ECHO ON SET TIME ON SPOOL… SPOOL OFF EXIT
Informix SQL Commands SQL Scripts UpdatePeopleTools	<process name>.sql	CONNECT TO …

Process	*Script Files*	*Updated Syntax*
DB2 UDB SQL Commands SQL Scripts UpdatePeopleTools	<process name>.sql	CONNECT TO …

Running Scripts Outside of Change Assistant

If you are running a script outside of Change Assistant, keep in mind that the default behavior of Change Assistant is to stop when any errors are encountered. To replicate that behavior outside of Change Assistant, you will need to run the script using the correct options. The following table displays the command line options required per database platform to either stop at errors or continue when errors are encountered.

Database	*Stop/Continue at Errors*
Oracle	Exit on error: <sqltool> <accessID>/<password>@<dbname>@<scriptname> Prepend script with: `WHENEVER SQLERROR EXIT` Continue on error: <sqltool> <accessID>/<password>@<dbname>@<scriptname> Prepend script with: `WHENEVER SQLERROR CONTINUE`
DB2 z/OS	Exit on error: <sqltool> /c /w /i DB2 -tvf <script name> -z <log name> -s Continue on error: <sqltool> /c /w /i DB2 -tvf <script name> -z <log name>
DB2 LUW	Exit on error: <sqltool> /c /w /i DB2 -vf <script name> -z <log name> -s Continue on error: <sqltool> /c /w /i DB2 -vf <script name> -z <log name>
Informix	Exit on error: <sqltool> -e -a - <script file> >> <log file> 2>&1 Continue on error: <sqltool> -e - <script file> >> <log file> 2>&1

Database	***Stop/Continue at Errors***
Microsoft SQL Server	Exit on error: <sqltool> -U <accessID> -P <password> -s <server name> -D <database name> -i <script name> -o <log name> -e -n -I -b Continue on error: <sqltool> -U <accessID> -P <password> -s <server name> -D <database name> -i <script name> -o <log name> -e -n -I
Sybase	No option to stop on error.

Appendix D

Troubleshooting Change Assistant and EMF

This appendix covers topics related to troubleshooting the configuration and operation of Change Assistant and the Environment Management Framework.

Peer Cannot Connect to the Hub

When an Environment Management peer (typically an agent or the viewer) can't communicate with the hub, the following error messages appear in the logs and stdout:

```
Broken connection - attempting to reconnect
RemoteException while connecting to server - retrying attempt 1
RemoteException while connecting to server - retrying attempt 2
RemoteException while connecting to server - retrying attempt 3
```

The peer periodically attempts to reconnect to the hub (by default every ten seconds) with the parameters that are specified in the configuration.properties file.

Determining the Error Condition

The peer may not be able to communicate with the hub for one of the following reasons:

- The peer is started but the hub is not started.

  The peer reconnects once the hub is started.

- The peer is started but the web server is configured to run on a different machine.

  Edit the configuration.properties file and change the hubURL parameter.

- The peer is started but the web server is configured to listen on a different port.

  Users continue to see the error messages described previously. Edit the configuration.properties file and change the port number for the hubURL parameter. Shut down and restart the peer.

- The peer is running and communicating with the hub, and the PIA web server is shut down.

  Users see the broken connection error message. Once the PIA web server is started, the connection is restored.

When the peer has a pinginterval configuration parameter set to a high value (60 seconds or more), the following exception might appear in the log:

```
INFO Thread-48 org.apache.commons.httpclient.HttpMethodBase - Recoverable
 exception caught when processing request WARN Thread-48
org.apache.commons.httpclient.HttpMethodBase
- Recoverable exception caught but MethodRetryHandler.retryMethod() returned
false, rethrowing exception Broken connection - attempting to reconnect
Sending pulse from 'com.peoplesoft.emf.peer:id=5'
```

This is due to an HTTP client connection timeout which does not affect functionality.

Ensuring the Correct Configuration

To ensure that you've configured the peer (agent or viewer) to properly connect with the hub, try each of the following actions in turn:

- Ping the hub host machine.

  At a command prompt, enter `ping machinename`, using the machine name configured in the hubURL setting. You should see messages indicating a reply from the machine.

- Ping the hub host domain.

  At a command prompt, enter `ping hostdomain`, using the fully qualified domain name as it's configured in the hubURL setting; for example, *mymachine.mydomain.com.* You should see messages indicating a reply from the machine.

- Use an IP address in the hubURL.

  In configuration.properties, replace the domain name in the hubURL setting with the machine's IP address, then restart the peer.

- Ensure that you specify the right port number in the hubURL.

  In configuration.properties, the port number in the hubURL setting must be <PIA port> if you set up PIA for a single server. In single server configurations, the hub uses the same port to which PIA is configured.

  In multi-server configurations, the hub uses the application default port, which is 8001. If you need to change this setting, it must be done in the web server configuration files.

Agent-Specific Resolutions

If an agent is still experiencing connection difficulties, delete the following agent directories if they exist:

- *PS_HOME*\PSEMAgent\envmetadata\data\ids
- *PS_HOME*\PSEMAgent\envmetadata\PersistentStorage
- *PS_HOME*\PSEMAgent\envmetadata\transactions

Note. You must also delete these directories after you install an additional hub on the same machine which doesn't replace the existing hub, then shut down the old hub and start the new hub using the same settings.

Viewer-Specific Resolutions

If the viewer Java application can't connect to the hub, first ensure that you specify the right port number when launching the viewer program.

If you set up PIA for a single server, 80 is the default port number, if you set up PIA for multiple servers, 8081 is the default listening port number for PSEMHUB.

If the viewer is still experiencing connection difficulties, delete the following viewer directories if they exist:

- *PS_HOME*\PSEMViewer\envmetadata\data\ids
- *PS_HOME*\PSEMViewer\envmetadata\PersistentStorage
- *PS_HOME*\PSEMViewer\envmetadata\transactions

Note. You must also delete these directories after you install an additional hub on the same machine which doesn't replace the existing hub, then shut down the old hub and start the new hub using the same settings.

Servlet Request Processor Exception

When running WebSphere on multiple servers the following error can occur in the stdout log of the server running PSEMHUB:

```
[10/21/03 20:32:44:826 PDT]  136aa03 OSEListenerDi E PLGN0021E:
Servlet Request Processor Exception:
Virtual Host/WebGroup Not Found : The host pt-lnx03.peoplesoft.com
on port 6080 has not been defined
```

Use the following steps to correct the error: . (the host now can accept redirected queries from your reverse proxy. Normally this configuration is applied during PIA install).

1. Open your WebSphere administration console.
2. Select Environment, Virtual Hosts, default_host, Host Aliases.
3. Add *.* so the host now can accept redirected queries from the reverse proxy.

   Normally this configuration is applied during PIA install.

Error Initializing Agent

When starting agents, if you receive the following error message, determine whether an agent is already running:

```
Error initializing agent. Verify if another agent is not
running on this machine or if you have the required permission to run the
agent.
```

If the console for the agent is not visible, check the task manager for the list of Java processes that are currently running. Stop a running agent by invoking the scripts to stop the agents and then restart the desired agent.

Determine whether the agent port is available. If not, choose a different port to start the agent.

Distributed Object Manager Errors

When running process, such as Application Engine, through the Process Scheduler (by way of Change Assistant) the following error can occur if you do not have security set appropriately for the PROCESSREQUEST.

```
Connecting to App Server: 10.138.124.216:9000
Error, exception caught: Distributed Object Manager: Page=Create Language=%2 (1,4)
```

See Chapter 11, "Running Upgrade Jobs with Change Assistant," Ensuring Process Scheduler Security Authentication, page 109.

Cloned Databases Not Being Unique

When copying databases, it is extremely important to delete the GUID value in the new (copied) database. If not deleted, the hub will assume that the two environments are the same, leading to confusing environment records.

To resolve this, set the value of the GUID field in the PSOPTIONS table to <space> in the new database. You can insert the blank value in the PSOPTIONS table using the SQL tool at your site. The next time an application server connects to the database, the system generates a new, unique GUID.

Large SQL Scripts Fail on Microsoft SQL Server

In some situations, depending on various factors, such as memory available on the Change Assistant workstation, large SQL scripts can fail when run against Microsoft SQL Server. For example, this can occur when running the Microsoft conversion script during an upgrade.

To resolve this issue:

- Set the step executing the SQL script to run manually.
- Split the script into at least three separate scripts and run them individually.

Process Scheduler Logs Retrieved Using FTP Losing Formatting

When reviewing Process Scheduler files retrieved by way of FTP, in some cases formatting is lost.

This is typically an issue with the ANSI setting on the FTP server. For example, on a vsftpd server, in the vsftpd.conf file, make sure `ascii_download_enable` is set to *YES*. If not, stop the FTP daemon, modify the setting, and restart the FTP daemon. (Adjust this information as needed for your FTP server).

Errors Found in Log Files

Change Assistant scans log files that are generated when various processes run, such as SQL, Data Mover, SQR, CopyDatabase and so on. The following table describes what logs are produced and what Change Assistant determines to be an error:

Processes	*Log File*	*Error*	*Warning Status*
Application Engine	<process name>_out.log	Restart Failed. Invalid, Error. Abended. Abort. Not Defined.	Warning.
Build Project CompareAndReport CopyDatabase CopyFromFile CopyToFile CreateProject	<process name>.log	Error. Invalid PeopleCode. Copy process cancelled. Project <xxx> does not exist.	Warning.
DataMoverBootstrap DataMoverTools DataMoverUser LoadBaseData	<process name>_out.log **Note.** Any logs generated by the Data Mover SET LOG statement will also be available.	Unsuccessful. PSDMTX Error.	Warning.
DBTSFIX SQRReport	<process name>_0.out <process name>_out.log **Note.** Change Assistant retrieves the SQR log files using the SQR settings in the Configuration Manager.	TNS Error. Program Aborting. Not Defined Error.	NA
Deploy File	<process name>_out.log	Failure. • Unable to connect. • Environment Management Components are Unavailable. Warning status.	NA

Processes	*Log File*	*Error*	*Warning Status*
DSAutoGeneration DSCompile DSCustomReport DSPatchCorrection DSPatchImport	<process name>_out.log <process name>.log	Failed. Warning status.	NA
DSGetLogs DSInitialImport DSRunJob	<process name>_out.log <process name>_detailed.log <process name>.log	Failed. Warning status.	NA
SQLCommand SQLScript UpdatePeopleTools	<process name>.log	DB2 z/OS and DB2 UDB: • SQLSTATE=value (value cannot be 02000). • SQLxxxxxN. • DB2xxxxxE. Oracle: ORA. Informix: • Error. • Transaction rolled back. Sybase: Msg Microsoft SQL Server: • Msg[Microsoft]. • Cannot open database, access denied. • Specified SQL Server not found. Transaction rolled back. • ConnectionOpen (Connect()). • Login failed.	Warning.

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