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PeopleTools 8.54: Change Assistant and Update Manager

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PeopleTools 8.54: Change Assistant and Update Manager
CDSKU

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Contents

Preface

Understanding the PeopleSoft Online Help and PeopleBooks

The PeopleSoft Online Help is a website that enables you to view all help content for PeopleSoft Applications and PeopleTools. The help provides standard navigation and full-text searching, as well as context-sensitive online help for PeopleSoft users.

PeopleSoft Hosted Documentation

You access the PeopleSoft Online Help on Oracle's PeopleSoft Hosted Documentation website, which enables you to access the full help website and context-sensitive help directly from an Oracle hosted server. The hosted documentation is updated on a regular schedule, ensuring that you have access to the most current documentation. This reduces the need to view separate documentation posts for application maintenance on My Oracle Support, because that documentation is now incorporated into the hosted website content. The Hosted Documentation website is available in English only.

Note: Only the most current release of hosted documentation is updated regularly. After a new release is posted, previous releases remain available but are no longer updated.

Locally Installed Help

If your organization has firewall restrictions that prevent you from using the Hosted Documentation website, you can install the PeopleSoft Online Help locally. If you install the help locally, you have more control over which documents users can access and you can include links to your organization's custom documentation on help pages.

In addition, if you locally install the PeopleSoft Online Help, you can use any search engine for full-text searching. Your installation documentation includes instructions about how to set up Oracle Secure Enterprise Search for full-text searching.

See *PeopleTools Installation* for your database platform, "Installing PeopleSoft Online Help." If you do not use Secure Enterprise Search, see the documentation for your chosen search engine.

Note: Before users can access the search engine on a locally installed help website, you must enable the Search portlet and link. Click the Help link on any page in the PeopleSoft Online Help for instructions.

Downloadable PeopleBook PDF Files

You can access downloadable PDF versions of the help content in the traditional PeopleBook format. The content in the PeopleBook PDFs is the same as the content in the PeopleSoft Online Help, but it has a different structure and it does not include the interactive navigation features that are available in the online help.

Common Help Documentation

Common help documentation contains information that applies to multiple applications. The two main types of common help are:

- Application Fundamentals
- Using PeopleSoft Applications

Most product families provide a set of application fundamentals help topics that discuss essential information about the setup and design of your system. This information applies to many or all applications in the PeopleSoft product family. Whether you are implementing a single application, some combination of applications within the product family, or the entire product family, you should be familiar with the contents of the appropriate application fundamentals help. They provide the starting points for fundamental implementation tasks.

In addition, the *PeopleTools: Applications User's Guide* introduces you to the various elements of the PeopleSoft Pure Internet Architecture. It also explains how to use the navigational hierarchy, components, and pages to perform basic functions as you navigate through the system. While your application or implementation may differ, the topics in this user's guide provide general information about using PeopleSoft Applications.

Field and Control Definitions

PeopleSoft documentation includes definitions for most fields and controls that appear on application pages. These definitions describe how to use a field or control, where populated values come from, the effects of selecting certain values, and so on. If a field or control is not defined, then it either requires no additional explanation or is documented in a common elements section earlier in the documentation. For example, the Date field rarely requires additional explanation and may not be defined in the documentation for some pages.

Typographical Conventions

The following table describes the typographical conventions that are used in the online help.

Typographical Convention	***Description***
Key+Key	Indicates a key combination action. For example, a plus sign (+) between keys means that you must hold down the first key while you press the second key. For Alt+W, hold down the Alt key while you press the W key.
. . . (ellipses)	Indicate that the preceding item or series can be repeated any number of times in PeopleCode syntax.
{ } (curly braces)	Indicate a choice between two options in PeopleCode syntax. Options are separated by a pipe (|).
[ ] (square brackets)	Indicate optional items in PeopleCode syntax.

Typographical Convention	*Description*
& (ampersand)	When placed before a parameter in PeopleCode syntax, an ampersand indicates that the parameter is an already instantiated object. Ampersands also precede all PeopleCode variables.
⇒	This continuation character has been inserted at the end of a line of code that has been wrapped at the page margin. The code should be viewed or entered as a single, continuous line of code without the continuation character.

ISO Country and Currency Codes

PeopleSoft Online Help topics use International Organization for Standardization (ISO) country and currency codes to identify country-specific information and monetary amounts.

ISO country codes may appear as country identifiers, and ISO currency codes may appear as currency identifiers in your PeopleSoft documentation. Reference to an ISO country code in your documentation does not imply that your application includes every ISO country code. The following example is a country-specific heading: "(FRA) Hiring an Employee."

The PeopleSoft Currency Code table (CURRENCY_CD_TBL) contains sample currency code data. The Currency Code table is based on ISO Standard 4217, "Codes for the representation of currencies," and also relies on ISO country codes in the Country table (COUNTRY_TBL). The navigation to the pages where you maintain currency code and country information depends on which PeopleSoft applications you are using. To access the pages for maintaining the Currency Code and Country tables, consult the online help for your applications for more information.

Region and Industry Identifiers

Information that applies only to a specific region or industry is preceded by a standard identifier in parentheses. This identifier typically appears at the beginning of a section heading, but it may also appear at the beginning of a note or other text.

Example of a region-specific heading: "(Latin America) Setting Up Depreciation"

Region Identifiers

Regions are identified by the region name. The following region identifiers may appear in the PeopleSoft Online Help:

- Asia Pacific
- Europe
- Latin America
- North America

Industry Identifiers

Industries are identified by the industry name or by an abbreviation for that industry. The following industry identifiers may appear in the PeopleSoft Online Help:

- USF (U.S. Federal)
- E&G (Education and Government)

Using and Managing the PeopleSoft Online Help

Click the Help link in the universal navigation header of any page in the PeopleSoft Online Help to see information on the following topics:

- What's new in the PeopleSoft Online Help.
- PeopleSoft Online Help acessibility.
- Accessing, navigating, and searching the PeopleSoft Online Help.
- Managing a locally installed PeopleSoft Online Help website.

Change Assistant and Update Manager Related Links

Hosted PeopleSoft Online Help

PeopleSoft Information Portal

My Oracle Support

Oracle University

PeopleSoft Video Feature Overviews

Patches&Updates

PeopleSoft Update Manager Home Page [ID 1641843.2]

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Send us your suggestions Please include release numbers for the PeopleTools and applications that you are using.

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Part I

Configuring and Working With Change Assistant

Chapter 1

Getting Started with PeopleSoft Change Assistant

PeopleSoft Change Assistant Overview

Oracle's PeopleSoft Change Assistant is a standalone, Windows based, Java program that orchestrates the process of updating or upgrading your PeopleSoft system. Environment Management Framework is used for non-PUM-enabled updates and for deploying files with Update Manager.

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.
- Is integrated with the PUM application and uses the change package definitions created in the PeopleSoft Image.

The Environment Management Framework performs these key tasks:

- Crawls local drives and directory paths to discover and validate the components associated with a given PeopleSoft environment.
- Deploys files to various components in the PeopleSoft environment.

Related Links

Environment Management Framework

Change Assistant Actions

Change Assistant supports the following actions:

Apply Updates	Any systems that are not Update Manager enabled will use the Apply Updates to apply updates downloaded from My Oracle Support.
Update Manager	Update Manager is used for application patching and updates for PeopleSoft applications 9.2 and above. This option allows you to select the updates from the PeopleSoft Image and create a custom change package that includes only the updates and any calculated requisites you want to apply to your application.

	Update Manager action is also used to apply the database changes required with PeopleTools patches and PeopleTools upgrades.
Application Upgrade	Application Upgrade is used to perform upgrade to a new application release, which typically includes a PeopleTools upgrade as well. Full application upgrades are delivered with detailed templates and documentation tailored to your specific upgrade path.
Review Managed Object or Merge Select Object Types	Provides the ability to copy and compare Managed Object projects in Change Assistant. You also have the ability to view and merge PeopleCode, SQL and XSLT.
Create or Modify Templates	Change Assistant templates are composites of all the possible steps that apply to an update or upgrade. The templates are delivered as part of the change package or upgrade. Once you select a change package or upgrade, the template is loaded into the Change Assistant internal storage. You can edit the template or add additional chapters, tasks and steps, if needed.

Installation

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

Step	***Reference***
Install PeopleTools, database client software and any database client connect information.	*PeopleTools 8.54 Installation for your platform*
Install your PeopleSoft application	Your PeopleSoft application installation guide
Install Change Assistant	*PeopleTools 8.54 Installation: Installing PeopleSoft Change Assistant*

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 as to help you to understand the main functions for which Change Assistant was designed.

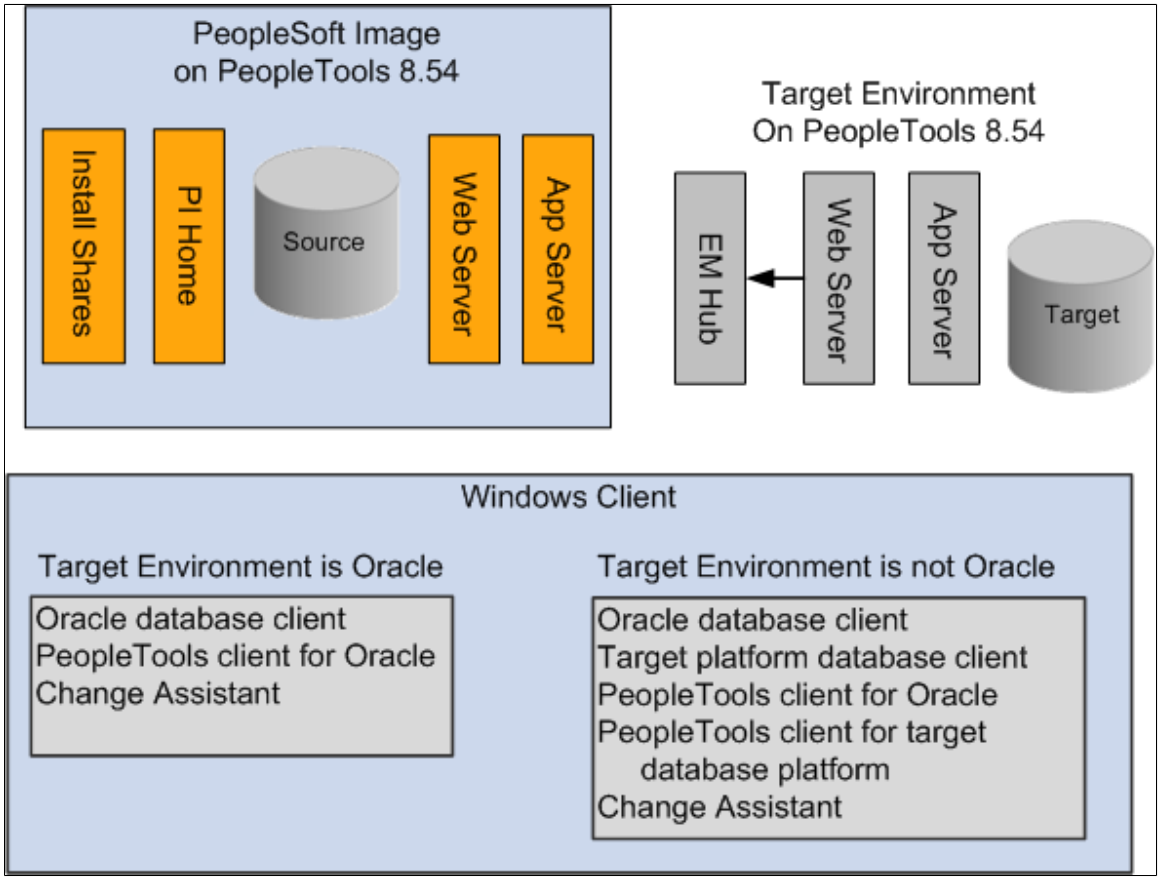
PeopleSoft Update Manager (PUM) Enabled Updates

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 task is provided.

Note: Initially PUM will only be enabled for 9.2 application patching and updates.

Image: PUM Environment

This diagram illustrates the PUM environment which includes the PeopleSoft Image, the target environment and the windows client.



Note: If the target environment is Oracle database on PeopleTools 8.53, the configuration will be the same as the target on a non-Oracle database.

Step	***Reference***
1. Use My Oracle Support (MOS) to find the current PeopleSoft Image and download it.	See PeopleSoft Update Manager Home Page [ID 1641843.2] from the PeopleSoft Update Manager Home Page, you can also access "*Applying Updates with PUM-Enabled Applications*" in the Resources and Documentation section.
2. Install the PeopleSoft Image. Consult the manifest in the KM document associated with the PeopleSoft image to determine the PeopleTools release/patch level for the PI. **Note:** The PeopleSoft Image may be at a different release/patch level than your target environments.	See *Using the PeopleSoft VirtualBox Images (PeopleSoft PeopleTools 8.54)*.

Step	*Reference*
3. (Optional) Configure and start the PSEMAgent on every server within your PeopleSoft target environment. **Note:** EMF is only run on the target environments not on the PeopleSoft Image. EM Hub is only used for file deploy in PUM-enabled applications.	See Configuring an Environment Management Agent.
4. Map your Windows client to the PeopleSoft Image shared drives. Mapping can be done using the PeopleSoft Image ip address. **Note:** The ip address can be identified using the ifconfig Linux command on the VirtualBox.	See Configuring the Microsoft Windows Client Running Change Assistant
5. Configure Microsoft Windows client running Change Assistant	See Configuring the Microsoft Windows Client Running Change Assistant
6. Install Change Assistant on Windows client from the PS Home at the same release/patch level as the PI.	See Installing Change Assistant
7. Start Change Assistant. Click Next on Welcome page, then select *Update Manager* action.	See Selecting Update Manager Action
8. In Change Assistant, select Update Manager > Define or Create a New Change Package. The Change Assistant Wizard will lead you through the setup pages.	See Defining a New Change Package
14. Use PeopleSoft Update Manager PIA application in the PeopleSoft Image environment to search for updates you need, review the update impact, and define your custom change package .	See Defining Custom Change Packages
15. Use Change Assistant to create the change package from your custom change package definition created with PeopleSoft Update Manager PIA application, analyze the change impact, and apply the updates.	See Packaging Updates.

Note: Use the PeopleSoft Update Image Home Pages tab form the PeopleSoft Update Manager Home Page [ID 1641843.2] to access the image for your application. The Update Image Home page for your application will contain links to all the relevant information for the PI you are downloading. The Installation Documentation section on the page contains a link to *Using the PeopleSoft VirtualBox Images (PeopleSoft PeopleTools 8.54)*.

Applying Individual PeopleSoft Release Patchset (PRP) to PeopleSoft Image

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. Search MOS for the PRP.	The PUM home page PeopleSoft Update Manager Home Page [ID 1641843.2] contains a link to "Applying Updates with PUM-Enabled Applications."
2. Download the PRP to a local directory.	See Applying Downloaded PeopleSoft Release Patchset to PeopleSoft Image
3. Apply the PRP to the PeopleSoft Image using Update Manager action Apply Downloaded Individual Posting to PeopleSoft Image.	See Applying Downloaded PeopleSoft Release Patchset to PeopleSoft Image
4. Use the Update Manager process to search for and apply the new individual fix to your target databases.	See PeopleSoft Update Manager (PUM) Enabled Updates

Traditional (Non-PUM Enabled) Updates

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 Configuring the Environment Management Hub.
2. Configure and start the PSEMAgent on every server within your PeopleSoft environment.	See Configuring an Environment Management Agent.
3. Install and configure Change Assistant, specifying the proper directories for file download and storage, and ensuring it can connect to the PSEMHUB.	See Setting Up Change Assistant.
4. Use My Oracle Support (MOS) to identify the bundles and updates that need to be applied to your specific environment.	See Discovering Updates Using My Oracle Support.
5. Download the required bundles and updates.	See Downloading Updates From My Oracle Support.
6. Use Change Assistant to apply the bundles and updates.	See Applying Updates To A Target Environment.

Application Upgrade

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 your upgrade environment.	See Configuring and Working With The Upgrade Environment
2. Create an upgrade job.	See Creating Upgrade Jobs
3. Start the upgrade process.	See Running the Upgrade Job

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 and your PeopleSoft application upgrade documentation.

Related Links

Application Designer Developer's Guide

Application Designer Lifecycle Management Guide

Change Impact Analyzer

Chapter 2

Understanding The Environment Management Framework and PeopleSoft Change Assistant

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 is used with Change Assistant to deploy files contained in an upgrade package. For traditional updates (non PUM-enabled applications), EMF is required to identify PeopleSoft environments, for all other Change Assistant actions configuring and running EMF is optional.

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: Multiple EM Agents can be run, but they must be run using a different agentport.

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:

- Selecting and applying updates related to PeopleSoft application maintenance. Change packages are automatically created based on the customers selection of the updates to apply.
- Performing upgrades, which includes PeopleTools-only upgrades, PeopleSoft application-only upgrades, and combined PeopleTools and application upgrades.
- Applying database changes for 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.

You can use PeopleSoft Update Manager for select applications releases to search for updates you may need for your environment and to review the potential impact of the selected changes. PeopleSoft Update Manager will automatically include requisite updates based on the items you select; it will show you what has already been applied to your target environment; and, it will let you review the changes included with each update before selecting it. You can then create a custom change package definition with your selected updates.

Important! The change package definition created only guarantees the requisites for the specific target selected. If the same change package is applied to a different target, you may encounter errors or warnings if the environment is not at the same level as the target specified when the package definition was created.

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 release level as Change Assistant.

For PUM , your PeopleTools version could be at 8.54.03, but you can run Change Assistant at the 8.54.08 level since the environment management hub and agents are on the same release.

For non PUM-enabled environments, the environment management agents and hub must be at the same release/patch level as Change Assistant, in order to apply updates. For example, your PeopleTools version could be at 8.53.09, but you can run Change Assistant at the 8.53.14 level as long as the agents and hub are also at the 8.53.14 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 for Change Assistant and all environment management elements (agents, hub, and so on). The software update technology runs independently from the rest of PeopleTools. **Important!** This only applies to non PUM_enabled applications.

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 running non PUM-enabled applications and 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.

PeopleSoft Update Manager

PeopleSoft Update Manager (PUM) is a tool which runs on the PeopleSoft Update Image database.

PeopleSoft Update Images are Oracle VirtualBox virtual machines that you download locally. There is one PeopleSoft Update Image per product family (database instance) and they will be released periodically according to the image schedule posted on the PeopleSoft Update Manager Home Page. The PeopleSoft Update Image is the master source environment from which you will pull the updated objects,

create a custom change package, and apply updates to your environment. The PeopleSoft Update Image for your application is cumulative so you will download the most current PeopleSoft Update Image and get all of the updates that you need.

The PeopleSoft Update Manager PIA Application and the PeopleSoft Update Image work together; the PeopleSoft Update Image contains the updates and the PeopleSoft Update Manager PIA Application is the searching tool and custom change package definition generator. PeopleSoft Change Assistant orchestrates the entire process flow. Change Assistant is the tool used to analyze and compare changes, to apply the changed objects to your environment, to add in your customizations, and to generate custom change packages.

Software Update Process

The software *update* process refers to applying updates to your PeopleSoft application. The procedure for applying updates depends on whether the PeopleSoft application is PUM enabled.

PUM Enabled PeopleSoft Systems

All PeopleSoft updates for a product family are made available on a PeopleSoft Update Image. The PeopleSoft Update Image is a VirtuaBox image that contains the very latest PeopleSoft working database, applications, managed objects, codeline, and the data and metadata required to use the PeopleSoft Update Manager. The PeopleSoft Update Image is posted and downloaded from My Oracle Support (MOS). The schedule for images will be posted in advance on MOS for each PeopleSoft application database instance.

Software update tools include:

- Environment Management Framework

  Used to collect environment information.

  See Running the Environment Management Hub

- Change Assistant

  Used to upload target database information to the PI, create change packages from the custom change package definitions created using PeopleSoft Update Manager, and to the apply change packages to target databases.

  See Applying Updates To A Target Environment

- PeopleSoft Update Manager PIA Application

  Used to search for updates and create custom change package definitions.

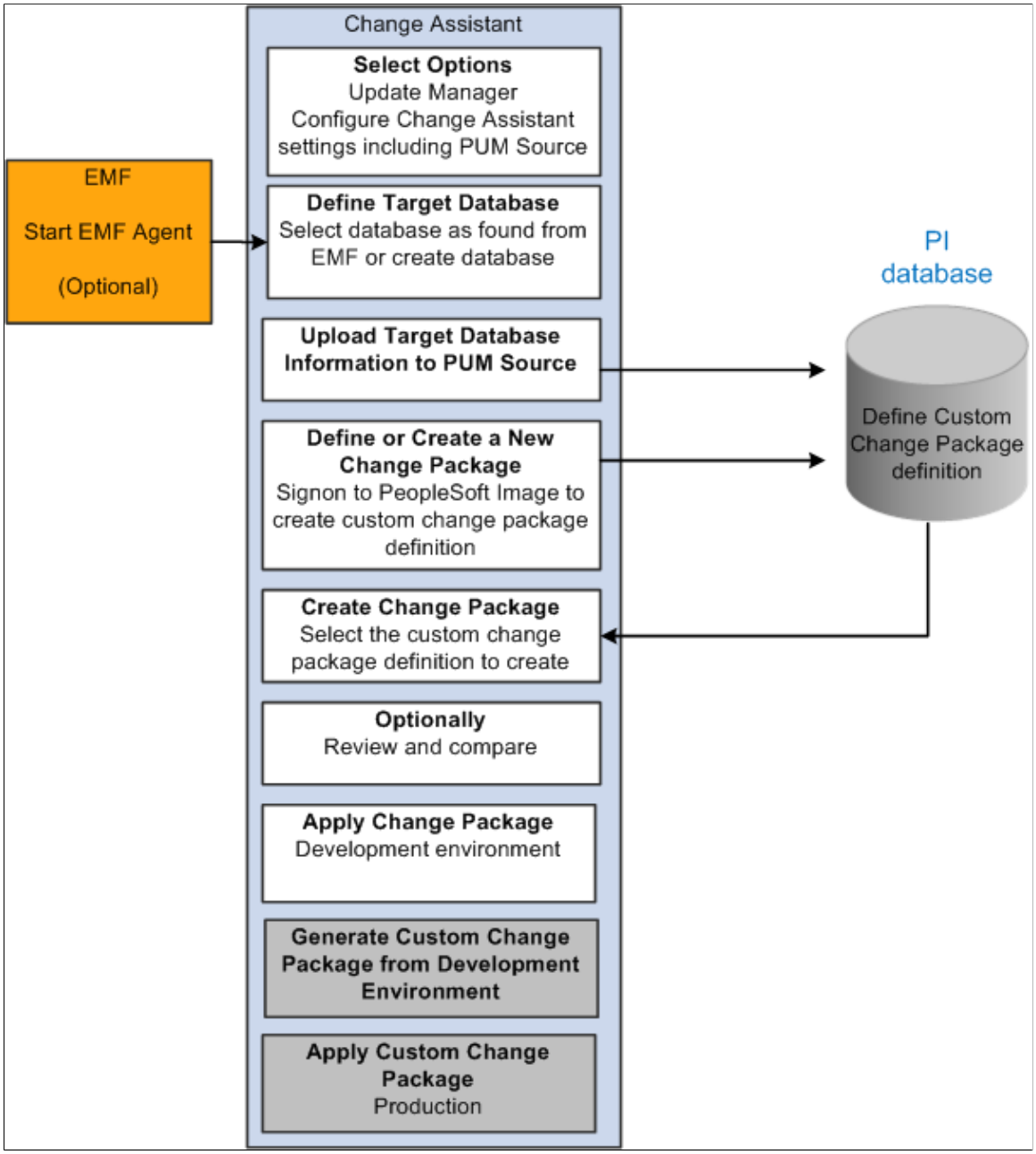
  The PeopleSoft Update Manager PIA Application is posted on PeopleSoft Update Manager Home Page [ID 1641843.2]

- Change Packager

Creates the change package in Change Assistant based on the change package definition created in PUM.

Image: Software Update Process in Change Assistant

This diagram illustrates the Software Update process steps for the initial pass.



Steps Used in Software Update Process

This table lists the steps used to search for and apply updates to your development or target database.

Step	Description
1	Download latest PeopleSoft Image from MOS. Use Oracle VM VirtualBox Manager to startup the PeopleSoft Update Image environment.
2	Configure your windows client to access the PeopleSoft Update Image (PI) database.
3	(Optional)Install and configure EMF on the target environment.
4	Install Change Assistant on the windows client.
5	(Optional) Start EMF Agent.
6	Start Change Assistant and configure for Update Manager. This includes defining the PUM Source. **Note:** Update Manager action.
7	In Change Assistant, Select Tools, Upload Target Database Information to PUM Source.
8	In Change Assistant, Select Tools, Define or Create a New Change Packages to connect to the PeopleSoft Update Image and create a change package definition. Sign on to the PeopleSoft Image and use PUM PIA application (PeopleTools > Lifecycle Tools > Update Manager > Define Change Package) to search for desired updates, review potential update impacts and changes, and generate your custom change package definition.
9	In Change Assistant, Select Tools, Apply Change Packages to create the change package and apply it to your target database. Use the *Initial Pass* option to identify your customizations and adjust the project accordingly. Reapply any customizations as necessary.
10	As part of the initial pass process, Change Assistant will create a new change package with all of your customizations that can be applied to your other environments, using the *Move to Production Pass* option.

Non-PUM Enabled PeopleSoft Systems

This software update process is only used for PeopleSoft systems that are not PeopleSoft Update Manager enabled. For PUM enabled systems refer to the previous section.

This software *update* process refers to applying change packages, bundles, and maintenance packs to your non-PUM enabled 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.

Step	Description
1	Install and configure Change Assistant and the Environment Management components.

Step	*Description*
2	Use My Oracle Support (MOS) to search for updates.
3	Download the Change Packages from MOS.
4	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.

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.

Change Assistant Environments and Terminology

Depending on the action to perform, the environment must be configured. Each environment will include:

- Database name
- Database type
- Unicode
- User Ids and passwords
- SQL query executable
- Products

  Products are selected for the target database only. The source database will inherit these values from the target.
- Languages

  Languages are selected for the target database only. The source database will inherit these values from the target.
- Paths to the current environment home directories.
  - PS_HOME
  - PS_APP_HOME
  - PS_CUST_HOME
- For application upgrades , the target database will also include paths to the old environment home directories.

Paths to Home Directories

The order by which the PeopleTools runtime will pick up objects from the file system is as follows:

1. PS_CUST_HOME
2. PS_APP_HOME
3. PS_HOME

Change Assistant will loop through the paths in order of precedence until it finds the first instance of the file object at which time it will execute the step.

Databases Used for Each Action

Action	***Databases and Paths Used***
Apply Update	Target database with path for current environment.
Update Manager	Target database with path for current environment. Source database (PeopleSoft Image VirtualBox) with path for current environment.

Action	***Databases and Paths Used***
Application Upgrade	Target database with path for current environment and path for old release. Source database (PeopleSoft Image VirtualBox) with path for current environment. (Optional) Copy of current demo database with path for current environment. (Optional) Production database with path for current environment.
Upgrade PeopleTools	Target database with path for current environment.
Copy/Compare Managed Objects or Merge Selected Object Types	Multiple databases can be copied, compared and merged.

Chapter 3

Configuring and Running Environment Management Components

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.
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, PS_APP_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. **Note:** The environment variable for PS_APP_HOME should be set in the application server/batch server configuration.	$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 PS Agent Home

If the environment variable PS_AGENT_HOME is not set, EMF writes to PS_HOME, which restricts the ability to run multiple agents specific to each application simultaneously on a shared PS_HOME.

This also poses a security concern as users under which the EM Agent runs must have write access to PS_HOME.

Set the environment variable PS_AGENT_HOME to the directory where you want to write the environment management metadata. When you launch PSEMAgent, the system will check for the PS_AGENT_HOME location and copy the necessary files to the PS_AGENT_HOME directory and log all activity in that directory.

Note: If you are using a Portable PS_HOME, you must set the PS_AGENT_HOME variable to your Portable PS Home location.

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.

Related Links

"Working with the Default PS_CFG_HOME" (PeopleTools 8.54: System and Server Administration)

"Securing PS_HOME on UNIX" (PeopleTools 8.54: System and Server Administration)

"Securing PS_HOME on Windows" (PeopleTools 8.54: System and Server Administration)

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 PS_AGENT_HOME\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 Starting an Agent in the Background on UNIX.

See Starting an Agent With PSEMAgent Windows Service.

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 "Securing PS_HOME on UNIX" (PeopleTools 8.54: System and Server Administration).

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.

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

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 Integration 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.

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.
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 "Working With User Profiles" (PeopleTools 8.54: Security Administration).

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

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 Change Assistant 8.5x.xx, Change Assistant.

Note: A new version of Change Assistant is delivered with each PeopleTools patch. After applying a PeopleTools patch, you must run the setup program again.

Note: The user who runs Change Assistant needs to have Administrator privileges on the Windows workstation. If you encounter the message "Another instance of Change Assistant is already running" the first time you try to access Change Assistant, right-click the icon or menu item and select Run as Administrator.

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

See *PeopleTools 8.54 Installation: Installing PeopleSoft Change Assistant*

For hardware and software requirements, consult *My Oracle Support, Certifications*.

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.

Example:

PS_HOME\bin\client\winx86

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;
   ```
7. If you've made any modifications, click OK to save your settings.

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.

Related Links

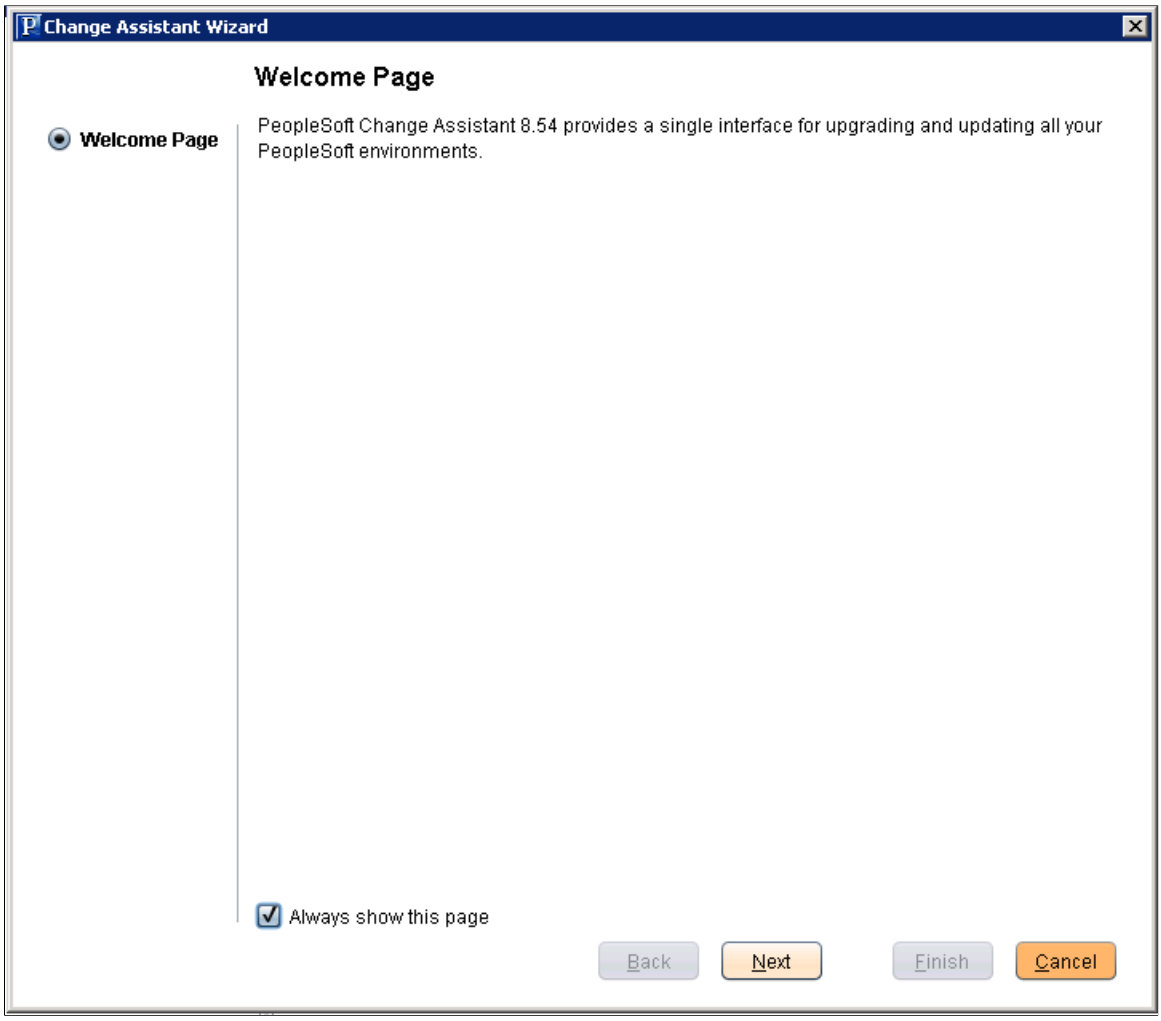
Cloned Databases Not Being Unique

Opening Change Assistant the First Time

The first time you open Change Assistant after installing it, you will be presented with the Welcome menu. You can select not to display this page again.

Image: Change Assistant Welcome page

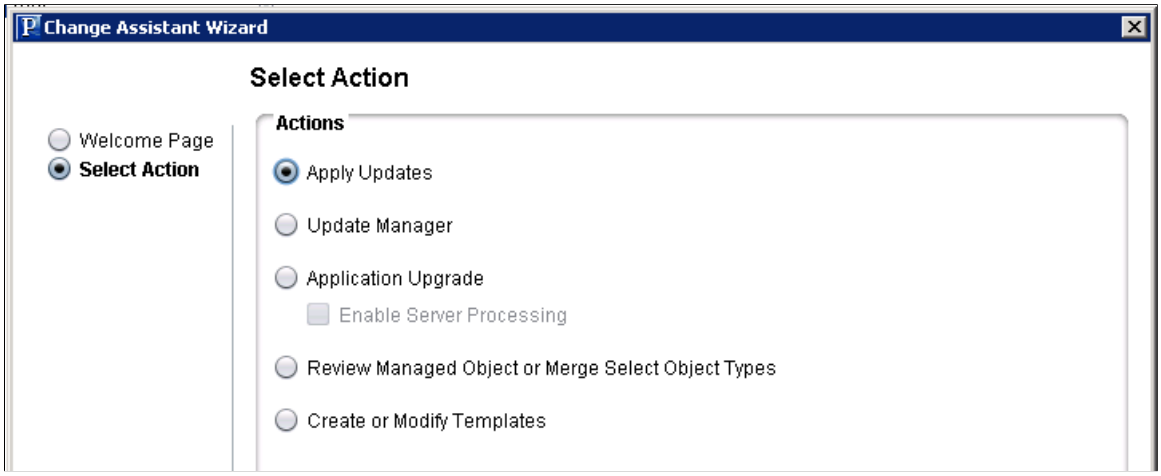
This example illustrates the fields and controls on the Change Assistant Welcome page.



Click Next to view the Change Assistant Options.

Image: Change Assistant Wizard – Select Action page

This example illustrates the fields and controls on the Change Assistant Wizard – Select Action page. You can find definitions for the fields and controls later on this page.



Depending on the action you select, the Change Assistant Wizard will guide you through the steps. Each of these actions has a topic that will provide details.

Apply Updates

Any systems that are not PUM enabled, will use the Apply Updates option to apply updates downloaded from My Oracle Support.

Apply Updates can be used with any non-PUM change packages.

See Applying Updates To A Target Environment

Update Manager

Update Manager is used to create and apply PUM Change Packages and PUM PeopleSoft Release Patches (PRP). The PeopleSoft Image is the virtual machine that contains the updates for a PeopleSoft application. The PeopleSoft Update Manager PIA application is used in the PeopleSoft Image to search for updates, review potential change impact, and create a custom change package definition that is based on the updates you selected for your environment.

Starting in PeopleTools 8.54, the Update Manager action is also used to apply PeopleTools patches and upgrade PeopleTools release.

Note: Update Manager is only available for 9.2 and above applications patching.

See Update Manager Action Overview

Application Upgrade

Application Upgrade is used to perform upgrade to a new application release, which typically includes a PeopleTools upgrade as well. Full application upgrades are delivered with

	detailed templates and documentation tailored to your specific upgrade path. See The Upgrade Process Using Change Assistant
Review Managed Object or Merge Select Object Types	Provides the ability to copy and compare Managed Object projects in Change Assistant. You also have the ability to view and merge PeopleCode, SQL and XSLT.
Create or Modify Templates	Change Assistant templates are composites of all the possible steps that apply to an update or upgrade. The templates are delivered as part of the change package. Once you select a change package, the template is loaded into the Change Assistant internal storage. You can edit the template or add additional chapters, tasks and steps, if needed.

Specifying Change Assistant Options

When you first start change Assistant, you will need to define options necessary for the selected action. Only the options related to the Change Assistant Action you selected will be displayed. Many of the options apply to all actions. If you are using the Change Assistant Wizard, after you select an action and click Next, the General Options page will be displayed.

Option	***Description***
General	The General Options define the Change Assistant PS Homes and directory paths used with associated action. Depending on the action selected, only the paths relating to that action are displayed.
PUM Source Options	The PUM Source is only used with Update Manager, to define the PeopleSoft Update Image that will be used for applying application and PeopleTools updates. For all other actions, PUM Source Options are skipped.
EM Hub Options	The Environment Management Hub is used to deploy files. If you are deploying files manually, leave the Define EM Hub checkbox deselected. EM Hub is only required for traditional updates (Apply Update action).
Additional Options	Additional options include email notifications and proxy information. These options are optional and available with all actions.

Note: Once the environment has been configured, you can use Tools, Options to make any changes to the environment options.

Defining Databases

Each source or target database that is used with Change Assistant needs to be defined. When you create the target environment, the system will query the database for details including:

- If the database is Unicode
- Products
- Product Line
- Industry
- Languages
- Base Language
- PeopleTools Version

To create a new database:

1. Click the Create button, which will launch the Database Wizard.
2. On the Define Database page, enter the information for the database you are defining. Depending on the action you selected and the database type (source or target), complete the fields necessary.
3. Click Next.

   Change Assistant will query the database and gather additional database information.

   Note: Change Assistant will verify the connection to the database, including User ID/password, Access ID/password, and Connect ID/password. You will need to correct any errors before continuing to define the database.

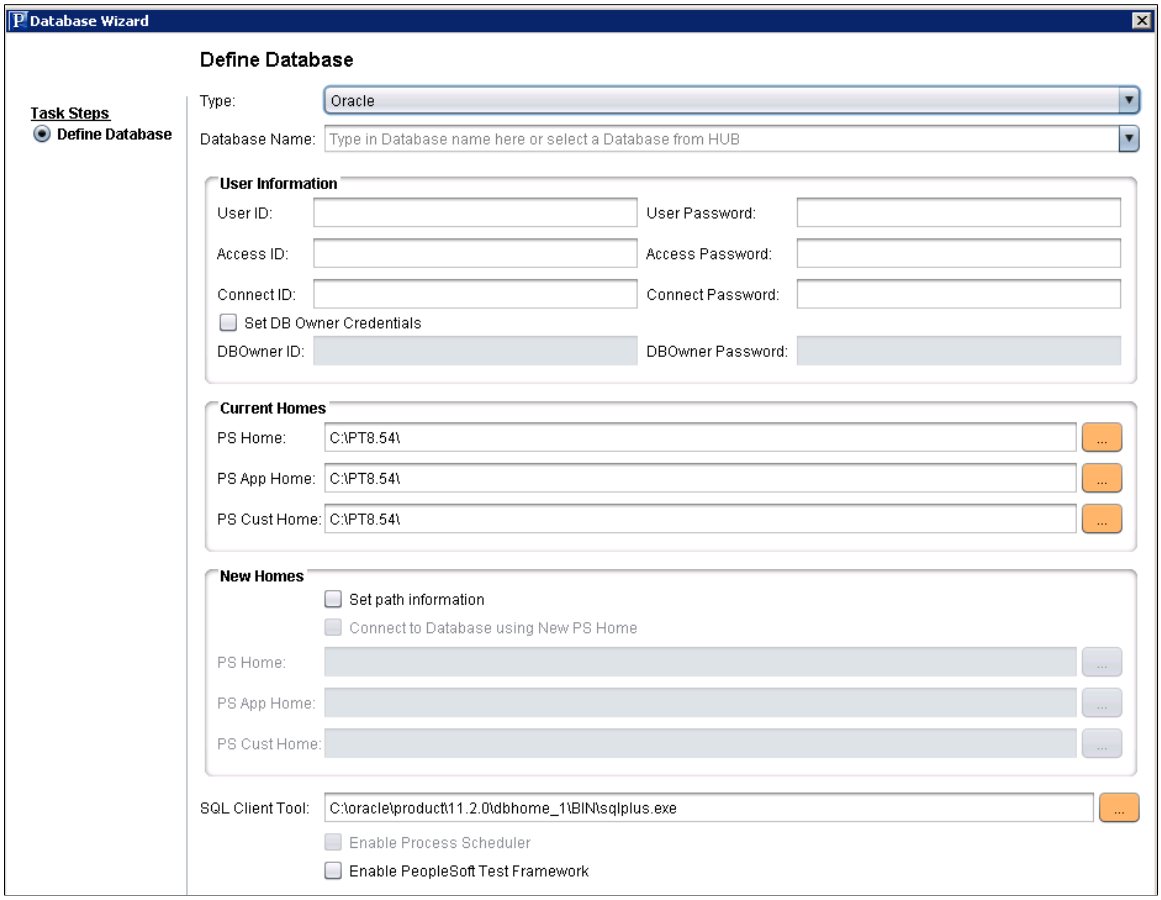
   ---

4. The information is then displayed on the Additional Database Details page.
5. Click Next and the Confirm Settings page is displayed.

6. Click Finish.

Image: Database Wizard - Define Database page

This example illustrates the fields and controls on the Database Wizard - Define Database page. You can find definitions for the fields and controls later on this page.



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

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.
Database Name	Enter a name of up to 8 characters for the database. If EMF is configured and running, use the drop-down to select a target database from Hub. If you are defining the PUM Source database, you will need to enter the database name.
Database Server Name	Only applies to Informix, Microsoft SQL Server and Sybase. If applicable, enter a name of up to 256 characters for the database server name.

Owner ID

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

User ID and 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.

Access ID and Password

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: For Microsoft SQL Server the access ID must also have System Administrator privileges.

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 "Access IDs" (PeopleTools 8.54: Security Administration).

Connect ID and Password

Enter the connect ID and password for the database. The default connect ID is people.

Set DB Owner Credentials

If this check box is select, then the DB Owner ID and DB Owner Password Fields are required fields.

The DB Owner is only used with the step type SQLScript-DBO. When the SQLScript-DBO step executes, the *Set DB Owner Credentials* option is checked prior to issuing the commandline. If the attribute is disabled, the job will exit with an error stating the credentials are not set, rather than attempting to execute the command and failing.

DB Owner ID and Password

Enter the Database Owner ID and password for the target database

Current HomesPS Home

Enter the location of your current PS_HOME.

Note: Oracle recommends using a mapped drive.

Current Homes PS App Home

Enter the location of your current PS_APP_HOME.

Note: Oracle recommends using a mapped drive.

Current Homes PS Cust Home

Enter the location of your current PS_CUST_HOME.

Note: Oracle recommends using a mapped drive.

New Homes Set path information

Select this check box if you are performing a PeopleTools upgrade or an application upgrade that includes a PeopleTools upgrade.

New Homes Connect to Database using New PS Home

When performing a PeopleTools upgrade, initially you will connect to your target database using your current PS Home. Once the target database is updated to the new release, the rest of the steps will require you to connect using the New PS Home.

Select this checkbox if you need to edit the database after the database has been upgraded to the new PeopleTools release.

New Homes PS Home

Enter the location of new PS_HOME.

Note: Oracle recommends using a mapped drive.

New Homes PS App Home

Enter the location of your new PS_APP_HOME.

Note: Oracle recommends using a mapped drive.

New Homes PS Cust Home

Enter the location of your new PS_CUST_HOME.

Note: Oracle recommends using a mapped drive.

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: sqlcmd.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.

Enable Process Scheduler

This option is only enabled if you are doing an application upgrade.

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.

See Specifying Upgrade Environment Process Scheduler Settings

Enable PeopleSoft Test Framework

Select this option if the upgrade contains PTF steps or if you want to incorporate PTF scripts into your template.

See Specifying PeopleSoft Test Framework Settings

Chapter 5

Working With Change Assistant

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 8.5x.xx, Change Assistant.

Change Assistant enables you to:

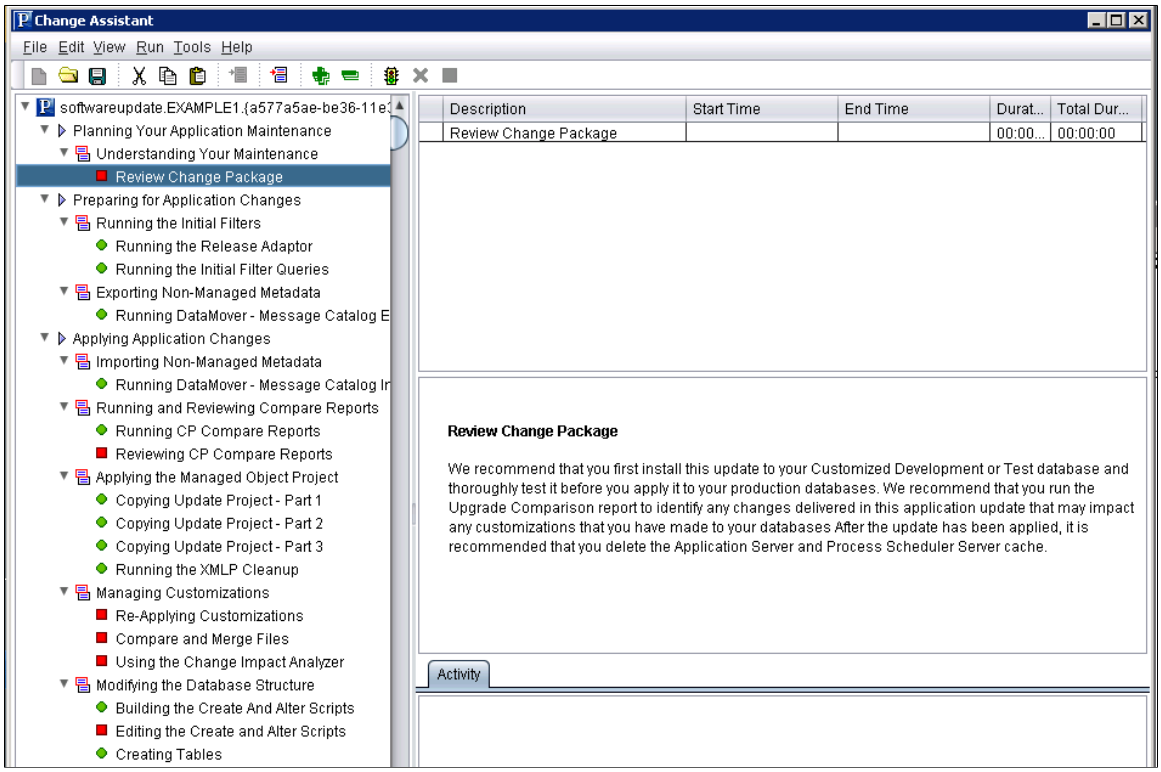
- View, modify, and create Change Assistant templates or jobs.
- Run PeopleSoft update and upgrade jobs.

Select and configure the action and task to perform. A Change Assistant job is created from the change package selected.

Note: Before starting and running Change Assistant, application servers, Process Scheduler servers, and web servers should be running. If you are planning to use EM Hub for file deploy or using the Apply Updates (non-PUM) action, then ensure all agents running on the servers are running and sending pulses.

Image: Job open in Change Assistant

This example illustrates the fields and controls on the Change Assistant interface. You can find definitions for the fields and controls later on this page.



When you have a Change Assistant template or job 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:** Properties are assigned at the step level in the template, not the task or chapter level.
Properties box	Depending on what is selected in the template tree, the properties box displays the properties associated with that node. For the Create or Modify Templates action, the properties box displays the properties assigned to the step when it was defined. For a job, the properties box displays information related to the progress of a step, such as start time, end time, total duration, and so on.
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, when a job is running in Change Assistant. This is 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 action, which is determined in the Change Assistant Actions dialog box.

File Menu

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

Menu Option	*Description*
New Template	Creates a new Change Assistant template.

Menu Option	***Description***
Open Template	Opens a template from the Change Assistant storage (internal database).
Save Template	Saves the template into the Change Assistant storage (internal database).
Save Template As	Saves the new template with the name you specify.
New Job	Creates a new Change Assistant job.
Open Job	Opens a job from the Change Assistant storage (internal database).
Save Job	Saves the job into the Change Assistant storage (internal database).
Save Job As	Saves the job with the name you specify.
Close	Closes the current template or job.
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. **Note:** Press and hold the CTRL key to select multiple templates for deletion.
Export Template	Exports a copy of the template out of Change Assistant so others can use it.
Export Job	Exports a copy of the job out of Change Assistant so others can use it.
Delete Job	Removes a job associated with the current template.
New Database	Launches the Database wizard for creating a new database. Change Assistant uses these settings to locate *PS_HOME* directories, connect to the Target database, and so on.
Open Database	Opens a defined database.

Menu Option	*Description*
Import Database	Imports an existing database.
Export Database	Exports an existing database.
Delete Database	Deletes an existingdatabase.
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.
Run	Runs the selected step.
Stop	Stops the selected step.

Menu Option	***Description***
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 incrementally, 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 job.
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.
Expand All	Expands all chapters, tasks, and steps.

Menu Option	*Description*
Collapse All	Collapses all chapters, tasks, and steps.
Steps Not Yet Completed	Filters steps to show steps not yet completed.
Steps Completed by System	Filters to show steps completed by the system. Deselect this option if you want to hide all the steps that have been completed.
Steps Completed Manually	Filters to show the steps that were manually completed. Deselect this option if you want to hide all the steps that have been manually completed.
Steps Filtered By Filter Query	Filters to show the steps that were filtered using a query filter. Deselect this option if you want to hide all the steps that have been filtered by a filter query.
Steps Filtered at the Job Level	Filters to show the steps that were filtered at the job level. Deselect this option if you want to hide all the steps that have been filtered at the job level.

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:

Note: If the menu option does not apply to the action selected, it will be grayed out.

Menu Option	***Description***
Upload Target Database Information to PUM	Enabled when action type is Update Manager. Uploads the target database information to the PUM source.
Define or Create a New Change Package	Enabled when action type is Update Manager. Opens Change Assistant Wizard to select yourdatabase information and leads you through the process to create a change package. See Defining a New Change Package
Apply Change Package	Enabled when action type is Update Manager. Opens Change Assistant Wizard to lead you through the process to apply a change package. See Applying Change Package
Apply PeopleSoft Release Patchset	Enabled when action type is Update Manager. Opens Change Assistant Wizard to guide you through applying PeopleSoft release patchset to the PeopleSoft Image. See Applying Downloaded PeopleSoft Release Patchset to PeopleSoft Image
Apply PeopleTools Patch	Enabled when action type is Update Manager. Open Change Assistant wizard to guide you through applying a PeopleTools patch. See Using Change Assistant to Apply PeopleTools Patch
Upgrade PeopleTools	Enabled when action type is Update Manager. Open Change Assistant wizard to guide you through upgrading your database for the new PeopleTools release. See Using Change Assistant to Upgrade PeopleTools
Validate	Validates the Change Assistant settings for EM Hub to ensure that the required elements are up and running, and that Change Assistant can connect to them.
Merge PeopleCode/SQL/XSLT	Enabled when action type is Review Managed Object or Merge Select Object Types. Allows you to start a new merge session or open an existing session.

Menu Option	*Description*
Default Merge Rules	Enabled when action type is Review Managed Object or Merge Select Object Types. Opens the Default merge Rules dialog box.
Project Administration	Enabled when action type is Review Managed Object or Merge Select Object Types. Opens Project Administration page.
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.
Change Actions	Opens Change Assistant Wizard Select Action page. See Opening Change Assistant the First Time
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. The *templates* are composites of all possible steps that apply to an update or upgrade, whether they apply to your environment or not.

The source of the template is dependant on the action you are performing in Change Assistant. This table lists the template source for each Change Assistant action.

Change Assistant Action	*Template*
Apply Update	Change Assistant template comes in the change package downloaded from MOS. For change packages created in Application Designer, the template is generated when you select Generate New Template.
Update Manager	Change Assistant template is either generated from the custom change package when you select to apply the change package or delivered from PeopleSoft if you are applying a PeopleSoft Release Patchset (PRP). For PeopleTools patches and PeopleTools upgrades, the change package is downloaded from MOS.
Upgrade	Change Assistant template for your upgrade path is downloaded from MOS.

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, adding PTF steps, 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.

   Note: Press and hold the CTRL key to select multiple steps for deletion.

   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.
- Set filter queries.

- 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.

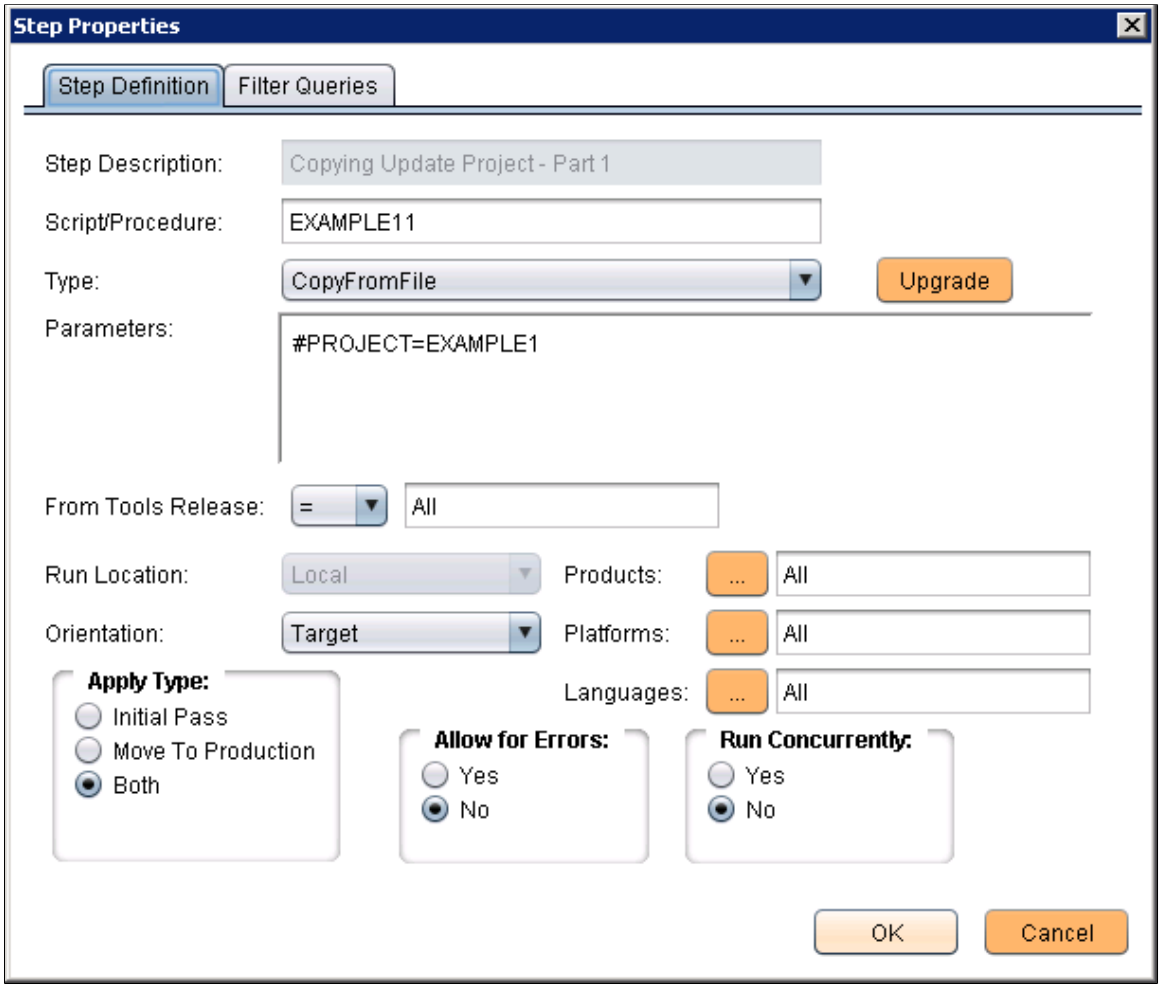
Note: Depending on what mode you are in, some of the fields may be disabled.

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.

Image: Step Properties dialog box

This example illustrates the fields and controls on the Step Properties dialog box. You can find definitions for the fields and controls later on this page.



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 Step Types

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 Step Parameters

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 Configuring Remote Agent Processing.

Orientation

Specify which database the step needs to be run against. Options will vary based on the action selected, but may include:

- *Source*
- *Target*
- *Copy of Current Demo*
- *Production*
- *Not Applicable*

Note: This orientation is used for Manual Stops or a task that does not use an orientation.

Step type and type of upgrade determine valid orientation settings.

See Source and Target Databases.

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: You must select at least one product.

Apply Type

Specify the type of upgrade to which this step applies:

- *Initial Pass*: refers to the initial application of a change package or new release to your Copy of Production database.
- *Move to Production*: refers to the upgrade between your Copy of Production database and your test or production system.

- *Both*: refers to steps that need to be run in both apply types.

Note: When the job is created, the system filters the template steps to be executed by the apply type specified. For example, if *Move to Production* is specified as the apply type, only steps in the template specified as Move to Production or Both will be included in the job.

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.

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.

Some examples are shown here, these examples use 3 AE steps and CA concurrency set to 2:

- Example 1

  Steps:

  - AE1 Concurrent=Yes
  - AE2 Concurrent=Yes
  - AE3 Concurrent=No
  - Manual Stop

  In this example, AE1 and AE2 will run in parallel. When both finished, AE3 will then run.Job will stop when ManualStop is encountered.

- Example 2:

Steps

- AE1 Concurrent=Yes
- AE2 Concurrent=Yes
- AE3 Concurrent=Yes
- Manual Stop

In this example, AE1 and AE2 will run in parallel, when either AE1 or AE2 finish, AE3 will run. Job will stop when ManualStop is encountered.

- Example 3

  Steps:

  - AE1 Concurrent=Yes
  - AE2 Concurrent=Yes
  - Manual Stop
  - AE3 Concurrent=No

  In this example, AE1 and AE2 will run in parallel, the job will stop when ManualStop is encountered. AE3 will run after the user completes the ManualStop.

- Example 3

  Steps:

  - AE1 Concurrent=Yes
  - AE2 Concurrent=No
  - AE3 Concurrent=Yes
  - Manual Stop

  In this example, AE1 will run, when AE1 finishes, AE2 will run, when AE2 finishes AE3 will run. Job will stop when ManualStop is encountered.

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.

Setting Filter Queries

Filter queries provide the ability to add ad-hoc step filtering criteria to a template to further improve applicability of job to the customer and where possible remove unnecessary manual steps.

See Adding Filter Queries

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 was completed by the system.
Manually Complete	Indicates this step was completed manually.
Filter	Indicates this step is filtered at the job level. Steps filtered at the job level will not execute and are equivalent to Complete. To hide these steps, select View, and deselect Steps Filtered at the Job Level.
Filter Query	Indicates this step is filtered by a filter query. Steps filtered by filter query will not execute and are equivalent to Complete. To hide these steps, select View, and deselect Steps Filtered by Filter Query.

Adding Filter Queries

Filter queries provide the user with the ability to add ad-hoc step filtering criteria to a template in order to improve the applicability of a job to the customer and where possible remove unnecessary manual steps.

This section discusses how to:

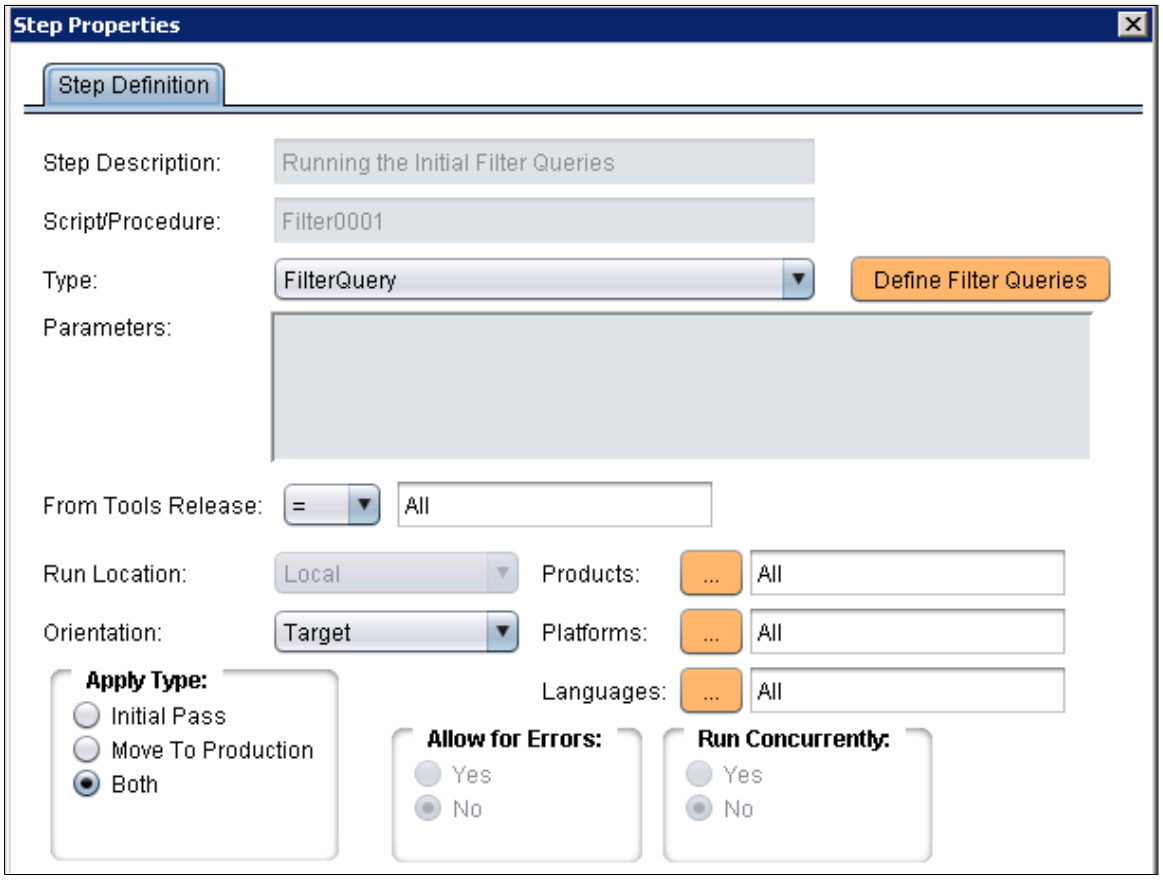
- Create Filter Query Step type.
- Assign Filter Query to a step.
- Cut and Paste filter queries
- Create and execute jobs that include filter queries.

Creating Filter Query Step Type

A template can have 0–n Filter Query steps defined and they can be defined at any position in the template. The location of the filter query step will determine when the filter queries associated to that step will be executed.

Image: Step Properties for Type FilterQuery

This example illustrates the fields and controls on the Step Properties dialog box . You can find definitions for the fields and controls later on this page.



Script/Procedure

The Script/Procedure is defaulted to Filter<n+1> where n is set to 0 for a new template and incremented by 1 each time a Filter Query step type is added and saved.

The first Filter Query step created in a template will be named Filter0001, the second will be named Filter0002, and so on.

These values must be unique, deletion of a filter query step, will not change the n value. When a filter query step is deleted, the value is never reused.

Define Filter Query

Use this button to access the Define Filter Queries dialog box.

The following step attributes can be set for Filter Query step type:

- From Tools release
- Orientation

- Products
- Platforms
- Languages
- Apply Type

Setting Step Properties

The following step attributes cannot be changed and will be greyed out.

- Parameters — not required for Query Filter step type
- Run Location (Default = Local)
- Allow for Errors (Default = No)
- Run Concurrently (Default = No)

Note: A filter query step cannot be filtered by it's own query. A filter query step can not be filtered by a filter query defined in another step.

Defining Filter Queries

The Define Filter Queries page is used to define the actual filter queries. The grid is displayed in read-only mode and always contains a minimum of one row in the view.

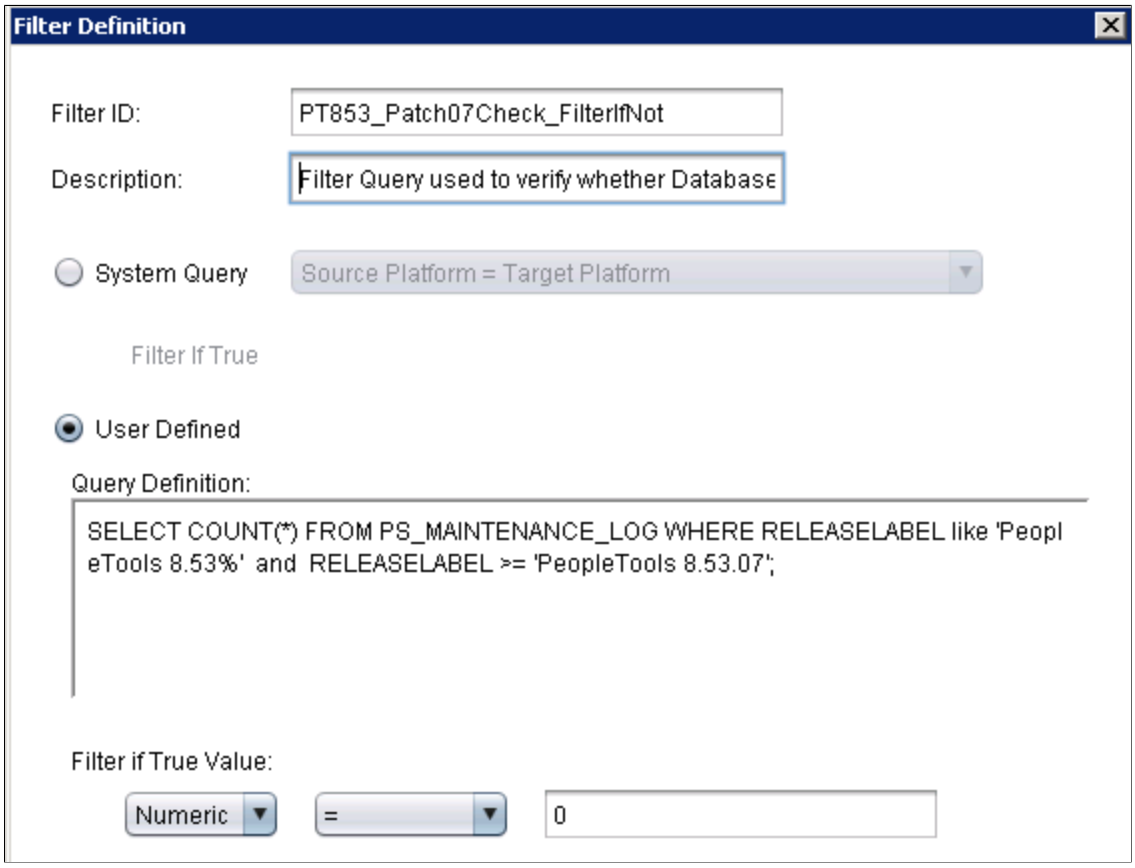
- To add a new filter query, right-click and select Add New Filter Query.
- To delete an existing filter query, right-click on the row and select Delete Selected Filter Query.
- To update an existing filter query either:
  - Right-click on the row and select Edit Selected Filter Query.
  - Double click on the row.

Defining Filter

Use the Filter Definition dialog box to define the filter.

Image: Filter Definition dialog box

This example illustrates the fields and controls on the Filter Definition dialog box. You can find definitions for the fields and controls later on this page.



Filter ID

The Filter ID must be unique within the Filter Query step. The Filter ID value in conjunction with the Script/Procedure name is used to ensure uniqueness within the template. For example: Filter1–AP Check.

Description

Enter a description for the filter query.

System Query

Select this radio button to use a system queries. System queries include:

- Source Platform = Target Platform
- Source Platform != Target Platform

User Defined

Select this radio button to type your own query definition.

Query Definition

Enter the SQL statement for the query.

Special filter queries are also available as described in the next section.

Note: The SQL statement is not validated.

Filter if True Value

The Filter if True Value can be a numeric or a string. Valid operator are:

- Numeric

  =, <, >, >=, <=, <>

- String

  Contains, Does Not Contain

For a single filter query, when the *Filter if True Value* is True then the associated step will be filtered.

Special Filter Queries

In addition to the standard user defined queries, a special platform-based filter query is available where Change Assistant leverages it's own metadata about the environments to resolve the query.

The following would be inserted in lieu of an actual SQL statement. The variables cannot be used as a part of the actual SQL statement. Examples of unique identifier pairing would be:

- #PLATFORM_SRC=#PLATFORM_TGT
- #PLATFORM_SRC=#PLATFORM_ODMO
- #PLATFORM_SRC=#PLATFORM_PROD

The return value for these pairings will be *Y* for yes and *N* for no.

For more information on variables see Filter Query Variables

Assigning Filter Query to a Step

To use a filter query, the filter query must be assigned to a step. The following rules apply:

- The drop down list of filter queries will be restricted to filter queries that are defined in the template at a position ahead or above the step being updated.
- Steps can only be associated to Filter Queries that would execute prior to the step being executed.
- Steps cannot be associated to the same Filter Query twice.

Adding a Query Filter to a Step

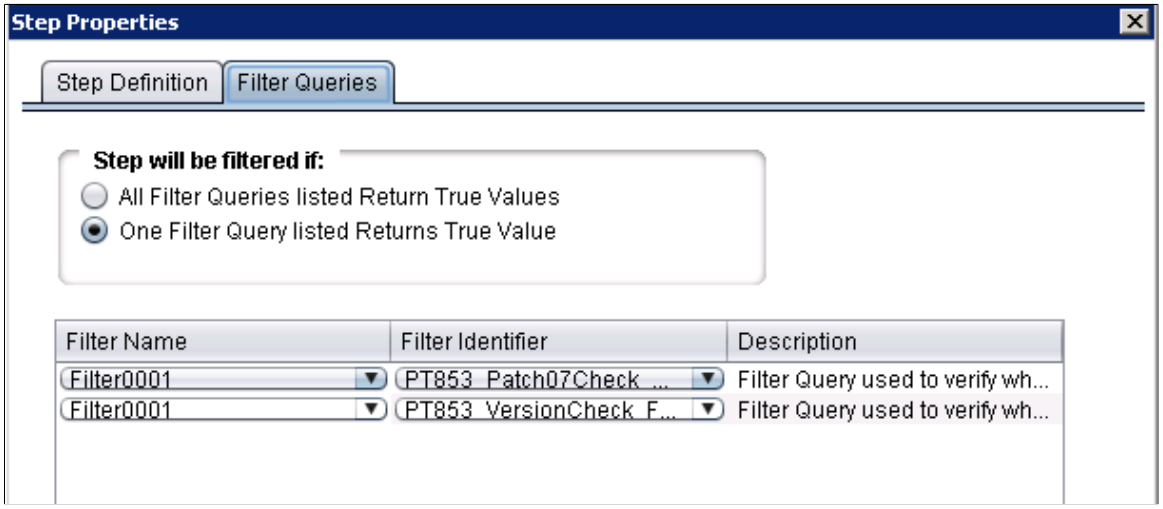
To add a query filter to a step:

1. Double-click on the step to open the Step properties.

2. Select the Filter Queries tab.

Image: Filter Queries dialog box

This example illustrates the fields and controls on the Filter Queries dialog box. You can find definitions for the fields and controls later on this page.



Step will be filtered if: Select when filtering will be done.

- All Filter Queries listed Return True Values

  AND condition

- One Filter Query listed returns True value

  OR condition

Filter Name Select the Filter name from the drop down list.

To add additional filter queries, right-click and select Insert Query.

Filter Identifier Select the Filter Identifier from the drop down list.

Note: The drop down list will contain all of the Filter IDs for the selected Filter Name. This field will be grayed out if a Filter name has not been specified.

To add additional Filter Queries, right-click on a row and select Insert Query.

Deleting a Query Filter from a Step

To delete a query filter:

1. Double-click on the step to open the Step properties.
2. Select the Filter Queries tab.
3. Right-click on the row with the filter and select Delete Query.

4. Click OK.

Cutting and Pasting Filter Queries

Once Filter Query Step types have been defined and used as filters for additional steps, you must take care in deleting or moving the steps in the template. Keep in mind the following points:

- Deleting a Filter Query Step

  If you delete a Filter Query step from the template, you will receive a warning that the deletion will result in all references to all filters defined in that step will be deleted. If you choose to continue, the process will remove all step references to the deleted Script/Procedure + Filter ID values.

- Cutting and pasting a Filter Query Step to another location in the template

  - Pasting to a position above or ahead of the original position has no impact.
  - Pasting to a position below the original position will result in a warning message indicating that moving step will result in removal of references to the current filter query step above it's new position.

    If you choose to continue, the process will remove all step references to the moved Script/Procedure + Filter ID values in steps that precede it in the revised template.

- Cutting and pasting a non-filter query step

  - Pasting to a position below the original position has no impact.
  - Pasting to a position above the original position will result in a warning message indicating that moving the step will result in removal of references to filter queries below it's new position.

    If you choose to continue, the process will remove all step references to the impacted Script/Procedure + Filter ID values within the relocated step.

Creating and Executing Jobs that Include Filter Queries

This section discusses how filter queries affect:

- Job Creation
- Job Execution

Job Creation

At the time of job creation, Filter Query steps can be filtered by any of the standard attributes (such as Platforms) as is the case for any other Step type. The filtering of a Filter Query step in this manner does not invalidate or cause steps that reference the filter query to filtered.

At job creation all Filter Queries defined within the template will be set to a default value of Null or No Value. No Step will be filtered by an Ad-Hoc Filter Query at job creation, because no Filter queries have been run at that time. The earliest these Filter Queries can be executed is in the first step of the template/job.

A step can be filtered by a System Filter Query at job creation, assuming that the associated step does not also have any ad-hoc Filter Queries associated to it.

Job Execution

On Filter Query step execution, results are retrieved for all filter query ID' s defined within that specific Filter Query step. These results are written to the Change Assistant database.

- The execution accounts for the orientation of the Filter Query step.
- The return values for each Filter Query are noted in the CA log listing the Filter Identifier, Filter ID, the Hide if True Condition, the return value and whether the Hide if True Condition was met.
- In the event of a SQL error, an error message is written to the CA log and the step is marked as *Failed*.
- In the event that the SQL returns a value of the wrong type (numeric as string) ,an error message is written to the CA log and the step is marked as *Failed*.

Upon completion of this execution, the template is refreshed and as part of this action filtering of steps will occur. Filtering of steps by filter query can only occur where all associated Filter Identifier' s have been resolved and are not in the Null or no value state. This is true even when only a single FALSE is required to filter a step.

When a Job is opened or refreshed – the filter query filtering will execute to ensure that all required filtering has occurred.

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.

Directory	*Maintenance Consideration*
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 to all target databases.
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.
PeopleSoft Update Manager Directory	This is a network share that maps to the PI_HOME share of the image. Do not delete these files.
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.

Running Change Assistant Job from the Command Line

Change Assistant jobs can be run from the command line to automate applying updates to multiple environments. There are 2 modes available AU and UM.

This section discusses command line parameters based on mode:

- Update Manager Mode (UM)
- Traditional Apply Updates Mode (AU)

Update Manager Mode

Update Manager mode supports the following actions:

- ENVIMP = Import Environment
- ENVCREATE = Create Environment
- ENVUPDATE = Update Environment
- PRPAPPLY = Apply PRP
- CPAPPLY = Apply Previously Created (non-PRP) Change Package
- CPCREATE = Create Change Package
- EMFVAL = Validate EMF Settings
- OPTIONS = Set General Options
- PTPAPPLY =Apply a patch to your Current PeopleTools Release
- PTUAPPLY =Upgrade to a New Release of PeopleTools

Command Line for Running PUM Updates 9.2 and Higher

The action CPAPPLY is used to apply a change package that was created using PUM.

Command line format:

```
Changeassistant.exe -MODE UM -ACTION CPAPPLY -TGTENV <target database> –UPD <change⇒
 package> -TYPE <initial pass or move to production> -SYNCTYPE <y OR n> -OUT <log f⇒
ile directory> -WARNINGSOK <Y or N> -EXONERR <launch GUI Y or N>
```

Example command line:

```
Changeassistant.exe -MODE UM -ACTION CPAPPLY  -TGTENV HR92A – UPD updPKG1
```

In this example the target database is named HR92A and the change package to apply is upgPKG1 (name of the custom change package created in Update Manager with the upg prefix when the change package is created). All of the other parameters will use the default.

Parameter	***Description***
-MODE	Change Assistant mode (Required) UM
-ACTION	Change Assistant action (Required) CPAPPLY = Apply Previously Created (non-PRP) Change Package
-TGTENV	Target database
-UPD	The Change Package to apply. (Required) Specify either *all* , a single or multiple Change Packages to apply to the specified environment. For example: • -UPD all • -UPD upd111111 • -UPD upd111111,upd222222
-TYPE	Apply Type. (Optional) • IP = Initial Pass (All steps) (default) • MTP = Move to production • IPSRC = Source only initial pass • IPTGT = Target only initial pass

Parameter	*Description*
-SYNCTYPE	Synchronize target metadata. (Optional) • Y = Yes (default if type is IP) • N = No (default if type is not IP)
-OUT	Path of log file (Optional) If the log directory is not specified it uses the default defined under General Options.
-WARNINGSOK	Proceed with apply even if warnings are found. (Optional) • Y = Proceed with apply even if warnings are found. (default) • N = Stop apply when warnings are encountered.
-EXONERR	Specify whether or not to launch GUI if an error or manual stop is encountered. (Optional) • Y = Do not Launch • N= Launch (default)

Command Line for Applying Downloaded PRP to PeopleSoft Update Image

The action PRPAPPLY is used to apply a previously downloaded PRP to the PeopleSoft Update Image.

Command line format:

```
Changeassistant.exe -MODE UM -ACTION PRPAPPLY  -UPD <change package> -OUT <log file⇒
 directory> -WARNINGSOK <Y or N> -REPLACE <Y or N> -EXONERR <launch GUI Y or N>
```

Example command line:

```
Changeassistant.exe -MODE UM -ACTION PRPAPPLY – UPD updPKG1
```

In this example the target database (PeopleSoft Image) is named HRIMAGE and the change package to apply is upd11111 (name of the downloaded PRP change package). All of the other parameters will use the default.

Parameter	*Description*
-MODE	Change Assistant mode (Required) UM = Update Manager
-ACTION	Action name (Required) PRPAPPLY = Apply PRP

Parameter	*Description*
-UPD	Update ID of Change Package to apply. (Required)
-OUT	Path of log file (Optional) If the log directory is not specified it uses the default defined under General Options.
-WARNINGSOK	Proceed with apply even if warnings are found. (Optional) • Y = Proceed with apply even if warnings are found. (default) • N = Stop apply when warnings are encountered.
-REPLACE	Replace existing data if it exists (Optional) • Y = Replace existing values if they exist (default) • N = Do not replace values if they exist
-EXONERR	Specify whether or not to launch GUI if an error or manual stop is encountered. (Optional) • Y = Do not Launch • N= Launch (default)

Command Line for Uploading Change Assistant Environments that were Previously Exported

The action ENVIMP is used to import an environment that was previously exported.

Command line format:

```
changeassistant -MODE UM -ACTION ENVIMP -FILEPATH <location of xml file> -FILE <xml⇒
 file name> -REPLACE <Y or N>
```

Parameter	*Description*
-MODE	Change Assistant Action (Required) UM = Update Manager
-ACTION	Action name (Required) ENVIMP = Import Environment
-FILEPATH	Location of xml file to be uploaded. (Required) Example: -FILEPATH C:\pt8.53

Parameter	*Description*
-FILE	Name of xml file to be uploaded. (Required)] Example: -FILE PT903R1.xml
-REPLACE	Replace existing data if it exists (Optional) • Y = Replace existing values if they exist (default) • N = Do not replace values if they exist

Command Line for Creating Environment

The action ENVCREATE is used to create an environment using the command line.

Command line format:

```
changeassistant -MODE UM -ACTION ENVCREATE -TGTENV <target database> -OUT <log path⇒
> -REPLACE <Y or N> -EXONERR <Y or N> -CT <database type> -CS <database server name⇒
> -OID <owner ID> -UNI <unicode> -CA <access id> -CAP <access id password> -CO <use⇒
r id> -CP <user password> -CI <connect id> -CW <connect id password> -CZYN <Y or N>⇒
 -CZ <DB owner> -CZP <DB owner password> -SQH <path to SQL Query tool> -INP <produc⇒
ts> -PL <product line> -IND <industry> -INL <languages> -PSH <path to PS Home> -PAH⇒
 <path to PS App Home> -PCH <path to PS Cust Home> -NPYN <Y or N> -NPSH <path to ne⇒
w PS Home> -NPAH <path to new PS App Home> -NPCH <path to new PS Cust Home>
```

The parameters for ENVCREATE action are:

Parameter	*Description*
-MODE	Change Assistant Action (Required) UM = Update Manager
-ACTION	Action name (Required) ENVCREATE = Create Environment
-TGTENV	Name of target database. (Required)
-OUT	Path of log file (Optional) If the log directory is not specified it uses the default defined under General Options.
-REPLACE	Replace existing data if it exists (Optional) • Y = Replace existing values if they exist (default) • N = Do not replace values if they exist

Parameter	***Description***
-EXONERR	Specify whether or not to launch GUI if an error or manual stop is encountered. (Optional) • Y = Do not Launch • N= Launch (default)
-CT	Database Type (Required)
-CS	Database Server Name (Optional)
-OID	Owner ID (Optional)
-UDI	Unicode (Required) • Y = Yes • N = No
-CO	User ID (Required)
-CP	User Password (Required)
-CA	Access ID (Required)
-CAP	Access Password (Required)
-CI	Connect ID (Required)
-CW	Connect Password (Required)
-CZYN	Set DB Owner Credentials (Optional) • Y = Yes • N = No (default)
-CZ	DBOwner ID (Required if –CZYN is Y)
-CZP	DBOwner Password (Required if –CZYN is Y)
-SQH	SQL Query Tool (Required)

Parameter	***Description***
-INP	Installed Products (Required) Specify either *all* , a single or multiple products. For example: • -INP all • -INP FMA • -INP FMA.REA,SMA
-PL	Product Line (Required)
-IND	Industry (Required) Specify either *all* , or a specific industry. For example: • -IND all • -IND Commercial
-INL	Languages (Required) Specify either *all* , or a specific languages. For example: • -INL all • -INL ENG,FRA
-PSH	PS Home (Required)
-PAH	PS App Home (Required)
-PCH	PS Cust Home (Required)
-NPYN	Enable new PS Home (Optional) • Y = Yes • N = No (default)
-NPSH	New PS Home (Required if –NPSH is Y)
-NPAH	New PS App Home (Required if –NPSH is Y)
-NPCH	New PS Cust Home (Required if –NPSH is Y)

Command Line for Updating Environment

The action ENVUPDATE is used to set options using the command line.

The command line for updating the environment uses the same parameters as creating an environment (ENVCREATE), except -REPLACE is not included.

Command Line for Setting Options

The action OPTIONS is used to set options using the command line.

Command line options are available for the General Options, EM Hub Options, and PUM Source Options. Additional options are not supported via command line.

Command line format:

```
changeassistant -MODE UM -ACTION OPTIONS -OUT <path to output log> -REPLACE <Y or N⇒
> -EXONERR <Y or N> -SWP <True or False> -MCP <maximum concurrect processes> -PSH <⇒
path to PS Home> -STG <staging directory> -OD <output directory> -DL <download dire⇒
ctory> -SQH <path to SQL Query tool> -EMYN <Y or N) -EMH <server host name> -EMP <s⇒
erver host port> -EMC <chunck size> -EMPING <ping interval> -EMDRV <drives to crawl⇒
> -SRCYN <Y or N> -SRCENV <PUMsource database name> -PUH <PUM PS Home> -PIA <PUM PI⇒
A URL>
```

The parameters for OPTIONS action are:

Parameter	***Description***
-MODE	Change Assistant Action (Required) UM = Update Manager
-ACTION	Action name (Required) OPTIONS = Set General Options
-OUT	Path of log file (Optional) If the log directory is not specified it uses the default defined under General Options.
-REPLACE	Replace existing data if it exists (Optional) • Y = Replace existing values if they exist (default) • N = Do not replace values if they exist
-EXONERR	Specify whether or not to launch GUI if an error or manual stop is encountered. (Optional) • Y = Do not Launch • N= Launch (default)

Parameter	***Description***
-SWP	Show Welcome Menu (Optional) • True = Show welcome page • False = Do not show welcome page
-MCP	Maximum Concurrent Processes (Optional)
-PCH	PS Home (Optional)
-PAF	PS App Home (Optional)
-PCH	PS Cust Home (Optional)
-STG	Staging Directory (Optional)
-OD	Output Directory (Optional)
-DL	Download Directory (Optional)
-PUH	PeopleSoft Update Directory (Optional)
-SQH	SQL Query Tools (Optional)
-EMYN	Configure EM Hub for file deploy (Optional) • Y = Yes • N = No (default)
-EMH	Server Host Name (Required if –EMYN is Y)
-EMP	Server Host Port (Required if –EMYN is Y)
-EMC	Chunk Size (Required if –EMYN is Y)
-EMPING	Ping Interval (Required if –EMYN is Y)
-EMDRV	Drives to Crawl (Required if –EMYN is Y)
-SRCYN	Configure PUM Source (Optional) • Y = Yes • N = No (default)
-SRCENV	PUM Source Database Name (Required if –SRCYN is Y)
-PUH	PUM PS HomDirectory (Required if –SRCYN is Y)

Parameter	Description
-PIA	PUM Source PIA URL (Required if –SRCYN is Y)

Command Line for Applying PeopleTools Patch

The action PTPAPPLY is used to apply a PeopleTools Patch using the command line.

Command line format:

```
Changeassistant.exe -MODE UM -ACTION PTPAPPLY -TGTENV <target database> -UPD <chang⇒
e package>
```

The parameters for applying a PeopleTools patch are:

Parameter	Description
-MODE	Change Assistant Action (Required) UM = Update Manager
-ACTION	Action name (Required) PTPAPPLY =Apply PTP
-TGTENV	Target environment (Required)
-UPD	Update ID of change package. (Required)] Example: -UPD PTP85401
-OUT	Path to log file. (Optional)
-WARNINGSOK	Proceed with apply even if warnings are found. (Optional) • Y = Proceed with apply even if warnings are found. (default) • N = Stop apply when warnings are encountered.
-EXONERR	Specify whether or not to launch GUI if an error or manual stop is encountered. (Optional) • Y = Do not Launch • N= Launch (default)

Command Line for Running PeopleTools Upgrade

The action PTUAPPLY is used to upgrade to a new PeopleTools release using the command line.

Command line format:

```
changeassistant -MODE UM -ACTION PTUAPPLY -TGTENV <target database> -UPD <change pa⇒
```



```
ckage> -OUT <path to log file> -WARNINGOK <Y or N> -EXONERR <Y or N>
```

The parameters for PTUAPPLY action are:

Parameter	***Description***
-MODE	Change Assistant Action (Required) UM = Update Manager
-ACTION	Action name (Required) PTUAPPLY=Apply PTU
-TGTENV	Target environment (Required)
-UPD	Update ID of change package. (Required)] Example: -UPD PTU854
-OUT	Path to log file. (Optional)
-WARNINGSOK	Proceed with apply even if warnings are found. (Optional) • Y = Proceed with apply even if warnings are found. (default) • N = Stop apply when warnings are encountered.
-EXONERR	Specify whether or not to launch GUI if an error or manual stop is encountered. (Optional) • Y = Do not Launch • N= Launch (default)

Command Line for Creating Change Package

The action CPCREATE is used to upgrade to a new PeopleTools release using the command line.

Command line format:

```
changeassistant -MODE UM -ACTION CPCREATE  -UPD <change package> -OUT <path to log ⇒
file>  -EXONERR <Y or N>
```

The parameters for CPCREATE action are:

Parameter	***Description***
-MODE	Change Assistant Action (Required) UM = Update Manager

Parameter	*Description*
-ACTION	Action name (Required) CPCREATE =Create Change Package
-UPD	Update ID of change package. (Required)] Example: -UPD PTU854
-OUT	Path to log file. (Optional)
-EXONERR	Specify whether or not to launch GUI if an error or manual stop is encountered. (Optional) • Y = Do not Launch • N= Launch (default)

Command Line to Validate EMF Settings

The action EMFVAL is used to upgrade to a new PeopleTools release using the command line.

Command line format:

```
changeassistant -MODE UM -ACTION EMFVAL -OUT <path to log file>  -EXONERR <Y or N>
```

The parameters for EMFVAL action are:

Parameter	*Description*
-MODE	Change Assistant Action (Required) UM = Update Manager
-ACTION	Action name (Required) EMFVAL = Validate environment
-OUT	Path to log file. (Optional)
-EXONERR	Specify whether or not to launch GUI if an error or manual stop is encountered. (Optional) • Y = Do not Launch • N= Launch (default)

Traditional Apply Updates Mode (non-PUM enabled)

CPAPPLY (Apply Change Package) is the only action available for the mode AU (Apply Updates).

Command Line for Non PUM-Enabled Environments

For Non PUM-enabled environments (PeopleSoft Update Image is not available), use the following command line format:

```
Changeassistant.exe -MODE AU -ACTION CPAPPLY -ENV <target database>  - UPD <change ⇒
package> -FS <file server> -CA <access id> -CAP <access password> -CO <user id> -CP⇒
 <user password> -DL <download directory> -BLD <manual or auto> -OUT <log file dire⇒
ctory> -EXONERR <launch GUI Y or N>
```

Note: EMF Agent must be running.

The parameters for CPAPPLY action are:

Parameter	***Description***
-MODE	Change Assistant Action (Required) AU = Apply Updates
-ACTION	Action name (Required) CPAPPLY = Apply Change Package
-ENV	Target database. (Required)
-UPD	The Change Package to apply. (Required) Specify either *all* , a single or multiple Change Packages to apply to the specified environment. For example: • -UPD all • -UPD upd111111 • -UPD upd111111,upd222222
-FS	File Server path to apply the Change Package to the specific environment. (Required) Select either *all* or list a specific file server configuration path in order. For example: • -FS all • -FS c:\pt8.53 -FS c:\pt8.53,c:\pt8.53–903
-CA	Access id for the environment. (Required)

Parameter	***Description***
-CAP	Access password for the environment. (Required)
-CO	User id for the environment. (Required)
-CP	User password for the environment. (Required)
-DL	Download directory for the environment. (Optional) If the directory is not specified it uses the default defined under General Options.
-BLD	Specify whether to create the Build scripts and execute them automatically or have the DBA run the scripts automatically. (Optional) • 0 = Manual • 1 = Automatically (default)
-OUT	Path of log file (Optional)
-EXONERR	Specify whether or not to launch GUI if an error or manual stop is encountered. (Optional) • Y = Do not Launch • N= Launch (default)

Part II

Using Change Assistant with PeopleSoft Update Manager

Chapter 6

Understanding Update Manager Action

Update Manager Action Overview

This section discusses:

- Update Tools
- Update Manager Actions

Understanding Update Tools

This section describes the tools used in applying updates with the PeopleSoft Update Manager (PUM). In a typical update process, you will use these tools to:

1. Locate, download, and install the PeopleSoft Update Image for your PeopleSoft application. This is the source environment.
2. Set up a Microsoft Windows client with Change Assistant, PeopleTools client and database client utilities for your environment.
3. Enable the Environment Management Framework on the target environment.
4. Configure Change Assistant with information about the source and target environments, and define a new change package.
5. Use the PeopleSoft Update Manager PIA Application to search for updates and create a custom change package.

See Quick Start for a list of steps and links.

PeopleSoft Update Image

The PeopleSoft Update Image (PI) is a VirtualBox image that includes the PeopleSoft working database, applications, managed objects, codeline, and the data and metadata required to use the PeopleSoft Update Manager.

Oracle delivers a complete and current PeopleSoft Update Image on a regular schedule for each PeopleSoft application database instance, for example: FSCM, HCM. The delivery schedules and the PI will be posted on My Oracle Support (MOS). Customers must download the image and deploy the image locally as a VirtualBox virtual machine before they can run Update Manager or create a custom change package.

The most current PeopleSoft Update Image will be delivered on the most current PeopleTools release. It is not necessary to upgrade PeopleTools on your target environment in order to use the current Image. The PeopleSoft Update Image supports multiple releases.

Note: It is recommended that customers download PeopleSoft Update Images when they are available, this will avoid the need to do a large download when a current image is needed to resolve a critical production issue.

The PeopleSoft Update Manager Home Page(My Oracle Support, Document 1641843.2) is the central location for all things related to PeopleSoft Update Manager (PUM) and PeopleSoft Update Images (PIs).

- Hardware and Software Requirements are available from the left-hand side of the PeopleSoft Update Manager Home Page.
- The PeopleSoft Update Image Home Pages tab provides links for you to locate the PeopleSoft Image and additional information for your application.

  The Update Image Homepage for your application will contain links to all the relevant information for the PI you are downloading. The Installation Documentation section on the page contains a link to *Using the PeopleSoft VirtualBox Images (PeopleSoft PeopleTools 8.54)*.
- The Best Practices provides information to help you plan for and determine the maintenance strategy and best practices your organization.

See Installing VirtualBox and PeopleSoft Update Image and Configuring the Microsoft Windows Client Running Change Assistant.

Change Assistant

Install Change Assistant on the Microsoft Windows client machine. The Update Manager action in Change Assistant is used to:

- Upload Target Database information to the PeopleSoft Update Image, including products and maintenance logs. Once the database information is uploaded, the database will be available in PeopleSoft Update Manager as a target database.
- Create a custom change package based on the change package definition created in PUM. Since Change Assistant has all of the target database information, this custom change package is automatically filtered for database platform and installed products.
- Apply updates to the target database.
- Create the reconciled or modified change package that can then be applied without compare into all other customized environments, assuming these customized environments are at the same release/patch level.
- Deploy updates to additional target environments using the reconciled change package.
- Update PeopleSoft Update Image with PeopleSoft Release Patchsets (PRP).
- Apply change package for PeopleTools patch.
- Apply change package for new PeopleTools release.

See Opening Change Assistant the First Time

Environment Management Framework (Optional)

Environment Management Framework (EMF) gathers and publishes 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. Change Assistant uses the information gathered by EMF to identify the available target databases when applying updates.

Configuring and running EMF is optional, EMF is only required to automate the file deploy process. If EMF is not configured and running, you will need to deploy files manually when you apply an application update.

See Configuring the Environment Management Hub

PeopleSoft Update Manager PIA Application

The PeopleSoft Update Manager PIA application runs on the PeopleSoft Update Image (PI) virtual machine. It contains 2 components, Define Change Package and Review Change Package. The Define Change Package component is a wizard that will lead you through the process of selecting updates and defining a custom change package for your environment. It provides a wide array of search options for selecting the updates to apply to your environment. It lets you review the details of the changes for each update before creating the change package definition, shows you what has already been applied to your environment, and automatically includes requisite updates based on what you selected and what is already applied to your environment.

Once the Target information has been uploaded to the PI, you can directly signon to the PI at any time to search for updates and create change package definitions without using Change Assistant. However, when you access Update Manager PIA application directly, the maintenance log details of that target will not be updated. Target database details are updated when:

- The task Upload Target Database Information to PUM Source is run.
- The step *SyncDatabaseInfoToPUMSource* in the change package template is executed.

  Note: This step is included in the change package if the option Synchronize Target Metadata (Requires Source) is selected on the Change Package Settings page when apply the update.

Change Assistant is updated when:

- The database is defined.
- The step *SyncDatabaseInfoToCA* in the change package template is executed.

When you are ready to create and apply the change package, the change package definition will be available from Change Assistant.

Change Packager

Change Packager is the software update tool that will automatically create your change package based on the change package definition. For change packages defined using PeopleSoft Update Manager PIA application, the change packager is invoked automatically by Change Assistant when you select to apply the change package.

Understanding Update Manager Action

Update Manager Action includes the following sections:

- Update Manager Tasks

  These are the tasks associated with defining and applying application updates from the PeopleSoft Update Image. The tasks include:

  - Validate Change Assistant EMF Settings

  - Upload Target Database Information to PUM Source
  - Define or Create New Change Package
  - Apply Change Package
  - Apply Downloaded PeopleSoft Release Patchset to PeopleSoft Image

- PeopleTools Tasks

  These are the tasks associated with applying PeopleTools patches and upgrades. The tasks include:

  - Apply a Patch to Your Current PeopleTools Release
  - Upgrade to a New Release of PeopleTools

Validate Change Assistant EMF Settings

EMF is used with the Update Manager action to identify the file servers for your target environment. If you configured the EM Hub option for your environment, use this to validate the EMF settings.

Upload Target Database Information to PUM Source

The Upload Target Database Information to PUM Source is used to upload the target database information to the PeopleSoft Update Image, including products and maintenance logs. Once the database information is uploaded, the database will be available in PeopleSoft Update Manager as a target database.

Note: In previous releases of Change Assistant, the target information was uploaded to the PUM source when you were creating a new change package in Change Assistant or when the *PUMMaintenanceLogSync* step was executed in Change Assistant. The *PUMMaintenanceLogSync* step has been replaced by the steps *SyncDatabaseInfoToPUMSource* and *SyncDatabaseInfoToCA*.

Define or Create a New Change Package

The Define or Create a New Change Package option is used to:

- Define your target databases in Change Assistant and open a browser session to the PeopleSoft Update Image database (PUM source).
- Define custom change package definition using PeopleSoft Update Manager PIA application on the PeopleSoft Update Image.
- Create the custom change package in Change Assistant.
- Apply the custom change package to the target database.

See Defining a New Change Package,

Apply Change Packages

The Apply Change Packages option is used to:

- Apply the custom change package to a target environment.

- Apply custom change package to additional target environments.

See Applying Change Package

Apply Downloaded PeopleSoft Release Patchset to PeopleSoft Image

The Apply Downloaded PeopleSoft Release Patchset to PeopleSoft Update Image is used to apply PeopleSoft Release Patches (PRP) to the PeopleSoft Update Image.

See Applying Downloaded PeopleSoft Release Patchset to PeopleSoft Image

Apply a Patch to Your Current PeopleTools Release

PeopleTools patches deliver fixes between PeopleTools minor releases. PeopleTools patches are posted to My Oracle Support, as they become available. PeopleTools patches are cumulative. They include all fixes from all previous patches for the specified release.

A PeopleTools patch contains the PeopleTools binaries and database changes. The database changes are delivered in a change package located in the PS_HOME\PTP directory. The Apply a Patch to Your Current PeopleTools Release option is used to apply this change package.

Upgrade to a New Release of PeopleTools

A PeopleTools upgrade consists of the new PeopleTools release and PeopleTools upgrade change package that contains all the database changes. After installing the new release and downloading the upgrade change package, this option is used to apply the upgrade change package.

Chapter 7

Setting Up the Client, Source, and Target Environments

Installing VirtualBox and PeopleSoft Update Image

To prepare your environment, you must install the PeopleSoft Update Image and configure the client machine that runs PeopleSoft Change Assistant to communicate with the PI.

Note: Review the hardware and software requirements on the PeopleSoft Update Manager Home Page (My Oracle Support, Document 1641843.2).

Before deploying the Oracle VM VirtualBox PeopleSoft Appliances, you must install Oracle VM VirtualBox. Once the VirtualBox software is installed, you will be able to download and install the PI. As new PIs are available, you can download and import a new image.

The deployment of the VirtualBox images includes the following activities:

Task	***Reference***
Install Oracle VM VirtualBox	Download the required version from https://www.virtualbox.org.
Obtain the PeopleSoft Update	See PeopleSoft Update Manager Home Page (My Oracle Support, Document 1641843.2) for instructions on finding the PeopleSoft Update Image.
Import the PeopleSoft Update Image	See *Using the PeopleSoft VirtualBox Images (PeopleSoft PeopleTools 8.54)*, Deploying the PeopleSoft VirtualBox Appliances, Importing the PeopleSoft VirtualBox Appliance. **Note:** Select the option Reinitialize the MAC address of all network cards when importing.
Set the network configuration	See *Using the PeopleSoft VirtualBox Images (PeopleSoft PeopleTools 8.54)*, Deploying the PeopleSoft VirtualBox Appliances, Setting the Network Configuration for the Virtual Appliance. **Note:** Select Bridged Adapter.
Start the environment (virtual machine) in VirtualBox Manager	See *Using the PeopleSoft VirtualBox Images (PeopleSoft PeopleTools 8.54)*, Deploying the PeopleSoft VirtualBox Appliances, Starting the PeopleSoft VirtualBox Appliance. **Note:** Make a note of the IP address assigned to the virtual appliance, or use the Linux command ifconfig to identify the IP address after the virtual appliance has started.

Task	*Reference*
Set the Authentication Domain	This step is only necessary if you entered a hostname and domain when you started the virtual machine. See *Using the PeopleSoft VirtualBox Images (PeopleSoft PeopleTools 8.54)*, Deploying the PeopleSoft VirtualBox Appliances, Setting the Authentication Domain in the Web Profile.

Configuring the Microsoft Windows Client Running Change Assistant

Change Assistant needs to be run from a Microsoft Windows client. It is highly recommended that you dedicate a Microsoft Windows client machine that is not used for other PeopleSoft purposes for each PI. It is necessary to configure this Microsoft Windows client machine to access all your target environments, as well as the PI. This setup is necessary for Change Assistant to communicate with the PI and target databases in 2-tier mode in order to correctly install updates.

Note: Keep in mind that the PI guest operating system is Oracle Linux, and that the PI runs on a Microsoft Windows host machine. While it is possible to use the same machine as the PI host and the PeopleSoft Microsoft Windows client, it is not required.

In setting up the Microsoft Windows client, be sure to review the software versions listed on the My Oracle Support home page for the PI you are using, as these will impact your setup.

Note: This documentation uses "release/patch" to refer to the PeopleSoft PeopleTools release, for example, 8.53, and patch number, for example 06. This release/patch example is written as 8.53.06.

The Microsoft Windows client needs to include:

- Oracle Database Client at a version level that is certified for the PeopleSoft PeopleTools release included on the PI.

  See My Oracle Support, Certifications

- Database Client for target database platform (if the target RDBMS is not Oracle).
  - For a target database that is not Oracle, you must always install the database client for your database platform.
  - For a target database that is Oracle, it will be necessary to install a second Oracle Database Client if the target database is not at the same PeopleTools release level as the PI.

    For example, PeopleTools 8.53 uses a 32–bit client and PeopleTools 8.54 requires a 64–bit client.

- PeopleTools Client for Oracle database platform at the same version level of the PI.

  Note: The PeopleTools client will work with all your target databases that are on the same PeopleTools release as the PI in carrying out PUM-enabled maintenance as long as the PeopleTools client is installed from the PI shared drive. If your target database is on a different PeopleTools release, you will need to install a second PeopleTools Client for that PeopleTools release.

- PeopleTools Client for target database platform at a version level supported by the PI.

Note: The supported PeopleTools client installer is available in the PI share. It is not necessary to upgrade the target database to the supported PeopleTools release patch level. The target database will work with the PeopleTools client.

- Change Assistant installed from the *PS_HOME* directory for the PeopleSoft Update Image on the Microsoft Windows client.

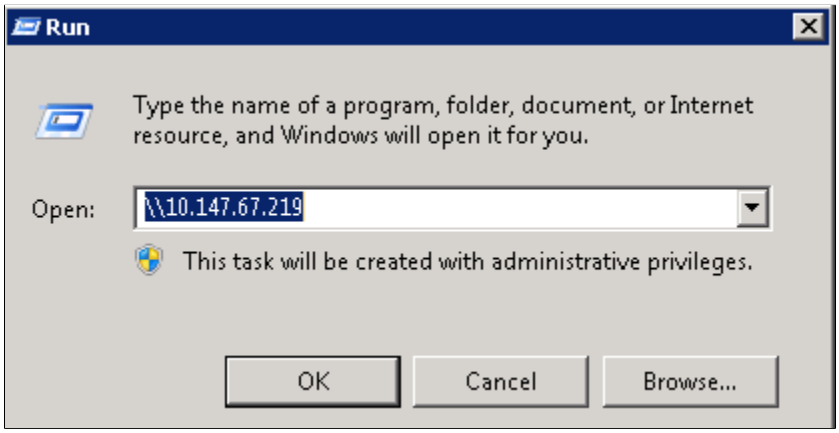
  Note: This use of *PS_HOME* refers to the location created by the client installation. You may need more than one client *PS_HOME* location, when you configure the Microsoft Windows Client. This documentation also uses "PS Home" in some cases to match the syntax on the Change Assistant UI.

After you install and initialize the PI, you access a shared drive which makes the folders from the image (Oracle Linux) accessible to the host (Microsoft Window OS).

From Windows Explorer access the virtual appliance file system from your Microsoft Windows host by selecting Start, Run, and entering the Microsoft Windows UNC path containing your virtual machine IP address.

Image: Microsoft Windows Run dialog box with IP address

This example illustrates the fields and controls on the Microsoft Windows Run dialog box with IP address.



The shared drive includes the following folders used to configure your Microsoft Windows client:

- client-853

  This directory contains the Disk1 folder used to install PeopleTools client if your target database is on PeopleTools 8.53.xx.

- client-854

  This directory contains the Disk1 folder used to install PeopleTools client at the release/patch level for the installed PI.

- oracle-12c-client-32bit

  This folder contains the zip file to install the Oracle database 32-bit client. The 32-bit client is required for PeopleTools 8.53.

- oracle-12c-client-64bit

  This folder contains the zip file to install the Oracle database 64-bit client and the tnsnames.ora file for the PI. The 64-bit client is required for PeopleTools 8.54.

- pi_home

  This folder contains all files needed for patching.

Note: See the list of software versions on the My Oracle Support home page for the PI.

Choosing the Microsoft Windows Client Configuration

This table describes which environment to use for installing the necessary database client and PeopleTools based on your target environment.

Target Environment	*Microsoft Windows client machine install*	*PS Homes on Microsoft Windows Client Machine*
Oracle database on PeopleTools 8.53	1. Install the Oracle database 32-bit client from the PeopleSoft Update Image oracle-12c-client-32bit shared drive, if it is not already installed. 2. Install the Oracle database 64-bit client from the PeopleSoft Update Image oracle-12c-client-64bit shared drive, if it is not already installed. 3. Update the tnsnames.ora file to include an entry for the PI (located in the oracle-12c-client-64bit shared drive) and an entry for the target database. 4. Install PeopleTools client from the PeopleSoft Update Image client-853/Disk1 shared drive. 5. Install PeopleTools client from the PeopleSoft Update Image client-854/Disk1 shared drive. See Working With a Target Environment on Oracle Database PeopleTools Release 8.53	For this scenario you will have two client PS Homes — one on PeopleTools 8.53 and one on PeopleTools 8.54.

Target Environment	***Microsoft Windows client machine install***	***PS Homes on Microsoft Windows Client Machine***
Oracle database on PeopleTools 8.54	1. Install the Oracle database 64-bit client from the PeopleSoft Update Image oracle-12c-client-64bit shared drive, if it is not already installed. 2. Update the tnsnames.ora file to include an entry for the PI (located in the oracle-12c-client-64bit shared drive) and an entry for the target database. 3. Install PeopleTools client from the PeopleSoft Update Image client-854/Disk1 shared drive. See Working With a Target Environment on Oracle Database	For this scenario you will have one client PS Home that is used by both the source and the target.
Non-Oracle database on PeopleTools 8.53	1. Install the Oracle database 64-bit client from the PeopleSoft Update Image oracle-12c-client-64bit shared drive. 2. Update the tnsnames.ora file to include an entry for the PI (located in the oracle-12c-client-64bit shared drive) and an entry for the target database. 3. Install target database client from the target environment and set up database connectivity. 4. Install PeopleTools client from the PeopleSoft Update Image client-854/Disk1 shared drive. **Note:** The PeopleTools install is for Oracle database platform. 5. Install PeopleTools client for your database platform from the PeopleSoft Update Image client-853/Disk1 shared drive. See Working With a Target Environment on PeopleTools 8.53 and Not on Oracle Database	For this scenario you will have two PS Homes—one for the source (Oracle RDBMS) at PeopleTools release 8.54 and one for the target (non-Oracle) at PeopleTools release 8.53.

Target Environment	*Microsoft Windows client machine install*	*PS Homes on Microsoft Windows Client Machine*
Non-Oracle database on PeopleTools 8.54	1. Install the Oracle database 64-bit client from the PeopleSoft Update Image oracle-12c-client-64bit shared drive. 2. Update the tnsnames.ora file to include an entry for the PI (located in the oracle-12c-client-64bit shared drive) and an entry for the target database. 3. Install target database client from the target environment and set up database connectivity. 4. Install PeopleTools client from the PeopleSoft Update Image client-854/Disk1 shared drive. 5. Install PeopleTools client for your database platform from the PeopleSoft Update Image client-854/Disk1 shared drive. See Working With a Target Environment on PeopleTools 8.54 and Not on Oracle Database	For this scenario you will have two PS Homes — one for the source (Oracle RDBMS) and one for the target (non-Oracle).

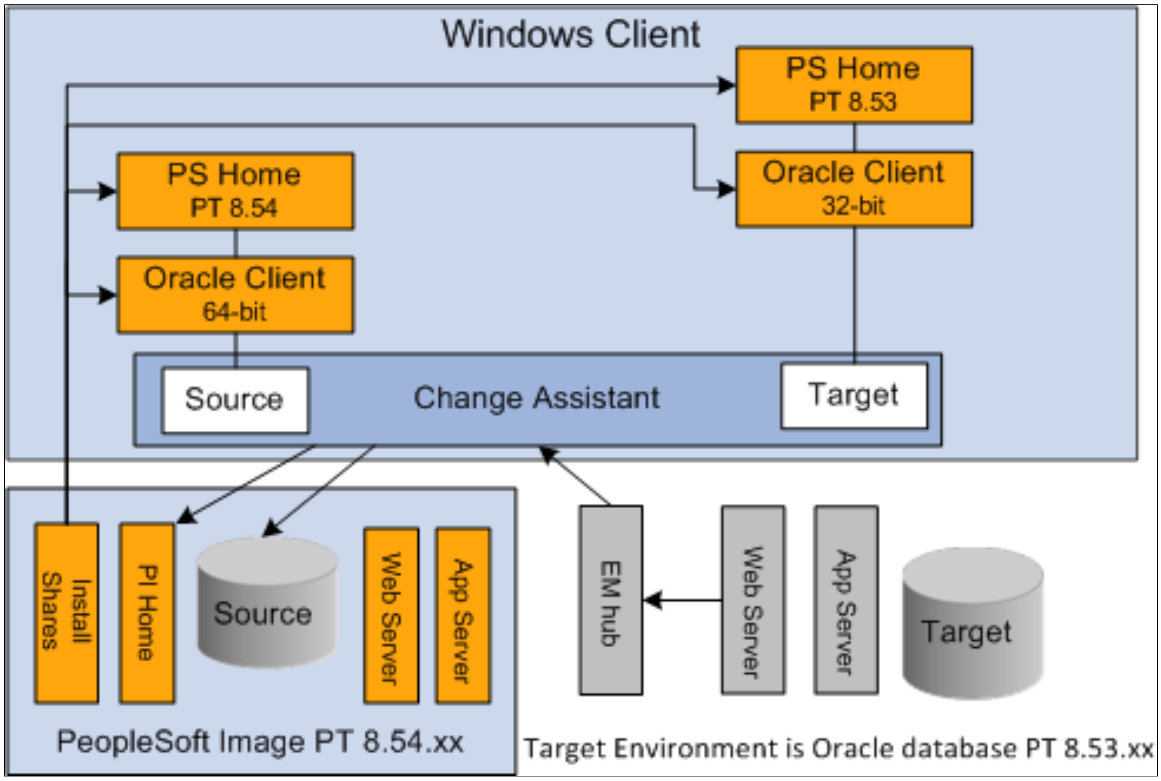
Working With a Target Environment on Oracle Database PeopleTools Release 8.53

If your target environment is on PeopleTools 8.53 and your are running on an Oracle database (Oracle RDBMS platform), you need to install a certified version of the Oracle database 32-bit client for the target database, as well as a certified version of the Oracle database 64-bit client for the PUM Source database. Install a versions that are certified for the PeopleSoft PeopleTools included with the PI, either from the shared folder on the PI shared drive, or from an existing installation.

You will install the PeopleTools client from the installation folder on the PI.

Image: Target Database on Oracle Database Platform on PeopleTools 8.53

This diagram illustrates the relationship between the Microsoft Windows client running Change Assistant and the PI when your target database is on PeopleTools 8.53 and the database platform is Oracle.



To set up a Microsoft Windows client where the target environment is on PeopleTools 8.53 and running on an Oracle database platform:

1. If you supplied a legitimate hostname and fully qualified domain name when starting the virtual machine image, you must update the hosts file on the Microsoft Windows client.

   See the sections Using the Virtual Appliance Hostname from the Host OS and Starting the PeopleSoft VirtualBox Appliance in *Using the PeopleSoft VirtualBox Images (PeopleSoft PeopleTools 8.54)*.

2. Map your Microsoft Windows client to the PI shared drives. You will use the mapped drive for the pi_home location when configuring Change Assistant for PUM. To map, use the IP address for the PI; for example, *IP_address*\pi_home. If you do not know the address, you can get it with the Linux command ifconfig while logged in to the virtual machine.

   See *Using the PeopleSoft VirtualBox Images (PeopleSoft PeopleTools 8.54)*, Starting the PeopleSoft VirtualBox Appliance.

3. Install the 32–bit Oracle database client from the PI shared drive folder oracle-12c-client-32bit.

   Important! Install using the administrator install option.

   Note: You have the option to use your existing Oracle database client software. The client must be at a version level that is certified for the PeopleSoft PeopleTools release of your target database.

See *Using the PeopleSoft VirtualBox Images (PeopleSoft PeopleTools 8.54)*, Installing and Starting Oracle Database Client Tools

4. Install the 64–bit Oracle database client from the PI shared drive folder oracle-12c-client-64bit.

Important! Install using the administrator install option.

---

5. Update the tnsnames.ora file on the Microsoft Windows client to include entries for the target database and the PI.

   The tnsnames.ora file is located in oracle_home\network\admin\tnsnames.ora; for example:

   ```
   C:\oracle\product\12.1.0\client_1\network\admin\tnsnames.ora
   ```

Note: Change Assistant requires a 2-tier connection on both the source and target databases.

   Copy the entry for the PI from the tnsnames.ora file found in the oracle-client directory on the virtual machine, as follows:

   a. Select Start, Run, and enter the Microsoft Windows UNC path containing your virtual appliance IP address.

   b. Double-click the oracle-12c-client-64bit shared folder.

   c. Open the tnsnames.ora file and copy the contents.

   d. Copy the entry into your existing tnsnames.ora file.

6. Install PeopleTools client for PeopleTools Release 8.53 from the PI shared drive folder client-853.

   The installation directory is referred to in this documentation as *PS_HOME*.

Note: Your target database may not be on the same release/patch level.
See the section Installing the PeopleTools Client Tools and Using Application Designer in *Using the PeopleSoft VirtualBox Images (PeopleSoft PeopleTools 8.54)*.

---

7. Install PeopleTools client for PeopleTools Release 8.54 from the PI shared drive folder client-854.

8. Install Change Assistant from the *PS_HOME* on PeopleTools 8.54 that you installed in the previous step from the PI shared drive.

   See Setting Up Change Assistant and *Using the PeopleSoft VirtualBox Images (PeopleSoft PeopleTools 8.54)*, "Installing PeopleSoft Change Assistant.

9. In the PeopleTools client installation for the target database, configure PeopleSoft Configuration Manager for the target environment, as follows:

   a. Go to PS_HOME\bin\client\winx86.

   b. Run pscfg.exe to launch Configuration Manager.

   c. Select the Profile tab and edit the default profile.

d. Select the Process Scheduler tab and confirm that all of your paths are correctly set to point to the PeopleTools client that you installed for the target database platform.

   Specifically, verify that the information in the SQR section corresponds to the location of the SQR executables in the PeopleTools client installation for the target database.

   For example, the default location for the SQR executables for an Oracle database would be PS_HOME\bin\sqr\ORA\binw. The SQR executables are RDBMS platform-specific, and all SQR executables in PUM are run against the target, so make sure you have the correct location.

   For information on working with Configuration Manager, see the information on configuring user profiles in the *PeopleTools: System and Server Administration* product documentation.

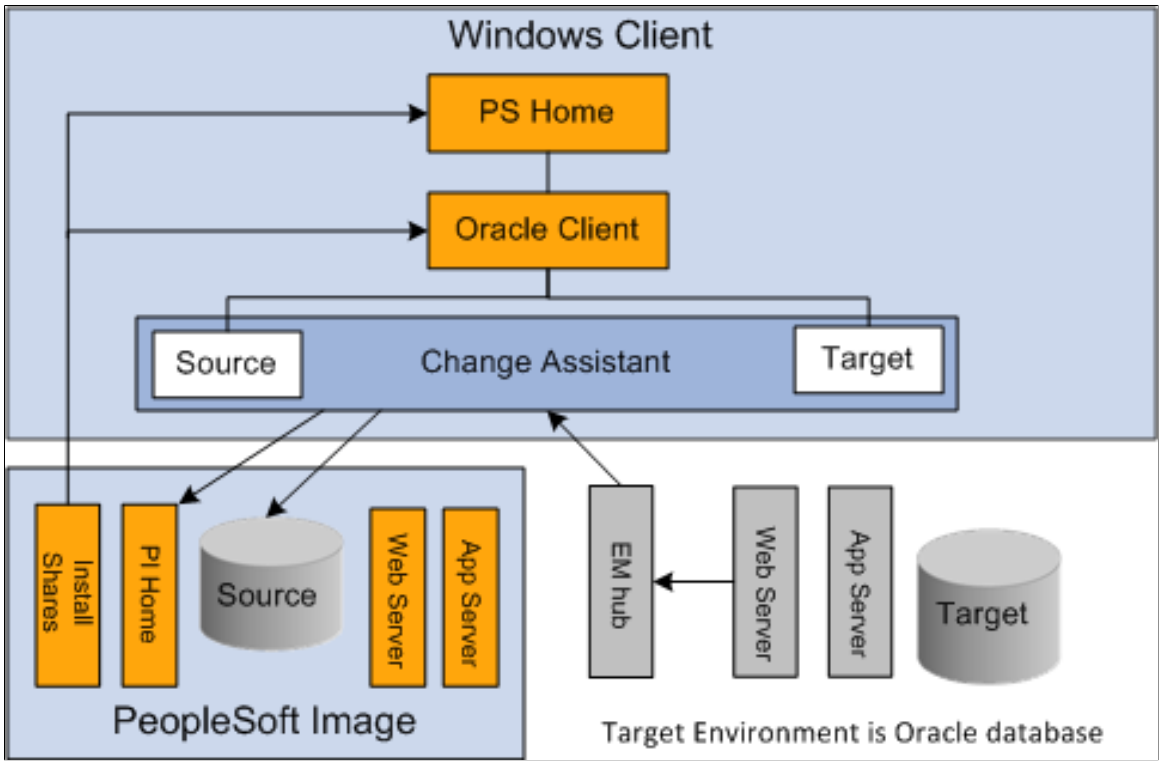
Working With a Target Environment on Oracle Database

If your target environment is running PeopleTools 8.54 on an Oracle database (Oracle RDBMS platform), you need to install a certified version of the Oracle database 64-bit client. Install a version that is certified for the PeopleSoft PeopleTools included with the PI, either from the installation folder on the PI shared drive, or from an existing installation.

You will install the PeopleTools client from the installation folder on the PI.

Image: Microsoft Windows client setup where the target database is on Oracle Database Platform

This diagram illustrates the relationship between the Microsoft Windows client running Change Assistant and the PI when your target database platform is Oracle.



To set up a Microsoft Windows client where the target environment is running on a supported Oracle database platform:

1. If you supplied a legitimate hostname and fully qualified domain name when starting the virtual machine image, you must update the hosts file on the Microsoft Windows client.

   See the sections Using the Virtual Appliance Hostname from the Host OS and Starting the PeopleSoft VirtualBox Appliance in *Using the PeopleSoft VirtualBox Images (PeopleSoft PeopleTools 8.54)*.

2. Map your Microsoft Windows client to the PI shared drives. You will use the mapped drive for the pi_home location when configuring Change Assistant for PUM. To map, use the IP address for the PI; for example, *IP_address*\pi_home. If you do not know the address, you can get it with the Linux command ifconfig while logged in to the virtual machine.

   See *Using the PeopleSoft VirtualBox Images (PeopleSoft PeopleTools 8.54)*, Starting the PeopleSoft VirtualBox Appliance.

3. Install the Oracle database client from the PI shared drive folder oracle-12c-client-64bit.

   Important! Install using the administrator install option.

   Note: You have the option to use your existing Oracle database client software. The client must be at a version level that is certified for the PeopleSoft PeopleTools release included on the PI.

   See *Using the PeopleSoft VirtualBox Images (PeopleSoft PeopleTools 8.54)*, Installing and Starting Oracle Database Client Tools

4. Update the tnsnames.ora file on the Microsoft Windows client to include entries for the target database and the PI.

   The tnsnames.ora file is located in oracle_home\network\admin\tnsnames.ora; for example:

   ```
   C:\oracle\product\12.1.0\client_1\network\admin\tnsnames.ora
   ```

   Note: Change Assistant requires a 2-tier connection on both the source and target databases.

   Copy the entry for the PI from the tnsnames.ora file found in the oracle-client directory on the virtual machine, as follows:

   a. Select Start, Run, and enter the Microsoft Windows UNC path containing your virtual appliance IP address.

   b. Double-click the oracle-12c-client–64bit shared folder.

   c. Open the tnsnames.ora file and copy the contents.

   d. Copy the entry into your existing tnsnames.ora file.

5. Install PeopleTools client from the PI shared drive folder client-854.

   The installation directory is referred to in this documentation as *PS_HOME*.

   Note: Your target database may not be on the same release/patch level.
   See the section Installing the PeopleTools Client Tools and Using Application Designer in *Using the PeopleSoft VirtualBox Images (PeopleSoft PeopleTools 8.54)*.

6. Install Change Assistant from the *PS_HOME* that you installed in the previous step from the PI shared drive.

   See Setting Up Change Assistant and *Using the PeopleSoft VirtualBox Images (PeopleSoft PeopleTools 8.54)*, "Installing PeopleSoft Change Assistant.

7. In the PeopleTools client installation for the target database, configure PeopleSoft Configuration Manager for the target environment, as follows:

   a. Go to PS_HOME\bin\client\winx86.

   b. Run pscfg.exe to launch Configuration Manager.

   c. Select the Profile tab and edit the default profile.

   d. Select the Process Scheduler tab and confirm that all of your paths are correctly set to point to the PeopleTools client that you installed for the target database platform.

      Specifically, verify that the information in the SQR section corresponds to the location of the SQR executables in the PeopleTools client installation for the target database.

      For example, the default location for the SQR executables for an Oracle database would be PS_HOME\bin\sqr\ORA\binw. The SQR executables are RDBMS platform-specific, and all SQR executables in PUM are run against the target, so make sure you have the correct location.

      For information on working with Configuration Manager, see the information on configuring user profiles in the *PeopleTools: System and Server Administration* product documentation.

Working With a Target Environment on PeopleTools 8.53 and Not on Oracle Database

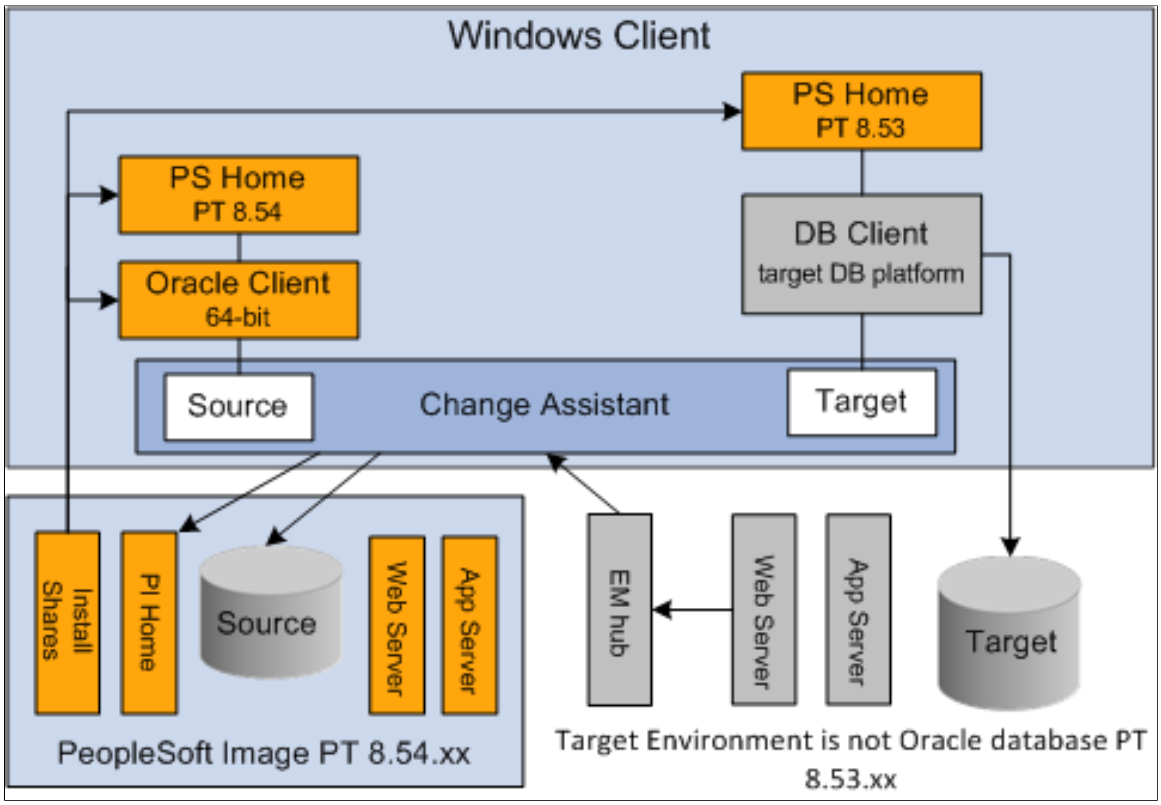
If your target environment is not on an Oracle database platform (that is, on another supported RDBMS platform such as Microsoft SQL Server or Sybase), it is necessary to load the Oracle database client and PeopleTools client from the PI. You will require two PS_HOMEs, one PS_HOME for the PUM source on PeopleTools 8.54 and Oracle database platform, and another PS_HOME for PeopleTools 8.53 on your target RDBMS platform. Both of these PeopleTools clients must be installed using the installers located in the shared folder available in the PI virtual machine. Change Assistant should be installed from the PS_HOME on PeopleTools 8.54 for the PUM source.

If your target database platform is not Oracle, you will need to install connectivity software for the target database platform, as well as the Oracle client from the PUM source. If your target database is not an Oracle RDBMS platform, you must install a client PS_HOME and client database connectivity

corresponding to the non-Oracle database platform because Change Assistant requires the binary files to connect to the target database.

Image: Target Database on PeopleTools 8.53 and Database Platform is Not Oracle

This diagram illustrates the relationship between the Microsoft Windows client running Change Assistant and the PI when your target database is not Oracle.



To set up Microsoft Windows client where the target environment is running on a database platform other than Oracle:

1. If you supplied a legitimate hostname and fully qualified domain name when starting the virtual machine image, you must update the hosts file on the Microsoft Windows client.

   See the sections Using the Virtual Appliance Hostname from the Host OS and Starting the PeopleSoft VirtualBox Appliance in *Using the PeopleSoft VirtualBox Images*.

2. Map your Microsoft Windows client to the PI shared drives.

   You will use the mapped drive for the pi_home location when configuring Change Assistant for PUM in a later section. To map, use the IP address for the PI; for example, *IP_address*\pi_home. If you do not know the address, you can get it with the Linux command ifconfig while logged in to the virtual machine.

   See *Using the PeopleSoft VirtualBox Images*, Starting the PeopleSoft VirtualBox Appliance.

3. Install the 64–bit Oracle database client from the PI shared drive folder oracle-12c-client-64bit.

   Important! Install using the administrator install option.

See *Using the PeopleSoft VirtualBox Images*, Installing and Starting Oracle Database Client Tools

4. Update the tnsnames.ora file on the Microsoft Windows client to include entries for the target database and the PI.

   The tnsnames.ora file is located in oracle_home\network\admin\tnsnames.ora; for example:

   ```
   C:\oracle\product\11.2.0\client_1\network\admin\tnsnames.ora
   ```

   Note: Change Assistant requires a 2-tier connection on both the source and target databases.

   Copy the entry for the PI from the tnsnames.ora file found in the oracle-client directory on the virtual machine, as follows:

   a. Select Start, Run, and enter the Microsoft Windows UNC path containing your virtual appliance IP address.

   b. Double-click the oracle-12c-client-64bit shared folder.

   c. Open the tnsnames.ora file and copy the contents.

   d. Copy the entry into your existing tnsnames.ora file.

5. Install PeopleTools client from the PI shared drive folder client-854 , and specify Oracle database platform during the installation.

   The installation directory is referred to in this documentation as *PS_HOME*.

   Note: See the section Installing the PeopleTools Client Tools and Using Application Designer in *Using the PeopleSoft VirtualBox Images*.

6. Install the database client for your target database platform and configure database connectivity.

   See *PeopleTools Installation <for your database platform>*.

   Note: Change Assistant requires 2-tier connectivity to your target database.

7. Install PeopleTools client for your target database from the PI shared drive folder client-853, and specify the database platform for your target database during the installation.

   Note: Your target database may not be on the same release/patch level.

   See the section Installing the PeopleTools Client Tools and Using Application Designer in *Using the PeopleSoft VirtualBox Images*.

8. In the PeopleTools client installation for the target database, configure PeopleSoft Configuration Manager for the target environment, as follows:

   a. Go to PS_HOME\bin\client\winx86.

   b. Run pscfg.exe to launch Configuration Manager.

   c. Select the Profile tab and edit the default profile.

d. Select the Process Scheduler tab and confirm that all of your paths are correctly set to point to the PeopleTools client that you installed for the target database platform.

   Specifically, verify that the information in the SQR section corresponds to the location of the SQR executables in the PeopleTools client installation for the target database.

   For example, if your target database platform is Sybase, the default location for the SQR executables would be PS_HOME\bin\sqr\SYB\binw. The SQR executables are RDBMS platform-specific, and all SQR executables in PUM are run against the target, so make sure you have the correct location.

   For information on working with Configuration Manager, see the information on configuring user profiles in the *PeopleTools: System and Server Administration* product documentation.

9. Install Change Assistant from the *PS_HOME* on PeopleTools 8.54 that you installed in the earlier step from the PI shared drive.

   See Setting Up Change Assistant and *Using the PeopleSoft VirtualBox Images*, "Installing PeopleSoft Change Assistant.

Working With a Target Environment on PeopleTools 8.54 and Not on Oracle Database

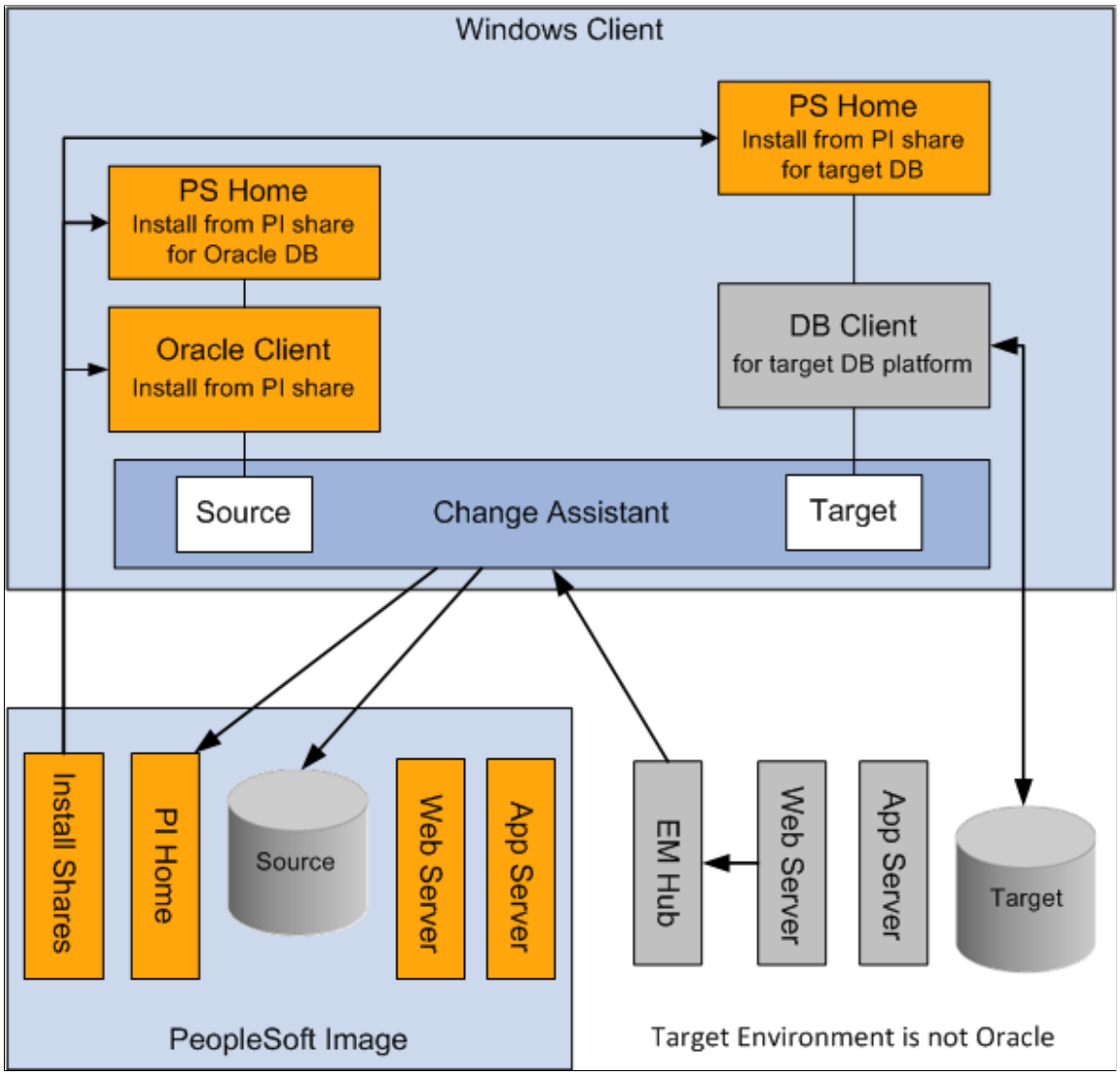
If your target environment is not on an Oracle database platform (that is, on another supported RDBMS platform such as Microsoft SQL Server or Sybase), it is necessary to load the Oracle database client and PeopleTools client from the PI. You will require two PS_HOMEs, one PS_HOME for the PUM source and Oracle database platform, and another PS_HOME for your target RDBMS platform. Both of these PeopleTools clients must be installed using the installer located in the client-854\Disk1 shared folder available in the PI virtual machine. Change Assistant should be installed from the PS_HOME for the PUM source.

If your target database platform is not Oracle, you will need to install connectivity software for the target database platform, as well as the Oracle client from the PUM source. If your target database is not an Oracle RDBMS platform, you must install a client PS_HOME and client database connectivity

corresponding to the non-Oracle database platform because Change Assistant requires the binary files to connect to the target database.

Image: Microsoft Windows client setup where the target database platform is not Oracle

This diagram illustrates the relationship between the Microsoft Windows client running Change Assistant and the PeopleSoft Image when your target database is not Oracle.



To set up Microsoft Windows client where the target environment is running on a database platform other than Oracle:

1. If you supplied a legitimate hostname and fully qualified domain name when starting the virtual machine image, you must update the hosts file on the Microsoft Windows client.

   See the sections Using the Virtual Appliance Hostname from the Host OS and Starting the PeopleSoft VirtualBox Appliance in *Using the PeopleSoft VirtualBox Images (PeopleSoft PeopleTools 8.54)*.

2. Map your Microsoft Windows client to the PI shared drives.

You will use the mapped drive for the pi_home location when configuring Change Assistant for PUM. To map, use the IP address for the PI; for example, *IP_address*\pi_home. If you do not know the address, you can get it with the Linux command ifconfig while logged in to the virtual machine.

See *Using the PeopleSoft VirtualBox Images (PeopleSoft PeopleTools 8.54)*, Starting the PeopleSoft VirtualBox Appliance.

3. Install the Oracle database client from the PI shared drive folder oracle-12c-client-64bit.

   Important! Install using the administrator install option.

   See *Using the PeopleSoft VirtualBox Images (PeopleSoft PeopleTools 8.54)*, Installing and Starting Oracle Database Client Tools

4. Update the tnsnames.ora file on the Microsoft Windows client to include entries for the target database and the PI.

   The tnsnames.ora file is located in oracle_home\network\admin\tnsnames.ora; for example:

   ```
   C:\oracle\product\12.1.0\client_1\network\admin\tnsnames.ora
   ```

   Note: Change Assistant requires a 2-tier connection on both the source and target databases.

   Copy the entry for the PI from the tnsnames.ora file found in the oracle-client directory on the virtual machine, as follows:

   a. Select Start, Run, and enter the Microsoft Windows UNC path containing your virtual appliance IP address.

   b. Double-click the oracle-12c-client-64bit shared folder.

   c. Open the tnsnames.ora file and copy the contents.

   d. Copy the entry into your existing tnsnames.ora file.

5. Install PeopleTools client from the PI shared drive folder client-854, and specify Oracle database platform during the installation.

   The installation directory is referred to in this documentation as *PS_HOME*.

   Note: Your target database may not be on the same release/patch level.
   See the section Installing the PeopleTools Client Tools and Using Application Designer in *Using the PeopleSoft VirtualBox Images (PeopleSoft PeopleTools 8.54)*.

6. Install the database client for your target database platform and configure database connectivity.

   See *PeopleTools Installation <for your database platform>*.

   Note: Change Assistant requires 2-tier connectivity to your target database.

7. Install PeopleTools client for your target database from the PI shared drive folder client-854, and specify the database platform for your target database during the installation.

See the section Installing the PeopleTools Client Tools and Using Application Designer in *Using the PeopleSoft VirtualBox Images (PeopleSoft PeopleTools 8.54)*.

8. In the PeopleTools client installation for the target database, configure PeopleSoft Configuration Manager for the target environment, as follows:

   a. Go to PS_HOME\bin\client\winx86.

   b. Run pscfg.exe to launch Configuration Manager.

   c. Select the Profile tab and edit the default profile.

   d. Select the Process Scheduler tab and confirm that all of your paths are correctly set to point to the PeopleTools client that you installed for the target database platform.

      Specifically, verify that the information in the SQR section corresponds to the location of the SQR executables in the PeopleTools client installation for the target database.

      For example, if your target database platform is Sybase, the default location for the SQR executables would be PS_HOME\bin\sqr\SYB\binw. The SQR executables are RDBMS platform-specific, and all SQR executables in PUM are run against the target, so make sure you have the correct location.

      For information on working with Configuration Manager, see the information on configuring user profiles in the *PeopleTools: System and Server Administration* product documentation.

9. Install Change Assistant from the *PS_HOME* that you installed in the previous step from the PI shared drive.

   See Setting Up Change Assistant

Chapter 8

Using Update Manager Action

Selecting Update Manager Action

The Update Manager action is used to selectively apply updates (bug fixes, patches, enhancements or new features) to your system. Before you can select this action, the following prerequisites must be configured and installed.

1. Download the latest PI from My Oracle Support and install it locally.

   See Installing VirtualBox and PeopleSoft Update Image

2. Configure the Microsoft Windows Client running Change Assistant.

   See Configuring the Microsoft Windows Client Running Change Assistant

Setting Up the Target Environment

To set up the target environment:

- Configure the Environment Management Framework (EMF) for your environment.

  EMF is required for the file deploy feature. This feature will automatically deploy files in change packages to different servers.

  Note: If Environment Management Framework is not configured, the file deploy steps will be excluded from the change package and any files included in the change package will require manual deployment.

  The version of EMF (Hub and Agents) to be used should match the PeopleTools version of your target database.

  - If your target database is on PeopleTools 8.53, the EM Hub and Agents need to running on PeopleTools 8.53.
  - If your target database is on PeopleTools 8.54, the EM Hub and Agents need to running on PeopleTools 8.54.

  Note: In both scenarios you will use Change Assistant 8.54 as it is compatible with EMF 8.53 and 8.54.

  See Configuring an Environment Management Agent

- Start the EMF Agent on the target environment.

  To verify that the EMF Agent is running, enter the hubURL into a browser. You should see a window with a message similar to this: "Sending pulse from 'com.peoplsoft.emf.peer: id 1'"

  See Running an Environment Management Agent

- Set user ID access.

  In Change Assistant, the user ID for the target database needs to have Full data admin access defined for Build/Data Admin on the Tools Permissions page for PeopleTools on one of the assigned permission lists. With the Full data admin access permission assigned, Change Assistant has access to all the build and copy options. Application Data Set (ADS) objects represent another security issue, because they contain actual rows of application data and there may be instances where this data is not suitable for compare or copy. In order to compare and copy ADS definitions, the user ID must have Full Access to compare and copy defined on the Copy Compare Permissions page for Data Migration Workbench on one of the assigned permission lists.

  See "Setting PeopleTools Permissions" (PeopleTools 8.54: Security Administration), "Setting Data Migration Permissions" (PeopleTools 8.54: Data Migration Workbench), and Administering Projects

Starting Change Assistant

To start Change Assistant:

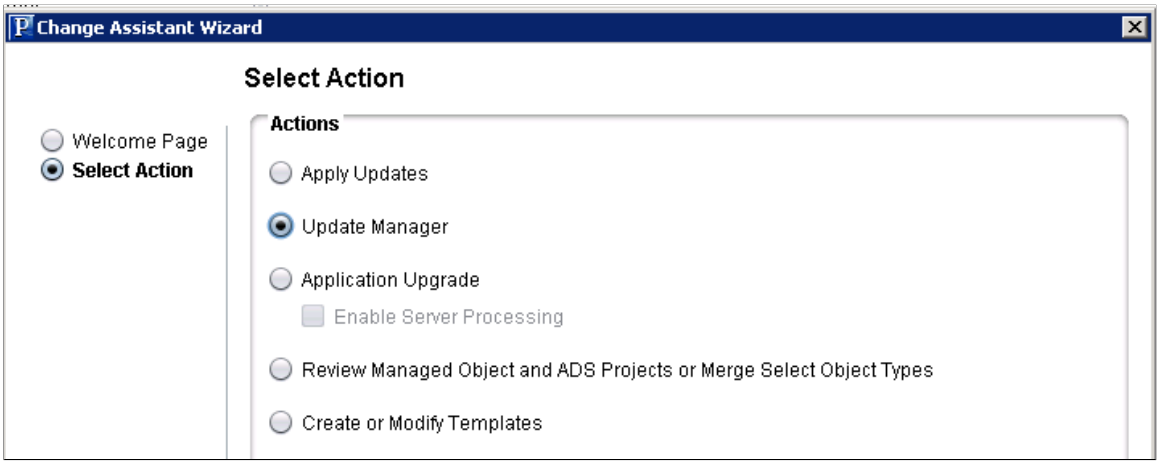
1. Select Start, Programs, PeopleSoft Change Assistant 8.54.xx, where *xx* refers to the release/patch number.

2. Depending on your preferences, you may or may not see a Welcome dialog box. If the Welcome dialog box is displayed, click Next.

   The Select Action page is displayed.

   Image: Change Assistant Wizard - Select Action page

   This example illustrates the fields and controls on the Change Assistant Wizard - Select Action page. You can find definitions for the fields and controls later on this page.



3. Select Update Manager and click Next.

   Note: You must select Update Manager for PUM-enabled maintenance.

Configuring Change Assistant for Update Manager

If this is the first time you are selecting Update Manager, the Wizard will guide you through the environment setup. As you click Next you will complete the following pages:

1. General Options

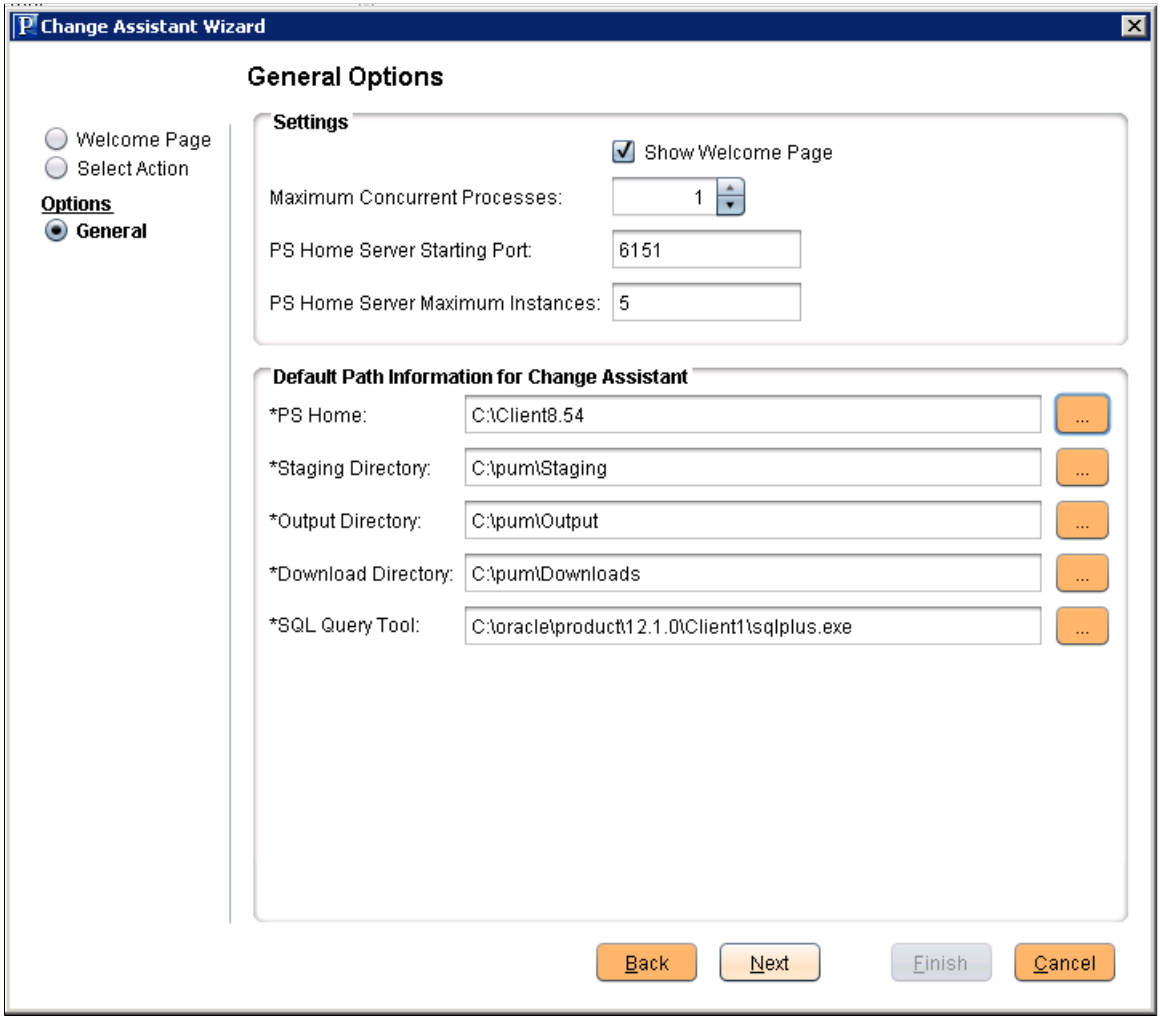
2. PUM Source Options
3. EM Hub Options
4. Additional Options
5. Select Task

Note: After the environment has been configured, you can use Tools, Options to make any changes to the environment options.

General Options

Image: Change Assistant – General Options page

This example illustrates the fields and controls on the Change Assistant – General Options page. You can find definitions for the fields and controls later on this page.



Maximum Concurrent Processes	Specifies the maximum number of processes that can be executed concurrently on the local machine. The default is 1.
PS Home Server Starting Port	Specify the port number for the first PS Home server.

Change Assistant uses this port number to communicate with Change Assistant PS Home servers. The default starting port number is 6151. If you enter a port number that is already in use, you see an error message. You must change to a port number that is not in use, and then restart Change Assistant for the change to take effect.

PS Home Server Maximum Instances Enter a number between 1 and 10 for the maximum number of PS Home servers.

Use this value for environments with more than one PS_HOME. For each server instance, Change Assistant increments the PS Home Server Starting Port number by 1 up to the maximum number of instances. For example, with a PS Home Server Starting Port value of 6151 and a PS Home Server Maximum Instances value of five, the port numbers would be 6151, 6152, 6153, 6154, and 6155. The default is 5.

If you change this value, you must restart Change Assistant for the change to take effect.

PS Home Enter the full path in which you installed PeopleTools client on the Windows Client machine.

Note: Specify the PS_HOME location you used to install Change Assistant.

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.

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

SQL Query Tool Select the correct executable for the database platform that matches the PS_HOME defined for CA.

Note: The SQL Query tool must align with the installed Change Assistant version. For an 8.54 PUM Source, this will be the 64–bit version of sqlplus.exe.

This value is used as the default when creating environments. Each environment contains separate settings and therefore, you can change this executable for a specific database.

Valid SQL query executables for each platform are:

- DB2: db2cmd.exe
- Informix: dbaccess.exe

- Microsoft SQL Server: sqlcmd.exe
- Oracle: sqlplus.exe
- Sybase: isql.exe

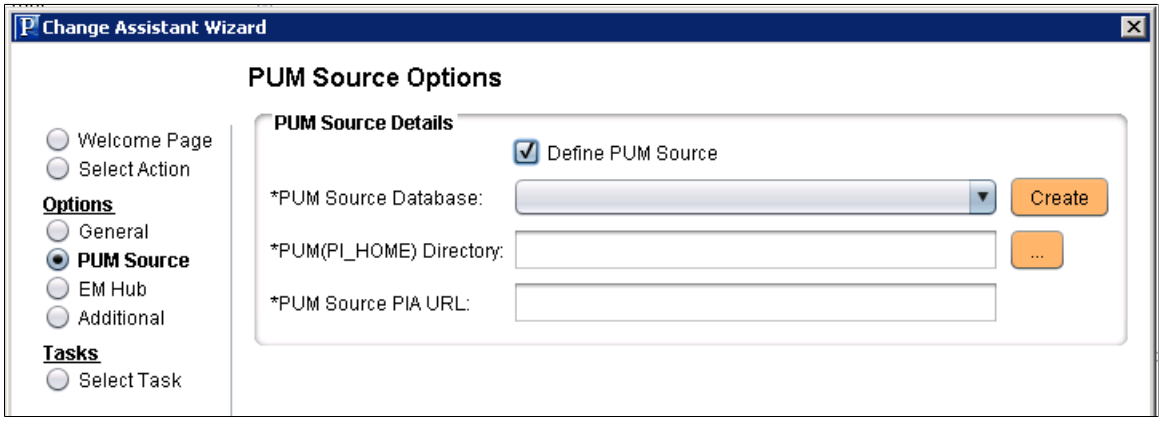
Note: Change Assistant uses the command line version of the .exe, not the GUI version. For example, sqlplus.exe is used for an Oracle database, rather than sqlplusw.exe.

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.

PUM Source Options

Image: Change Assistant - PUM Source Options page

This example illustrates the fields and controls on the Change Assistant - PUM Source Options page. You can find definitions for the fields and controls later on this page.



Define PUM Source

Select this checkbox to define the PUM Source.

Note: Not all Change Assistant actions require a PUM Source.

PUM Source Database

If the database has already been defined, it will be available from the drop-down list. After you select a database that has already been configured, the database information on the remainder of the page will be displayed in read-only mode.

If the database has not been defined yet, click Create which will launch the Database Wizard.

When defining the PUM Source database, keep the following points in mind:

- PS Home for the PUM Source database is the PeopleTools client installed from the PI share for Oracle database.
- PUM Source does not use PS App Home or PS Cust Home, however you must include the path, use the same path as PS Home.
- The SQL Client Tool for the PUM Source is the SQL PLUS executable that aligns with the installed Change Assistant version. For example, Change Assistant on PeopleTools 8.54, uses the 64–bit version of sqlplus.exe.

See Defining Databases

PUM(PI_HOME) Directory Enter the path to the pi_home share on the PI. The pi_home share contains all files needed for patching.

Note: The drive is a path mapped to the PeopleSoft Image pi_home share.

PUM Source PIA URL Enter the URL to sign on to the PeopleSoft Image database.

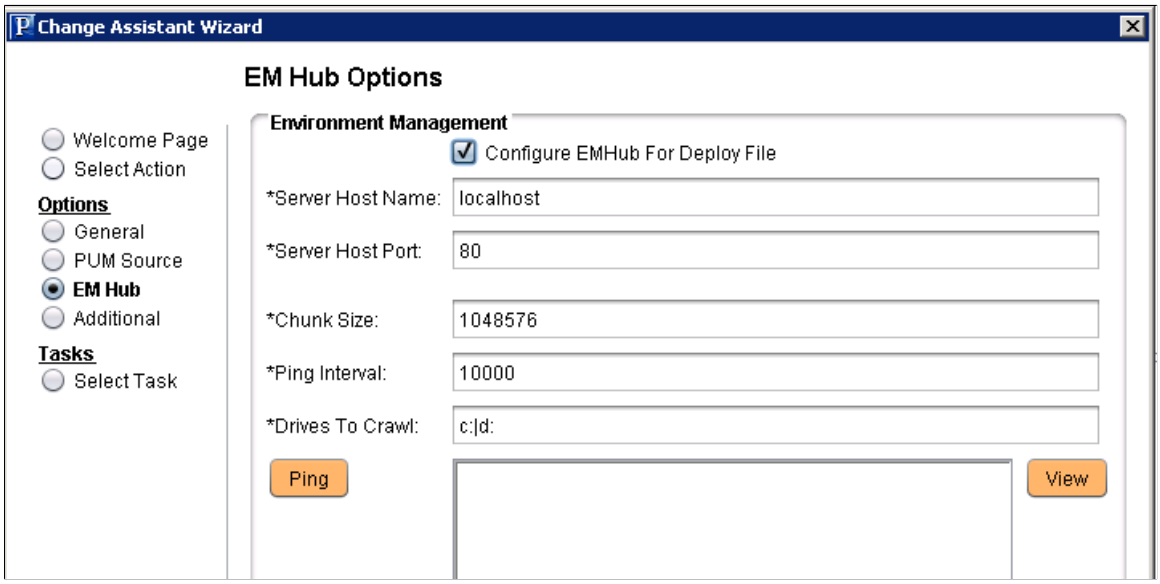
When you click OK, Change Assistant will validate the connection to the PUM Source database.

EM Hub Options

Use this page to configure the EM Hub options for the target database.

Image: Change Assistant - EM Hub Options page

This example illustrates the fields and controls on the Change Assistant - EM Hub Options page. You can find definitions for the fields and controls later on this page.



Configure EMHub For Deploy File

Select this checkbox if you want to use EMHub for file deploy.

Note: In order to use this option EMF must be configured and running.

Server Host Name

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

Server Host Port

Indicates the port in which to connect to the Environment Management hub.

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.

Note: For PUM-enabled applications Change Assistant EM Hub is only used to deploy files. Change Assistant uses the SQL Client Tools path defined for the database definition.If you receive a validation error when applying changes packages that EMF did not find any SQL Query Tools, you can ignore it.

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 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

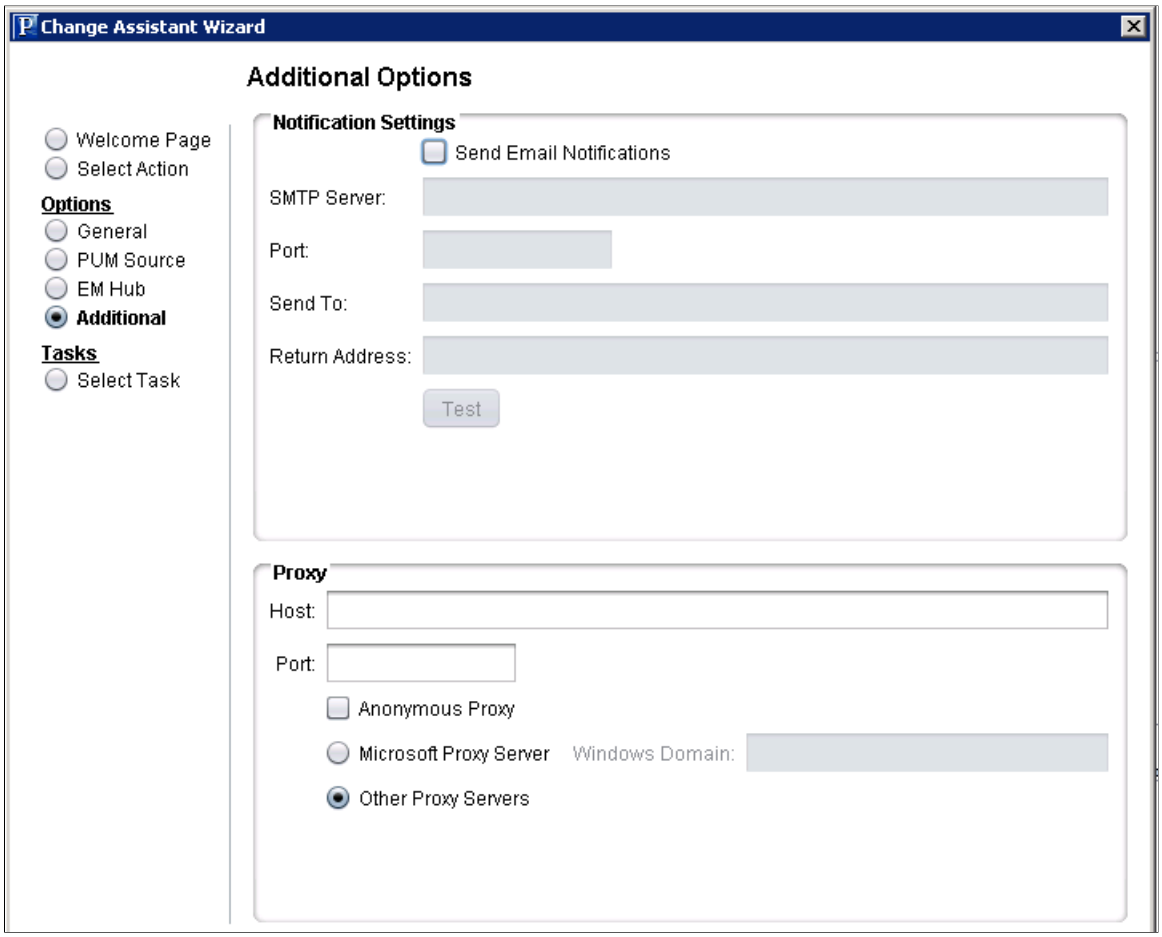
Click to display the list of all PeopleSoft components discovered and registered in the Environment Management hub.

Note: This button is visible only if your display is set to Windows Classic style.

Additional Options

Image: Change Assistant - Additional Options page

This example illustrates the fields and controls on the Change Assistant - Additional Options page. You can find definitions for the fields and controls later on this page.



Notification Settings Section

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.

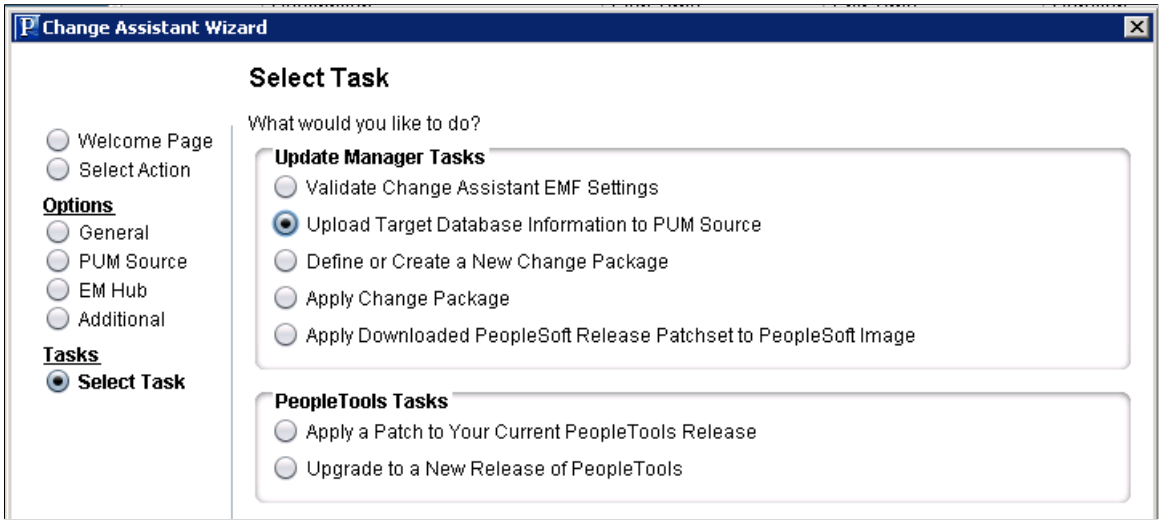
Proxy Section

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.

Select Task

Image: Change Assistant Wizard - Select Task page

This example illustrates the fields and controls on the Change Assistant Wizard - Select Task page. You can find definitions for the fields and controls later on this page.



Depending on the options configured, some tasks may be not be enabled. For example if EM Hub is not defined, Validate Change Assistant EM Settings will be grayed out.

Validate Change Assistant EMF Settings

Select to validate the settings. Change Assistant validates settings by:

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

Upload Target Database Information to PUM Source	Select to upload the target database information to the PUM source database. Once the database information is uploaded, the database will be available in PeopleSoft Update Manager as a target database.
Define or Create a New Change Package	Select to open the Wizard that will guide you through the process of creating a custom change package with the updates you select. See Defining a New Change Package
Apply Change Package	Select after the custom change package has been created to apply the change package to your target database. See Applying Change Package
Apply Downloaded PeopleSoft Release Patchset to PeopleSoft Image	Select to apply a PRP to the PeopleSoft Image. See Applying Downloaded PeopleSoft Release Patchset to PeopleSoft Image
Apply a Patch to Your Current PeopleTools Release	Select to apply a PeopleTools patch change package.
Upgrade to a New Release of PeopleTools	Select to apply a new release of PeopleTools change package.

From this page, you also have the ability to go directly to other pages by selecting the radio button on the left:

Welcome Page	Select to go to the Welcome page.
Select Action	Select to go to the Select Actions page.
General	Select to go to the General Options page.
PUM Source	Select to go to the PUM Source Options page.
EM Hub Options	Select to go to the EM Hub Options page.
Additional	Select to go to the Additional Options page.
Select Task	This radio button is selected by default to lead you through the wizard for the option selected on the right.

Validating Change Assistant EMF Settings

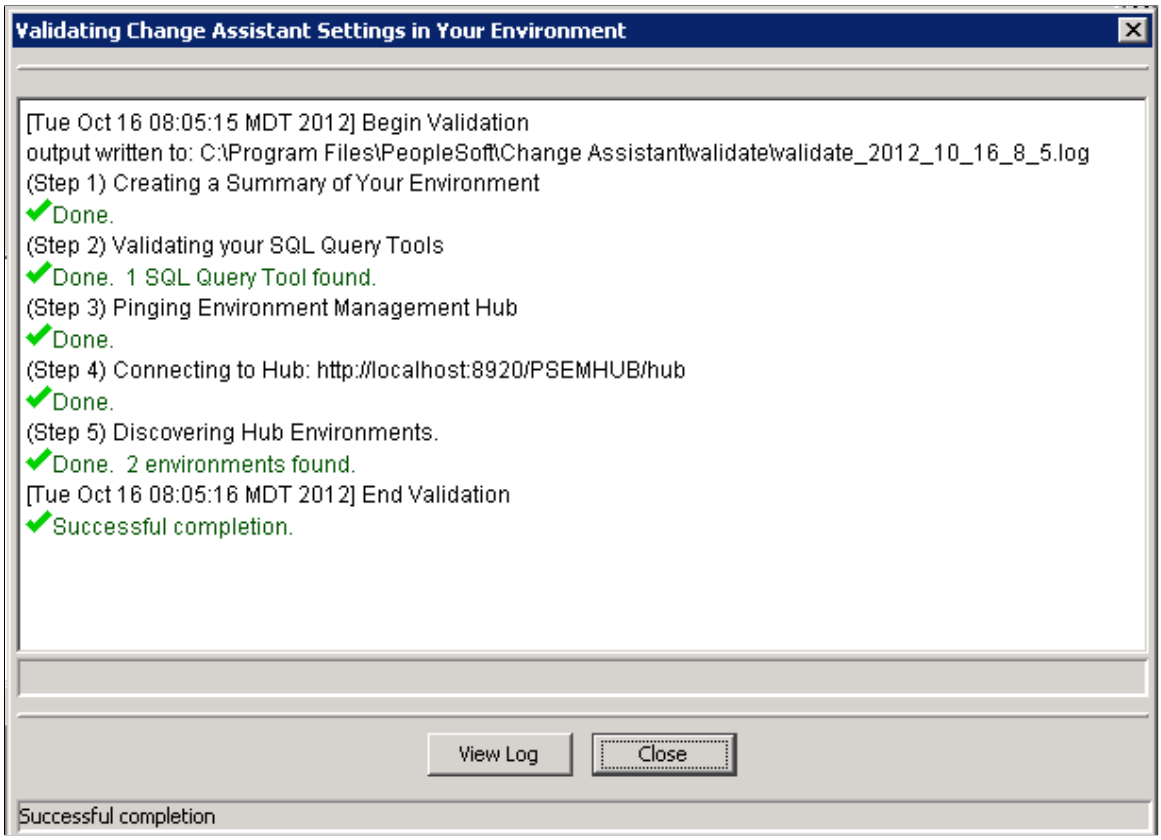
After you have set up and configured Change Assistant and the Environment Management components, you should validate your Change Assistant and environment settings. To validate your environment:

1. Select the Validate Settings radio button.
2. Click Finish.
3. Click Start Validation.

When the validation is complete, a completion message appears. To view the log, click the View Log button. The log will contain information about any steps that were not successful.

Image: Validating Change Assistant Settings in Your Environment dialog box

This example illustrates the fields and controls on the Validating Change Assistant Settings in Your Environment dialog box.



Defining Target Database

The Define Database page is used to define all databases. See Defining Target Database.

When defining the target database to use with PUM, make sure that the various PS homes are properly configured based on your database platform and release.

PS Home

Ps Home needs to be set to the PeopleTools release/patch for your target database.

When you set up your windows environment, you may have installed 2 PS Homes. One for Oracle on the PUM image release/patch, which is used for the PUM Source PS Home and one for your target database platform at the supported release/patch level for your target environment. Make sure you select the PS Home for your target environment.

PS App Home

PS App Home is the location where you installed your PeopleSoft application files for your target environment. If you needed to install a new PS Home to use with the PUM image, it will not contain your application files. Make sure you select the path where your application files reside.

PS Cust Home

If you are using PS_CUST_HOME (PeopleSoft Customization Home) to identify and store your site's customized files, you need to specify the path PS Cust Home.

Uploading Target Database Information

In order to use the Update Manager actions, the PUM Source must contain all of the information about your target database. The upload may take several minutes. This information includes:

- Database name
- Database user defined in Change Assistant for this database.

  Note: Change Packages are associated with both database and user ID. The user ID on the target database must match the user ID used to signon to the PUM source in PIA when you create a define a change package.

- Products
- Languages

  Note: If you have multiple target databases with different languages, you will need to install separate PeopleSoft Images for each language combination.

To upload the target database information:

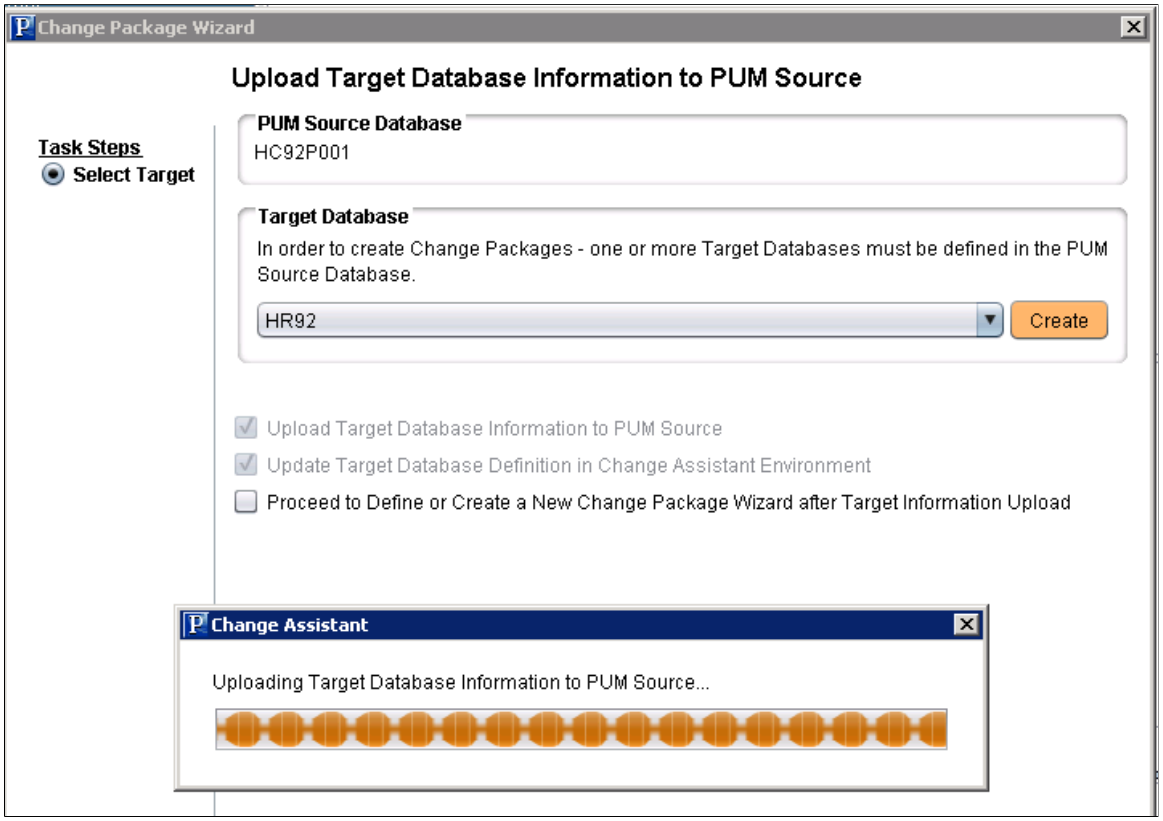
1. In Change Assistant, select Tools, Change Actions.
2. Select Update Manager and click Next.
3. Select Upload Target Database Information to PUM Source and click Finish.

   Note: The PUM Source must be defined before this option is available to select.

4. Select or Create the target database to upload.

Image: Upload Target Database Information to PUM Source page

This example illustrates the fields and controls on the Upload Target Database Information to PUM Source page. You can find definitions for the fields and controls later on this page.



Target Database	Select an existing target database or create a new target database using the Create button. See Defining Databases
Upload Target Database Information to PUM source	This check box is always selected and read only. This option upload the target database information to the PUM Source.
Update Target Database Information in Change Assistant Environment	This check box is always selected and read only. This option updates Change Assistant with the target database information.
Proceed to Define or Create a New Change Package Wizard after Target Information Upload	Select this check box to open the Define or Create a New Change Package Wizard after target information is uploaded.

Note: After upgrading the target database tools release, it is necessary to update the target database in Change Assistant and upload the upgraded target database information to the PeopleSoft Update Image database. In Change Assistant, select File, Open Database and update the target database. After updating the target database, select Tools, Upload Target Database Information to PUM Source.

Defining a New Change Package

In order to define a new change package, the following steps must be completed:

- PUM Source Database defined.
- Target Database defined.
- Target Database uploaded to the PUM Source.

See Selecting Update Manager Action

Use the Define or Create a New Change Package action to create the custom change package definition.

To define a new change package:

1. In Change Assistant, select the Update Manager action.

   The Update Manager action is available from:

   - The menu by selecting Tools, Change Actions.
   - Clicking Next on the Welcome page.

2. Select Define or Create a New Change Package and click Finish.
3. Click the Click Here to Open Browser and Connect to PUM Source Database.

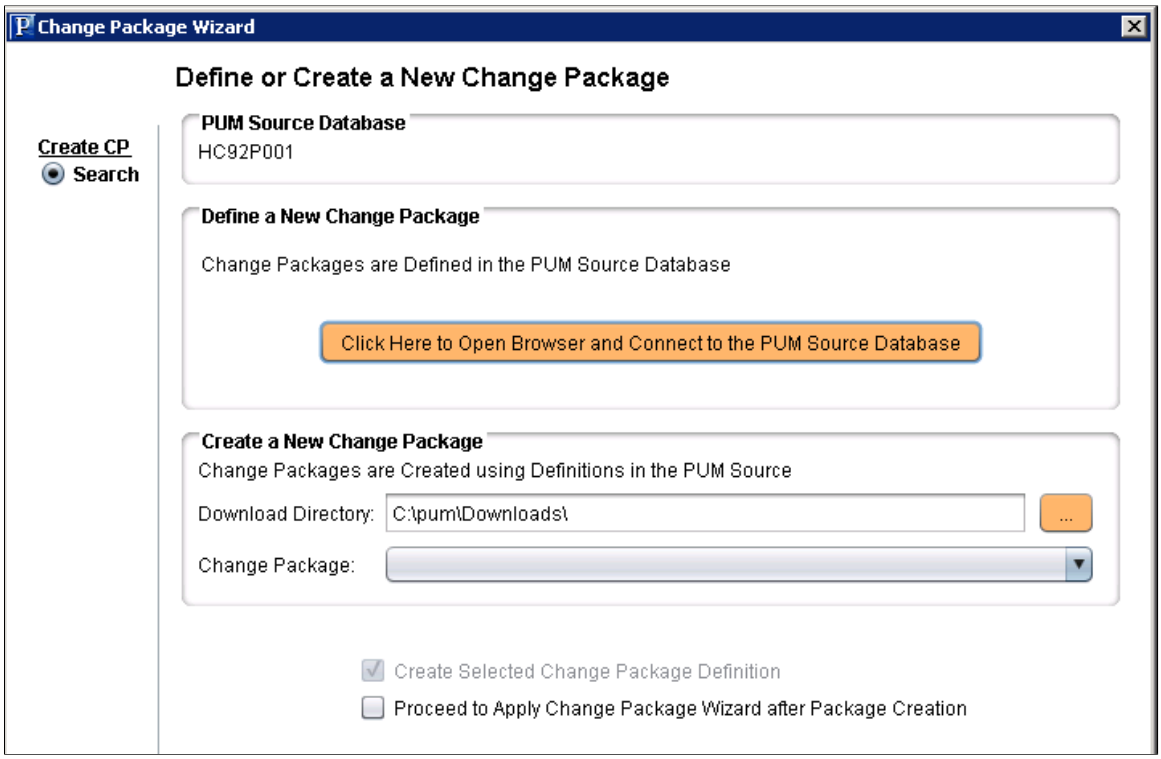
   Use the PeopleSoft PIA application to create the change package definition. See Defining Custom Change Packages

4. After you create the change package definition in the PUM PIA application, return to this page in Change Assistant and the package will be available from the drop down.
5. Select the package to create the change package and click Finish.

The Change Package Wizard will generate the change package. When the package is created you will receive a message indicating the change package was successfully created.

Image: Define or Create a New Change Package page

This example illustrates the fields and controls on the Define or Create a New Change Package page. You can find definitions for the fields and controls later on this page.



Click Here to Open Browser and Connect to the PUM Source Database	Click to open the browser and sign on to the PeopleSoft Update Image database.
Download Directory	When the change package definition is defined on the PUM Source, it will be downloaded to the directory indicated here. By default the download directory defined for Change Assistant is used.
Change Package	All change package definitions that have been created with the PUM process will be available in the drop down list. Select the change package to work with. **Note:** Change package definitions that were not created with the PUM process are not included in this list.
Proceed to Apply Change Package Wizard after Package Creation	Select this check box to proceed to the apply the apply Change Package Wizard when the change package is created. If you want to review the change package or make some changes to the template, leave this check box deselected.

Chapter 9

Using PeopleSoft Update Manager PIA Applications

PeopleSoft Update Manager PIA Application Overview

The PeopleSoft Update Manager application runs on the PeopleSoft Update Image (PI) virtual machine. It contains two components, Define Change Package and Review Change Package. The Define Change Package component is a wizard that will lead you through the process of selecting updates and defining a custom change package for your environment. It provides a wide array of search options for selecting the updates to apply to your environment. It lets you review the details of the changes for each update before creating the change package definition, shows you what has already been applied to your environment, and automatically includes requisite updates based on what you selected and what is already applied to your environment.

Once the Target information has been uploaded to the PI, you can directly signon to the PI at any time to search for updates and create change package definitions without using Change Assistant. However, when you access Update Manager PIA application directly, the maintenance log details of that target will not be updated. Target database details are updated when:

- The task Upload Target Database Information to PUM Source is run.
- The step *SyncDatabaseInfoToPUMSource* in the change package template is executed.

Note: This step is included in the change package if the option Synchronize Target Metadata (Requires Source) is selected on the Change Package Settings page when apply the update.

Defining Custom Change Packages

The latest PeopleSoft Update Image downloaded from MOS includes the PeopleSoft working database, PeopleTools, applications, managed objects, codeline, and the data and metadata required to use the PeopleSoft Update Manager. The Update Manager PIA interface is used to identify required and desired updates for the change package definition.

The Define Change Package wizard will guide you through the steps to create a change package definition. There are 6 steps:

1. Select Target Database
2. Enter Change Package Name
3. Select Scope
4. Select the updates, objects or criteria

   Based on the scope selected in step 3, appropriate page will open to select your updates. If you select All Updates Not Yet Installed in step 3, this step is skipped.

5. Review Bugs
6. Done Identifying Bugs

Dependency Calculator

When the user transitions from Step 4 to Step 5 the dependency calculator is automatically executed.

- The calculator is a PeopleCode Program.
- If you selected to select by Specific Updates, Updates by Criteria, or Updates by Object Name, the dependency tree is calculated such that bugs that are Already Applied, and the post-requisites of those same bugs are excluded from the package during the calculation process. Un-applied pre-requisites of applied bugs will, however, be included in the calculated result.
- If you selected All Updates Not Yet Installed, the calculator will insert all updates that have not been applied in the selected target environment into the results table.

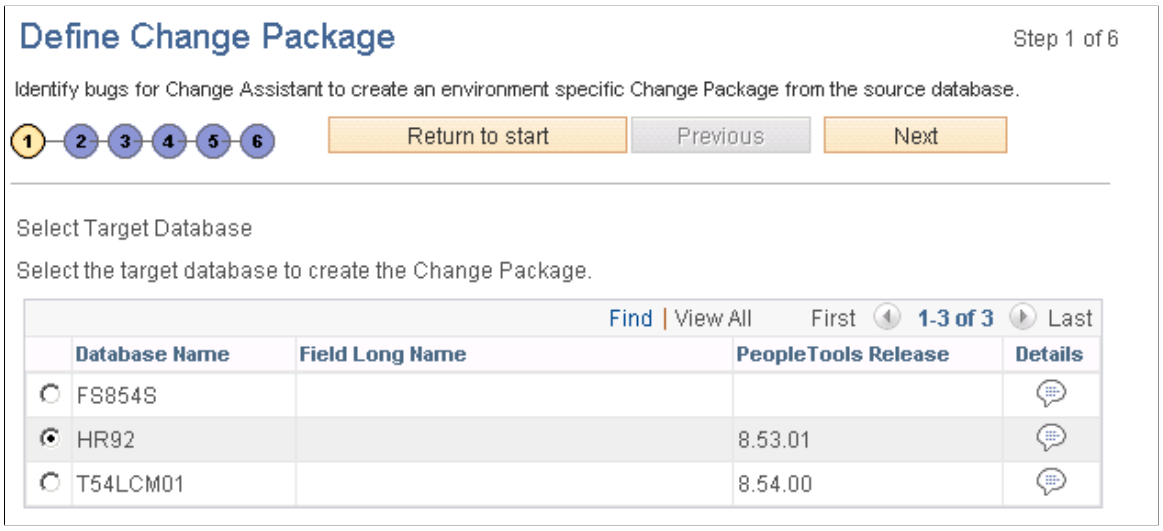
Note: All requisite updates are specific to and calculated based on the target database. If the change package is reused for another database, Change Assistant will perform a check to ensure all requisites exist. If requisites are missing, you will get an error message.

Define Change Package Wizard Step 1 of 6

To create a custom change package, sign on to your PUM Source Database and select PeopleTools, Lifecycle Tools, Update Manager, Define Change Package, Define Change Package

Image: Define Change Package Step 1 of 6

This example illustrates the fields and controls on the Define Change Package Step 1 of 6. You can find definitions for the fields and controls later on this page.



All environments that were selected as target databases in Change Assistant Wizard and uploaded to the PUM Source will be displayed in the list. This list is also filtered by UserID.

Note: The target database information is uploaded to the PUM source database when you select the Upload Target Database Information to PUM Source. See Uploading Target Database Information

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If you only have one database, this step is skipped.

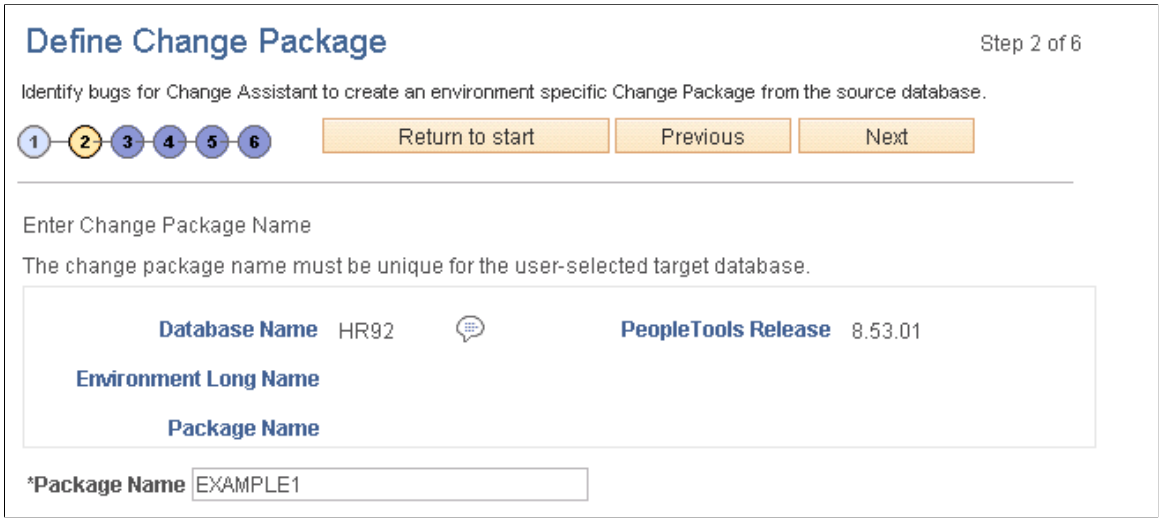
After selecting the database, click Next.

Define Change Package Wizard Step 2 of 6

The second step is to enter a change package name.

Image: Define Change Package Step 2 of 6

This example illustrates the fields and controls on the Define Change Package Step 2 of 6. You can find definitions for the fields and controls later on this page.



Package Name Enter a name for your custom change package.

Click Next.

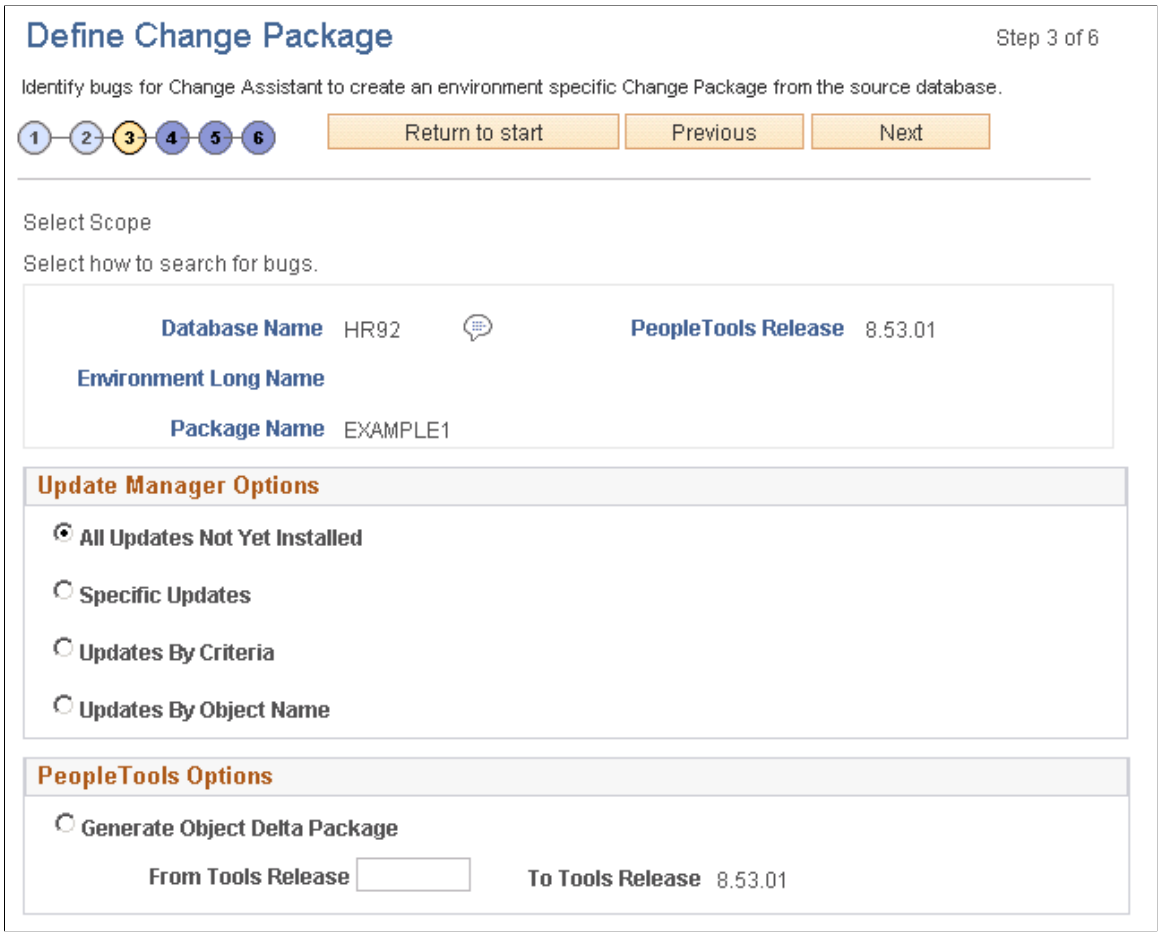
Note: If the package name already exists, you will be prompted whether or not you want to overwrite the change package definition.

Define Change Package Wizard Step 3 of 6

The third step is to select the scope to use for searching for updates.

Image: Define Change Package Step 3 of 6

This example illustrates the fields and controls on the Define Change Package Step 3 of 6. You can find definitions for the fields and controls later on this page.



Note: Regardless of the option you choose, all available and not yet applied requisite updates for the bugs selected will be included in the change package.

All Updates Not Yet Installed	Select this option to take all of the available updates and get current.
Specific Updates	Select this option to search for updates related to specific Bug IDs.
Updates By Criteria	Select this option to search for updates by various criteria such as Product or Severity.
Updates by Object Name	Select this option to search for updates related to specific PeopleSoft managed objects.

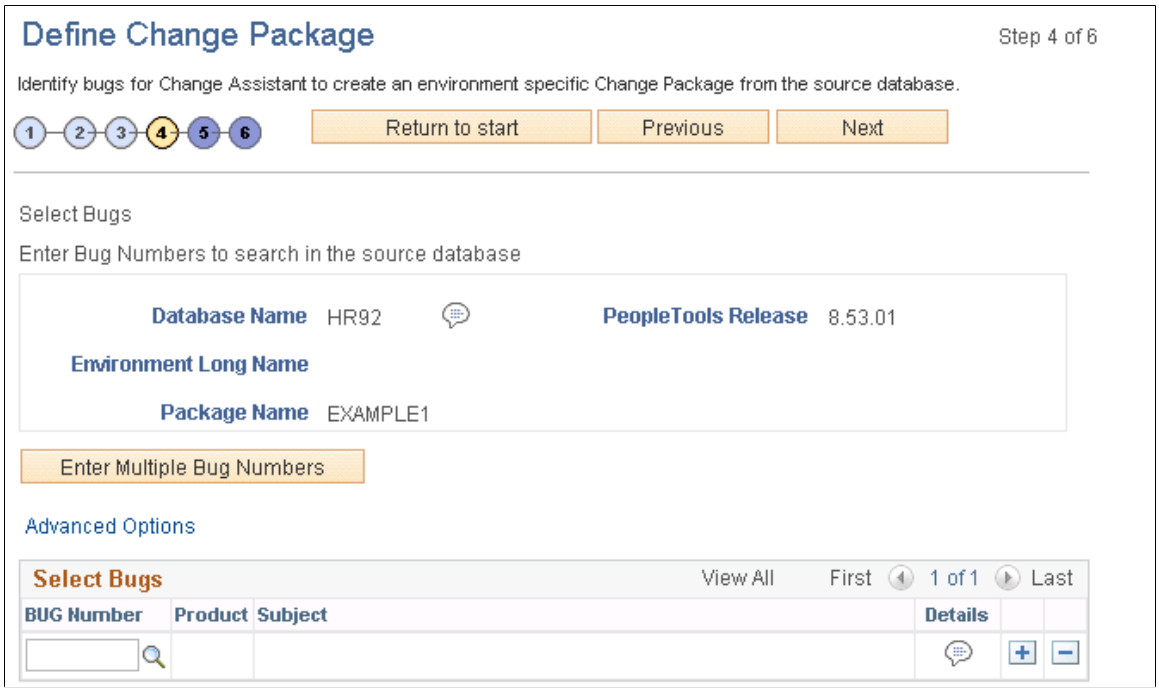
Generate Object Delta Package This option is used after you upgrade to a new PeopleTools release.

Selecting Specific Updates

Select the Specific Updates radio button and click Next.

Image: Define Change Package Step 4 of 6 for Specific Updates

This example illustrates the fields and controls on the Define Change Package Step 4 of 6 for Specific Updates. You can find definitions for the fields and controls later on this page.



Bug Number Use the lookup icon to select specific bugs. Add additional rows as needed.

Product The product from the bug will be displayed as read only.

Subject The subject from the bug will be displayed as read only.

Enter Multiple Bug Numbers Use this link to open a model window where you can enter the specific bugs. Use a comma or space to separate Bug numbers.

Advanced Options link Select this link to set the dependency calculation. The package dependency calculation can optionally include or exclude the post requisites of fixes that have previously been applied to your target database.

- Yes — Include Post Requisites of Already Applied Bug Fixes

  The full Dependency Tree is calculated prior to checking whether bug fixes included in the calculation have previously been applied to your target. The resulting package will include the Post Requisites of Already Applied

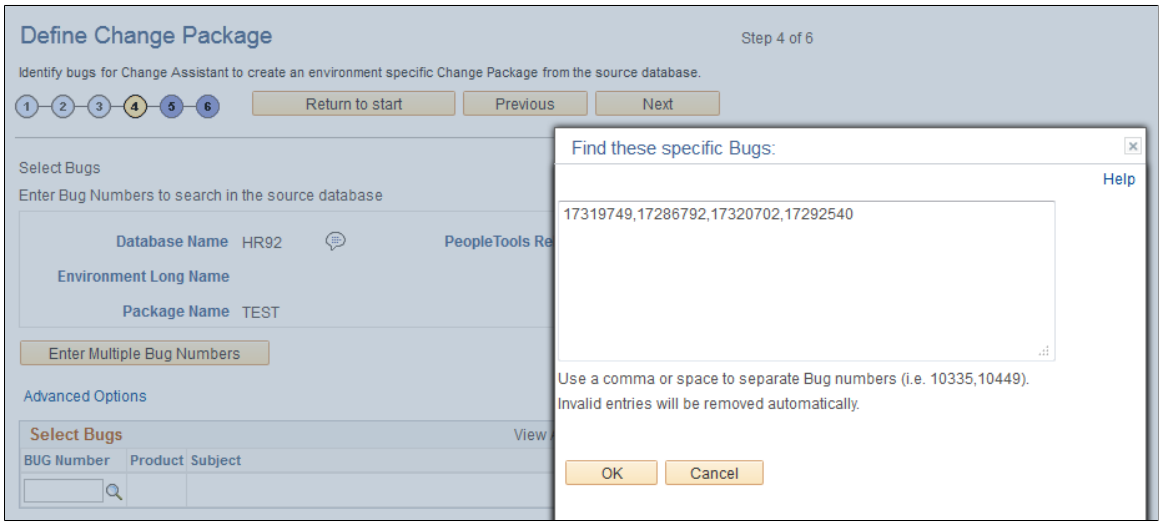
bug fixes, but not the Already Applied bug fixes or their pre-requisites. Selecting this option will generally result in a larger change package being created, but this may reduce the chances of missing a fix.

- No — Exclude Post Requisites of Already Applied Bug Fixes (default)

  The Dependency Tree is calculated such that bugs that are Already Applied are removed during the calculation process, and as a result the resulting package will not include the Post Requisites of the Already Applied bug fixes, nor the Already Applied bug fixes or their prerequisites. Selecting this option will generally result in a smaller change package being created, but this may increase the chances of missing a required fix.

Image: Define Change Package Step 4 of 6 page with Find Specific Bugs window

This example illustrates the Find Specific Bugs window.



Once you have selected the updates, click Next.

Selecting Updates By Criteria

The Updates by Criteria, enables you to search for updates by:

- Product Family

  Allows you to select one or more values.

  A Product Family is a grouping of products. This grouping is defined by PeopleSoft, and is intended to align with the “Bundle” groupings in non-PUM enabled application updates.

  Note: Product Family = PNA will select all fixes for Payroll North America (equivalent to a PNA Tax Update in prior releases),
  Product Family = Global Payroll will select all fixes for Global Payroll products (equivalent to a GP Update Bundle in prior releases).

- Installed Products

  You can select if you want to include related components and subcomponents and then select the installed products to search. A related component or subcomponent is a defined relationship between products. This relationship is defined by PeopleSoft, and is intended to assist the search experience by including the related products automatically when a given product is selected.

- Severity

  Select the severity:

  - 1 - Complete loss of service
  - 2 - Severe loss of service
  - 3 - Minimal loss of service

- Image Number

  When you select this option you see drop-down lists for From PI and To PI. Enter a range of image numbers to include in the search.

  The minimum allowed value is image 1.

- Translations Only

  When you select this option you see a field that allows you to select a language.

- Standard Search Criteria

  Standard search criteria are defined by PeopleSoft, and are common attributes used to categorize fixes in order to facilitate the search for fixes of a specific type.

  Select one or more values from the list of standard search criteria. Some examples are:

  - Required at Install.
  - Required at Upgrade
  - Documentation Update

- Advanced Search Criteria

  Advanced Search Criteria are defined by PeopleSoft, on an as required basis in order to facilitate the search for fixes of a specific, often functional, type.

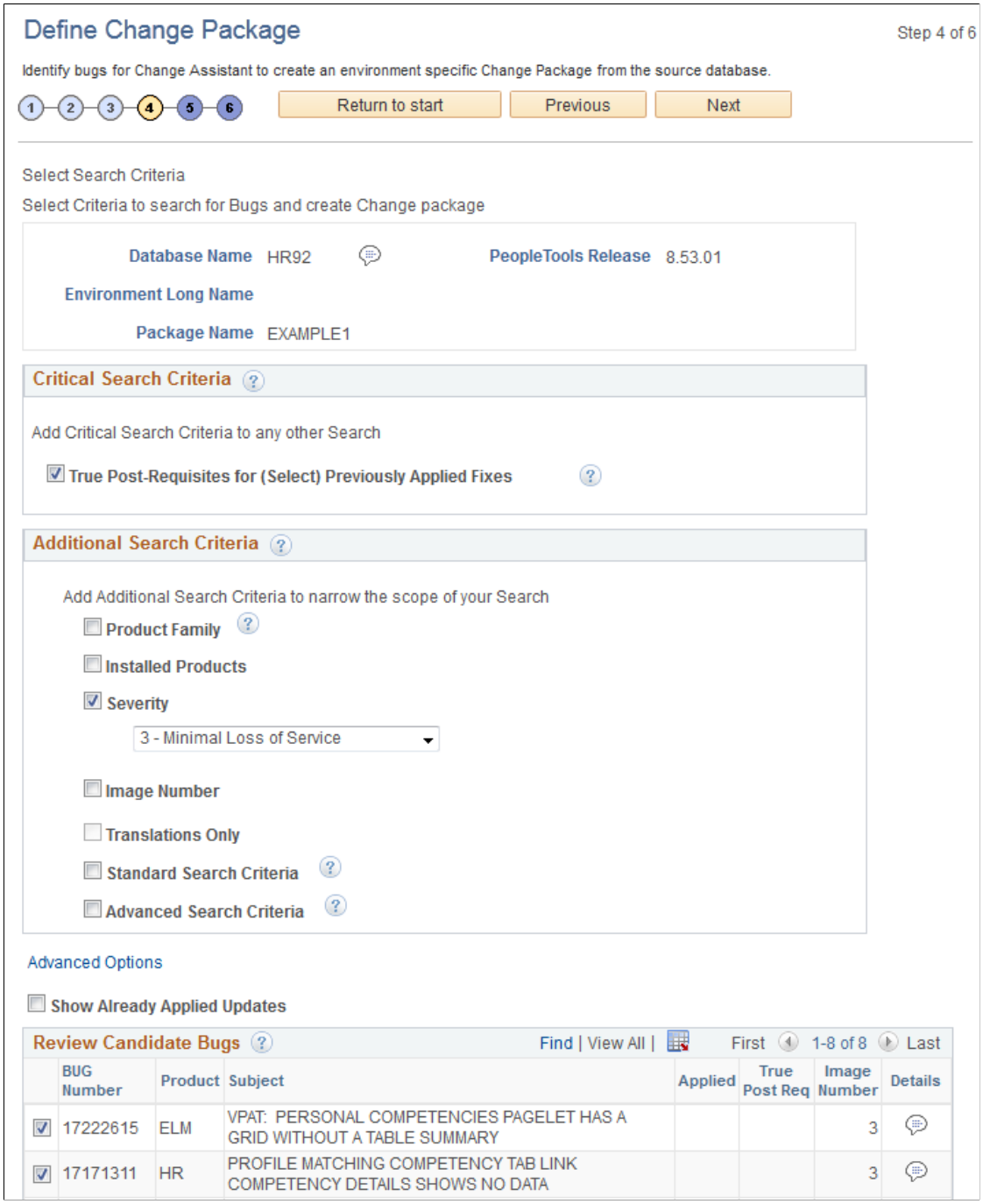
  Select the Tracking Group and value. Tracking groups will differ by product. Some examples are:

  - Global Payroll Update (PSFT)

- Tax Update (PSFT)

Image: Example Select Search Criteria page

This example illustrates the fields and controls on the Select Search Criteria page. You can find definitions for the fields and controls later on this page.



True Post Requisites for (Select) Previously Applied Fixes

When this check box is selected, the system will check the target database (customer database) maintenance log data with the PeopleSoft Update Image database to identify post requisites that have not been applied to the customer database. Select Post

	Requisites are those that are defined by PeopleSoft, as being critical to correct or complete a previously posted fix. By default this check box is selected.
Show Already Applied Updates	Select this check box to include already applied updates in the result set. If this check box is selected, a visual indicator will appear in the Applied column.
Bug Number	Lists the bug numbers returned by the search.
Subject	Displays the subject for the bug.
Applied	A visual indicator will be displayed, if the Show Already Applied check box is selected and the bug has already be applied to the target database. This bug is not included in the change package definition.
True Post Req	True post-requisite updates will be sorted to the top of the bug list. A visual indicator is displayed to identify the bug as true post requisite. All bugs discovered based on the Post Requisites for (Select) Previously Applied bugs will be listed as suggested.
Posted Date	Date the bug was posted.
Details	Click this icon to display the bug details.

Requisite Updates

Based on the search criteria, a list of updates will be displayed on the page. The user can deselect updates from the return result, however the updates may get added back during the final dependency calculation, if the updates are in-fact requisites of other selected updates.

Updates By Object Name

Updates by Object Name, enables you to search for updates related to specific PeopleSoft objects. Select an object type and enter an object name. For example, you can search for the PERSONNEL record and see all of that record's related fixes.

After clicking the Find button, the grid displays your query output; in this instance, the specific PeopleSoft objects related to your search criteria.

Selecting the radio button next to the object displays a list of all the bugs related to that object.

To search for updates related to specific PeopleSoft objects:

1. Select an object type from the drop-down list.
2. Enter an object name and click the Find button.

   For example, you can search for the records that start with JOB. .and see all of that record's related fixes.

After clicking the Find button, the grid displays your query output; in this instance, the specific PeopleSoft objects related to your search criteria.

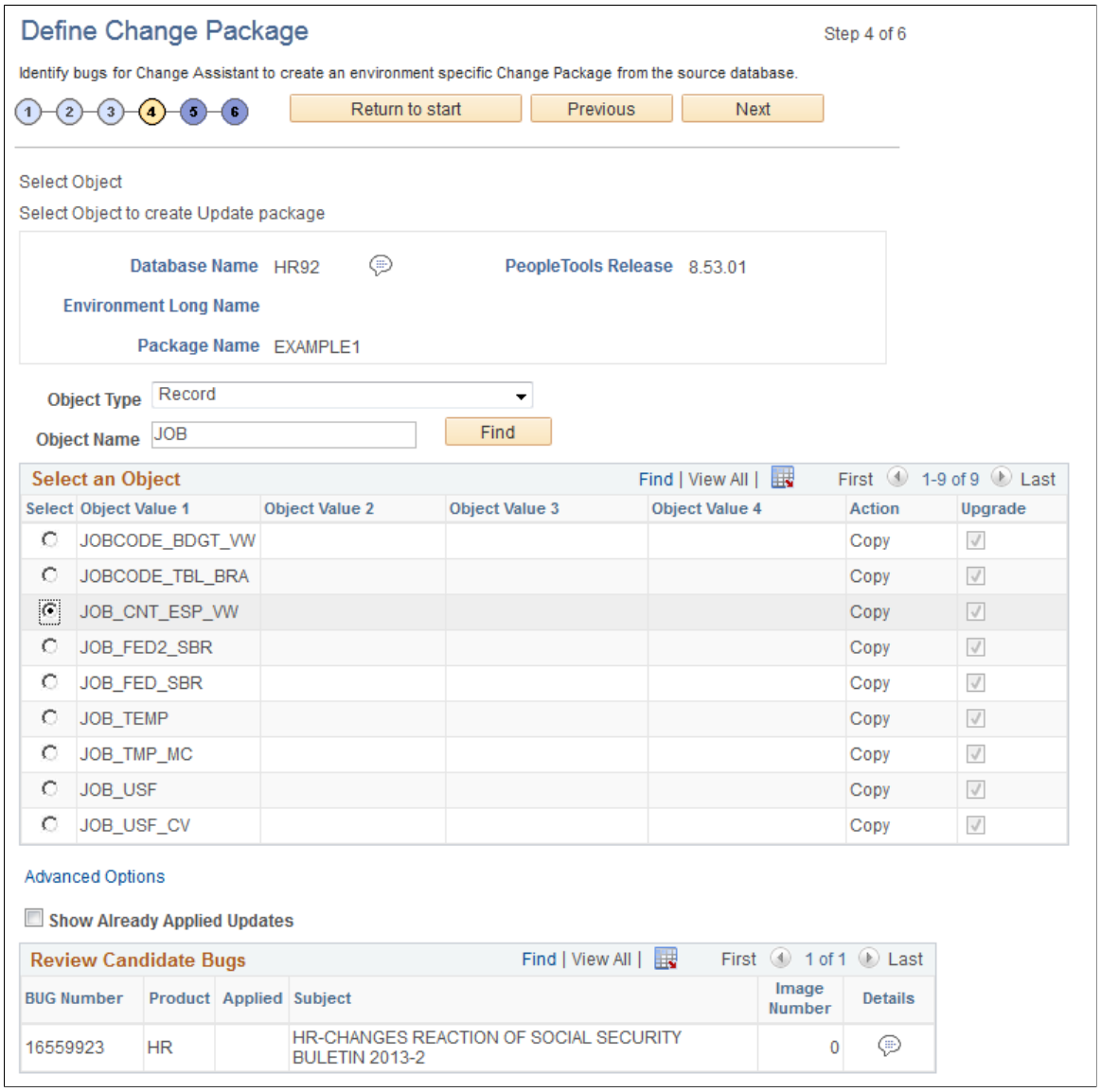
3. Select the radio button next to an object in the result grid to display a list of all the bugs related to that object.

   Note: If necessary, access the Details icon to confirm the correct image number.

4. Select the Show Already Applied Updates check box to include bugs that have already been applied to the target database or environment.

Image: Example of Select Object page

This example illustrates the fields and controls on the Select Object page.



Define Change Package Wizard Step 5 of 6

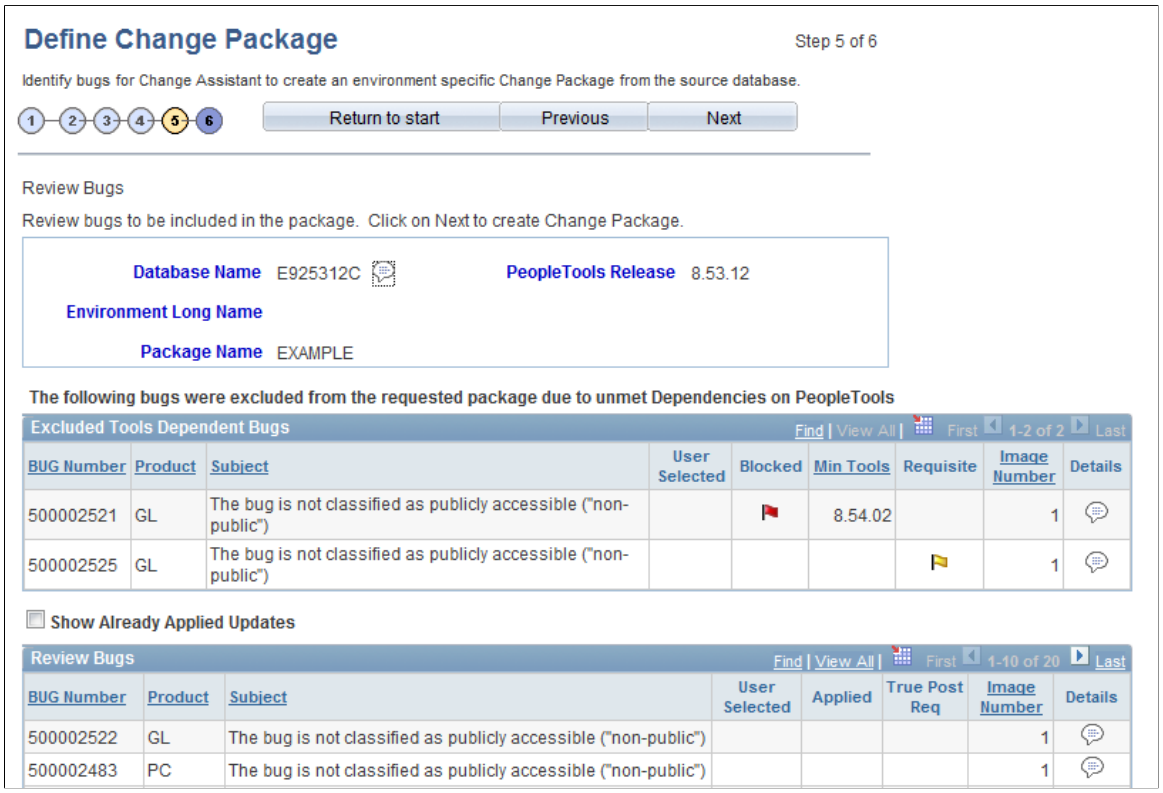
The fifth step is to review the results of the dependency calculation. This page will display all of the updates selected, as well as all dependent updates. Any updates that include PeopleTools hard

dependencies will be excluded from the change package and listed in the Excluded Tools Dependent Bug grid.

Note: This page is read-only. In order to modify the results, the user must click *Previous* to return to the previous page in the Wizard.

Image: Define Change Package Step 5 of 6

This example illustrates the fields and controls on the Define Change Package Step 5 of 6 page. You can find definitions for the fields and controls later on this page.



Bug Number All of the bug numbers that will be included in the change package are listed.

Product The PeopleSoft product impacted.

Subject Displays the subject for the bug.

User Selected If the bug number was selected in Step 4, this column will contain a check. Updates that do not have a check are required for the selected updates.

Applied If the bug has already been applied to your database, this column be checked.

Note: Applied bugs are not included in the change package definition.

True Post Req Icon is displayed to indicate the bug type.

Subject Bug subject is displayed

Image Number Displays the image in which the bug was made available.

Click the Bug Details icon to display the Bug information.

Overlapping Packages Section This section will appear if any of the bugs selected have already been included in another change package definition that has not been applied to the database.

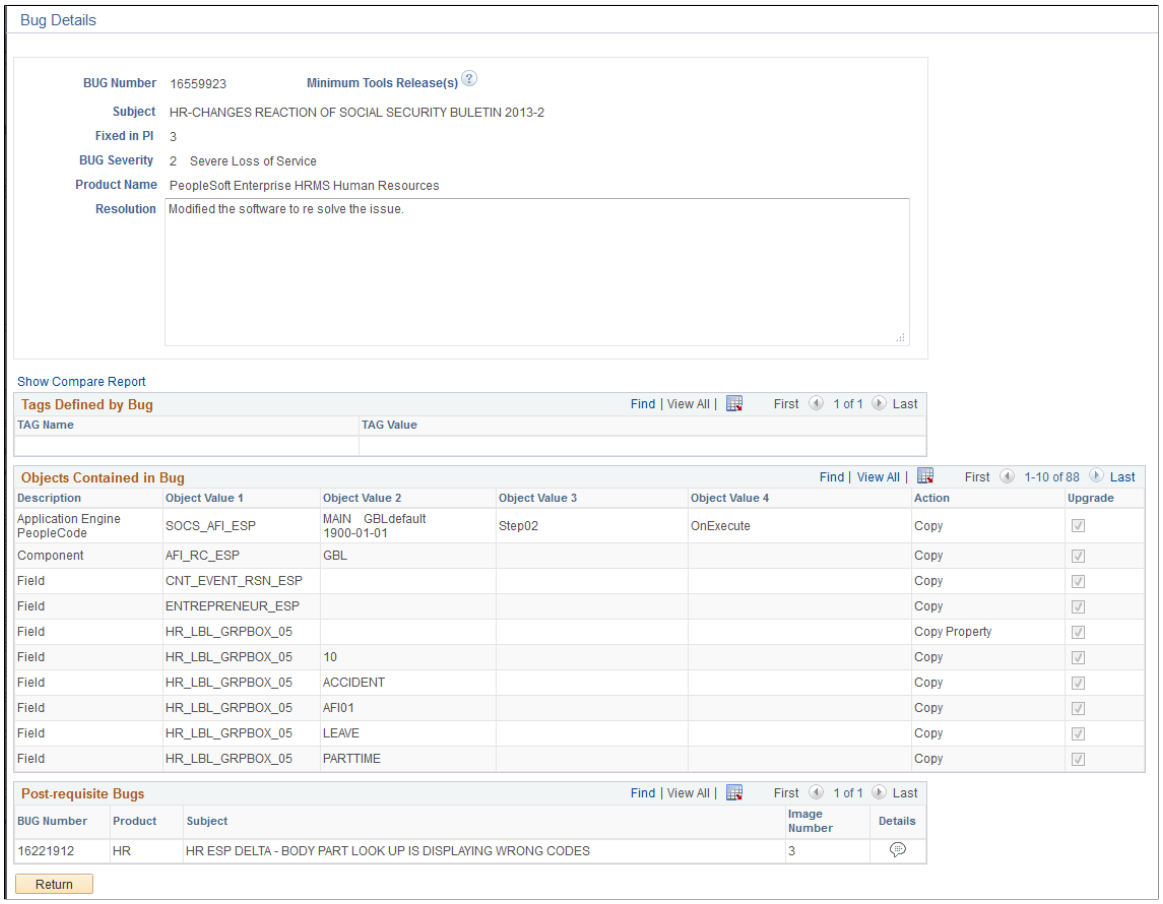
Note: If overlapping packages are listed, you will be prompted to either click OK to ignore the overlapping packages, or click Cancel to return to the previous page and review the change package.

Bug Details

When you click the bug details icon, a modal window is displayed:

Image: Example Bug Details page

This example illustrates the fields and controls on the Bug Details page. You can find definitions for the fields and controls later on this page.



Show Compare Report	The compare report is stored in the PUM metadata. This delta compare report is intended to show the specific changes made in order to fix the bug. **Important!** Keep in mind that you will need to run a compare on the change package once it has been created, as the results may be different based on requisite changes to the same object or objects in your target database.
Tags Defined by bug	The tag name and value represent the tracking group and value. A bug can have 0-n Tracking Groups defined.
Objects Contained in Bug	List of objects included in the change package. The object columns list the records, fields and so on, that are part of the fixes in the bug.
Pre-requisite Bugs	List of pre-requisite bugs, their subjects and image numbers. Click the Details icon to open a window with the bug details.
Post-requisite Bugs	List of post-requisite bugs, their subjects and image numbers. Click the Details icon to open a window with the bug details.

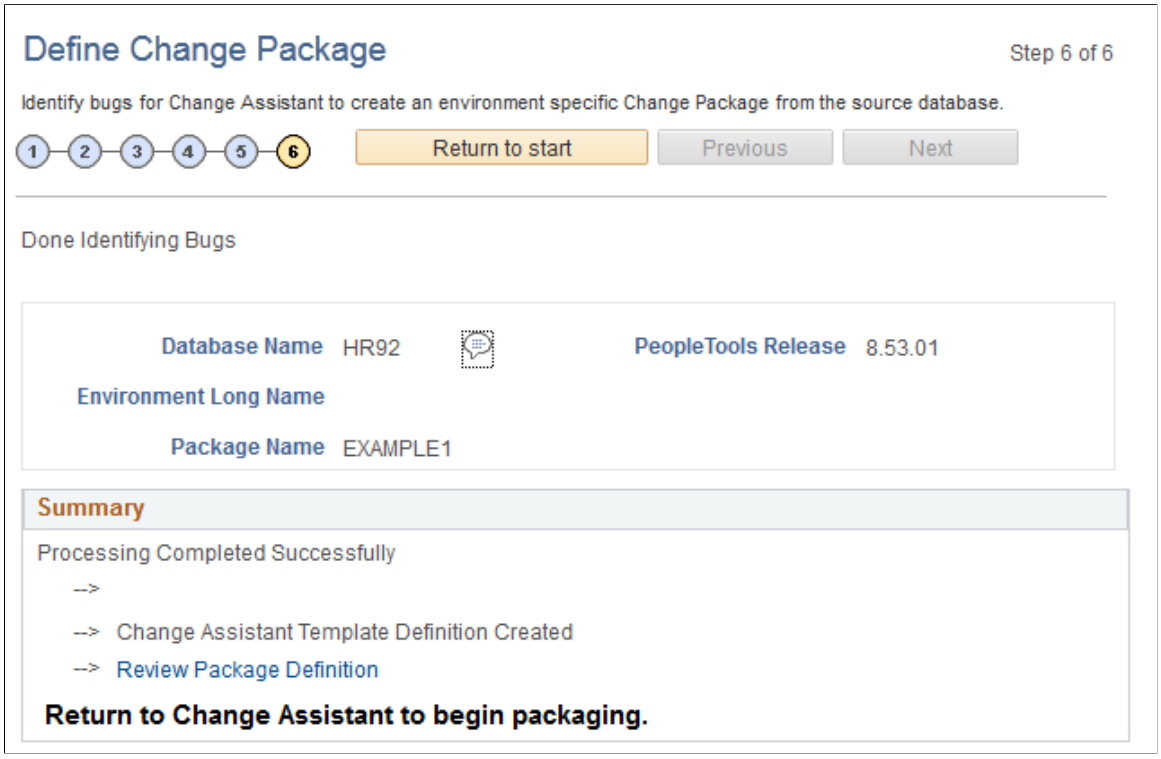
Define Change Package Wizard Step 6 of 6

When you transition to step 6 , the Change Package Aggregator will execute. The Change Package Aggregator is an engine that aggregates the steps from one or more BUG step apply structures into one

single list of steps. This list of steps is then passed to the Change Packager API so that a Change Assistant template can be generated. The Change Package Aggregator will also remove any duplicate steps.

Image: Define Change Package - Step 6 of 6

This example illustrates the fields and controls on the Define Change Package page - Step 6 of 6



A summary is displayed for the Change Package. A link is provided to Review Change Package.

See Reviewing Change Packages

This step indicates that you are done identifying the updates and you need to return to Change Assistant to begin packaging.

Reviewing Change Packages

After you have created Change Package definitions, you can review the change package.

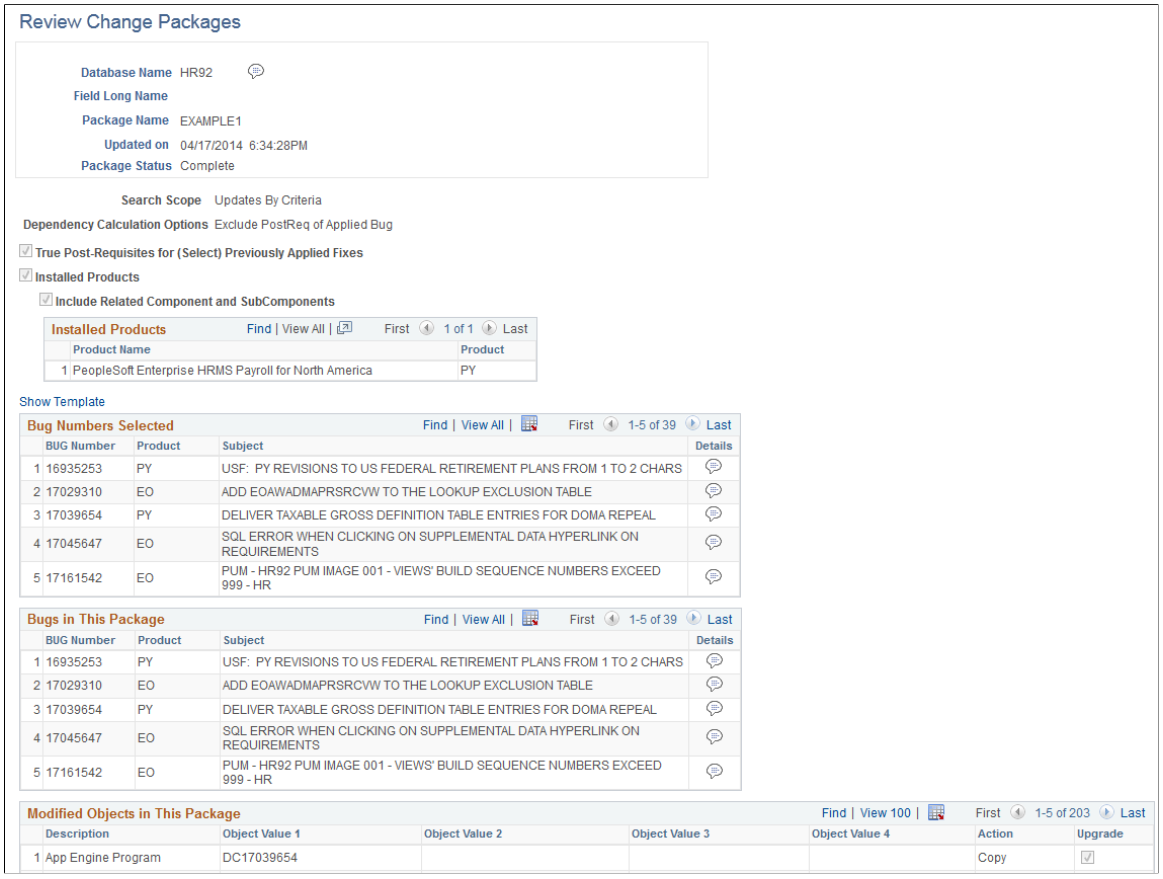
Navigation

PeopleTools, LifecycleTools, Update Manager, Review Change Packages

You can also select the Review Package Definition link on the Define Change Package Step 6 of 6 page.

Image: Review Change Packages page

This example illustrates the fields and controls on the Review Change Packages page. You can find definitions for the fields and controls later on this page.



The Review Change Package page is display only to provide information on the change package.

Incomplete packages will not display all of the fields.

Package Status

Indicates the current status of the package.

- Incomplete - the change package has not been created in Change Assistant.
- Complete - the change package has been created in Change Assistant.

Search Scope

Indicates the scope used to create the change package.

Depending on the scope selected, additional information is displayed.

Show Template

For change packages that are complete, use this link to view the steps in the change package template.

Bug Numbers Selected For change packages that are complete, you see a grid displaying the bug numbers that were selected.

Bugs in this Package For change packages that are complete, you see a grid displaying the bug in the change package.

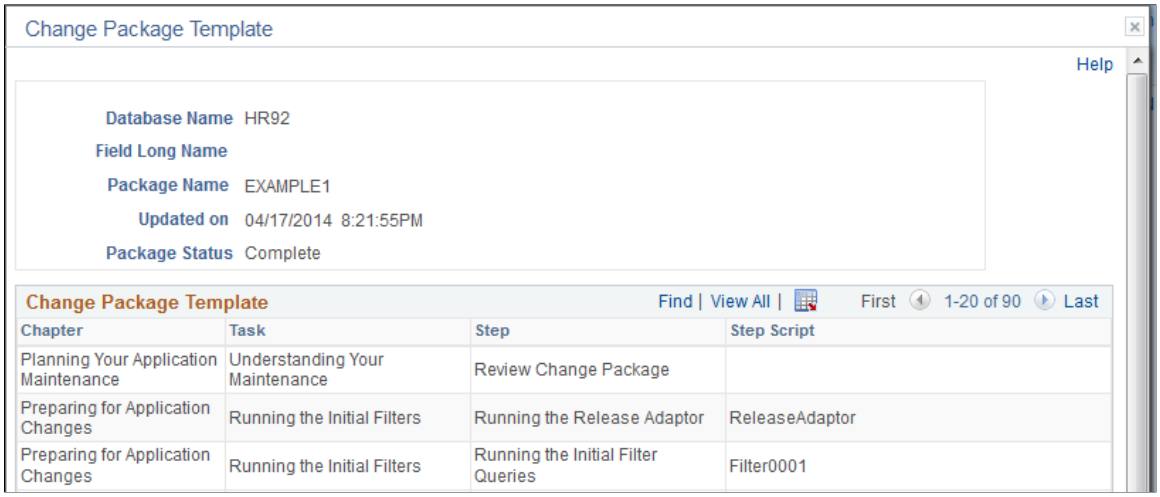
Modified Objects in this Package For change packages that are complete, you see a grid listing the modified objects.

Show Template

Click Show Template on the Review Change Packages page to open the Change Package Template window listing the chapters, tasks, steps, and step scripts in the change package template.

Image: Show Template page

This example illustrates the fields and controls on the Show Template page. You can find definitions for the fields and controls later on this page.



Chapter 10

Applying Custom Change Packages

Packaging Updates

After defining the Change Package, you must return to Change Assistant to create the package.

1. Select Tools, Define or Create a New Change Package.
2. Select the new change package from the drop down list.
3. Optionally select the Apply Change Package check box.

   If selected the Apply Change Package Wizard will launch when the package is created.
4. Click Finish.

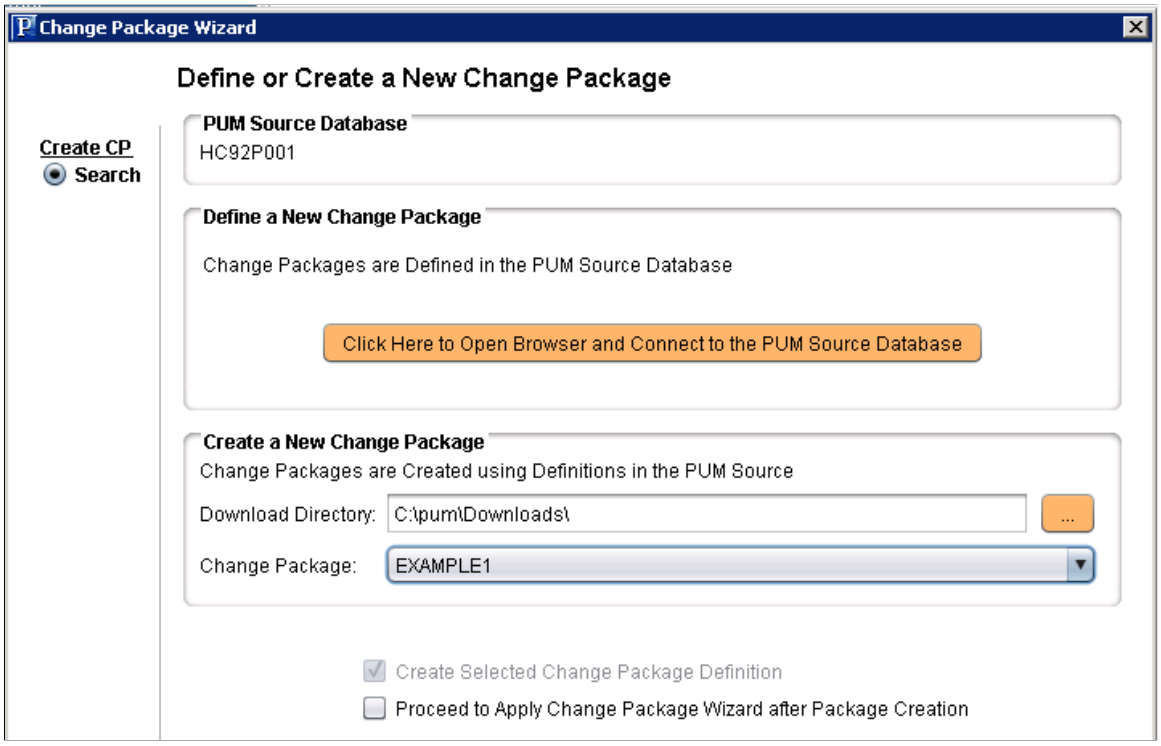
   The progress dialog box will open to indicate the change package is being created.

   The change package is created as upd<change package definition name>.zip. For example updPKG1.zip.
5. Click OK on the message *Change Package <package name> has been successfully Created in the Download Directory*.

Change Packager is also aware of the target environment, including the platform and all installed products. The Change Package will include platform and product filters.

Image: Set Change Package

This example illustrates the fields and controls on the Define or Create a New Change Package page that are used to create the change package. You can find definitions for the fields and controls later on this page.



Download Directory	When the change package definition is defined on the PUM Source, it will be downloaded to the directory indicated here. By default the download directory defined for Change Assistant is used.
Change Package	Select the change package definition from the drop down list.
Create Selected Change Package Definition	This check box is selected and read-only. After selecting the change package definition when you click Finish, Change Assistant will create the change package in the download directory.
Proceed to Apply Change Package Wizard after Package Creation	Select this option if you want to apply the change package as soon as it's created. If you leave this check box cleared, you can review the Change Package before applying it.

Change Package Contents in the Download Directory

The download directory will contain the following:

- Zip file for the change package name upd<changepackage_name>.zip

- Project Directory named upd<changepackage_name>

Depending on the updates selected, the project directory contains the following folders:

changeassistanttemplate	Contains the Change Assistant template for the update job
DATA	Contains any data files required for the selected updates.
Documentation	Contains the documentation for the Change Assistant job.
Projects	Contains the Managed Objects project.
Scripts	Contains any scripts files required for the selected updates
SQR	Contains any SQRs included in the selected updates.

Applying Change Package

The Apply Change Package wizard will guide you through the configuration based on the Apply Type that is selected.

- Initial Pass — the initial pass is used to compare the updates to your target system. There are 3 choices:
  - All Steps
  - Target Steps Only
  - Source Steps Only
- Move to Production

  Used to apply the updated custom change package to your other environments, including production.

Understanding the Apply Update Process

When the custom change package containing your selected updates is created not all files are included in the change package for 2 major reasons:

1. Reduces the time it takes to create the initial package.
2. Leverages Change Assistant job filtering to eliminate the creation of files not required by your target environment.

The update job is filtered based on the target environment and only the files required for the target environment are created from the PUM source. Depending on where the VirtualBox for PUM is installed the process may be very time-consuming, to alleviate this issue customers have the option to run the source and target steps in separate jobs.

The initial pass to apply updates has the following options:

- Source Steps Only

  The Source Steps Only option provides the ability to run the initial pass to create all files that are contained in the change package. This job can be run on the same machine where the VirtualBox is installed. Once the initial pass has completed, a modified change package is created that contains all

the files. The modified update change package can then be copied to the machine where you will run the Apply Update on your target database.

- Target Steps Only

  Using the new change package created from the Source Steps Only job, you can apply the change package to your target database without requiring a connection to the source database. When the job is created for the target environment, all unnecessary files are filtered out.

- All Steps

  All steps requires a connection to both the target database and the PUM source. When this option is selected, the source steps will create the necessary files needed for the target system.

Applying the Change Package

To apply the change package:

1. Start EMF if it is not already started and you selected *Configure EMHub For File Deploy* on the EMHub Options page in Change Assistant.

   Note: EMHub is only required for file deploy. If you plan to manually deploy file, skip this step.

2. In Change Assistant, select Tools, Change Actions.
3. Select Update Manager and Click Next.

   Note: If you are already in the Update Manager action, select Tools, Apply Change Package.

4. Select Apply Change Packages and click Finish.
5. Select the download directory where the change package was created.
6. Select the change package that was created for your custom change package definition.
7. Select *Initial Pass*.

   By default All Steps is selected. Change this value if you choose to decouple the source and target steps.

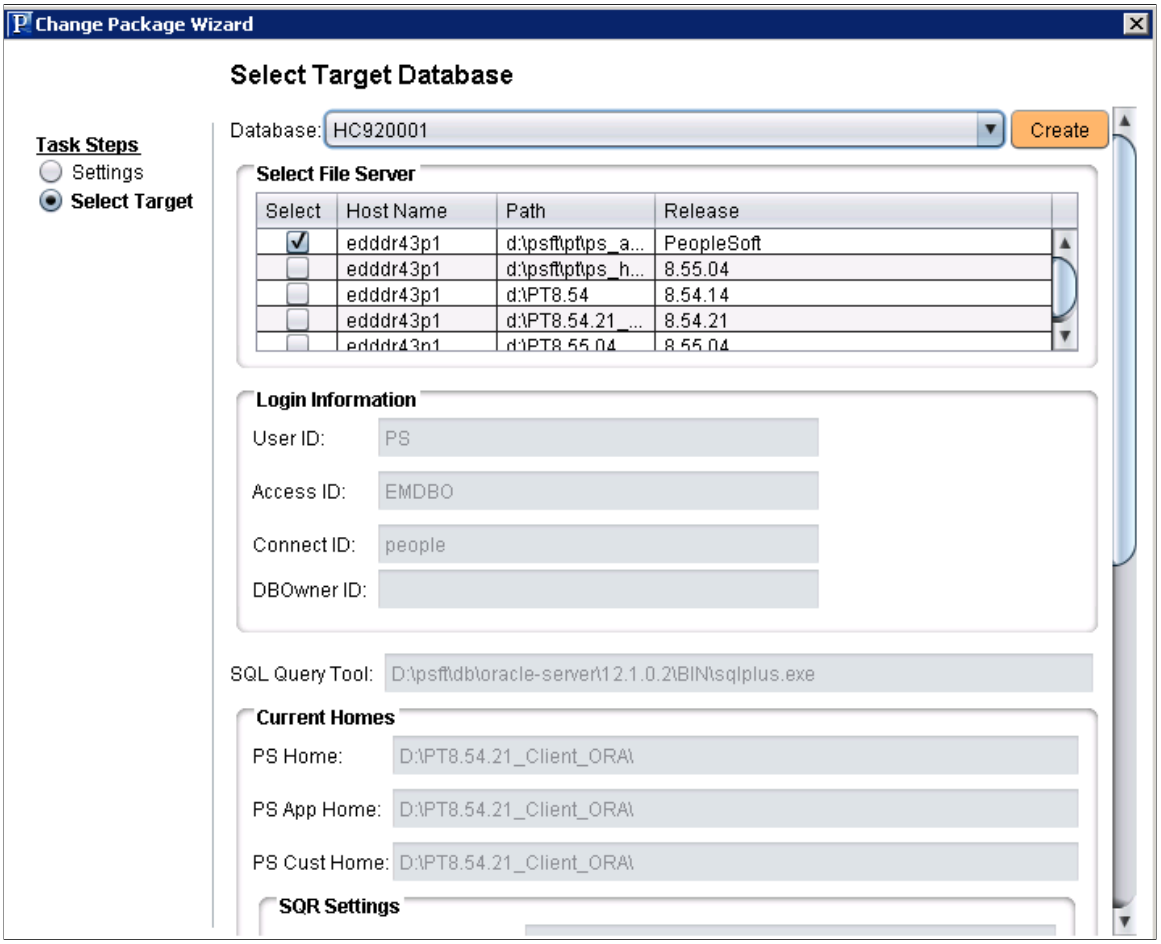
8. Click Next.
9. Select the target database.

   Note: Use the Create button to create the target database if it has not been previously created. See Defining Databases and Defining Target Database

10. If you are using EMHub, select the file server.

    Image: Select Target Database page

    This example illustrates the fields and controls on the Select Target Database page. You can find definitions for the fields and controls later on this page.



11. Click Next.

12. Change Assistant will connect to the target database and check compatibility. The Compatibility Check page will then be displayed.

13. Click Next.

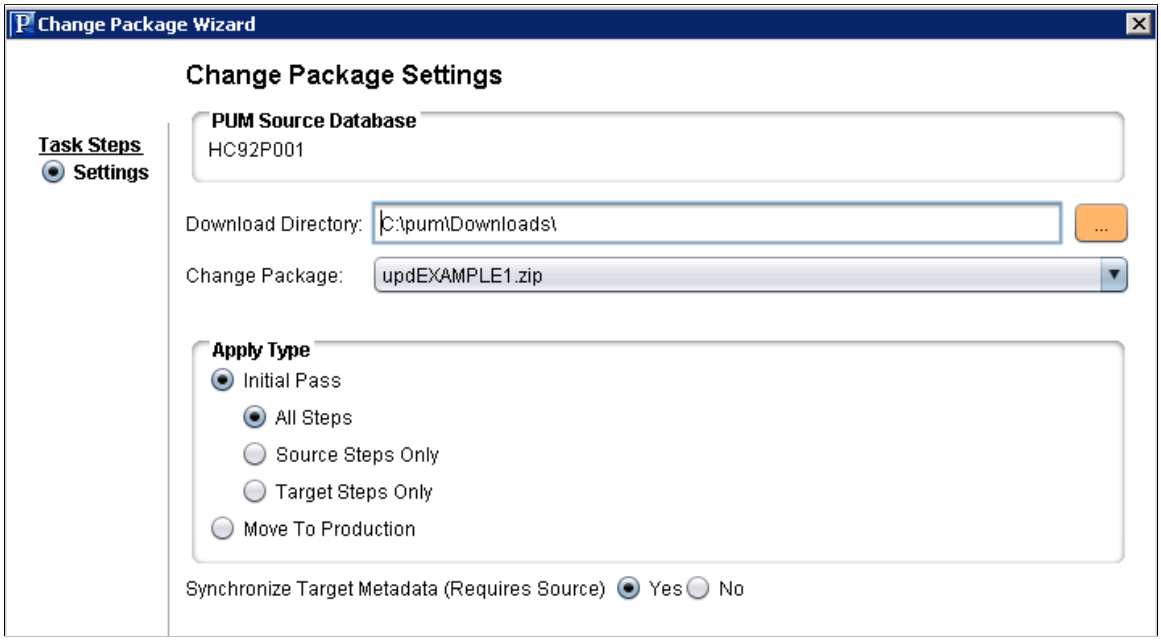
14. The Apply Summary is displayed, click Finish.

    Change Assistant will begin building the Change Assistant job.

15. The Update job will be created and open in Change Assistant.

Image: Change Package Settings page

This example illustrates the fields and controls on the Change Package Settings page. You can find definitions for the fields and controls later on this page.



Download Directory

When the change package definition is defined on the PUM Source, it will be downloaded to the directory indicated here. By default the download directory defined for Change Assistant is used.

Change Package

The change package name will include the change package definition. upd<your change package name>.zip.

Apply Type

- Initial Pass

  You will first apply the update to your development environment which is an Initial Pass.

  In the Initial Pass you will perform compares to retrofit your customizations and repackage the update to include all your customizations.

  Important! Development environment must have the same maintenance level as any additional targets where you intend to subsequently reuse this package (after incorporating customizations) and apply them using the *Move to Production* apply type.

  In the initial pass, you can select which steps to perform.

  See Understanding the Apply Update Process

- Move to Production

Use the Move to Production to apply the updated custom change package to your other environments, including production.

See *PUM Best Practices and Maintenance Strategy* document post on the PUM Homepage.Change Assistant and Update Manager Related Links

Synchronize Target Metadata (Requires Source)

Select *Yes* to upload the target database information to the PUM Source when the update is applied.

The default is *Yes*, however if you are applying the update to a database that is not used for defining and creating change packages in PUM, there is no need to upload the database information to the PUM Source and you would select *No*.

Note: If the PUM source is not defined, this option will not be enabled.

Reviewing the Change Assistant Job

After you apply a change package, the Change Assistant job is created using the selected change package and options. Change Assistant will filter the job to only include the steps that apply to your environment. The job is filtered by step attribute criteria, including

- Platform
- Language
- Products
- PeopleTools Release
- Orientation
- EM Hub

  If the EM Hub is defined and the target database is defined to the hub, the file deploy steps will be included in the job, if it is not defined, the file deploy steps will be set to Filtered at the Job Level.

- Synchronize Target Metadata

  If the Synchronize Target Metadata option is set to No , the step Re-Synching Target Details with PI Image will be set to Filtered at the Job Level.

Change Assistant will execute each step in the job until completion, unless a manual step or error is encountered.

When you encounter manual steps you will need to take some action, such as review compare reports. If you make any changes while the job is executing, you will want these same changes applied to additional targets.

Note: It is possible to use a PeopleSoft VirtualBox image as a sample target environment for PeopleSoft Update Manager. You may choose to do this, for example, to familiarize yourself with the PeopleSoft Update Manager process without using one of your corporate environments. Instructions for this special scenario are given in "PeopleSoft Update Manager PeopleTools 8.53: Configuring a Sample Target Environment." Note that in this scenario, if you run a compare report, for example during the Change Assistant job, the sample target environment will not include any customizations. Because the compare reports are filtered to show customizations (customer-applied changes), in this case the compare report will be blank.
See "PUM Configuring a Sample Target Environment," PeopleSoft Update Manager Home Page, Document 1641843.2.

Running SQRReport Steps

For Change Assistant jobs created from PUM change packages only, you can edit the SQRReport step type to add a user-defined Run Control ID, as follows:

1. Highlight the step and select Edit, Step Properties.
2. Select the Step Definition tab.
3. Click Additional Settings.
4. Add the Run Control ID, and specify any other settings needed.

   If no value is entered for Run Control ID, the default value ADHOC is used.
5. Click OK twice and restart the Change Assistant job.

Creating Filtered Documentation

The Change Assistant template is delivered with embedded documentation to help guide you through the change package jobs, especially the manual steps. You can create a single HTM file that is filtered to contain only the documentation for the chapters, tasks, and steps relevant to your job. This section assumes that you have created a Change Assistant job from a PUM change package. To create the filtered documentation:

1. In Change Assistant, in Update Manager mode, highlight the root node of the template.
2. Right-click, and select Finalize Documentation.

   This produces a single consolidated HTM file named for the update job. The file is saved on your client machine in the following location, where <download_directory> is the directory you specified on the General Settings page:

   ```
   <download_directory>\<change_package_name>\Documentation\<job_name>.htm
   ```

Updating Package for Subsequent Passes

The last steps in the template are used to prepare your change package for the Move to Production.

Step	*Type*	*Description*
Copying Customized Codeline Objects	Manual Stop	Manually copy your customized codeline objects (located in PSHOME / PS_APP _HOME / PS_CFG_HOME or such similar locations to the staging directory.

Step	*Type*	*Description*
Merging CP and CP Invalid View Projects	Merge Project	Merges the additional invalid views project (if one was created during the initial pass) into the existing project resulting in a single project. The merged project is used in all subsequent applies using the updated change package.
Exporting Modified Package-MO Project	CopyToFile	Copies the managed object project to a file.
Exporting Modified ADS-MO Project Only if Required	AEWithRunControl	Consolidates multiple ADS projects into one project and copies it to a file.
Exporting Modified ADS Project - [ADSProjectName] Only if Required	AEWithRunControl	Copies individual ADS project (by bug) to a file. **Note:** There will be a step created for each ADS project included in the change package.
Create Modified Change Package	UpdateChangePackage	The change package is zipped to the staging directory and ready for the Move to production.

Moving to Production

In the Initial Pass, you applied the custom change package to your development database. In the process of applying the change package, you completed all compares and adjusted the change package to retrofit any customizations to your system. Once you have tested the updates, you are ready to deploy the updates to your other target environments, including production.

When you select the Apply Type Move to Production, the Patching Source Database will be your Development database where the patch has already been applied.

To apply the updates to your target databases:

1. (Optional) Start EMF if it is not already started and you selected *Configure EMHub For File Deploy* on the EMHub Options page in Change Assistant.

   Note: EMHub is only required for file deploy. If you plan to manually deploy file, skip this step.

2. In Change Assistant, select Tools, Change Actions.
3. Select Update Manager and Click Next.

   Note: If you are already in the Update Manager action, select Tools, Apply Change Package.

4. Select Apply Change Packages and click Finish.
5. Select the download directory where the change package was created.
6. Select the change package that was created for your custom change package definition.

7. Select *Move to Production*
8. Click Next.
9. Select the target database.

   Note: Use the Create button to create the target database if it has not been previously created. See Defining Databases

10. If you are using EMHub, select the file server.
11. Click Next.
12. Change Assistant will connect to the target database and check compatibility. The Compatibility Check page will then be displayed.
13. Click Next.
14. The Apply Summary is displayed, click Finish.

    Change Assistant will begin building the Change Assistant job.

15. The Update job will be created and run until it completes or encounters an error.

    Note: There are no manual stops in the Move to Production.

Chapter 11

Applying PeopleSoft Release Patchset to PeopleSoft Image

Applying Downloaded PeopleSoft Release Patchset to PeopleSoft Image

The PeopleSoft Update Image will be available on a regular schedule and is the source of all updates to your application, however there may be times when a critical fix is necessary and you can not wait for the next PeopleSoft Image. When this circumstance occurs, it will be necessary to download the PeopleSoft Release Patch from My Oracle Support (MOS).

You will apply the PRP to the current PeopleSoft Image so that you can continue to take advantage of the powerful PeopleSoft Update Manager PIA application to generate a custom change package including requisite updates that may have already been posted. The PRP change package includes the metadata required to keep your current PeopleSoft Image up to date. Every PRP will be included in the next scheduled release of the PeopleSoft Image which is cumulative of all updates.

Important! The pi_home directory requires read and write access to apply PeopleSoft Release Patchsets (PRPs). To apply PeopleSoft Release Patchsets (PRPs), use the instructions in the *Using the PeopleSoft VirtualBox Images (PeopleSoft PeopleTools 8.54)*, "Deploying the PeopleSoft VirtualBox Appliances", Changing the Access for PI_HOME to change the access to read/write and disable guest login.

Warning! Because PRPs are created for specific PIs, the PRP can only be applied to the specific PI for which it was created. Change Assistant will not allow you to apply a PRP directly to your PeopleSoft environment.

To download and apply an individual fix:

1. Discover and download the PRP from MOS.
2. Use Change Assistant to apply the PRP to the PeopleSoft Image database.
3. Create a new custom change package definition using Define Change Package option in the Update Manager Action.

   See Defining a New Change Package
4. Apply the new custom change package the same as any other update from the PeopleSoft Image.

   See Applying Change Package

Discovering and Downloading the PRP

Before you download the change package for the PRP, make sure that you have set up a download directory on your local machine.

To discover and download the PRP:

1. Create a download directory on your local machine.

2. Log onto My Oracle Support and Select the Patch and Updates tab.
3. Search for PeopleSoft Release Patchsets (PRP) by Bug Number, Product, or Product Family.
4. Search for PRPs.

   For detailed information on searching for PRPs, consult *Applying Updates with PeopleSoft PUM-Enabled Applications* on the PeopleSoft Update Manager Home Page (My Oracle Support, Document 1641843.2).

   See "Using My Oracle Support for Searching and Downloading Patches and Updates."
5. Open the fix details to review the fix.
6. From the Patch Details page, click Download.
7. Select the Include Prerequisites checkbox to list all the prerequisite change packages
8. In the file download window, click on the change package name and select Save.
9. Select your download directory.

Applying the PRP to the PeopleSoft Image

To apply the PRP to the PeopleSoft Image:

1. In Change Assistant, select Tools, Change Actions.

   Note: If you are already in the Update Manager Action, select Tools, Apply Downloaded PeopleSoft Release Patchset to PeopleSoft Image then go to step 4.
2. Select Update Manager and click Next.
3. Select Apply Downloaded PeopleSoft Release Patchset to PeopleSoft Image and click Finish.
4. Select the download directory where you downloaded the PRP change package and click Next.
5. Select the PRP change package or packages from the list displayed and click Next.
6. Change Assistant will verify that the package is compatible with the PI version. If it is not compatible, you will receive a message to Cancel.
7. The Change Assistant job will start running.

Note: Use the instructions in the *Using the PeopleSoft VirtualBox Images*, “Deploying the PeopleSoft VirtualBox Appliances”, Changing the Access for PI_HOME to change the access to read/write and disable guest login for the pi_home share.

Applying the PRP to Target Database

After the PRP has been applied to the PeopleSoft Image database, it is now available for you to apply to your target environments using the Update Manager action. Apply the PRP as you would any other update.

See Defining a New Change Package

Chapter 12

Applying PeopleTools Patch

Using Change Assistant to Apply PeopleTools Patch

Understanding PeopleTools Patch

PeopleTools patches deliver fixes between PeopleTools minor releases. PeopleTools patches are posted to My Oracle Support, as they become available. PeopleTools patches are cumulative. They include all fixes from all previous patches for the specified release. For example, patch .03 contains all the fixes contained in the .02 patch as well as all of those contained in the .01 patch.

The patch contains the PeopleSoft Installer which is used to update the binaries in your PS Home directory.

The PeopleTools patch location is always the PTP directory in your target PS home.

Discovering and Downloading PeopleTools Patch

To discover and download a PeopleTools patch:

1. Create a download directory on your local machine.
2. Go to My Oracle Support and select the Patches & Updates tab.
3. Select the Product or Family (Advanced) link.
4. Select the Include all products in a family check box.
5. Select the following search criteria:
   - For Product, select PeopleSoft PT PeopleTools.
   - For Release, select your PeopleTools release.
   - In the next search filter, select Language from the drop-down menu. In the adjacent field, select American English as your language.
6. Click Search.
7. Select the update ID for the PeopleSoft PeopleTools patch that you want to apply.

   Note. It is recommended that you take the latest PeopleSoft PeopleTools patch so that you are completely up to date with all PeopleSoft PeopleTools updates.
8. Before applying each fix, review the documentation included with the fix.
9. Download the PeopleSoft PeopleTools patch to the directory created in step 1.

Installing the Patch

The readme file downloaded with the patch provides the instructions for installing the PeopleTools binaries.

Note: Once the binaries are installed, you can use Change Assistant to apply the database changes for the patch. If you prefer to load database changes manually, follow the instructions in the readme file downloaded with the PeopleTools patch.

Installing a New PeopleTools Patch Version of Change Assistant

Most PeopleTools patches will instruct you to install the new PeopleTools patch version of Change Assistant. To install Change Assistant:

1. Navigate to PS_HOME\setup\PsCA.
2. Double-click setup.exe to run the setup.
3. If a previous version of Change Assistant was installed on the machine, *Remove all installed features* will be displayed:
   a. Click Next.
   b. Click OK on the message " Do you want to completely remove the selected application and all of its features?"
   c. The previous version of Change Assistant is removed, click Finish.
   d. Double-click setup.exe to run the setup a second time.
4. Click Next on the Welcome page.
5. Enter the directory to install Change Assistant and click Next.
6. Click Next on the Start Copying Files page.
7. Select No on the Install PeopleSoft Change Impact Analyzer page and click Next.
8. Click Finish.

Configuring Change Assistant for Applying a PeopleTools Patch

To apply a PeopleTools Patch, the following configurations is required:

- General Options

  If the general options have not been previously defined, the Change Assistant Wizard will open this page when you select an action. See Opening Change Assistant the First Time

  Alternatively, you can populate the General options using the command line. See the section Command Line for Setting Options in Update Manager Mode

- Database Definition

  Each target database will need to be defined. You can define a database by selecting File, New Database or clicking the Create button on the Select Target Database page. See Defining Databases

  Alternatively, you can define the target database using the command line. See the section Command Line for Creating Environments in Update Manager Mode

Applying the PeopleTools Patch Change Package

To apply the PeopleTools patch in Change Assistant:

1. In Change Assistant, select Tools, Change Actions.
2. Select Update Manager and click Next.
3. Select Apply a Patch to your Current PeopleTools Release and click Finish.
4. Review the Change Package Settings page and click Next.

   PeopleTools patches do not use the PUM Source, so it will indicate Not Set.

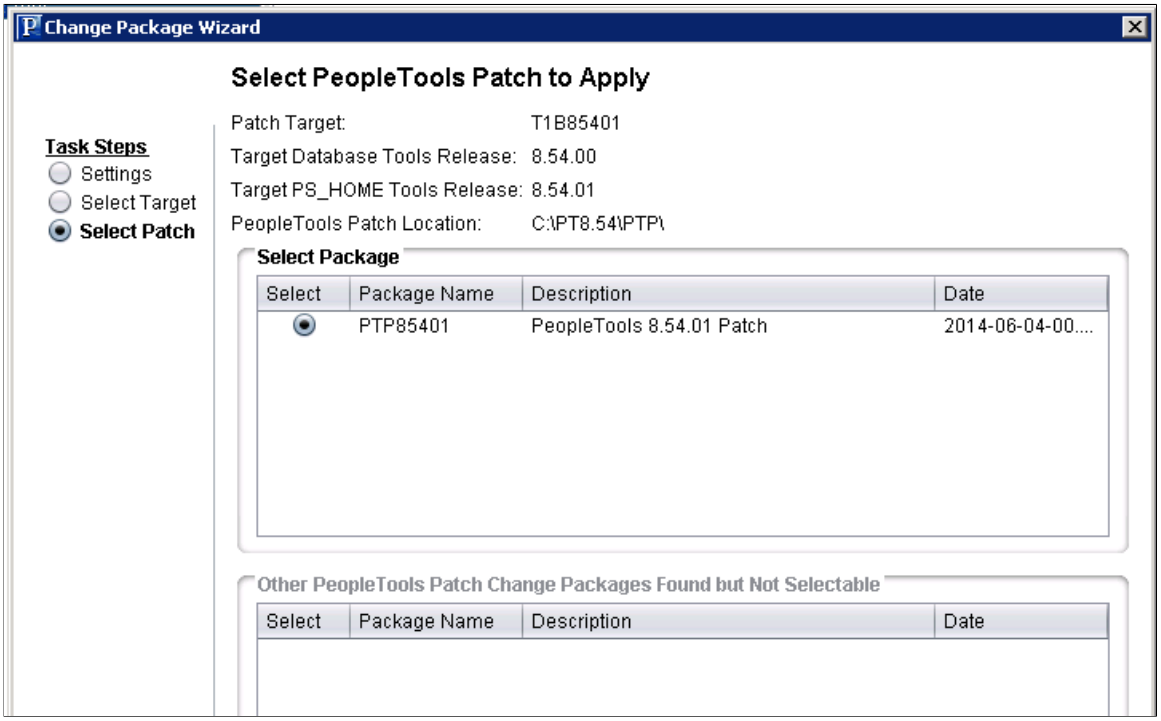
   The download directory is always the PTP directory in your target home.

   PeopleTools patches are always applied to the target database.
5. Select the target database, if the database has not been defined yet use the Create button to create the database.

   See Defining Databases
6. Click Next.
7. Select the Change Package.

   Image: Select PeopleTools Patch to Apply

   This example illustrates the fields and controls on the Select PeopleTools Patch to Apply.



8. Click Next.
9. Change Assistant performs a PeopleTools patch version check. Review the messages and click Next.

   A warning is displayed if the selected patch is at the same or a lower level than the installed PeopleTools patch. It is not recommended to re-apply or downgrade PeopleTools patches.

10. The Apply Summary page is displayed, review the summary and click Finish.
11. Change Assistant will load the change package and run the PeopleTools patch job.
12. All steps will run unattended and when the last step is complete you will receive a message that there are no more steps to run.

PeopleTools Patch Level

In PeopleTools 8.54, a new field PTPATCHREL was added to the PSSTATUS table. When you apply a PeopleTools patch, the PTPATCHREL field is updated with the new PeopleTools patch level.

Using Command line to Apply PeopleTools Patch

Alternatively, If you have configured a target datbase and general options in Change Assistant, you can apply the PTP via the command line by using an updated version of the following syntax: For example:

```
Changeassistant.bat -MODE UM -ACTION PTPAPPLY -TGTENV <YOUR_TARGET_DB_ENV_NAME_LIKE⇒
_PT854TST> -UPD PTP85401
```

See the section Command Line for Applying PeopleTools Patch in Update Manager Mode

Chapter 13

Upgrading PeopleTools

Using Change Assistant to Upgrade PeopleTools

Understanding PeopleTools Upgrade

PeopleTools upgrades involve two major components:

- New PeopleTools release.
- Change Package containing databases changes for the new PeopleTools Release.

Download the most recent version of the PeopleSoft PeopleTools upgrade documentation. Go to My Oracle Support and search for the PeopleSoft PeopleTools upgrade documentation for your release.

Upgrading Oracle's PeopleSoft PeopleTools software requires planning, resources, testing, and training. The PeopleSoft PeopleTools upgrade documentation provides information to help you get started planning for your upgrade and installing the new release.

Important! The PeopleSoft PeopleTools upgrade documentation provides all of the steps necessary to prepare for and upgrade PeopleTools.

Installing the New PeopleTools Release

To upgrade, you must first install the new PeopleTools release:

1. Download the PeopleSoft PeopleTools installation guide for your database platform. See My Oracle Support, select the Knowledge tab, then PeopleSoft Enterprise. Search for PeopleTools, then select the PeopleTools installation guide for your new release. Download the installation guide.
2. Install your new PeopleSoft PeopleTools software following the instructions in the PeopleTools installation guide for your database platform. You will be installing a separate PS_HOME for the purpose of the upgrade. Do NOT install into an existing PS_HOME or PS_CFG_HOME.
3. Download any PeopleTools patches required at Upgrade.

   As part of the PeopleSoft PeopleTools upgrade, you will incorporate the application of a PeopleSoft PeopleTools patch into the upgrade process. Apply the patch for the new PeopleSoft PeopleTools release that you are installing; do not apply a patch for a different PeopleSoft PeopleTools release.

   To find a patch, go to My Oracle Support, Patches & Updates, PeopleSoft PT PeopleTools, and search for the patch for the new PeopleSoft PeopleTools release. Review the documentation delivered with the patch to fully understand the fixes.

   Important! Do not apply the PeopleTools patch in Change Assistant at this time.

   ---

4. Download the PeopleTools Upgrade Change Package from the PeopleTools upgrade page on My Oracle Support.
5. Install Change Assistant from your new PS_HOME.

See Installing Change Assistant

Note: If Change Assistant was installed on a previous release, you will be prompted to remove the existing Change Assistant. For some release/patch level, the installation may just preform a update.

---

6. Configure Change Assistant for PeopleTools Upgrade.

   See Configuring Change Assistant for PeopleTools Upgrade

7. Apply the PeopleTools Upgrade Change Package.

   See Upgrading to a New Release of PeopleTools

8. Set the Configuration Manager Profile.

   See the PeopleTools installation guide for your new release.

9. Create and apply the PeopleTools Object Delta package.

   See Creating and Applying Object Delta Change Package

Configuring Change Assistant for PeopleTools Upgrade

When performing a PeopleTools Upgrade, you will always be using a newly installed version of Change Assistant at the new PeopleTools release/patch level.

To configure Change Assistant for PeopleTools upgrade:

1. Launch Change Assistant.

2. At the Welcome menu, click Next.

   De-select the Always show this page if you want to bypass the Welcome menu next time you launch Change Assistant.

3. On the Select Action page, select *Update Manager* and click Next.

4. If this is the first time you are selecting Update Manager, the Wizard will guide you through the Change Assistant setup.

   See Configuring Change Assistant for Update Manager – Upgrade to a New Release of PeopleTools

5. On the Select Task page, select *Upgrade to a New Release of PeopleTools* and click Finish.

6. To apply the PeopleTools upgrade, the Wizard will guide you through the environment setup.

   See Upgrading to a New Release of PeopleTools

Configuring Change Assistant for Update Manager – Upgrade to a New Release of PeopleTools

If this is the first time you are selecting Update Manager, the Wizard will guide you through the Change Assistant setup. As you click Next you will complete the following pages:

1. General Options

2. PUM Source Options

Note: PUM Source is not used with PeopleTools upgrades. You will click Next to skip this page.

3. EM Hub Options

Note: EM Hub is not used with PeopleTools upgrades. You will click Next to skip this page.

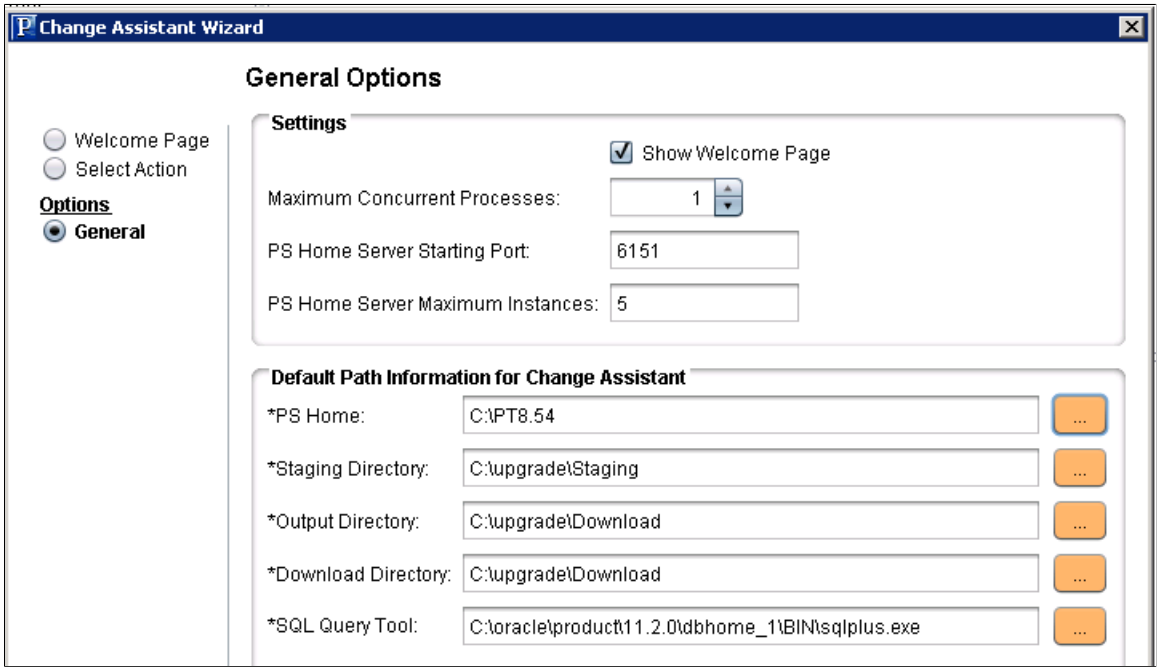
4. Additional Options
5. Select Task

Note: Once the environment has been configured, you can use Tools, Options to make any changes to the environment options.

General Options

Image: General Options

This example illustrates the fields and controls on the General Options page, you can find definitions for the fields and controls later on this page.



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

PS Home Server Starting Port Specify the port number for the first PS Home server.

Change Assistant uses this port number to communicate with Change Assistant PS Home servers. The default starting port number is 6151. If you enter a port number that is already in use, you see an error message. You must change to a port number that is not in use, and then restart Change Assistant for the change to take effect.

PS Home Server Maximum Instances Enter a number between 1 and 10 for the maximum number of PS Home servers.

Use this value for environments with more than one PS_HOME. For each server instance, Change Assistant increments the PS Home Server Starting Port number by 1 up to the maximum number of instances. For example, with a PS Home Server Starting Port value of 6151 and a PS Home Server Maximum Instances value of five, the port numbers would be 6151, 6152, 6153, 6154, and 6155. The default is 5.

If you change this value, you must restart Change Assistant for the change to take effect.

PS Home Enter the full path to the new PeopleTools release PS_HOME.

Note: This is the same PS_HOME used to install Change Assistant.

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

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

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

SQL Query Tool Select the correct executable for the database platform that matches the PS_HOME defined for CA. This value is used as the default when creating environments. Each environment contains separate settings and therefore, you can change this executable for a specific database.

Valid SQL query executables for each platform are:

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

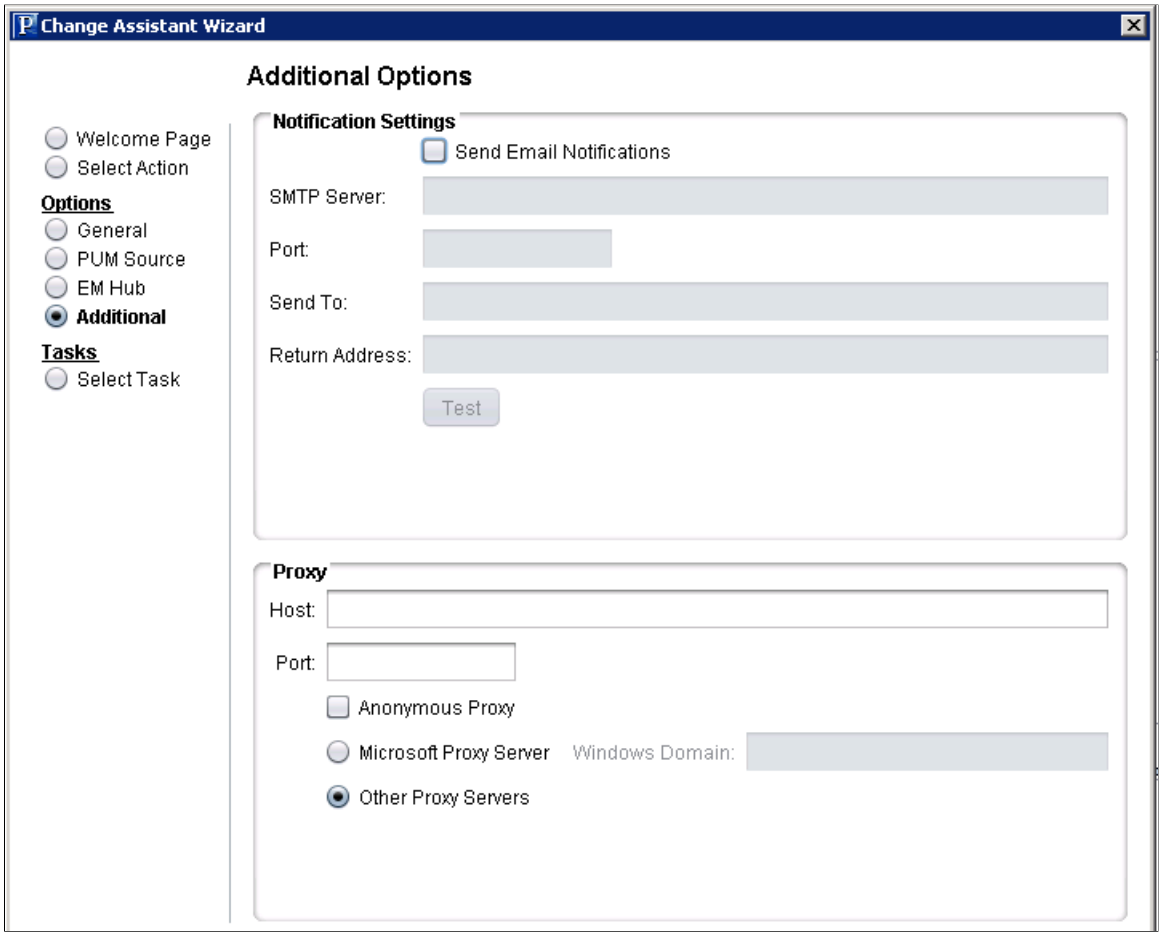
Note: Change Assistant uses the command line version of the .exe, not the GUI version. For example, sqlplus.exe is used for an Oracle database, rather than sqlplusw.exe.

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.

Additional Options

Image: Change Assistant - Additional Options page

This example illustrates the fields and controls on the Change Assistant - Additional Options page. You can find definitions for the fields and controls later on this page.



Notification Settings Section

Send Email Notifications Select this check box to receive email notifications if there are errors in the upgrade 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.

Proxy Section

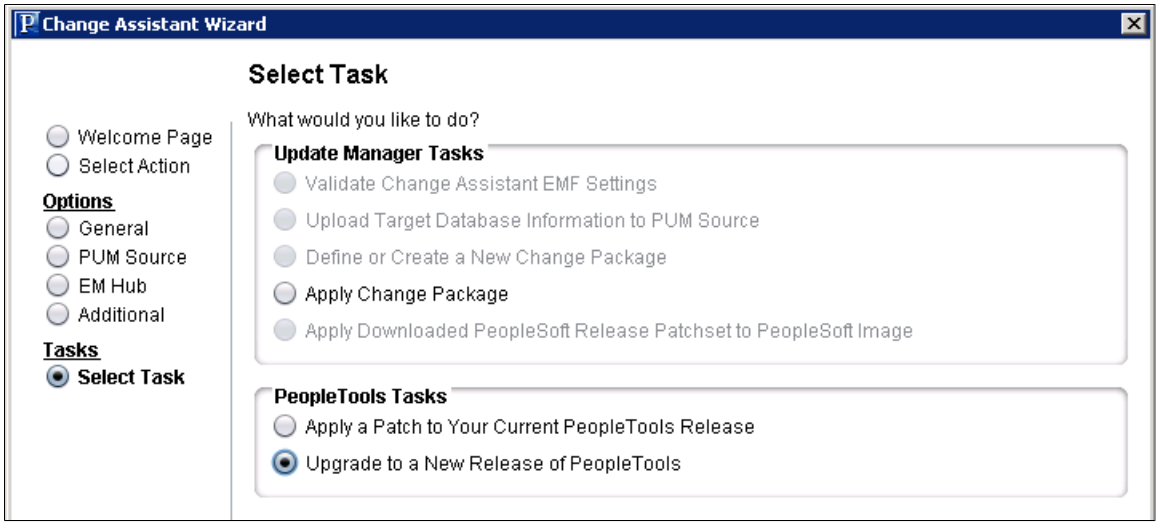
Host	(Optional) Enter the name of the proxy server if you want to run Change Assistant behind the firewall using a proxy server.
Port	(Optional) Enter the port number for the proxy server.
Anonymous Proxy	Indicates that you are using a proxy server that does not require authenticated connections.
Microsoft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

Select Task

Select Upgrade to a New Release of PeopleTools.

Image: Select Task – Upgrade to a New PeopleTools Release

This example illustrates the task Upgrade to a New PeopleTools Release selected.



Upgrading to a New Release of PeopleTools

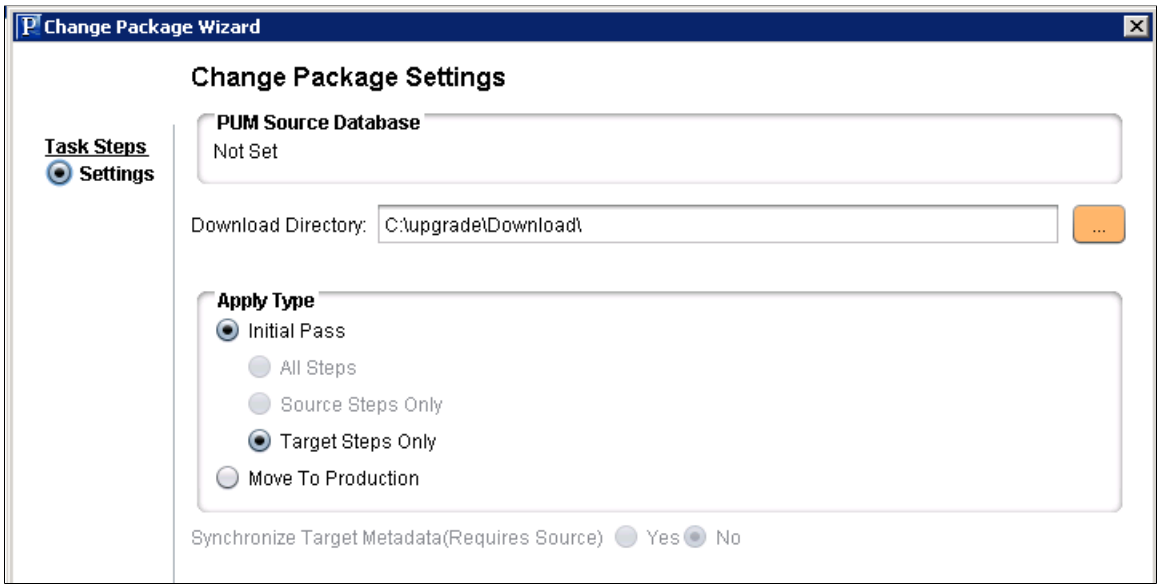
To apply the PeopleTools upgrade, the Wizard will guide you through the environment setup. As you click Next you will complete the following pages:

1. Change Package Settings
2. Select Target Database
3. Select PeopleTools Upgrade
4. Check Compatibility
5. Apply Summary

Change Package Settings

Image: Change Package Settings for a PeopleTools Upgrade

This example illustrates the fields and controls on the Change Package Settings page. You can find definitions for the fields and controls later on this page.



For a PeopleTools upgrade, the apply type in Initial Pass and Target Steps Only.

Select Target Database

On the Select Target Database page, you will need to create the target database. Click the Create button to launch the Database Wizard.

To create a new database:

1. Click the Create button, which will launch the Database Wizard.
2. On the Define Database page, enter the information for the database you are defining. Depending on the action you selected and the database type (source or target), complete the fields necessary.
3. Click Next.

   Change Assistant will query the database and gather additional database.

   Note: Change Assistant will verify the connection to the database, including User ID/password, Access ID/password, and Connect ID/password. You will need to correct any errors before continuing to define the database.

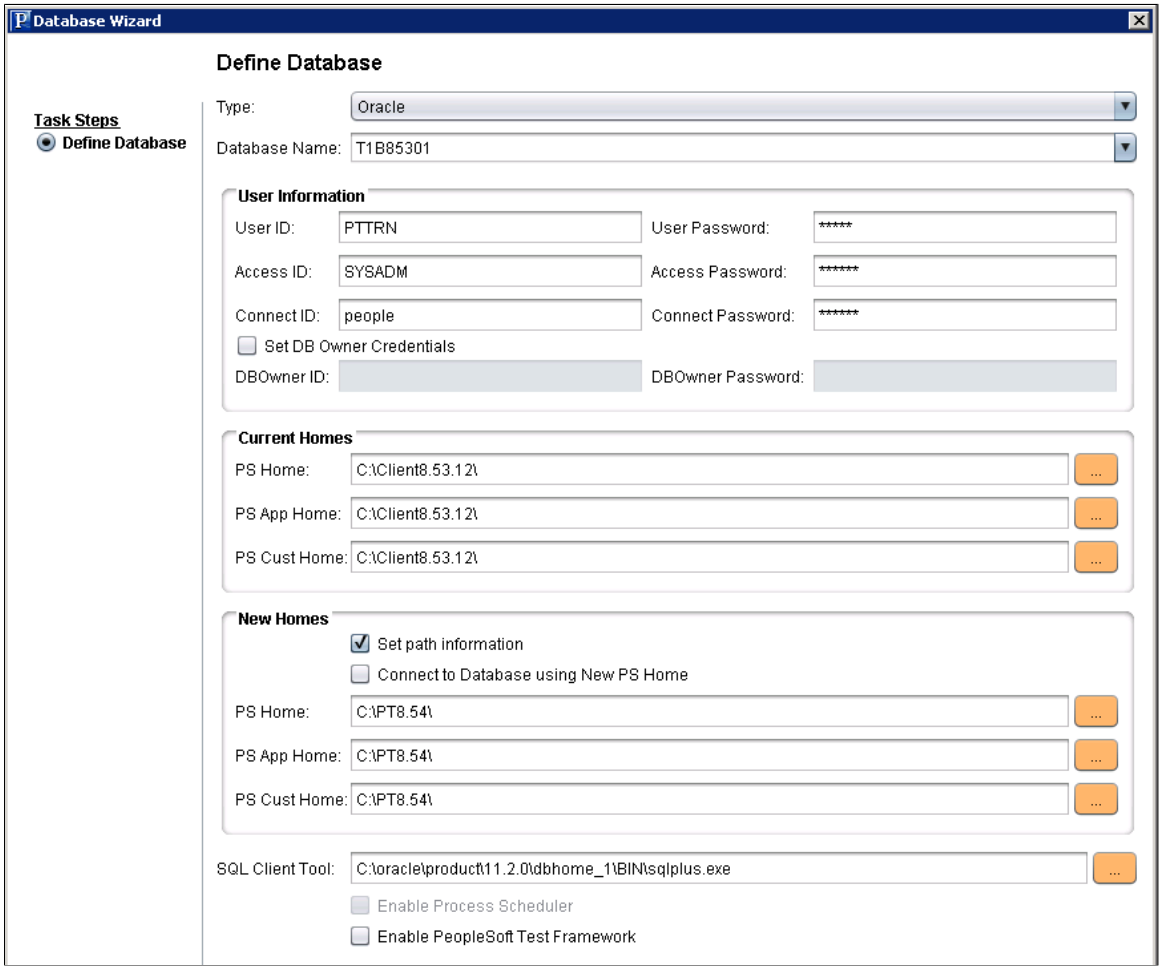
   ---

4. The information is then displayed on the Additional Database Details page.
5. Click Next and the Confirm Settings page is displayed.

6. Click Finish.

Image: Define Database

This example illustrates the fields and controls on the Define Database page. You can find definitions for the fields and controls later on this page.



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

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.

Database Name

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

If EMF is configured and running, you can select a database from Hub.

Database Server Name

Only applies to Informix, Microsoft SQL Server and Sybase.

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

Owner ID

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

User ID and 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.

Access ID and Password

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: For Microsoft SQL Server the access ID must also have System Administrator privileges.

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 "Access IDs" (PeopleTools 8.54: Security Administration).

Connect ID and Password

Enter the connect ID and password for the target database. The default connect ID is people.

Set DB Owner Credentials

If this check box is select, then the DB Owner ID and DB Owner Password Fields are required fields.

The DB Owner is only used with the step type SQLScript-DBO. When the SQLScript-DBO step executes, the *Set DB Owner Credentials* option is checked prior to issuing the commandline. If the attribute is disabled, the job will exit with an error stating the credentials are not set, rather than attempting to execute the command and failing.

DB Owner ID and Password

Enter the Database Owner ID and password for the target database

Connect to Database using New PS Home

Select this checkbox if you need to edit the target database after the database has been upgraded to the new PeopleTools release.

Current HomesPS Home

Enter the location of your current PS_HOME.

Note: Oracle recommends using a mapped drive.

Current Homes PS App Home

Enter the location of your current PS_APP_HOME.

Note: Oracle recommends using a mapped drive.

Current Homes PS Cust Home

Enter the location of your current PS_CUST_HOME.

Note: Oracle recommends using a mapped drive.

New Homes Set path information

Select this check box if you are performing a PeopleTools upgrade or an application upgrade that includes a PeopleTools upgrade.

New Homes PS Home

Enter the location of new PS_HOME.

Note: Oracle recommends using a mapped drive.

New Homes PS App Home

Enter the location of your new PS_APP_HOME.

Note: Oracle recommends using a mapped drive.

New Homes PS Cust Home

Enter the location of your new PS_CUST_HOME.

Note: Oracle recommends using a mapped drive.

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: sqlcmd.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.

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.

Enable PeopleSoft Test Framework Select this option if the upgrade contains PTF steps or if you want to incorporate PTF scripts into your template.

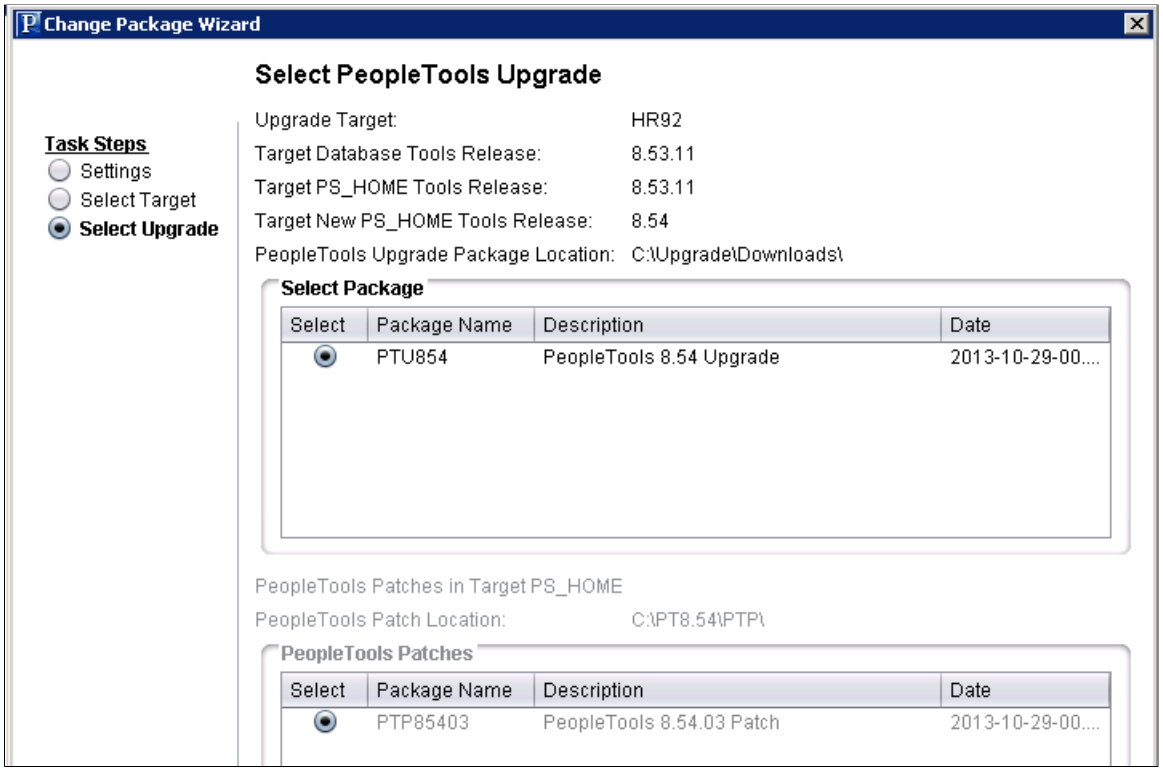
See Specifying PeopleSoft Test Framework Settings

Select PeopleTools Upgrade

The select PeopleTools Upgrade page will display the target database information, as well as the change package to install and any PeopleTools patches that Required at Upgrade and downloaded to the download directory.

Image: Select PeopleTools Upgrade

This example illustrates the fields and controls on the Select PeopleTools Upgrade page.

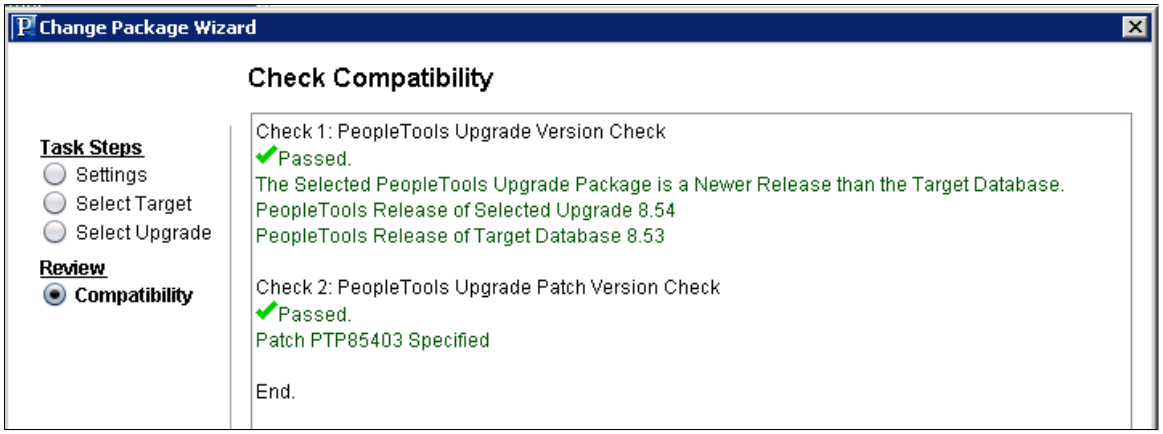


Check Compatibility

Change Assistant will perform a compatibility check to the upgrade version and upgrade patch.

Image: Check Compatibility

This example illustrates the fields and controls on the Check Compatibility page.



PeopleTools Upgrade Job

When you click Finish on the Summary page, the PeopleTools upgrade job is created and opens. The first step is usually a manual stop.

For more information on running Change Assistant Jobs, see Running the Upgrade Job

Creating and Applying Object Delta Change Package

In PeopleTools 8.53, application updates did not include any updates that included a PeopleTools hard dependency, however soft dependencies did exist. When the change package was created, processes and utilities were implemented, such as Release Adaptor and Project Copy, that stripped away any extra unnecessary attributes or objects based on the soft dependencies.

In PeopleTools 8.54 applications soft dependencies are allowed. Customers are still not required to upgrade PeopleTools in order to apply application updates. However it is necessary for PUM to handle shape differences that may exist between different PeopleTools releases.

When the customer does upgrade to the newer PeopleTools release, any previously applied updates that contained soft dependencies need to be re-applied with the associated post-requisites to add back the attributes or objects that were stripped away when the updates were applied in the old release. The Generate Object Delta Package option in the PeopleSoft PIA application is used to create this change package.

Prerequisites

You will use the Change Assistant Update Manager > Define or Create a New Change Package action to create and apply the change package. Before you can select this action, the following prerequisites must be configured and installed:

1. Download the latest PI from My Oracle Support and install it locally.

See Installing VirtualBox and PeopleSoft Update Image

2. Configure the Microsoft Windows client running Change Assistant.

   See Configuring the Microsoft Windows Client Running Change Assistant

3. (Optional) Configure Environment Management Framework for your target environment, if you want to use the file deploy feature.

   See Configuring the Environment Management Hub

4. (Optional) Start EMF if you plan to use the file deploy feature.

   See Running the Environment Management Hub

5. Define the PUM Source and EM Hub.

Note: For the PeopleTools Upgrade these options were skipped when the original configuration for Change Assistant was completed. Depending on the PeopleSoft Image downloaded and installed, you may need to remove Change Assistant and install the version delivered with the PeopleSoft Image. After installing a new version of Change Assistant, you will need to set up Change Assistant.

Defining the PUM Source and EM Hub

If you are using the same version of Change Assistant that was used for the PeopleTools upgrade, follow these instructions. If you installed a different version of Change Assistant, follow the instructions in Configuring Change Assistant for Update Manager.

To configure Change Assistant options:

1. In Change Assistant, select Change Actions.
2. Select Update Manager and click Finish.
3. Select Tools, Options.
4. Verify that the information on the General page is correct.

Note: PS_HOME will be the new release of PeopleTools.

---

5. Select the PUM Source tab.
   a. Select Define PUM Source.
   b. Click Create and define the PUM source database.

      See Defining Databases

   c. Select the drive that you mapped to the pi_home directory when you configured the Microsoft Windows client.
   d. Enter the PUM Source PIA URL.

6. (Optional) Select the EM Hub tab.

   You must have EMF configured and running before defining the EM Hub.

a. Select Configure EMHub For File Deploy.

b. Enter the Server Host Name.

c. Enter the Server Host Port.

d. Enter the Chunk Size.

e. Enter the Ping Interval.

f. Enter the Drives to Crawl.

g. Click Ping.

A successful ping will return Packets: Sent = 3, Received = 3, Lost = 0.

h. Click the View button to display the Environment Management Hub Summary.

Select the Additional tab.

Verify that the information on the Additional page is correct.

7. Click OK.

Creating the Object Delta Change Package

To create the object delta change package:

1. Select Tools, Define or Create a Change Package.
2. Click the button Click Here to Open a Browser and Connect to the PUM Source Database.
3. Sign on.
4. Select PeopleTools, Lifecycle Tools, Update Manager, Define Change Package.
5. If you only have one target database defined, step 2 will open. If you have multiple target databases defined, select the target database and click Next.
6. On step 2, enter a Package name and click Next.
7. On step 3, select Generate Object Delta Package.
8. Enter the From Tools Release value in the format <release>.<patch> for example 8.53.12 (PeopleTools release 8.53 patch 12). The new PeopleTools release/patch number is displayed in the To Tools Release field.
9. Click Next.
10. Step 5 in the Define Change Package wizard is displayed showing all the bugs that will be included in the change package.
11. Click Next.

    The change package definition is created and you can return to Change Assistant to apply the change package.

12. Sign off and close the browser.

13. Return to Change Assistant and click the drop-down for Change Package on the Define or Create New Change Package page. The package you just created on the PUM source should be at the top of the list. Select the change package.

    Note: If you closed Change Assistant, launch Change Assistant and select Tools, Define or Create a Change Package.

14. If you would like to apply the package when it is created, select the Proceed to Apply Change Package Wizard after Package Creation checkbox.

Part III

Using Change Assistant with Non-PUM Enabled Systems

Chapter 14

Using Apply Update Action

Discovering Updates Using My Oracle Support

If the current application level of PeopleSoft product is not PUM-enabled, it is necessary to use My Oracle Support to discover updates and then download them to your local system.

1. Log onto My Oracle Support (MOS).
2. Select Patch and Updates tab.

For detailed instructions on using MOS for patches and updates, refer to

My Oracle Support Patches and Updates for PeopleSoft Products [ID 1465172.1]

Downloading Updates From My Oracle Support

When you select an update to download, you will be downloading the change package. You will need to set up a download directory on your local machine to store all of your downloaded change packages. When you are ready to apply the change packages, you will reference this directory from Change Assistant.

Downloading a Single Patch

To download a patch from the Patch Details page:

1. In the Patch Search Results table, click the patch name link to view the patch details page.
2. Click Download.
3. Select the Include Prerequisites check box to list all the prerequisite change packages.
4. In the File Download window, click the patch file name link and select Save.

The context bar for each patch provides a download option. Note that you can select multiple patches from a list by using Ctrl or Shift.

Downloading Multiple Patches From My Oracle Support

To download more than one patch:

- From the patch search results, click anywhere in the row except a link to select that row. Use Ctrl or Shift to select multiple rows.
- Choose the Download button from the context bar.
- Click each file and save it.

Using WGET Options

WGET is a UNIX download utility. The WGET options enable you to create a WGET download script that you can save as a file or copy to the clipboard.

Note: The WGET download script is intended for advanced users. In most cases, there are no messages to indicate that an error has occurred. Before using the WGET script, you should be familiar with the WGET command and WGET log files. You should also be familiar with UNIX file management, know how to edit, delete, and copy UNIX files, create and edit shell scripts, change execute privileges in UNIX, and understand HTTP error codes. Alternatively, use a download manager to download multiple patches. If you do this, you must maintain an active My Oracle Support session while you download the patches.

For details on using the WGET options refer to

Patches and Updates

Reviewing the Updates Change Log

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.

Configuring Change Assistant for Apply Updates Action

Before you can apply an update, you need the following:

1. Change package in your download directory.

   For non-PUM enabled applications, this is the change package downloaded from MOS. See Downloading Updates From My Oracle Support

   For change packages created for your own customizations, place the change package in the download directory. See Creating a Change Project

2. Environment Management Framework must be configured and running.

   See Configuring the Environment Management Hub

Selecting Apply Updates Action

To start Change Assistant: and apply updates:

1. Select Start, Programs, PeopleSoft Change Assistant 8.54.xx, where *xx* refers to the release/patch number.

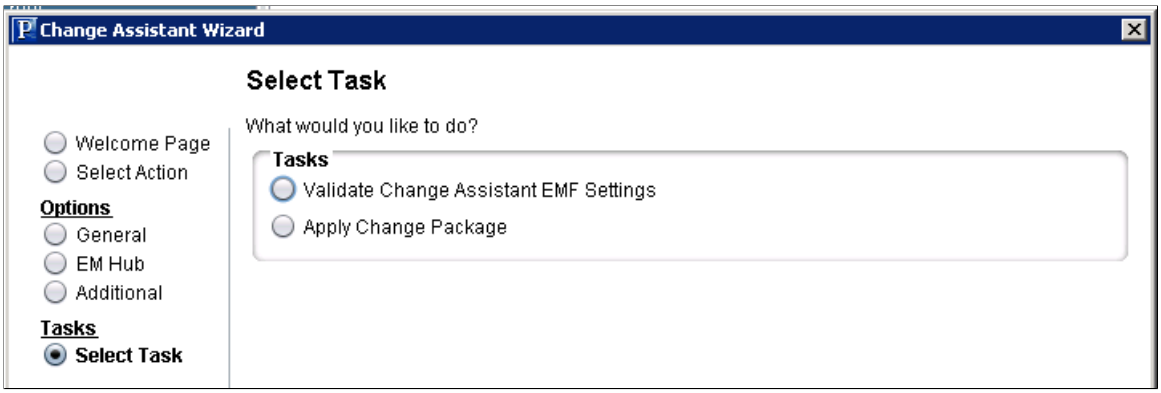
2. Depending on your preferences, you may or may not see a Welcome dialog box. If the Welcome dialog box is displayed, click Next.

   The Select Action page is displayed.

3. Select Apply Updates and click Next.

   Image: Apply Updates Tasks

   This example illustrates the fields and controls on the Select Task page for Apply Updates. You can find definitions for the fields and controls later on this page.

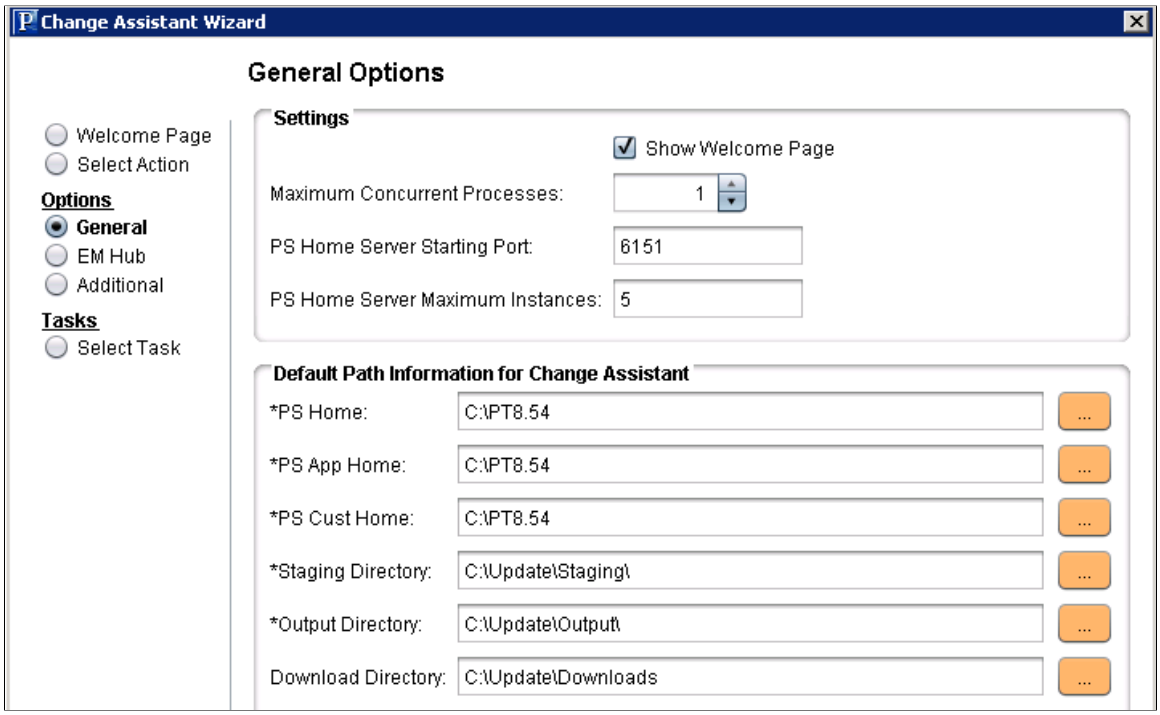


4. The options required for Apply Updates are shown on the left side of the page. If the options have not been defined, Change Assisant will guide you through the set up pages. Click each option to ensure it is properly configured for this action.

General Options

Image: General Options for Apply Updates

This example illustrates the fields and controls on the General Options page. You can find definitions for the fields and controls later on this page.



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

PS Home Server Starting Port Specify the port number for the first PS Home server.

Change Assistant uses this port number to communicate with Change Assistant PS Home servers. The default starting port number is 6151. If you enter a port number that is already in use, you see an error message. You must change to a port number that is not in use, and then restart Change Assistant for the change to take effect.

PS Home Server Maximum Instances Enter a number between 1 and 10 for the maximum number of PS Home servers.

Use this value for environments with more than one PS_HOME. For each server instance, Change Assistant increments the PS Home Server Starting Port number by 1 up to the maximum number of instances. For example, with a PS Home Server Starting Port value of 6151 and a PS Home Server Maximum Instances value of five, the port numbers would be 6151, 6152, 6153, 6154, and 6155. The default is 5.

If you change this value, you must restart Change Assistant for the change to take effect.

PS Home, PS App Home, and PS Cust Home

Enter the full path for your PS home directories.

Note: Specify the PS_HOME location you used to install Change Assistant.

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.

Download Directory

Enter the full path of the location to where you downloaded the update change packages.

SQL Query Tool

Select the correct executable for the database platform that matches the PS_HOME defined for CA. This value is used as the default when creating environments. Each environment contains separate settings and therefore, you can change this executable for a specific database.

Valid SQL query executables for each platform are:

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

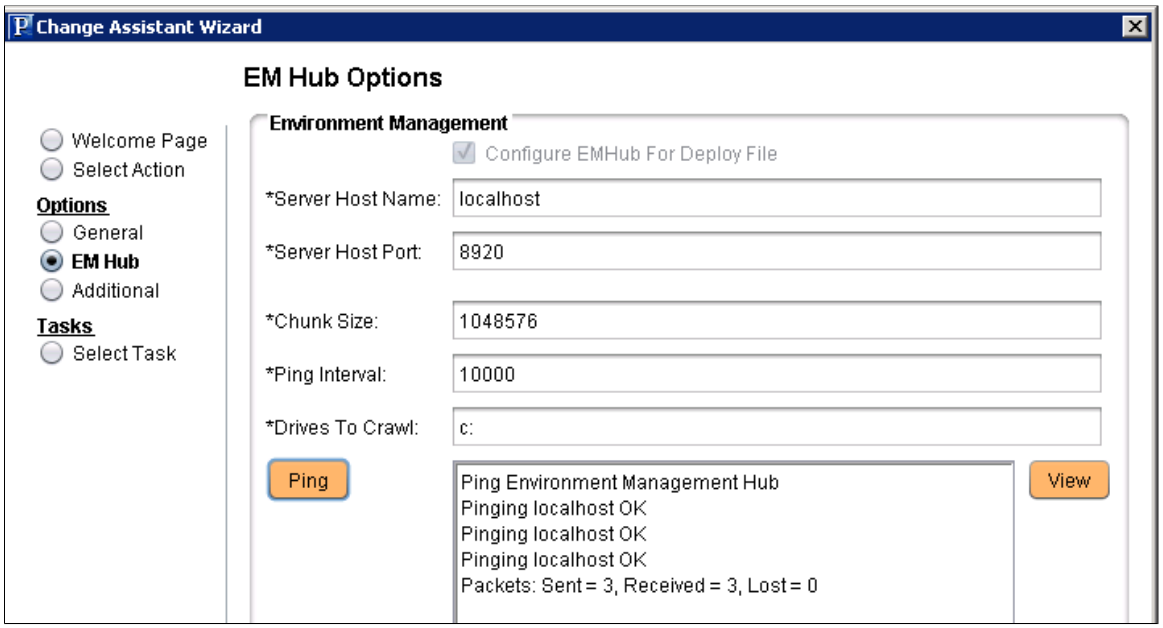
Note: Change Assistant uses the command line version of the .exe, not the GUI version. For example, sqlplus.exe is used for an Oracle database, rather than sqlplusw.exe.

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.

EM Hub Options

Image: EM Hub Options for Apply Updates

This example illustrates the fields and controls on the EM Hub Options page. You can find definitions for the fields and controls later on this page.



Configure EMHub For Deploy File

Select this checkbox if you want to use EMHub for file deploy.

Note: In order to apply traditional updates (non PUM-enabled) EMF must be configured and running.

Server Host Name

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

Server Host Port

Indicates the port in which to connect to the Environment Management hub.

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.

Note: For traditional updates, Change Assistant discovers the SQL Client Tool using EM Hub. There is a directory path limit of 5 when EM hub crawls the drives, therefore if your SQL Client Tool is more than 5 directories deep, you must provide partial path. For example: D:/|D:/Oracle/app/Administrator where the full path to the query tool is path is D:\Oracle\app \client\Administrator\product\12.1.0\client_1\BIN\sqlplus.exe.

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 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

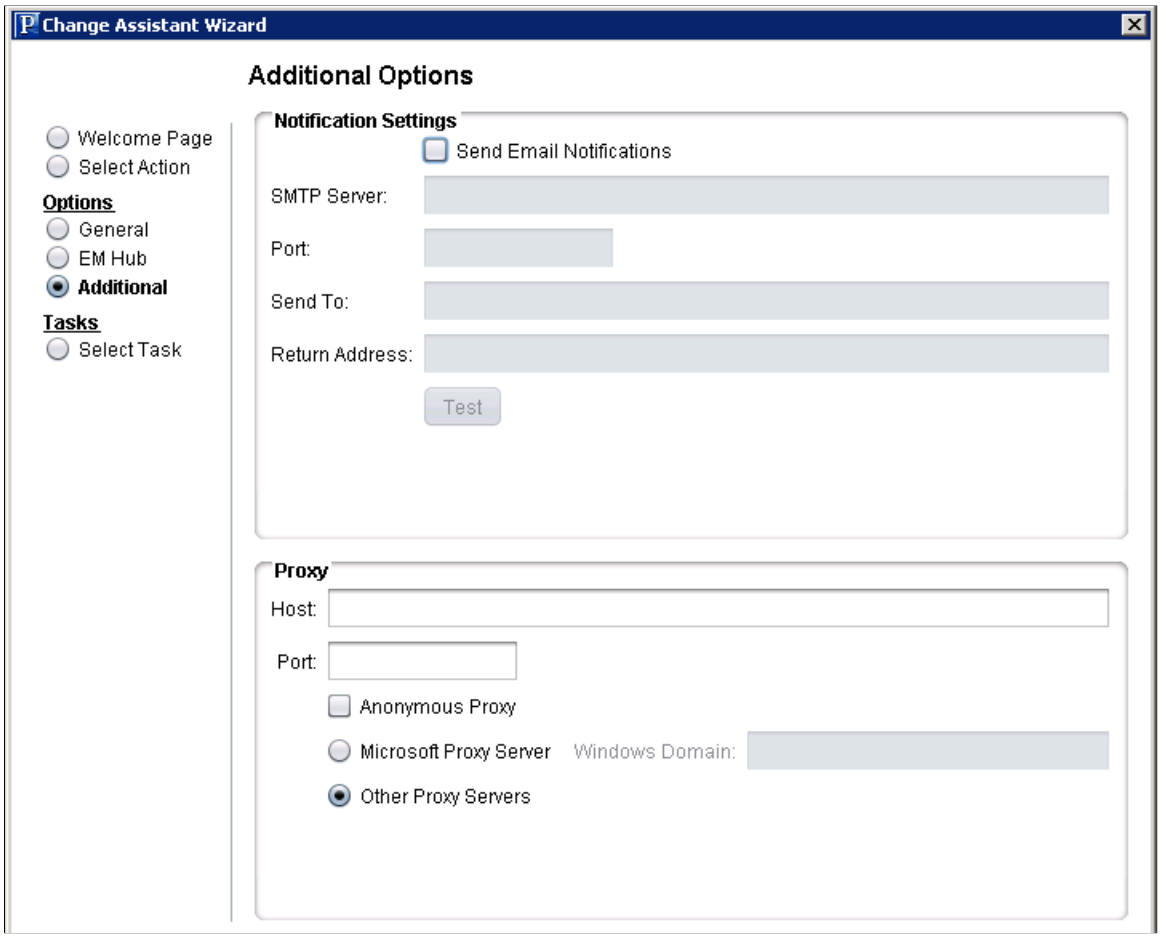
Click to display the list of all PeopleSoft components discovered and registered in the Environment Management hub.

Note: This button is visible only if your display is set to Windows Classic style.

Additional Options

Image: Additional Options for Apply Updates

This example illustrates the fields and controls on the Additional Options page. You can find definitions for the fields and controls later on this page.



Notification Settings Section

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.

Proxy Section

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.

Validating Change Assistant Settings

Before applying non-PUM updates, you should validate your 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.

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:

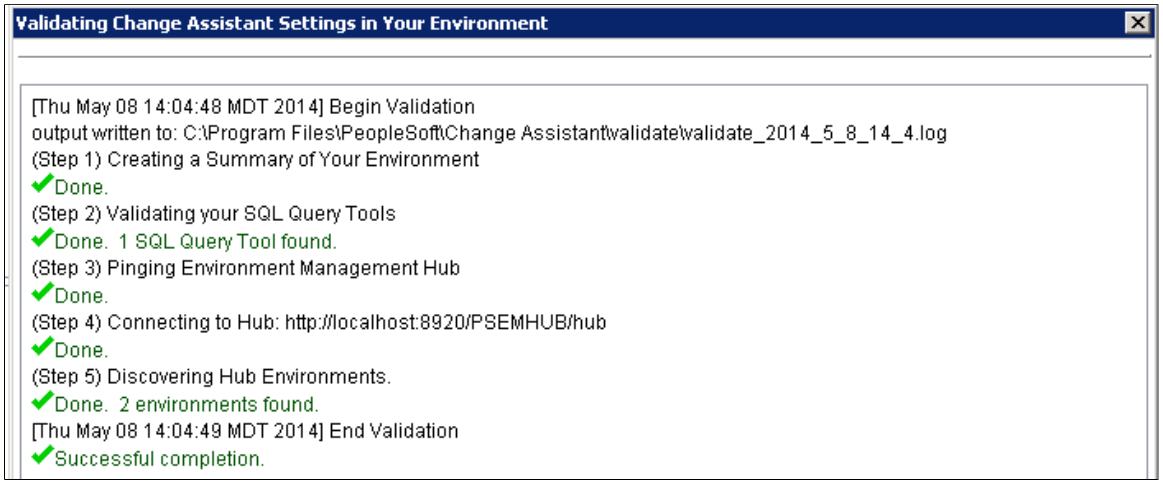
1. From the Select Task page, select Change Assistant Validate EMF Setting and click Finish or from the menu bar, select Tools, Validate.
2. Click Start Validation.
3. When the validation process has completed, a completion message appears.
4. If any of the steps were unable to complete successfully, 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.

You can also select the Validate Change Assistant EMF Settings radio button from the Change Assistant Wizard when the action Apply Updates is selected.

Image: Validating Change Assistant Settings in Your Environment

This example illustrates validation results.



Note: If you use proxy servers, the system will ping those and prompt for proxy server user ID and password.

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.

When you apply updates by using the Apply Update action with 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 Using Templates in Upgrades.

Applying Updates To A Target Environment

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.

To apply change packages to the target environment:

1. The Environment Management Hub must be up and running.

2. In Change Assistant, select Tools, Change Actions.

3. Select Apply Updates.

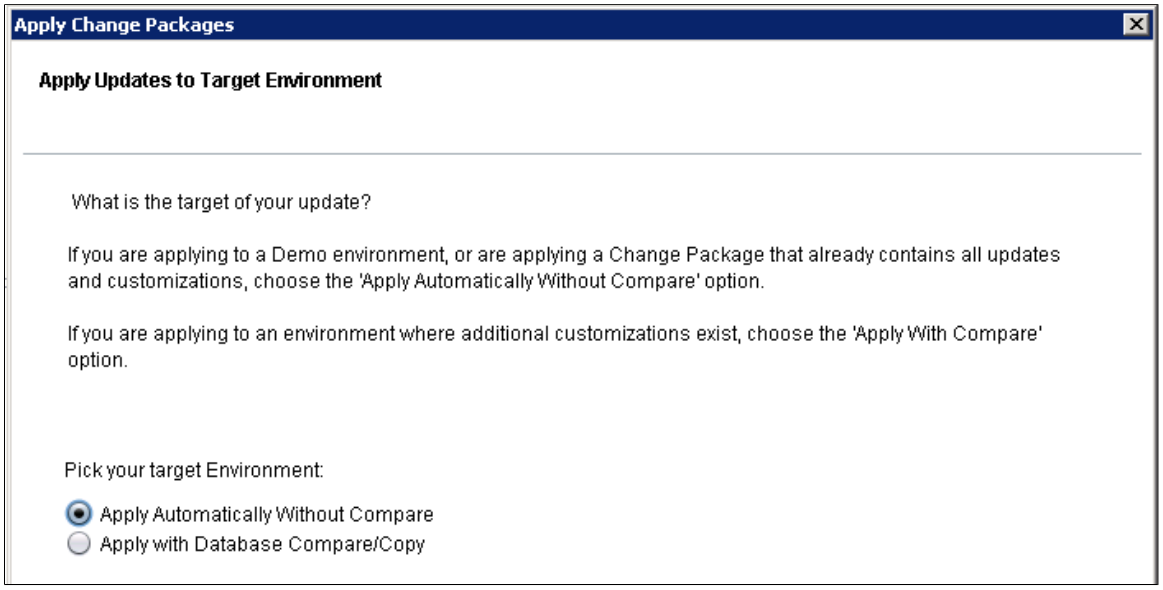
4. Select Apply Change Packages and click Finish.

5. Apply Change Packages Wizard starts.

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

Image: Apply Updates to Target Environment

This example illustrates the fields and controls on the Apply Updates to Target Environment page. You can find definitions for the fields and controls later on this page.



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.

See Apply Without Compare

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.

See Apply With Compare or 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. Change Assistant will re-validate the environment.

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.

   Note: For the Apply without compare, only the target database is required. For the Apply with compare, credentials for both the target and source are required.

7. On the Select Download 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.

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.

Part IV

Working With Change Packages (Traditional Updates Only)

Chapter 15

Working with Change Packages (Traditional Update Only)

Understanding Change Packages

Once you have your change project completed, you create a change package 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 is numeric. 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:

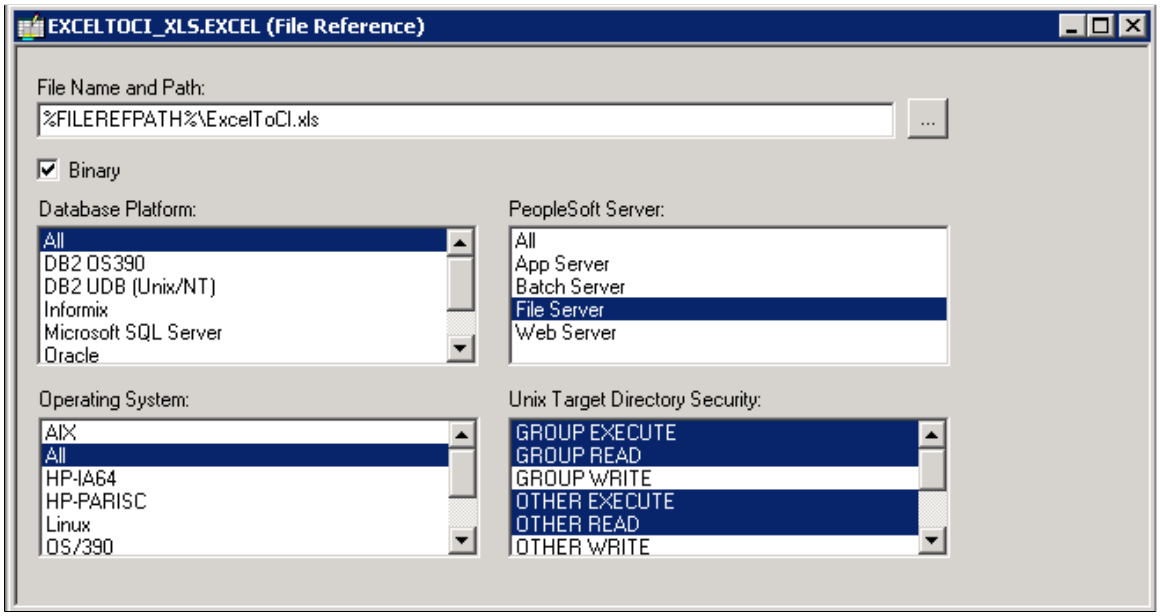
- In the File Name and Path edit box, enter the name of the file and prepend the filename with %FILEREFPATH%.

  For example: %FILEREFPATH%\ExcelToCI.xls

- Add this file reference to a change project.

Image: Example of Variable Path File Reference

This example illustrates the fields and controls on the Example of Variable Path File Reference. You can find definitions for the fields and controls later on this page.



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 enables 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 Creating a Change Package.

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.

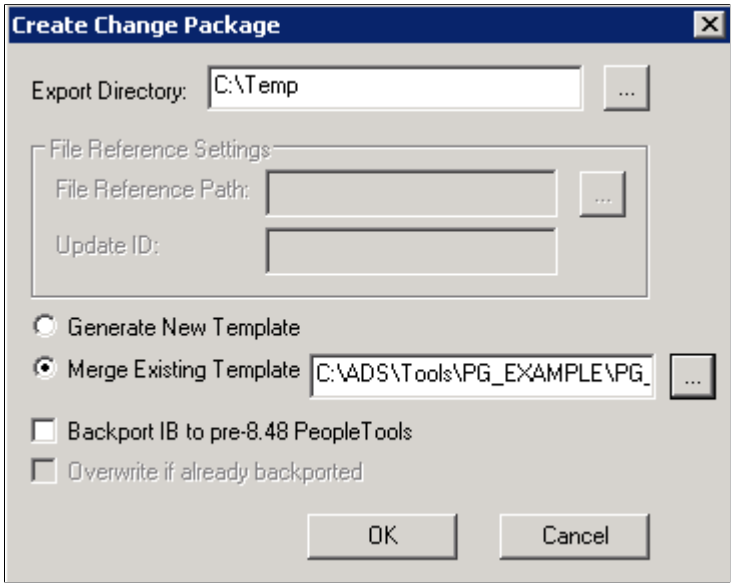
Creating a Change Package

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.

Image: Create Change Package dialog box

This example illustrates the fields and controls on the Create Change Package dialog box. You can find definitions for the fields and controls later on this page.



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 Creating a File Reference Definition.

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 V

Using Change Assistant for Software Upgrades

Chapter 16

Getting Started with Software 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

Download documentation for the specific upgrade process that you will be performing from the Upgrade home page in My Oracle Support. You must read the documentation Getting Started on Your PeopleSoft Upgrade before you continue with your upgrade. This getting started guide explains the upgrade process, terminology, and setup tasks that must be performed prior to starting your upgrade.

Before continuing with the upgrade, you must complete all of the tasks in Getting Started on Your PeopleSoft Upgrade, "Starting Your Upgrade."

Verify that the following tasks are complete:

- Installing the new release.
- Applying PeopleSoft PeopleTools patches.
- Installing PeopleSoft Change Assistant.
- Making a Copy of Production Database.
- Retrieving and applying upgrade files.
- Creating and configuring an upgrade job.
- Setting the Configuration Manager profile.
- Reviewing upgrade step properties.

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

- Create directories on your windows machine where Change Assistant is installed for Output and Staging.
- Define your databases identify the databases to be used during the upgrade.
- Use the Application Upgrade action to 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 Working with Change Assistant Templates and Jobs.

Chapter 17

Configuring Change Assistant for Upgrades

Downloading The Upgrade Template and Documentation

You can download the templates and upgrade documentation for your application from the upgrade home pages on My Oracle Support.

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.

Note: When viewing the HTML documentation in Change Assistant on some of the supported Microsoft Windows operating systems, the image icons may be inoperable. To view the documentation images, use the upgrade documentation in PDF format that is available on the Upgrade My Oracle Support pages.

The upgrade home page will detail which tools are necessary for the upgrade and the upgrade source database to use.

Importing and Opening a Template

To import and open the upgrade template:

1. Start Change Assistant.
2. Select Create or Modify Templates and click Finish.
3. Select File, Import Template.

   The Import Template dialog box appears.
4. Select the directory where you stored the upgrade template that you downloaded from My Oracle Support.
5. Select the template for your product and path.
6. 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.

   ---
7. Select the template for your product and path.

Change Assistant loads the template for your upgrade path.

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.

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.
4. Save the template.

Note: The saved template will include the documentation path information.

See Working with Embedded Documentation.

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 that the remaining steps in the job are applicable to your specific environment.
- locate necessary upgrade tools, like SQL query tools, PeopleTools installations, Process Scheduler servers.
- connect to the databases.

Selecting Application Upgrade Option

In order to perform an Application Upgrade, you must be in the Application Upgrade action. To select the Application Upgrade action:

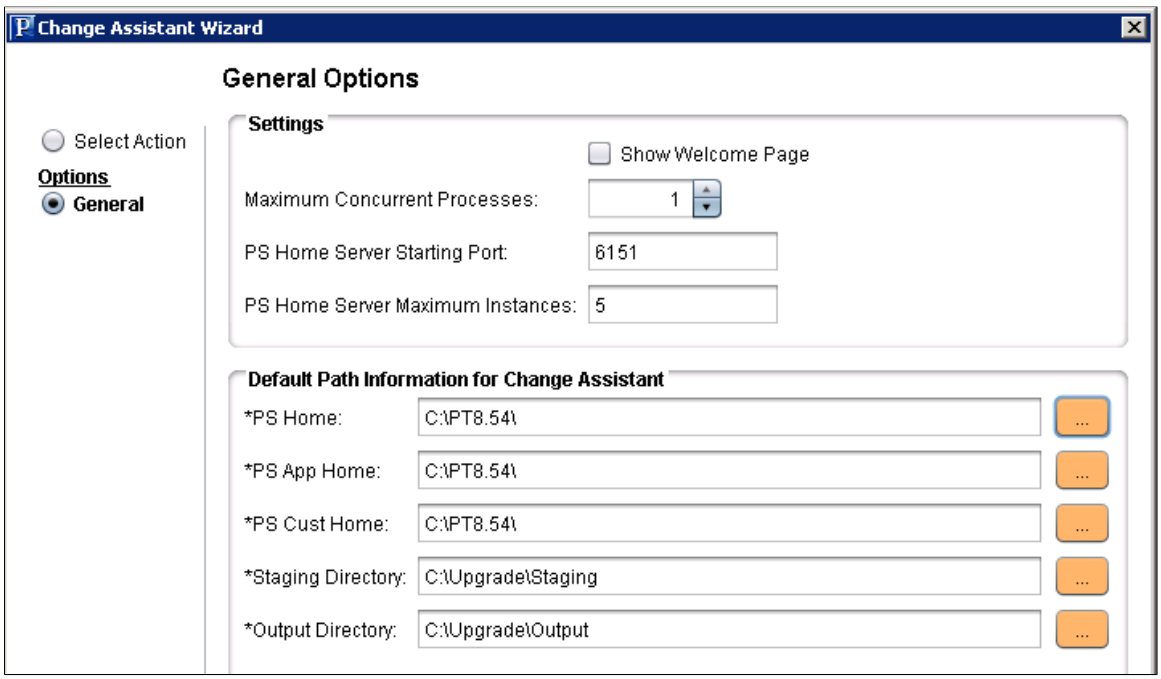
1. Select Tools, Change Actions.
2. Select Application Upgrade and click Next.
3. On the General Options page, specify the high-level settings for your current environment. and click Next.
4. On the Additional Options page, enter your optional email notifications settings.
5. Click Finish.

General Options

The values entered on the General Options page are used as the default values for all of the various databases in the upgrade process.

Image: General Options page

This example illustrates the fields and controls on the General Options page. You can find definitions for the fields and controls later on this page.



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

PS Home Starting Port Specify the port number for the first PS Home server.

Change Assistant uses this port number to communicate with Change Assistant PS Home servers. The default starting port number is 6151. If you enter a port number that is already in use, you see an error message. You must change to a port number that is not in use, and then restart Change Assistant for the change to take effect.

PS Home Server Maximum Instances Enter a number between 1 and 10 for the maximum number of PS Home servers.

Use this value for environments with more than one PS_HOME. For each server instance, Change Assistant increments the PS Home Server Starting Port number by 1 up to the maximum number of instances. For example, with a PS Home Server Starting Port value of 6151 and a PS Home Server Maximum Instances value of five, the port numbers would be 6151, 6152, 6153, 6154, and 6155. The default is 5.

If you change this value, you must restart Change Assistant for the change to take effect.

PS Home

Enter the full path in which you installed PeopleTools client on the Windows Client machine.

Note: Specify the PS_HOME location you used to install Change Assistant.

PS App Home

Enter the location for PS_APP_HOME.

PeopleTools provides the option of installing your PeopleSoft application into a separate directory, outside of the PS_HOME location. The location where you install your PeopleSoft application files is represented by the PS_APP_HOME environment variable.

For more information see "Working with PS_APP_HOME" (PeopleTools 8.54: System and Server Administration)

PS Cust Home

Enter the location for PS_CUST_HOME.

PS_CUST_HOME (PeopleSoft Customization Home) enables you to further clarify the ownership of files within your PeopleSoft system and separate them for more efficient lifecycle maintenance and system administration. While PS_APP_HOME enables you to separate PeopleSoft application files from PeopleTools files, PS_CUST_HOME enables you to identify your site's customized files and store them in a location separate from your PeopleTools and PeopleSoft application files.

For more information see "Working with PS_CUST_HOME" (PeopleTools 8.54: System and Server Administration)

Staging Directory

Enter the directory in which you would like to stage all the Change Assistant upgrade files. This is the location that Change Assistant will store files to be used during the upgrade job.

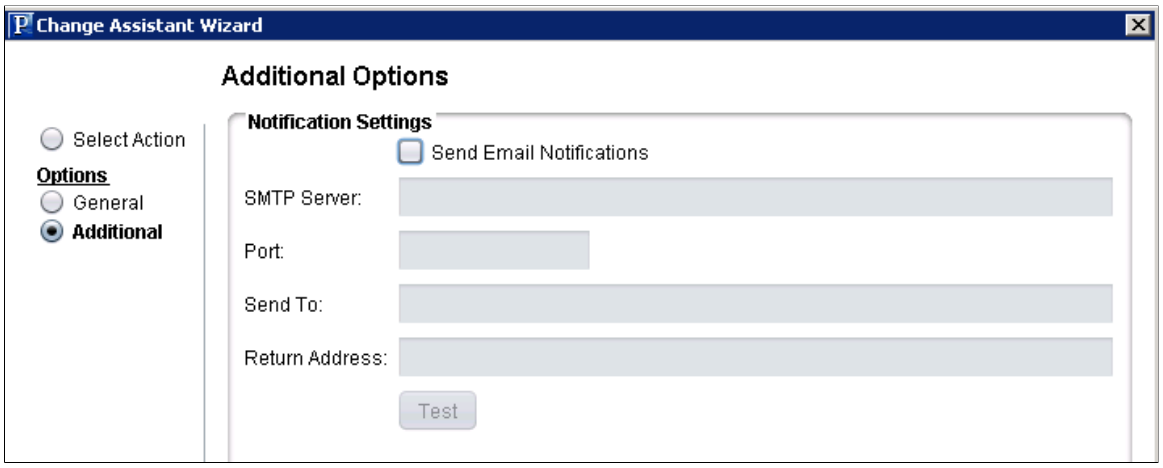
Output Directory

Enter the directory in which you want the log files generated by the upgrade job.

Additional Options

Image: Additional Options page

This example illustrates the fields and controls on the Additional Options page. You can find definitions for the fields and controls later on this page.



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.

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

Creating a New Upgrade Environment

To create a new upgrade environment:

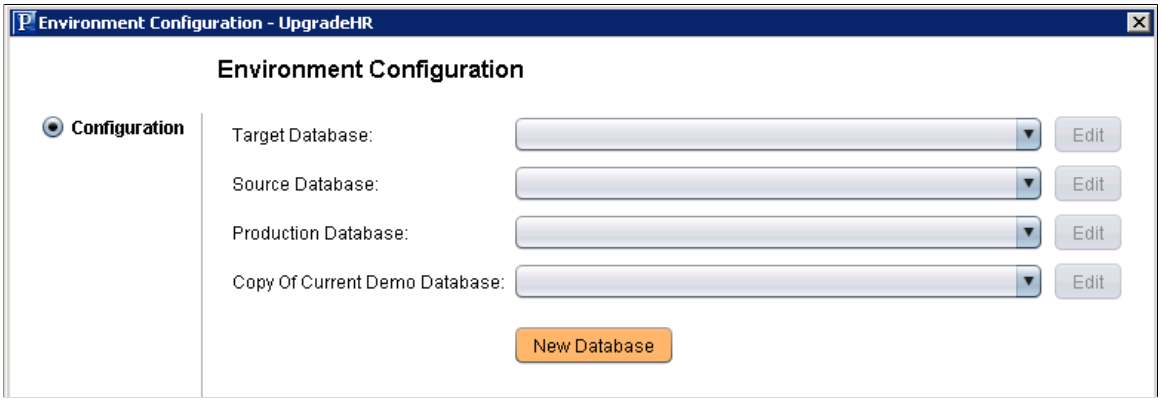
1. Select File, New Environment.

   The Environment Configuration Wizard will guide you through the set up pages.

   Note: You must be in the action mode Application Upgrade.

   Image: Environment Configuration page

   This example illustrates the fields and controls on the Environment Configuration page. You can find definitions for the fields and controls later on this page.



   Note: You must define a target and a source database.

2. If the database has already been defined on Change Assistant, you can use the drop down to select the database. If the database has not been defined, use the New Database button to launch the Define Database Configuration Wizard.

   See Defining Databases

   Note: For Move to Production upgrade passes, be sure to edit and update the database information for your Source database if you are re-using the Initial pass target database. The database information from a previous upgrade pass may not be compatible when re-using the database as a Source database in Move to Production.

3. You can define current PS Homes, as well as new PS Homes for your database. To set the PS homes:

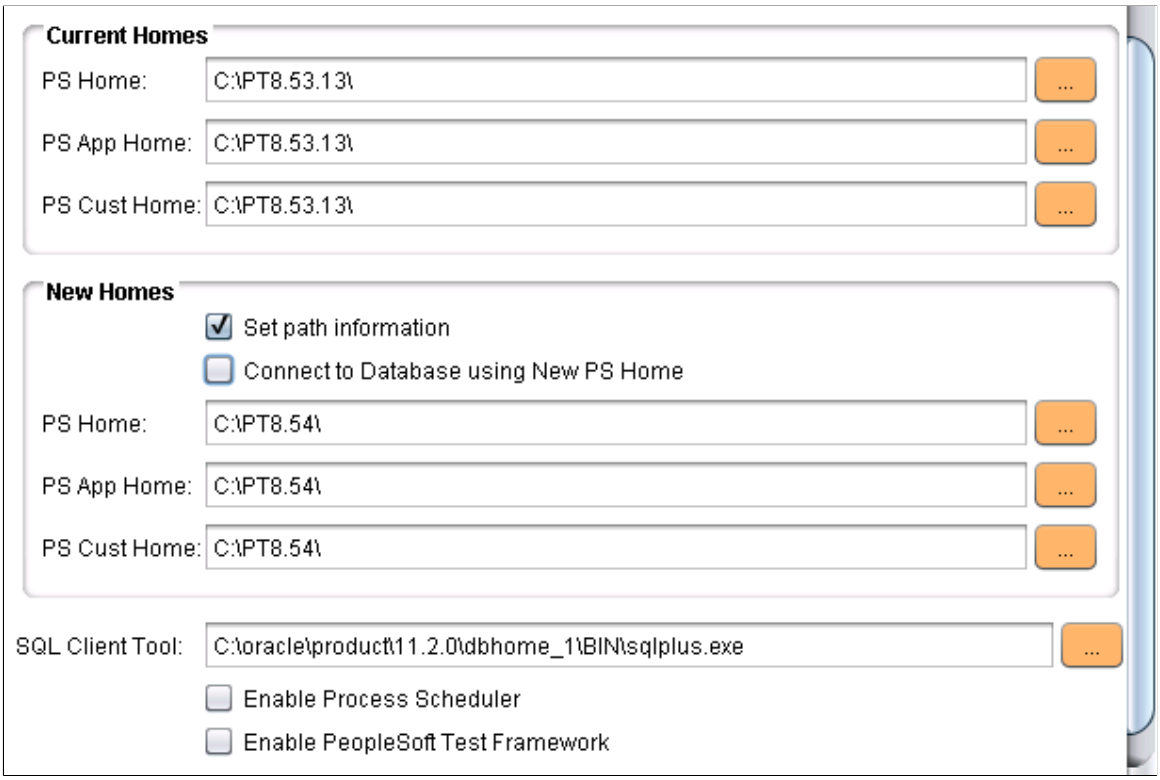
a. Use the Edit button to edit an existing database.

b. Enter the path information for your current release PS Homes, which corresponds to the release you are upgrading from for your target database. For all other databases, the current release corresponds to the release defined for the database.

c. Select the Set path information check box to enable the New Homes fields. You will only need to fill out New Home information for your target database.

Image: Current and new homes on Define Database page

This example illustrates the fields and controls for the current and new homes on Define Database page.



d. Enter the path information for the New Homes, which corresponds to the destination release.

e. For an application upgrade, you may select to Enable Process Scheduler and Enable PeopleSoft Test Framework.

f. Click Next.

The system will verify the connection to the database.

g. Click Next on the additional details page.

h. Click Finish on the Confirm Settings page for your database.

4. After entering your database information, click Next.

5. On the Confirm Settings page, click Finish.

Changing PS Home Location for the Target Database

If your application upgrade includes a change in PeopleTools release, after completing the PeopleTools upgrade portion, the rest of the steps in the upgrade job will require you to connect using the New PS Home.

To change the PS Home location for the target database:

1. Select File, Open Environment.
2. Select your upgrade environment. and click OK.
3. Select the Edit button for your target database.
4. Select the Connect to Database using New PS Home check box.
5. Click Next.

   The system will verify the connection to the database.
6. Click Finish on the Confirm Settings page for your database.
7. Click Next.
8. On the Confirm Settings page, click Finish.

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.

Machine name 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).
Domain Connection Password	Enter the domain connection password for the application server.
Server Name	Enter the name of the Process Scheduler server definition, such as PSUNIX.
Method of retrieving Process Scheduler logs	You can download and 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 IDandUser 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).

Specifying PeopleSoft Test Framework Settings

If you selected the Enable PeopleSoft Test Framework option, you will need to supply PTF connection settings.

Server:Port

Enter the server name and port for the environment. Contact your Integration Broker administrator or system administrator for the correct values.

The format for the Server:Port field is:

```
<machine_name>:<https_port>
```

For example:

```
rtdc79614.us.oracle.com:443
```

If the https port is the default 443 the port is optional.

You can also enter a complete https URL in this format:

```
https://<machine_name>:<https_port>/PSIGW/
HttpListeningConnector
```

For example:

```
https://rtdc79614vmc.dsi-inet.peoplesoft.com:443/
PSIGW/HttpListeningConnector
```

Node ID

This field is required if more than one database is connected to the server. Enter the name of the PeopleSoft node with which the integration gateway is to communicate.

Contact your Integration Broker administrator or system administrator for the correct values.

Execution Options

Specify the name of the Execution Options configuration to use.

Path to PTF Client

Specify the path to the PTF client executable.

The default location is `C:\Program Files\PeopleSoft \PeopleSoft Test Framework.`

Use Proxy Options

Select this option to enter details for the proxy server. When you select this option, the proxy information fields are enabled.

Proxy Information

Enter the following information for the proxy server:

- Server: Enter the server name
- Port: Enter the server port.
- User: Enter the user ID for the proxy server.

  If you use network authentication, use the DOMAIN\USER format.
- Password: Enter the password.

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.

Note: Environments are associated with the selected action. To export Upgrade environments, you must be in the Application Upgrade action.

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.

Note: The Target database must be up and available when you create the Change Assistant upgrade job in order for steps to be filtered appropriately.

To create a new upgrade job:

1. If you are not in the Application Upgrade action, select Tools, Change Actions and select Application Upgrade and click Finish.
2. Select File, New Upgrade Job.
3. On the Use Template dialog box, select the template you want to use for the upgrade job, and click OK.
4. On the Environments dialog box, select the environment you want to use for the upgrade job, and click OK.
5. 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.

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

Filtering During Job Creation

Change Assistant filters the job based on:

- Type of Upgrade

  Each step in the template has the associated upgrade type, Initial Upgrade, Move to production or Both.

- Languages

  Each step in the template has the associated languages for the step.

- Platform

  Each step in the template has the associated languages for the step.

- Products

  Each step in the template has the associated languages for the step.

- Parameter Filters

  If your target database and the source database are not on the same platform, there are certain steps that can not be run, for example Database Compare. In order to ensure the correct steps are run, delivered templates will contain parameter filters on the step. If the filter evaluates to true, the step is included in the job. If the parameter filter evaluates to false, it is not included in the job.

  See Filter Query Variables

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 upgrade pass, 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 Select Action page, select Application Upgrade and Enable Server Processing.
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) executables. 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 18

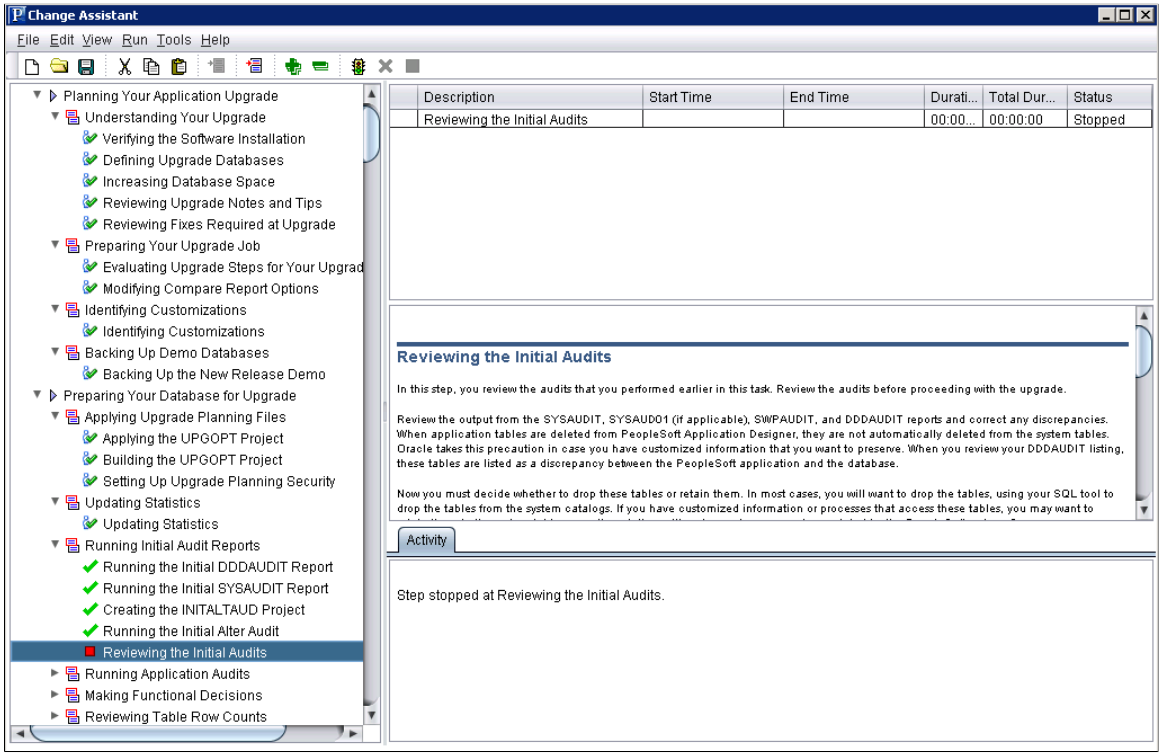
Running Upgrade Jobs with Change Assistant

Running the Upgrade Job

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

Image: Upgrade Job

This example illustrates the fields and controls on the Upgrade Job. You can find definitions for the fields and controls later on this page.



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.

	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.
	Indicates that the process is running.
	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.
	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.
	Indicates that the step was completed by the system.
	Indicates this step was completed manually.
	Indicates this step is filtered at the job level. Steps filtered at the job level will not execute and are equivalent to Complete. To hide these steps, select View, and deselect Steps Filtered at the Job Level.
	Indicates this step is filtered by a filter query. Steps filtered by filter query will not execute and are equivalent to Complete. To hide these steps, select View, and deselect Steps Filtered by Filter Query.

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.

Note: Refer to the PeopleSoft upgrade documentation for your upgrade path for additional information.

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 Process Scheduler
Define Process Scheduler servers in your upgrade environment.	See Configuring and Working With The Upgrade Environment.
Include a ProcessScheduler step type in your upgrade template.	See Step Parameters.

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).

The status returned by Change Assistant for the step matches the status returned by Process Scheduler itself. The log files generated by Process Scheduler are not parsed for warnings or errors. Therefore, even though Change Assistant may show a status of Complete for a Process Scheduler step type, you should review the generated log files for more details.

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.

Chapter 19

Using Data Conversion Utilities

Understanding Data Conversion Utilities

The Upgrade Data Conversion Application Engine Programs are organized into a series of Drivers or Groups that guide the flow and order of execution at runtime for a particular upgrade path.

This topic contains information regarding People Tools Impact Analysis (PTIA) and the PS_PTIA_DCAEPGMS table. The PTIA process consists of two Application Engine programs and is intended to optimize the data conversion process by analyzing Source and Target tables and state records to determine actual dependencies between Application Engine sections. This allows you to run your data conversion process during your PeopleSoft application upgrade with optimal performance.

Using the PTIA Data Conversion Process

This section discusses:

- Understanding the PTIA Data Conversion Process
- Reviewing PTIA Initial Analysis
- Reviewing Dependency Analysis
- Reviewing Runtime for PTIADATACONV
- Reviewing PTIA Reporting

Understanding the PTIA Data Conversion Process

The PeopleTools Impact Analysis (PTIA) process uses many pieces of the previous style data conversion delivered in PeopleSoft 9.1 applications and lower. For example, PTIA uses the Application Engine section grouping and sequencing in the PS_PTIA_DCAEPGMS table for its dependency modeling. The PTIA process also uses the terminology – *root or top section*. A *root or top section* is an Application Engine section defined in PS_PTIA_DCAEPGMS. We use *root or top section* to distinguish between sections being called from the data conversion program as opposed to sections being called from an Application Engine call section step.

The PTIA process includes analyzing the insert, update, and delete SQL steps in your data conversion to determine the Source and Target tables and state records that are used. This includes analyzing dynamic SQL, App Classes, SQLExec's, and platform-specific code.

The Application Engine program gathers a list of Application Engine sections required for data conversion from a given upgrade path. These sections are analyzed and SQL statements are extracted and stored in the Application Engine Analyzer repository. Each SQL statement is analyzed to derive a list of tables that are manipulated or queried during the execution of that SQL. Once all the SQL is analyzed, the information is used to derive section dependency information, which is then saved in the Application Engine Analyzer repository. PTIA allows the Application Engine data conversion to run out of the box on a number of threads.

There are two types of analysis for PTIA: initial and dependency. This section will describe both analysis types in detail.

Reviewing PTIA Initial Analysis

This section discusses:

- Understanding Initial Analysis
- Reviewing Data Conversion Query Parsing
- Reviewing Custom Data Conversion Code
- Reviewing Table Usage Information
- Reviewing Non Parsable SQL
- Reviewing the Data Conversion Repositories

Understanding Initial Analysis

The first part of the PTIA process is the PTIAANALYSIS Application Engine, also known as the Application Engine Analyzer. PTIAANALYSIS accepts one parameter for the upgrade path, and then queries PS_PTIA_DCAEPGMS to retrieve all the groups and sections for that upgrade path, ordering by group and sequence. Starting with the first group and first sequence, PTIAANALYSIS parses each Application Engine section definition following the flow from step to step and through any nested call sections. As it follows the flow, it inserts rows into the PS_PTIA_ANALYSIS table for each Application Engine Section, Step, and Action it comes across. PTIAANALYSIS maintains a counter as it goes and increments the counter as it writes each Action to the PS_PTIA_ANALYSIS table. By the end of this first task, the PS_PTIA_ANALYSIS table will describe the entire upgrade from top to bottom, from the first Application Engine section in the first Upgrade Group to the last section in the last Upgrade Group. By querying the PS_PTIA_ANALYSIS table and ordering by PTIA_AESTMTSEQ, the whole will be described, including any nested call sections.

It is important to note that the PS_PTIA_ANALYSIS table contains every actual Step in the chosen upgrade path. During the data conversion runtime phase, it is likely that not all these steps will be executed because specific data composition and various application options will prevent some sections or steps from running. With the PTIA process, data composition can affect the data conversion runtime flow, which makes it impossible to predetermine the exact runtime flow the conversion will follow.

The PTIAANALYSIS Application Engine reads the data conversion code for your defined upgrade path (where the path is defined in the PS_PTIA_DCAEPGMS table with PTIA_UPG_CONV_TYPE= “MAIN”).

The Application Engine Analyzer program leverages two PeopleCode functions included with PeopleSoft PeopleTools 8.50 or higher. The two PeopleCode functions are:

- GetProgText: A function that retrieves a PeopleCode program as text.
- ResolveMetaSQL: A function that returns a string of SQL text that has had its metasql resolved.

Reviewing Data Conversion Query Parsing

After PTIAANALYSIS determines the upgrade path flow, it traverses the flow again looking at all the different Step Actions to determine which SQL is being executed by that Step. Most action types are straightforward; SQL, Do Select. PeopleCode is the most complicated action type. A Java program parses the PeopleCode and pulls all the SQL executed in the PeopleCode. The results of the action type analysis end up in a table called PS_PTIA_DTLIDSQLS, which stores a reference to PS_PTIA_ANALYSIS, along with the SQL statements associated with each Step Action. In the case of PeopleCode, there may be

many rows in the PS_PTIA_DTLIDSQLS table for each PeopleCode reference in PS_PTIA_ANALYSIS. In addition, a second shadow table, called PS_PTIA_DTLIDSQLSR, is also populated during action type analysis. The only difference between PS_PTIA_DTLIDSQLS and PS_PTIA_DTLIDSQLSR is that PS_PTIA_DTLIDSQLSR contains the fully resolved SQL statements. For example, if the original SQL in a Step was:

```
UPDATE PS_BEN_DEFN_COST SET RATE_TBL_ID = %Substring(%Sql(UPG_HC_221,RATE_TBL_ID),1⇒
,4) %Concat '-2' WHERE RATE_TYPE='2' AND RATE_TBL_ID IN ( SELECT RATE_TBL_ID FROM P⇒
S_UPG_BN_RATES WHERE RATE_TYPE='2')
```

Then this would be resolved to platform-specific SQL. In the case of SQL server it would be:

```
UPDATE PS_BEN_DEFN_COST SET RATE_TBL_ID = SUBSTRING(RTRIM(RATE_TBL_ID),1,4) + '-2' ⇒
WHERE RATE_TYPE='2' AND RATE_TBL_ID IN (SELECT RATE_TBL_ID FROM PS_UPG_BN_RATES WHE⇒
RE RATE_TYPE='2')
```

Each of these SQL statements is further parsed to determine the tables that participate in the query. The results are stored in the PS_PTIA_DTLIDTBLS table. A query can have zero or one target tables. If the query is an INSERT, UPDATE, DELETE, etc, then there will be one target. If the query is a select statement, then there will be no target table. For the previously stated query, you would expect to see 2 rows in the PS_PTIA_DTLIDTBLS table. The first row would be for the PS_BEN_DEFN_COST table with an PTIA_TABLEUSAGE value of T because it is the target table of the query. The second row would be for the PS_UPG_BN_RATES table with an PTIA_TABLEUSAGE value of S because it is a source table in the query.

At this point we have gathered all the information we need about the specific upgrade path to build a dependency model. The dependency model is solely based on which tables are affected by which steps and follows some very simple rules. Most of these rules are inherent in the Upgrade Group model.

Reviewing Custom Data Conversion Code

You can include custom data conversion code in the Initial Analysis and subsequent steps in the PTIA process by adding a row (or rows) to the PS_PTIA_DCAEPGMS table for each custom Application Engine section that is to be executed, where a row is defined as PTIA_UPG_PATH, PTIA_UPG_GROUP, SEQ_NUM, AE_APPLID, AE_SECTION, ACTIVE_FLAG, PTIA_UPG_CONV_TYPE, PTIA_UPG_GROUP_LVL.

Reviewing Table Usage Information

The data conversion analysis process attempts not only to identify the tables that are used in a given Application Engine step, but also how the tables are being used in the context of each step.

This information is stored in the analysis tables and documented in the Table Usage and Action columns of delivered PTIA reports, such as PTIA0001.SQR.

Valid values for the Table Usage column are:

- *S* for Data Source
- *T* for Data Target
- *X* for Unknown

Note: An X value in the Table Usage column for the PS_PTIA_DUAL, PS_PTIA_COMMON_AET, PS_PTIA_NORECNAME, or PS_PTIA_STATE_AE tables is expected and does not impact the subsequent Dependency Analysis Process.

See Reviewing Dependency Analysis

Valid values for the Action column are:

- CREATE
- DELETE
- DROP
- INSERT
- SELECT
- TRUNCATE
- UPDATE
- UPDSTATS
- UNKNOWN
- OTHER

A valid value for the action “Unknown” is only applicable to PeopleCode steps and only occurs in instances when the parser encounters syntax such as `GETRECORD`, `GETROWSET`, `CREATERECORD`, or `CREATEROWSET`, and cannot determine which actions were being done against the variable.

A valid value for the action “Other” occurs in instances when the parser encounters syntax such as the “Invalid SQL Override” or other non-SQL statements such as application function calls.

Reviewing Non Parsable SQL

The data conversion analysis process may mark certain SQL statements as non parsable. This designation refers to SQL statements that the Application Engine Analysis process could not correctly process. When a SQL statement is marked non parsable, there are three options that you can use:

- Modify the SQL so that the Application Engine Analyzer can process the statement. The following table compares sample non parsable and parsable SQL statements:

NON PARSABLE SQL	***PARSABLE SQL***
UPDATE %Table(%BIND(RECNAME)) SET RELATIONSHIP = ’C’ WHERE RELATIONSHIP IN (’S’, ’D’)	• UPDATE %TABLE(BN_834_MEMBER) SET RELATIONSHIP = ’C’ WHERE RELATIONSHIP IN (’S’, ’D’) • UPDATE %TABLE(DEP_BEN_EFF) SET RELATIONSHIP = ’C’ WHERE RELATIONSHIP IN (’S’, ’D’) • UPDATE %Table(EMERGENCY_CNTCT) SET RELATIONSHIP = ’C’ WHERE RELATIONSHIP IN (’S’, ’D’)

- For non parsable SQL statements in PeopleCode, add an override line directly above the non parsable SQL to manually document the Source and Target tables that are in use.

Note: There is no override option for Application Engine SQL steps that are marked as non parsable.

Note: Entering inaccurate or incomplete information in the override statement may result in data conversion sections being run in the incorrect dependent order, which can produce incorrect conversion results, such as data errors.

Note: Tables defined in the override statement require the *PS_* prefix.

Correct = PS_JOB

Incorrect = JOB

The following table gives sample override lines for various situations:

Syntax	***Sample Override Lines***
When Source and Target tables are explicitly known and static	For example: • REMSQLANALYSIS:T:<Tgt Table>,<Tgt Table>:S:<SRC Table>,<SRC Table>; • REMSQLANALYSIS:T::S:<SRC Table>,<SRC Table>; • REMSQLANALYSIS:T:<Tgt Table>,<Tgt Table>:S:;

Syntax	*Sample Override Lines*
When Source and/or Target Tables are determined based on a query	For example: • REM SQLANALYSIS:T:%SQL(SQLid [, paramlist]):S:[table name]; • REM SQLANALYSIS:T:<Tgt Table>,<Tgt Table>:S: %SQL(SQLid [, paramlist]); • REM SQLANALYSIS:T:%SQL(SQLid [, paramlist]):S: %SQL(SQLid [, paramlist]); • REM SQLANALYSIS:T::S:%SQL(SQLid [, paramlist]); • REM SQLANALYSIS:T:%SQL(SQLid [, paramlist]):S:; Where: *SQLid*: Specify the name of an existing SQL definition. *paramlist*: Specify a list of arguments for dynamic substitutions at runtime. The first argument replaces all occurrences of %P(1) in the referenced SQL definition, the second argument replaces %P(2), and so forth. **Note:** The paramlist arguments must be static values. Variable values in the parmlist are not permitted. **Note:** The Query is resolved at the time the Data Conversion Analysis is executed. It is NOT resolved during the Data Conversion Runtime. **Note:** The Query must return one or more valid RECNAME values. No other return results are permitted.
Where there is no Source or Target table to be defined an/or the non parsable SQL is to be excluded from the table and dependency analysis.	REMSQLANALYSIS:T::S:PS_PTIA_NORECNAME; **Note:** The “REMSQLANALYSIS:T::S:;” syntax is not a valid override and will be marked as “Invalid” by the PTIAANALYSIS Program.

- Leave the SQL as it is. This results in the non parsable SQL being marked as “dependent” on all steps that exist prior to it, and all steps subsequent to the non parsable SQL become dependent on it.

  Note: This will likely result in slowing the runtime of data conversion and is *not* recommended.

Reviewing the Data Conversion Repositories

The tables in the Data Conversion Analysis repository hold the following data:

- Step actions stored in execution order.
- SQL clauses extracted from step actions.
- Tables featured in SQL clause.
- Bind variables used in SQL.

Analysis information is stored in the following tables:

- PS_PTIA_DCAEPGMS
- PS_PTIA_ANALYSIS
- PS_PTIA_ANALYSISTX
- PS_PTIA_DATACONV
- PS_PTIA_DTLIDSQLS
- PS_PTIA_DTLIDSQLSR
- PS_PTIA_DTLIDTBLS
- PS_PTIA_RUNDEPEND
- PS_PTIA_SECDEPEND
- PS_PTIA_SECLISTTMP
- PS_PTIA_STEPDEPEND

The following Analysis tables make up the PTIA process:

PS_PTIA_DATACONV

The PS_PTIA_DATACONV table is based on the table definition for PS_PTIA_DCAEPGMS. It stores the upgrade Application Engine sections for the chosen upgrade path.

COLUMN	*DESCRIPTION*
PTIA_UPG_PATH	Upgrade Path copied from PS_PTIA_DCAEPGMS
PTIA_DBTYPE	Stores the text equivalent of the standard DBTYPE codes
PTIA_UPG_GROUP	Upgrade Group
PTIA_UPG_GROUP_LVL	Upgrade Group Level
PTIA_UPG_CONV_TYPE	Conversion type: MAIN or DDL
SEQ_NUM	Upgrade Sequence Copied from PS_PTIA_DCAEPGMS
AE_APPLID	Upgrade Application Engine Copied from PS_PTIA_ DCAEPGMS

COLUMN	DESCRIPTION
AE_SECTION	Upgrade Application Engine Section Copied from PS_PTIA_DCAEPGMS
ACTIVE_FLAG	Active Flag Copied from PS_PTIA_DCAEPGMS
PTIA_RUNDURATION	Elapsed time for this section to run during data conversion
PTIA_RUNSTATUSFLAG	Run Status Flag (Y-complete, N-not run yet, R-Running, F-Failed)
PTIA_GUID	GUID generated by the Data Conversion runtime engine

PS_PTIA_ANALYSIS

This is the main analysis table. The Application Engine Analyzer (PTIAANALYSIS) writes a row to this table for every Action in each Root Section of the specified upgrade path.

COLUMN	DESCRIPTION
PTIA_UPG_PATH	Upgrade Path copied from PS_PTIA_DCAEPGMS
PTIA_DBTYPE	Stores the text equivalent of the standard DBTYPE codes
PTIA_UPG_GROUP	Upgrade Group
PTIA_UPG_GROUP_LVL	Upgrade Group Level
PTIA_UPG_CONV_TYPE	Conversion type: MAIN or DDL
SEQ_NUM	Upgrade Sequence copied from PS_PTIA_DCAEPGMS
PTIA_TOPAEAPPLID	Upgrade Application Engine copied from PS_PTIA_DCAEPGMS
PTIA_TOPAESECTN	Upgrade Application Engine Section copied from PS_PTIA_DCAEPGMS
PTIA_TOPAESTEP	Upgrade Section Step
PTIA_TOPAESEQNUM	Upgrade Section Sequence Number
PTIA_AELEVEL	Nesting level for Call Section
AE_APPLID	Actual Application Engine Program (same as PTIA_TOPAEAPPLID if PTIA_AELEVEL is 1)
AE_SECTION	Actual Section (same as PTIA_TOPAESECTN if PTIA_AELEVEL is 1)

COLUMN	DESCRIPTION
AE_STEP	Actual Step (same as PTIA_TOPAESTEP if PTIA_AELEVEL is 1)
AE_SEQ_NUM	Actual Seq Num (same as PTIA_TOPAESEQNUM if PTIA_AELEVEL is 1)
MARKET	Market
DBTYPE	DBTYPE
AE_DO_SECTION	If Step Action is Call Section, then this is the section to be called
AE_DO_APPL_ID	If Step Action is Call Section, then this is the program to be called
AE_DYNAMIC_DO	Indicates the Call Section is a dynamic call section
STEP_DESCR	Step Description
AE_STMT_TYPE	Action Type e.g. S-SQL, P-PeopleCode, D-DoSelect, H-DoWhen etc
PTIA_STMTTYPENUM	Numeric identified for AE_STMT_TYPE (used for ordering step actions)
PTIA_AESTMTSEQ	Sequence used to order the steps actions for the whole upgrade
AE_REUSE_STMT	Standard Application Engine Reuse Statement flag
AE_DO_SELECT_TYPE	Standard Application Engine Do Select Type
DETAIL_ID	Section.Step.Action identifier used as a key to most PTIA tables
PTIA_INFO1	Extra Information mostly related to FUNCLIB calls
PTIA_INFO2	Extra Information mostly related to FUNCLIB calls
PTIA_INFO3	Extra Information mostly related to FUNCLIB calls
PTIA_INFO4	Extra Information mostly related to FUNCLIB calls
PTIA_INFO5	Extra Information mostly related to FUNCLIB calls
SQLID	For SQL step, the SQLID of the SQL this step action executes
PTIA_STMTDESCR	Description copied from Application Engine Step Description

COLUMN	DESCRIPTION
PTIA_HASPARENTS	This Step has dependencies on other one or more other Steps
PTIA_HASCHILDREN	One or more other Steps have a dependency on this step
PTIA_HASWHERE	The SQL has a where clause – Mostly used by PeopleSoft Development

PS_PTIA_DTLIDSQLS

This table holds a reference to every SQL in the conversion code for the specified upgrade path.

COLUMN	DESCRIPTION
PTIA_GUID	GUID generated by the Data Conversion runtime engine
DETAIL_ID	Section.Step.Action identifier used as a key to most PTIA tables
AE_APPLID	Actual Application Engine Program
DBTYPE	DBTYPE
PTIA_UPG_PATH	Upgrade Path copied from PS_PTIA_DCAEPGMS
PTIA_DBTYPE	Text equivalent of the standard DBTYPE codes
PTIA_UPG_CONV_TYPE	Conversion type: MAIN or DDL
PTIA_SQLNUM	SQL Number, for peoplecode there may be many SQL statements
PTIA_AESTMTLEN	Length of the text of the SQL statement
PTIA_OBJ_TYPE	S-SQL or P-PeopleCode
TABLE_NAME	Main Table in the SQL Statement, Blank if SQL is SELECT with many tables
PTIA_DMLACTION	INSERT, UPDATE, DELETE, SELECT etc
PTIA_LINENUM	Refers to the PeopleCode line number where the SQL is defined
PTIA_SQLPASSDPARSE	Indicates whether SQL parser was able to successfully parse the SQL statement
DESCR254	Description column

COLUMN	DESCRIPTION
PTIA_PARAMCLAUSE	Bind variable used in the SQL
PTIA_INFO1	Extra Information mostly related to FUNCLIB calls
PTIA_INFO2	Extra Information mostly related to FUNCLIB calls
PTIA_INFO3	Extra Information mostly related to FUNCLIB calls
PTIA_INFO4	Extra Information mostly related to FUNCLIB calls
PTIA_INFO5	Extra Information mostly related to FUNCLIB calls
PTIA_CHUNKSEQ	Statement Chunk Sequence
PTIA_TEXTCHUNK	Statement executed by this Step

PS_PTIA_DTLIDSQLSR

This table differs slightly from the PS_PTIA_DTLIDSQLS table in that the SQL statement has been fully resolved into platform-specific SQL. This makes it much easier to see what is happening in the SQL.

COLUMN	DESCRIPTION
PTIA_GUID	GUID generated by the Data Conversion runtime engine
DETAIL_ID	Section.Step.Action identifier used as a key to most PTIA tables
AE_APPLID	Actual Application Engine Program
DBTYPE	DBTYPE
PTIA_UPG_PATH	Upgrade Path copied from PS_PTIA_DCAEPGMS
PTIA_DBTYPE	Text equivalent of the standard DBTYPE codes
PTIA_UPG_CONV_TYPE	Conversion type: MAIN or DDL
PTIA_SQLNUM	SQL Number, for PeopleCode there may be many SQL statements
PTIA_CHUNKSEQ	Statement Chunk Sequence
PTIA_TEXTCHUNK	Statement executed by this Step

PS_PTIA_DTLIDTBLS

This table holds a reference to every SQL in the conversion code for the specified upgrade path and which Tables or Records are in use for each piece of SQL.

COLUMN	DESCRIPTION
PTIA_GUID	GUID generated by the Data Conversion runtime engine
DETAIL_ID	Section.Step.Action identifier used as a key to most PTIA tables
AE_APPLID	Actual Application Engine Program
PTIA_UPG_PATH	Upgrade Path copied from PS_PTIA_DCAEPGMS
PTIA_DBTYPE	Text equivalent of the standard DBTYPE codes
PTIA_UPG_CONV_TYPE	Conversion type: MAIN or DDL
PTIA_SQLNUM	SQL Number, for peoplecode there may be many SQL statements
RECNAME	Record Name
TABLE_NAME	Associated Table Name
PTIA_TABLEUSAGE	T-Target, S-Source
PTIA_TABLETYPE	R-Record, S-State Record, U-Upgrade Table, V-View, T-TempTable
PTIA_INFO1	Extra Information mostly related to FUNCLIB calls
PTIA_INFO2	Extra Information mostly related to FUNCLIB calls
PTIA_INFO3	Extra Information mostly related to FUNCLIB calls
PTIA_INFO4	Extra Information mostly related to FUNCLIB calls
PTIA_INFO5	Extra Information mostly related to FUNCLIB calls

PS_PTIA_STEPDEPEND

By querying PS_PYIA_DTLIDTBLS and PS_PTIA_ANALYSIS, it is possible to determine which steps have dependencies and what those dependencies are.

COLUMN	DESCRIPTION
PTIA_UPG_PATH	Upgrade Path copied from PS_PTIA_DCAEPGMS

COLUMN	DESCRIPTION
PTIA_DBTYPE	Text equivalent of the standard DBTYPE codes
PTIA_UPG_CONV_TYPE	Conversion type: MAIN or DDL
PTIA_P_UPG_GROUP	Parent Data Conversion Group
PTIA_P_UPGGRPLVL	Parent Data Conversion Group Level
PTIA_P_SEQNUM	Parent Application Engine Section Sequence Number
PTIA_P_TOPAEAPPLID	Parent Data Conversion Application Engine Program
PTIA_P_TOPAESECTN	Parent Data Conversion Application Engine Section
PTIA_P_TOPAESTEP	Parent Data Conversion Application Engine Step
PTIA_P_TOPAESEQNUM	Parent Data Conversion Application Engine Step Sequence
PTIA_P_AEAPPLID	Parent Application Engine Program
PTIA_P_AESECTION	Parent Application Engine Section
PTIA_P_AESTEP	Parent Application Engine Step
PTIA_P_AESEQNUM	Parent Application Engine Step Sequence within the Section
PTIA_P_AESTMTSEQ	Parent Application Engine Step Sequence across whole upgrade
PTIA_P_DETAILID	Parent Application Engine Step Detail ID
PTIA_P_SQLNUM	Parent Application Engine Detail ID SQL Sequence
PTIA_C_UPG_GROUP	Child Data Conversion Group
PTIA_C_UPGGRPLVL	Child Data Conversion Group Level
PTIA_C_SEQNUM	Child Application Engine Section Sequence Number
PTIA_C_TOPAEAPPLID	Child Data Conversion Application Engine Program
PTIA_C_TOPAESECTN	Child Data Conversion Application Engine Section
PTIA_C_TOPAESTEP	Child Data Conversion Application Engine Step
PTIA_C_TOPAESEQNUM	Child Data Conversion Application Engine Step Sequence
PTIA_C_AEAPPLID	Child Application Engine Program

COLUMN	DESCRIPTION
PTIA_C_AESECTION	Child Application Engine Section
PTIA_C_AESTEP	Child Application Engine Step
PTIA_C_AESEQNUM	Child Application Engine Step Sequence within the Section
PTIA_C_AESTMTSEQ	Child Application Engine Step Sequence across whole upgrade
PTIA_C_DETAILID	Child Application Engine Step Detail ID
PTIA_C_SQLNUM	Child Application Engine Detail ID SQL Sequence
PTIA_TABLENAME	Common table referenced by the parent and child step
PTIA_P_TABLEUSAGE	Parent table usage T-Target, S-Source
PTIA_C_TABLEUSAGE	Child table usage T-Target, S-Source

PS_PTIA_ SECDEPEND

This table is an aggregation of PS_PTIA_STEPDEPEND to the Section level.

COLUMN	DESCRIPTION
PTIA_UPG_PATH	Upgrade Path copied from PS_PTIA_DCAEPGMS
PTIA_DBTYPE	Text equivalent of the standard DBTYPE codes
PTIA_UPG_CONV_TYPE	Conversion type: MAIN or DDL
PTIA_P_UPG_GROUP	Parent Data Conversion Group
PTIA_P_UPGGRPLVL	Parent Data Conversion Group Level
PTIA_P_TOPSEQNUM	Parent Application Engine Section Sequence Number
PTIA_P_TOPAEAPPLID	Parent Data Conversion Application Engine Program
PTIA_P_TOPAESECTN	Parent Data Conversion Application Engine Section
PTIA_P_AESTMTSEQ	Parent Application Engine Step Sequence across whole upgrade
PTIA_C_UPG_GROUP	Child Data Conversion Group
PTIA_C_UPGGRPLVL	Child Data Conversion Group Level

COLUMN	DESCRIPTION
PTIA_C_TOPSEQNUM	Child Application Engine Section Sequence Number
PTIA_C_TOPAEAPPLID	Child Data Conversion Application Engine Program
PTIA_C_TOPAESECTN	Child Data Conversion Application Engine Section
PTIA_C_AESTMTSEQ	Child Application Engine Step Sequence across whole upgrade
PTIA_DEPENDSOURCE	Dependency Rule
PTIA_DEPENDRULE	DEPENDENT or INDEPENDENT
PTIA_EXCLUDEFLAG	Indicates whether this dependency should be excluded from the runtime dependency calculation

PS_PTIA_RUNDEPEND

This table represents the section dependency model. You can query this table for any given data conversion Application Engine Section to determine what it depends on and what depends on it. The runtime data conversion Application Engine (PTIADATACONV) uses this table to determine which sections are eligible to run.

COLUMN	DESCRIPTION
PTIA_UPG_PATH	Upgrade Path copied from PS_PTIA_DCAEPGMS
PTIA_DBTYPE	Text equivalent of the standard DBTYPE codes
PTIA_P_UPG_GROUP	Parent Data Conversion Group
PTIA_P_TOPSEQNUM	Parent AE Section Sequence Number
PTIA_P_TOPAEAPPLID	Parent Data Conversion AE Program
PTIA_P_TOPAESECTN	Parent Data Conversion AE Section
PTIA_C_UPG_GROUP	Child Data Conversion Group
PTIA_C_TOPSEQNUM	Child AE Section Sequence Number
PTIA_C_TOPAEAPPLID	Child Data Conversion AE Program
PTIA_C_TOPAESECTN	Child Data Conversion AE Section
PTIA_DEPTH	Dependency Nesting

Reviewing Dependency Analysis

This section discusses:

- Understanding Dependency Analysis
- Reviewing Data Conversion Runtime Rules

Understanding Dependency Analysis

The table usage information identified in the Initial Analysis is subsequently used to determine the dependencies between AE Steps. The Step Dependency Information is then aggregated to the "Root Section" level where a Root Section is defined as a row in the PS_PTIA_DCAEPGMS table (PTIA_UPG_PATH, PTIA_UPG_GROUP, SEQ_NUM, AE_APPLID, AE_SECTION, ACTIVE_FLAG, PTIA_CONV_TYPE, PTIA_UPG_GROUP_LVL).

Reviewing Data Conversion Runtime Rules

The following rules are the data conversion runtime rules:

- Dependencies are derived from tables referenced in SQL or PeopleCode actions in Upgrade Sections.
- Dependencies follow the Upgrade Group sequencing. If Section ABC in Upgrade Group 1 updates a given table, then any Section assigned a higher sequence than ABC that updates or queries that same table cannot run until Section ABC is complete.
- Upgrade groups are further grouped into levels. For example, objects defined in Level 2 are dependent on objects defined in Level 1. Additionally, objects defined in Level 3 are dependent on objects defined in Level 1 and Level 2.
- Upgrade groups within the same level do not depend on each other. If Section QWE in Upgrade Group 2 updates table FFF and Section ASD in Upgrade Group 3 also updates table FFF and Upgrade Groups 2 and 3 are at the same level, there is no dependency created.
- Upgrade groups create dependencies on sections within their own upgrade group and upgrade groups of lower levels. If Section ABC in Upgrade Group 1 updates table FFF and Section QWE in Upgrade Group 2 also updates table FFF, and Upgrade Group 1 is in a lower level than Upgrade Group 2, then Section QWE becomes dependent on Section ABC.
- Tables as sources do not create dependencies. If Section ZXC in Upgrade Group 1 selects from table FFF, and then Section BNM in Upgrade Group 1 also selects from table FFF, no dependency is created.
- If a Section has a SQL statement that PTIAANALYSIS cannot understand, the SQL is flagged as non parsable from the parser point of view (the Data Conversion will still run fine) and a hard dependency is created. This means for every Section with a query that cannot be parsed, it becomes dependent on every Section sequentially above it in its Upgrade Group, and on every Section in Upgrade Group 1. Furthermore, every Section sequentially afterward becomes dependent on it.
- Usage of the PS_PTIA_DUAL, PS_PTIA_COMMON_AET, or PS_PTIA_NORECNAME tables never results in a dependency.

Example of Dependency Rules Calculation

In the following example, the highlighted row (with values in *italics*) would be dependent on itself and all items in Level's MAIN-1 and MAIN-2, but not the other items in Level MAIN-3 nor items in Level DDL-1.

PATH	***GROUP***	***SEQ_NUM***	***AE_APPLID***	***AE_SECTION***	***PTIA_CONV_ TYPE***	***GROUP_ LEVEL***
HC89	1	260	UPG_HR89	HCHRS01	MAIN	1
HC89	1	265	UPG_FG89	FGHCS01	MAIN	1
HC89	3	230	UPG_BN89	HCBNS06	MAIN	2
HC89	4	165	UPG_GPBR90	HCBRP040	MAIN	2
HC89	7	40	UPG_EP89	HCEPS25	MAIN	2
HC89	7	50	UPG_EP89	HCEPS30	MAIN	2
HC89	10	20	UPG_TL89	HCTLK01	MAIN	2
HC89	80	140	UPG_TL90	HCTLP04	MAIN	3
HC89	80	160	UPG_TL90	HCTLP06	MAIN	3
HC89	*85*	*170*	*UPG_PY90*	*HCPYM01*	*MAIN*	*3*
HC89	85	180	UPG_PY90	HCPYP01	MAIN	3
HC89	10	200	UPG_PY90	HCPYP09	DDL	1
HC89	10	210	UPG_PY90	HCPYP10	DDL	1

Reviewing Runtime for PTIADATACONV

This section discusses:

- Understanding Runtime for PTIADATACONV
- Querying the PTIA Tables

Understanding Runtime for PTIADATACONV

All runtime information for PTIADATACONV is stored in the following tables:

- PS_PTIA_DATACONV
- PS_PTIA_RUNSTATUS
- PS_PTIA_RUNDETAIL
- PS_PTIA_RUNCOUNT

The PTIADATACONV Application Engine leverages the Dependency Analysis to optimize the runtime of the data conversion. The runtime of the data conversion is improved in the new PeopleSoft release by

running multiple instances of PTIADATACONV in parallel, executing against a single set of dependency information. The optimal number of instances to be initiated will vary.

PTIADATACONV determines which “Root Sections” are able to run and executes them. A Root Section is able to run when all Root Sections that are dependent on it have completed successfully.

In the event that multiple root sections are able to run at the same time, steps that have the largest number of dependent Root Sections and/or Root Sections that have the longest runtime (in a previous run), are given priority.

In the event of failure, the instance of PTIADATACONV that encountered the error will mark the step as “Failed” and stop. All other instances of PTIADATACONV will continue to run. Steps that are dependent on a “Failed” step will be marked as “Blocked” and will not be executed as part of the current run. Upon restarting the process, the “Failed” section and any “Blocked” sections will be executed.

The following list describes the PTIADATACONV program flow:

- The run is initialized.

  This initial phase determines if this is a brand new run or if it is a restart of a previously failed run. If it is a new run, then PTIADATACONV sets up a thread in PS_PTIA_RUNSTATUS.

- PTIADATACONV performs a simple test to verify that there is work to do.

  If there is work to do, then PTIADATACONV runs Data Conversion Application Engine Sections that have not already run. This is a fairly simple Do While loop that counts eligible sections left to run. If there are no more sections left to run, processing stops. The work inside the loop consists of executing a process to check the status of any other thread that is running. If a thread dies, it cannot clean itself up, so one of the other threads has to perform the cleanup. The cleanup mostly consists of setting the status flag in PS_PTIA_DATACONV to “F” for the AE Section that failed.

- SQLs run to look for work to do.

  The SQL object PTIA_FINDSECTIONTORUN finds the next eligible section to run. If the query returns nothing, we execute another SQL object called PTIA_COUNTSECTIONSNOTDONE to count how many Sections are left to run. If PTIA_FINDSECTIONTORUN returns no work to do and PTIA_COUNTSECTIONSNOTDONE returns Sections still need to be run, then there must be a Section already running that must complete before anything else can run. If there is no work to do, the loop issues a pause before the loop completes and executes the next loop.

- PTIADATACONV performs more housekeeping to reset statuses on successful completion of all Data Conversion Application Engine Sections.

- A completion message is written to the log file.

Reviewing PTIA Reporting

This section discusses:

- Understanding PTIA Reporting
- Reviewing the Tables Referenced Report
- Reviewing the Customization Impacts Report
- Reviewing Execution Report by Section – Duration

- Reviewing Execution Report by Section – Start Time
- Reviewing the Execution Report by Step
- Reviewing the Execution by Thread Report
- Reviewing the Thread Duration Report
- Reviewing the Execution Comparison Report
- Reviewing the Table Analysis Report
- Reviewing the Data Conversion Report

Understanding PTIA Reporting

You can query all tables populated and leveraged by PTIA (as identified previously) through the various platform specific query tools or psquery. You can gather information in the PTIA tables to identify the following:

- Tables referenced in the data conversion code.
- Steps impacted by customizations (prior to the initial data conversion run).
- Performance issues (after the initial data conversion run).
- Impact of changes (run to run timing comparisons).

Oracle has delivered a series of standard reports to address the most commonly accessed information in the PTIA repository.

Reviewing the Tables Referenced Report

PTIA0001.SQR lists all tables referenced within the Application Engine data conversion programs. For each table listed, the report displays the section and step in which it is used, whether it is a data source or data target table, and the type of SQL statement in which it is referenced. This report is sorted by table name. Data for this report comes from the PS_PTIA_ANALYSIS, PS_PTIA_DTLIDSQLS, and PS_PTIA_DTLIDTBLS tables. This report can be run anytime after the PTIAANALYSIS Application Engine program has run and populated the PTIA tables used by this SQR.

Reviewing the Customization Impacts Report

PTIA0002.SQR shows the section/steps within the Application Engine data conversion programs that referenced tables with custom added fields. This report is sourced from the PS_PTIA_ANALYSIS table and the PSPROJECTITEM table. This report must be run after the customizations project has been compared against the New Release Demo database.

Reviewing Execution Report by Section – Duration

PTIA0003.SQR shows the duration or execution time for each Application Engine section. Since this report is at a section level, the information is sourced from the PS_PTIA_RUNDETAIL table. The report is ordered by execution time with the poorest performing steps at the top. This report can be run anytime after the PS_PTIA_RUNDETAIL table has been populated for the data conversion run on which you want to report.

Reviewing Execution Report by Section – Start Time

PTIA0004.SQR shows the duration or execution time for each section. Since this report is at a section level, the information will be sourced from the PS_PTIA_RUNDETAIL table. The report would be ordered by start time so that you can see the order in which the sections were executed. This report can be run anytime after the PS_PTIA_RUNDETAIL table has been populated for the data conversion run on which you want to report.

Reviewing the Execution Report by Step

PTIA0005.SQR shows the execution time for each section and the associated steps that were run.

This report requires a trace of 16,384 or higher.

Since this report is at a step level, it assumes that a trace of 16,384 or higher has been run so that the step information could be obtained from the PS_PTIA_TIMINGS_DT table. If the appropriate trace has not been run, then a report is not created and output files will be produced. The report will be ordered by execution time with the poorest performing steps at the top.

Reviewing the Execution by Thread Report

PTIA0006.SQR shows the execution timing of each Application Engine section run as part of the data conversion process. This report is sorted so that you can see which sections were executed by each thread. This report is sourced from the PS_PTIA_RUNDETAIL table.

Reviewing the Thread Duration Report

PTIA0007.SQR shows the total duration time for each thread used during the data conversion process. This report is sourced from the PS_PTIA_RUNDETAIL table. It can be run anytime after the PS_PTIA_RUNDETAIL table has been populated from the data conversion run on which you want to report.

Reviewing the Execution Comparison Report

PTIA0008.SQR shows the execution duration from the current run of data conversion as compared to the execution duration from the previous run of data conversion. This report is sourced from the PS_PTIA_RUNDETAIL table. This report can be run anytime after the PS_PTIA_RUNDETAIL table has been populated for the data conversion runs on which you want to report.

Reviewing the Table Analysis Report

PTIA0009.SQR indicates how a particular application table is impacted by the create/alter scripts as well as the data conversion process during the PeopleSoft upgrade. This report is sourced from the PS_PTUALTRECDATA, PS_PTUALTRECFLDDAT, PS_PTIA_ALTRECDATA, PS_PTIA_ANALYSIS, and PS_PTIA_DTLIDTBLS tables. This report can be run after the Alter Analyzer and the AE Analyzer processes have successfully completed. This report is designed to be run against the initial pass database as the data stored in the tables during the Move to Production will differ.

Reviewing the Data Conversion Report

Each of the upgrade data conversion sections contains comments that describe the processing performed by the section. Oracle delivered an SQR (PTIA0010.sqr) to list all of these comments by the group and sequence numbers that determine how they run. The name of this report is PTIA0010.

To run PTIA0010:

1. Using SQRW, run SQR PTIA0010 on your copy of Production database.
2. When prompted for upgrade path, enter (for example):

   HC90

   CR90

   CR91

Using the Upgrade Driver Program

The sequence of Application Engine sections that are run by an upgrade driver is maintained in the PS_PTIA_DCAEPGMS table. The Application Engine sections defined in the PS_PTIA_DCAEPGMS table are referred to as *root sections*.

There are two categories of Upgrade Groups:

- MAIN – Core Data Conversion
- DDL – Data Conversion sections that contain Drop Table Statements (only)

Upgrade groups contain one or more Application Engine sections that are ordered within the group by sequence number. The Application Engine program PTIADATACONV is used to execute the MAIN and the DDL data conversion groups.

When data conversion is executed using the PTIADATACONV Application Program, the sequence number is used to determine the “Relative Run Order” of Application Engine sections that reference the same table or tables, but not the “Absolute Run Order” of the upgrade group(s).

This section discusses:

- Defining an Upgrade Path
- Accessing the Define Data Conversion Page

Defining an Upgrade Path

Before you can define data conversion sections, you must define an upgrade path.

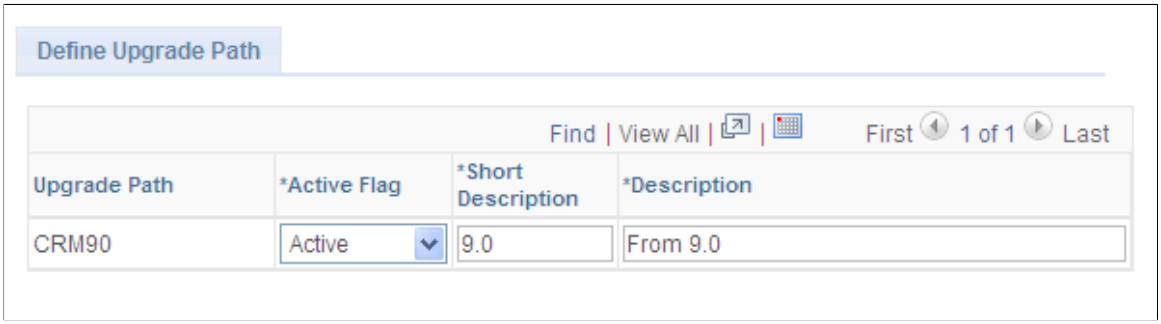
To define an upgrade path:

1. From your browser, sign in to the Demo database.
2. Select PeopleTools, Lifecycle Tools, Upgrades, Define Upgrade Paths.
3. The Define Upgrade Path page appears.
4. Click theAdd a New Value tab.
5. Enter a value for Upgrade Path.
6. Click Add.
7. Select a value for Active Flag.

8. Enter description for the new upgrade path.
9. Click Save.

Image: Define Upgrade Path page

This example illustrates the fields and controls on the Define Upgrade Path page.



After you have defined an upgrade path, you can add sections for the upgrade path on the Define Data Conversion page.

Accessing the Define Data Conversion Page

Before you run data conversion, you may need to change what the Upgrade Driver program runs. You can add, remove, or deactivate Application Engine sections through the Define Data Conversion page.

To access the Define Data Conversion page:

1. From your browser, sign in to the Demo database.
2. Select PeopleTools, Lifecycle Tools, Upgrades, Define Data Conversion.
3. The Define Data Conversion page appears.
4. Enter your upgrade path.

   For example:

   HC90

   CR90

5. Click Search.

The Define Data Conversion page displays information for the selected upgrade path, as shown in the example below. Following the example of the Define Data Conversion page are descriptions for each section of the page.

Image: Define Data Conversion page

This example illustrates the fields and controls on the Define Data Conversion page. You can find definitions for the fields and controls later on this page.

Define Data Conversion

Personalize | Find | View 100 | First 1-25 of 167 Last

Upgrade Path	*Program Name	*Group Number	*Group Level	*Conv Type	*Section	*Sequence	*Active Flag	Short Description	Long Descr
HC90	UPG_HR90	1	2	Main	HCHRL01	5	Active	HR_SUCC_PLN_HDR	Long Descr
HC90	UPG_HR90	1	2	Main	HCHRL02	10	Active	HR_SUCC_PLN_DTL	Long Descr
HC90	UPG_HR90	1	2	Main	HCHRL03	15	Active	CAREER_DEVELOP	Long Descr
HC90	UPG_HR90	1	2	Main	HCHRL04	20	Active	CAREER_STRENGTH	Long Descr
HC90	UPG_HR90	1	2	Main	HCHRL05	25	Active	CAREER_WEAKNESS	Long Descr
HC90	UPG_HR90	1	2	Main	HCHRL06	30	Active	CAREERPATH_TBL	Long Descr
HC90	UPG_HR90	1	2	Main	HCHRL07	35	Active	SEQUENCE/VALUE fields	Long Descr
HC90	UPG_HR90	1	2	Main	HCHRL08	40	Active	STATEMENT fields	Long Descr
HC90	UPG_HRFR90	1	2	Main	HCFRL01	45	Active	Updating EDIT_2483_FRA	Long Descr
HC90	UPG_HC90	1	2	Main	HCHCL01	50	Active	PS_EMPL_CHECK_LANG	Long Descr
HC90	UPG_HC90	1	2	Main	HCHCL02	55	Active	PS_MU_SETUP_TBL	Long Descr
HC90	UPG_HC90	1	2	Main	HCHCL101	60	Active	PS_ADDRESSES	Long Descr
HC90	UPG_HC90	1	2	Main	HCHCL102	65	Active	PS_EMAIL_ADDRESSES	Long Descr
HC90	UPG_HC90	1	2	Main	HCHCL103	70	Active	PS_ACTN_REASON_BRA	Long Descr
HC90	UPG_HC90	1	2	Main	HCHCL104	75	Active	PS_ACT_RSN_TBL_ESP	Long Descr
HC90	UPG_HC90	1	2	Main	HCHCL105	80	Active	PS_PER_ORG_ASGN	Long Descr
HC90	UPG_HC90	1	2	Main	HCHCL07	85	Active	OWS/Clairvia upgrade	Long Descr
HC90	UPG_HC90	1	2	Main	HCHCL108	95	Active	PS_RUN_CNTL_SCRTYxx	Long Descr
HC90	UPG_HC90	1	2	Main	HCHCL12	100	Active	PS_EMPL_CHKLST_ITM	Long Descr
HC90	UPG_HC90	1	2	Main	HCHCL03	105	Active	PS_JOB	Long Descr
HC90	UPG_HC90	1	2	Main	HCHCL04	110	Active	PS_DIVERSITY	Long Descr

Upgrade Path This field contains the upgrade path on which the section will be run.

Program Name This is the Application Engine program that contains the section.

Group Number This is the group number. All sections with the same group number will be run during the same run of the PTIA_DATACONV Application Engine program

Group Level This is the group level.

Conv Type This is the conversion type. PTIA supports two categories: MAIN and DDL

Section This is the section that will be called from the PTIA_DATACONV Application Engine program.

Sequence This is the order in which the sections will be called during the run of PTIA_DATACONV for the group number.

Active Flag This field determines whether the section will be run. If the value of this field is *Active*, the section will be run. If the

	value is *Inactive*, it will not be run. If you need to remove a section, change the value in this field to *Inactive*.
Short Description	This field contains the Section description.
Long Descr	This field is optional.

This section also discusses:

- Adding a new Section on the Define Data Conversion Page
- Inactivating a Section on the Define Data Conversion Page

Adding a new Section on the Define Data Conversion Page

Follow the instructions below to add a new section to the Define Data Conversion page.

Note: To add a new section, the Application Engine program and section must exist on the Demo database.

To add a new section to the Define Data Conversion page:

1. From your browser, sign in to the Demo database.
2. Select PeopleTools, Lifecycle Tools, Upgrades, Define Data Conversion.
3. The Define Data Conversion page appears.
4. Enter your upgrade path.

   For example:

   HC90

   CR90
5. Click Search.

   The Define Data Conversion page displays information for the selected upgrade path.
6. Add a new row.
7. Select a value for Program Name.
8. Enter a value for Group Number.

   Note: Each group number corresponds to a data conversion step in the PeopleSoft Change Assistant template. If you select a group number that already exists in the PS_PTIA_DCAEPGMS table, your section will be executed when PeopleSoft Change Assistant runs the data conversion step that corresponds to the group number you selected. Alternatively, if you assign a group number to your new section that does not already exist in PS_PTIA_DCAEPGMS, you must add a new step to your PeopleSoft Change Assistant template. The new template step will have the same properties as the other data conversion steps, except for the group number specified in the step properties Parameters box.

   ---

9. Enter values for Group Level and Conv Type.
10. Select a value for Sectionand enter value for Sequence.
11. Select a value for Active Flag.
12. The Short Descriptionfield is populated from the Section description. The Long Descrfield is optional.
13. Click Save.

Inactivating a Section on the Define Data Conversion Page

Follow the instructions below to deactivate a section on the Define Data Conversion page. If a section is deactivated, the section will not run as part of data conversion.

To inactivate a section on the Define Data Conversion page:

1. From your browser, sign in to the Demo database.
2. Select PeopleTools, Lifecycle Tools, Upgrades, Define Data Conversion.
3. The Define Data Conversion page appears.
4. Enter your upgrade path.

   For example:

   HC90

   CR90
5. Click Search.
6. Find the row with the Program Name and Section you want to remove and change the value of the Active Flag field to *Inactive*.
7. Click Save.

Part VI

Comparing and Merging

Chapter 20

Using Review Managed Object or Merge Select Object Types Action

Comparing and Copying Managed Objects Overview

You create and maintain upgrade projects using the Application Designer project management features. Many of the same features are accessible through Project Administration in Change Assistant. Projects can be viewed and copied and compare reports can be executed and viewed either through Change Assistant Project Administration or Application Designer.

Related Links

"Using Projects" (PeopleTools 8.54: Application Designer Developer's Guide)

"Preparing Projects for an Upgrade" (PeopleTools 8.54: Application Designer Lifecycle Management Guide)

"Setting Project Properties" (PeopleTools 8.54: Application Designer Developer's Guide)

Administering Projects

To access the Administering Projects tool:

1. In Change Assistant, select Tools, Change Actions.
2. Select Review Managed Object or Merge Select Object Types.
3. Click Next and select Compare/Copy Managed Objects.
4. Click Finish and select the environment to use from the list.

   Note: The environment and all associated DLLs for the PS Home are loaded. The environment does not have to be on the same PeopleTools release as Change Assistant.

   If the environment has not been created, you will need to create the database .

   a. Click Cancel on the Select Environment page.
   b. Select Tools, New Database.
   c. Define the database.

      See Defining Databases

   d. Select Tools, Project Administration.
   e. Select the database from the list.

5. Select File, Open to open an existing definition. Definition types are:

Managed Object Compare Select this option to open the compare reports for a project. Only compare reports created with the option *Generate Output to Tables* are available from the drop down list.

Project Select this option to display the project status and actions.

You can open projects that have been created in Application Designer.

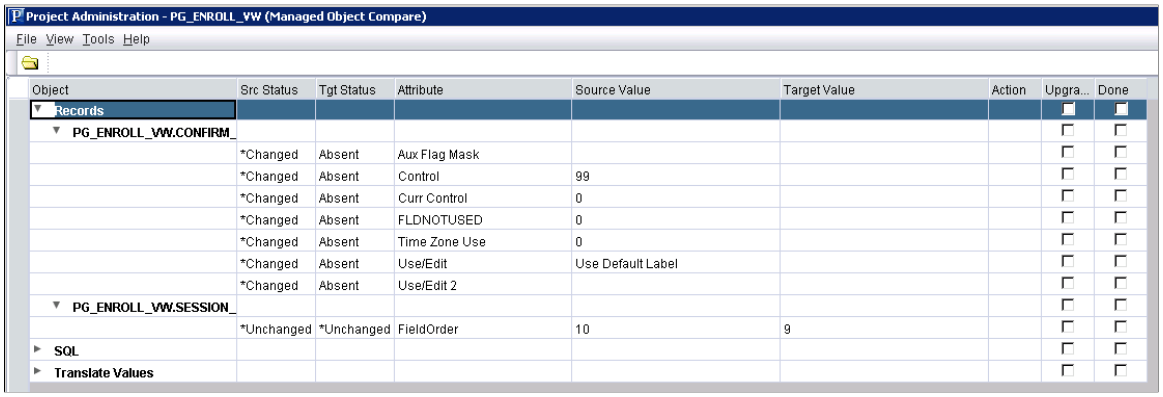
If you are already in Review Managed Object or Merge Select Object Types action, you can open the Project Administration menu from the toolbar by selecting Tools, Project Administration.

Viewing Managed Object Compare Reports

When you select the Managed Object Compare and select a project, the compare report is displayed. You can expand and collapse the objects to display.

Image: Managed Object Compare page

This example illustrates the fields and controls on the Managed Object Compare page. You can find definitions for the fields and controls later on this page.



Object	Src Status	Tgt Status	Attribute	Source Value	Target Value	Action	Upgra...	Done
Records								
PG_ENROLL_VW.CONFIRM_								
	*Changed	Absent	Aux Flag Mask					
	*Changed	Absent	Control	99				
	*Changed	Absent	Curr Control	0				
	*Changed	Absent	FLDNOTUSED	0				
	*Changed	Absent	Time Zone Use	0				
	*Changed	Absent	Use/Edit	Use Default Label				
	*Changed	Absent	Use/Edit 2					
PG_ENROLL_VW.SESSION_								
	*Unchanged	*Unchanged	FieldOrder	10	9			
SQL								
Translate Values								

The Project Administration interface can logically be divided into three areas for the compare report:

1. Project-based data
2. Compare results
3. Copy actions

Project-Based Data

These columns display details for definitions in the compare project:

Object Displays the name of the definition, plus any other key values, in a hierarchical tree view.

Src (Source) Status Displays the definition status in the source (current) database.

Tgt (Target) Status Displays the definition status in the source (current) database.

Definition Status

By default, Source Status and Target Status are set to Unknown.

Following a compare, the values in the Source Status and Target Status columns are updated as follows:

Unknown	Definition has not been compared. This is the default status for all definitions inserted manually into a project and the permanent status of all non-comparison definitions.
Absent	The definition was found in the other database, but not in this one. When upgrading to a new PeopleSoft release, all new PeopleSoft definitions should have Absent status in the target database and all of your custom definitions should have Absent in the source database.
Changed	The definition has been compared, the LASTUPDOPRID value is PPLSOFT, and the LASTUPDDTM value is greater than the date/time stamp of the comparison release database. This indicates that PeopleSoft modified the definition since the comparison release.
Unchanged	The definition has been compared, the LASTUPDOPRID value is PPLSOFT, and the LASTUPDDTM value is less than or equal to the date/time stamp of the comparison release database. This indicates that PeopleSoft modified the definition prior to the comparison release.
***Changed**	The definition has been compared, the LASTUPDOPRID value is *not* PPLSOFT, and the LASTUPDDTM value is greater than the date/time stamp of the comparison release database. This indicates that a customer modified the definition since the comparison release.
***Unchanged**	The definition has been compared, the LASTUPDOPRID value is *not* PPLSOFT, and the LASTUPDDTM value is less than or equal to the date/time stamp of the comparison release database. This indicates that a customer modified the definition prior to the comparison release.
Same	The definition has been compared and is defined the same in both databases. When a definition in one database has this status its counterpart in the other database will have the equivalent status. This status can be seen when performing a project comparison because with a project comparison the definitions are static; the project is not repopulated based on the comparison results. This status is not seen in a database comparison, because when doing so the project is populated only with definitions defined differently.

See "Working with Definition Status" (PeopleTools 8.54: Application Designer Lifecycle Management Guide).

Compare Results

The following table describes the columns that display compare results.

Attribute	The attribute of the definition being compared.
Source Value	The value for the attribute in the source database.
Target Value	The value for the attribute in the target database.

Copy Actions

By default Action is set to Copy and Upgrade is checked.

The following table describes the columns that enable you to specify copy actions.

Action	Displays the action that is performed if the definition is copied into the target database.
Upgrade	Select to upgrade the definition during a copy.
Done	The system changes the Done checkbox to selected when the definition has been copied. You cannot select Done check boxes yourself, but you can deselect them. Only definitions that have Upgrade selected and Done deselected are copied during an upgrade.

See "Working with Upgrade Definition Columns" (PeopleTools 8.54: Application Designer Lifecycle Management Guide).

Filtering

Select View, Filtering to define filters for the Source or Target status column.

Select View, Filtering to filter the listed items based on the following statuses for either source or target:

- Absent
- Changed
- Changed*
- Same
- Unchanged
- Unchanged*
- Unknown

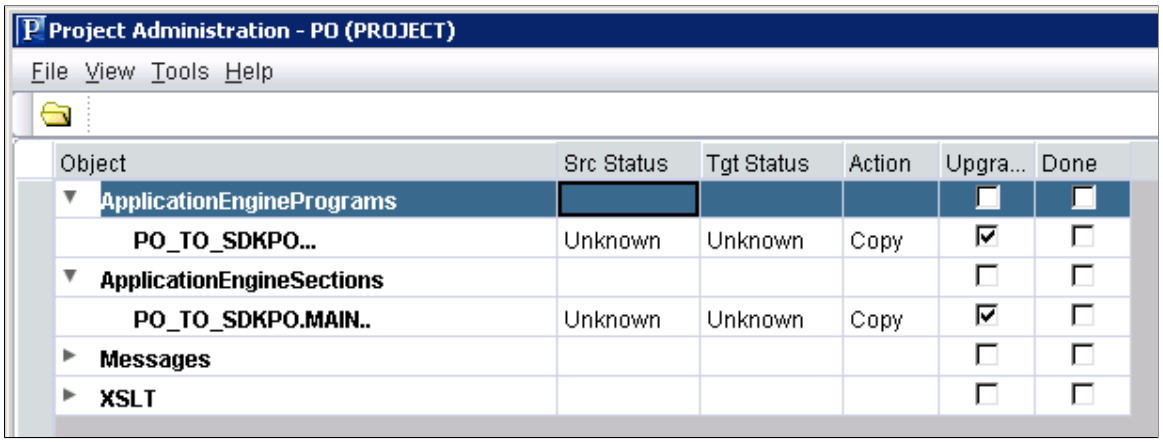
A checkmark indicates that a status is selected. By default, all statuses are selected.

Viewing Projects

When you select Projects and select a project, the project status is displayed. You can expand and collapse the objects to display.

Image: Project Administration - Project before compare

This example illustrates the fields and controls on the Project Administration - Project before compare.



Project Administration allows you to perform all of the same actions as in Application Designer Upgrade View for the project.

For details see "Working with Upgrade Definition Columns" (PeopleTools 8.54: Application Designer Lifecycle Management Guide)

Working With Project Administration Menu Options

This section describes the menu options available when using Project Administration.

File Menu

The File menu contains these Project Administration options:

Menu Option	*Description*
Open	Opens a managed object compare or project.
Save Project	Saves the project. **Note:** Only available for projects.
Save Project As	Creates a copy of the project. **Note:** Only available for projects.
Project Properties	Opens the Project Properties dialog box. **Note:** Only available for projects.

Menu Option	*Description*
Exit	Exits Project Administration.

View Menu

The View menu contains these Project Administration options:

Menu Option	*Description*
Filtering	Select the status to display for the source and target database.

Tools Menu

The Tools menu contains these Project Administration options:

Menu Option	*Description*
Validate Project	Run the validate utility to make sure that all definitions included in the project actually exist in your database.
Compare and Report	Run a compare report to a database. **Note:** Only available for projects.
Copy Project	Copy the project to a database. **Note:** Only available for managed object compare or project.

Comparing Definitions

To compare definitions in Project Administration:

1. In Change Assistant, select Tools, Project Administration.

   Note: The action type must be Compare/Copy Managed Objects.

2. Select the Source database from the available environments or create a new environment and click OK.
3. Select File, Open and select the definition type Project.
4. Select the Project you want to compare and click Open.
5. Select Tools, Compare and Report, To Database.

   Select the Target database from the available environments or create a new database and click OK.

   Note: You must exit Project Administration and select New Database to create a new database.

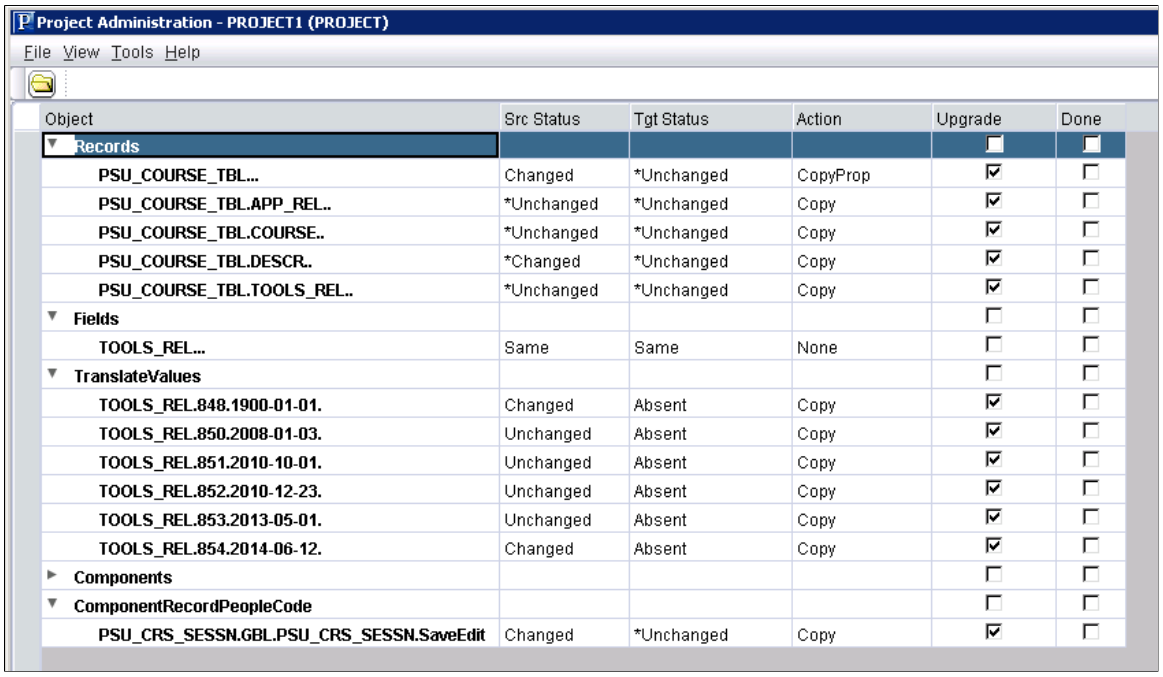
6. The Compare and Report Dialog is displayed. Enter your compare options and then click Compare.

   The Compare and Report dialog box is the same as Application Designer. For details see "Setting Upgrade Options" (PeopleTools 8.54: Application Designer Lifecycle Management Guide)

7. The Compare Report will be populated, expand each section to view.

Image: Project Administration window with compare results

This example illustrates the fields and controls on the Project Administration window with compare results. You can find definitions for the fields and controls later on this page.



Object	Src Status	Tgt Status	Action	Upgrade	Done
Records				☐	☐
PSU_COURSE_TBL...	Changed	*Unchanged	CopyProp	☑	☐
PSU_COURSE_TBL.APP_REL..	*Unchanged	*Unchanged	Copy	☑	☐
PSU_COURSE_TBL.COURSE..	*Unchanged	*Unchanged	Copy	☑	☐
PSU_COURSE_TBL.DESCR..	*Changed	*Unchanged	Copy	☑	☐
PSU_COURSE_TBL.TOOLS_REL..	*Unchanged	*Unchanged	Copy	☑	☐
Fields				☐	☐
TOOLS_REL...	Same	Same	None	☐	☐
TranslateValues				☐	☐
TOOLS_REL.848.1900-01-01.	Changed	Absent	Copy	☑	☐
TOOLS_REL.850.2008-01-03.	Unchanged	Absent	Copy	☑	☐
TOOLS_REL.851.2010-10-01.	Unchanged	Absent	Copy	☑	☐
TOOLS_REL.852.2010-12-23.	Unchanged	Absent	Copy	☑	☐
TOOLS_REL.853.2013-05-01.	Unchanged	Absent	Copy	☑	☐
TOOLS_REL.854.2014-06-12.	Changed	Absent	Copy	☑	☐
Components				☐	☐
ComponentRecordPeopleCode				☐	☐
PSU_CRS_SESSN.GBL.PSU_CRS_SESSN.SaveEdit	Changed	*Unchanged	Copy	☑	☐

Related Links

"Reviewing Upgrade Settings" (PeopleTools 8.54: Application Designer Lifecycle Management Guide)

Copying Definitions

To copy definitions in Project Administration:

1. In Change Assistant, select Tools, Project Administration.

   Note: The action type must be Compare/Copy Managed Objects.

2. Select the Source database from the available databases and click OK.

3. Select File, Open and select Project .

4. Select the Project you want to copy and click Open.

5. Review the Action and Upgrade columns to insure you have the correct selections.

6. Select Tools, Copy, To Database.

Select the Target environment from the available environments or create a new environment and click OK.

7. The Copy Database dialog is displayed. Enter your copy options and then click Copy.

   The Copy Database dialog box is the same as Application Designer. For details see "Copying Projects to a Target Database" (PeopleTools 8.54: Application Designer Lifecycle Management Guide)

8. The Done column will be updated when the copy is complete

Validating Projects

An important part of the PeopleSoft upgrade process involves validating your upgrade project. PeopleSoft Application Designer includes a validate utility to make sure that all definitions included in the project actually exist in your database. This same functionality is available in Project Administration.

To validate a project:

1. Open the project in Project Administration.
2. Select Tools, Validate Project.

Related Links

"Validating Projects" (PeopleTools 8.54: Application Designer Developer's Guide)

Understanding Merging PeopleCode, SQL, XSLT Programs

Change Assistant enables you to compare the same PeopleCode, SQL or XSLT programs shared among three databases. You can view the text together while the system detects each difference and clearly indicates the differences using visual queues. During this comparison, you choose which lines from each program to carry forward into the merged version.

Beginning a New Merge Session

To begin a new merge session in Change Assistant:

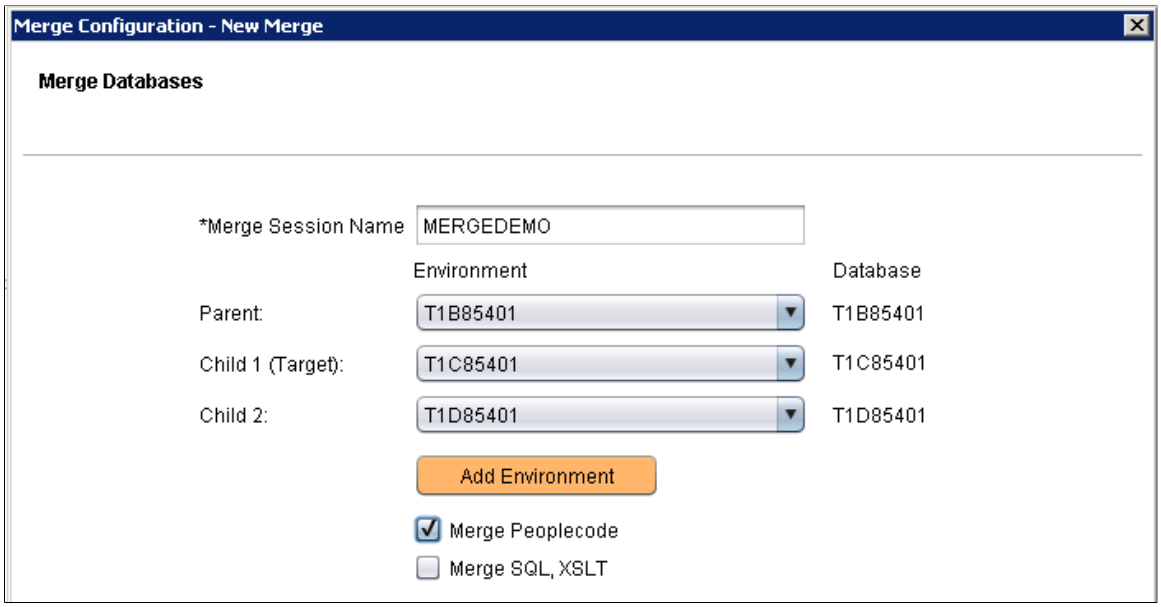
1. Select Tools, Change Actions.
2. Select Compare/Copy Managed Objects or Merge Select Object Types.
3. Click Next.
4. Select Begin New Merge Session.
5. Click Finish.
6. Select your merge databases and merge type and click Next.
7. Define the merge rules and click Next.
8. Click Merge to start the full database merge.

Selecting Merge Databases

The merge is a 3–way merge, so you must select the parent and child databases for the merge.

Image: Merge Databases page

This example illustrates the fields and controls on the Merge Databases page. You can find definitions for the fields and controls later on this page.



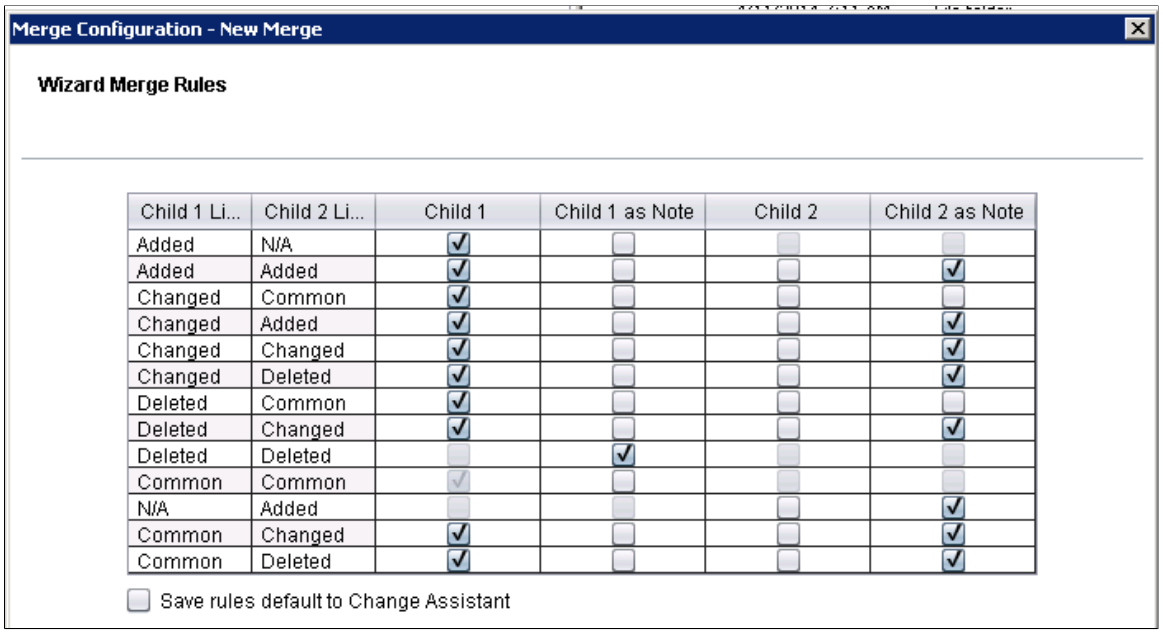
Merge Session Name	Enter a name for the merge session.
Parent Database	Select an environment for the parent database.
Child 1 Database (Target)	Select an environment for the child 1 database.
Child 2 Database	Select an environment for the child 2 database.
Add Environment	Click this button to add a newdatabase. The database configuration wizard will open. See Defining Databases
Merge PeopleCode	Select for a PeopleCode merge.
Merge SQL, XSLT	Select to merge SQL and XSLT

Defining Merge Rules

Use the Merge Configuration page to define how the code will be merged.

Image: Wizard Merge Rules page

This example illustrates the fields and controls on the Wizard Merge Rules page. You can find definitions for the fields and controls later on this page.



Child 1 Li...	Child 2 Li...	Child 1	Child 1 as Note	Child 2	Child 2 as Note
Added	N/A	✓			
Added	Added	✓			✓
Changed	Common	✓			
Changed	Added	✓			✓
Changed	Changed	✓			✓
Changed	Deleted	✓			✓
Deleted	Common	✓			
Deleted	Changed	✓			✓
Deleted	Deleted		✓		
Common	Common	✓			
N/A	Added				✓
Common	Changed	✓			✓
Common	Deleted	✓			✓

Using the Merge Interface

When you perform a merge, Change Assistant:

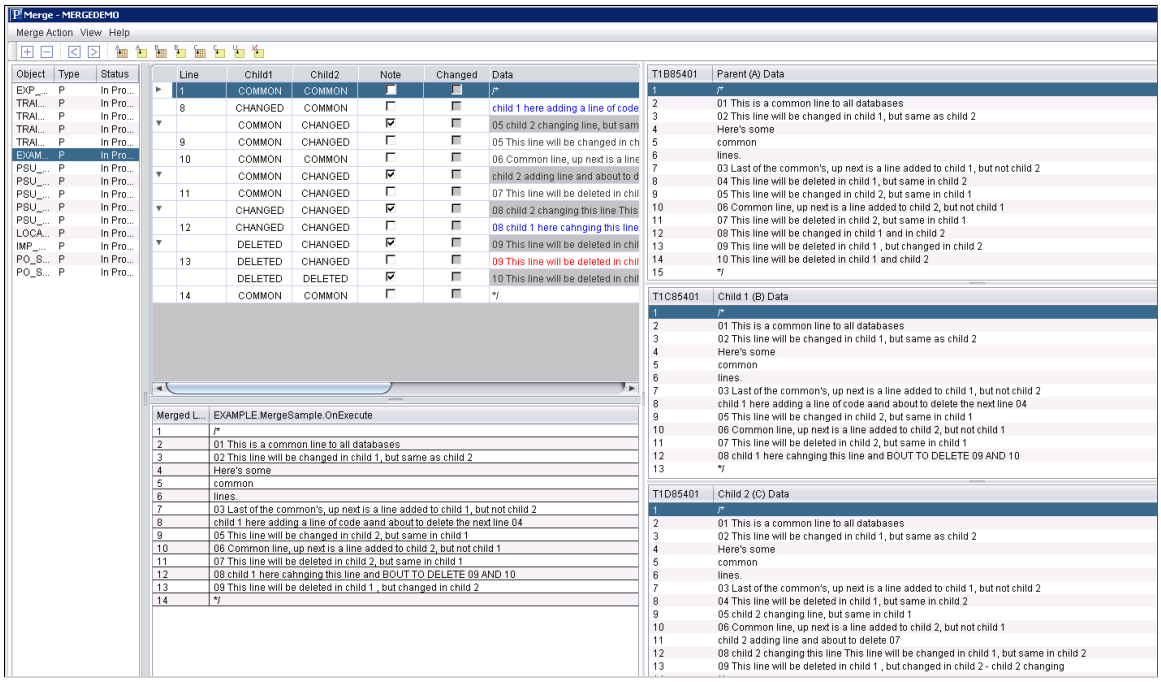
- Compares the Parent database to the Child 1 database to detect changes in Child 1.
- Compares the Parent database to the Child 2 database to detect changes in Child 2 of those objects changed in Child 1.
- Displays the compare results on the merge page.

Merge Page

When the full database merge has completed, the Merge page is displayed.

Image: Merge page

This example illustrates the fields and controls on the Merge page. You can find definitions for the fields and controls later on this page.



The Merge page contains these panes:

- Program list
- Merge edit pane
- Merge output pane
- Parent (A) Data
- Child 1 (B) Data
- Child 2 (C) Data

Program List

This pane lists the programs that were changed in Child 1 (If something was changed only in Child 2, it won't show up here)

If the entire program name is not visible, hover over the name to display a tooltip with the full name.

Double-click an item in the list to open it for merging.

You can select a status for each program to indicate whether it is in progress, completed, or has no action.

Merge Edit Pane

Change Assistant displays the comparison in the merge edit pane. Lines from Child 1 and Child 2 are listed in the merge pane and in the output pane according to the merge rules.

In the merge edit pane, the Action column shows the state of the line and the database to which it belongs. The lines are also color coded to show the state of each line. The color codes are, by default:

Action	***Color***
COMMON	Black
ADDED	Green
CHANGED	Blue
DELETED	Red
COMMENT	Gray
READ ONLY	Black

Select View, Colors and Fonts to change the line display attributes.

Common lines are grouped in collapsed sections. Click the expand icon to expand each section.

Click in the text area of a line to edit the text.

To add lines to the merge edit pane from the individual data panes :

1. Highlight a line in the data pane.
2. Highlight a line in the merge edit pane.

   The new line will be inserted below the highlighted line.
3. Click an action icon to either insert the line or insert it as a note.

To add a blank line or delete a line, select the line and click the Add line icon or the Delete line icon on the Merge toolbar.

The Merge toolbar contains these options:

Add line.

Delete line.

Previous difference.

	Next difference.
	Insert Parent line.
	Insert Parent line as note.
	Insert Child 1 line.
	Insert Child 1 line as note.
	Insert Child 2 line.
	Insert Child 2 line as note.

Merge Output Pane

The output pane displays the current merge results. Initially, the output pane displays the results of the comparison based on the merge rules. When you apply changes, the new merge appears in the pane.

Data Windows

When you select a program, Change Assistant displays the three versions of the program in the respective Parent, Child 1, and Child 2 windows.

Merge Menu

The Merge menu contains these options:

New Session	Create a new merge session.
Open Session	Open an existing merge session. [Crashes CA]
Save Session	Save the session.
Apply to Target	Apply changes to the Child 1 (Target) database and display the merged program in the merge worksheet pane.
Set Merge Rules	Opens the Edit Session Rules dialog. See Defining Merge Rules.
Purge Session	Purge the merge.

Appendix A

Working With Scripts

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 …
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
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

Database	***Stop/Continue at Errors***
Sybase	No option to stop on error.

Appendix B

Modifying Step Properties and Parameters

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.
ApplicationEngineWithRunControl	Runs an Application Engine process with run controls. Use the Options button to select the application engine program and enter the run control parameters. For ADS Compare/Copy see Setting AE With Run Control Options for ADS Compare/Copy Global Payroll (GP) application engine programs are used to move GP rules and data between databases. There are 7 application engine programs available. The same parameters are used for all the GP application engine programs. Run Control ID needs to be the same name as the Package ID. Package ID is the Package ID of the rule package. Version indicates if this package is to be versioned, the default is Y. Search Framework - Schedule Index runs the application engine program PTSF_SCH_INDEX to build a Search Framework search index. Click Options to enter the run control options. The run control options are the same as the Build Search Index page. See "Building Search Indexes" (PeopleTools 8.54: Search Technology) The Logging Suffix option can be used to create a unique log file for the step.

Step Type	***Definition***
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 "Selecting Build Options and Running the Build Process" (PeopleTools 8.54: Application Designer Developer's Guide).
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 "Setting Upgrade Options" (PeopleTools 8.54: Application Designer Lifecycle Management Guide).
Compare from file	Runs the project compare (which produces compare reports) process using the project specified in the step properties parameter as #Project= (for example, #Project=PROJECT1). The compare is performed through the PeopleTools command line. Use the Upgrade button to select the definition types to compare and enter the Import/Export Directory that contains the file. Use the Options button on the Compare from File dialog box to select the appropriate options, which are identical to those provided for Upgrade Options in Application Designer. See "Setting Upgrade Options" (PeopleTools 8.54: Application Designer Lifecycle Management Guide).
Compile PeopleCode	Compiles PeopleCode based on database or project. Use the Options button to select the PeopleCode to compile. For the database, you can select either all PeopleCode or just directive PeopleCode. For a project select Project and enter the project name.
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.

Step Type	***Definition***
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). Use the Upgrade button to select the definition types to copy and enter the Import/Export Directory that contains the file.
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). Use the Upgrade button to select the definition types to copy and enter the Import/Export Directory for the file.
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).
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 LUW, 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. When you select the DeployFile type, an Additional Settings button is available to set: • File Reference ID • File Type Code

Step Type	***Definition***
FileCopy	Enables you to copy files or directories. File Copy properties include: • Source Path • Destination Path • Overwrite Existing Files check box. The Source and Target Paths can be defined as: • actual paths for example: *C:\temp* • variablesfor example: *%STAGINGDIRECTORY%* • combination of variables and fixed paths for example: *%STAGINGDIRECTORY%\IMAGE*
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 Step Parameters.

PTFTest	This step is used to run a PTF test. Use the following parameters: • #TST - test name • #TC - test case • #PFX - test case prefix
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.

Step Type	*Definition*
SQL Script DBO	Runs the SQL Script defined in the Script/Procedure value under the Step Properties, using the DB Owner ID. The DB Owner and password is set for the database when the *Set DB Owner Credentials* is selected on the database definition.
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. See Setting SQR Report Output Options
SyncDatabaseInfoToCA	This step updates all of the target information to Change Assistant. This step will run as part of the Cleanup and Administrative tasks in the Change Assistant Job.
SyncDatabaseInfoToPUMSource	This step is only used for PUM updates. If the user selects Yes on the Synchronize Target Metadata (Requires Source) radio button on the Change Package Settings page, this step is executed in the job to update all of the target database information to the PI.
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.
UpdateChangePackage	UpdateChangePackage is a specialized function within the Change Packager relating to the updating of change packages created using Update Manager.

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

Setting AE With Run Control Options for ADS Compare/Copy

The application engine process PTADSAEPRCS is used to copy a data migration project a a file, copy a data migration project from a file or compare a data migration project from a file.

To set the AE run control options:

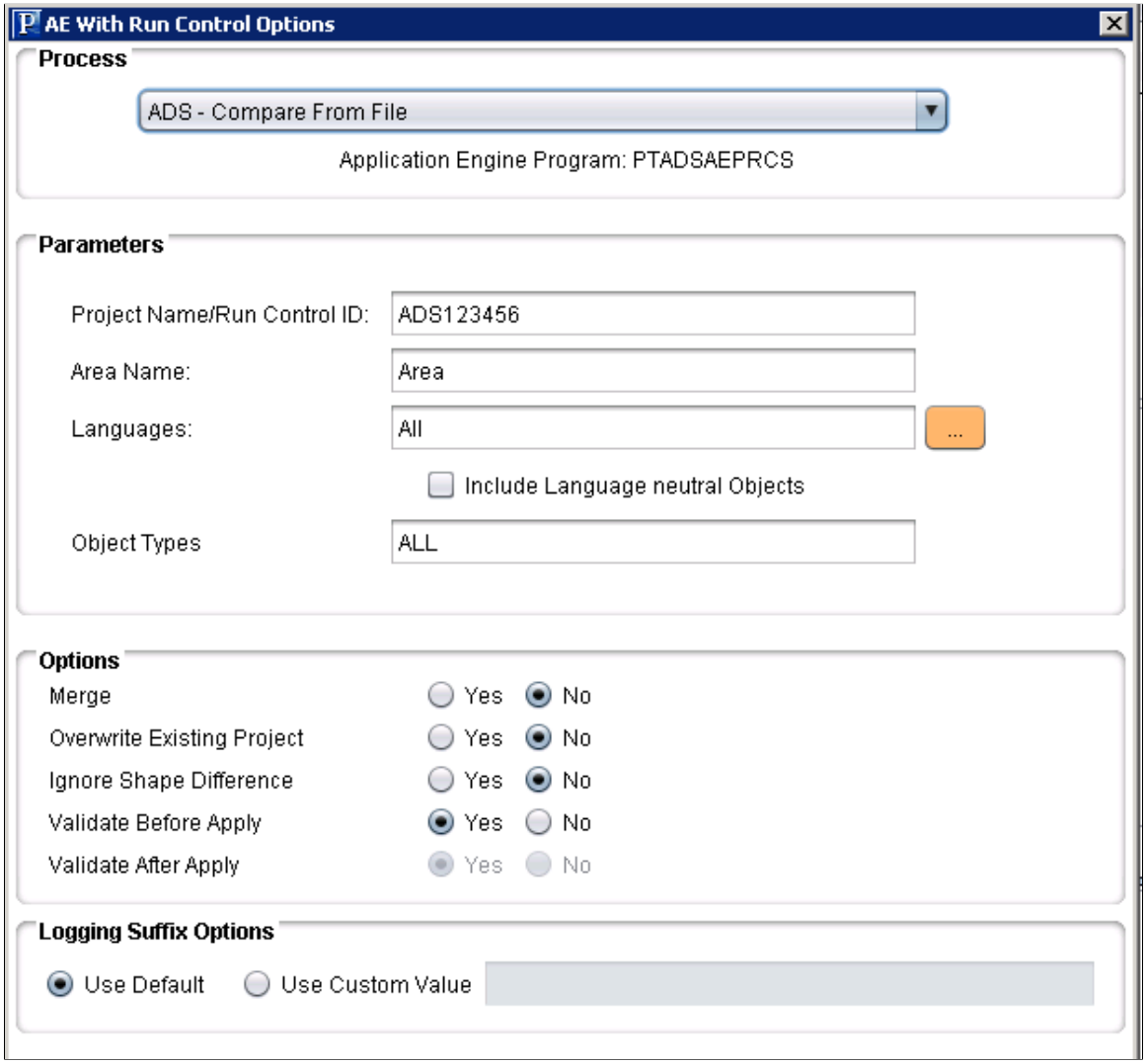
1. Insert a new step in the template and select Type *ApplicationEngineWithRunControl* or open an existing step with the type *ApplicationEngineWithRunControl*.
2. Make sure the orientation is set correctly.
   - Source is used for Copy to File.

- Target is used for Compare From File and Copy From File.

3. Click the Options button.

Image: AE With Run Control Options

This example illustrates the fields and controls on the AE With Run Control Options page. You can find definitions for the fields and controls later on this page.



Process

Select the AE process, For ADS, the options are:

- Compare From File
- Copy to File
- Copy From File
- Validate From File

Project Name/Run Control	Enter the Data Migration Project Name. The project name is also used as the run control and is automatically populated in the Run Control ID.
Area Name	Enter the name of the area (folder) for the file. When you select Copy to File, the file will be written to the Staging directory defined for the job in a folder PTADSAEPRCS\<area name>. For example: D:\Staging\PTADSAEPRCS\TOOLS
Languages	Select the languages
Include Language Neutral Objects	Select to include language neutral objects (COMMON).
Object Types	ALL will include all data sets in the project. To select only specific data sets, enter the data set name or names separated by comma.
Merge	Select Yes to merge target configurations on the Copy From File.
Overwrite Existing	Select Yes if you want to overwrite an existing file.
Ignore Shape Difference	Select Yes if you want to ignore shape difference. The allowed shape changes include adding records or fields to a data set definition.
Validate Before Apply	Select Yes to validate the data set before it is compared or copied from file.
Validate After Apply	Select Yes if you want to check integrity after the copy.
Logging Suffix Options	Select whether to use the default log name or enter a custom suffix value for the log file name. The suffix is used to create a unique output log file name for the step.

Note: Depending on the action selected, the available options are enabled.

Setting SQR Report Output Options

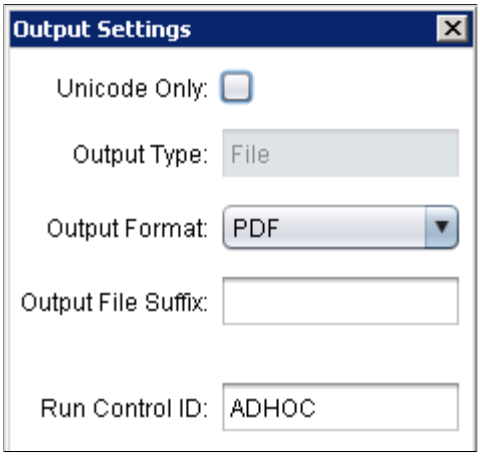
To set SQR output options:

1. Insert a new step in the template and select Type *SQRReport* or open an existing step with the type *SQRReport*.
2. Enter the report name in the Script/Procedure field.

3. Click the Output Settings button.

   Image: SQR Output Settings dialog box

   This example illustrates the fields and controls on the SQR Output Settings dialog box. You can find definitions for the fields and controls later on this page.



Unicode Only	Select this checkbox for Unicode Only.
Output Type	Currently File is the only supported value and is read-only.
Output Format	Select the output format. The allowable output values are PDF, HTML, and SPF. The default is SPF
Output File Suffix	Enter an output file suffix if applicable. The suffix is used to create a unique output log file name for the step. A change package may run the same SQR multiple times, the suffix will ensure unique output log files.
Run Control ID	Enter the run control ID. The default is AD HOC.

4. Click OK.
5. Click OK on the step

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 one of standard home directories defined for the environment. For example: `#Directory=#OutputDirectory`

#RunLocation=
 	
#FileLocation=
	By default the scripts and processes are run on one of the current home directories defined for the environment. However if the script or process needs to run on the old release, you need to specify the old release home directories using the variable #ALL_OLD_PATHS_TGT. Example:
	
	`#RunLocation=#ALL_OLD_PATHS_TGT`
	`#FileLocation=#ALL_OLD_PATHS_TGT`

#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`
#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 LUW 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).

Parameter	***Description***
#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 LUW, 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).
#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. **Note:** This parameter is case sensitive. That is, the value must appear in the exact case as the process type in Process Scheduler. For example, for an Application Engine program, the process type parameter should appear as *PROCESS_TYPE=Application Engine*, not *PROCESS_TYPE=APPLICATION ENGINE*.
#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:** If NUM_INSTANCES is greater than one, Change Assistant will append 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. If NUM_INSTANCES is equal to one, Change Assistant will NOT append unique sequence numbers to the end of the Run Control ID.

Parameter	Description
#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.
#TST	Used with the PTFTest step to identify the test
#TC	Used with the PTFTest step to identify the test cas.
#PFX	Used with the PTFTest step to identify the test prefix.

Variables for All Step Types that Use Path

The order by which the PeopleTools runtime will pick up objects from the file system is as follows:

1. PS_CUST_HOME
2. PS_APP_HOME
3. PS_HOME

Change Assistant will loop through the paths in order of precedence until it finds the first instance of the file object at which time it will execute the step.

The following variables can be used for parameters requiring a path.

Variable	Description
#ALL_PATHS_TGT	Uses the path values defined for the target database current environment.
#ALL_PATHS_SRC	Uses the path values defined for the source database current environment.
#ALL_PATHS_ODMO	Uses the path values defined for the copy of demo database current environment.
#ALL_PATHS_PROD	Uses the path values defined for the production database current environment.
#ALL_OLD_PATHS_TGT	Uses the path values defined for the target database old environment.

Filter Query Variables

The following variables in filter queries can be used to determine whether databases are the same platform.

Variable	*Description*
#PLATFORM_TGT	Uses the platform values defined for the target database current environment.
#PLATFORM_SRC	Uses the platform values defined for the source database current environment.
#PLATFORM_ODMO	Uses the platform values defined for the copy of demo database current environment.
#PLATFORM_PROD	Uses the platform values defined for the production database current environment.

Example: Compare and Report

In order to run a compare and report to a database, the databases must be on the same platform. A query filter can be set on the step to remove non-relevant steps, so only the applicable steps will run.

Step Set	*Filter*
CompareAndReport Review Compares CopyProject	#PLATFORM_SRC=#PLATFORM_TGT returns true
CopyToFile CompareFromFile Review Compares CopyFromFile	#PLATFORM_SRC=#PLATFORM_TGT returns false

Platform Used in Command Line

Steps where the command line includes the platform are:

- ApplicationEngine
- ApplicationEngineWithRunControl
- BuildProject
- CompareAndReport
- CopyDatabase
- CopyfromFile
- CopyToFile
- CreateProject

- MergeProject
- DataMoverBootstrap
- DataMoverUser
- SQLCommand
- SQLScript
- SQRReport

Appendix C

Clearing Environment Management Framework Cache

Clearing Environment Management Framework Cache Overview

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_AGENT_HOME\PSEMAgent\envmetadata **Note:** If PS_AGENT_HOME is not defined, the data is stored in PS_HOME.
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 D

Troubleshooting Change Assistant and EMF

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 Ensuring Process Scheduler Security Authentication.

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:

The log files generated by Process Scheduler are not parsed for warnings or errors. Therefore, even though Change Assistant may show a status of Complete for a Process Scheduler step type, you should review the generated log files for more details.

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

Processes	***Log File***	***Error***	***Warning Status***
Deploy File	<process name>_out.log	Failure. • Unable to connect. • Environment Management Components are Unavailable. Warning status.	NA
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
ProcessScheduler		The log files generated by Process Scheduler are not parsed for warnings or errors. Therefore, even though Change Assistant may show a status of Complete for a Process Scheduler step type, you should review the generated log files for more details	

Processes	***Log File***	***Error***	***Warning Status***
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.