PeopleTools 8.4:
Data Management

PeopleSoft®

PeopleTools 8.4: Data Management

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Data Management Preface

In this book we'll show you how to use various administration PeopleTools, such as Data Mover, the PeopleTools Utilities, Configuration Manager, Archive Data, and so on.

In previous releases, this book contained the Mass Change documentation. However, Mass Change is no longer recommended for new development, and because of that we no longer distribute the documentation.

The "About This PeopleBook" section contains general product line information, such as related documentation, common page elements, and typographical conventions. This book also contains a glossary with useful terms that are used in PeopleBooks.

See **PeopleSoft Glossary**.

About This PeopleBook

This book provides you with the information that you need for implementing and using *PeopleTools 8.4* applications. Complete documentation for this release is provided on the CD-ROM PT84PBR0.

Note. Your access to PeopleSoft PeopleBooks depends on which PeopleSoft applications you've licensed. You may not have access to all of the PeopleBooks.

This section contains information that you should know before you begin working with PeopleSoft products and documentation, including PeopleSoft-specific documentation conventions, information specific to each PeopleSoft product line, and information on ordering additional copies of our documentation.

Before You Begin

To benefit fully from the information covered in this book, you should have a basic understanding of how to use PeopleSoft applications. We recommend that you complete at least one PeopleSoft introductory training course.

You should be familiar with navigating the system and adding, updating, and deleting information by using PeopleSoft windows, menus, and pages. You should also be comfortable using the World Wide Web and the Microsoft® Windows or Windows NT graphical user interface.

Because we assume that you already know how to navigate the PeopleSoft system, much of the information in these books is not procedural. That is, these books do not typically provide step-by-step instructions on using tables, pages, and menus. Instead, we provide you with the information that you need to use the system most effectively and to implement your

PeopleSoft application according to your organizational or departmental needs. PeopleBooks expand on the material covered in PeopleSoft training classes.

PeopleSoft Application Fundamentals

Each PeopleSoft application PeopleBook provides implementation and processing information for your PeopleSoft database. However, there is additional, essential information describing the setup and design of your database contained in a companion volume of documentation called *PeopleSoft Application Fundamentals.*

PeopleSoft Application Fundamentals contains important topics that apply to many or all PeopleSoft applications across each product line. Whether you are implementing only one PeopleSoft application, some combination of products within a product line, or an entire PeopleSoft system, you should be familiar with the contents of this central PeopleBook. It contains fundamental information such as setting up control tables and administering security.

The PeopleSoft Applications Fundamentals PeopleBook contains common information pertinent to all applications in each product line, such as defining general options. If you're upgrading from a previous PeopleSoft release, you may notice that we've removed some topics or topic headings from the individual application PeopleBooks and consolidated them in this single reference book. You'll now find only application-specific information in your individual application PeopleBooks. This makes the documentation as a whole less redundant. Throughout each PeopleBook, we provide cross-references to *PeopleSoft Application Fundamentals* and other PeopleBooks.

Related Documentation

You can order printed, bound versions of the complete PeopleSoft documentation delivered on your PeopleBooks CD-ROM and additional copies of the PeopleBooks CDs through the Documentation section of the PeopleSoft Customer Connection website: http://www.peoplesoft.com/corp/en/login.asp

You can find updates and additional documentation for this release, as well as previous releases, on PeopleSoft Customer Connection (http://www.peoplesoft.com/corp/en/login.asp). Through the Documentation section of Customer Connection, you can download files to add to your PeopleBook library. You'll find a variety of useful and timely materials, including updates to the full PeopleSoft documentation delivered on your PeopleBooks CD.

Important! Before you upgrade, it is *imperative* that you check PeopleSoft Customer Connection for updates to the upgrade instructions. We continually post updates as we refine the upgrade process.

Hard-copy Documentation

To order printed, bound volumes of the complete PeopleSoft documentation delivered on your PeopleBooks CD-ROM, visit the PeopleSoft Press website from the Documentation section of

PeopleSoft Customer Connection. The PeopleSoft Press website is a joint venture between PeopleSoft and Consolidated Publications Incorporated (CPI), our book print vendor.

We make printed documentation available for each major release shortly after the software is shipped. Customers and partners can order printed PeopleSoft documentation by using any of the following methods:

Internet	From the main PeopleSoft Internet site, go to the Documentation section of Customer Connection. You can find order information under the Ordering PeopleBooks topic. Use a Customer Connection ID, credit card, or purchase order to place your order. PeopleSoft Internet site: http://www.peoplesoft.com/.
Telephone	Contact Consolidated Publishing Incorporated (CPI) at **800 888 3559.**
Email	Send email to CPI at **callcenter@conpub.com**.

PeopleBooks Standard Field Definitions

Throughout our product documentation, you will encounter fields and buttons that are used on many application pages or panels. This section lists the most common fields and buttons and provides standard definitions.

Field	*Definition*
As of Date	The last date for which a report or process includes data.
Business Unit	An identification code that represents a high-level organization of business information. You can use a business unit to define regional or departmental units within a larger organization.
Description	Freeflow text up to 30 characters.
Effective Date	Date on which a table row becomes effective; the date that an action begins. For example, if you want to close out a ledger on June 30, the effective date for the ledger closing would be July 1. This date also determines when you can view and change the information. Pages or panels and batch processes that use the information use the current row. For more information about effective dates, see Understanding Effective Dates in *Using PeopleSoft Applications.*
EmplID (employee ID)	Unique identification code for an individual associated with your organization.

Field	*Definition*
Language or **Language Code**	The language in which you want the field labels and report headings of your reports to print. The field values appear as you enter them. Language also refers to the language spoken by an employee, applicant, or non-employee.
Process Frequency group box	Designates the appropriate frequency in the **Process Frequency** group box: **Once** executes the request the next time the batch process runs. After the batch process runs, the process frequency is automatically set to **Don't Run**. **Always** executes the request every time the batch process runs. **Don't Run** ignores the request when the batch process runs.
Report ID	The report identifier.
Report Manager	This button takes you to the Report List page, where you can view report content, check the status of a report, and see content detail messages (which show you a description of the report and the distribution list).
Process Monitor	This button takes you to the Process List page, where you can view the status of submitted process requests.
Run	This button takes you to the Process Scheduler request page, where you can specify the location where a process or job runs and the process output format.
	For more information about the Report List page, the Process List page, and the Process Scheduler, see **Process Scheduler Basics** in the PeopleTools documentation.
Request ID	A request identification that represents a set of selection criteria for a report or process.
User ID	The system identifier for the individual who generates a transaction.
SetID	An identification code that represents a set of control table information or TableSets. A TableSet is a group of tables (records) necessary to define your company's structure and processing options.
Short Description	Freeflow text up to 15 characters.

Typographical Conventions and Visual Cues

We use a number of standard conventions and visual cues in our online documentation.

The following list contains our typographical conventions and visual cues:

`(monospace font)`	Indicates a PeopleCode program or other program example.
Bold	Indicates field names and other page elements, such as buttons and group box labels, when these elements are documented below the page on which they appear. When we refer to these elements elsewhere in the documentation, we set them in Normal style (not in bold). We also use boldface when we refer to navigational paths, menu names, or process actions (such as **Save** and **Run**).
Italics	Indicates a PeopleSoft or other book-length publication. We also use italics for *emphasis* and to indicate specific field values. When we cite a field value under the page on which it appears, we use this style: ***field value.*** We also use italics when we refer to words as words or letters as letters, as in the following: Enter the number *0,* not the letter *O.*
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 W.
Cross-references	The phrase **For more information** indicates where you can find additional documentation on the topic at hand. We include the navigational path to the referenced topic, separated by colons (:). Capitalized titles in *italics* indicate the title of a PeopleBook; capitalized titles in normal font refer to sections and specific topics within the PeopleBook. Here's an example: **For more information,** see **Documentation on CD-ROM** in *About These PeopleBooks:* Additional Resources.

Note. Text in this bar indicates information that you should pay particular attention to as you work with your PeopleSoft system. If the note is preceded by **Important!,** the note is crucial and includes information that concerns what you need to do for the system to function properly.

Text in this bar indicates cross-references to related or additional information.

Warning! Text within this bar indicates a crucial configuration consideration. Pay very close attention to these warning messages.

Page and Panel Introductory Table

In the documentation, each page or panel description in the application includes an introductory table with pertinent information about the page. Not all of the information will be available for all pages or panels.

Usage	Describes how you would use the page or process.
Object Name	Gives the system name of the panel or process as specified in the PeopleTools Application Designer. For example, the Object Name of the Detail Calendar panel is DETAIL_CALENDAR1.
Navigation	Provides the path for accessing the page or process.
Prerequisites	Specifies which objects must have been defined before you use the page or process.
Access Requirements	Specifies the keys and other information necessary to access the page. For example, **SetID** and **Calendar ID** are required to open the Detail Calendar page.

Comments and Suggestions

Your comments are important to us. We encourage you to tell us what you like, or what you would like to see changed about our documentation, PeopleBooks, and other PeopleSoft reference and training materials. Please send your suggestions to:

PeopleSoft Product Documentation Manager
PeopleSoft, Inc.
4460 Hacienda Drive
Pleasanton, CA 94588

Or send comments by email to the authors of the PeopleSoft documentation at:

DOC@PEOPLESOFT.COM

While we cannot guarantee to answer every email message, we will pay careful attention to your comments and suggestions. We are always improving our product communications for you.

CHAPTER 1

Data Integrity Tools

This chapter provides an overview and covers how to:

- Run SQL Alter.
- Run DDD Audit.
- Run SYSAUDIT.

Understanding Data Integrity Tools

PeopleSoft provides several data integrity tools to ensure the health of the information stored in your PeopleSoft system. These tools are SQL Alter, SYSAUDIT, and DDDAUDIT. You'll typically want to use these tools during certain activities, such as upgrades and system customizations, to verify the integrity of your PeopleSoft system and check how it compares to your actual SQL objects.

The tools described in this chapter help maintain consistency between the knowledge stored in PeopleTools and the actual information stored in your corresponding database(s). In addition to these tools provided by PeopleSoft, most database platform vendors provide data integrity tools specific to their system. Check the documentation for your particular database platform for further information.

SQL Alter

The primary purpose of the Application Designer's "SQL Alter" function is to bring SQL tables into accordance with PeopleTools record definitions. You can run SQL Alter in an "audit-only" mode that alerts you to discrepancies between your record definitions and SQL tables, but that doesn't actually perform an alter.

To audit tables or views:

1. In Application Designer, choose the record(s) you want to audit.

   You have the option of auditing the active object definition (must be a record), selected records in the project workspace, or all the records in the current project.

2. Select the **Build** menu and select the appropriate option for the records you want to audit.

If you're auditing an open record definition, choose **Build, Current Object.** If you have one or more records selected in the project workspace, you can select **Build, Selected Objects.** If you want to audit all records in the current project, select **Build, Project.**

The **Build Scope** reveals a list of all the records that will be affected, or audited in the case.

3. Select **Alter tables** as your **Build Option** and select **Build script file** as your **Build Execute option.**
4. Click Settings and choose the Alter tab in the Build Settings dialog.
5. In the Alter Any group box, select the situations for which you want an Alter performed.
6. Select the **Scripts** tab.

   You use the **Scripts** tab to specify your output for the build scripts—in one file, in two files, where the file will be generated, and so on.
7. Select **Write Alter comments to script.**

   Performing Alters with this option enabled will add comments to the SQL script about what fields are being manipulated.
8. Choose your other script file options.
9. Click **OK,** to close the **Build Settings** dialog and return to the **Build** dialog.
10. Press **Build,** on the **Build** dialog.

Understanding Table and Column Audits

The SELECT statements produced by auditing with SQL Alter deal with inconsistencies between PeopleTools tables and SQL in the definition of tables or columns. A SQL table is equivalent to a record in the Application Designer, and a column is equivalent to a field.

To fix problems found in your system tables and columns, you need to know how PeopleSoft field types correspond to SQL data types:

Application Designer Field Type	*SQL Data Type*	*SQL Description*
Character	CHAR	Alphanumeric; fixed length
Long character	LONGVAR	Alphanumeric; variable length
Date	DATE	Dates; stored as fixed length; displayed in various formats
Number or signed number	SMALLINT	Numeric; integers only (no decimals); 1-4 digits (and 5 digits if RawBinary)

Application Designer Field Type	*SQL Data Type*	*SQL Description*
Number or signed number	INTEGER	Numeric; integers only (no decimals); 5-9 digits(and 10 digits if RawBinary)
Number or signed number	DECIMAL	Numeric; either (1) 10 or more digits or (2) contains decimal positions

Note. In Application Designer, if a field is specified as "required," or if a field is numeric and does not have a format of Phone, SSN, or SIN, you need to initialize the starting value of the column and specify the NOT NULL attribute in SQL.

DDDAUDIT

The Data Designer/Database Audit Report (DDDAUDIT) finds inconsistencies between PeopleTools record and index definitions and the database objects. This Audit consists of nine queries: four on tables, two on views, and three on indexes.

Note. This SQR refers to the Data Designer, the PeopleTool that allowed you to create record definitions in the PeopleTools releases prior to release 7. Now, all of the development tools are incorporated into one integrated development environment called the Application Designer. But you can still think of this audit as auditing the "data designing" component of the Application Designer.

To run DDDAUDIT:

1. Using Windows Explorer navigate to PS_HOME\sqr and locate DDDAUDIT.SQR.
2. Double-click it.
3. Type in the Database name, Username, and Password.

   You'll probably need to use the database Access ID and password to execute the DDDAUDIT properly.
4. Verify the **Report arguments** and click **OK.**

   The –f argument indicates where the system writes the .LIS file.
5. At the Command Prompt, press ENTER.

   At the end of a successful run, you'll be prompted to press Enter again.

When you run DDDAUDIT.SQR, its results are written to a file called DDDAUDIT.LIS in your \TEMP folder. After running DDDAUDIT, view the .LIS file using any text editor. Here's a sample excerpt of this file:

DDDAUDIT Queries

The following table lists the names of each query that DDDAUDIT performs on your PeopleSoft system, what it means if rows are returned, and how to resolve the inconsistency.

Note. The query names in this table are arranged alphabetically, and are not necessarily in they order in which they appear in DDDAUDIT.LIS.

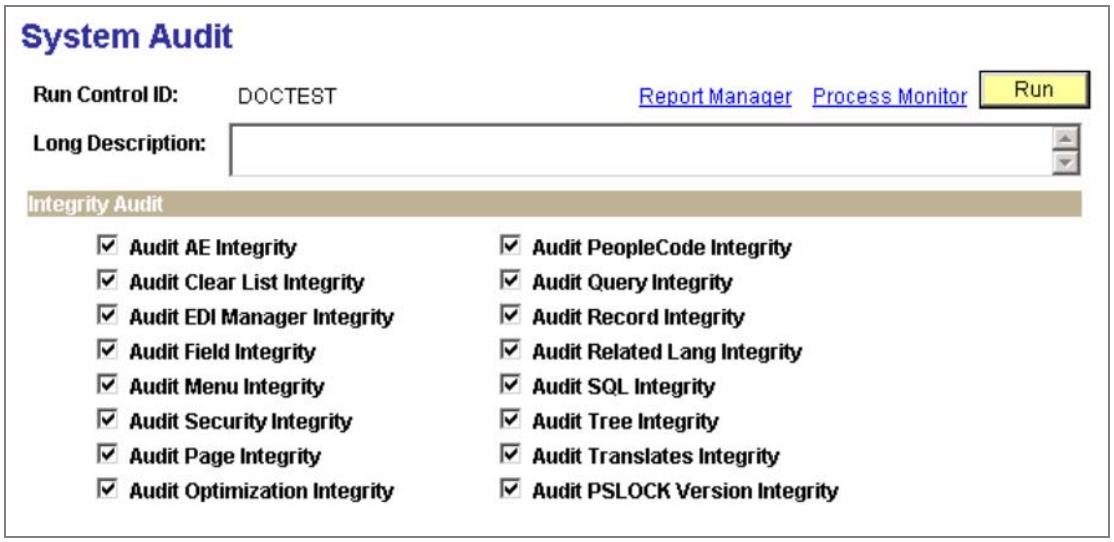
Query	*If Rows are Returned...*	*Resolution*
INDEX-1	Indexes are defined in the Application Designer and not found in the Database.	Use Application Designer to create the index.
INDEX-2	Indexes are defined in the Database and not found in the Application Designer.	If the index is valid, use Application Designer to define the index. Otherwise, DROP the index.
INDEX-3	Uniqueness or the number of keys in the Index Definition do not match between the Application Designer and the Database.	See INDEX-1.
TABLE-1	SQL table names are defined in the Data Designer that are not blank and not the same as the Record Name.	Use Application Designer to enter the record name as the **Non-Standard SQL Table Name.**
TABLE-2	SQL tables are defined in the Data Designer and not found in the Database.	If you want to delete the record definition, use Application Designer (select **File, Delete**). Otherwise, to create the SQL table, use Application Designer. This command also creates the appropriate indexes for keys, duplicate order keys, alternate keys, and list items.
TABLE-3	SQL tables are defined in the database and not found in the Data Designer. SYSINDEXES and SYSTABLES can be ignored in these results. **For Informix:** PSALTERLONG can also be ignored.	If the table is not valid, DROP it. Otherwise, define a new record in Application Designer.

Query	*If Rows are Returned…*	*Resolution*
TABLE-4	Tablespace not defined for the SQL Table in the Application Designer.	If you're using—or migrating to—an RDBMS that uses tablespaces, you should use Application Designer to assign tablespaces to these tables.
TABLE-5	Table contains more than 250 fields.	Use Application Designer to adjust the number of fields on the table, as needed.
VIEWS-1	Views are defined in the Data Designer and not found in the Database.	If you want to delete the view definition, use Application Designer (select File, Delete). Otherwise, to create the SQL view, use Application Designer.
VIEWS-2	Views are defined in the Database and not found in the Data Designer.	If the view is not valid, DROP it. Otherwise, define a new view in Application Designer.
TRIGGER-1	Trigger defined in the Application Designer and not found in the Database.	Delete the definition if it is not needed. Otherwise, use Application Designer to create the trigger in the database..

SYSAUDIT

The System Audit (SYSAUDIT) identifies "orphaned" PeopleSoft objects and other inconsistencies within your system. An example of an orphaned object would be a module of PeopleCode that exists, but which does not relate to any other objects in the system.

Select PeopleTools, Utilities, Audit, Perform System Audit.



System Audit page

If checked, the System Audit option checkboxes do the following in your PeopleSoft system:

Audit AE Integrity	Audits Application Engine program definitions and components.
Audit Clear List Integrity	Audites the SYSCLRLIST* component.
Audit EDI Manager Integrity	Audits the EC* component for EDI Manager.
Audit Field Integrity	Audits the DBFLD* component for Application Designer fields.
Audit Menu Integrity	Audits the MENU* component for Application Designer menus.
Audit Security Integrity	Audits the AUTH*, OPRDF* components for PeopleTools Security.
Audit Page Integrity	Audits the PNL* component for Application Designer pages.
Audit Optimization Integrity	Audits the definitions for Optimization Engine.
Audit PeopleCode Integrity	Audits the PCM*, PRG* components for PeopleCode programs.
Audit Query Integrity	Audits the QRY* component for PeopleSoft Query.
Audit Record Integrity	Audits the REC*, VIEWT* components for Application Designer records.
Audit Related Lang Integrity	Audits Related Language Integrity—Query the *LANG component.

Audit SQL Integrity	Audits the referential integrity of the tables supporting SQL objects in the db component.
Audit Tree Integrity	Audits the TREE* component.
Audit Translates Integrity	Audits the XLAT* component.
Audit PSLOCKS Version Integrity	Audits the VERSN* component.

To run SYSAUDIT:

1. Select PeopleTools, Utilities, Audit, Perform System Audit**.**

When prompted, enter a new Run Control ID and click OK.

2. Select the desired Integrity Audit options.
3. Click Run.
4. Select the appropriate settings on the Process Scheduler Request page, and click OK..

Understanding SYSAUDIT Output

When you run SYSAUDIT, the results are written to the Data Mover output file. For best viewing, PeopleSoft recommends opening the output file in a text editor.

The following table lists the names of each of the audit queries that SYSAUDIT performs on your PeopleSoft system, what it means if rows are returned, and how to resolve the discrepancies uncovered by the audit report.

Note. The query names in this table are arranged alphabetically, and are not necessarily in they order in which they appear in the output.

Application Engine Integrity

Query	*Description*	*Resolution*
AE-01	AE programs without any sections	If the affected program was delivered by PeopleSoft and has not been modified, contact the GSC. If the affected program was converted as part of an upgrade, this may be a symptom that the conversion failed. Contact the GSC. Otherwise, use the Application Engine designer to either create valid sections for the program or remove the program. It is not possible to recover the missing sections.
AE-02	AE sections without AE programs	If the affected program was delivered by PeopleSoft and has not been modified, contact the GSC. If the affected program was converted as part of an upgrade, this may be a symptom that the conversion failed. Contact the GSC. If the affected program was a customization, it is not possible to recover the missing program. Restore it from a backup if needed. Use SysAECleanUp.dms (located in PS_HOME\scripts.) to remove any orphans remaining after you have followed the steps above.
AE-03	AE state records without AE programs	If the affected record was delivered by PeopleSoft, contact the GSC. If the affected program was converted as part of an upgrade, this may be a symptom that the conversion failed. Contact the GSC. Otherwise, ignore the warnings or restore the program from a backup. It is not possible to recover the missing program.

Query	Description	Resolution
AE-04	AE state records without record definitions	If the affected record was delivered by PeopleSoft, contact the GSC. If the affected program was converted as part of an upgrade, this may be a symptom that the conversion failed. Contact the GSC. Otherwise, using PeopleTools Application Designer remove invalid records from the program definition or create record definitions.
AE-05	AE section details without base section definitions	If the affected program was delivered by PeopleSoft and has not been modified, contact the GSC. If the affected program was converted as part of an upgrade, this may be a symptom that the conversion failed. Contact the GSC. Otherwise, ignore the warnings or restore the program from a backup. It is not possible to recover the missing sections.
AE-06	AE steps without sections	If the affected program was delivered by PeopleSoft and has not been modified, contact the GSC. If the affected program was converted as part of an upgrade, this may be a symptom that the conversion failed. Contact the GSC. If the affected program was a customization, it is not possible to recover the missing program. Restore it from a backup if needed. Use SysAECleanUp.dms (located in PS_HOME\scripts.) to remove any orphans remaining after you have followed the steps above.

Query	Description	Resolution
AE-07	AE Call Section actions referring to non-existent sections	If the affected program was delivered by PeopleSoft and has not been modified, contact the GSC. If the affected program was converted as part of an upgrade, this may be a symptom that the conversion failed. Contact the GSC. Otherwise, use the Application Engine either to open the program containing the Call Section and change it to call the correct section, or create the required section.
AE-08	AE Log Message actions without an AE step	If the affected record was delivered by PeopleSoft, contact the GSC. If the affected program was converted as part of an upgrade, this may be a symptom that the conversion failed. Contact the GSC. If the affected program was a customization, it is not possible to recover the missing program, restore it from a backup if needed. Use SysAECleanUp.dms (located in PS_HOME\scripts.) to remove any orphans remaining after you have followed the steps above.
AE-09	AE actions without an AE step	If the affected record was delivered by PeopleSoft, contact the GSC. If the affected program was converted as part of an upgrade, this may be a symptom that the conversion failed. Contact the GSC. If the affected program was a customization, it is not possible to recover the missing program, restore it from a backup if needed. Use SysAECleanUp.dms (located in PS_HOME\scripts.) to remove any orphans remaining after you have followed the steps above.

Query	Description	Resolution
AE-10	AE TempTables attached to Invalid AE programs	If the affected temp table was delivered by PeopleSoft, contact the GSC. If the affected program was converted as part of an upgrade, this may be a symptom that the conversion failed. Contact the GSC. Otherwise, ignore the warnings or restore the program from a backup. It is not possible to recover the missing programs.
AE-11	Orphaned AE PeopleCode	Because of platform issues and SQR, this check may not be included in the audit report. But SysAECleanUp.dms will clean up these orphans.
AE-12	Orphaned AE SQL objects	Because of platform issues and SQR, this check may not be included in the audit report. But SysAECleanUp.dms will clean up these orphans.
AE-13	Verify enough rows loaded into PS_AEONLINEINST	Contact the GSC. This table is a critical component of the Application Engine Runtime
AE-14	Verify enough rows loaded into PS_AEINSTANCENBR	Contact the GSC. This table is a critical component of the Application Engine Runtime
AE-15	Verify a row is loaded into PS_AELOCKMGR.	Contact the GSC. This table is a critical component of the Application Engine Runtime

Clear List Integrity

Query	Description	Resolution
SYSCLRLIST-01	Entries in PSACTIVITYDEL and PSACTIVITYDEFN are not mutually exclusive	Run the VERSION Application Engine program.
SYSCLRLIST-02	Entries in PSAEAPPLDEL and PSAEAPPLDEFN are not mutually exclusive	Run the VERSION Application Engine program.
SYSCLRLIST-05	Entries in PSCOLORDEL and PSCOLORDEFN are not mutually exclusive	Run the VERSION Application Engine program.

Query	Description	Resolution
SYSCLRLIST-06	Entries in PSFMTDEL and PSFMTDEFN are not mutually exclusive	Run the VERSION Application Engine program.
SYSCLRLIST-07	Entries in PSHOLIDAYDEL and PSHOLIDAYDEFN are not mutually exclusive	Run the VERSION Application Engine program.
SYSCLRLIST-09	Entries in PSIMPDEL and PSIMPDEFN are not mutually exclusive	Run the VERSION Application Engine program.
SYSCLRLIST-10	Entries in PSMENUDEL and PSMENUDEFN are not mutually exclusive	Run the VERSION Application Engine program.
SYSCLRLIST-11	Entries in PSPCMPROGDEL and PSPCMPROG are not mutually exclusive	Run the VERSION Application Engine program.
SYSCLRLIST-12	Entries in PSPNLDEL and PSPNLDEFN are not mutually exclusive	Run the VERSION Application Engine program.
SYSCLRLIST-13	Entries in PSPNLGRPDEL and PSPNLGRPDEFN are not mutually exclusive	Run the VERSION Application Engine program.
SYSCLRLIST-14	Entries in PSPRCSRUNCDEL and PSPRCSRUNCNTL are not mutually exclusive	Run the VERSION Application Engine program.
SYSCLRLIST-15	Entries in PSPROJECTDEL and PSPROJECTDEFN are not mutually exclusive	Run the VERSION Application Engine program.
SYSCLRLIST-16	Entries in PSQRYDEL and PSQRYDEFN are not mutually exclusive	Run the VERSION Application Engine program.
SYSCLRLIST-17	Entries in PSRECDEL and PSRECDEFN are not mutually exclusive	Run the VERSION Application Engine program.
SYSCLRLIST-18	Entries in PSRECURDEL and PS_PRCSRECUR are not mutually exclusive	Run the VERSION Application Engine program.
SYSCLRLIST-19	Entries in PSSTYLEDEL and PSSTYLEDEFN are not mutually exclusive	Run the VERSION Application Engine program.
SYSCLRLIST-20	Entries in PSTOOLBARDEL and PSTOOLBARDEFN are not mutually exclusive	Run the VERSION Application Engine program.

Query	Description	Resolution
SYSCLRLIST-21	Entries in PSTREEBRADEL and PSTREEBRANCH are not mutually exclusive	Run the VERSION Application Engine program.
SYSCLRLIST-22	Entries in PSTREEDEL and PSTREEDEFN are not mutually exclusive	Run the VERSION Application Engine program.
SYSCLRLIST-23	Entries in PSTREESTRDEL and PSTREESTRCT are not mutually exclusive	Run the VERSION Application Engine program.
SYSCLRLIST-24	Entries in XLATTABLEDEL and XLATTABLE are not mutually exclusive	Run the VERSION Application Engine program.

EDI Manager Integrity

Query	Description	Resolution
ECINMPFL-1	Inbound work records not found in the PSRECDEFN table	Either modify the inbound map definition to not use the Inbound Row ID Work Record (ECINMAPFILE), or create the Work Record Definition.
ECINMPFL-2	Inbound work record EC Map ID not found in the PS_ECMAPDEFN table	Create an entry in the map definition table (ECMAPDEFN).
ECINMPFD-1	Inbound work record fields not found with valid EC Map ID and EC File Row ID combination from the PS_ECINMAPFILE table	Either remove the invalid map id from the Inbound Work Record (ECINMAPFLD), or create an Inbound Row ID Work Record (ECINMAPFILE) entry.
ECINMPFD-2	Inbound work record fields from PS_ECINMAPFLD not found in PSRECFIELD	Either remove the invalid entry in the inbound work record (ECINMAPFLD) or create the record/field definition.
ECINMPRC-1	Target inbound records not found in the PSRECDEFN table	Either modify the inbound map definition to not use the Inbound Row ID Target Record (ECINMAPREC), or create the Work Record Definition.
ECINMPRC-2	Target inbound EC Map ID not found the PS_ECMAPDEFN table	Either remove the invalid map ID from the Inbound Row ID Target Record (ECINMAPREC) or create an entry in the Map Definition table (ECMAPDEFN).

Query	Description	Resolution
ECINMPRF-1	EC Map ID/EC File Row ID combination not found in PS_ECINMAPREC for the target inbound record field in PS_ECINMAPRECFLD	Remove the invalid map ID from the Inbound Target Record (ECINMAPRECFLD).
ECINMPRF-2	A Field for a Record in PS_ECINMAPRECFLD was not found in PSRECFIELD	Create the appropriate definitions in PSRECFIELD or remove the invalid map ID from the Inbound Target Record (ECINMAPRECFLD).
ECINMPRF-4	A related record in PS_ECINMAPRECFLD was not found in PSRECDEFN	Either create the record definition or remove the reference to the related record in the Inbound Target Record (ECINMAPRECFLD).
ECINMPRF-5	An EC Related Record in PS_ECINMAPRECFLD does not have a valid EC Related Row ID from PS_ECINMAPREC	Either remove the reference to the related record from the Inbound Target Record (ECINMAPRECFLD) or create an appropriate entry in the Inbound Row ID Target Record (ECINMAPREC).
ECINMPRF-6	A related field in PS_ECINMAPRECFLD was not found in PSRECFIELD	Either remove or correct the reference to the related field record from the Inbound Target Record (ECINMAPRECFLD) or create the correct definition in PSRECFIELD
ECOTMPRC-1	Target outbound records not found in the PSRECDEFN table	Either modify the outbound map definition to not use the Outbound Target Record (ECOUTMAPREC), or create the record definition.
ECOTMPRC-2	Outbound work record EC Map ID was not found in the PS_ECMAPDEFN table	Create an entry in the map definition table (ECMAPDEFN).
ECOTMPRC-3	Parent records from the outbound work record not found in the PSRECDEFN table	Remove the reference to the parent record or create a record definition for the parent.
ECOTMPRC-4	File records from the outbound work record not found in the PSRECDEFN table	Create a record definition for the file record.
ECOTMPFD-1	Outbound work record fields not found with valid EC Map ID and EC File Row ID combination from the PS_ECOUTMAPREC table	Either remove the entry from the Outbound Work Record (ECOUTMAPFLD) or create an entry in the Outbound Target Record (ECOUTMAPREC).

Query	Description	Resolution
ECOTMPFD-2	Outbound work record fields from PS_ECOUTMAPFLD not found in PSRECFIELD	Create the appropriate definitions in PSRECFIELD or remove the invalid map ID from the Outbound Work Record (ECOUTMAPFLD).
SYSECMGR-1	Inbound work record field does not exist in type definitions in PSDBFIELD	Call PeopleSoft GSC for resolution.

Field Integrity

Query	Description	Resolution
FIELD-3	The Following Default Fields are Invalid	Modify the Default Value in Record Field Properties.
FIELD-4	Fields being used in Record Definitions that do not exist in PSDBFIELD	Define the Field in Application Designer.
FIELD-5	Fields have multiple default field labels in PSDBFLDLABL.	Open the field, select default label, and resave.

FIELD-06	Deleted Fields have orphaned field labels in PSDBFLDLABL.	`DELETE FROM PSDBFLDLABL`
		
		`WHERE FIELDNAME NOT IN (SELECT FIELDNAME FROM PSDBFIELD)`

Menu Integrity

Query	Description	Resolution

MENU-01	A row in the MenuItem table has no corresponding row in the MenuDefinition table.	Issue the following SQL:
		`DELETE FROM PSMENUITEM`
		`WHERE MENUNAME = 'x';`

MENU-02	A component-type menu item specified no component.	Use the Menu Designer to change each of these menu items to reference an existing component.
MENU-03	A menu item has a specified component, but that component has no corresponding row in the ComponentDefinition table.	Use the Menu Designer to change each of these menu items to reference an existing component.

Query	Description	Resolution
MENU-04	A PeopleCode-type menu item has a specified enabling component, but that component has not been specified for any component-type menu item within the same menu. (Such menu items would never get enabled at runtime.)	Use the Menu Designer to change each of these menu items to reference a component that is associated with a component-type menu item within the same menu.
MENU-05	A menu has no rows in the MenuItem table.	Use the Menu Designer to add any appropriate menu items to each of these menus.

Security Integrity

Query	Description	Resolution
SEC-01	Authorized Signon Operator does not exist in Class Definition table.Incomplete permission list: Orphan signon times: (Verifies the existence of permission lists owning signon times)	Delete the extra signon times. If this is a permission list that should exist, recreate it through PeopleTools Security. `DELETE FROM PSAUTHSIGNON WHERE CLASSID='x'`
SEC-2	:Incomplete permission list: Orphan page permissions: (Verifies the existence of permission lists owning page permissions)	Delete the extra page permissions. If this is a permission list that should exist, recreate it through PeopleTools Security. `DELETE FROM PSAUTHITEM WHERE CLASSID='x'`
SEC-3	:Incomplete permission list: Orphan process groups: (Verifies existence of permission lists owning process groups)	Delete the extra process group authorizations. If this is a permission list that should exist, recreate it through PeopleTools Security `DELETE FROM PSAUTHPRCS WHERE CLASSID='x'`

Query	Description	Resolution
SEC-4	Incomplete permission list: Orphan process profiles: (Verifies existence of permission lists owning process profiles)	Delete the extra process profiles. If this is a permission list that should exist, recreate it through PeopleTools Security `DELETE FROM PSPRCSPRFL WHERE CLASSID='x'`
SEC-5	Permission list references a non-existent process group: (Verifies the existence of process groups)	Delete the extraneous process groups. If this group should exist, recreate it `DELETE FROM PSAUTHPRCS WHERE CLASSID='x' AND PRCSGRP = 'y'`
SEC-6	User Profile references a Role that does not exist:	Open the User Profile in PeopleTools Security and remove the reference to the Role that does not exist.
SEC-7	Role references a Permission List that does not exist:	Open the Role in PeopleTools Security and remove the reference to the Permission List that does not exist.

Page Integrity

Query	Description	Resolution

PAGE-01	Page definition's page field count is not equal to the count of its page fields in the PageField table, and there is at least one row in the PageField table for that page.	Enter the following SQL:
		`SELECT COUNT(*)`
		`FROM PSPNLFIELD`
		`WHERE PNLNAME = 'x';`
		`UPDATE PSPNLDEFN`
		`SET FIELDCOUNT = count`
		`WHERE PNLNAME = 'x';`

PAGE-02	Page definition's page field count is not equal to zero, but there are no rows in the PageField table for that page definition.	Enter the following SQL:
		`UPDATE PSPNLDEFN`
		`SET FIELDCOUNT = 0`
		`WHERE PNLNAME = 'x';`

PAGE-03	A subpage contains itself as a page field.	Use the Page Designer to change each of these page fields to reference a different subpage.

PAGE-04	A row in the PageField has no corresponding row in the PageDefinition table.	Issue the following SQL:
		`DELETE FROM PSPNLFIELD`
		`WHERE PNLNAME = 'x';`

Query	Description	Resolution
PAGE-05	A subpage-type page field has no corresponding row in the Page Definition table for its specified subpage.	Use the Page Designer to change each of these page fields to reference an existing subpage.
PAGE-06	A page field's specified record/field has no corresponding row in the RecordField table.	Use the Page Designer to change each of these page fields to reference an existing record/field.

PAGE-07	A row in the ComponentItem table has no corresponding row in the ComponentDefinition table.	Issue the following SQL:
		`DELETE FROM PSPNLGROUP`
		`WHERE PNLGRPNAME = 'x';`

PAGE-08	A component item's specified page has no corresponding row in the PageDefinition table.	Use the Component Designer to replace each of these component items with one that references an existing page.
PAGE-09	A component's specified access detail page has no corresponding row in the PageDefinition table.	Use the Component Designer to change each of these components to reference an access detail page that exists.
PAGE -10	A component's specified search record has no corresponding row in the RecordDefinition table.	Use the Component Designer to change each of these components to reference a search record that exists.
PAGE-11	A component's specified add search record has no corresponding row in the RecordDefinition table.	Use the Component Designer to change each of these components to reference an add search record that exists.

Optimization Integrity

Query	Description	Resolution

OPTZN-01	Problem Type Records that do not have matching record definitions.	Execute SQL:
		`DELETE FROM PSOPTREC WHERE RECNAME = '<RECORD NAME>';`
		
		`DELETE FROM PSOPTFIELD WHERE RECNAME = '<RECORD NAME>';`

OPTZN-02	Optimization delete records that do not have matching definitions.	Go to Record Designer, open base record definition properties and clear the optimization delete record name and perform an Alter.

Query	Description	Resolution
OPTZN-03	Optimization base record has fields that delete record does not.	Using Record Designer, delete the optimization delete record definition, drop the table and recreate it by cloning the base record. Run Build. You may need to recreate triggers on the base record on some platforms where deferred processing is not done.
OPTZN-04	Optimization delete record has fields that base record does not.	Using Record Designer, delete the optimization delete record definition, drop the table and recreate it by cloning the base record. Run Build. You may need to recreate triggers on the base record on some platforms where deferred processing is not done.
OPTZN-05	Optimization base record field definitions that do not match with delete record fields.	Using Record Designer, delete the optimization delete record definition, drop the table and recreate it by cloning the base record. Run Build. You may need to recreate triggers on the base record on some platforms where deferred processing is not done.
OPTZN-06	Optimization base record defn has trigger flag set but has no delete record name or vice versa.	Using Record Designer, open the record definition properties, make sure the optimization delete record name is set and save. Build the record with 'create triggers' checkbox set to create optimization triggers.
OPTZN-07	Optimization records that need to have trigger flag set and do not.	Using Record Designer, open the record definition properties, make sure the optimization delete record name is set and save. Build the record with 'create triggers' checkbox set to create optimization triggers.
OPTZN-08	Optimization records that have trigger flag set but are not marked readable in any problem type.	Using Record Designer, open the record definition properties, clear the optimization delete record name and alter the record to drop optimization triggers as they are no longer needed but impact performance.

PeopleCode Integrity

Query	*Description*	*Resolution*
PEOPLECODE-1	PeopleCode Name table contains Program name that does not exist in PcmProgram table	DELETE FROM PSPCMNAME A WHERE NOT EXISTS (SELECT 'X'FROM PSPCMPROG B WHERE B.OBJECTID1 = A.OBJECTID1 AND B.OBJECTVALUE1 = A.OBJECTVALUE1 AND B.OBJECTID2 = A.OBJECTID2 AND B.OBJECTVALUE2 = A.OBJECTVALUE2 AND B.OBJECTID3 = A.OBJECTID3 AND B.OBJECTVALUE3 = A.OBJECTVALUE3 AND B.OBJECTID4 = A.OBJECTID4 AND B.OBJECTVALUE4 = A.OBJECTVALUE4 AND B.OBJECTID5 = A.OBJECTID5 AND B.OBJECTVALUE5 = A.OBJECTVALUE5 AND B.OBJECTID6 = A.OBJECTID6 AND B.OBJECTVALUE6 = A.OBJECTVALUE6)
PEOPLECODE-2	PeopleCode Program table contains Program name that does not exist in PcmName table	DELETE FROM PSPCMPROG A WHERE A.NAMECOUNT <> 0 AND NOT EXISTS (SELECT 'X' FROM PSPCMNAME B WHERE A.OBJECTID1 = B.OBJECTID1 AND A.OBJECTVALUE1 = B.OBJECTVALUE1 AND A.OBJECTID2 = B.OBJECTID2 AND A.OBJECTVALUE2 = B.OBJECTVALUE2 AND A.OBJECTID3 = B.OBJECTID3 AND A.OBJECTVALUE3 = B.OBJECTVALUE3 AND A.OBJECTID4 = B.OBJECTID4 AND A.OBJECTVALUE4 = B.OBJECTVALUE4 AND A.OBJECTID5 = B.OBJECTID5 AND A.OBJECTVALUE5 = B.OBJECTVALUE5 AND A.OBJECTID6 = B.OBJECTID6 AND A.OBJECTVALUE6 = B.OBJECTVALUE6)

Query	Description	Resolution
PEOPLECODE-3	PeopleCode Program table Name count does not match record count in PcmName table	UPDATE PSPCMPROG A SET A.NAMECOUNT = (SELECT COUNT(*) FROM PSPCMNAME C WHERE C.OBJECTID1 = A.OBJECTID1 AND C.OBJECTVALUE1 = A.OBJECTVALUE1 AND C.OBJECTID2 = A.OBJECTID2 AND C.OBJECTVALUE2 = A.OBJECTVALUE2 AND C.OBJECTID3 = A.OBJECTID3 AND C.OBJECTVALUE3 = A.OBJECTVALUE3 AND C.OBJECTID4 = A.OBJECTID4 AND C.OBJECTVALUE4 = A.OBJECTVALUE4 AND C.OBJECTID5 = A.OBJECTID5 AND C.OBJECTVALUE5 = A.OBJECTVALUE5 AND C.OBJECTID6 = A.OBJECTID6 AND C.OBJECTVALUE6 = A.OBJECTVALUE6)
PEOPLECODE-4	PeopleCode contains Invalid FILELAYOUT References:	Open PeopleCode program in Application Designer and correct invalid reference.
PEOPLECODE-5	PeopleCode Reference to Invalid Record or Field	Open PeopleCode program in Application Designer and correct invalid reference.
PEOPLECODE-6	PeopleCode Reference to Invalid Field	Open PeopleCode program in Application Designer and correct invalid Field Name

Process Scheduler

Query	*Description*	*Resolution*
PRCSSCHED-01	SQR-Related Process Definitions (PS_PRCSDEFN) that override the PARMLIST field from the Process Type Definition (PS_PRCSTYPEDEFN)	For the listed processes select Process Scheduler, Processes, Override Options. Remove the value assigned to the Parameter List field. **Note:** This PRRSCHED-01 is intended to be a warning. If the override of the Parameter List specified in the Process Type definition was intentional, then the above action can be bypassed.
PRCSSCHED-03	Process Definitions (PS_PRCSDEFN) where the OUTDESTTYPE should be set to NONE	For the listed processes select Process Scheduler, Processes Destination. In the Output Destination Options group, set the Type option to (None).
PRCSSCHED-04	Process Definitions (PS_PRCSDEFN) where the API AWARE should be set to true.	For the listed processes select Process Scheduler, Processes, Process Definition. Select the checkbox that reads API Aware. If API Aware is not marked, this process will get an incorrect Run Status when viewed from Process Monitor. For additional information, please refer to the Process Scheduler PeopleBook.
PRCSSCHED-05	Process Definitions (PS_PRCSDEFN) where Process Type was not found in the Process Type Definition (PS_PRCSTYPEDEFN)	This occurs when a Process Definition is copied from another PeopleSoft database using project upgrade. However, the Process Type definition associated with this Process Definition was not copied into the database. Review the project upgrade used to create the Process Definition. Create another project upgrade to copy Process Type definition from the database where the Process Definition originated.

Query	Description	Resolution
PRCSSCHED-06	Process Job Item (PS_PRCSJOBITEM) where Process Type listed as a Job Item but was not found in the Process Definition (PS_PRCSDEFN).	This occurs when a PSJob was copied from another PeopleSoft database using a project upgrade. However, the Process Definition for one or more job items in the PSJob was not copied from the database. Review the project upgrade used to create the PSJob. Create another project upgrade to copy the Process Definitions identified in this report from the database where the PSJob originated.
PRCSSCHED-07	Server Class List (PS_SERVERCLASS) where Process Type was not found in the Process Type Definition (PS_PRCSTYPEDEFN)	This occurs when a Server Definition is copied from another database using a project upgrade. However, a process type in the Server Class list is not found in the Process Type Definition. Create another project upgrade to copy the Process Type definition from the database where the Server Definition was created.

Query Integrity

Query	*Description*	*Resolution*

QUERY-01	Query Definition Select count does not match record count in the Query Select table	The query definition is corrupt. Run the following SQL to delete the entire query definition:
		`DELETE FROM psqrydefn WHERE oprid = 'x' AND q ryname = 'y'`
		`DELETE FROM psqryselect WHERE oprid = 'x' AND qryname = 'y'`
		`DELETE FROM psqryrecord WHERE oprid = 'x' AND qryname = 'y'`
		`DELETE FROM psqryfield WHERE oprid = 'x' AND qryname = 'y'`
		`DELETE FROM psqrycriteria WHERE oprid = 'x' AND qryname = 'y'`
		`DELETE FROM psqryexpr WHERE oprid = 'x' AND qryname = 'y'`
		`DELETE FROM psqrybind WHERE oprid = 'x' AND qryname = 'y'`

QUERY-02	Query Definition Expression count does not match record count in the Query Expression table	See resolution for QUERY-01.
QUERY-03	Query Definition Bind count does not match record count in the Query Bind table	See resolution for QUERY-01.
QUERY-04	Query Definition Record name does not exist in the Record Definition table.	See resolution for QUERY-07.
QUERY-05	Query Definition Record JoinRecord name does not exist in the Query Record table	See resolution for QUERY-01.
QUERY-06	Query Definition Record JoinField name does not exist in the Query Field table	See resolution for QUERY-01.

Query	Description	Resolution
QUERY-07	Query Field Record Name does not exist in Record Definition Table	To salvage the query, you must use Application Designer to recreate the record definition. Having recreated the record, run Query and open the offending query. Remove or repair the affected areas and save the query. Or, if the query is not important you can delete the entire query definition using the resolution for QRY-01.
QUERY-08	Query Definition Field name does not exist in the Field Definition table	If the record on which this field appears has been deleted, you will have seen errors for every referenced field that belonged to the deleted record. If this is the case, see the resolution for QUERY-1. If this is not the case, some fields that the query depended on have either been deleted or renamed. Run Query and open the offending query. Query will automatically repair itself and update the query definition in the database.
QUERY-09	Query Selection Record count does not match record count in Query Record table	See resolution for QUERY-01.
QUERY-10	Query Selection Field count does not match record count in Query Field table	See resolution for QUERY-01.
QUERY-11	Query Selection Criteria count does not match record count in Query Criteria table	See resolution for QUERY-01.
QUERY-11A	Query Selection Criteria having count does not match record count in Query Criteria table	See resolution for QUERY-01.
QUERY-12	Query Selection Parent select number does not exist in Query Select table	See resolution for QUERY-01.

Query	Description	Resolution
QUERY-13	Query Criteria Selection-Left does not exist in the Query Selection table	Run Query and delete corrupted criteria entry. If you can't open the query, run the following SQL to delete the corrupted criteria entry: `DELETE FROM psqrycriteria WHERE oprid = 'x' AND qryname = 'y' AND crtnum = 'z'`
QUERY-14	Query Criteria Selection-Right1 does not exist in the Query Selection table	See resolution for QUERY-13.
QUERY-15	Query Criteria Selection-Right2 does not exist in the Query Selection table	See resolution for QUERY-13.
QUERY-16	Query Criteria Field-Left does not exist in the Query Selection table	See resolution for QUERY-13.
QUERY-17	Query Criteria Field-Right1 does not exist in the Query Selection table	See resolution for QUERY-13.
QUERY-18	Query Criteria Field-Right2 does not exist in the Query Selection table	See resolution for QUERY-13.
QUERY-19	Query Criteria Expression-Right1 does not exist in the Query Selection table	See resolution for QUERY-13.
QUERY-20	Query Criteria Expression-Right2 does not exist in the Query Selection table	See resolution for QUERY-13.
QUERY-22	Following Queries Were Created Without PUBLIC Access	This is normal; the audit insures that PeopleSoft does not deliver non-public queries as part of its standard delivered products.
QUERY-23	Following Queries do not exist in PSQRYRECORD	This is an internal PeopleSoft audit. Call PeopleSoft GSC for resolution.
QUERY-24	Following Queries were created with name UNTITLED	This is normal; the audit insures that PeopleSoft does not deliver any queries with a name of "UNTITLED' as part of its standard delivered products.

Record Integrity

Query	*Description*	*Resolution*

RECORD-1	Record Definition Field count does not match the number of records in Record Field table	`SELECT COUNT(*) FROM psrecfield WHERE recname = 'x';`
		
		`UPDATE psrecdefn SET fieldcount = count WHERE recname = 'x';`

RECORD-2	Record Definition Fields do not exist in Record Field table	Either
		`UPDATE psrecdefn SET fieldcount = 0 WHERE recname = 'x';`
		Or
		`DELETE FROM psrecdefn WHERE recname = 'x';`

RECORD-3	Record Definition Parent Record does not exist in Record Definition table	Use Application Designer to open the definition. Select **File, Object Properties, Use** and specify a valid parent record.
RECORD-4	Record Definition SubRecord does not exist in Record Definition table	Use Application Designer to open the definition. Select **File, Object Properties, Type** and specify a valid subrecord.
RECORD-5	Record Definition Query Security Record does not exist in Record Definition table	Use Application Designer to open the definition. Select **File, Object Properties, Use** and specify a valid query security record.
RECORD-6	Record Field definitions contain Record names that do not exist in the Record Definition table	`DELETE FROM psrecfield WHERE recname = 'x';`
RECORD-7	DBField records do not exist for the following RecField table Fields	Use Application Designer to open the definition and fix the invalid fields.
RECORD-8	Record definitions do not exist for the following RecField table SubRecords	Use Application Designer to open the definition and fix the invalid fields.
RECORD-9	IDENTIFY INVALID RECORDS IN RECORD GROUP DEFINITIONS	Can be fixed with: `DELETE FROM PS_REC_GROUP_REC WHERE RECNAME NOT IN (SELECT DISTINCT RECNAME FROM PSRECDEFN)`

Query	Description	Resolution
RECORD-11	Records with more than two Longs defined	This depends on whether your database platform supports it or not. If it does not, then those records must be modified.
RECORD-12	Records with a Blank/Null RECNAME	Can be fixed with: `DELETE FROM PSRECDEFN WHERE RECNAME = ''`

Related Language Integrity

Query	Description	Resolution

SYSLANG-01	Base Language Records found in the PSRECDEFNLANG table	Run the following SQL from the your SQL tool.
		`Delete from psrecdefnlang where`
		`Language_cd = (select b.language_cd from psoptions)`

SYSLANG-02	Base Language Fields found in the PSDBFIELDLANG table	Check the value of LANGUAGE_CD on PSOPTIONS- this is your base language. Entries with this language code were found in PSDBFIELDLANG. Base language entries should only be in PSDBFIELD. Once you've established that the base language entries in PSDBFIELD are correct, you should delete them from PSDBFIELDLANG as follows: `DELETE FROM psdbfieldlang WHERE language_cd =(SELECT language_cd FROM psoptions)`

Query	Description	Resolution

SYSLANG-03	Foreign Language Records found in PSRECDEFNLANG table without related Base Records from PSRECDEFN	Run the following SQL from the appropriate SQL tool.
		`Delete from psrecdefnlang where not exists (select 'x' from psrecdefn b where psrecdefnlang.recname = b.recname)`
		`And psrecdefnlang.language_cd <> (select c.language_cd from psoptions c)`

SYSLANG-04	Foreign Language Fields found in the PSDBFIELDLANG table without related Base Fields from PSDBFIELD	`DELETE FROM psdbfieldlang A WHERE NOT EXISTS (SELECT 'X' FROM psdbfield B WHERE A.fieldname=B.fieldname) AND A.language_cd <> (SELECT language_cd FROM psoptions)`
SYSLANG-05	Foreign Language Translate Fields found in the XLATTABLE table without related Base Language Translate Fields	Either delete the offending entries via SQL, or use the Application Designer to add the equivalent entries in the base language of the database.
SYSLANG-07	Related Language Records Which Are Not Valid Records	In Application Designer, delete the specified Related Language Records.
SYSLANG-08	The Following Related Language Records are effective dated but do not have an EFFDT field defined	In Application Designer, add EFFDT to the specified related language table.
SYSLANG-09	The Following Related Language Record(s) Point to another Related Language Record	In Application Designer, delete the related language reference for each record listed.
SYSLANG-10	The Following Related Language Record(s) do not contain a LANGUAGE_CD as a key field.	In Application Designer, make LANGUAGE_CD field a Key on the specified Related Language Tables.
SYSLANG-11	The Following Related Language View(s) Have The Wrong Structure Defined	In Application Designer, make the key structures on the specified Related Language view identical to the key structure on the Base Table/view.

Query	*Description*	*Resolution*
SYSLANG-12	The Following Related Language Record(s) Have The Wrong Key Structure Defined	In Application Designer, make the key structures on the specified Related Language Tables identical to the key structure on the Base Table.
SYSLANG-13	Identify related language records that have more than one base record defined	In Application Designer, remove the related language table link to one of the base records.
SYSLANG-14	Identify related language RECORDS that have the wrong structure defined	In Application Designer, make the key structures on the specified Related Language Tables identical to the key structure on the Base Table. Also remove any fields, except language_cd, on the related language record that do not exist on the base record.
SYSLANG-15	The Following Related Language field(s) are orphaned	For each row on the related language record there must be a single row on the base table with matching keys. An orphan row is a row of data on the related language record that does not have a corresponding parent row on the base table. Orphan rows must be deleted.

Query	Description	Resolution

		Select against the related language table using the key fields listed in the report to find discrepancies.
		
		To fix this problem, using your platform's query tools select against the related language table, using the fields listed in the report, where the values do not match a row on the base table. For every row on the report there is an orphan row on the table. Do a SELECT first to ensure you are getting the same row count as the report then delete the selected rows. Here is sample SQL for a Microsoft SQL Server database.
		
		`SELECT * FROM PSCONTDEFNLANG A WHERE NOT EXISTS`
		
		`(SELECT 'X' FROM PSCONTDEFN B WHERE A.ALTCONTNUM = B.ALTCONTNUM`
		
		`AND A.CONTNAME = B.CONTNAME AND A.CONTTYPE = B.CONTTYPE)`
		
		`DELETE FROM PSCONTDEFNLANG WHERE NOT EXISTS`
		
		`(SELECT 'X' FROM PSCONTDEFN B WHERE PSCONTDEFNLANG.ALTCONTNUM = B.ALTCONTNUM`
		
		`AND PSCONTDEFNLANG.CONTNAME = B.CONTNAME AND PSCONTDEFNLANG.CONTTYPE = B.CONTTYPE)`
		
		`SELECT * FROM <Related Language Record> A WHERE NOT EXISTS`
		
		`(SELECT 'X' FROM <Base Record> B WHERE A.<Field Name> = B.<Field Name> ...for each field name listed)`

SQL Integrity

Query	Description	Resolution
SQL-01	SQL text without a base definition	Can be fixed with: `DELETE FROM PSSQLTEXTDEFN WHERE SQLID NOT IN (SELECT DISTINCT SQLID FROM PSSQLDEFN)`
SQL-02	SQL definitions without SQL text	Can be fixed with: `DELETE FROM PSSQLDEFN WHERE SQLID NOT IN (SELECT DISTINCT SQLID FROM PSSQLTEXTDEFN)`
SQL-03	SQL descriptions without a base definition	Can be fixed with: `DELETE FROM PSSQLDESCR WHERE SQLID NOT IN (SELECT DISTINCT SQLID FROM PSSQLDEFN)`
SQL-04	SQL descriptions without associated SQL text	Can be fixed with: `DELETE FROM PSSQLDESCR WHERE SQLID NOT IN (SELECT DISTINCT SQLID FROM PSSQLTEXTDEFN)`
SQL-05	AE SQL without SQL definitions	This reveals Application Engine SQL Actions that do not contain any SQL code within them. Open the Application Engine program and complete the entry of the SQL before attempting to run the program. If the empty SQL actions were delivered by PeopleSoft, open an incident with the GSC to report the corrupt AE program.

Query	Description	Resolution
SQL-06	AE SQL that's not referenced	This reveals an Application Engine SQL object that is not being referenced by an AE program. This indicates that the AE program was deleted but the associated SQL was not. The orphaned SQL will not cause issues other than consuming disk space. If the orphaned SQL was delivered by PeopleSoft, open an incident with GSC to make sure that it is not a symptom of a larger problem such as a corrupted AE application.
SQL-07	Record Views/Dynamic Views without SQL definitions	Complete the entry of the record view/dynamic view before attempting to build/create the view. Each record should be opened, and the SQL should be entered as required.

SQL-08	View SQL that's not referenced by record or dynamic views	Enter the following SQL:
		
		`DELETE FROM PSSQLDEFN WHERE SQLTYPE = 2 AND SQLID NOT IN (SELECT DISTINCT RECNAME FROM PSRECDEFN WHERE RECTYPE = 5 OR RECTYPE = 1)`
		
		`DELETE FROM PSSQLDESCR WHERE SQLTYPE = 2 AND SQLID NOT IN (SELECT DISTINCT RECNAME FROM PSRECDEFN WHERE RECTYPE = 5 OR RECTYPE = 1)`
		
		`DELETE FROM PSSQLTEXTDEFN WHERE SQLTYPE = 2 AND SQLID NOT IN (SELECT DISTINCT RECNAME FROM PSRECDEFN WHERE RECTYPE = 5 OR RECTYPE = 1)`

Tree Integrity

Query	Description	Resolution
TREE-01	Tree Structure table contains Level Record name that does not exist in Record Definition table	Use Tree Manager to open the structure and fix the invalid fields.
TREE-02	Tree Structure table contains Level Page name that does not exist in Page Definition table	Use Tree Manager to open the structure and fix the invalid fields.

Query	Description	Resolution
TREE-03	Tree Structure table contains Node Record name that does not exist in Record Definition table	Use Tree Manager to open the structure and fix the invalid fields
TREE-04	Tree Structure table contains Node Field name that does not exist in RecordField table	Use Tree Manager to open the structure and fix the invalid fields
TREE-05	Tree Structure table contains Node Page name that does not exist in Page Definition table	Use Tree Manager to open the structure and fix the invalid fields
TREE-06	Tree Structure table contains Detail Record name that does not exist in Record Definition table	Use Tree Manager to open the structure and fix the invalid fields
TREE-07	Tree Structure table contains Detail Record name that does not exist in Record Definition table	Use Tree Manager to open the structure and fix the invalid fields
TREE-08	Tree Structure table contains Detail Page name that does not exist in Page Definition table	Use Tree Manager to open the structure and fix the invalid fields
TREE-09	Tree Structure table contains Summary Tree that does not exist in Tree Level table	Lists any Summary Tree Structures that reference a level number on a Detail Tree that does not exist in the Tree Level table. Since a Summary Tree is a tree that is built off of the nodes from an existing Detail Tree at a given level, the level specified on the Summary Tree Structure must exist in the detail tree's PSTREELEVEL table. Given this situation the Summary Tree would NOT be useable from nVision or other reporting tools. The situation could occur from several possible causes : • Summary Tree was moved or imported into a new database but Detail Tree was not • The levels on the Detail Tree could have been deleted since the summary tree structure was created

Query	Description	Resolution
		Corrective Action : 1. First need to determine if Detail Tree exists and is in a valid state. This can be done by checking the name of the Detail Tree on the Summary Tree's Structure record -- check the Summary Tree tab on the Tree Structure record for the Summary Tree. Note the Tree Name, SetId, and Level # 2. If Detail Tree exists, check and see if the level # defined on the Summary Tree Structure (step 1 above) exists. 3. To correct the situation, either add missing level to detail tree or update Summary Tree Structure to refer to a valid detail tree and level number.
TREE-10	Tree Structure table contains Level Menu-Menu Bar combination that does not exist	Use Tree Manager to open the structure and fix the invalid fields.
TREE-11	Tree Structure table contains Node Menu-Menu Bar combination that does not exist	Use Tree Manager to open the structure and fix the invalid fields.
TREE-12	Tree Structure table contains Detail Menu-Menu Bar combination that does not exist	Use Tree Manager to open the structure and fix the invalid fields.
TREE-13	Tree Structure table contains Level Menu-Page combination that does not exist	Use Tree Manager to open the structure and fix the invalid fields.
TREE-14	Tree Structure table contains Node Menu-Page combination that does not exist	Use Tree Manager to open the structure and fix the invalid fields.
TREE-15	Tree Structure table contains Detail Menu-Page combination that does not exist	Use Tree Manager to open the structure and fix the invalid fields.

Query	Description	Resolution

TREE-16	Tree Definition Level count does not match record count in Tree Level table	Set the Count in the Tree Definition table to reflect the actual number of records in the PSTREELEVEL table for this tree branch. Note that a problem may occur if some levels are missing and there are still nodes referencing them. In this case, the nodes will not open the tree correctly. The third SELECT checks for the previous situation. If this is the problem, run PSTED, and define the missing levels, save the tree, and then close and re-open it.
		`SELECT COUNT(*)`
		`FROM PSTREELEVEL`
		`WHERE TREE_NAME = 'tree_name'`
		`AND`
		`SETID = 'setid' AND`
		`EFFDT = 'effdt';`
		
		`UPDATE PSTREEDEFN`
		`SET LEVEL_COUNT = $count`
		`WHERE TREE_NAME = 'tree_name'`
		`AND`
		`SETID = 'setid' AND`
		`EFFDT = 'effdt';`

TREE-17	Tree Definition Node count does not match record count in Tree Node table	Set the count in the Tree Definition table to reflect the actual number of the records in the PSTREENODE table for this tree branch.
		`SELECT COUNT(*)`
		`FROM PSTREENODE`
		`WHERE TREE_NAME = 'tree_name'`
		`AND`
		`SETID = 'setid' AND`
		`EFFDT = 'effdt' AND`
		`TREE_BRANCH =`
		`'tree_branch_name';`
		
		`UPDATE PSTREEDEFN`
		`SET NODE_COUNT = $count`
		`WHERE TREE_NAME = 'tree_name'`
		`AND`
		`SETID = 'setid' AND`
		`EFFDT = 'effdt'`
		`TREE_BRANCH =`
		`'tree_branch_name';`

Query	Description	Resolution

TREE-18	Tree Definition Leaf count does not match record count in Tree Leaf table	Set the Count in the Tree Definition table to reflect the actual number of records in the PSTREELEAF table for this branch.
		`SELECT COUNT (*)`
		`FROM PSTREELEAF`
		`WHERE TREE_NAME = 'tree_name'`
		`AND`
		`SETID = 'setid' AND`
		`EFFDT = 'effdt'`
		`TREE_BRANCH =`
		`'tree_branch_name';`
		
		`UPDATE PSTREEDEFN`
		`SET LEAF_COUNT = $count`
		`WHERE TREE_NAME = 'tree_name'`
		`AND`
		`SETID = 'setid' AND`
		`EFFDT = 'effdt'`
		`TREE_BRANCH =`
		`'tree_branch_name';`

TREE-19	Tree Definition contains Structure ID that does not exist in Tree Structure table	Use Tree Manager to create the structure desired using the name reported in this audit.

TREE-20	Tree Definition contains Query Access Group structure with undefined levels and leaves	Query trees should have no leaves and no levels. This audit finds exceptions to that case in the definition counts.
		`UPDATE pstreedefn`
		`SET level_count = 0,`
		`leaf_count = 0`
		`WHERE tree_strct_id =`
		`'ACCESS_GROUP' AND`
		`(level_count <> 0 OR`
		`leaf_count <> 0);`

TREE-21	Tree Selector Control contains Tree name 'that is not defined in Tree Definition table	This audit flags records in the PSTREESELCTL tables for records that don't have a corresponding record in the PSTREEDEFN table.
		`DELETE FROM pstreeselctl A`
		`WHERE NOT EXISTS`
		`(SELECT 'x' FROM pstreedefn B`
		`WHERE B.setid = A.setid AND`
		`B.tree_name = A.tree_name AND`
		`B.effdt = A.effdt)`

Query	Description	Resolution
TREE-22	Tree Definition Level count does not match level use	This audit flags the Level Use type with the Level Count for conflicts. When the Level Use is "N" there should be no Levels defined and when it is not "N" then there should be levels defined. A problem in this audit may also report problems in the TREE-16 audit. When the Level Use is 'N" and the Level Count !=0 and TREE-16 does not indicate an error on the same tree, do the following: UPDATE PSTREEDEFN SET USE_LEVELS = 'S' WHERE TREE_NAME = 'tree_name' AND SETID = 'setid' AND EFFDT = 'effdt' When the Level Use is 'S' and the Level Count !=0 and TREE-16 does not indicate an error on the same tree, do the following (after checking the resolution on TREE-16 to cleanup any level records): UPDATE PSTREEDEFN SET LEVEL_COUNT = 0 WHERE TREE_NAME = 'tree_name' AND SETID = 'setid' AND EFFDT = 'effdt' When the Level Use is not 'N' and the Level Count = 0 and TREE-16 does not indicate an error on the same tree, do the following (after checking the resolution on TREE-16 to cleanup any level records): UPDATE PSTREEDEFN SET USE_LEVELS = 'N' WHERE TREE_NAME = 'tree_name' AND SETID = 'setid' AND EFFDT = 'effdt'

Query	Description	Resolution
		and UPDATE PSTREENODE SET TREE_LEVEL_NUM = 0 WHERE TREE_NAME = 'tree_name' AND SETID = 'setid' AND EFFDT = 'effdt' When TREE-23 indicates an error on the same Tree with the Level Count on the PSTREEDEFN = number of PSTREELEVEL records (when the PSTREELEVEL has no levels for this tree, count = 0 for the following: SELECT COUNT(*) FROM PSTREELEVEL WHERE TREE_NAME = 'tree_name' AND SETID = 'setid' AND EFFDT = 'effdt' \\ Then… UPDATE PSTREEDEFN SET LEVEL_COUNT = 0 WHERE TREE_NAME = 'tree_name' AND SETID = 'setid' AND EFFDT = 'effdt' and UPDATE PSTREEDEFN SET USE_LEVELS = 'N' WHERE TREE_NAME = 'tree_name' AND SETID = 'setid' AND EFFDT = 'effdt' and UPDATE PSTREENODE SET TREE_LEVEL_NUM = 0 WHERE TREE_NAME = 'tree_name' AND SETID = 'setid' AND EFFDT = 'effdt'

Query	Description	Resolution
TREE-23	Tree Level does not exist in Tree Definition table	Tree Level records in the PSTREELEVEL table exist for trees that don't exist in the PSTREEDEFN table. `DELETE FROM pstreelevel A WHERE NOT EXISTS (SELECT 'x' FROM pstreedefn B WHERE B.setid = A.setid AND B.tree_name = A.tree_name AND B.effdt = A.effdt)`
TREE-24	Tree Node does not exist in Tree Definition table	Tree Node records in the PSTREENODE table exist for trees that don't exist in the PSTREEDEFN table. `DELETE FROM pstreenode A WHERE NOT EXISTS (SELECT 'x' FROM pstreedefn B WHERE B.setid = A.setid AND B.tree_name = A.tree_name AND B.effdt = A.effdt)`
TREE-25	Tree Leaf does not exist in Tree Definition table	Tree Leaf records in the PSTREELEAF table exist for trees that don't exist in the PSTREEDEFN table. `DELETE FROM pstreeleaf A WHERE NOT EXISTS (SELECT 'x' FROM pstreedefn B WHERE B.setid = A.setid AND B.tree_name = A.tree_name AND B.effdt = A.effdt)`
TREE-26	Tree Leaf ranges not valid in Tree Definition table	Finds records in the PSTREELEAF table where RANGE_FROM is less than RANGE_TO. Use Tree Manager to open the tree and correct the invalid range values
TREE-27	Tree Leaf does not have parent Tree Node in Tree Definition table.	`DELETE FROM pstreeleaf A WHERE NOT EXISTS (SELECT 'x' FROM pstreenode B WHERE B.setid = A.setid AND B.tree_name = A.tree_name AND B.effdt = A.effdt AND B.tree_node_num = A.tree_node_num)`

Query	Description	Resolution
TREE-28	Tree Branch does not exist in Tree Branch table.	Refer to the "Tree Audit and Repair Utilities" chapter in the Tree Manager PeopleBook and run the Unbranch Tree Repair Utility so that all branches are removed from the tree.
TREE-29	Tree Branch does not exist in Tree Branch table	Refer to the "Tree Audit and Repair Utilities" chapter in the Tree Manager PeopleBook and run the Unbranch Tree Repair Utility so that all branches are removed from the tree.
TREE-30	Tree Branch Node count does not match record count in Tree Node table	See Resolution for Tree-29
TREE-31	Tree Branch Leaf count does not match record count in Tree Leaf table	See Resolution for Tree-29
TREE-32	Tree Node Num, Node Num End, or Level Num is invalid in Tree Branch table	See Resolution for Tree-29
TREE-33	Identify all orphan access group definitions as well as invalid access group definitions in the access group security	Open Query Access Group Tree in Query Access Group Manager and update the identified Access Group so that a record is created in the Access Group Table
TREE-34	Tree Definition Node Count Does Not Equal 0 for a Branched Tree.	See Resolution for Tree-29
TREE-35	Tree Definition Leaf Count Does Not Equal 0 for a Branched Tree.	See Resolution for Tree-29

Translate Integrity

Query	Description	Resolution
XLATT-1	Translate table Field does not exist in database Field.	Create the field using Application Designer.
XLATT-3	Translate field(s) do not have associated translate values defined.	Edit translate field and enter translate value.

PSLOCK Integrity

Query	Description	Resolution
Manager-< XXX > *Where XXX is the associated three-letter code of the object type.*	Version Check of listed table against PSVERSION.	Run the Version Application Engine program.

CHAPTER 2

Data Mover

This document provides an overview of Data Mover and covers the following topics:

- Data Mover interface
- Using Data Mover
- Data Mover Scripts
- Database Setup functionality
- Data Mover Command Line Interface
- Data Mover Commands
- Data Mover Set Parameters
- Sample Data Mover Scripts

Understanding Data Mover

Data Mover enables you to perform the following tasks:

- Transfer application data between PeopleSoft databases.
- Move PeopleSoft databases across operating systems and database platforms.
- Execute SQL statements against any PeopleSoft database, regardless of the underlying operating system or database platform.
- Control database security and access.
    - Create, edit, and run scripts. These scripts may include any combination of SQL commands and Data Mover commands for exporting and importing data.

The Data Mover development interface, or GUI, only runs on Windows. However, the Data Mover command line interface, which is mainly intended for UNIX servers, runs on Windows and UNIX operating systems.

Important! Data Mover runs in two-tier mode only. You must sign on to the database directly, not through an application server.

Understanding the Data Mover Interface

Before you begin using Data Mover to create and run your database scripts, you'll want to become familiar with the Data Mover interface.

Starting Data Mover

There are two ways to start Data Mover:

- Using the Data Mover short cut in your PeopleSoft program group, as in Start, Programs, <PeopleSoft Group>, Data Mover. This access method only applies to the Windows Development Environment.
- Using the command line interface. This executes Data Mover in a console for Windows and a telnet session for UNIX. The command line interface is discussed in more detail later in this document.

Operating Modes

Operating modes refer to how you are connected to the database. You use Data Mover in one of the following modes: regular or bootstrap.

Regular Mode — Most of the time you will sign onto Data Mover in regular mode. To do this, you simply enter your PeopleSoft user ID and password at the signon screen. In regular mode, all commands are valid.

Bootstrap Mode — At times, you need to signon on to Data Mover in bootstrap mode, which means using the database access ID and password at the signon screen. Typically, using bootstrap mode is necessary for database loading because there are no PeopleSoft security tables established yet. Bootstrap mode is also used for running some security commands, such as, ENCRYPT_PASSWORD.

Note. In bootstrap mode, the following commands are not valid: EXPORT, RENAME, and REPLACE_VIEW.

Signing on to the Development Environment

To start Data Mover in the Development Environment:

1. Select Start, Programs, <PeopleSoft Group>, Data Mover.

Where <PeopleSoft Group> refers to the program group containing your PeopleSoft programs. If you don't have a Data Mover short cut, you can add one to the desktop. The executable to launch is as follows: %PS_HOME%\bin\client\winx86\PSDMT.EXE.

2. Sign on using the appropriate ID and password.

   In regular mode, these would be your User ID and password. In bootstrap mode, you use the system access ID and access password, such as SYSADM.

Understanding the Data Mover Window

The Data Mover interface is split horizontally into two panes: an input pane and an output pane.

The input pane is on the top of the screen and the output pane is on the bottom.

The status bar at the bottom of the screen reveals the following:

- Database Name. QEDMO, PT840HR, and so on.
- Database Type. Oracle, Sybase, and so on.
- Operating Mode. Regular or Bootstrap mode.
- Trace Status. On or off.

The input pane (window) is where the script you've opened appears. This is where you view and edit Data Mover scripts.

The output window displays the results after running a script. If you encounter any errors, the output window shows where the script failed. In a multi-database environment, always check the information at the top of the output to ensure that you've run the script against the appropriate database. Specifically, refer to the "Database:" line.

Note. The results shown in the output window are saved to the file DATAMOVE.LOG by default, which is written to the default log directory as specified in the Configuration Manager (Profile, Common tab). You can also specify your own file name.

SQL Trace status appears in the far right portion of the status bar. PeopleSoft recommends using Data Mover with tracing turned off. You can disable SQL Trace (for the Windows environment) before starting Data Mover in a number of places:

- Configuration Manager
- PeopleTools Options
- Data Mover Command (NO TRACE)

The operating mode display on the status bar lets you know if you're in regular mode or in bootstrap mode. If you are connected to the database in regular mode, the status shows a

"blank" operating mode. The operating mode displays BootStrap if you signed on using the access ID and password.

Note. Make sure you know the mode you are using. Most commands require regular mode to run successfully.

See Also

Configuration Manager

PeopleTools Options

NO TRACE

Operating Modes

LOG

Understanding the Menu Options

There are four menu bar items in the Data Mover window: File, Edit, View, and Help.

File	Contains options to Create, Open, Save, and Run scripts. You also launch Database Setup from this menu. These options are discussed later in this document in the proper context.
Edit	Contains menu items similar to those of most text editors: Undo, Cut, Copy, Paste, and Clear. Also, you will find Select All, Find, Replace, and Repeat.
View	Using the View menu list, you can opt to hide the Toolbar and/or the Status Bar. Both appear by default.
Help	Contains the Standard PeopleSoft help options.

Understanding the Toolbar Options

The toolbar offers the standard Microsoft Windows buttons to use in place of selecting menu options for the following actions: New, Open, Save, Cancel, Cut, Copy, Paste, and Help. The only button that is specific to Data Mover is the Run Script button.

Understanding Data Mover Scripts

This section covers:

- Command Types

- Syntax Rules
- Creating and editing scripts

Command Types

A Data Mover script can contain two types of commands:

- **Data Mover commands.** Used to export and import database information and to otherwise modify the database. Data Mover commands also control script execution, call other Data Mover files, and enter comments.
- **SQL commands.** These include both standard and non-standard SQL commands used to modify the database.

Syntax Rules

If you plan to create or edit Data Mover scripts, you will need to keep the following syntax rules in mind to make sure your commands run successfully.

Rule 1

With the exception of double-dash (--) comment statements, every command statement must be followed by a delimiter.

Valid delimiters are:

- Semicolon (;). A semicolon can reside on the same line as the command itself, or by itself on the line immediately following a command statement. For example, the following two uses of the semicolon delimiter are valid:

```
SET OUTPUT c:\temp\abc.dat;
SET LOG c:\temp\new.log
;
```

- Forward slash (/). This delimiter can be used only on a line by itself, in column 1, on a line immediately following a command statement. For example:

```
IMPORT *
/
```

Rule 2

With the exception of double-dash (--) comment statements, statements may span multiple lines. For example:

```
EXPORT absence_hist
     WHERE absence_type = 'A';
```

Rule 3

A double-dash (--) comment statement does not require a delimiter termination. However, each statement can't span more than one line. Also, make sure you add a space after the (--) before you start your comment. For example:

Correct:

```
-- This script imports the information stored in
-- the ABC.DAT file.
```

Incorrect:

```
--This script imports the information stored in
the ABC.DAT file.
```

Rule 4

Command statements may contain any amount of white space between items.

Rule 5

Statement text is case insensitive. For example,

```
IMPORT *
```

is equivalent to

```
import *
```

Note. In this chapter, we show commands in UPPERCASE to help set them apart from other statement text.

Rule 6

String constants are case sensitive and must be surrounded by single quotes. For example, 'ABC' is treated differently than 'Abc' or 'abc'.

Rule 7

In Data Mover, when a record name needs to be specified as one of the elements in the command statement syntax, as in an IMPORT statement, you can specify either the record name or the corresponding table name. For example, the following IMPORT statements are equivalent:

Correct:

```
IMPORT job;
```

Correct:

```
IMPORT ps_job;
```

However, when a table name is required for one of the elements in the command statement syntax, you must use the table name—not the record name. For example:

Correct:

```
IMPORT job  AS  ps_process;
```

Incorrect:

```
IMPORT job  AS  process;
```

Creating and Editing Scripts

When you want to use Data Mover to manipulate the information in your database, you can either write a new script, or open and edit an existing script that is similar to the one you want to create.

The default file extension for scripts is DMS, which stands for Data Mover Script.

To create a new script:

1. Select **File, New.**

   When you first launch Data Mover, this is the default mode; you don't need to select File, New.

2. Enter the script text (code) in the input (top) pane.

   Using proper Data Mover syntax, enter the command statements you want the script to execute.

3. Save the script.

   Select **File**, **Save.** On the Save As dialog box select the **Save as Unicode** checkbox (if appropriate) and click **Save.**

To edit an existing Data Mover script

1. Select File, Open.

2. Choose the file you want and click **OK.**

   By default, you view only .DMS files. You can also choose *All Files* from the **Files of type** drop-down list and view all file types. After you open a script, it appears in the Data Mover input pane.

3. Make the desired changes to the script.

   If the file you opened was not a .DMS type, be sure to check that it conforms to the required syntax rules and that it doesn't contain any unsupported SQL commands.

4. Save the script with a new name, if desired.

   Select **File**, **Save As**.

   On the **Save As** dialog, enter a File name, select the **Save as Unicode** checkbox if appropriate and click **Save**.

   If the script is edited in Unicode format, then the default save is Unicode. However, if the file is opened in ASCII format then the default will be ASCII.

See Also

Understanding Data Mover Scripts

Understanding Data Mover Commands

Data Mover Command Reference

SET Parameter Reference

Running Scripts

Preparing to Run Export Scripts

Before running a Data Mover export script, you must first prepare your database, by completing the following steps:

To prepare for an export

1. Load DDL model information by running all DDL*.DMS files through Data Mover.
2. If you need to change your DDL model information, use the DDL Model Defaults utility in PeopleTools Utilities.
3. Run the DDDAUDIT.SQR and fix any errors it finds.
4. Run the SYSAUDIT.SQR and fix any errors it finds.
5. Use Application Designer to SQL Alter all tables.

   Either let the files alter in place or run the script that it generates to alter any tables it finds out of sync.
6. Use Application Designer to SQL Create all records, using the **If table exists... Never recreate** option.

See Also

PeopleTools Utilities

Running Scripts

This section discusses running scripts with Data Mover. Through Data Mover, you can run DDL, DML, and SQL scripts created with the following tools:

- Data Mover (DMS scripts).
- Application Designer's Build SQL functionality (SQL scripts).
- Platform-specific SQL utility (SQL scripts).

When running scripts through Data Mover, keep the following items in mind:

- PeopleSoft strongly recommends running Data Mover scripts when SQL Trace is set to Off. If SQL Trace is enabled, turn it off on the Trace tab in the Configuration Manager before you run the script. You can also enter the SET NO TRACE statement within your scripts whenever possible. This disables SQL Trace for the DMS script even if it is enabled in the Configuration Manager.
- Records defined using Data Mover EXPORT and IMPORT commands can have a maximum of 250 total columns and no more than two long columns.
- On DB2 platforms, locks can occur on system catalogs. In that case, you should not let Data Mover sessions run unattended, and be sure to close your session as soon as all scripts complete.
- If you want to run a .SQL script, you must open it using File, Open so that the SQL executes properly. Do not copy and paste SQL from another source into Data Mover.

See Also

SET Parameter Reference

Configuration Manager

To run a script:

1. Select File, Open.
2. Choose the type of script to run.

   You have the following options:

   - Data Mover Files (.DMS). These are the files created using Data Mover.
   - Query Files (.SQL). These are the files created using the Build SQL functionality menu in Application Designer or using an RDBMS-specific query tool, such as PL/SQL on Oracle.
   - All Files. Enables you to view all available files in a directory. Only .DMS and .SQL files are valid file types for Data Mover.

Note. SELECT commands are not supported. When performing upgrades, use the SQL utility for your platforms to run .SQL scripts, not Data Mover.

3. Select File, Run.

   You can monitor the script's progress in Data Mover's output pane, which reveals any error messages and a message saying "Script Completed" when processing has ended.

Using Database Setup

Typically, Database Setup is used during PeopleSoft installations and upgrades, not necessarily on a daily basis. You use Database Setup to create Data Mover import scripts that load data into your PeopleSoft database.

This section covers:

- Accessing Database Setup
- Using the Database Setup Wizard

Note. If you are performing an installation, you need to use the documentation included in your PeopleSoft Installation guide, which provide specific details regarding your applications, languages, and RDBMS. This section provides a general overview, not specific to the installation procedure.

Accessing Database Setup

To Access the Database Setup Utility:

1. Signon on to Data Mover in bootstrap mode.

   Use the access ID and password rather than your PeopleSoft user ID and password.

2. Select File, Database Setup.

Note. If you sign on to Data Move using the regular mode, not bootstrap mode, the Database Setup menu option is disabled.

Using the Database Setup Screen

Select Target Database — From the drop-down list, select the RDBMS you intend to run the database setup script against. For instance, if the database you are creating is to run on an Oracle server, select *Oracle*.

Database Type — PeopleSoft supports Non-Unicode (ANSI) and Unicode database types. Make sure you select the appropriate type for your system. For some RDBMS types, Unicode is not an option.

Select Character Set — Depending on what RDBMS you selected previously, the valid character sets appear in this drop-down list. Select the appropriate option for your system.

Using the Select PeopleSoft Application Screen

PeopleSoft Application — Only the applications that you have licensed appear. Select the applications for which you want to create Data Mover scripts. To add applications selectively, use the Add button. To add all applications available, use the Add All button. The Add All button is enabled when multiple applications appear. You add the applications to the Data Mover Scripts to Create edit box.

Data Mover Scripts to Create — Contains the applications you added from the PeopleSoft Application list box. Use the Remove button to remove a single application, and use the Remove All button to clear the list box if multiple applications appear. The Remove All button resets the PeopleSoft Application list.

Database Type — Specify what the result of running the script should be. There are two database codes: PT for PeopleTools and EP for PeopleSoft applications.

- Demo. For creating a demonstration database.
- System. For creating a system database.
- Add New Language. For adding support of new languages to and existing database.
- Add New Product. To add an new PeopleSoft product to the current system. With this option selected only non-PT Database Codes appear.

Using the Database Parameters Screen

Database Name — Enter the name of the database against which you intend to run the script. Note that the database name that appears is the database for which you are currently signed on. If the script you are creating will be run against another database, make sure to specify the appropriate name here. If elect to generate a script for a database other than the current database, the system uses a default database using the following convention, XXDMO for demonstration databases, and XXSYS for system databases. The 'XX' represents the product code, such as HR.

Symbolic ID — This is used as the key to retrieve Access ID and access password. For initial installation set it equal to the Database Name.

Access ID — The PeopleSoft Access ID is the RDBMS ID with which PeopleSoft application(s) are ultimately connected to your database once the PeopleSoft System validates the User or Connect ID. It typically has all the RDBMS privileges necessary to access and manipulate data for an entire PeopleSoft application.

Access Password — The password associated with the access ID.

Connect ID — The ID used for the initial connection to the database. Any two-tier connection requires a Connect ID. A Connect ID is a valid user ID that, when used during login, takes the place of PeopleSoft User IDs for the logon process.

Table Owner — (DB2 for OS390) Populates the CREATOR field in the system catalog table SYSIBM.SYSTABLES. You determined the name of the table owner ID during the initial installation using your PeopleSoft installation guide.

Index Storage Group — (DB2 for OS390) The storage group where the index spaces will be created.

Table Space Storage Group — (DB2 for OS390) The storage group for tablespaces. This value must be the same as that used in the XXDDL.SQL script when you created tablespaces during your installation.

Checking the Generated Script

After running Database Setup, check the output directory for the generated script if you are interested in viewing it. Notice that some commands are added that call other scripts and

perform various functions. These commands are added to reduce the number of scripts and commands you need to run manually. For example, notice that the following commands appear at the end of the script:

- REPLACE_VIEW. Creates views for the new database.
- CREATE_TEMP_TABLE. Creates any necessary temporary table images. The number of temporary tables to create is determined by the value Temp Table Instances setting in PeopleTools Options (Utilities, Administration, PeopleTools Options) plus the number of Application Engine temporary table(s).
- SWAP_BASE_LANGUAGE. If you selected a base language other than English, this command modifies your system to recognize that language as the base language. The default PeopleTools language is English if PSSTATUS table is not available.
- RUN. This command executes the CURRXXX.DMS script, to load your system with the appropriate currency information, and this command executes MSGTLXXX.DMS to load your system with the appropriate PeopleTools messages (error and informational messages). Where 'XXX' represents the language code, such as FRA for French. The system runs these scripts only if you have selected a base language other than English.

Note. After each DDL create table, import data, and DDL create indexes, Data Mover issues an UPDATE STATISTICS command (except on OS/390), which improves the performance of subsequent commands, such as the REPLACE_VIEW command.

See Also

CREATE_TEMP_TABLE

SWAP_BASE_LANGUAGE

Using the Data Mover Command Line Interface

The following section gives an overview of the command line feature and discusses:

- Running scripts from the command line.
- Command line parameters.
- Using a parameter file ("parm file").

Overview

The Data Mover command line interface enables you to run Data Mover scripts from the command line in UNIX and Windows environments. Keep in mind that the command line interface is designed only for running scripts, not creating and editing scripts. You create and

edit scripts using the Data Mover Development Environment, which is supported on Windows only.

When using the command line interface the results of the script run appear in the command line window much like the contents of the output pane in the Windows GUI. The system also writes this information to the LOG file.

Data Mover supports $PS_HOME, for UNIX, and %PS_HOME, for Windows NT.

Note. The command line interface also runs on Windows machines, however, in most cases you would use the Data Mover Windows GUI to run scripts on Windows machines. This documentation is geared towards UNIX.

Note. The Data Mover command line on UNIX is intended to increase the performance with large database loads during installation. It is recommend that you use the Data Mover Windows interface for other types of scripts.

Getting Started (on UNIX)

Before running the Data Mover command line on UNIX, be aware of the following items:

- BEA Tuxedo is required for Data Mover to run on UNIX, and it must be installed before you use the UNIX Data Mover interface.
- Run PSCONFIG.SH first to set the UNIX and PeopleTools environment variables before running PSDMTX.
- PeopleSoft supplies default UNIX environment variables for Data Mover in the PSCONFIG.SH shell program. If you need to modify the default environment variables, you need to edit the PSCONFIG.SH or manually change the environment. For example, to change the Data Mover environment variables modify the following:

export PS_DM_DATA=<new data path>

export PS_DM_SCRIPT=<new script path>

export PS_DM_LOG=<new log path>

Configuration Setting	*Description*
$PS_DM_DATA	Use this environment variable to specify the directory where Data Mover should search for its input data files (.DAT). When running a Data Mover script, if no explicit path is specified for the file named in the set input lines, then Data Mover searches directories for the .DAT file in the following order. The default is $PS_HOME/data.
$PS_DM_SCRIPT	Use this environment variable to specify the location of your Data Mover scripts files. The default is $PS_HOME/scripts.

Configuration Setting	*Description*
$PS_DM_LOG	Use this environment variable to specify the location of your Data Mover log files. The default is $PS_HOME/log.

Running a Data Mover Script from the Command Line

To run a script from the command line:

1. Launch the command prompt.
2. Navigate to the %PS_HOME%\bin\client\winx86 directory for Windows and $PS_HOME/bin directory for UNIX.

   For example,

   Windows. %pt840%\bin\client\winx86>

   UNIX. $pt840/bin
3. Enter the name of the program to launch, which is PSDMTX.

   For example,

   Windows. %pt840%\bin|client\winx86\psdmtx

   UNIX. $pt840/bin/psdmtx
4. Enter all the appropriate command line arguments.

   To invoke Data Mover to run a script from the command line, you need to specify the Data Mover executable (PSDMTX.EXE) followed by the required parameters, as shown in the following example:

```
psdmtx -CT <dbtype> -CS <server> -CD <database name> -CO <user ID> -CP
<password> -CI <connect ID> -CW <connect password> -FP <Filename>
```

   See the following section for a complete description of all the command line parameters.
5. Press ENTER.

Understanding the Command Line Parameters

The following command line arguments are available to pass to PSDMTX.EXE for running Data Mover Scripts.

-CT Database type. Valid values are ORACLE, INFORMIX, SYBASE, MICROSFT, DB2, DB2ODBC, DB2UNIX. For example,

```
-CT ORACLE
```

-CS	Server name. The name of the database server for the database to which you're connecting. This setting is required for some database types. For example, `-CS pt-sun05`
-CD	Database name. The name of the database to connect to, as you would enter at the PeopleSoft signon. For example, `-CD HR840DMO`
-CO	The PeopleSoft user ID to use to login. For example, `-CO TOM2`
-CP	The password for the specified user ID. For example, `-CP SAWYER2`
-CI	Connect ID. The ID used to connect to the database server. For example, `-CI HUCK`
-SS	Suppresses the display of the PeopleSoft splash screen. To do so, you need to include this parameter followed by *NO*. For example, `-SN NO`
-SN	Suppresses the sound that plays when signing onto the PeopleSoft system. To do so, you need to include this parameter followed by *NO*. For example, `-SN NO`
-FP	Filename. The name of the Data Mover script to run. For example, `-FP $pt840/scripts/test.dms`
/? or /help	Help. Shows the command line arguments and their description in your command prompt.

Using a Parameter File

Rather than submitting the arguments manually on the command line you also have the option of having Data Mover read a file that contains the appropriate parameters. PeopleSoft provides a sample parm file (parameter file) for you to use as a template, which you can find in $PS_HOME/setup directory.

If you submit a filename to Data Mover as the first parameter in the command line, Data Mover reads the contents of the file and interprets the contents as if it were parameters entered on the command line. For example,

```
pdmtx $temp/myparmfile.txt
```

Note. You must enter the full path to the parameter file.

Note. For security reasons, after Data Mover interprets the contents of the parm file, it immediately deletes the parm file.

Understanding Data Mover Commands

In this section we briefly discuss each of the commands that you can use in a Data Mover script and what you can expect them to accomplish. After reading this section you will know all the valid Data Mover commands and SQL commands that you can include in your Data Mover scripts.

Data Mover Commands

Data Mover commands are platform-independent and are unique to Data Mover. You can use Data Mover commands for importing, exporting, and other tasks, such as controlling the run environment, renaming fields and records, database security administration, and denoting comments.

The following list presents the Data Mover commands and methods to indicate comments:

ENCRYPT_PASSWORD	Encrypts one or all users' passwords (operator *and* access) defined in PSOPRDEFN for operators.
EXPORT	Instructs Data Mover to select record information and data from a record or records and places the result set in a file. You can use the export file generated as input for migrating to another platform. This file is portable between ASCII and EBCDIC character sets, and also supports double-byte characters.
IMPORT	Inserts data into a table or tables using the information in an export file. If a tablespace or table does not exist, this command creates tablespace, table, and indexes for the record, using the information in the export file, and inserts the data.
REM, REMARK, --	Use this to denote comment statements.
RENAME	Renames a PeopleSoft record, a field in one record, or a field in all records.
REPLACE_ALL	A variation of the IMPORT command. If a table already exists, use this command to drop the table and its indexes from the database and create the table and indexes using

	the information in the export file. Then, it inserts data into the table using the information in the export file.
REPLACE_DATA	A variation of the IMPORT command. Deletes data in existing table(s) and inserts the corresponding data from the export file.
REPLACE_VIEW	Recreates specified views found in the database.
RUN	Executes a specified .DMS file from within a Data Mover script. The file can not contain nested RUN commands.
SET	When followed by valid SET parameters, it forms statements that establish the conditions under which Data Mover executes the Data Mover and/or SQL commands that follow.
SWAP_BASE_LANGUAGE	Swaps all the language tables from PSRECDEFN.
SET IGNORE_ERRORS	Optional. If the command is set then all errors during the swap base language will be ignore. Otherwise, it stops on error.
SET BASE_LANGUAGE	Used to swap individual language tables. You should swap individual table only when there is an error with any of the table after the SWAP_BASE_LANGUAGE command.

See Also

Data Mover Command Reference

SET Parameter Reference

SQL Commands

With Data Mover, you can use supported SQL commands in scripts on any supported database platform. Except where noted otherwise (in the Standard SQL Commands topics), you can use all the supported SQL commands with the following Data Mover SET statements:

- SET LOG
- SET NO COMMIT
- SET NO TRACE

Standard SQL Commands with DMS Scripts

Data Mover supports the following standard SQL commands:

- ALTER

- COMMIT
- CREATE
- DELETE
- DROP

Note. With DROP commands, any drop errors are ignored. The script continues, but the errors are reported in the log.

- GRANT
- INSERT

Note. INSERT cannot be used with SET NO COMMIT or SET NO TRACE.

- ROLLBACK
- UPDATE

Important! Data Mover does *not* support SELECT statements, because they require a SQL FETCH function.

Standard SQL Commands with SQL Files

Data Mover supports all SQL commands and other database specific function calls that are supported by the database engine.

Note. Data Mover only runs files with the extension .SQL.

Non-Standard SQL Commands

Also available for use with Data Mover are some non-standard SQL commands created by PeopleSoft—PSCOPY, STORE, and ERASE.

Note. In previous versions of PeopleSoft, we supported a command called PSCOPY, which was an Oracle-specific command to support altering records that have a long field in an INSERT statement subquery. Now you should be running Oracle scripts generated by the Build feature in Application Designer through SQL*Plus.

STORE

To change COBOL SQL statements in PS_SQLSTMT_TBL, you use two non-standard, PeopleSoft SQL commands: STORE and ERASE.

The STORE command first deletes the existing stored statement from PS_SQLSTMT_TBL, then inserts the new statement using the following syntax:

```
STORE progname_type_stmtname
```

For example:

```
STORE PTPEMAIN_S_MSGSEQ
SELECT MAX (MESSAGE_SEQ), PROCESS_INSTANCE
     FROM PS_MESSAGE_LOG
     WHERE PROCESS_INSTANCE = :1
     GROUP BY PROCESS_INSTANCE
;
```

ERASE

The ERASE command deletes one or all stored statements from PS_SQLSTMT_TBL. When deleting a single statement, you use the *progname_type_stmtname* format as shown for STORE, above. For example:

```
ERASE PTPEMAIN_S_MSGSEQ;
```

When deleting *all* SQL statements for a particular program, you include only the program name in the command line format. For example:

```
ERASE PTPEMAIN;
```

Command Matrix

The following table shows the relationship between SQL and Data Mover commands. *DDL* refers to data definition commands, which define the structure of a database. *DML* refers to data manipulation commands which define the contents of a database.

Function	*Command Type*	*Supported SQL Commands*	*Data Mover Commands*
Create tables, tablespaces, and indexes.	DDL	CREATE	IMPORT, REPLACE_ALL
Create views.	DDL	CREATE	REPLACE_VIEW
Drop tables.	DDL	DROP	REPLACE_ALL
Modify tables.	DDL	ALTER	None
Modify PeopleSoft records.	DDL	None	RENAME

Function	*Command Type*	*Supported SQL Commands*	*Data Mover Commands*
Insert rows.	DML	INSERT, STORE*	IMPORT, REPLACE_ALL, REPLACE_DATA
Delete rows.	DML	DELETE, ERASE*	REPLACE_DATA
Update rows.	DML	UPDATE	None
Encrypt rows.	DML	None	ENCRYPT_PASSWORD
Select rows.	Query	None	EXPORT
Save/don't save changes.	Transaction	COMMIT, ROLLBACK	SET (when used with COMMIT or NO COMMIT)
Control/execute other Data Mover commands.	Environment	None	SET, RUN
Denote an explanatory statement.	Comment	None	REM, REMARK, --

** Non-standard SQL commands.*

Data Mover Command Reference

This section provides the details of syntax and use for each of the Data Mover commands. This section also covers Data Mover Command Modifiers such as AS, WHERE, and IGNORE_DUPS, which can be used to modify certain commands.

Throughout this section, we use the following typographical conventions to distinguish between different elements of the command statement syntax:

italic	Italic items are placeholders for arguments that your program must supply.
...	Ellipses indicate that the preceding item or series can be repeated any number of times.
{ }	Group of items, from which you must choose one item, are enclosed in curly brackets.
[ ]	Optional items are enclosed in square brackets.
|	An upright slash separates item choices within curly and square brackets.

CHANGE_ACCESS_PASSWORD

Syntax

```
CHANGE_ACCESS_PASSWORD <SymbolicID> <newAccessPswd>
```

Valid SET Parameters

LOG, NO TRACE

Required SET Parameters

None.

Use

Security administrators should use the procedure outlined in this section to reset the Access Password and have it be transparent to users.

The CHANGE_ACCESS_PASSWORD command performs the following operations:

- Selects the ACCESSPSWD field from PSACCESSPRFL for <SymbolicID>.
- Changes the Access ID's database password to <newAccessPswd> (Oracle, Sybase and Microsoft SQL Server only).
- Updates PSACCESSPRFL for <SymbolicID> with <newAccessPswd>.

CREATE_TEMP_TABLE

Syntax

```
CREATE_TEMP_TABLE {record | *}
```

Valid SET Parameters

None.

Required SET Parameters

None.

Use

Creates temporary table images for use with Application Engine programs. To customize the number of temporary tables you need to modify the PeopleTools Options page or updated the PSOPTIONS table using the following SQL:

```
UPDATE PSOPTIONS SET TEMPTBLINSTANCE = <#>
```

You also need to review the number of temporary tables allotted for Application Engine programs.

Note. This command is disabled for OS/390.DMS script generated by Database Setup due to security issues.

See Also

PeopleTools Options

CREATE_TRIGGER

Syntax

```
CREATE_TRIGGER {* | <RECNAME>
```

Valid SET Parameters

None.

Required SET Parameters

None.

Use

Creates database triggers on the specified table.

Note. If using CREATE_TRIGGER in bootstrap mode, the system automatically activates SET IGNORE ERROR. This enables Data Mover to continue processing until all of the view definitions have been processed and all errors have been written to the current .LOG file (or an error log file). This is similar to the REPLACE_VIEW behavior.

ENCRYPT_PASSWORD

Syntax

```
ENCRYPT_PASSWORD {userID | *};
```

Valid SET Parameters

LOG, NO COMMIT, NO TRACE

Required SET Parameters

None

Use

Encrypts one or all user passwords (user passwords and access passwords). When encrypting a single user's password, that user ID must be present in PSOPRDEFN. You can use an asterisk instead of a name to encrypt *all* passwords in PSOPRDEFN.

Here's an example of how to encrypt a single user password (FS) already listed in PSOPRDEFN:

```
ENCRYPT_PASSWORD FS;
```

To encrypt all user passwords in PSOPRDEFN, enter:

```
ENCRYPT_PASSWORD *;
```

EXPORT

Syntax

```
EXPORT {record | *} [WHERE condition(s)];
```

See Also

Data Mover Command Modifiers**.**

Valid SET Parameters

LOG, NO COMMIT, NO DATA, NO TRACE, NO VIEW, OUTPUT

Note. SET NO VIEW is only valid with EXPORT *.

Required SET Parameters

None.

Note. If SET OUTPUT is not used, Data Mover writes to the default file name, DATAMOVE.DAT.

Use

Creates a single export file containing the database contents specified—a result set that can contain any of the following: a single PeopleSoft record, a group of records, or the entire database. You can use the export file as input for Data Mover's IMPORT command if you want to migrate the data within the platform, or to *another* platform.

Note. This command is not available in Bootstrap mode.

Records exported using EXPORT can have a maximum of 250 total columns and no more than two long columns.

When you export all records using EXPORT*, Data Mover orders them alphabetically, with the exception of PSLOCK; it is the last record exported. After each record, Data Mover indicates how many records remain. After all the tables are exported, then the views are exported.

To export a single record, use an EXPORT command for that specific record. For example:

```
EXPORT PS_JOB;
```

Note. When specifying a particular record in the EXPORT command (as shown in the previous example), the specified record must be a table, not a view.

To export *all* PeopleSoft records—including views—type:

```
EXPORT *;
```

IMPORT

Syntax

```
IMPORT {record | *} [IGNORE_DUPS]
     [AS new_table_name];
```

Valid SET Parameters

All except OUTPUT

Note. IGNORE_DUPS is only valid in Bootstrap mode.

Required SET Parameters

INPUT

Use

IMPORT creates database spaces, creates non-existing records and indexes, and appends non-duplicate rows to records. It will also create the views if the export file was created using EXPORT * and imported using IMPORT *.

Important! All duplicate row checking depends on the existence of a unique index. If no unique indexes are created before loading the data, there is a potential for duplicate data.

In the IMPORT statement, the AS clause is only valid if you specify a particular record; it is not valid and should not be used with IMPORT*. Also, the table name that you specify after the just after the AS command modifier must not exceed 18 characters (including the *ps_*

prefix). If you do specify a table_name that exceeds 18 characters the following error will appear: "Error: Unable to process create statement…".

Records defined using IMPORT can have a maximum of 250 total columns, and no more than two long columns. There are also two variations of IMPORT that you can use—REPLACE_ALL and REPLACE_DATA.

To import a single record from an export file, use an IMPORT command for that record. For example:

```
SET INPUT file_name;
IMPORT PS_JOB;
```

To import *all* PeopleSoft records from an export file, including views, type:

```
SET INPUT file_name;
IMPORT *;
```

Globalization Considerations

In previous releases, Data Mover required multiple .DAT files for base and non-base languages. Data Mover now offers a base-language-independent method for moving application data between databases. Data Mover loads a single DAT file, detects the target database base language, and inserts the data into the correct base or related language table.

This means that if PeopleSoft provides a software fix, you don't need to swap the base language before importing it into a database with a different base language. For example, suppose a fix is sent with the base language being English (ENG) and a related language of Japanese (JAP). In this case, you can import this file directly into a database where the base language is JAP and the related language is ENG.

Upon EXPORT, the system adds the LANGUAGE_CD (Language Code) to the generated DAT file. For example,

```
SET DAM_VERSION 8.4:1:0


SET BASE_LANGUAGE {ENG, FRA, …}
```

Then, when you use the IMPORT command to import the generated DAT file, the system detects the LANGUAGE_CD in the DAT file and automatically resolves the base language/related language issues.

Keep the following items in mind when running the IMPORT command.

- This feature is not optional; it's enabled whenever you import a DAT file.
- There may be some unavoidable performance impact when running the IMPORT command.

See Also

REPLACE_ALL

REPLACE_DATA

REM, REMARK, - -

Syntax

```
REM Comments;
REMARK Comments;
-- Comments
```

Valid SET Parameters

Not applicable

Required SET Parameters

Not applicable

Use

Each of these three command variations denotes explanatory text in a Data Mover script. Here are three examples explaining the use of each:

```
REM  This example demonstrates the use of the REM command to set off script
comments.  These statements can span multiple lines and must be terminated
with a valid delimiter;
REMARK  The REMARK command variation has the same restrictions as REM
/
--  This example demonstrates the use of two dashes to denote script
--  comments.  No delimiters are required, but statements can not
--  exceed one line without using another double-dash.
```

When using a double-dash (--) in the third example, you need at least one space after the double-dash—before the start of the actual text of the comment. Otherwise you will receive a syntax error.

When used in conjunction with a comment prefixed by REM or REMARK, the forward-slash delimiter (/) should be *by itself* on the last line of that comment. In such cases: instead of using a forward-slash (/), you can also use a semi-colon (;) by itself on this last line. The forward-slash (/) can also be used by itself without a REM or REMARK statement, in lieu of blank lines, which are also allowed in a script.

RENAME

Syntax

```
RENAME {RECORD record | FIELD {field | record.field}} AS new_name;
```

Valid SET Parameters

LOG, NO COMMIT, NO TRACE

Required SET Parameters

None

Use

Renames a PeopleSoft record, a field in one record, or a field in all records.

Note. This command is not available in BootStrap mode.

Important! Using RENAME only modifies an object in the PeopleSoft tables. To write the change to the system tables you must either use Application Designer to Alter the affected tables (for record and field renames), or you must run TLSCOPY.SQR (for recfield renames.)

To rename a recfield, you must qualify the original name of the field with the record name. If you don't qualify the record name, Data Mover will try to globally change the field name in all records.

Here's an example of how to rename a record:

```
RENAME RECORD absence_hist AS absent_hist;
```

Here's an example of how to globally rename a field:

```
RENAME FIELD effdt AS currdate;
```

Here's an example of how to rename a recfield:

```
RENAME FIELD course_tbl.duration_days AS duration_d;
```

Renaming a record field is only possible through Data Mover, and you must complete the following steps for the rename to be complete.

To rename a record field:

1. Perform the rename in Data Mover.

   For example,

```
RENAME FIELD RECORD.FIELD AS NEWFIELD; COMMIT;
```

2. In Application Designer create a project which contains the record that contains the field that you renamed, and save the project.

   In the case of a subrecord field rename, the subrecord along with all tables which contain that subrecord must be inserted into the project.

3. Select Build, Settings.

   - Select the Alter tab.
   - Check Adds and Renames.

- Deselect Changes and Deletes.
- Drop Column and Change Column Length do not apply so it doesn't matter what is selected.
- Select the Scripts tab and select desired output settings.
- Specify an output file and click OK.

4. Select Build, Project.
   - Select Alter Tables (Create Indexes will automatically be checked).
   - Click Build.
   - Click Yes to continue the build process.
5. Run the generated SQL script using your query tool.

   This adds the new field to the table(s) within the project.

To remove the old field from the table(s):

1. In Application Designer, open the project you created the previous steps.
   - Select Build, Settings.
   - Select the Alter tab.
   - Select Drop column if data present.
   - Check Deletes.
   - Deselect Adds and Renames.
   - Select the Scripts tab.
   - Give the output file a different name and click OK.
2. Select Build, Project.
   - Check Alter Tables (Create Indexes will automatically be checked).
   - Click Build.
   - Click Yes to continue the build process.
3. Run the generated SQL script using your query tool.

   The old field should no longer appear on the table(s) included in the project.

REPLACE_ALL

Syntax

```
REPLACE_ALL {record | *}
     [AS new_table_name];
```

Valid SET Parameters

All except IGNORE_DUPS, OUTPUT

Required SET Parameters

INPUT

Use

A variation of the IMPORT command. If a table already exists, drops the table and its indexes from the database and creates the tables and indexes using the information in the export file. Then, the command inserts data into the table using the information in the export file.

In the REPLACE_ALL statement, the AS clause is only valid if you specify a particular record. It is *not* valid and should *not* be used with REPLACE_ALL *.

The *table_name* you specify after the AS command modifier should not have more than 18 characters (including the *ps_* prefix). Specifying a *table_name* that is greater than 18 characters will invoke the following Error message: “Error: Unable to process create statement…”.

Note. Records defined using REPLACE_ALL can have a maximum of 250 total columns and no more than two long columns.

REPLACE_DATA

Syntax

```
REPLACE_DATA {record | *};
```

Valid SET Parameters

COMMIT, EXECUTE_SQL, EXTRACT, INPUT, INSERT_DATA_ONCE, LOG, NO COMMIT, NO TRACE, NO VIEW, SIZING_SET, SPACE, START, VERSION

Required SET Parameters

INPUT

Use

A variation of the IMPORT command. Deletes data in existing table(s) and inserts the corresponding data from the export file.

REPLACE_VIEW

Syntax

```
REPLACE_VIEW {view | *};
```

Valid SET Parameters

LOG, NO COMMIT, NO TRACE, START

Required SET Parameters

None

Note. If using REPLACE_VIEW in bootstrap mode, the system automatically activates SET IGNORE ERROR. This enables Data Mover to continue processing until all of the view definitions have been processed and all errors have been written to the current .LOG file.

Use

Recreates one or all specified views in the database.

RUN

Syntax

```
RUN dms_file_name;
```

Valid SET Parameters

Not applicable

Required SET Parameters

Not applicable

Use

Executes a DMS file from within a script. The specified file can contain any supported SQL commands, Data Mover commands, or SET statements, but it can not contain any RUN commands.

The RUN command cannot contain a directory path. The RUN command uses the same directory as the current Data Mover script in which RUN is being used.

SET

Syntax

```
SET parameter_1;
SET parameter_2; ...
SET parameter_n;
```

Valid SET Parameters

Not applicable

Required SET Parameters

Not applicable

Use

The SET command, when combined with valid SET parameters, creates statements that establish the conditions under which Data Mover executes a script.

A SET statement controls the processing environment for the commands in a script until another SET statement intervenes between commands. At that point, all SET parameters are reset to their default values. For example:

```
SET LOG c:\temp\new.log
SET OUTPUT c:\temp\new.dat;
/
EXPORT absence_hist;
EXPORT employee_tbl
/
SET NO DATA
/
REMARK      All other SET parameters will be reset to their default values at
this point
;
EXPORT bank_branch_tbl;
```

In the above script, the specified log and output files (NEW.LOG and NEW.DAT) are used for the first two EXPORTs. Then, because SET NO DATA interrupts the script commands, all other SET parameters are reset to their default values. So, for the third EXPORT and any subsequent Data Mover or SQL commands, the log file used is the default log file, DATAMOVE.LOG, and the output file used is the default output file, DATAMOVE.DAT.

See Also

SET Parameter Reference

SWAP_BASE_LANGUAGE

Syntax

```
SWAP_BASE_LANGUAGE <NEW LANGUAGE_CD>;
SWAP_BASE_LANGUAGE <RECNAME>;
```

Valid SET Parameters

Not applicable

Required SET Parameters

Not applicable

Use

Use this command when you want to install any language other than English. For instance, if you wanted to swap English for Canadian French, enter the following:

```
SWAP_BASE_LANGUAGE CFR
```

Where 'CFR' is the new language code (LANGUAGE_CD).

The command swaps all the language tables from PSRECDEFN. Gets all table names that contain related table, swaps one table at a time. Copies base table into the relate table, updates related record into the base table, and then deletes related record from the related table.

If successful it will update the PSOPTIONS SET LANGUAGE_CD = new base language.

Note. Run the command SWAP_BASE_LANGUAGE <NEW LANGUAGE_CD> before you attempt to swap the individual record names.

Note. During the initial installation, Database Setup generates a script that automatically swaps the base language if while in the Database Setup interface you selected a base language other than English.

SET IGNORE_ERRORS

Syntax

```
SET IGNORE_ERRORS;
SWAP_BASE_LANGUAGE <LANGUAGE_CD>;
```

Valid SET Parameters

Not applicable

Required SET Parameters

Not applicable

Use

Used in conjunction with the SWAP_BASE_LANGUAGE command.

Here's an example of how to swap one table, without the SET IGNORE_ERRORS command, it will stop on error.

```
SWAP_BASE_LANGUAGE <LANGUAGE_CD>;
```

Here's an example of how to ignore all errors and swap all tables.

```
SET IGNORE_ERRORS;
SWAP_BASE_LANGUAGE <LANGUAGE_CD>;
```

When the SWAP_BASE_LANGUAGE command is run after SET IGNORE_ERRORS, the PSOPTIONS SET LANGUAGE_CD will automatically be updated with new base language even if errors were recorded.

When the command has run, you should then examine the log, and swap the individual record names that failed using SWAP_BASE_LANGUAGE <RECNAME> command.

SET BASE_LANGUAGE

Syntax

```
SWAP_BASE_LANGUAGE <NEW LANGUAGE_CD>;
SET BASE_LANGUAGE <CURRENT LANGUAGE_CD>;
SWAP_BASE_LANGUAGE <RECNAME>;
```

Valid SET Parameters

Not applicable

Required SET Parameters

Not applicable

Use

Swap individual table is used only when there is an error with any of the table after the SWAP_BASE_LANGUAGE <NEW LANGUAGE_CD>.

Note. Never run SET BASE_LANGUAGE <CURRENT LANGUAGE_CD>, SWAP_BASE_LANGUAGE <RECNAME> commands before SWAP_BASE_LANGUAGE <NEW LANGUAGE_CD>.

Data Mover Command Modifiers

The following commands allow you to modify a Data Mover command to either limit its scope, rename the item being processed, or control error messaging.

AS

Syntax

```
{IMPORT | REPLACE_ALL} record
     AS table_name;
```

Valid Data Mover Commands

IMPORT, REPLACE_ALL

Use

Changes the name of a record, then imports it. When using this modifier, keep the following items in mind:

- If used with an IMPORT, the record will not be imported if the *table_name* specified in the IMPORT command) already exists in the database.
- When using the AS command modifier, you can specify either the *record* or *table_name* for the record/table specified preceding the AS. However, you must always specify the *table_name* (*not* the *record_name*) for the record/table specified following the AS. The name specified following the AS is the actual name that will be used for the table to be created.
- This modifier is not supported for records containing trigger definitions. All other records with no trigger definition are allowed.

The following example imports a new record/table originally named PS_JOB and creates it as PS_PROCESS:

```
IMPORT job
     AS ps_process;
```

Also Correct:

```
IMPORT ps_job
     AS ps_process;
```

Incorrect:

```
IMPORT ps_job
     AS process;
```

Incorrect:

```
IMPORT job
     AS process;
```

The incorrect examples are wrong because process is specified, instead of ps_process. This means that the table created will be named PROCESS, when it should be named PS_PROCESS to comply with the convention that all non-PeopleTools tables should be prefixed with PS_. Therefore, ps_process—not process—should have been specified in the last two examples above.

The table_name you specify following the AS command modifier should not have more than 18 characters (including the ps_ prefix). Specifying a table_name that is greater than 18 characters will invoke the following Error message: "Error: Unable to process create statement…".

When you import a record in this way, it is only created in the system tables, not in the PeopleSoft tables. So, you must also create it in the PeopleSoft tables, such as PSRECDEFN, by completing the following steps.

To create a table after running the IMPORT command:

1. Launch Application Designer
2. Create, or clone, the new record.

   Using the Job/Process example from the previous discussion: open JOB and then select File/Save As and rename the record to PROCESS.

   Note. The PS_ does not appear in the Application Designer.

3. Select **Build, Current Object.**
4. On the Build dialog, select Create Tables under Build Options.

   You may also want to make sure that all the appropriate options are set in the **Build Settings** tabs.

IGNORE_DUPS

Syntax

```
SET IGNORE_DUPS;
IMPORT {record | *};
```

Valid Data Mover Commands

IMPORT

Use

Ignores "duplicate row" error messages from the database, which means that the IMPORT process will continue despite any "duplicate rows" errors displayed in the output window and

log file. When IGNORE_DUPS is set, bulk loading—the ability to load more than one row at a time—is turned off. By default, bulk loading is on and inserts many (100) rows into a table at a time. Because turning off bulk loading slows performance, we suggest that you use this feature only when required.

Note. SET IGNORE_DUPS is only valid in Bootstrap mode.

WHERE

Syntax

```
EXPORT {record | *} WHERE
     condition(s)[;var#1_type,_var#1_value,var#2_type,var#2_value,...
     var#n_type,var#n_value];
```

Important! In an EXPORT statement, the WHERE modifier must be on the same line as the EXPORT command.

Valid Data Mover Commands

EXPORT

Use: Exports

Exports a partial set of rows from a record. The syntax and conditions of a Data Mover WHERE clause in an EXPORT are similar to a WHERE clause in SQL. You can write the WHERE clause with comparison operands “inline” or as bind variables. You can also use sub-SELECTs.

Here’s an example of a WHERE clause using both an inline operand and bind variables in an EXPORT script:

```
EXPORT JOB WHERE
     EFFDT > :1 AND
     HOURLY_RT > :2
     AND GRADE = 'ADV';DATE,1994-01-01,NUMBER,100;
```

Note that there are no single or double quotation marks around the bind data, as they are not necessary, and notice that dates are formatted as YYYY-MM-DD. The valid data types for binding are CHAR, NUMBER, DATE, TIME, DATETIME, LONG, and IMAGE. Not all database platforms support LONG or IMAGE data types in the WHERE clause, so you should not use WHERE clauses with these data types.

The following operators are supported in an Import WHERE clause: =, < >, <, >,< =, > =, and simple uses of AND and OR. For example, in the following formula, if A, B, and C are true, or if D is true, or if E is true, then the whole statement is true:

```
WHERE
     A = :1 AND B = :2 AND C = :3
```

```
OR D = :4
OR E = :5;NUMBER,10,NUMBER,20,NUMBER,30,NUMBER,0,NUMBER,1;
```

When Data Mover Issues COMMITs

Data Mover issues COMMIT statements after most successful SQL commands, except for EXPORT * and IMPORT *. For EXPORT * and IMPORT *, Data Mover issues a COMMIT after each record. With IMPORT *, there is a SET COMMIT *n* command that performs a COMMIT after the system inserts every *n* rows.

If you are executing native SQL in Data Mover and no COMMITs exist in the SQL script, Data Mover issues a COMMIT after each *successful* SQL statement. For example, if you run a Data Mover script that contains three update commands and the third command fails, the first and second update commands are committed, but the third command is not.

SET Parameter Reference

The following parameters can be appended to a SET command to create a valid SET statement.

Throughout this section, we use the following typographical conventions to distinguish between different elements of the command statement syntax:

italic	Italic items are placeholders for arguments that your program must supply.
...	Ellipses indicate that the preceding item or series can be repeated any number of times.
{ }	Group of items, from which you must choose one item, are enclosed in curly brackets.
[ ]	Optional items are enclosed in square brackets.
|	The upright slash separates item choices within curly and square brackets.

COMMIT

Syntax

```
SET COMMIT #of_rows;
```

Valid Data Mover Commands

IMPORT, REPLACE_ALL, REPLACE_DATA

Valid SQL Commands

None

Use

Sets the commit level only for inserting rows and not for DDL statements. If the level is set to 0, commits will only be done when all rows for a record are inserted. Due to the expense of recompiling and rebinding after a commit, the default is 0.

CREATE_INDEX_BEFORE_DATA

Syntax

```
SET CREATE_INDEX_BEFORE_DATA;
```

Valid Data Mover Commands

IMPORT, REPLACE_ALL

Valid SQL Commands

None

Use

Creates the index before inserting rows into a record. The default method is to insert rows into a record and then create the index.

DBSPACE

Syntax

```
SET DBSPACE {<old dbname>.<old spcname>} AS {<new_dbname>.<new spcname>};
```

Valid Data Mover Commands

IMPORT, REPLACE_ALL

Valid SQL Commands

None

Use

Note. This command is supported only on DB2 for OS/390. You use this command in place of the SPACE command used on other platforms.

The DBSPACE command is similar to the SPACE command in use, but it is designed to handle the combination of DBNAME.DDLSPACENAME. On DB2, the DBNAME or DDLSPACENAME alone is not necessarily unique. However, the combination of the two

(DBNAME.DDLSPACENAME) provides a unique relationship. For example, DBSPACE would be needed in the following scenario:

```
PSFSDMO.HRAPP
PSHRDMO.HRAPP
PSPTDMO.HRAPP
```

The wild card (*) character is permitted for the <dbname> and <spc name> parameters to apply to all values being processed for the specific parameter in which the wild card character is used. The following are examples of using this command to achieve one of the following:

- To change a specific DBNAME/DDLSPACENAME combination to a single new combination:

```
SET DBSPACE <old dbname>.<old spcname> AS <new dbname>.<new spcname>
```

- To keep the currrent DBNAMEs the same but change the specific DDLSPACENAME to a new name:

```
SET DBSPACE <*>.<old spcname> AS <*>.<new spcname>
```

- To keep the current DDLSPACENAMEs the same, but change the specific DBNAME to a new name:

```
SET DBSPACE <old dbname>.<*> AS <new dbname>.<*>
```

Warning. Because of the large number of objects delivered in the PeopleSoft logical databases, we strongly advise that you do not override all “old” dbname or spcname values to a single “new” dbname or spcname value when building a SYS or DMO database. The functionality to do so, is delivered, however, and may be useful in working with smaller data files that contain a smaller number of objects.

For large databases, the following commands are not recommended:

```
SET DBSPACE <*>.<*> AS <new dbname>.<new spcname>

SET DBSPACE <*>. <*> AS <*>.<new spcname>

SET DBSPACE <*>.<*> AS <new dbname>.<*>
```

You can use multiple SET DBSPACE statements to override the DDLSPACENAME in the .DAT file. This enables you to override multiple databases in the same section of the script. For example,

```
SET DBSPACE PSFSDMO.* AS MYFSDMO1.*;
SET DBSPACE PSFSDMOF.* AS MYFSDMO2.*;
SET DBSPACE PSFSDMOD.* AS MYFSDMO3.*;
SET DBSPACE PSFSDMOM.* AS MYFSDMO4;
```

DDL

Syntax

```
SET DDL {RECORD | INDEX | UNIQUE INDEX | SPACE} {object_name | *}
     INPUT parm AS value;
```

Valid Data Mover Commands

IMPORT, REPLACE_ALL

Valid SQL Commands

None

Use

Substitutes values for the parameters specified in the DDL template commands. Substitutes the *parm* and *value* placeholders for an actual parameter and its value. If an asterisk is used instead of an object name, a SQL update on PSDDLDEFPARMS is performed on the parameter and value upon successful completion of the IMPORT or REPLACE_ALL command that corresponds to the SET DDL statement.

Below are some examples of DDL template SET commands from a DB2 import script:

```
SET DDL RECORD            *      INPUT dbname         AS pt750dg0;
SET DDL INDEX             *      INPUT stogroup             AS wps04sg;
SET DDL SPACE             *      INPUT stogroup             AS wps04sg;
```

EXECUTE_SQL

Syntax

```
SET EXECUTE_SQL [AFTER] sql_statement;
```

Valid Data Mover Commands

IMPORT, REPLACE_ALL, REPLACE_DATA

Valid SQL Commands

None

Use

Executes the *sql_statement* specified at the beginning of a transaction. Typically, this command is used to setup a specific cursor environment before Data Mover begins processing. For example, in DB2, use this command to set the current SetID, or for Oracle, use this command to designate a specific rollback segment.

This command doesn't execute for DDL SQL statements. For example, in DB2, you cannot set the current SetID before creating spaces, tables, indexes, or views.

EXTRACT

Syntax

```
SET EXTRACT {COMMAND | DDL | INPUT | SPACE | OUTPUT file_name};
```

Valid Data Mover Commands

IMPORT, REPLACE_ALL

Valid SQL Commands

None

Use

Extracts various types of information from an export file (the .DAT file specified in the corresponding SET INPUT command that precedes the IMPORT or REPLACE ALL command) and writes this information to the user defined output file specified in the SET EXTRACT OUTPUT *file_name* statement.

Note. You must use SET EXTRACT OUPUT before issuing any other SET EXTRACT statements.

EXTRACT INPUT writes out any statements from the .DAT file that are associated with the table(s) being imported. EXTRACT DDL writes out any CREATE TABLE, CREATE INDEX, or CREATE UNIQUE INDEX statements from the .DAT file. EXTRACT COMMAND writes out the EXPORT statements from the .DAT file.

When EXTRACT statements are issued, no SQL CREATE or INSERT statements will be executed. The associated IMPORT or REPLACE_ALL command is not actually executed, so no import is performed.

IGNORE_DUPS

Syntax

```
SET IGNORE_DUPS;
```

Valid Data Mover Commands

IMPORT

Note. The command "SET IGNORE_DUPS" is only valid in Bootstrap mode. This prevents the lost of data during a Data Mover import of a language table in user mode.

Valid SQL Commands

None

Use

Ignores "duplicate row" error messages from the database; the IMPORT process will continue despite any "duplicate row" errors displayed in the output window and log file. You can set this command for the entire import script or by record, using IGNORE_DUPS as a command modifier.

When IGNORE_DUPS is set, bulk loading—the ability to load more than one row at a time—is turned off (to allow checking for duplicates, so that duplicate rows can be ignored/bypassed). By default, bulk loading is on and inserts many (100) rows into a table at a time. Because turning off bulk loading slows performance, we suggest that you use this feature only when required and/or by record.

See Also

IMPORT

Data Mover Command Modifiers

INPUT

Syntax

```
SET INPUT file;
```

Valid Data Mover Commands

IMPORT, REPLACE_ALL, REPLACE_DATA

Valid SQL Commands

None

Use

Specifies the name of the exported file to import; typically this file will have a .DAT extension, though this is not a requirement. Because this statement is required to do an import, there is no default file.

If you don't specify a path for this file, Data Mover searches for the file in the following locations in the order presented:

- The Data Mover Input Directory as defined in the Configuration Manager on the Common tab.
- If the Input Directory is set to *blank* (not set) on the Common tab, Data Mover will search the C:\TEMP directory.

INSERT_DATA_ONCE

Syntax

```
SET INSERT_DATA_ONCE record;
```

Valid Data Mover Commands

IMPORT, REPLACE_ALL, REPLACE_DATA

Valid SQL Commands

None

Use

Instructs Data Mover to skip (bypass importing) the specified *record* if there is already one or more rows in the table corresponding to that *record*. If the table is empty, only a single row will be inserted.

LOG

Syntax

```
SET LOG file;
```

Note. You must specify a file name for the SET LOG statement or else a log file will not be created. If you do not want to specify a log file name, you should omit the SET LOG statement completely.

Valid Data Mover Commands

All

Valid SQL Commands

All

Use

Allows you to specify a user-defined filename for the log file that will be created when running a Data Mover script or command. If the SET LOG statement is omitted completely, a default log file will be created with the name DATAMOVE.LOG. Data Mover will write this DATAMOVE.LOG file to the default log directory, which is determined as follows:

- The Data Mover log directory specified on the Common tab in the Configuration Manager.
- If the previous setting is blank, the log file will be written to C:\TEMP.

Note. If you use the SET LOG statement but do not specify a filename and path, Data Mover will write the user-defined log file to the default log directory according to the same rule defined above.

When checking the DATAMOVE.LOG file in a multi-database environment, always make sure you are examining the correct log file. At the top of the output file, check the date and the database name to confirm.

```
Logging status in C:\TEMP\datamove.log
Started:  Fri Mar 17 13:47:15 2001
Data Mover Release: 8.4
Database: HR702U40
…….
Ended:  Fri Mar 17 13:47:20 2001
Successful completion
```

NO DATA

Syntax

```
SET NO DATA;
```

Valid Data Mover Commands

EXPORT, IMPORT, REPLACE_ALL

Valid SQL Commands

None

Use

During an export, the NO DATA command prevents data from being exported. In an import, this command prevents data from being inserted.

NO INDEX

Syntax

```
SET NO INDEX;
```

Valid Data Mover Commands

IMPORT, REPLACE_ALL

Valid SQL Commands

None

Use

Prevents indexes from being created during an IMPORT or a REPLACE_ALL command.

NO RECORD

Syntax

```
SET NO RECORD;
```

Valid Data Mover Commands

IMPORT, REPLACE_ALL

Valid SQL Commands

None

Use

Prevents records from being created during an import.

NO SPACE

Syntax

```
SET NO SPACE;
```

Valid Data Mover Commands

IMPORT, REPLACE_ALL

Valid SQL Commands

None

Use

Prevents tablespaces from being created. This is the default setting. You can use this statement to reset the default after executing a SET SPACE statement.

NO TRACE

Syntax

```
SET NO TRACE;
```

Valid Data Mover Commands

All

Valid SQL Commands

All except INSERT

Use

Sets the PeopleSoft trace flag (TraceSQL) in the Configuration Manager to "off" for the commands that follow, until the next SET statement. This is the recommended method of executing commands. This means that if SET NO TRACE is specified, then no trace file will be created, even if you specify a Trace File in the is Configuration Manager on the Trace tab. Commands that you run *without* specifying SET NO TRACE, will trace SQL if SQL tracing is enabled in the Configuration Manager.

Note. This statement cannot be used with an INSERT command.

NO VIEW

Syntax

```
SET NO VIEW;
```

Valid Data Mover Commands

EXPORT * only, IMPORT * only, REPLACE_ALL * only, REPLACE_DATA * only

Valid SQL Commands

None

Use

Prevents views from being created.

OUTPUT

Syntax

```
SET OUTPUT file;
```

Note. You must specify a file name for the SET OUTPUT statement or else a log file will not be created. If you do not want to specify a log file name, you should omit the SET OUTPUT statement completely.

Valid Data Mover Commands

EXPORT

Valid SQL Commands

None

Use

Allows you to specify a user-defined filename for the output file that will be created by the corresponding EXPORT statement. If the SET OUTPUT statement is omitted completely, a default output file with the name DATAMOVE.DAT will be created. The location that the output file is created is determined by the following:

- The Data Mover Output Directory specified on the Common tab in the Configuration Manager.
- If the previous setting is blank, the output file will be generated to the C:\TEMP directory.

Note. If you use the SET OUTPUT statement but do not specify a filename and path, Data Mover will write the user-defined log file to the default log directory according to the same rule defined above.

SIZING_SET

Syntax

```
SET SIZING_SET n;
```

Valid Data Mover Commands

IMPORT, REPLACE_ALL

Valid SQL Commands

None

Use

Specifies the Sizing Set number—as defined in the DDL Model Defaults page. Default is 0. To use this parameter, the specified sizing set must be defined in the export file.

See Also

DDL Model Defaults

SPACE

Syntax

```
SET SPACE old spcname AS new_spcname;
```

Valid Data Mover Commands

IMPORT, REPLACE_ALL

Valid SQL Commands

None

Use

Used for all operating systems other than OS/390.

Renames the default space names to customized space names. To name all record default space names to a single space name, substitute * for a space name. For example:

```
SET SPACE * AS PS;
```

START

Syntax

```
SET START [AFTER] record;
```

Valid Data Mover Commands

IMPORT, REPLACE_ALL, REPLACE_DATA, REPLACE_VIEW

Valid SQL Commands

None

Use

Designates where in the export file to start the import process. The default is to start at the beginning of the file. If you want to start immediately after a particular PeopleSoft record in

the file, use SET START AFTER. This SET statement is useful for restarting a script after an error.

If the AFTER parameter is omitted, the import process starts at the record that's specified in the SET START statement. If the AFTER parameter is specified, the import process starts *after* the *record* that's specified in the SET START statement.

Note. If the same record name appears multiple times in the same .DAT file, the SET START AFTER command begins after the last occurrence of the record name in the .DAT file.

When using the SET START command with REPLACE_VIEW and no .DAT file specified, this designates what view in the database to start at or after. Views are created in alphabetical order.

STATISTICS

Syntax

```
SET STATISTICS { ON | OFF };
```

Valid Data Mover Commands

IMPORT, REPLACE_ALL

Valid SQL Commands

None

Use

Turns UPDATE STATISTICS on or off. The default value is on. Turns value to off, if you do not want to update statistics after an IMPORT. This command works only in bootstrap mode.

VERSION

Syntax

```
SET VERSION sql_table.column condition;
```

Valid Data Mover Commands

IMPORT, REPLACE_ALL, REPLACE_DATA

Valid SQL Commands

None

Use

Verifies the version of the database for importing. For example, if you state the following:

```
SET VERSION PSLOCK.TOOLSREL="8.4"
```

Data Mover verifies that the TOOLSREL column in PSLOCK equals 8.4. This avoids importing an export file into the wrong database. Use the SQL table name to indicate which PeopleSoft record to check.

Script Examples

This section shows you several example script files. Review these scripts to see how you can use Data Mover to accomplish different tasks.

Exporting a Database

```
SET OUTPUT c:\temp\pt.dat;
SET LOG c:\temp\pt.log;
EXPORT *;
```

Building a Microsoft SQL Server Database

```
set log c:\temp\hcengd.log;
set input c:\HRDMO\data\hcengd.db;
set no view;
set no space;
set no trace;
import *;
update PSLOCK set OWNERID = 'ownerid';
update PSOPRDEFN set ACCESSID = 'accessid', ACCESSPSWD = 'accesspw', OPERPSWD
= '0000000000000000' where OPRTYPE = 0;
update PSACCESSPRFL set ACCESSID = 'accessid', ACCESSPSWD = 'accesspw',
VERSION = 0, ENCRYPTED = 0;
set log c:\temp\grant.log;
encrypt_password *;
```

Recreating All Views

```
SET LOG c:\temp\view.log;
REPLACE_VIEW *;
```

Importing with REPLACE_ALL with a Commit Level

```
SET INPUT c:\ptdvl\bin\exp2.dat;
```

```
SET LOG c:\ptdvl\bin\exp2.log;
SET COMMIT 2;
REPLACE_ALL employee_review;
REPLACE_ALL course_tbl
     WHERE days_duration = :1 AND course_type > :2;number,1,char,C;
REPLACE_ALL absence_hist
     WHERE return_dt > :1;date,1988-01-01;
```

Combining SQL Commands and IMPORT

```
SET INPUT c:\ptdvl\bin\exp2.dat;
SET COMMIT 10;
SET START AFTER course_tbl;
SET IGNORE_DUPS;
DELETE FROM ps_absence_hist WHERE emplid = '8001';
IMPORT *;
```

CHAPTER 3

PeopleTools Utilities

This chapter provides an overview of the PeopleTools Utilities and discusses how to:

- Use the Administration utilities.
- Use the Audit utilities.
- Use the Debug utilities.
- Use the International utilities.
- Use the Optimization utilities.

Understanding the PeopleTools Utilities

As you work with your PeopleSoft system, you'll find that there are some administrative tasks that you only need to perform occasionally. These tasks include such things as maintaining error messages and setting DDL model defaults. The PeopleTools Utilities menu is where you'll find tools for accomplishing some of these more infrequent tasks.

The Utilities are grouped along the following functional areas:

- Administration
- Audit
- Debug
- International
- Optimization

The documentation the utilities matches the menu structure of the Utilities interface. For example, the PeopleTools Options utility falls under the Administration menu in the Utilities interface. So the documentation for PeopleTools Options can be found under the Administration heading in this chapter.

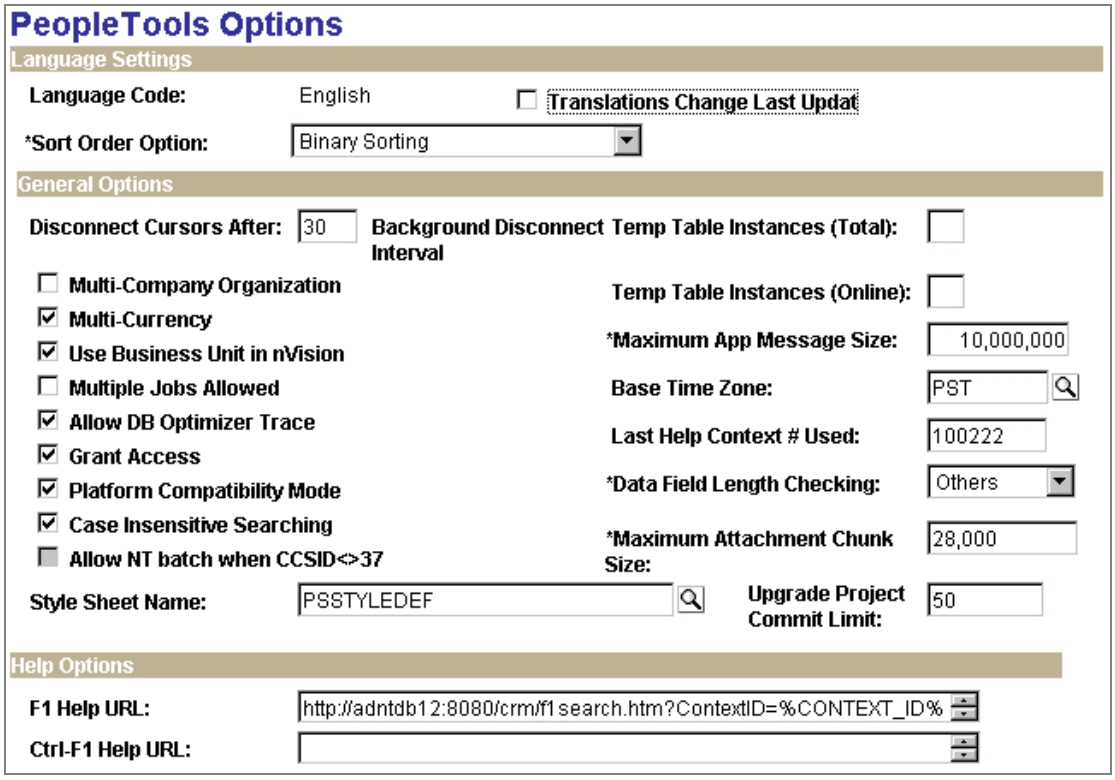
Note. In many instance, this book refers to other PeopleBooks for the detailed documentation for a particular utility.

Administration Utilities

The following section covers the utilities under the Administration menu.

PeopleTools Options

Use this page to set a number of options that affect multiple PeopleTools and Applications, such as Language Options and Change Control Settings.



PeopleTools Options page

Language Settings

Base Language Code

The *base language* of an application is the application's primary language—normally the language used most commonly throughout the enterprise. A database can have only one base language. All other languages translations stored in the database are referred to as *non-base languages* (or sometimes as *foreign languages*).

You can't change the Base Language Code setting in this page. This field is for display purposes only. To change your base language, use the SWAP_BASE_LANGUAGE Data Mover command.

	The Base Language Code field box identifies the database's base language.
Translations Change Last Updated Information	If you have the Translations Change Last Updated Information checkbox turned on, and you use the PeopleTools translate utilities to translate objects, the system updates the "Last Updated" information of the translated object to the date/time/userid of the translation. If it's turned off, then the date/time/userid of the object does not change when translated. **Note.** This only applies when using the page-based PeopleTools translation utilities; the Translation Workbench always updates the last updated information.
Sort Order Option	Select the sort order that is appropriate for your site. See the Global Technology PeopleBook for descriptions of the options.

General Options

Disconnect Cursors After XX Seconds	The Disconnect Cursors After field controls the Background Disconnect Interval. The value entered here will act as the default for Security Administrator profiles.
Multi-Company Organization	Turn on Multi-Company Organization if more than one company comprises your organization. This option affect how Application Processor displays company related fields in search dialogs and pages. See your HRMS documentation for more details.
Multi-Currency	The Multi-Currency setting is a system-wide switch that enables automatic formatting of currency amount fields that have associated currency control fields. Another function of this setting is to globally display currency control fields. If you turn off this option, automatic formatting based on currency control fields is no longer active and all currency control fields are thus hidden. When the Multi-Currency setting is on, it also validates user-entered currency data against the currency's defined decimal precision. This validation causes the system to issue an error if a user attempts to enter a decimal precision greater than that allowed by the currency code definition. Under most circumstances, you will leave Multi-Currency selected.
Use Business Unit in nVision	Deselect the Use Business Unit in nVision option if you're using an HRMS database. Otherwise, select it.

Multiple Jobs Allowed

Selecting Multiple Jobs Allowed enables HRMS systems to support employees holding concurrent jobs with more than one set of enrollments.

This option affects how Application Processor displays Employee Record # related fields in search dialogs and pages. See your HRMS documentation for more details.

Allow DB Optimizer Trace

Typically, you turn on this trace only during periods in which you are collecting detailed performance metrics. When you are not tuning your performance, the DB Optimizer trace should be turned off.

Grant Access

When adding a new operator using Security Administrator, the system will automatically "grant" the new operator select-level access to the three PeopleTools SQL tables they need to log on. If you are using a SQL security package and do *not* want PeopleTools Security Administrator to perform any SQL grants, turn off Grant Access.

Platform Compatibility Mode

Enables you to add the capability to set a database compatibility mode as an overall database setting forcing developers to create applications using *all* platforms as the least common denominator. This option enables developers, who create applications for multi-platform deployment, to catch platform-specific issues at design time rather than during testing.

Note. This option is used mainly by PeopleSoft development teams that need to develop applications to run on all supported database platforms. To support numerous database platforms, PeopleSoft needs to have a tablespace for each physical table record definition.

If platform compatibility is enabled for a database the system forces developers to enter a tablespace name when saving a record definition regardless of the current platform. If this option is disabled, you are only prompted for a tablespace name if you are developing on a platform that utilizes tablespaces. This prevents table record definitions being added to the database without a tablespace name.

Case Insensitive Searching

Enables you to enable case insensitive searching for the PeopleSoft search records.

Note. This is not associated with the Verity search technology.

Allow NT batch when CCSID <>37

Enables you to override non-MVS COBOL batch restrictions. If your DB2/OS390 database's CCSID is NOT 37 PeopleSoft blocks Batch COBOL from running against OS390 Databases on NT unless you choose this

override.

Note. Even if you choose this override, if you use %BINARYSORT() in the COBOL, the system issues an error on Windows NT. RemoteCall COBOL can run on NT and UNIX regardless of this option setting, even if CCSID is NOT 37, but the system issues an error.

Refer to PeopleSoft Globalization Technology, "Sorting in COBOL" for information on %BINARYSORT().

Style Sheet Name

All PeopleSoft applications reference the PSSTYLEDEF style sheet by default. You can set your individual style sheets in Application Designer, and these will override the general style sheet for the application, which is set here.

Temp Table Instances (Total):

The value that you specify in the Temp Table Instances (Total) edit box, controls the total number of physical temporary table instances that Application Designer creates for a temporary table record definition when you perform the Build process.

This value indicates the total number of *undedicated* temporary table instances. The maximum number of temporary table instances that you can specify is 99.

Temp Table Instances (Online)

Enter the available online instance values.

When you invoke a process online, PeopleTools randomly allocates a single temporary table instance number to programX for *all* its dedicated temp table needs. The higher the number of online instances defined, the less likely it will be for two online processes to get the same value.

Maximum App Message Size

There is practical limit to how large a message can be. Enter the maximum message size, this does not set individual message definition, but defines the size for all application messages.

Base Time Zone

Although you can *display* time data a number of different ways, PeopleSoft databases *store* all times relative to a system-wide base time zone. You can adjust the display of the time that an end user sees using the Use Local Time Zone (LTZONE) setting in PeopleTools, Personalizations.

This base time zone is the one used by the database server. In order for PeopleSoft to properly manage time data, the system needs to know which time zone that is. Set the Base Time Zone to the time zone used by your database server's clock.

Note. After changing this setting, you should reboot any application servers connected to the database.

Note. It is critical for the correct operation of the system

that this time zone match the time zone in which your database is operating. Any discrepancy in the base time zone as defined in this page and the time zone in which the database system is operating will lead to inaccurate time processing.

Last Help Context # Used The Last Help Context # Used field is no longer used.

Data Field Length Checking Normally, field length validation is based on the number of characters allowed in a field. For example, a field defined as CHAR(10) in Application Designer will hold ten characters, regardless of which characters you enter. In a Unicode database, double-byte characters such as those found in Japanese are counted the same as single-byte characters such as those found in the Latin alphabet.

If you create a non-Unicode database, the field length in Application Designer represents the number of bytes permitted in the field, not the number of characters. When the non-Unicode database uses a single-byte character set (SBCS), you can only enter single-byte characters. So the number of characters and the number of bytes are the same. However, because double-byte character sets (DBCS) typically allow a mix of single- and double-byte characters, the number of characters allowed in a field in a non-Unicode DBCS database will vary. This is true for both shifting and non-shifting double-byte character sets.

For example, a if a user enters ten Japanese characters into a field defined as CHAR(10) in Application Designer, this string needs 20 bytes of storage in a non-shifting double-byte character set and 22 bytes of storage in a shifting double-byte character set. This ten-character input would fail insertion into both these databases.

Use the Data Field Length Checking option to ensure field length validation appropriate to your database's character set. The valid values for the Data Field Length Checking option are DB2 MBCS, MBCS, and Others.

Choose Others if you are using a Unicode encoded database or a non-Unicode single-byte character set database. This prevents special field length checking. As discussed above, these types of databases do not require such checking.

Choose DB2 MBCS if you are running a Japanese database on the DB2/MVS platform. This enables field length checking based on a shifting DBCS character set.

Choose MBCS if you are running a non-Unicode Japanese database on any other platform. This enables field length checking based on a non-shifting DBCS character set.

Note. The non-Unicode DBCS settings are specifically

	oriented towards Japanese language installations, as Japanese is the only language supported by PeopleSoft in a non-Unicode DBCS encoding. All other languages requiring double-byte character sets are only supported by PeopleSoft using Unicode encoded databases.
Maximum Attachment Chunk	Controls the size of the file attachments you store in the database. The default is 28000 kilobytes.
Upgrade Project Commit Limit	Sets the limit on how many rows can be modified by an upgrade project before the system issues a COMMIT statement.

Help Options

FI Help URL	This setting only applies to the Windows environment (such as Application Designer) when the user presses F1 or selects Help, PeopleBooks Help while in PeopleTools. The F1 Help URL can direct users to any location on the Web, such as a custom help system or the web site for your company's help desk. It can be a fully qualified URL, which is passed literally to the browser or it can contain one or both of these system variables. %CONTEXT_ID% is the object name or context ID of the currently displaying page or dialog box. %LANG_CD% is the three-letter language code for the user's preferred language.
Ctrl-F1 Help URL	This setting only applies to the Windows environment (such as Application Designer). The Ctrl+F1 URL allows you to provide an alternate location for help. For example, you may set the main F1 Help URL to the PeopleBook and the Ctrl+F1 for your company's help site.

See Also

PeopleTools PeopleBooks: PeopleSoft Global Technology, Setting Up a Currency Amount Field.

PeopleTools PeopleBooks: PeopleSoft Application Designer, Specifying Style Sheets.

PeopleTools PeopleBooks: PeopleSoft Application Engine, Using Temporary Tables.

PeopleTools PeopleBooks: PeopleSoft Global Technology, “Maintaining Time Zones”

PeopleTools PeopleBooks: PeopleTools Security, “Page Permissions”

PeopleTools PeopleBooks: PeopleSoft Application Engine, “Disabling the DB Optimizer Trace”

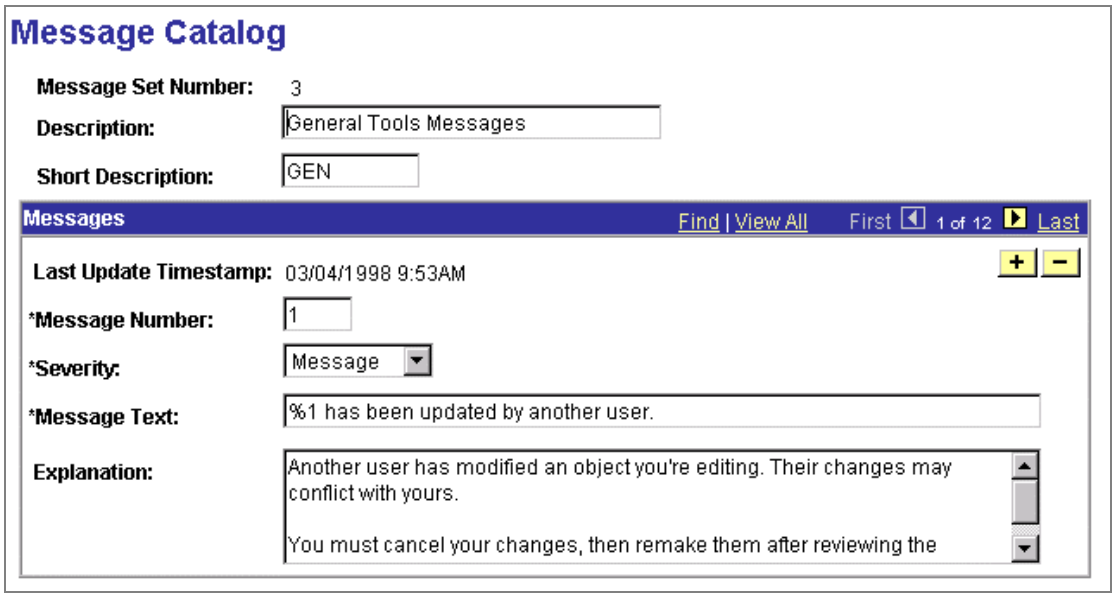
PeopleTools PeopleBooks: PeopleSoft nVision, “PeopleSoft nVision”

PeopleTools PeopleBooks: PeopleSoft Global Technology, “Swapping the Base Language”

PeopleTools PeopleBooks: PeopleSoft Global Technology, “Using the Translate Utilities”

Message Catalog

You add and maintain system messages using the Message Catalog page.



Message Catalog page

Message Set Number Identifies the message set.

Description The Message Set Description is a reference used on reports and pages for easy identification.

Short Description The Message Set Short Description is a reference used on reports and pages for easy identification.

Message Number Each message set consists of one or more rows of messages identified by a Message Number.

Severity You assign each message a Severity, which determines how the message is displayed and how the component processor responds after the user acknowledges message. The severity levels are:

Cancel This severity should be reserved for the most severe of messages, as when a critical error occurs and the process must be aborted or a machine needs to be shut down. To indicate how rarely this severity level is appropriate, of all PeopleTools messages only five or so have a severity level of Cancel. In almost all cases, you will use one of the other severity levels.

	Error. Processing stopped and data can not be saved until the Error is corrected. *Message*. This is an informational message and processing continues normally. *Warning*. User can decide to either stop or continue processing despite the error.
Message Text	In the Message Text edit box, you'll see the message text. Any reference to the characters %*n*, as in %1 or %2, will be replaced by parameter values provided by the system.
Explanation	The Explanation text provides a more in-depth explanation of why the message was generated and how to fix the problem. This text appears below the Message Text when the message displays.

PeopleSoft error messages are stored in the Message Catalog, and organized by message set number. Each message set consists of a category of messages, ranging from PeopleTools Message Bar Items and PeopleCode Runtime Messages to PeopleSoft Payroll and PeopleSoft General Ledger application messages.

PeopleTools uses some messages, but the applications use the other messages, which get called by the Error, Warning, Message Box, MsgGet, and MsgGetText built-in PeopleCode functions.

Note. You can add your own messages and message sets to support new or customized functionality in your system. You can also edit the messages that PeopleSoft delivers. In both of these cases, remember that PeopleSoft reserves all message set numbers up to 20,000. If you've added a message set or edited a message set with a number less than 20,000, it may be overwritten in future upgrades.

To add a message set

1. Select **Utilities, Administration, Message Catalog**, and on the search page click the Add New Value.
2. Enter the value of the new Message Set Number and click OK.

   The **Message Catalog** page appears.
3. Enter a **Description** and **Short Description** of the type of messages this message set will contain.

   You should try to group your messages logically. For instance, create one message set for your new budgeting application and a different one for your customized billing pages.
4. Add messages.
5. Save your work.

To add a message

1. Open the desired message set.
2. In the Message Catalog page, click the plus sign button to add a new row.

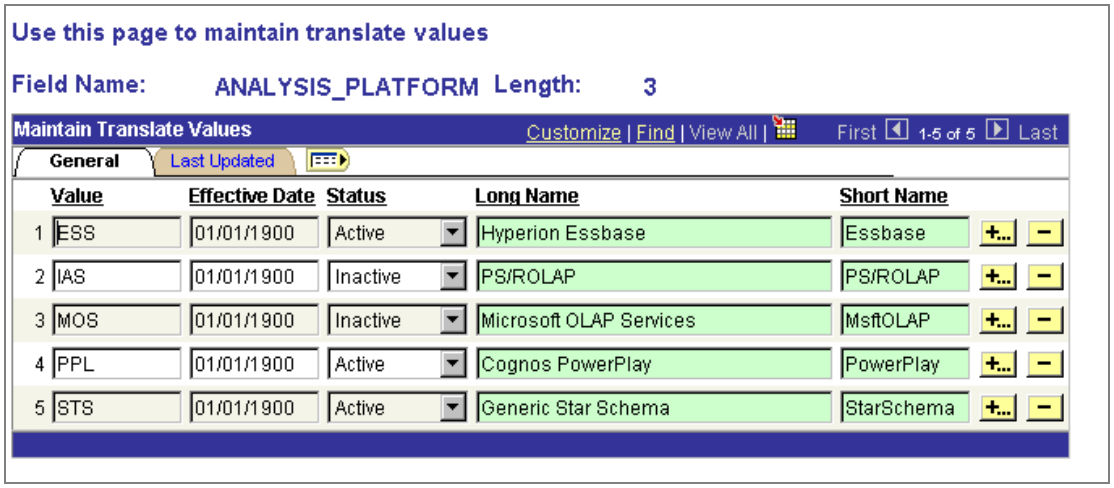
   The **Message Number** value will be automatically set to the next unassigned number in the message set.
3. Select a Severity level, enter Message Text and a detailed Explanation.
4. Save your work.

See Also

PeopleTools PeopleBooks: PeopleSoft PeopleCode Reference, "MsgGet"

Translate Values

You use the Translate Values interface to maintain the values in the translate table. If allowed by your site security administrators, power users can now learn to add their own "pick lists" (translate values) to an application.



Translate Values page

Value	Enter the value for the translate selection.
Effective Date	Specify a date for the value to become active.
Status	Specify whether the value is active or not.
Long Name	Enter a long description for identification. There is a 30-character limit.
Short Name	Enter a shorter description for identification. There is a 10-character limit.

See Also

PeopleTools PeopleBooks: PeopleSoft Application Designer, “Using the Translate Table”

Load Application Server Cache

The Load Application Server Cache page enables you to invoke an Application Engine program, called LOADCACHE, which pre-loads the cache for the application server. You need to run this program only if you intend to implement shared caching on your application server, which you configure using the ServerCacheMode parameter in the application server configuration file.

Understanding Load Cache and Application Server Caching

Each PeopleTools server process has two types of cache: memory cache and file cache. Memory cache is always enabled for all processes, but file cache can be configured by an administrator. This section describes populating and using a shared file cache.

The LOADCACHE program caches all of the PeopleTools object metadata into the cache directory you specify. This is the equivalent of having a user access every page in your system once so that all the metadata would be stored in cache. The shared cache also contains metadata for other application objects such as application messages and Application Engine programs

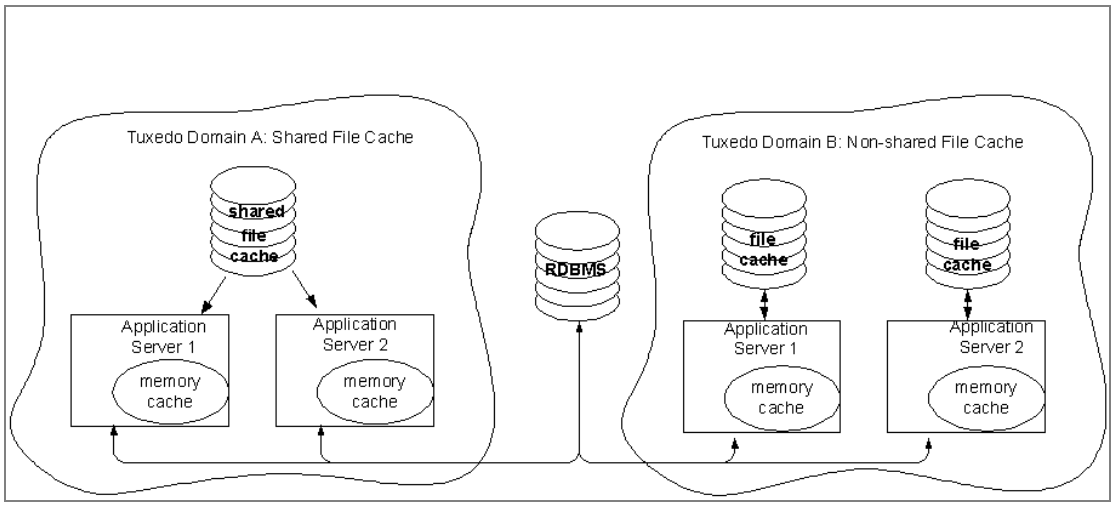
Using the caching options the application server is recommended for optimal performance, but the underlying benefit of pre-loading the cache and using shared cache on the application server is predictable performance. For instance, by pre-loading your cache users don't have to wait for the system to cache an object if it's the first the system accesses the object. Because the cache is preloaded with all the database objects, the system retrieves *all* of the required objects from the cache. This provides a significant improvement in first-time transactions and large transactions.

If you elect to implement the shared cache option on the application server, consider the following items:

- You need to run the LOADCACHE program at least once. As the PeopleTools metadata objects change, items in the shared cache are marked invalid but are not rewritten. This includes design time changes, upgrades, patches, and so on.
- The first time that you run the LOADCACHE program, it can take between 2-30 hours to complete. The time of the program run depends on the number of active languages set in the PSLANGUAGES table, the size of the database, and the performance of the machine. Subsequent program runs complete in less time if there is already valid cache in the target cache directory, as the program is designed only to update the changed objects after the staging directory is already loaded.
- If you update PSSTATUS.LASTREFRESHDTTM, the system marks all items in the shared cache as invalid and you will need to rerun LOADCACHE from scratch.

Note. The output is not portable to different operating systems. For instance, if you generate the cached metadata on/to a Windows NT machine, you can't copy the cache files to a UNIX machine.

The following example graphically depicts the shared cache and the non-shared cache architecture.



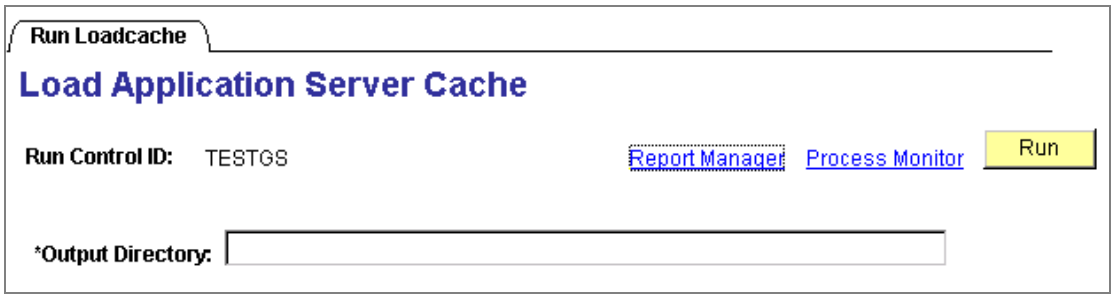
Shared Cache vs. Non-Shared Cache

Important! Shared caching can be used without running the LOADCACHE program, however you would still need to load the cache through some other mechanism. If you do not pre-load the cache then shared caching is equivalent to having no file cache at all. PeopleSoft strongly recommends using the LOADCACHE program to load your file cache.

Running the LOADCACHE Program

This page enables you to run the LOADCACHE Application Engine program.

Select PeopleTools, Utilities, Administration, Load Application Server Cache.



Load Application Server Cache page

Run Control ID	Displays the Run Control ID selected or created.
Report Manager/Process Monitor	After you invoke the program, you can use these links to monitor the progress of the program run.
Output Directory	Specify a directory for the program to cache the metadata. The output directory should be a temporary, or staging, directory, as in c:\temp. The program creates the cache file in a cache\stage directory structure beneath the specified temporary directory, and creates the cache file within it. After the program completes, copy the contents of the temporary directory to your application server. **Note.** The directory you specify as the output directory should not be the actual \cache\share directory for an application server domain.
Run	After you have specified a valid output directory, click Run to invoke the LOADCACHE program.

To create and deploy a shared cache:

1. Make sure that the database that the application server runs against produces a clean SYSAUDIT report.

   If SYSAUDIT is not clean, the LOADCACHE program may fail.

2. Check your PSPRSCS.CFG file (Process Scheduler configuration file).

   PSPRCS.CFG is where you specify the type of objects to cache using the EnableServerCaching parameter. Set it to 1 or 2. The LOADCACHE program reads this setting and caches metadata according to the value specified in the Process Scheduler configuration.

   Note. Do *not* enable shared caching (ServerCacheMode=1) for Process Scheduler.

3. Select PeopleTools Utilities, Administration, Load Application Server Cache.

4. Enter the appropriate Run Control ID.

   The Load Application Server Cache page appears.

5. In the Output Directory, specify directory where you want the cached meta data to be written.

6. Click **Run.**

   The first time you run the program, the process may take 4-5 hours.

   Important. Launch the program with Run Location set to Server.

7. Shut down your application server domain.
8. Enable shared caching with the ServerCacheMode parameter (ServerCacheMode=1), and reconfigure the domain so that the changes are reflected.
9. Copy the contents of the output directory into the \cache\share directory for the appropriate domain.
10. Reboot your application server domain.

See Also

PeopleTools PeopleBooks: PeopleSoft Internet Architecture Administration, "Cache Settings"

Table Space Utilities

Select PeopleTools, Utilities, Administration, Table Space Utilities.

This page provides utilities used for maintaining your table spaces.

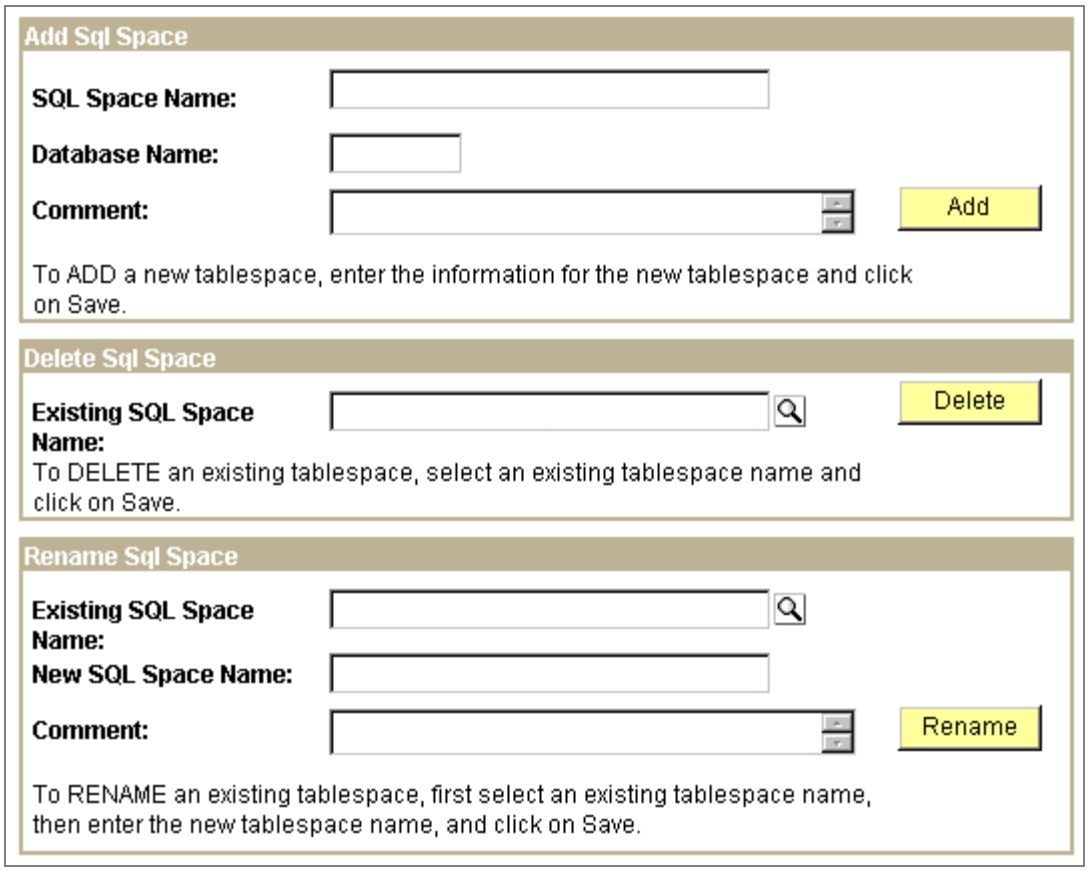


Table Space Utilities page

Add SQL Space

SQL Space Name	Enter the name of the SQL space you want to add.
Database Name	Enter the database name into which you want to add the space.
Comment	Enter any internal documentation required to identify the space and its purpose.
Add	Adds the SQL space to the database.

Delete SQL Space

Existing SQL Space Name	Enter or lookup the name of the SQL space you want to delete.
Delete	Deletes the specified SQL space.

Rename SQL Space

Existing SQL Space Name	Enter or lookup the name of the SQL space you want to rename.
New SQL Space Name	Enter the new name for the SQL space.
Comment	Enter any internal documentation required to identify the space and its purpose.
Rename	Renames the specified SQL space.

Table Space Management

Select PeopleTools, Utilities, Administration, Table Space Management.

These pages enable you to modify the table space definition.

Tablespace Defn Page

This page shows the identification values for the tablespace.

Tablespace List Page

This page is where you add records to a particular table space. Use the plus and minus signs to add and delete rows from the list.

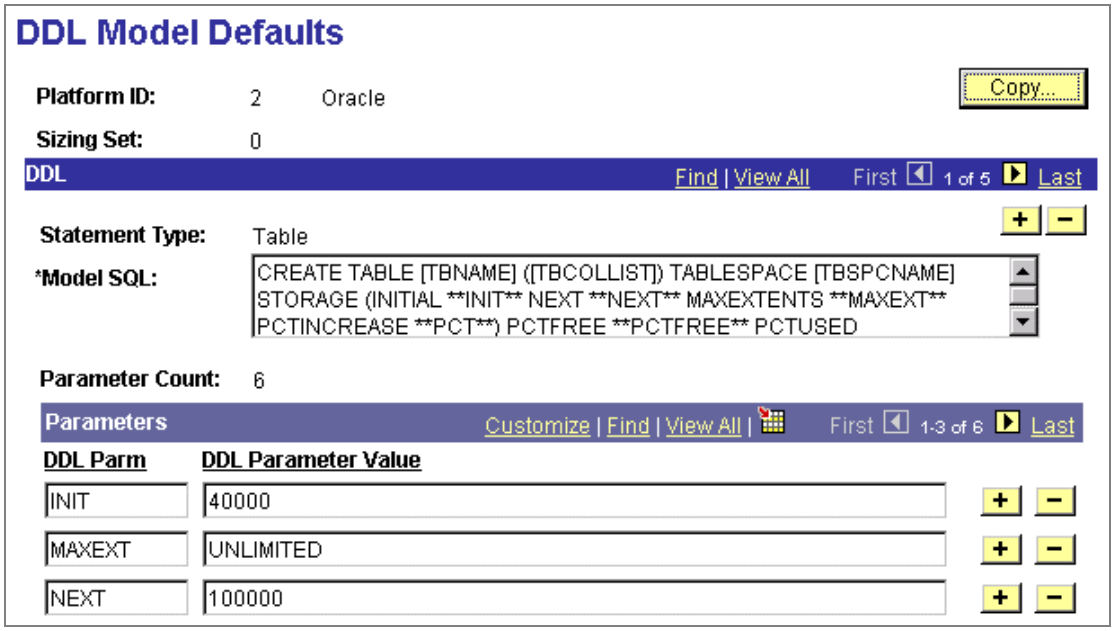
Tablespace DDL Page

This page enables you to view and override DDL parameters if needed. View the default DDL in the Default Tablespace DDL list. You override specific parameters, if needed, in the Override Tablespace DDL list. Enter the parameter you want to override in the Parameter Name column, and enter your override value in the Override column.

DDL Model Defaults

Select PeopleTools, Utilities, Administration, DDL Model Defaults.

Used to view and edit the DDL for creating tablespaces, indexes and tables. Any changes made here are global.



DDL Model Defaults page

Platform ID Identify the type of platform you will be running on.

Sizing Set Specify multiple Sizing Sets if needed. Sizing Sets are a way to maintain multiple versions of your DDL Model statements for a particular database platform. For example, you could have one sizing set to be used during a development phase, when tables only have test data, and you could have separate sizing set to be used during production, when tables will have much more data.

Copy Copies information from one sizing set to another.

Statement Type The four statement types are CREATE TABLE, CREATE INDEX, CREATE UNIQUE, and it looks like running update statistics. Some platforms have all the statements, some do not. For example DB2 has all four statements. SQLServer only has CREATE TABLE and CREATE INDEX.

Model SQL Displays the SQL model statements.

Parameter Count The Parameter Count is calculated based on how many non-blank DDL parm rows you define.

DDL Parm The DDL Parm value is a value that the user can change.

DDL Parameter Value The DDL Parameter value is a value that the user can change. Here you can override the DDL parameter default values with your own for the selected statement type. The statement type you want to change must be open and have the focus in the Application Designer.

For example if you want to change the DDL Parm Values for Indexes, set the statement type to Index, then open the record where the index is located in Application Designer, and then change the DDL Parm Value for the index in the chosen record.

Using the DDL Model Defaults page, you can maintain DDL model statements and default parameters for Data Mover. The options you select on this page also apply to the Build function in Application Designer.

Using this utility, you can:

- Scroll through all the statement types and platforms defined in the PSDDLMODEL table.
- Change DDL model statements.
- Add, delete, or change DDL parameters and values.

The Platform IDs are as follows:

Number	*Platform*
0	SQLBase (No longer supported)
1	DB2
2	Oracle
3	Informix
4	DB2/UNIX
5	Allbase (No longer supported)
6	Sybase
7	Microsoft
8	DB2/400 (No longer supported)

Note. There is no validation performed on the Model SQL statement, the DDL Parm syntax, or the relationship between the statement and the parameters.

See Also

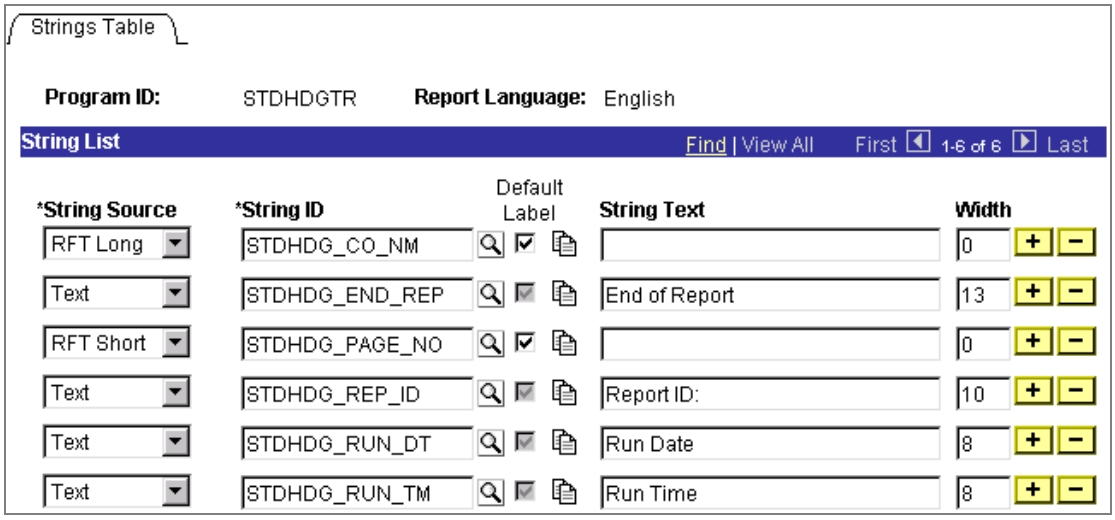
PeopleTools PeopleBooks: PeopleSoft Data Management, "Data Mover"

PeopleTools PeopleBooks: PeopleSoft Application Designer, "Building SQL Tables and Views"

Strings Table

Select PeopleTools, Utilities, Administration, Strings Table.

The Strings Table page enables you to customize the column headings in your SQR reports.



Strings Table page

String Source

Select from the following list of sources

Select RFT Long If you want the long description of the field to be displayed in your column heading as set in the Application Designer.

Select RFT Short if you want the short description of the field as set in the Application Designer to be displayed in your column heading.

Select Text to enter a custom column heading for your report.

String ID

Use the browse button to select the string ID to be used for your column heading in your SQR report.

Default Label

The default label will be enabled if you select the RFT Long or RFT Short string source, otherwise, the checkbox will be disabled.

Remember that fields can have multiple labels. Select the Default Label option to ensure that the default label is

	used. If you do not use the field's default label, you must select which of the field's labels to use using the label properties button.
String Text	Enter the text for the custom column heading, This is the text that will be displayed if you set the string source to Text.
Width	The Width defaults to the current width of the string you entered or selected. Be sure to update the width based on the actual space available on your report layout to avoid limiting a translator to an artificially short length, which is likely to degrade the quality of their translation.

See Also

PeopleTools PeopleBooks: PeopleSoft Global Technology, "Using the Strings Table"

XML Link Function Registry

The XML Link Function Registry is used in conjunction with the XML Link technology exclusively. This utility is documented in the XML Link PeopleBook.

See Also

PeopleTools PeopleBooks: PeopleSoft Business Interlink (XML) Guide, "Setting up the Inbound Business Interlink Environment for an IScript Function"

Merchant Integration Utilities

There are two utilities related to the Merchant Integration technology that are provided for upgrade support only. They are:

- Merchant Categories
- Merchant Profile

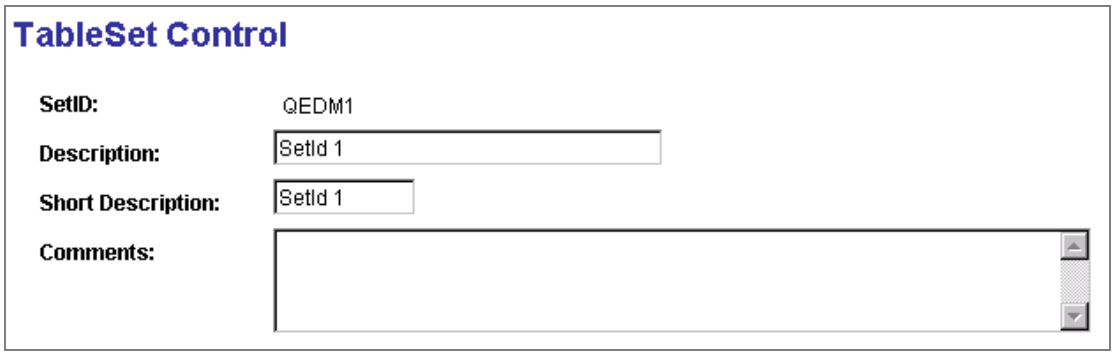
Refer to your previous PeopleSoft documentation for information regarding these utilities. These utilities are not intended for any new development purposes.

TableSet IDs

Select PeopleTools, Utilities, Administration, TableSet IDs.

Use this utility to create Set IDs. Before doing so, do the following:

- Add the SETID field (as a key field) to the record definition for that table.
- Define a Set Control Field as the field controlling the assignment of table sets.



TableSet Control page

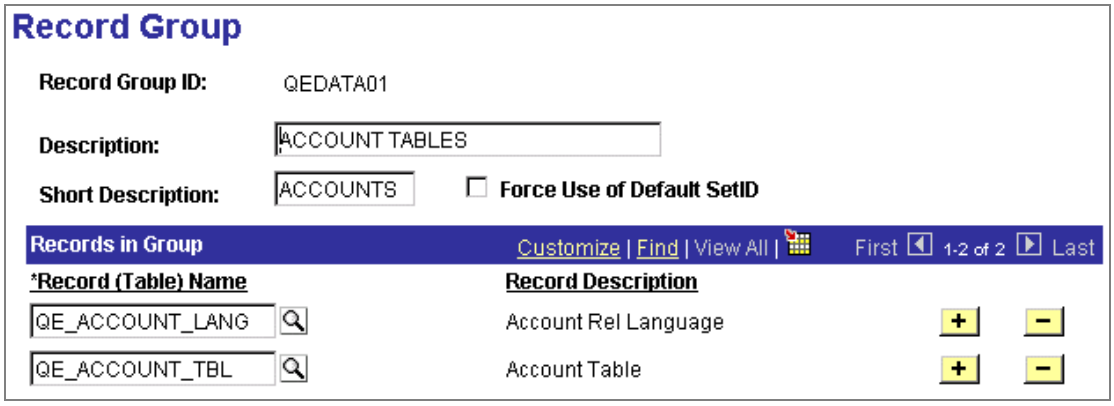
SetID Enter the SetID as defined in the record definition.

Description/Comments Add any descriptions and comments necessary for identification and internal documentation.

Record Group Table

Select PeopleTools, Utilities, Administration, Record Group.

Used to group record definitions for the tables you want to share, as well as any dependent record definitions.



Record Group Table page

Description The Record Group ID description should provide enough information to encompass a category of related tables, not just the table you are specifically sharing.

Short Description Enter a short description.

Force Use of Default SetID This will override alternate SetIDs entered so that the default will be used.

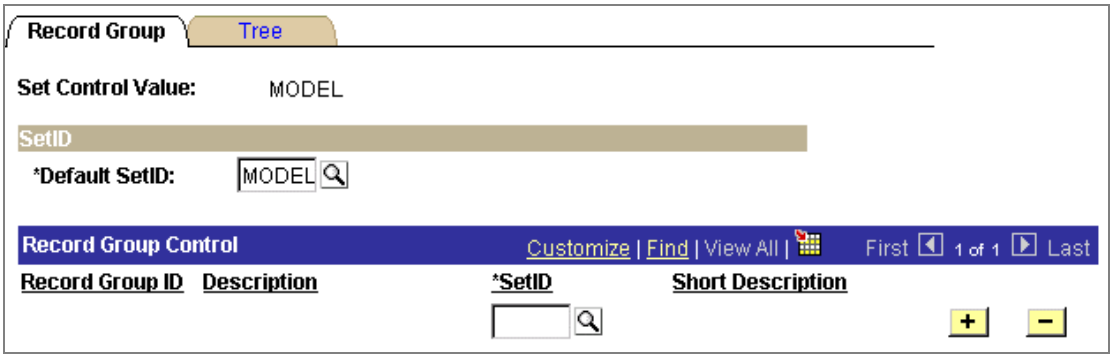
Record (Table) Name	This prompt list comes from a SQL view of record definitions that are defined with that Set Control Field—that haven't already been associated with a record group.
Record Description	Automatically populated, when the Record (Table) Name is selected.

TableSet Control

Record Group Page

Select PeopleTools, Utilities, Administration, TableSet Control, Record Group.

Used to define which record groups will use which table set.



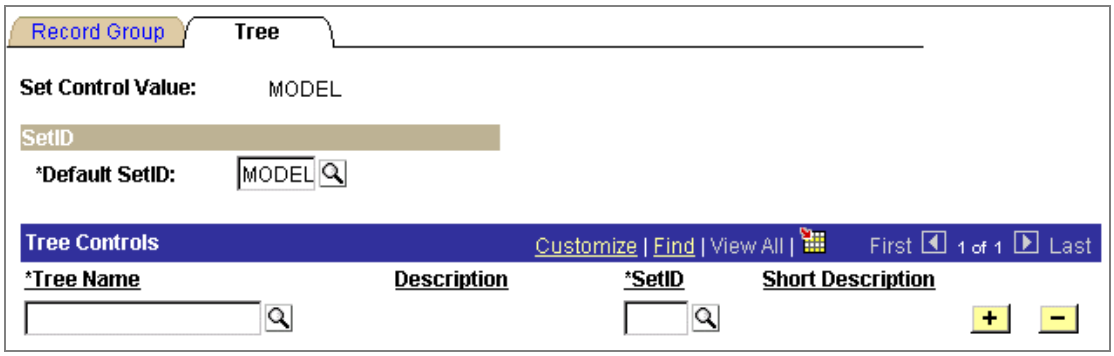
TableSet Control page: Record Group tab

Default SetID	This is the Set ID the system will use as you add additional record definition groups to be shared within this table set.
SetID	While we've set up our database to share only one accounting-related record group, you may have multiple record groups that you will assign default Set ID or unique Set IDs.

Tree Page

Select PeopleTools, Utilities, Administration, TableSet Control, Tree.

Used to share Trees as well as tables and views.



TableSet Control page: Tree tab

Default SetID The Default Set ID you assigned this field value is automatically displayed. If you created another tableset for sharing trees, you can change this value.

Tree Name Use the browse button to select from a list of only the tree definitions that are defined with the same Set Control Field.

SetID Use the browse button to select the appropriate SetID

See Also

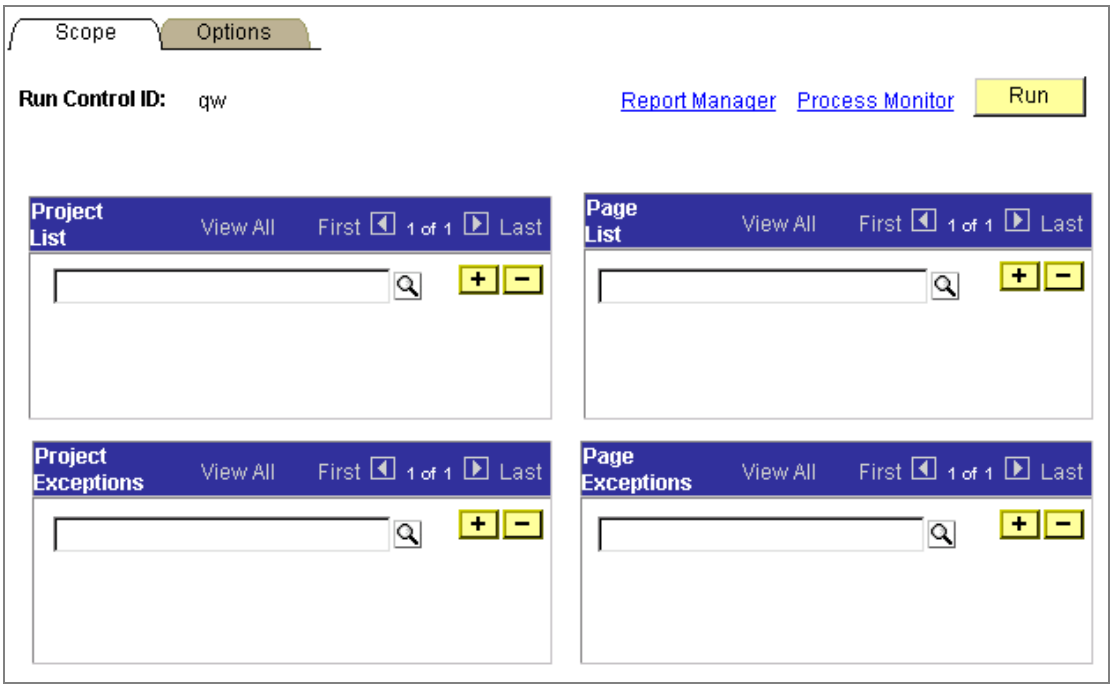
PeopleTools PeopleBooks: PeopleSoft Application Designer, “Defining Tableset Controls”

Convert Panels to Pages

Scope Page

PeopleTools, Utilities, Administration, Convert Panels to Pages, Scope.

This utility helps you update panels you have developed for previous PeopleSoft releases to reflect the pages used for the internet architecture.



Convert Panels to Pages page: Scope

Project List Insert projects, containing panels you wish to convert, into this scroll. In addition, if you are using the *Apply Panel Group Defaults* option, any panel group that is contained in projects in this scroll will be processed. Note that exceptions may be defined see the task titled, "Project Exceptions."

Page List Insert panels, that you want to convert to pages, into this scroll.

Project Exceptions If you want to ensure that a group of panels or panel groups is never processed for conversion, you can insert them into an application upgrade project and insert the project name in this scroll.

Page Exceptions Panels inserted into this scroll will not be processed.

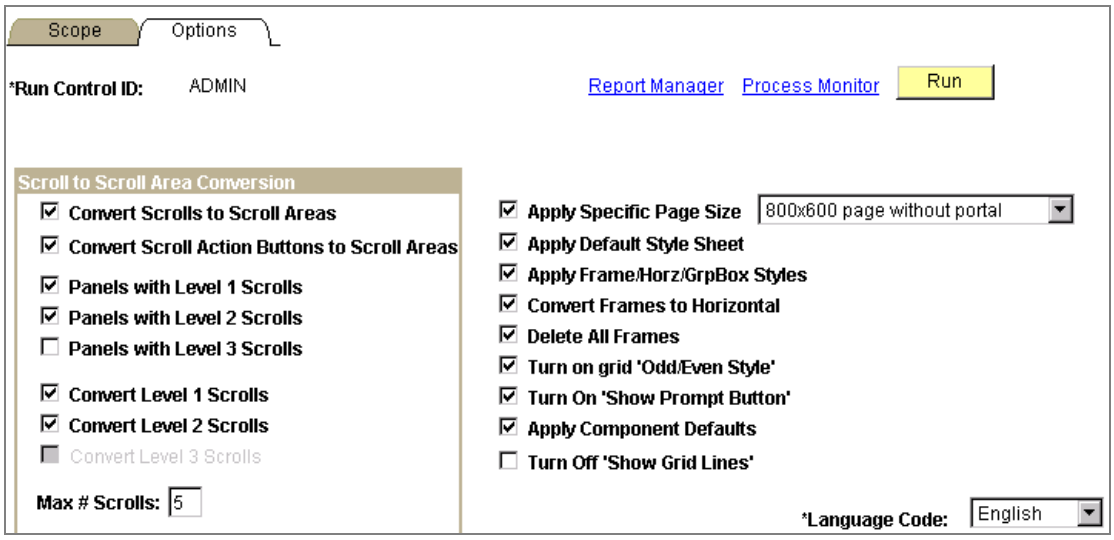
See Also

PeopleSoft Upgrade documentation

Options Page

PeopleTools, Utilities, Administration, Convert Panels to Pages, Scope.

Specify the options for your conversion process.



Convert Panels to Pages: Options page

Convert Scrolls to Scroll Areas If you select this option, scroll to scroll area conversions will take place for panels with scroll bars. If this is unchecked, no scroll to scroll area conversion will take place.

Convert Scroll Action Buttons to Scroll Areas Some scroll bars may exist with scroll action buttons already defined. This option determines whether these scrolls should be converted or ignored. If they are converted, the scroll action buttons are removed before the scroll bar is converted to a scroll area.

If you select this option, scrolls with scroll action buttons will be converted. If this options is not checked, scrolls with scroll action buttons will be ignored.

Panels with Level 1 Scrolls If you select this option, panels with level 1 scrolls will be processed for scroll conversion.

Panels with Level 2 Scrolls If you select this option, panels with level 2 scrolls will be processed for scroll conversion.

Panels with Level 3 Scrolls If you select this option, panels with level 3 scrolls will be processed for scroll conversion.

Convert Level 1 Scrolls If you select this option, level 1 scrolls will be converted to scroll areas.

Convert Level 2 Scrolls If you select this option, level 2 scrolls will be converted to scroll areas.

Convert Level 3 Scrolls If you select this option, level 3 scrolls will be converted to scroll areas.

Max # Scrolls This parameter is a general scroll count limit for scroll conversion processing. For example, if this is set to 5, any panel with more than 5 scrolls which are not invisible will

	be ignored. This is a simple way of eliminating complex panels from automatic scroll conversion.
Apply Specific Page Size	This option is used to define whether a specific size should be assigned to a panel. If you select this option, the panel size defined in the drop down box will be applied to the panel. If this is unchecked, no changes will be made to the panel size. **Note.** When you select a specific panel size, the panel size will be applied to standard panels only (secondary panels and sub-panels are not sized automatically).
Apply Default Style Sheet	If you select this option, the style sheet associated with a panel is updated with a blank value, so that the panel's style sheet will default from PSOPTIONS.STYLESHEETNAME ('PSSTYLEDEF').
Apply Frame/Horz?GrpBox Styles	If you select this option, the conversion process looks for frames, group boxes, and horizontal rules that have no styles associated with them, and that appear to be associated with a specific scroll area by virtue of their position within a scroll area. It then assigns level-specific styles, based on the *occurs* level of the scroll area.
Convert Frames to Horizontal	Horizontal lines are a new page object for PeopleSoft 8. If you select this option, the conversion process looks for frames on the panel with upper and lower coordinates less than 9 grid units apart. These frames are then converted to Horizonal Lines.
Delete All Frames	If you select this option, the process removes all frames on the converted panel. **Note.** If Convert Frames to Horizontal and Delete All Frames are both checked, the conversion from frame to horizontal will take place first, then any remaining frames are deleted.
Turn On Grid 'Odd/Even Style'	This applies to grids on a panel being converted. If you select this option, the conversion process determines if grids on the panel have their 'Odd/Even Style' turned on. If it is not turned on, the conversion process will turn this option on.
Turn On 'Show Prompt Button'	This option applies to edit box fields that are not invisible and are not *display-only*. If you select this option, the conversion process turns on the 'Show Prompt Button' option for edit box fields that have it turned *off*.
Apply Component Defaults	This option is used to apply standard defaults to component definitions. The defaults that are set are dependent on the *Use* characteristics of the components See Application Designer, Component Properties/Use and Component Properties/Internet tabs.

Turn Off 'Show Grid Lines'	This option turns off the 'Show Grid Lines' option for grids that have it checked *on*.
Language Code	Enables you to convert panels whose language code differs from that in PSOPTIONS. Select a language code from the drop down menu.

Update Utilities

The Update utilities enable you to keep track of the PeopleSoft updates you've applied to your database.

Update By Release Label

The release label refers to the official release name, such as PeopleTools 8.40.00

Updates By Update ID

The update ID refers to the patch or project name you applied to your system. The update ID is typically the report ID for a TPRD incident.

URL Maintenance

PeopleTools, Utilities, Administration, URLs.

Use the URL Table to store URL addresses and to simplify specifying and updating URLs. URLs saved here can be referenced from page controls such as a push button/hyperlink. The associated URL can be either an internet or intranet hyperlink.

URL Maintenance page

Description	Users can search for URLs by description.
URL	Enter the entire URL.

Comments	This field can be used to make notations and comments and is not displayed elsewhere.

To add a new URL entry in the URL Table:

1. Click on the **Add a New Value** hyperlink.

A new page will display prompting you to enter the URL Identifier. Enter the name you want to use to identify the new URL address.

2. Click the **Add** button.

   The URL Maintenance page will display.

3. Enter the **Description, URL**, and **Comment**, if any.

4. Click on the **Save** button.

   You must save the page before you can add another URL, or Update/Display existing URL addresses.

5. Click on the **Add** button to add another URL.

To update or display the URL Table:

1. From the URL Maintenance search page click on the **Search** button.

2. Select the URL Identifier hyperlink you want to update from the Search Results table.

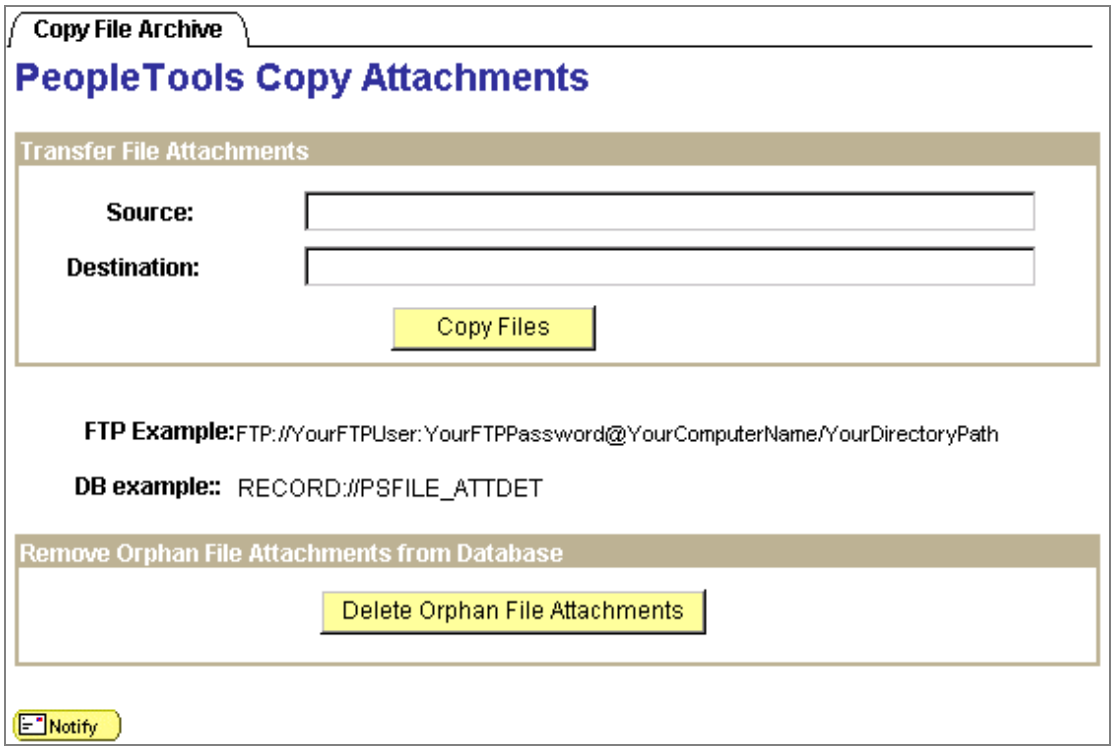
   The URL Maintenance page opens.

3. Make your changes to the page and click the **Save** button.

Copy File Attachments

PeopleTools, Utilities, Administration, Copy File Attachments.

Enables you to manage the file attachments stored in your database.



Copy File Archive page

Transfer File Attachments

Source — When you want to copy the file attachment archive from one location to another, enter the record or directory where the files are currently stored.

Destination — Enter the record or directory where you want to copy your file attachment archive.

Copy — Invokes the PeopleCode function (CopyAttachment) that copies the file attachment archive to another location. You can copy from a file server to a database and you can copy from a database to a file server (for example).

Remove Orphan File Attachments from Database

The accumulation of file attachments can consume a significant chunk of disk space. On a regular basis, you should make sure that lingering, or orphaned, file attachments are deleted from the database. Click the Delete Orphan File Attachments button to complete this task. This button invokes the CleanAttachments PeopleCode function.

See Also

PeopleTools PeopleBooks: PeopleCode Developer's Guide, "Using Methods and Built-In Functions," Understanding File Attachment Architecture

Query Monitor

The Query Monitor is used to track the queries that users execute in your system. It enables you perform such tasks as identify queries that need to have logging turned off or need to be tuned.

See Also

PeopleTools PeopleBooks: PeopleSoft Query, "Appendix C: Query Monitor"

Sync ID Utilities

The Sync ID Utilities are used exclusively with the PeopleSoft Mobile Applications technology.

See Also

PeopleTools PeopleBooks: PeopleSoft Mobile Agent, "Data Synchronization "

Audit Utilities

This section covers the utilities used for auditing your system's integrity.

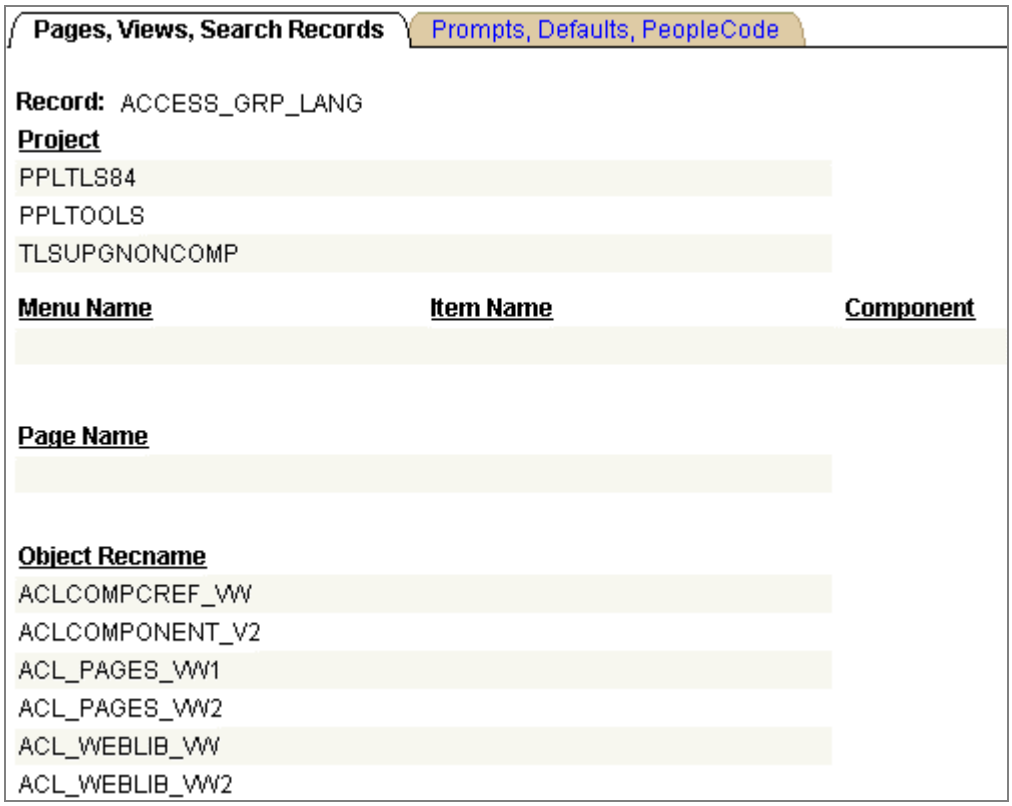
Record Cross Reference

You use the Record Cross Reference pages to view where a record is used throughout your application. There are two pages in this page group:

- Pages, Views, Search Records.
- Prompts, Defaults, PeopleCode.

Pages, Views, Search Records

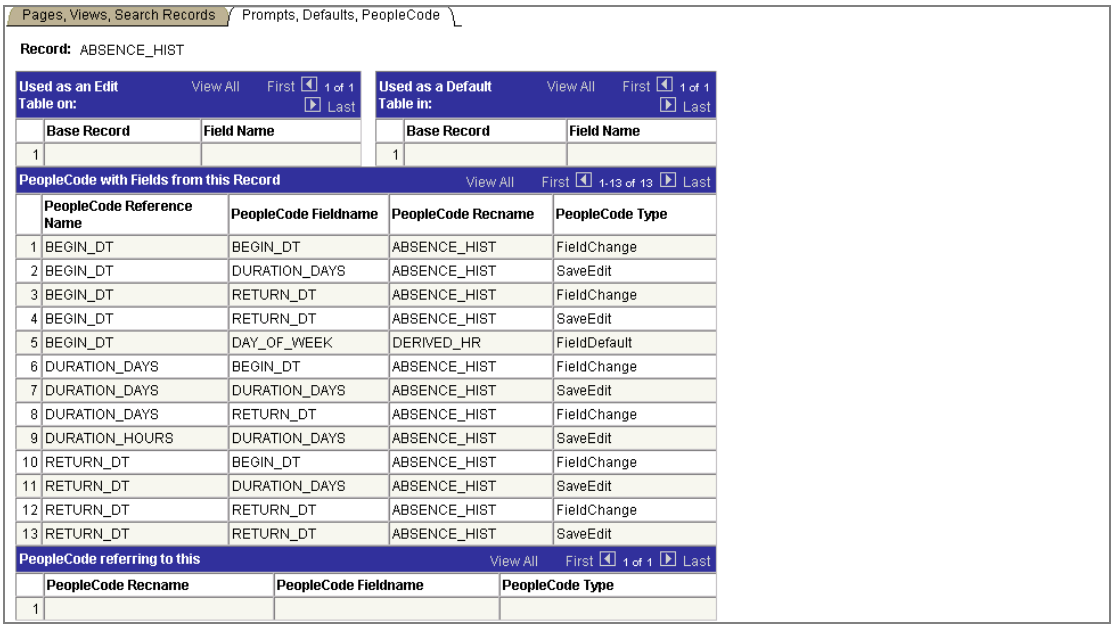
This is a read-only page that shows what Projects, Menus, Pages, and Objects reference a particular record.



Record Cross Reference: Pages, View, and Search Records page

Prompts, Defaults, PeopleCode

In the Prompts, Defaults, PeopleCode page, the group boxes list the components that refer to the record.



Pages, Views, Search Records | Prompts, Defaults, PeopleCode

Record: ABSENCE_HIST

Used as an Edit Table on: View All First 1 of 1 Last

	Base Record	Field Name
1		

Used as a Default Table in: View All First 1 of 1 Last

	Base Record	Field Name
1		

PeopleCode with Fields from this Record View All First 1-13 of 13 Last

	PeopleCode Reference Name	PeopleCode Fieldname	PeopleCode Recname	PeopleCode Type
1	BEGIN_DT	BEGIN_DT	ABSENCE_HIST	FieldChange
2	BEGIN_DT	DURATION_DAYS	ABSENCE_HIST	SaveEdit
3	BEGIN_DT	RETURN_DT	ABSENCE_HIST	FieldChange
4	BEGIN_DT	RETURN_DT	ABSENCE_HIST	SaveEdit
5	BEGIN_DT	DAY_OF_WEEK	DERIVED_HR	FieldDefault
6	DURATION_DAYS	BEGIN_DT	ABSENCE_HIST	FieldChange
7	DURATION_DAYS	DURATION_DAYS	ABSENCE_HIST	SaveEdit
8	DURATION_DAYS	RETURN_DT	ABSENCE_HIST	FieldChange
9	DURATION_HOURS	DURATION_DAYS	ABSENCE_HIST	SaveEdit
10	RETURN_DT	BEGIN_DT	ABSENCE_HIST	FieldChange
11	RETURN_DT	DURATION_DAYS	ABSENCE_HIST	SaveEdit
12	RETURN_DT	RETURN_DT	ABSENCE_HIST	FieldChange
13	RETURN_DT	RETURN_DT	ABSENCE_HIST	SaveEdit

PeopleCode referring to this View All First 1 of 1 Last

	PeopleCode Recname	PeopleCode Fieldname	PeopleCode Type
1			

Record Cross Reference: Prompts, Defaults, PeopleCode

Used as an Edit Table on	Lists pages that use the record for those purposes.
Used as a Default Table in	Lists pages that use the record for those purposes.
PeopleCode with Fields from this Record	Shows where fields from this record are used in PeopleCode.
PeopleCode referring to this	Shows all PeopleCode that references this record.

Perform System Audit (SYSAUDIT)

This utility is extensively documented elsewhere.

See Also

PeopleTools PeopleBooks: PeopleSoft Data Management, “SYSAUDIT”

Database Level Auditing Utilities

This utility is used to support our database level auditing feature.

See Also

PeopleTools PeopleBooks: Data Management, “Database Level Auditing”

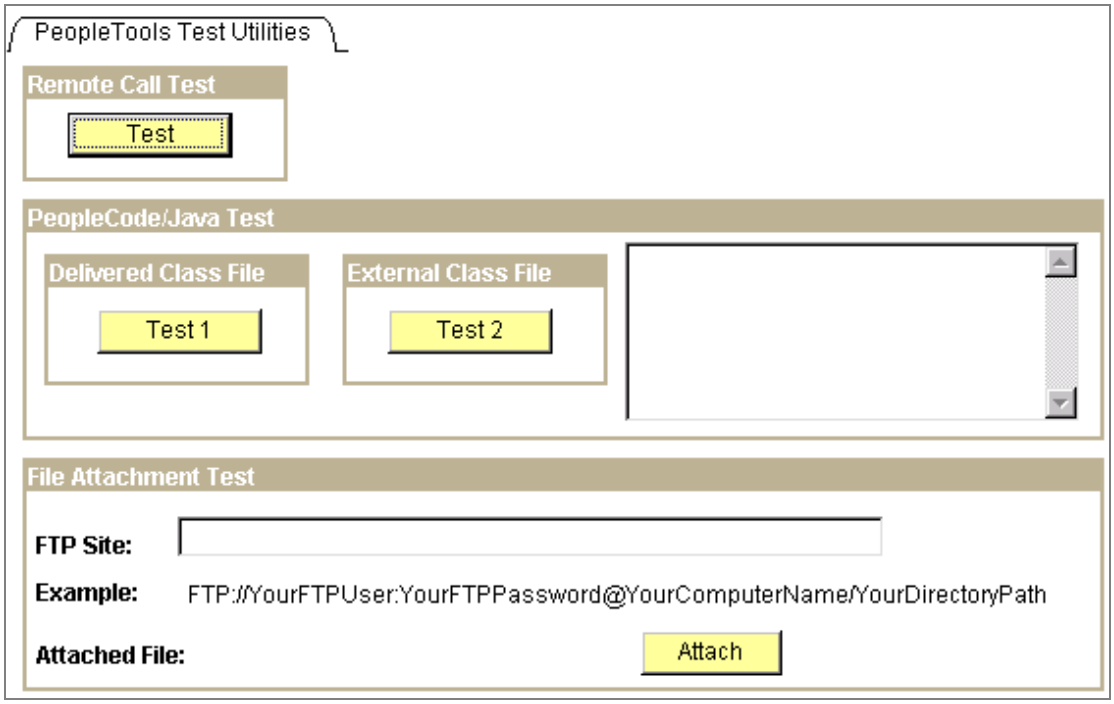
Debug Utilities

This section describes the testing utilities.

PeopleTools Test Utilities

Select PeopleTools, Utilities, Administration, PeopleTools Test Utilities.

The PeopleTools Test Utilities page enables you to test certain basic PeopleTools functionality.



PeopleTools Test Utilities page

Remote Call Test — You use the Remote Call Test button to test your Remote Call configuration.

Delivered Class File — The Delivered Class File button tests java PeopleCode integration. It tests to see that java is being executed correctly through PeopleCode. The Delivered Class File button tests a java class that is shipped with PeopleSoft 8.

External Class File — The External Class File button tests java PeopleCode integration. The External Class File button tests a java class created similar to that, which a customer may wish to create.

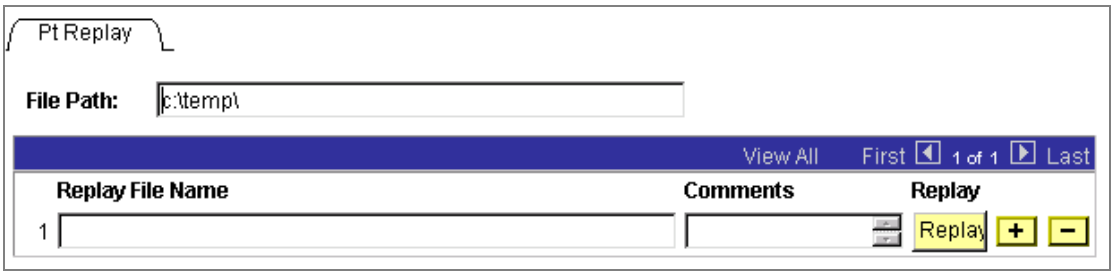
FTP Site — Enter the full path and password for your test file. For example:

	FTP://YourFTPUser:YourFTPPassword@YourComputer Name/YourDirectory/Path
Attached File	Click this button to attach the file whose path you indicated in the FTP Site.

Replay Appserver Crash (Application Server Crash)

Enables you to recreate an application server crash with a “crash dump” file.

Select Utilities, Process, Replay Appserver Crash.



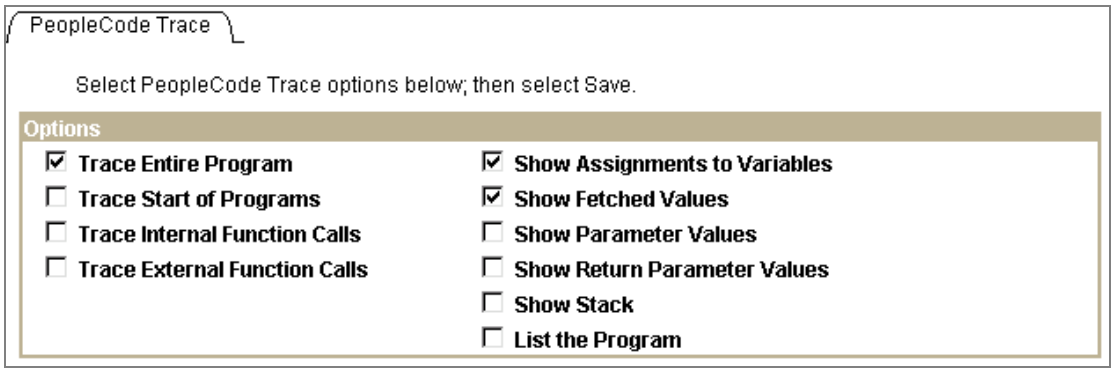
Replay Appserver Crash page

File Path	Enter the full file path for where you want the crash dump file to be saved.
Replay File Name	Enter the name of the crash dump file, so that you can identify it later.
Comments	Insert any comments.
Replay	Click this button to replay the crash dump file. You can only replay the crash dump file when you are signed on to the system using a three-tier Windows client, not while logged into the internet architecture.

Trace PeopleCode

You use this page to change your PeopleCode tracing options while online. This page does not affect trace options set in Configuration Manager.

Note. The Trace PeopleCode utility has largely been made obsolete by the introduction of the PeopleCode debugger. For reasons of upgrade compatibility, we’ve left Trace PeopleCode in place.



Trace PeopleCode page

Trace Entire Program	Select this checkbox to show a line by line trace of the program
Trace Start of Programs	Select this checkbox to show the starting and ending points of the program
Trace Internal Function Calls	Select this checkbox to show the calls to PeopleTools built in function calls
Trace External Function Calls	Select this checkbox to show calls to Application written functions
Show Assignments to Variables	Select this checkbox to show variable assignments
Show Fetched Values	Select this checkbox to show values from PeopleCode Fetch call
Show Parameter Values	Select this checkbox to show function parameter values
Show Return Parameter Values	Select this checkbox to show function return parameter values
Show Stack	Select this checkbox to display the PeopleCode evaluator's stack after each PeopleCode (internal) instruction.
List the Program	Select this checkbox to show the code of the PeopleCode program

You use Trace PeopleCode to create a file displaying information about PeopleCode programs processed from the time you start the trace.

Note. The Trace PeopleCode Utility decreases system performance due to the overhead that occurs during the monitoring and recording of all PeopleCode actions.

The checkboxes on this page correspond to the options on the **Trace** tab in Configuration Manager. However, the selections that appear on this page do not necessarily reflect those made in Configuration Manager. While the Configuration Manager settings are stored in the Windows registry and used each signon, the settings in the Utilities page only apply to the current online session, and, once set, they override the Configuration Manager's settings.

The benefit of using this page to control PeopleCode tracing is that you can turn it on and off without having to restart PeopleTools, and without resetting your Configuration Manager settings. Keep in mind, though, your selections are not enabled until you save the page.

To enable/disable PeopleCode tracing while on line

1. Select PeopleTools, Utilities, Debug, Trace PeopleCode.

   The **Trace PeopleCode** page appears.

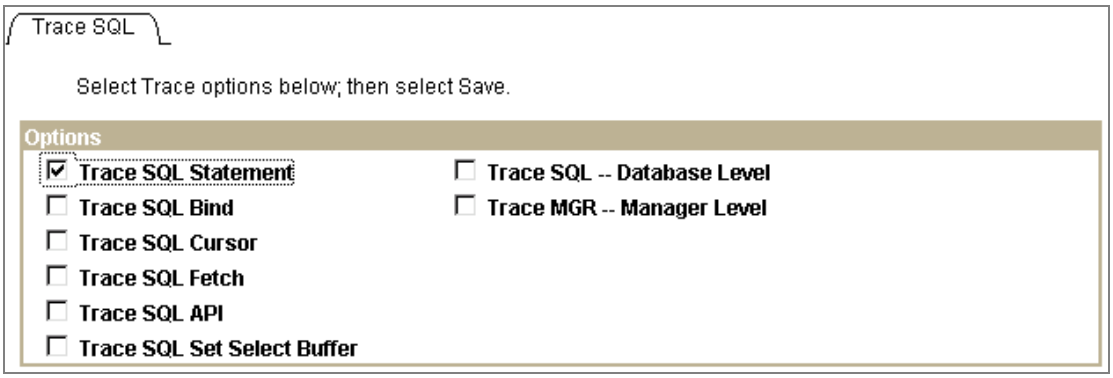
2. Select/deselect the desired **Options.**

3. Save the page.

   If you selected any of the checkboxes, the system will start writing to the trace file.

Trace SQL

You use this page to change your SQL tracing options while online. Your Configuration Manager settings will not be affected.



Trace SQL page

Trace SQL Statement	Shows the SQL statement
Trace SQL Bind	Shows Bind values for SQL statements that have parameter markers.
Trace SQL Cursor	Shows Connect, disconnect, commit and rollback calls
Trace SQL Fetch	Shows Fetch call for Select Statement
Trace SQL API	Shows other API calls (Execute, Describe, and so on.)
Trace SQL Set Select Buffer	Shows Binds for Select columns
Trace SQL -- Database Level	Low level tracing at the database API (ODBC, ct-lib, and so on.)

Trace SQL -- Manager Level Shows calls for Cache calls.

You use Trace SQL to monitor SQL activity on your system. You can run Trace SQL alone or concurrent with Trace PeopleCode

The checkboxes on the Trace SQL page correspond to options on the Trace tab in the Configuration Manager. However, the selections showing in this page do not necessarily reflect those made in the Configuration Manager. The displayed page selections are not enabled until you save the page.

To enable/disable SQL tracing while on line

1. Select/deselect the desired trace options.
2. Save the page.

   If you selected any of the checkboxes, the system will start writing to the trace file.

Trace Page

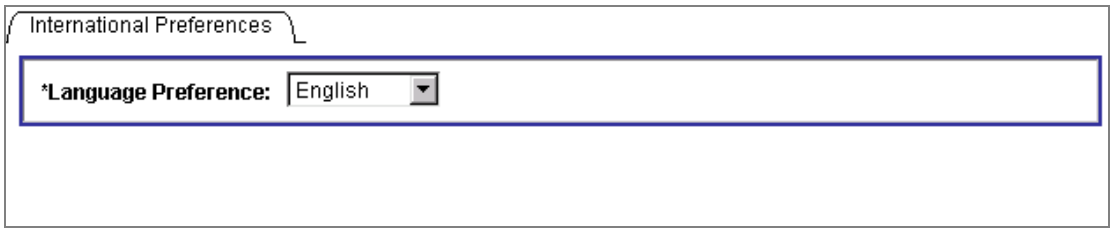
This page is no longer actively used or maintained.

International Utilities

The following sections cover the utilities used in your Globalization efforts.

Preferences

Used to override the language selected when you signed onto the database.



International Preferences page

Language Preference You use the International Preferences page to temporarily change the operator Language Preference specified in your operator ID profile in Operator Security. This change lasts until you exit the PeopleSoft session or change the Language Preference again.

See Also

PeopleTools PeopleBooks: PeopleSoft Global Technology, Changing the Signon Language While Signed On

Process Field Size

If you process currency values which require large numbers, such as Italian Lira, that require fields longer than those included in your standard application, you can use the International Field Size page to expand amount fields throughout your application.

After you set the appropriate lengths for a list of fields, click the Run button to launch the batch program that performs the field size changes.

Field Name	Use the Browse button to select the field name.
Current Field Size	This is a read only field indicating the current field size as stored in PSDBFIELDS.
Field Size - International	Enter the field size to expand (or contract) the field size for foreign fields.

SeeAlso

PeopleTools PeopleBooks: PeopleSoft Global Technology, “Resizing Currency Fields Using the International Field Size Report”

Time Zones

This utility has been extensively documented in the Globalization PeopleBook.

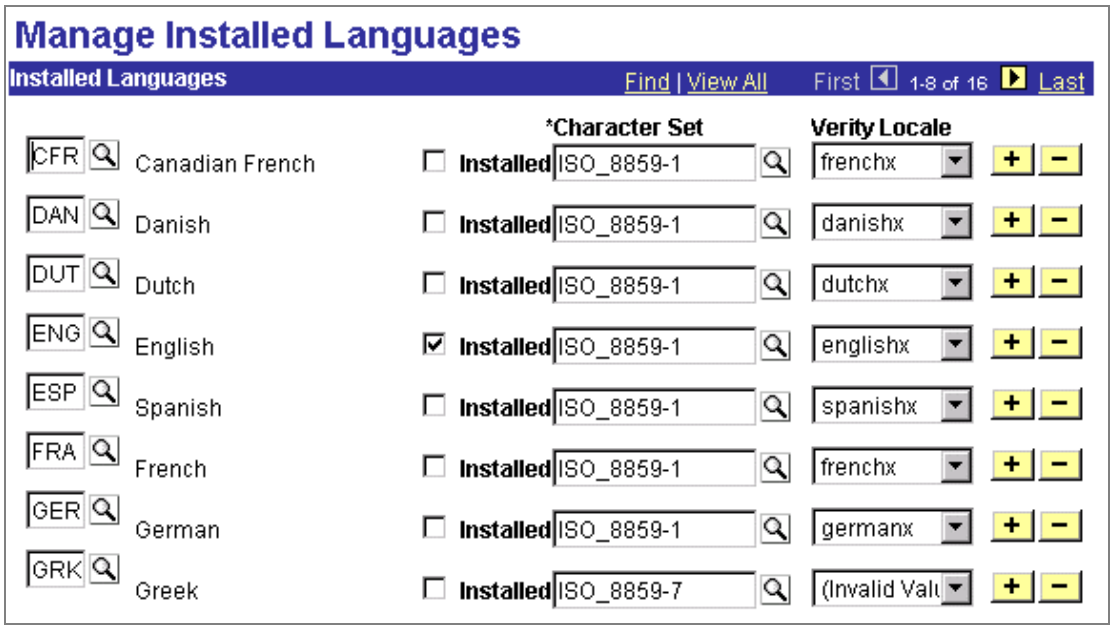
SeeAlso

PeopleTools PeopleBooks: PeopleSoft Global Technology, “Maintaining Time Zones”

PeopleTools PeopleBooks: PeopleSoft Global Technology, “Understanding Time Zones”

Manage Languages

Use the Manage Installed Languages page as a central utility to manage language information for the currently enabled languages.



Manage Installed Languages page

Language Code Field Use the browse button to select the language code from the XLATTABLE table. The language description will appear to the right of the code field.

Installed checkbox This checkbox is selected when a language is installed and available to you.

Character Set field This field is required. Use the browse button to select the character set from the PSCHARSETS table.

Verity Locale Enables you to match the installed language with the appropriate Verity locale to enable proper search capabilities within the browser.

Optimization Utilities

The Optimization utilities are documented extensively in the Optimization Framework PeopleBook.

See Also

PeopleTools PeopleBooks: PeopleSoft Optmization Framework, “Administering Optimization Tables”

PeopleTools PeopleBooks: PeopleSoft Optmization Framework, “Updating Solver Licenses”

CHAPTER 4

Understanding Configuration Manager

This chapter provides a description of and instructions for using:

- Configuration Manager.
- Configuration Manager Interface.
- Startup page.
- Display page.
- Crystal/Business Interlink page.
- Trace page.
- Workflow page.
- Remote Call page.
- Client Setup page.
- Import/Export page.
- Profile page.
- Command Line Options.
- Set up the Development Environment.

Configuration Manager

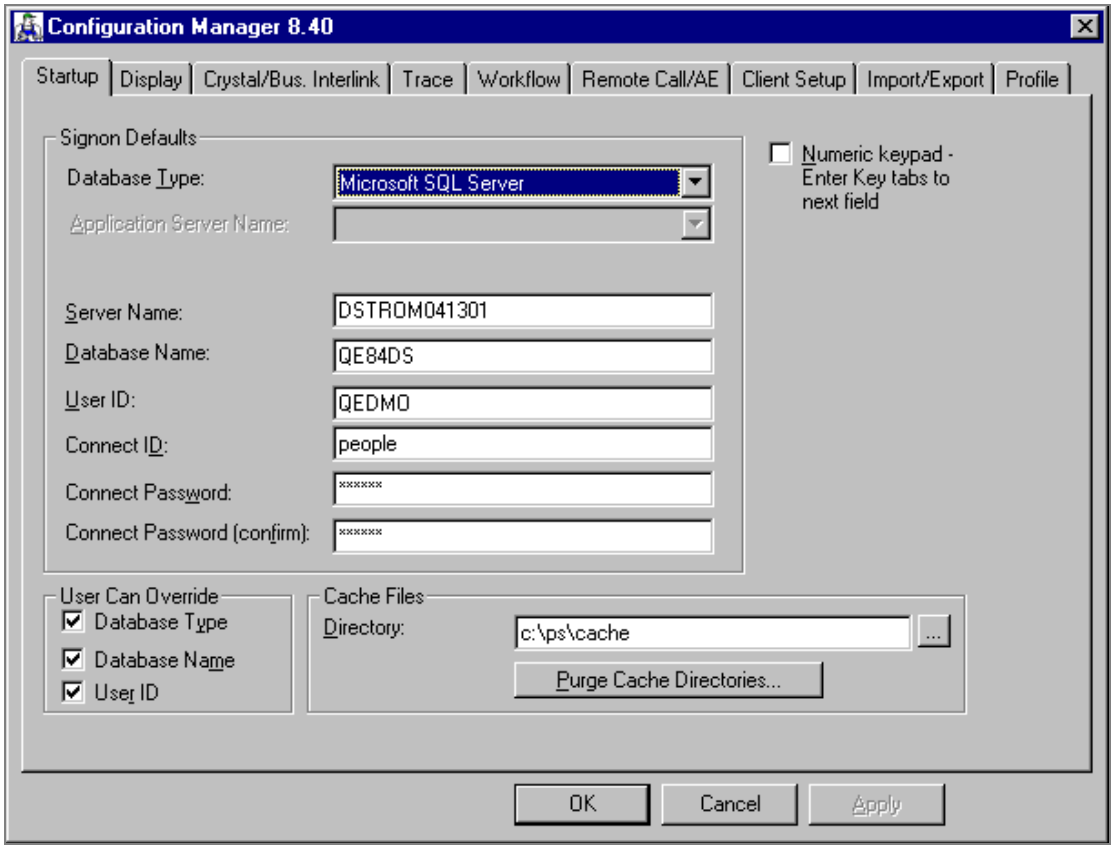
The Configuration Manager is a PeopleTool designed to simplify workstation administration by providing a way to adjust the PeopleSoft registry settings from one central location. With the Configuration Manager you can set up one workstation to reflect the environment at your site, and then you can export the configuration file, which can be shared among all the workstations at your site.

The Configuration Manager contains a variety of setting controls that allow you to set up your workstations for connecting to the database, using workflow, and so on. It enables you to define separate "profiles" for connecting to different PeopleSoft databases.

The following sections describe each tab in the Configuration Manager's interface and explain the environment settings you can specify.

The Configuration Manager Interface

Configuration Manager is convenient, in that it allows you to access PeopleSoft-specific registry settings from a central location; this saves you from hunting through the registry on your own. It's also easy to use due to its familiar and easy-to-use interface—a Windows dialog box consisting of multiple tabs:



Configuration Manager

You can start Configuration Manager by double-clicking the Configuration Manager shortcut in your PeopleSoft program group. It's also possible to start the program online by selecting **Edit, Preferences, Configuration** from within a PeopleSoft Windows application.

Folder Tabs

The various PeopleSoft configuration parameters are grouped on the dialog tabs according to the function, feature, or PeopleTool that they control. The label on the tab identifies the kind of parameters you can expect to find there.

Push Buttons

You'll notice the following four buttons on the bottom of Configuration Manager:

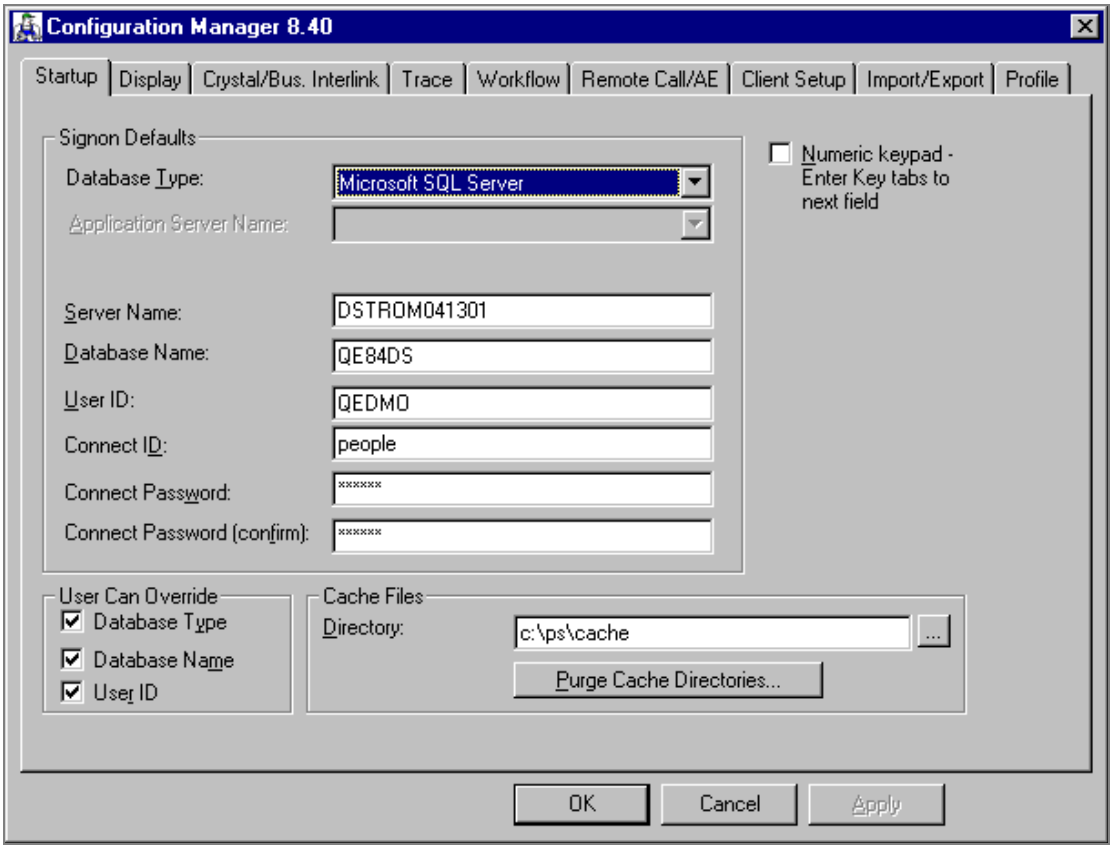
- **OK.** Clicking **OK** saves your settings and exits Configuration Manager.

- **Cancel.** Using **Cancel** closes Configuration Manager without saving any changes you have made.
- **Apply.** This button allows you to save your changes without exiting.
- **Help.** Click **Help** to display documentation.

Note. The changes you make with Configuration Manager do not take effect until the next time you start PeopleSoft.

Startup

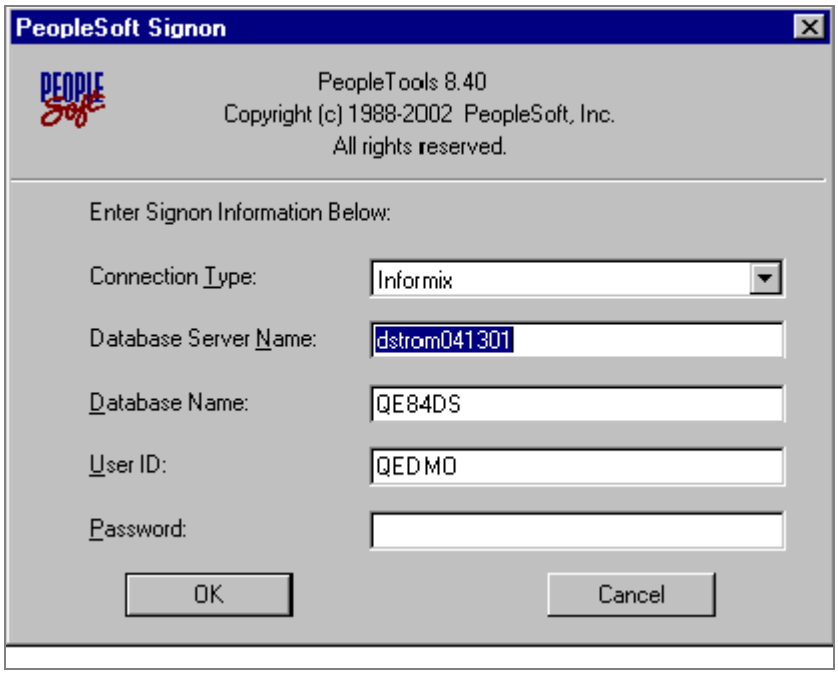
The options on this tab enable you to customize the default values presented during the signon process. These entries will appear on the signon screen, and users do not need to change any values unless they do not want the defaults. You can also choose which PeopleTool or PeopleSoft application you want to open after you sign on.



Startup Tab

Signon Defaults

The options in this group enable you to customize the defaults presented to users during the signon process. These entries will appear on the signon screen, and only need to change values unless if they do not want the defaults. They will, of course, need to be authorized to make any changes to the signon defaults. To show the relationship between the Startup tab and the PeopleSoft Signon dialog, the values that appear in the previous example showing an Informix signon appear in the following example.



PeopleSoft Signon Dialog

Database Type

This is where you select the name of the RDBMS—ORACLE, INFORMIX, and so on—that you want to appear as a default on the **PeopleSoft Signon** window. You can also choose ***APPSRV*** to log on to an application server instead of a database. For a list of the possible choices, view the drop down list. To allow an operator to change their **Database Type** selection at the signon dialog, you must select the **Database Type** option in the **Operator Can Override** group.

Note. When you select ***APPSRV*** from the **Database Type** drop-down list, the **Server Name**, **Connect ID**, and **Connect Password** controls will be disabled. The system obtains these values from the application server.

Application Server Name

If you selected *APPSRV* from the **Database Type** drop-down list, you then need to specify the application server's name in this field. You need to have already configured your application server and registered it on the **Application Servers** tab.

Server Name

Enter the name of the default database server in the **Server Name** field. This parameter is only enabled for Informix, Sybase, Microsoft SQL Server, and DB2, and refers to the instance to which the user connects. This is different from previous PeopleSoft releases, where the Server Name field referred to the Host name of the UNIX server.

- **Informix.** The **Server Name** must be entered in lower case.
- **Microsoft SQL Server.** The **Server Name** value is used to automatically create your ODBC data source name.

Database Name

Enter a default **Database Name.** You can choose any valid PeopleSoft database name. As with **Database Type,** to allow the operator to override the default selection at signon, you must select appropriate option in the **Operator Can Override** group.

User ID

The **User ID** parameter enables you to specify the default user ID that will be used to log onto PeopleSoft. This parameter—like all the Startup parameters—is optional.

You can use the User ID parameter in conjunction with a PSUSER module containing a user-defined logon process. The PSUSER code, if present, can evaluate and modify the User ID value before you attempt to log on to the selected database.

Connect ID and Connect Password

The **Connect ID** is a shared RDBMS ID that all DB2 platforms and Informix use in place of your PeopleSoft User ID for the logon process. If you use this feature, you need to create a separate operating system account, or connect ID, for every user ID in the PSOPRDEFN table.

Use the **Connect Password** field to define a default connect ID password.

Note. The connect ID edit box needs a value or the user can't sign on to the system in a two-tier environment.

See Also

Installation and Administration book and Internet Architecture Administration

Understanding PeopleSoft Security

Connect ID

Numeric keypad — Enter Key tabs to next field

In Microsoft Windows applications, pressing the Enter key in a dialog box selects the default action button. For example, in the **PeopleSoft Login** dialog box, pressing Enter has the effect of clicking the **OK** button. Selecting this check box overrides this default behavior for the Enter key next to the numeric keypad: instead of selecting the action button, pressing the Enter key moves the cursor to the next field in the dialog box.

Note. This check box affects the Enter key that is part of the numeric keypad. The Enter key on the main keyboard retains its normal behavior.

Operator Can Override

Some PeopleSoft sites make use of multiple database types and names. Using the checkboxes in the **Operator Can Override** group, you can enable your operators to enter an RDBMS, database name, or user ID other than the defaults provided at logon. Of course, in most cases, you will use these controls to prevent users from attempting to signon onto any database other than the default. The settings in this group work in the following manner:

Database Type — If you select **Database Type**, PeopleSoft assumes that you will also want to grant the ability to override the Database Name and User ID. So, those options will automatically be selected. You can not deselect **Database Name** or **User ID** without first deselecting **Database Type**. If you are configuring a workstation to connect in both two-tier and three-tier, then you must select this option. The user will need to specify a two-tier or three-tier connection from the **PeopleSoft Signon** dialog.

Database Name — If you just select **Database Name**, PeopleSoft assumes that you will also want to override the **User ID**, and the **User ID** radio button will automatically become selected by default. However, you can deselect **User ID**. To disable **Database Name**, the **Database Type** radio button must also be disabled.

User ID — If you just want to grant a user the ability to override the **User ID** submitted at logon, you can just select **User ID**. None of the previous options need to be selected. You can not disable **User ID** if **Database Type** is selected.

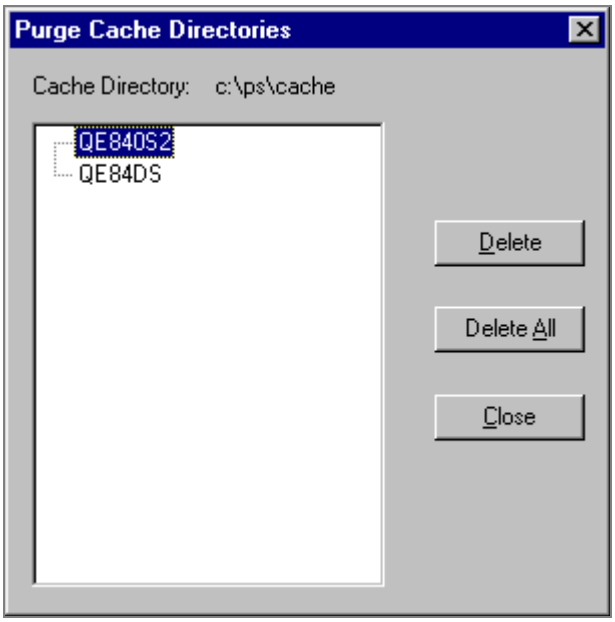
Cache Files

Enter the parent **Directory** that holds your cache file directories. For example:

```
C:\PS\CACHE
```

Note. Cache files store database object information locally and are automatically downloaded the first time you open a PeopleSoft database object or if a change has been made to the master copy of the object on the database server. For each PeopleSoft database you use, you have one cache file directory that stores the cache files for that database.

If you click **Purge Cache Directories,** a dialog will appear displaying your existing cache file directories.

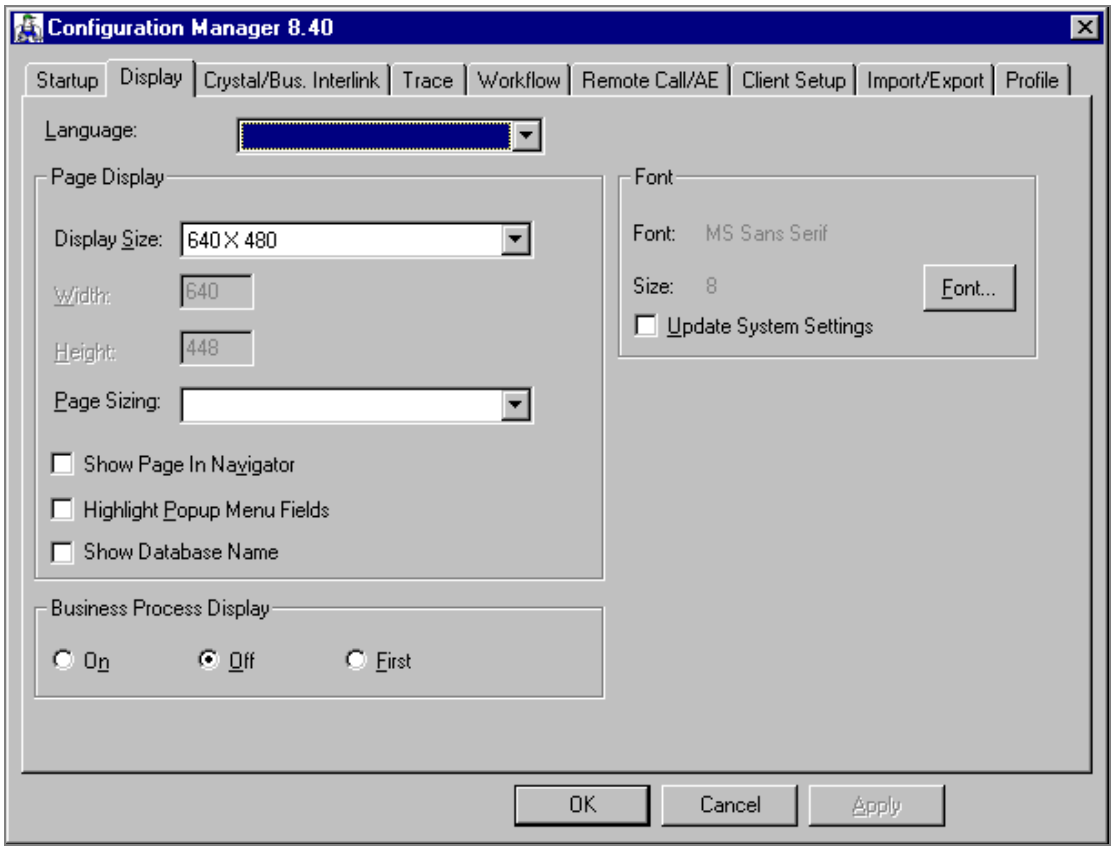


Purge Cache Directories Dialog

You can select a single directory and press **Delete,** or you can press **Delete All** to remove all the directories. If a cache file directory is missing (after you delete it), the system will automatically rebuild it the next time cache files are downloaded. After you delete the appropriate cache directory, press **Close** to return to the **Startup** tab.

Display

The **Display** tab allows you to customize the appearance of your PeopleSoft Graphic User Interface (GUI). For instance, you can adjust the width and height of your pages to fit in with the other elements on your desktop.



Display Tab

Language

In the **Language** drop-down list, specify which language you want to display on your PeopleSoft pages. The default setting is English.

Note. Your choices are not limited to the languages that appear in the drop down list. For example, you can customize your applications so that they appear in another language, however, you will not be able to switch to that other language through the Configuration Manager. You will have to switch languages by manually changing the registry setting.

Page Display

You have the option to customize the way the PeopleSoft pages appear on the screen. You can adjust the entire display size or just the page height and width.

Display Size, Width and Height

You specify the **Display Size** (in pixels) of your screen. This will affect the default size of the PeopleSoft window—as displayed in the corresponding **Width** and **Height** fields. The drop-down list provides four options:

- 640 X 480 (Window size defaults to 640 x 448)
- 800 X 600 (Window size defaults to 800 x 576)
- 1024 X 768 (Window size defaults to 1024 x 744)
- Custom (You can manually set default window size by specifying **Width** and **Height** values)

Note. Changing these parameters will not affect a window which is already open. And, if either value is either blank or zero, the values will be reset to the 640 X 480 **Display Size.**

Page Sizing

You can specify the way pages are displayed if they were designed for a different size window than is opened. You have the following two options:

- **SCALE.** Pages are scaled to fit the window as necessary. For example, if your **Display Size** is set to 640 X 480 and you open a page designed to display in an 800 X 600 window, the page controls will be scaled down so that all page information appears. Conversely, if you open a 640 x 480 page in a larger window, the page controls will be scaled to fill the window completely.
- **CLIP.** This setting ensures that page controls are always displayed in their normal size. However, if a page is too large for the window, the page information will be clipped along the right and bottom edges of the window. Of course, window scroll bars *will* be displayed so that you can view the remainder of the page.

Show Panel in Navigator

Select this check box if you want to see the navigator tree view and the page view at the same time.

Highlight Popup Menu Fields

The **Highlight Popup Menu Fields** check box allows you to specify whether the fields that have an associated popup menu will be highlighted to alert users to its existence. By default, this option will be disabled. In most cases, it's a good idea to show users what fields contain popup menus. The visual cue that denotes a popup menu is a black rectangle surrounding the perimeter of a page control. The PeopleCode Developer's Guide contains more information about popup menus.

Show Database Name

The **Show Database Name** check box feature is especially useful if you are running multiple instances of PeopleTools. It enables the following options:

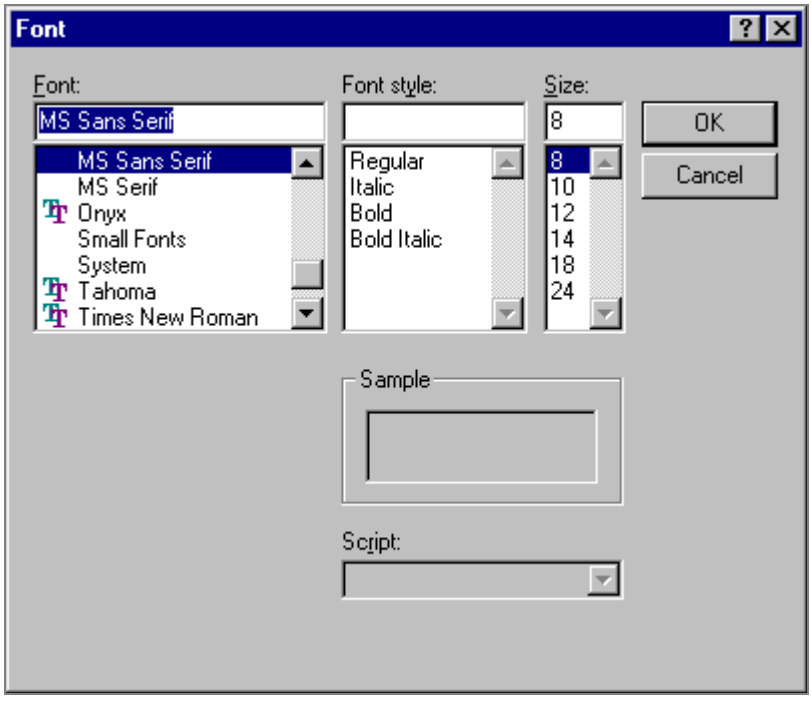
- When you have a PeopleSoft page open, you have the option to have the database name to which you are connected appear in the Status bar, which is located at the bottom of the page. If you select the **Show Database Name**, option, the Status bar will show the database name to which you are connected in addition to what normally appears: the current page name and the activity. For example, the Status bar might read PTDMO, Job Data 1, Add—in that order.
- Also, when you select **Show Database Name**, you will be able to see the database to which you are connected in the PeopleTools icon that appears in the Windows NT or Windows 95 Task bar when you have minimized a PeopleTools instance.

Note. In both cases, the database name may appear abbreviated to fit on the provided space for text.

Font

You have the option to customize the way the PeopleSoft text appears on the screen.

You specify the font by clicking on the **Font…** button to bring up a standard font selection pop-up menu. Select the font you want from that menu.



Font

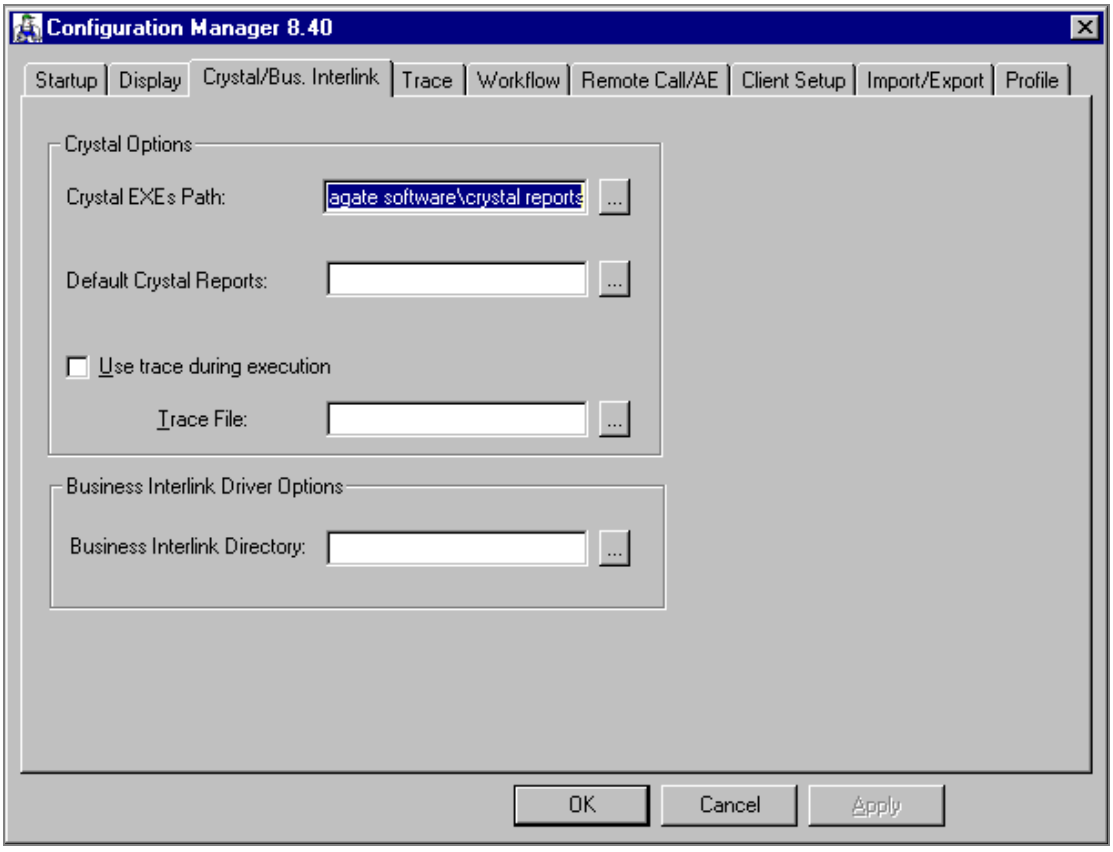
Business Process Display

You have three display options for the **Business Process Display:**

- **On**—The Navigator will appear with each menu group you open.
- **Off**—The Navigator will not be displayed. The user will have to launch the Navigator manually.
- **First**—The Navigator will only appear on the very first instance of PeopleSoft. After that, the subsequent instances will not display the Navigator.

Crystal/Business Interlink

This tab provides access to the necessary settings for Crystal Reports in the PeopleSoft environment and for business interlinks.



Crystal Tab

Crystal Options

If you have Crystal installed locally on the workstation, the **Crystal EXEs Path** will be populated automatically. But, if you have Crystal installed on a network drive, then the **Crystal EXEs Path** parameter should be set to reflect the location of the Crystal Reports executables. For example:

```
n:\hr800\bin\client\winx86\crystal
```

Since you can create customized reports with Crystal, the **Default Crystal Reports** option allows you to specify the default location of such reports. If this option does not apply to your site's Crystal implementation, you can disregard this parameter.

When you select **Use Trace during execution**, Crystal will write the trace statements to a log file you specify in **Trace File** field.

See Also

Crystal Reports

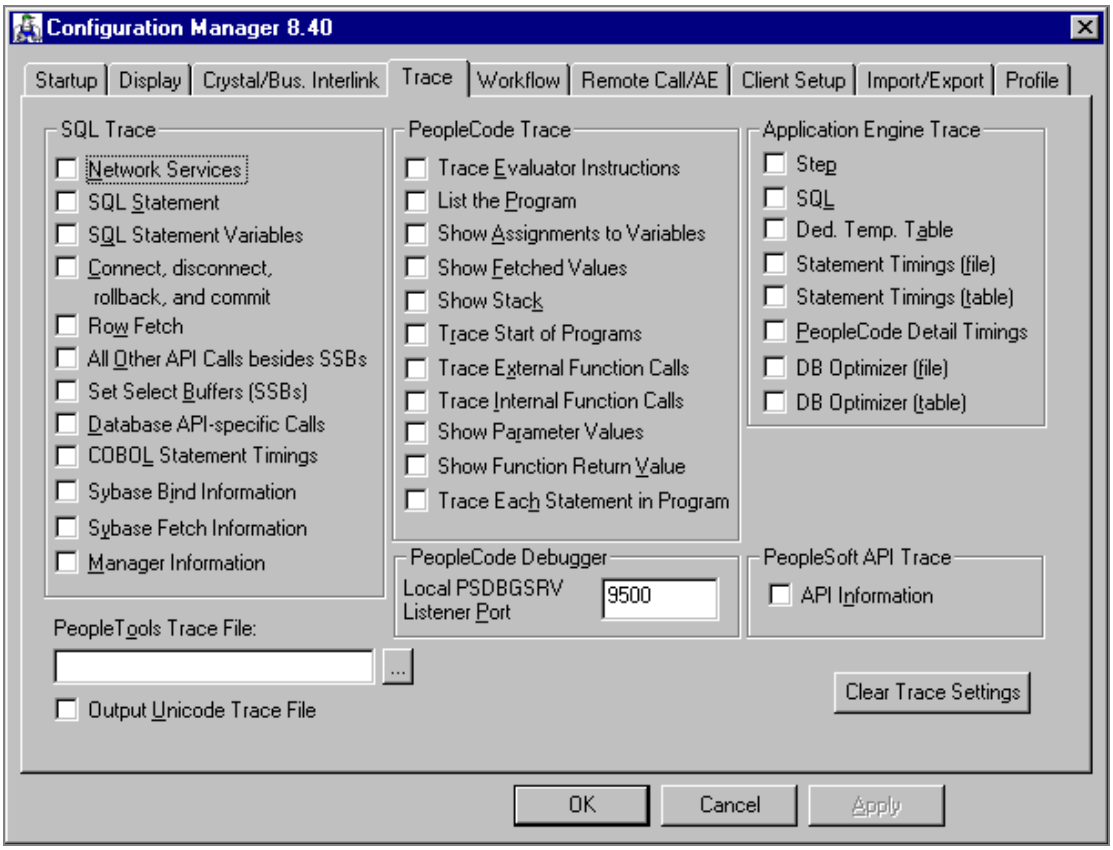
Your Crystal Reports User Manual

Business Interlink Driver Options

In the **Business Interlink Directory** box, enter the complete path to the directory that contains the drivers that business interlinks use to communicate with external systems.

Trace

The **Trace** tab allows you to select the tracing options for various parts of the PeopleTools system, such as SQL statements, PeopleCode, and Application Engine. If you are involved with tuning your PeopleSoft system and improving the online performance, you will want to make yourself familiar with this tab. You can also set these trace options through the PeopleTools Utilities page. Keep in mind that when you change the settings and options in the Configuration Manager, the new settings will only take effect the next time you launch PeopleTools.



Trace Tab

PeopleTools Trace File

The default filename for the **PeopleTools Trace File** is DBG1.TMP. The system writes the file to the following directories:

- On Windows: %TEMP% directory.
- On UNIX: $PS_HOME/log/dbname.

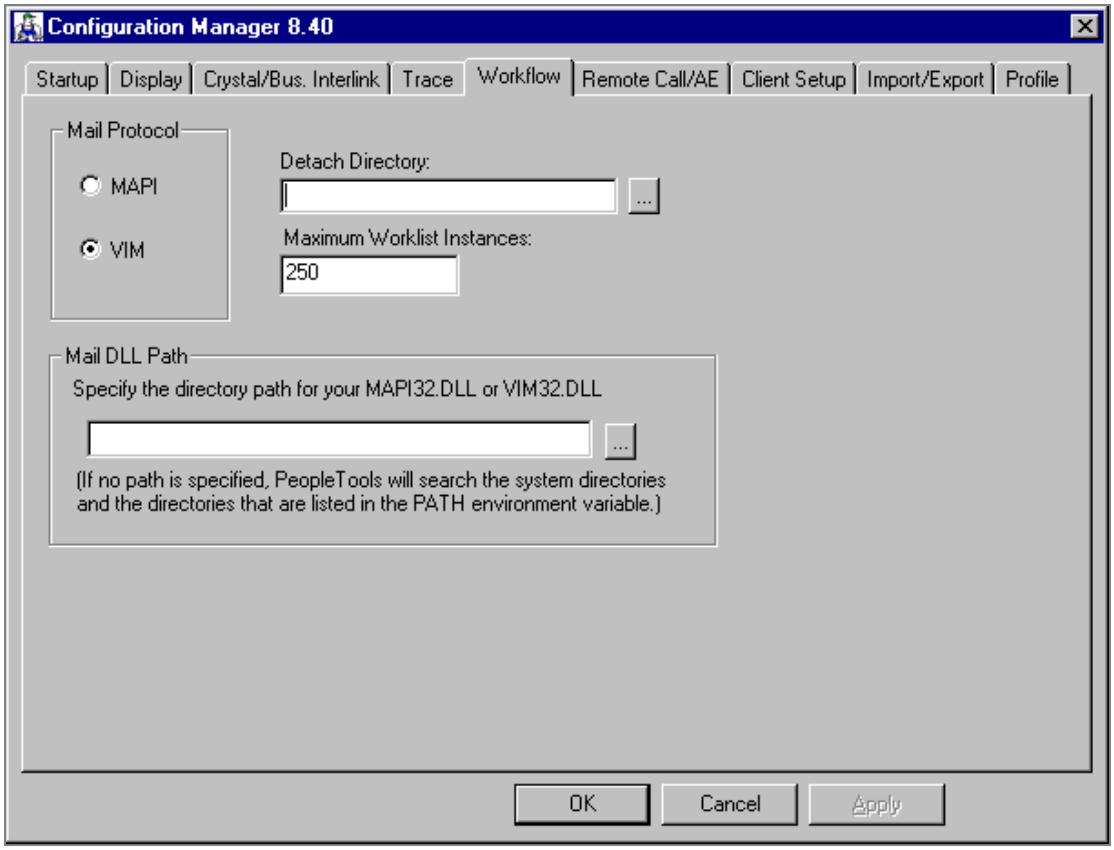
To specify a different PeopleTools Trace File

1. From the **Trace** tab in Configuration Manager, click the button on the right side of the **PeopleTools Trace File** edit box; a standard **Open** dialog appears.
2. Navigate to and select the new trace file.
3. Click **Open.**

   The field will now display the path and filename.

Workflow

The **Workflow** tab is where you specify the options and locations that are related to the Workflow implementation at your site. Electronic Workflow allows you to keep track of and assign tasks within business processes automatically.



Workflow Tab

See Also

PeopleSoft Workflow

Detach Directory

This is where you specify the directory into which PSNOTES.EXE detaches any file attachments on the forms it receives. This is also where PSNOTES.EXE places any files that it does not deliver to the Message Agent.

Maximum Worklist Instances

To set limits on the amount of worklist instances or entries that will display when viewing worklists, use the **Maximum Worklist Instances** control. The default value set at installation is *250*. If you do not want any rows returned, leave the edit box blank.

Mail Protocol

If you want to incorporate email into your Workflow scheme, and most likely you will, the **Mail Protocol** group is where you specify which mail protocol your site uses. PeopleSoft supports the following protocols:

- **MAPI,** or Mail API, is a programming interface that allows you to send and receive mail over the Microsoft Mail messaging system. If this is the mail protocol that your site uses, select this option to configure your client to perform PeopleSoft Workflow email generation.
- **VIM,** or Vendor Independent Messaging Interface, is a programming interface that enables you to send and receive email over a VIM-compliant messaging system, such as cc:Mail. If this is the mail protocol that your site uses, select this option to configure your client to perform PeopleSoft Workflow email generation.

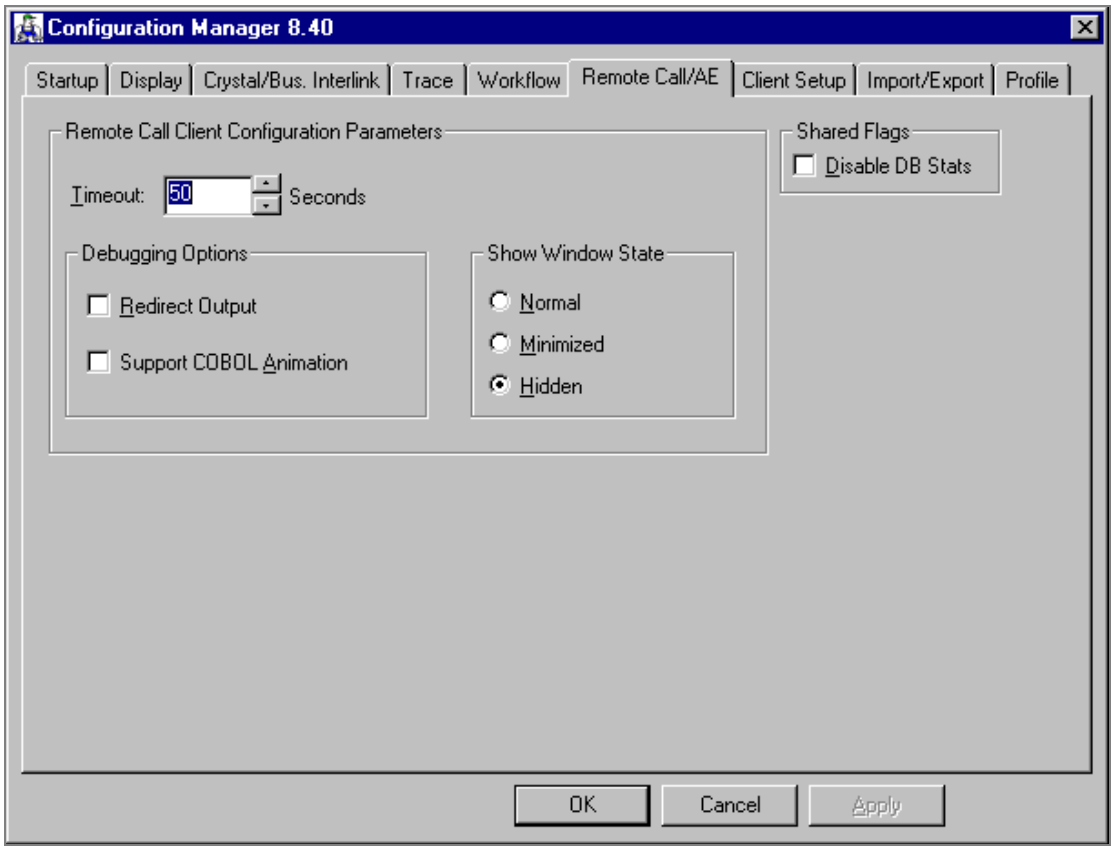
Mail DLL Path

After you have specified what **Mail Protocol** your site uses, enter the location of the mail DLL. For example:

```
C:\Windows\System
```

Remote Call

Some of PeopleSoft's applications make use of Tuxedo's Remote Call feature, which invokes data-intensive transactions on a remote server. This helps to alleviate heavy processing on the client.



Remote Call Tab

Timeout

Timeout refers to the time after which Remote Call will terminate the child COBOL process. The default is ***50*** seconds. Set the appropriate time for your site.

Debugging Options

You have the following options regarding Remote Call debugging:

- **Redirect Output.** Specify whether the stdout/stderr of the child COBOL process should be directed to a file. The default is ***NO.***
- **Support COBOL Animation.** This allows you save the COBOL input file so that you can reuse it with COBOL animator. The default is ***NO.***

Show Window State

This option allows you to specify how you want the window state of the child COBOL process to appear on the desktop. You can choose the following:

- **Normal.** Appears like a DOS window on the desktop.
- **Minimized.** Appears as an icon on the task bar.

- **Hidden.** Runs unseen in the background.

Shared Flags

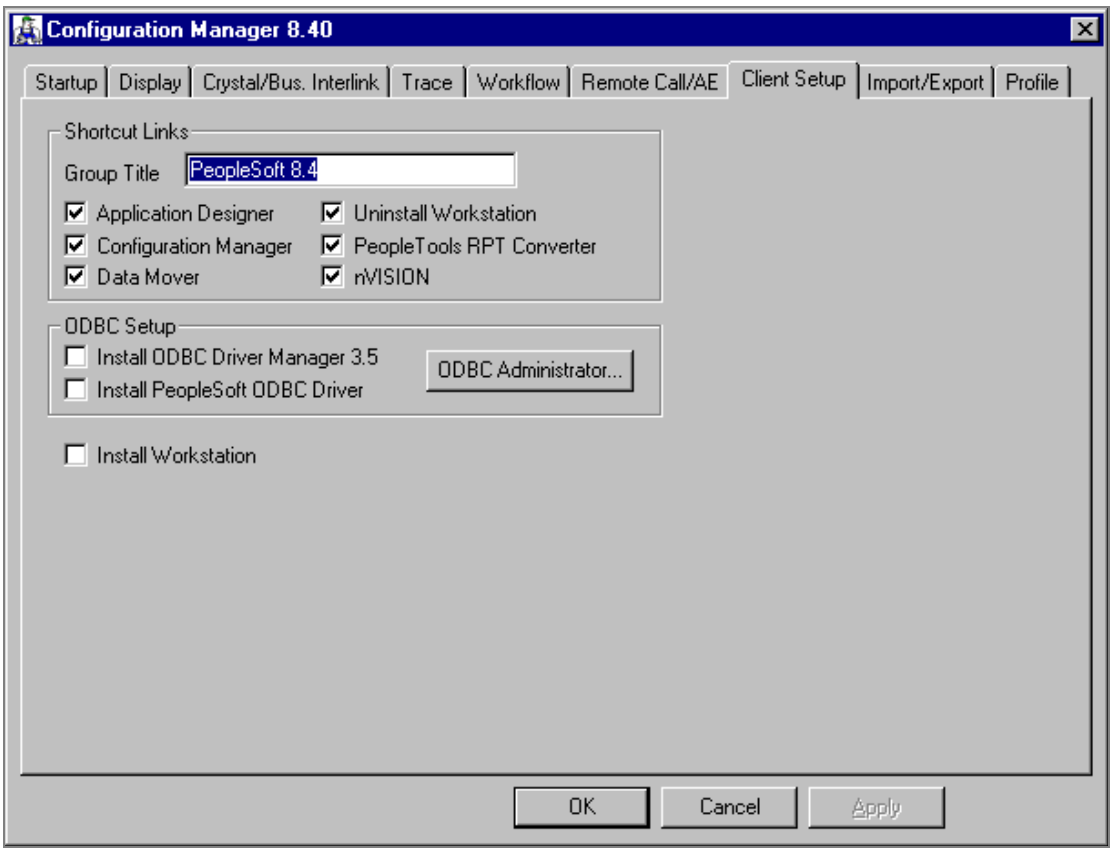
Specify whether or not to disable the DB Stats feature, which is the %UpdateStats meta SQL construct. . This applies to Application Engine programs.

See Also

PeopleTools PeopleBooks: PeopleSoft Application Engine, “Using Meta SQL and PeopleCode”, %UpdateStats

Client Setup

As part of the PeopleSoft installation process the workstations need to be configured to run successfully with your PeopleSoft system. The **Client Setup** tab is where you select many of the options that will affect workstations as well as invoke the Client Setup process. For example, on this tab you choose which shortcuts will appear on a workstation desktop. Keep in mind that this is not the only tab that contains essential values for the PeopleSoft workstation. You should also make sure that all of the tabs reflect the correct values for your site, especially the **Startup** tab and the **Process Scheduler** tab for the Default profile.



Client Setup Tab

Shortcut Links

- **Application Designer.** Adds the icon for the main PeopleTools development environment.
- **Configuration Manager.** Adds the PeopleSoft Configuration Manager shortcut, which will allow you to edit registry settings relevant to PeopleSoft.
- **Data Mover.** Adds a shortcut that will launch Data Mover.
- **Uninstall Workstation.** Adds the Uninstall Workstation shortcut, which uninstalls the most recent Client Setup.
- **PeopleTools RPT Converter.** This shortcut calls a stand-alone program that converts your RPT files from the format PeopleSoft used in previous releases to the PeopleTools 7 format. You only need to run this program if you are upgrading from previous versions of PeopleTools.
- **NVision.** This shortcut causes an nVision menu item to be added to the PeopleSoft 8 menu group in the Windows Start menu.

Note. We recommend that you back up your previous RPT files before you run the converter program, which significantly alters them.

- **SQA Robot Setup.** Adds a shortcut to the SQA setup program. You can use the SQA Robot to test the applications you develop. See your SQA documentation for installation instructions.

ODBC Setup

You need to specify one or both of the **ODBC Setup** options to run PeopleSoft Open Query. Read the information regarding each option and decide the appropriate action for your site.

- **Install ODBC Driver Manager 3.0.** This installs the Microsoft ODBC drivers that you need to run in conjunction with the PeopleSoft ODBC Driver to enable PeopleSoft Open Query. If you already have the Microsoft ODBC drivers installed on your client, this is an optional component.

Note. If you already have the Microsoft ODBC drivers installed, you will overwrite your current driver. Client Setup installs the ODBC Driver Manager version 3.0.2822. Any preceding versions of the ODBC driver *will* be overwritten, and any versions higher than 3.0.2822 will *not* be overwritten.

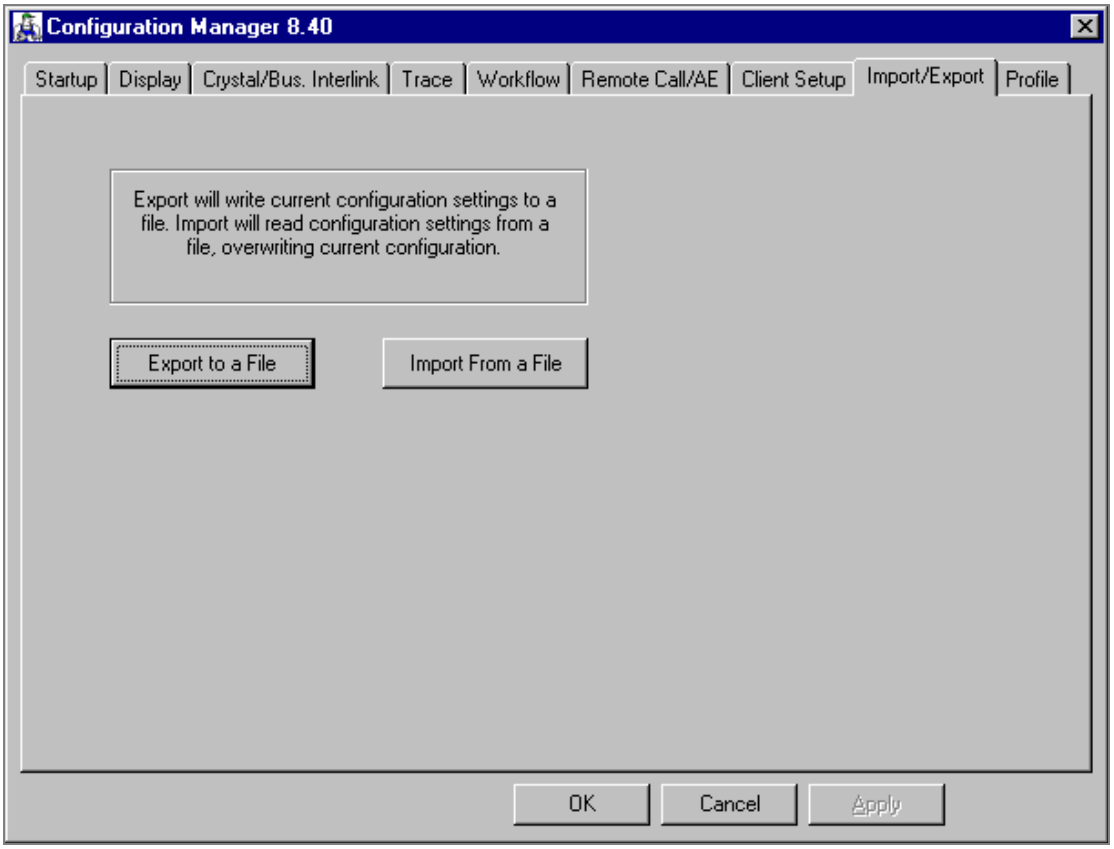
- **Install PeopleSoft ODBC Driver.** You need to install this driver to enable PeopleSoft Open Query.

Install Workstation

You must have this check box enabled to engage the Client Setup function. Only select the check box after you have made sure that all the appropriate selections are specified on all the Configuration Manager tabs. If you do not have it checked, Client Setup will not run. After you click the check box, you must then click either **OK** or **Apply.**

Import/Export

The **Import/Export** tab allows you to export, or save to file, the specified environment settings, and to import previously exported settings. This is useful when you plan to configure multiple workstations to have similar settings.



Import/Export Tab

Export to a File

As stated in the directions that appear on the tab, **Export to a File** will write current configuration settings to a file. This is useful when you want to set up multiple workstations with similar or exact environment settings. When you click **Export to a File** a regular **Save** dialog appears. Make note of the filename you give the configuration file.

Note. Always make sure to click **Apply** before you export a file. This way you'll make sure the exported configuration file reflects the current settings in case you have made any changes.

Import from a File

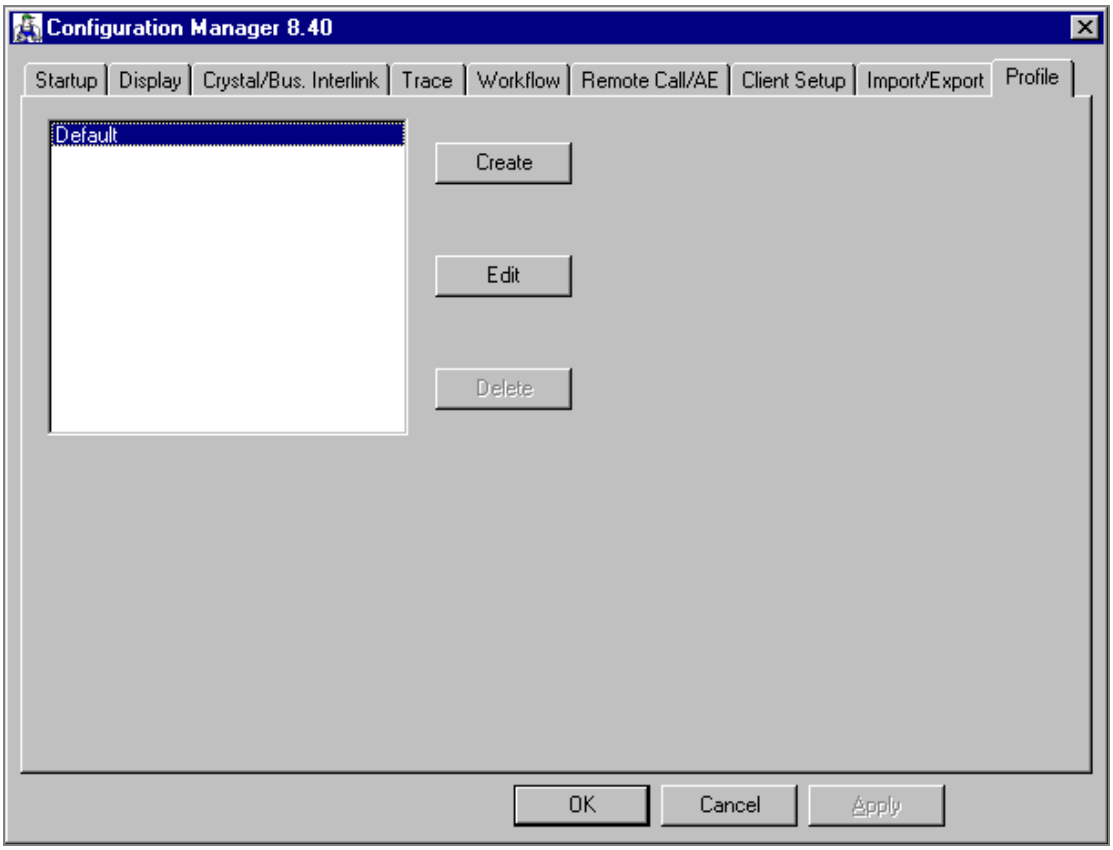
Import from a File provides the opposite service as **Export to a File.** Where as **Export to a File** allows you to save your current configuration settings to a file, **Import from a File** allows you to import previously saved configurations on other workstation. By importing a previously saved configuration file you will override all the current environment settings.

When you click **Import a File** a normal **Open** dialog will appear. Navigate to the directory containing the appropriate configuration file, select the proper file, and click **Open**.

Profile

The **Profile** tab enables you to define one or more user profiles, each of which specifies connection parameters and file location information for a PeopleSoft installation.

Many PeopleSoft installations include multiple databases that users need to connect to in order to perform different tasks. For example, you may have one database for tracking financial information such as expense reports and another database for HR processes such as benefits enrollment. Each of these databases has its own set of supporting files—SQR reports, COBOL processes, and so on. PeopleTools locates these files by referring to the Windows registry. By defining multiple profiles, you can tell PeopleTools to use different directory paths depending on which database the user is connecting to.



Profile Tab

When you first open the Configuration Manager, the Profile tab displays a single profile named Default. To set the parameters for this profile, highlight it and click the **Edit** button. To create a new profile, click the **Create** button. The **Edit Profile** dialog box appears.

Like the Configuration Manager itself, **Edit Profile** is a tabbed dialog box. The sections below describe each of the tabs.

You have the option of setting up multiple Configuration Manager *profiles*. Profiles give you a way of setting up a workstation to configure the workstation to access multiple PeopleSoft 8 applications.

Each workstation must have a default profile. The default profile is used when the user signs on to a database or application server that isn't listed in any profile. If the workstation requires only one set of profile settings, then no profiles other than the default profile need to be defined.

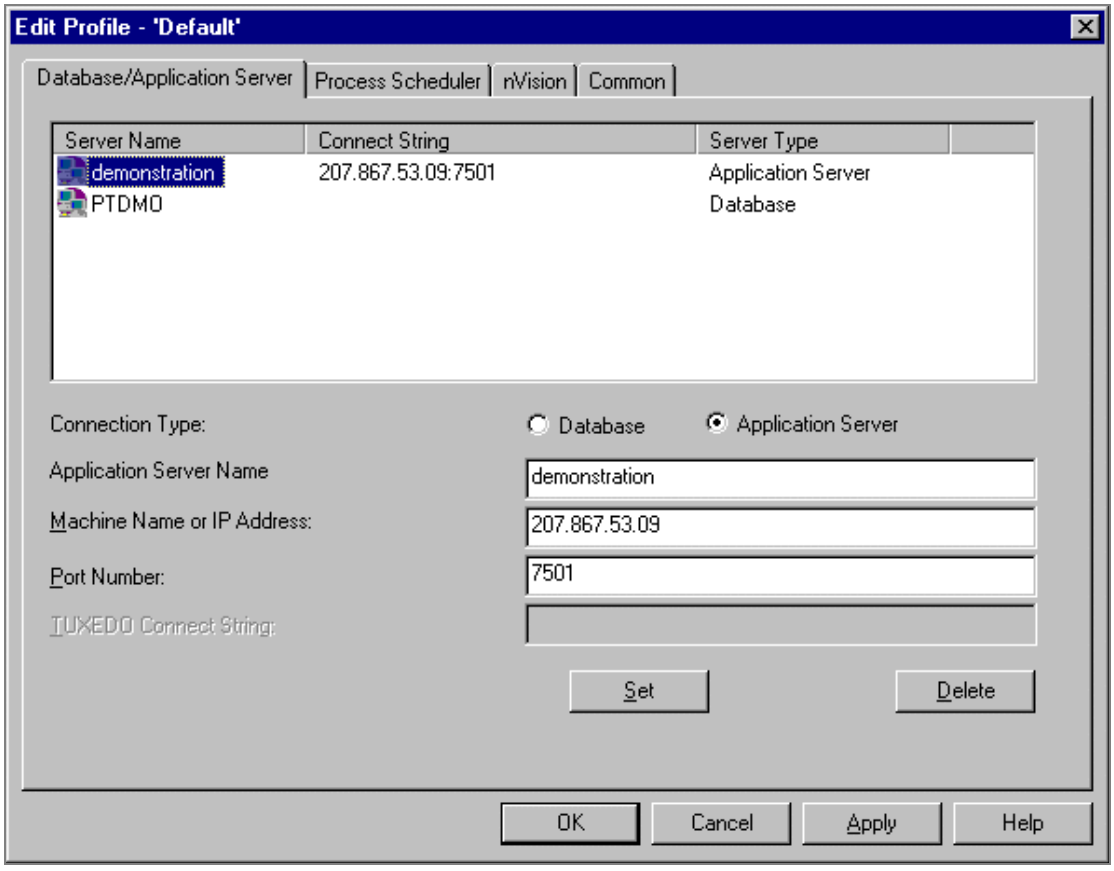
The profiles are set for the Windows workstation, and will be shared by all workstation users.

Note. This feature makes it unnecessary to set up Windows shortcuts for switching among applications, as was recommended in previous versions of PeopleTools.

Database/Application Server

The **Database/Application Servers** tab is where you specify the configured databases and application servers associated with this profile. When a user enters one of these databases or application servers in the **PeopleSoft Signon** dialog box, PeopleTools uses the registry settings associated with this profile.

Note. You can assign multiple databases and application servers to a single profile. However, each database and application server must be assigned to only one profile. If you try to add a database to a second profile, Configuration Manager asks you if you want to remove it from the previous profile and add it to the current one.



Database/Application Server Tab

Before you enter a database or application server on this tab, you should have already installed and configured it as documented in the PeopleSoft *Installation and Administration* book for your RDBMS.

Application Server Name

Enter a name for an application server that you have configured. This is the name that will appear in the drop-down list on the **PeopleSoft Signon** screen. We recommend that you choose a name that's intuitive for your site.

Note. The name you choose for an application server must not exceed 24 characters.

Machine Name or IP Address

Enter the IP Address or the resolvable server name of the application server you specified in the **Application Server Name** field. You specified the IP Address in the [Workstation Listener] section of your PSAPPSRV.CFG file when you installed your PeopleSoft application server. For example, you could enter:

```
207.135.65.20
```

or

```
sp-hp32
```

Port Number

Enter the **Port Number** for the application server you specified in the **Application Server Name** field. You specified the **Port Number** in the [Listener] section of your PSAPPSRV.CFG file when you installed and configured the application server. A port number is an arbitrary number between 0 and 9999 that is determined by site specifications. The following is a sample **Port Number:**

```
7999
```

TUXEDO Connect String

The TUXEDO Connect String is designed for advanced configuration to support dynamic load balancing. You can specify a free-form connect string that allows a client to connect to another application server in case another is either down or being used to full capacity. The following sections provide the description of and syntax for the connect string options.

Round Robin Load Balance

This option specifies multiple application servers to which the client will arbitrarily connect. The odds being that each application server will receive an equal number of connections. To specify the round robin, use the following syntax (where ip = IP Address and port = port number):

```
(//ip1:port1|//ip2:port2|//ipn:portn)
```

You can specify the IP Address using either dotted notation or by using the server's DNS name. Regardless of which convention you use to enter the address, the slashes (//) preceding the IP Address are required.

If the application server selected is unavailable, your connection attempt will fail and the system will not try to connect you to the other application servers defined within the parentheses.

Spaces must not be embedded in any part of the connection string. PeopleSoft will automatically remove embedded spaces before storing the value in the registry.

Round Robin with Failover

Similar to Round Robin Load Balance, this option allows you to define a failover connection string. To specify this option, use the following syntax (where ip = IP Address and port = port number):

```
(//ip1:port1|//ip2:port2),(//ip3:port3)
```

If the application server selected from the first group of parentheses (ip1 and ip2) is unavailable, the system will automatically attempt to connect to an application server defined in the second group (ip3). If that application server fails, the system will attempt to connect to the next group to the right, sequentially.

If multiple application servers are defined within any group, the system will round-robin between them. If the selected application server fails, the system will attempt to connect to the next application server to the right, if any. The following are three separate examples, showing a range usage:

```
(//sp-ibm01:8000|//sp-ibm02:8000),(//sp-
nt01:8000)
(//208.136.78.88:8000|//208.136.78.88:8050|//208
.136.78.88:8080)
(//sp-sun01:8000),(//sp-sun02:8000),(//sp-
sun03:8000)
```

Note. The Tuxedo Connect String can not exceed 1000 characters.

Set and Delete Buttons

When you click **Set,** your application server information is displayed in the grid at the top of the dialog. You can then enter a new **Application Server Name** and setup a different server.

Note. The settings that you enter in the grid are not saved until you press **Apply** or **OK.** If you press **Cancel,** without first pressing **Apply** or **OK,** you will lose all the information in the grid.

To remove an application server configuration, select its **Application Server Name** in the grid and click **Delete.**

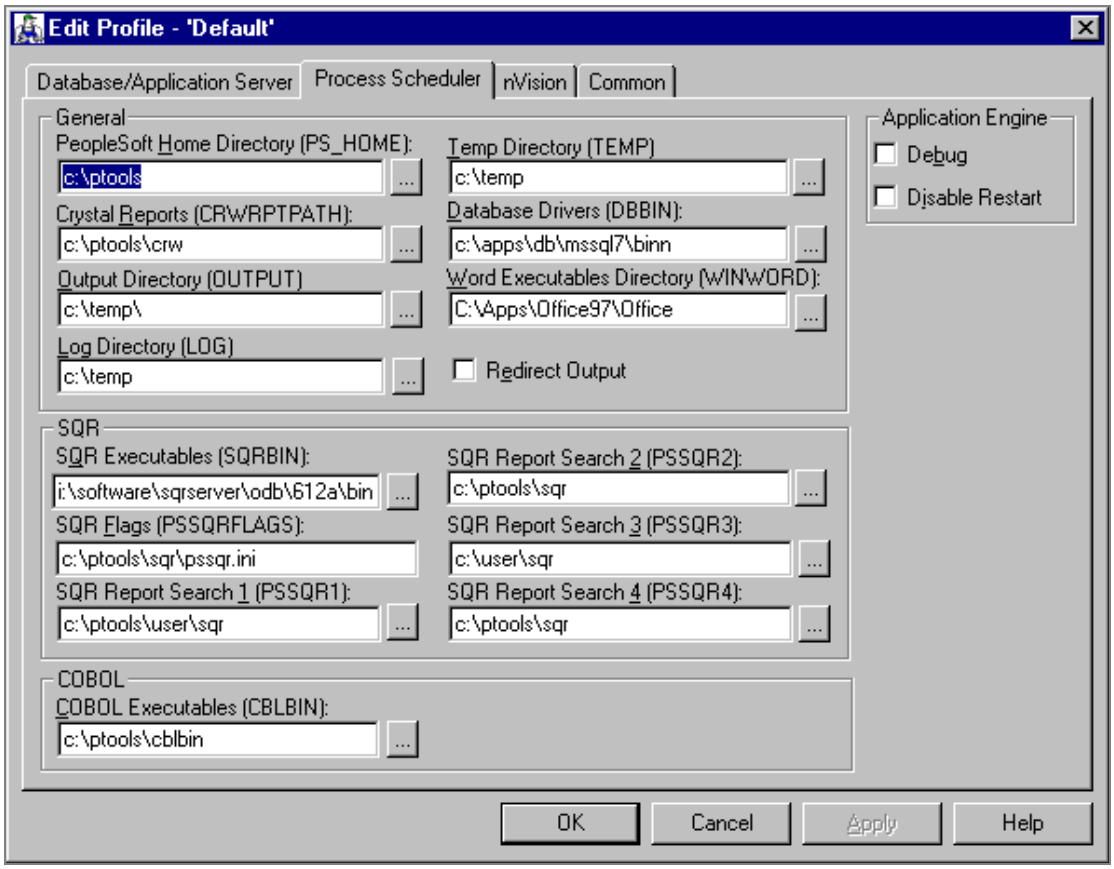
See Also

PeopleTools Installation Guide for your platform

Internet Architecture Administration

Process Scheduler

The **Process Scheduler** tab allows you to specify all of the directories that are associated with your Process Scheduler jobs, such as your SQR and COBOL directories.



Process Scheduler Tab

General

PeopleSoft Home Directory This field contains the value of your high-level PeopleSoft directory, such as: `N:\EPM80`

Crystal Reports In this field enter the path to \CRWRTPATH where Crystal sends your reports.

Output Directory Optional directory used with Output Destination field when scheduling a Process Scheduler request.

Log Directory The directory for SQR, COBOL, and Process Scheduler log files.

Temp Directory In this field enter the path to your temporary directory. This is where you will find log files and other output files. For example: `C:\TEMP`

Database Drivers In this field enter the path to \DBBIN where your Database drivers reside.

Word Executables Directory This field points to your Microsoft Word executables. For example: `N:\APPS\OFFICE95\WINWORD`

Redirect Output — The **Redirect Output** check box allows you to redirect the onscreen COBOL DISPLAY statements to a log file. If you leave the check box deselected you will just see the onscreen messages. Having the messages sent to a log file is useful for debugging purposes. The log file will be created in **%TEMP%\PS_HOME\DBNAME directory.**

In addition to the output generated by COBOL DISPLAY statements, the log file will also contain any errors generated by the COBOL Run Time System.

Note. To use the Application Engine debug feature, you must deselect the **Redirect Output** check box.

Application Engine

Debug — Select this check box to enable the Application Engine command-line debugger.

Warning! Select the **Debug** check box only when you are testing and troubleshooting client-side processes. If you select **Debug** and submit a process request to the server, the process will hang, waiting for a user command.

Disable Restart — Select this check box to disable the Application Engine restart feature, which enables you to restart an abnormally terminated Application Engine program. With **Disable Restart** selected, Application Engine programs start from the beginning.

The **Disable Restart** option is useful during debugging. It should not be selected in a production environment.

SQR

SQR Executables — In this field enter the path to the \SQRBIN where your SQR executables reside.

SQR Flags — In this field, enter the SQR Flags that the Process Scheduler should pass on the command line to the SQR executables. The following SQR flags are required for launching SQR reports:

-i specifies the path to SQC files.

-m specifies the path to the ALLMAXES.MAX file.

-f specifies the output path.

-o directs log messages to the specified file.

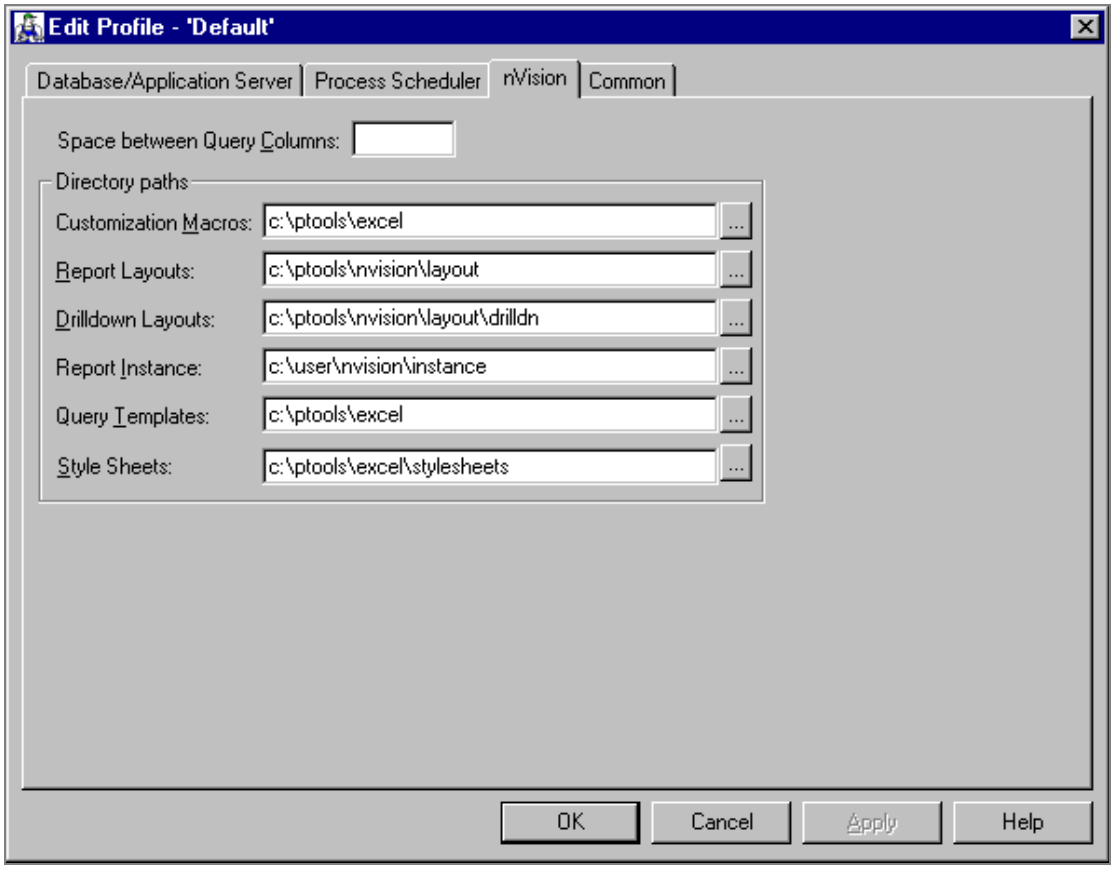
	-ZIF sets full path to the and name of the SQR initialization file, SQR.INI.
SQR Report Search	Enter the directory paths the SQR executable should use to locate SQR reports. SQR Report Search 1 will be searched first, followed by SQR Report Search 2, and so on.

COBOL

COBOL Executables	In this field enter the path to \CBLBIN—where your COBOL executables reside.

nVision

PeopleSoft nVision refers to a number of registry settings to determine where it should look for files and how it should operate. PeopleSoft Query Link, the feature that enables you to send PeopleSoft Query output to a spreadsheet, also refers to these settings.



nVision Tab

Space between Query Columns

This parameter sets the number of blank Excel characters that PeopleSoft Query Link places between query output columns. To eliminate column spacing, set **Space between Query Columns** to 0 (zero).

Directory Paths

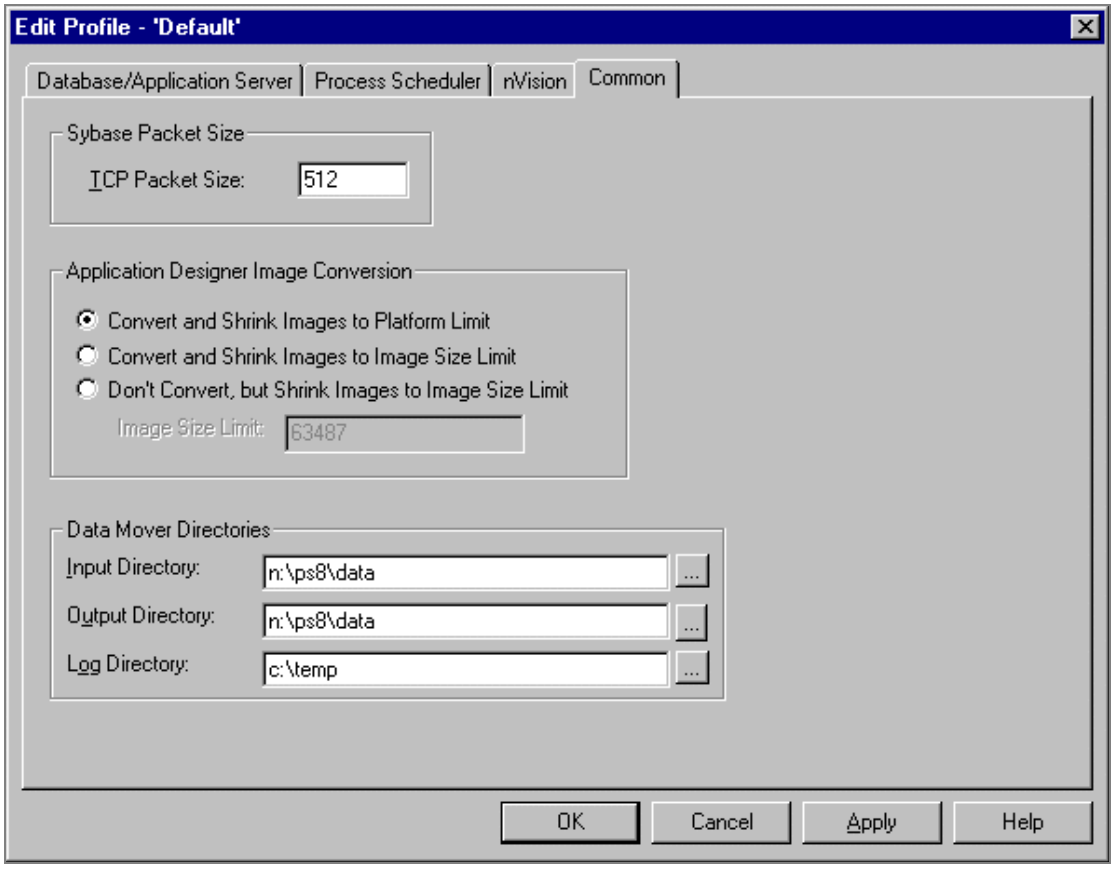
These fields allow you to specify the locations of the directories that are associated with your nVision jobs.

Customization Macros	This parameter specifies the directory containing macros for PeopleSoft nVision and Query Link. It is usually %PS_HOME%\EXCEL.
Report Layouts	Specifies the location of your PeopleSoft nVision layout fields.
Drilldown Layouts	Specifies the location of your PeopleSoft nVision Drilldown files, usually \NVISION\LAYOUT\DRILLDOWN.
Report Instance	Specifies which directory in which nVision places report instances. For example: `C:\user\nVision\instance`
Query Templates	Specifies where to look for the QUERY.XLT file. This file defines the Excel styles used to format your output. The default is the \MacroDir folder.
Style Sheets	Specifies the location where the NVSUSER Style Wizard locates nPlosion style sheets.

See Also

PeopleTools PeopleBooks: PeopleSoft nVision

Common Tab



Common Tab

Sybase Packet Size

This option allows you to specify a **TCP Packet Size.** The minimum value is 512 and the maximum value is 65538. The default packet size will be 512. If you make any changes to the packet size, make sure that you make the corresponding changes to the Sybase server. Your Sybase reference manuals and the "Tuning" chapter in the *Installation and Administration for Sybase* book Sybase contains more information about TCP packet sizes.

Application Designer Image Conversion

When you upgrade to newer version of PeopleTools, you'll need to convert images to a new format, which may require more storage space. If the images exceed the record size limit of your platform, you can shrink the images to conform to this limit. When doing so, you have the following options:

- **Convert and Shrink Images to Platform Limit.** This option will both convert and shrink images to fit your selected database platform limit, as shown in the Image Size Limit field.

- **Convert and Shrink Images to Image Size Limit.** This option applies of you are upgrading to a different database platform. Select this option, and specify the correct value in the **Image Size Limit** field.

- **Don't Convert, but Shrink Images to Image Size Limit.** This option is useful for images that have already been converted, but you just need to convert them so they meet the platform size limits.

Data Mover Directories

The following section describe the Data Mover settings that you can control through Configuration Manager.

Input Directory

Use this field to specify the directory where Data Mover should search for its input data (.DB) files. When running a Data Mover script, if no explicit path is specified for the file named in the set input lines, then Data Mover will search directories for the database file in the following order.

1. Specified output directory.

2. C:\TEMP

Output Directory

Specifies the directory where your Data Mover scripts will be created. The default is PS_HOME\DATA.

Log Directory

This parameter specifies the location of your Data Mover log files. The default is PS_HOME\DATA.

See Also

PeopleTools PeopleBooks: Data Mover

Command Line Options

In addition to the tab interface, the Configuration Manager also offers the command line options described in this section. They may be useful while implementing your PeopleSoft system and for some everyday tasks like signon. The syntax for the Configuration Manager command line options is as follows:

```
pscfg -<command>
```

For example,

```
pscfg -import:n:\config\hr800.cfg
```

Import File

To import configuration settings from a named file, enter:

```
-import:<filename>
```

Export File

To export the current configuration settings, enter:

```
-export:<filename>
```

Run Client Setup

To run Client Setup, enter:

```
-setup
```

Note. The -setup command must be used in conjunction with the -import switch if you are setting up a new workstation.

Run Client Setup "Quietly"

To run Client Setup "quietly" without displaying any messages or dialog boxes, enter:

```
-quiet
```

Note. All of the output messages will be written to a log file: %temp%\PSINSTAL.LOG.

Install ActiveX controls

To register ActiveX controls, enter:

```
-activex
```

Note. ActiveX controls are registered during Client Setup. –activex allows you to register the ActiveX controls without running the entire Client Setup.

Install Crystal runtime files

To install Crystal runtime files, enter:

```
-crystal
```

Install MMS DSN

To install MMS DSN, enter:

```
-dsn
```

Disable ODBC Driver Manager Installation

This command is only valid when used in conjunction with the **-setup** command. This disables the installation of the Version 3.0 ODBC Drivers during the Client Setup process. Use this command when you do not wish the Version 3.0 ODBC drivers to be installed on the client workstation when using the **-setup** option.

```
-noodbc
```

Disable PeopleSoft ODBC Driver Installation

This command is only valid when used in conjunction with the **-setup** command. It disables the installation of the PeopleSoft ODBC Driver during the Client Setup process. Use this command when you do not wish the PeopleSoft ODBC driver to be installed on the client workstation when using the **-setup** option.

```
-nopsodbc
```

Uninstall Workstation

To clear the PeopleSoft settings from the registry or uninstall the PeopleSoft workstation, enter:

```
-clean
```

The **-clean** command will remove the following items from the workstation:

- PeopleSoft registry settings.
- All cache files from the current \CACHE directory.
- Shortcut links.
- PeopleSoft program group.

Make sure that removing all of these items is acceptable before you issue the **-clean** command.

Help

To view the Configuration Manager's command line options online, enter:

```
-help
```

or

```
-?
```

Setting up the Development Environment

Most end users will use workstations equipped with supported web browsers, but with no special PeopleSoft software installed. At the same time, the "traditional" Windows client—now called the PeopleTools Development Environment—is still supported, and is primarily used as a development environment.

The PeopleTools Development Environment runs on Windows NT 4.0, Windows 95, Windows 98, and Windows 2000. This chapter describes how to configure these Windows-based clients using Configuration Manager. As before, such clients can connect to the PeopleSoft database directly using client connectivity software (a two-tier connection), or through a PeopleSoft application server (a three-tier connection).

Verify <PS_HOME> Access

The workstation must have access to the file server <PS_HOME> directory (that is, the high-level directory to which the PeopleSoft files were installed) and have a drive mapped to the directory. The workstation user(s) must have read access to the <PS_HOME> directory.

Verify Connectivity

As mentioned, database connectivity is required on all Windows-based clients that will be making a two-tier connection to the database. A two-tier connection is required if any of the following is true:

- The user will be signing on to the application in two-tier.
- The user will be running Data Mover scripts.
- The user will be running COBOL and SQR batch processes on the client.

Verify Supporting Applications

PeopleSoft requires that a number of supporting applications be installed on any Windows-based client on which batch processes will be run locally.

SQR

On Windows-based clients, you have the option of installing SQR locally, or mapping to a copy installed on the file server. Because SQR does not require any local registry settings, you can execute SQR from any Windows-based client once SQR been installed to a shared

directory. Installing SQR locally will result in improved performance; over a slow network connection the improvement will be significant.

Crystal Reports

Optionally install Crystal Reports on Windows-based two-tier clients. As with SQR, you have the option of installing Crystal locally, or mapping to a copy installed on the file server. Because Crystal does not require any local registry settings, you can execute Crystal from any two-tier client once Crystal been installed to a shared directory. Installing Crystal locally will result in improved performance; over a slow network connection the improvement will be significant.

Crystal Reports requires that you install the PeopleSoft ODBC driver on the workstation where Crystal processes are executed.

Microsoft Office

Install Microsoft Office on any two-tier client that will be running nVision or Microsoft Word batch processes. Microsoft Office must be installed locally, because it requires registry settings.

Understanding the User Settings

Configuration Manager includes the following tabs for setting options for each workstation user. If multiple users will be signing on to the workstation, you may need to set these options once for each user.

- **Startup.** Controls the default values that appear in the PeopleSoft signon screen, as well as the location of the PeopleSoft cache on the client.
- **Display.** Controls your language preference, the display size of PeopleSoft page groups, as well as other display options.

Note. In PeopleTools 8.1, the language setting in Configuration Manager determines your language preference for your PeopleTools Development Environment, regardless of the operator language preference.

- **Crystal/Business Interlink.** Specifies the locations of Crystal Reports executables and default location for Crystal Reports generated via PeopleSoft Query; the latter must be a directory to which the user has write access. This tab also specifies the location of Business Interlink drivers.
- **Trace.** Controls SQL, PeopleCode, Application Engine, Message Agent, and PeopleSoft API trace options.

Running Client Setup

Note. Prior to running Client Setup, you should create all the profiles you need.

The Client Setup tab does the following:

- Installs a PeopleSoft program group on the workstation.
- Sets up a Microsoft SQL Server system data source name using the server and database name information from the Startup tab.
- Installs the PeopleSoft ODBC driver required for Open Query and Crystal Reports.
- Installs Crystal Reports DLLs on the workstation.
- Configures a PeopleSoft ODBC data source name.

These Client Setup functions are performed when you press **OK** or **Apply** from Configuration Manager only if the **Install Workstation** check box on the Client Setup tab is selected.

Note. Any files installed by Client Setup on the workstation from the file server, including ODBC driver files, use the paths specified in the default profile.

To run Client Setup

1. Select the Client Setup tab.
2. In the **Group Title** text box enter the name of the program group for the icons you want on the client workstation.

   You can call the program group anything you want, but we will refer to it by its default name, **PeopleSoft 8.4**.
3. Select check boxes to create shortcut links for any PeopleSoft applications that you wish to access from the workstation.

   When you run Client Setup, it will uninstall any existing shortcuts in the PeopleSoft 8 program group, and install shortcuts for the applications you have selected. If you subsequently want to install or uninstall shortcuts, you can always re-run Client Setup.
4. Select the **Install PeopleSoft ODBC Driver** check box if you wish to install the PeopleSoft ODBC driver and set up a user ODBC data source name required by PeopleSoft Open Query and by Crystal Reports.
5. Select the **Install Workstation** check box.

   This check box determines whether Client Setup runs when you click **Apply** or **OK** in Configuration Manager. If this box is not selected, Client Setup will create or update settings in the registry, but it won't set up the PeopleSoft 8 program group, or install local DLLs.

6. Click **Apply** to run Client Setup and apply the other Configuration Manager settings.

   - You can press ODBC Administrator to directly access the Microsoft ODBC Administrator to verify the installation and configuration of the ODBC DSN.

   - If you install the ODBC Driver Manager 3.5, reboot the workstation after running Client Setup.

7. To view a list of the files installed and actions taken by Client Setup, you can open the psinstal.log file in your Temp directory.

Note. The **Uninstall Com Components** pushbutton removed registry entries related to the components used in three-tier debugging. These registry entries are also removed as part of running Uninstall workstation.

CHAPTER 5

Data Archiving

This chapter contains an overview of the PeopleTools Archive Data utility as well as covers the following topics:

- Archive Designer.
- Archive Data.
- Archive Processes.
- Archive Reports.
- Tips and Techniques.

Understanding Data Archiving

PeopleSoft systems create and maintain volumes of data. Often the data in your online tables is no longer required. However, you don't want to simply delete the data just to make room for new data. Managing this historical data is a time-consuming challenge for many database administrators. However, unless you create an archiving strategy, databases increase to unmanageable sizes. Also, removing the historical data from your online tables can improve overall performance.

PeopleTools Data Archival enables you to select the rows of data you no longer need in your online system and store these rows in history/staging tables or in a flat file format. Keeping the data in the system in history/staging tables keeps the data available for queries and reporting.

Also, you have the option to archive data directly to a flat file for long-term storage if the historical data is no longer needed for reporting. You may consider exporting the data to flat files and delete it completely from the system.

Warning!! The Archive Data Tool is a powerful tool. Improper use may result in data loss or corruption of the database. It is strongly recommended that only those who are trained for and familiar with the archiving process should use the Data Archiving Tool.

Determining an Archive Strategy

Determining an archiving strategy is essential for using the Data Archiving Tool efficiently. This strategy strongly depends on how the archived data will be utilized. The table below highlights the aspects of the two available archiving strategies.

Table Archiving Strategy	*Flat File Archiving Strategy*
Utilizes history tables for storing archived data. Allows reporting & queries from history tables. Requires secondary step to delete archived data from online tables. Requires additional database space.	Archives data straight to a flat file. Deletes the archived data directly from the online tables. Efficient one-step archiving process. No additional database storage space required.

The two strategies offer different approaches to archiving. The History Table Archiving Strategy requires history tables for temporary storage, while the Flat File Archiving Strategy offers archiving in one simple step. The system is designed to provide as much flexibility as possible. By reviewing your business requirements, you will be able to decide on which strategy best fits your business needs.

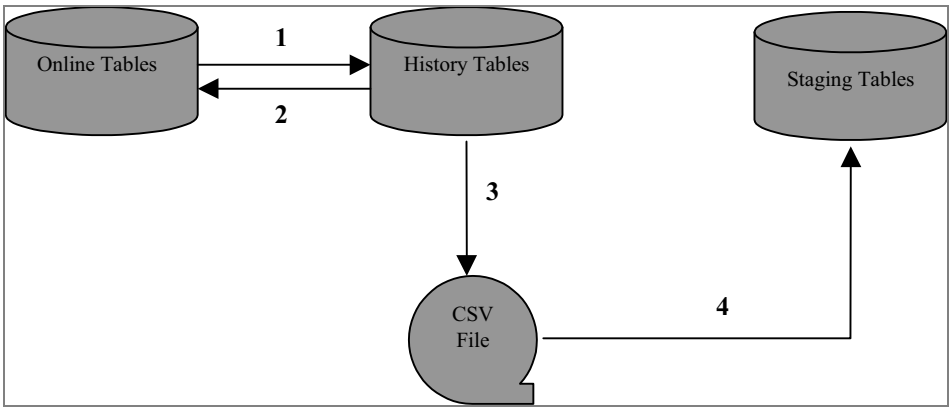
Note. Before deciding which archiving strategy to use, please review this entire document so that you are familiar with all of the archiving features.

Archiving to Tables

Archiving to history tables involves the use of tables that your create for the sole purpose of storing archived data. It is up to you to determine whether this archived data should be stored in these history tables temporarily or for long-term.

By definition, history tables are identical copies of the online tables with the exception of an additional column: PSARCH_ID. The system uses this key field to denote when a piece of data was archived and to uniquely identify it. Some PeopleSoft applications deliver history tables pre-built for use in common archiving processes. However, if you design a custom archiving scheme, you'll need to create the history tables using Application Designer.

The following illustration depicts the steps involved with archiving to history tables.



Archiving to Staging Tables

Step	*Description*
1	In step 1, data is moved into the history tables. This is known as the selection process. This will allow you to query the selected data for information and delete them from the online tables.
2	If you accidentally delete the data from the online tables, there is a process to restore the data back from the history tables. Step 2 shows this rollback process.
3	When you no longer need to reference the data from the history tables, you can move them to flat files and delete them completely from the system. Step 3 shows this export process.
4	If necessary, you can return the archived data back into the system using staging tables. Staging tables are often identical to online tables, but they are not necessarily true replicas. This import process is shown as step 4 in the above diagram.

History Table Considerations:

- History tables generally reside on the same database as the online tables, however, they can exist in a separate database, as well. If the history tables reside in a separate database, you need to setup database links using the proprietary methods for your RDBMS.
- After the archive process moves the data into the history table, you have two options: deleting the archived data from the online tables, or leaving the archived rows in the online tables such that the data exists in parallel.

Staging Table Considerations:

- Staging tables a exact duplicates as the online tables. They do not contain the PSARCH_ID column.
- Once you import data into the staging tables, you can't rollback the data into the online tables.

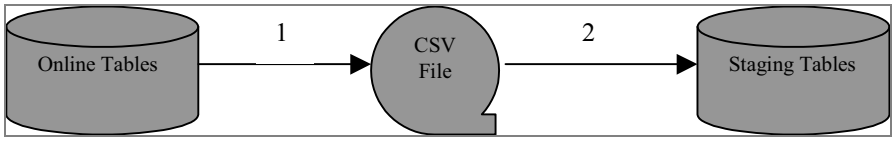
Archiving to Flat Files

You can also archive data directly from online tables to flat files. When you are ready to archive your data and you no longer need to reference them from the online tables, you can extract them to flat files.

The data is stored in the Comma Separated Values (CSV) format, which enables a portable representation of the online tables and data.

Note. The data is deleted from the online tables as the data is being archived.

The following diagram depicts the steps involved in archiving to flat files.



Archiving data to flat files

Step	*Description*
1	Export the selected online rows to a CSV file.
2	If you need to access your archived data in the future, you can restore the data into staging tables. Step 2 shows this import process.

Using Archive Designer

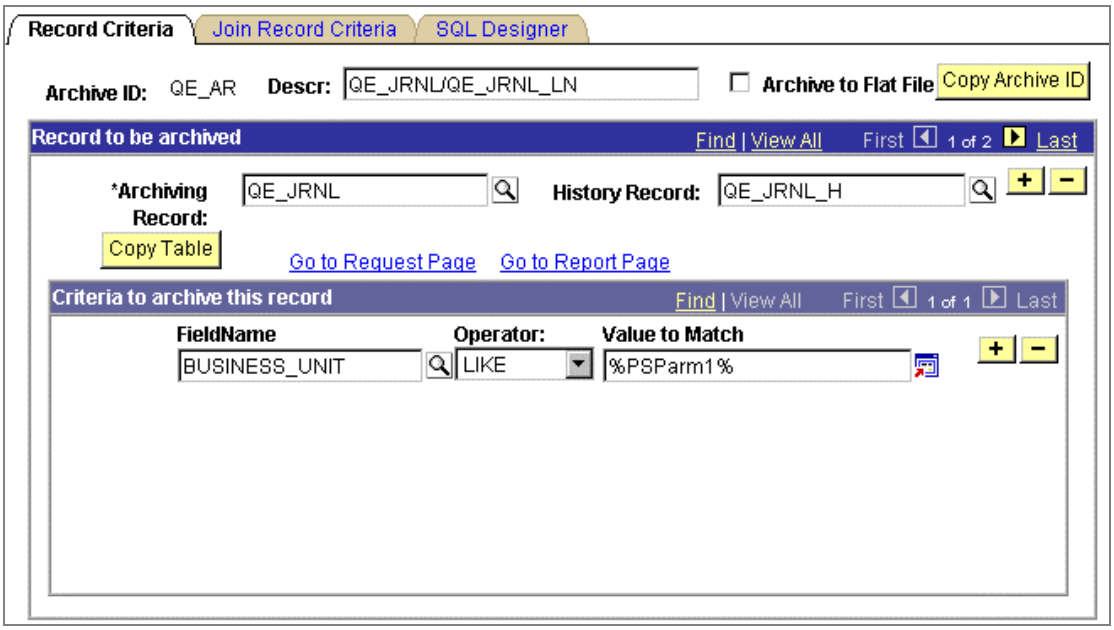
The Archive Designer is used to create and maintain your archive project. When you create a new archive project, you identify it using the archive ID. This archive ID is then used in the various archive processes discussed later. The following section covers the interface that you use to design archive templates, or projects.

The following section covers the interface that you use to design archive templates, or projects.

Record Criteria Page

The process of archiving data begins with the creation of an archiving template, or project, which logically groups all of the online tables that are to be archived into a single entity. You associate the online table with its history table counterpart, and you select the fields to archive and the criteria by which to archive.

Select PeopleTools, Archive Data, Archive Designer, Record Criteria.



Record Criteria Page

Archive ID An Archive ID is used to identify a group of transactions as an archive definition during the archiving process.

Description Description of the archive. 30-character limit.

Archive to Flat File Enables the user to archive the project *directly* to a flat file and bypass the history tables.

Copy Archive ID Allows the current archive project to be copied to a new Archive ID. This is equivalent to a "Save As." All tables, criteria, and other criteria are copied to the new Archive ID.

Archiving Record Table to be archived. You can request multiple tables within one Archive ID.

History Record History tables are copies of the online table with the additional PSARCH_ID field. This is where the archived data is stored.

Copy Table Copies all criteria to a new row in the existing Archive ID. Useful if you are dealing with multiple tables.

Go to Request Page Transfer to the Archiving Process page.

Go to Report Page Transfer to the Report Request page.

FieldName Columns in the online tables to specify archive criteria. Specifying the fields and adding the conditions is comparable to the WHERE clause in a SQL statement.

Operator =, <>, <, >, <=, >=, LIKE, NOT LIKE

Value to Match — Column value to match against, as in 07/01/1999 or$75,000.

You can also use special parameter markers in the format of %PSPARMnn% where nn can be any number. For example, valid parameter markers could be %PSPARM1% or %PSPARM18%.

When the system generates the SQL statement, %PSPARMnn% is embedded in to the SQL statement and substituted with values entered using the run control pages. One example of implementing this is to create an archive project based on a business unit and then enter the actual business unit at run time.

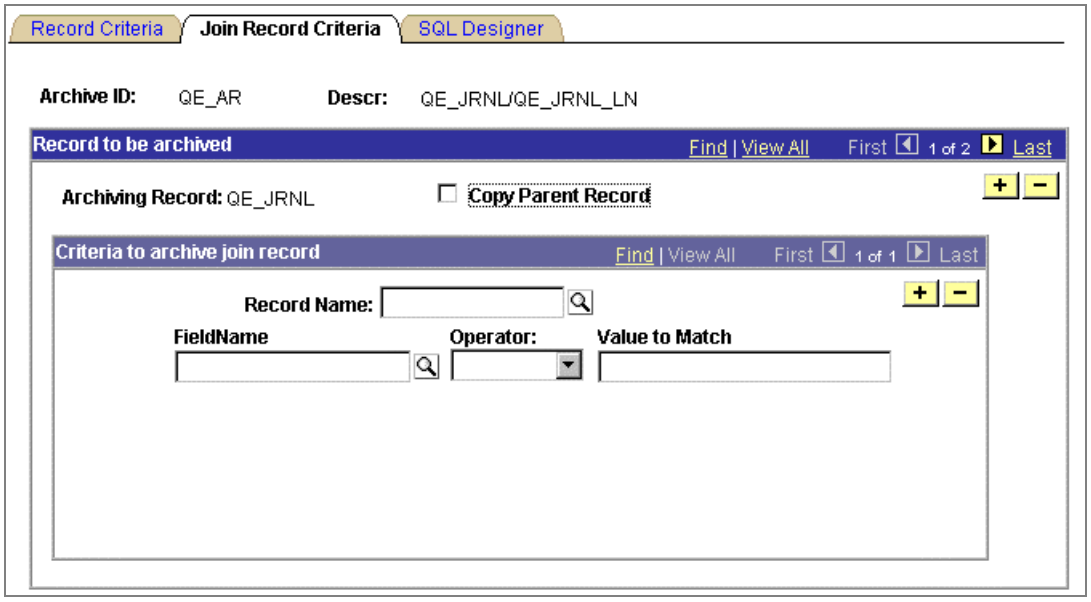
Note. Parameter markers cannot be implemented with DATE fields.

A/O — Toggle between AND and OR. This button is only visible if you have added multiple lines to the field list.

Join Record Criteria Page

If there are dependencies from other tables in the archiving project, such as parent/child relationships, you must insert the criteria that are based from the parent tables into this page. This can also be done by clicking on the Copy Parent Table button. For this to work correctly, the parent, table criteria must already exist on the Archiving Project panel. You can specify multiple levels, such as grand parent-to-parent, grand parent-to-parent-to child, and so on.

PeopleTools, Archive Data, Archive Designer, Join Record Criteria.



Join Record Criteria

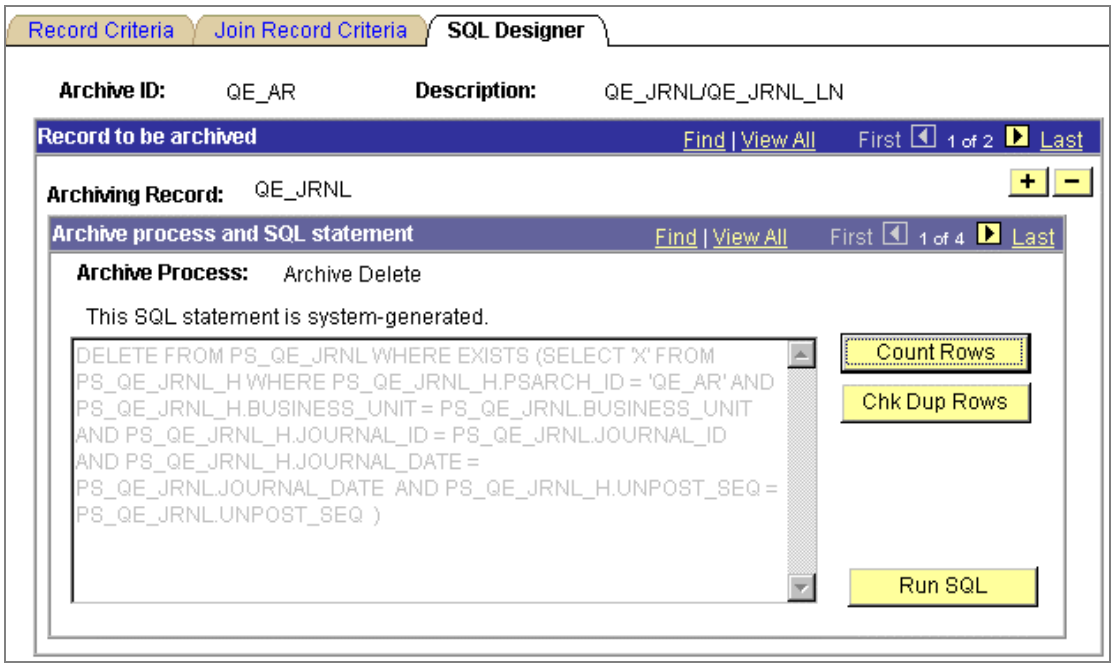
Archiving Record	The table to be archived.
Copy Parent Record	Allows the criteria that exist in the parent record on the Record Criteria page to be copied easily to the child tables on the Join Record Criteria page. When you click this, an edit box appears to the right that you use to select the parent table.
Record Name	Table to be joined. You can request multiple table joins per archiving table. The two tables must share common keys.
Field Name	Columns in the online tables to specify archive criteria.
Operator	=, <>, <, >, <=, >=, LIKE, NOT LIKE.
Value to Match	Column value to match. See Record Criteria discussion for description of using parameter markers.
A/O	Change And to Or, and vice versa.

SQL Designer Page

The SQL Designer page is useful for generating and editing the SQL that will be used to perform the archive process. In addition, you can count the number of rows that will be affected by the current archive process, import or export SQL, and check for duplicate rows that the SQL is affecting.

Note. The buttons on this page depend on what your access privileges are and what the current archive is. To access this page, complete the required information on the previous two pages.

Select PeopleTools, Data Archival, Archive Designer, SQL Designer.



SQL Designer Page

Generate SQL

Produces the SQL statements for the current record. The following types of SQL are created:

- The Archive/Delete from the online tables (Archive Delete).
- Remove data from history tables (Remove from History).
- Rollback (Archive Rollback).
- The SELECT that moves rows from the online table to the history table (Archive Selection).
- The SQL is stored in PS_ARCH_SQL_LNG by archive ID.

Count Rows

Returns the row count of what the generated SQL will affect.

Chk Dup Rows (Check Duplicate Rows)

Checks to see if an incorrect join will cause duplicate rows to be archived.

Edit SQL

Allows the user to modify the generated SQL. If you edit and save the SQL, a flag will be used to identify that the SQL is User-Modified and not System Generated. When you modify the SQL and save it, the text above the edit box indicates that the SQL has been altered from the original, system-generated SQL.

Run SQL Allows the user to execute the generated SQL. Typically, this button is designed for the developer of the archive ID. After the archive ID is developed, an Application Engine program executes the SQL.

Working with the Archives

This section covers:

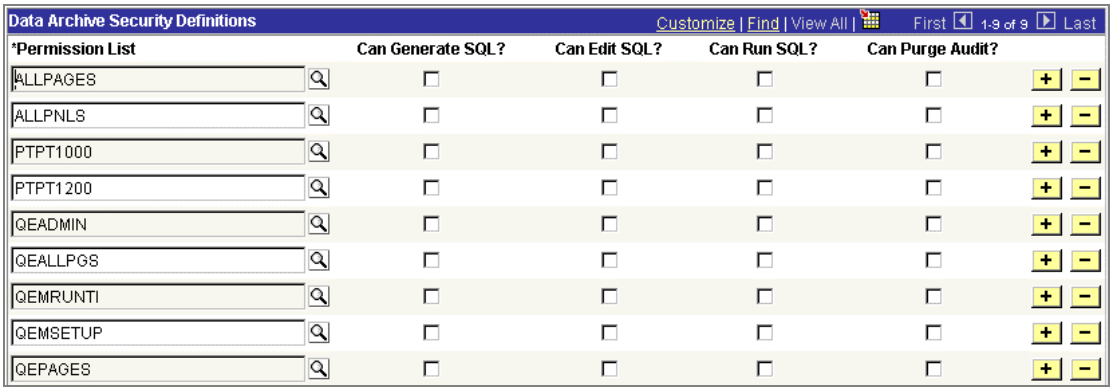
- Archive Security
- Archive Utilities

Archive Security Page

This page enables you to grant access rights to the permission lists that use Archive Data.

The permission lists you add need to exist already in PeopleTools Security. The permission list must be the primary permission list for the user profile in order for the user to have access to the command button.

Select PeopleTools, Archive Data, Archive Security.



Archive Security Page

Permission List Add the permission list(s) to which you want to grant Archive Data access.

Can Generate SQL? Allows the user to generate SQL on the SQL Designer page in Archive Designer. The generate SQL button will be displayed on the SQL Designer page of Archive Designer.

Can Edit SQL? Allows the user to edit, import, and export SQL on the SQL Designer page in Archive Designer.

Can Run SQL? Allows the user to execute SQL on the SQL Designer page in Archive Designer.

Can Purge Audit? Allows the user to purge the audit history on the Archiving Audit page.

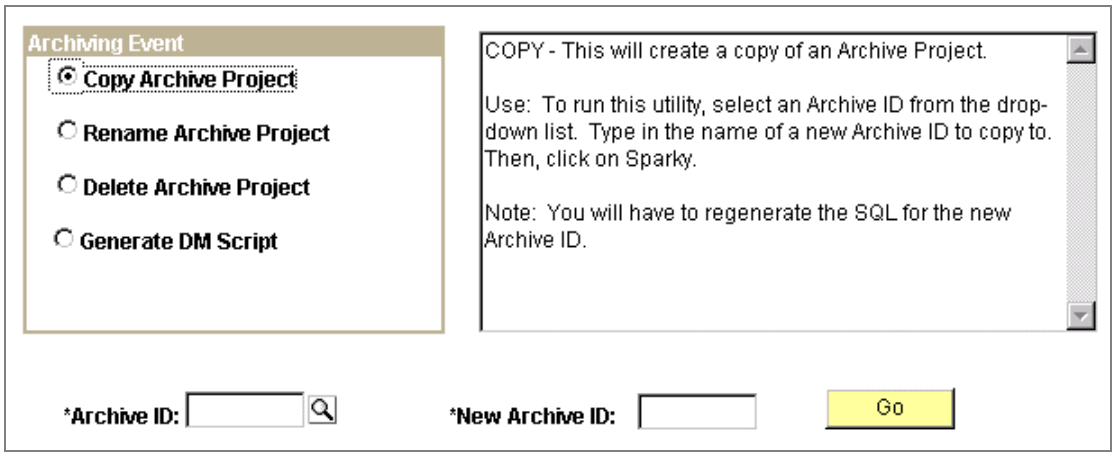
Note. You also need access to the Archive Processes before you can run any of the archive processes. PeopleTools delivers a process group ARCHALL that should be added to the appropriate permission list using PeopleTools Security.

Archive Utilities Page

The Archive Utilities page allows quick archive project administration. These operations include copying, renaming, deleting, exporting and importing.

Note. These options are mainly included for upgrade compatibility.

Select PeopleTools, Archive Data, Archive Utilities.



Archive Utilities Page

Archiving Event Select the action you want to perform. The description for each action appears in the box to the right.

Archive ID Add the Archive ID that you want to copy, rename, delete, or generate a Data Mover script for.

New Archive ID Add the new Archive ID. Only applies to copying and renaming archive projects.

Working with Data

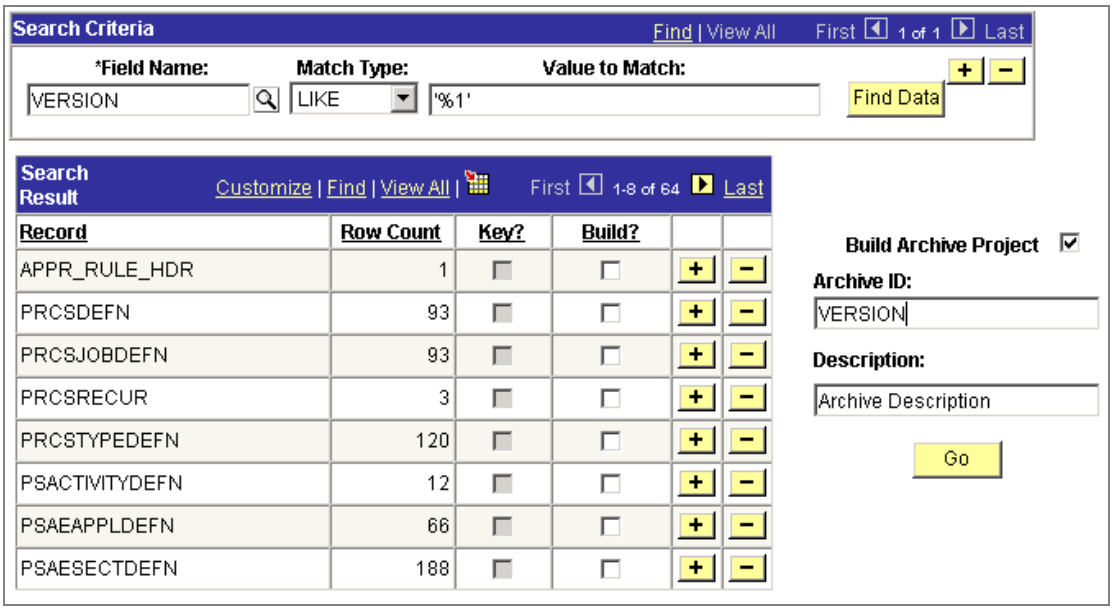
The following sections cover the following:

- Data Finder page.
- Data Input page.
- Data Output page.

Data Finder Page

This page enables you to find data in your online system that meets your criteria. If the data appears, you can then immediately create an archive project.

PeopleTools, Archive Data, Find Data



Find Data Page

Field Name Enter the name of the field that you want to find a match for.

Match Type Specify whether the match between the field value and the match value should be equal or "like." The options are '=' and *LIKE*.

Value to Match Enter the value for the system to search for within the specified field name.

Find Data After you have entered the desired criteria, click Find Data for the system to begin searching your online data.

Record Shows the record containing the rows that meet the criteria.

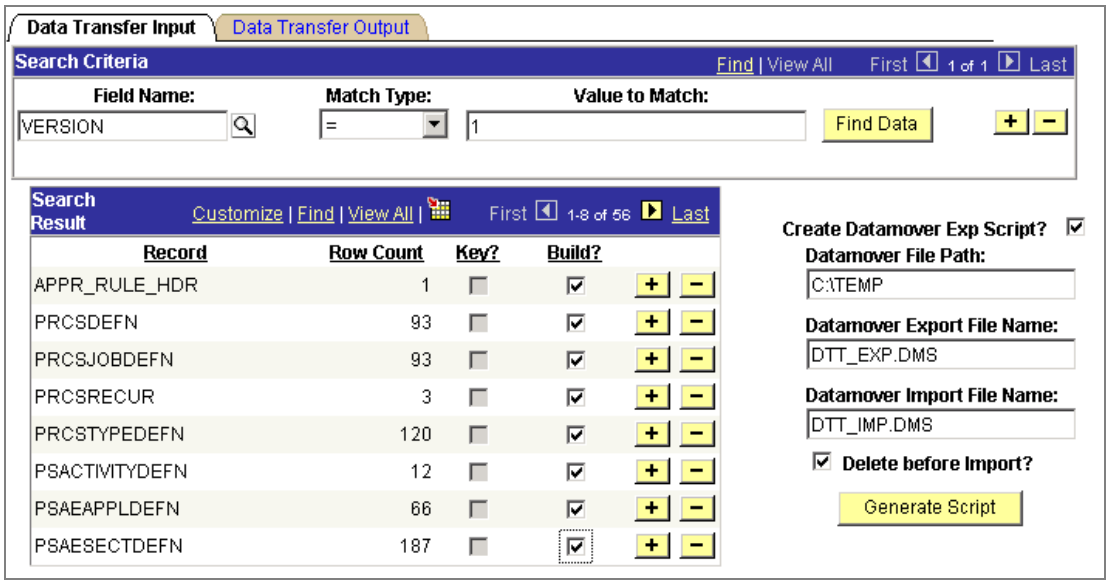
Row Count The number of rows in the record that meet the criteria.

Key Signifies if the field is a key field in the record.

Build Click this checkbox to include this record in the generated archiving project. This box is checked automatically if the field is a key field.

Data Transfer Input Page

Select PeopleTools, Archive Data, Transfer Data, Transfer Input.



Data Transfer Input

Field Name Enter the name of the field you want to find a match for.

Match Type Specify whether the match between the field value and the match value should be equal or "like." The options are '=' and *LIKE*.

Value to Match Enter the value for the system to search for within the specified field name.

Record Shows the record containing the rows that meet the criteria.

Row Count The number of rows in the record that meet the criteria.

Key? Signifies if the field is a key field in the record.

Build? Click this checkbox to include this record in the generated script. This box is checked automatically if the field is a key field.

Create Data Mover Export Script Check this checkbox to enable the system to create a Data Mover Export script.

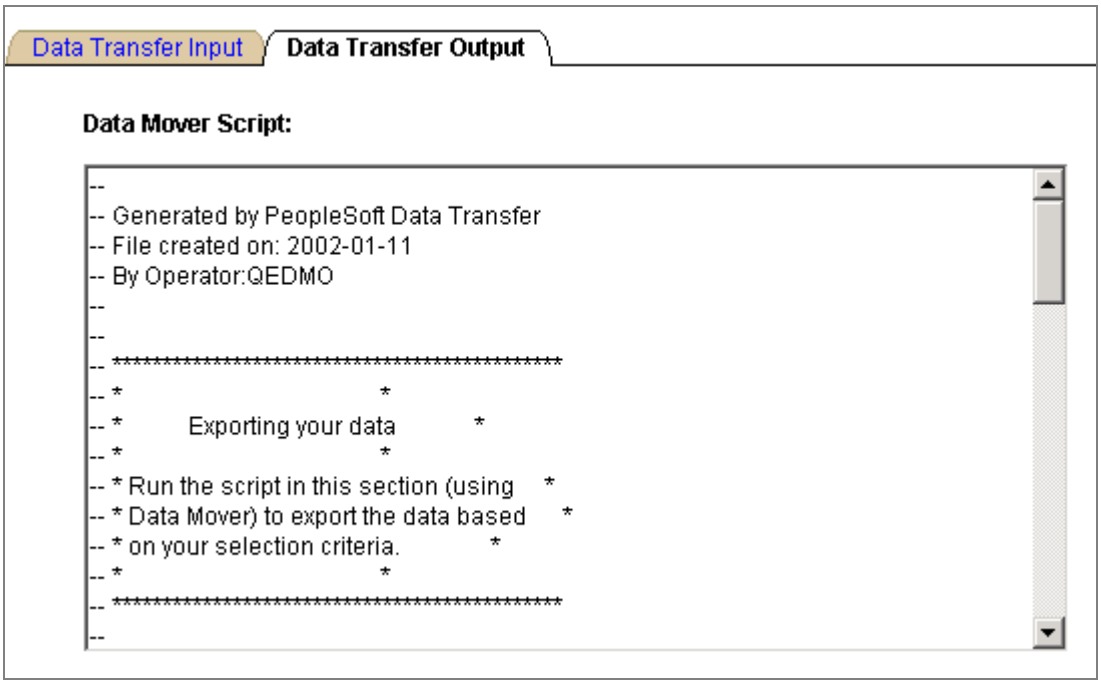
Data Mover File Path	Defines the file path of the Data Mover files in the generated script.
Data Mover Export File Name	Defines the export file name in the generated script.
Data Mover Import File Name	Defines the import file name in the generated script.
Delete Before Import	If this check box is checked, the generated script includes a DELETE statement that includes the user specified criteria in the WHERE clause. The DELETE statement appears before the Data Mover IIMPORT statement.

Note. The generated Data Mover script will be populated in the second page of this component (Data Transfer Output).

Data Transfer Output Page

Enables you to view and edit the Data Mover script generated from the Data Transfer Input page.

Select PeopleTools, Archive Data, Transfer Data, Transfer Output.



Data Transfer Output page

The generated script contains two Data Mover scripts: one to export the data and one to import the data.

To run the script using Data Mover, you need to copy the generated script to an editor (Notepad, for example), and then save it as a DMS file.

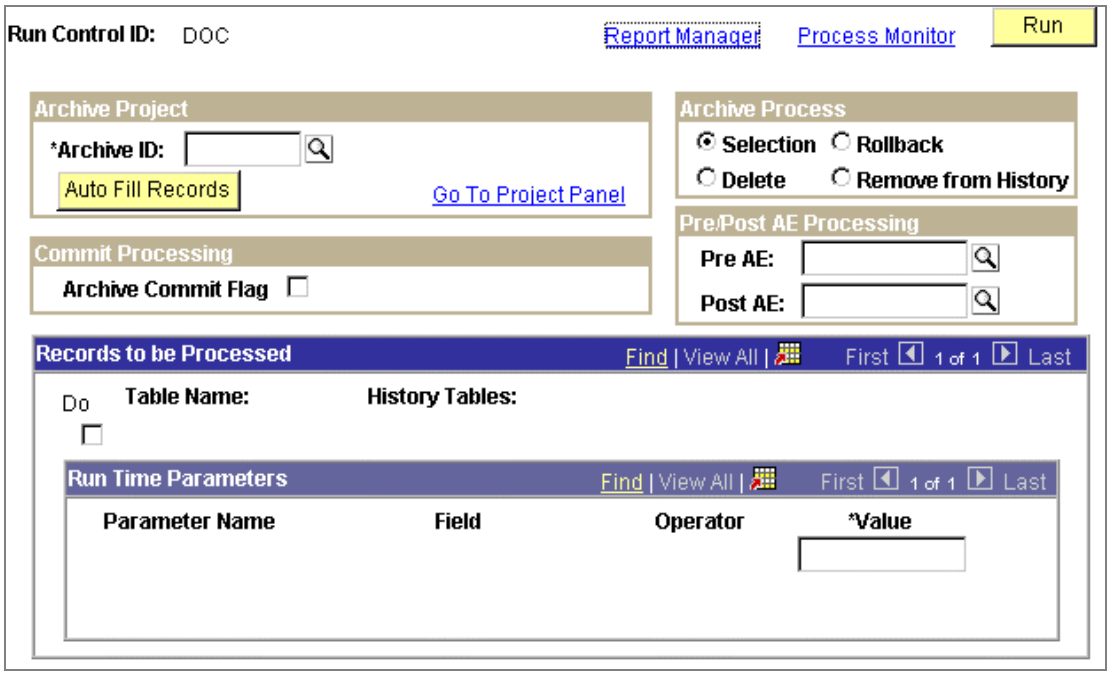
Running Data Archival Processes

This section covers the options and processes related to building archives.

Archive Data Page

Once you have created an archive project, you can begin the archiving process. This is when the system moves the data from your online tables.

PeopleTools, Archive Data, Archive Data.



Archive Data Page

Archive ID. Enter a previously created Archive ID.

Auto Fill Records. Once you've selected an Archive ID, clicking on this button will display all the tables included in the archive project.

Archive Process. Select which archive process you want to run:

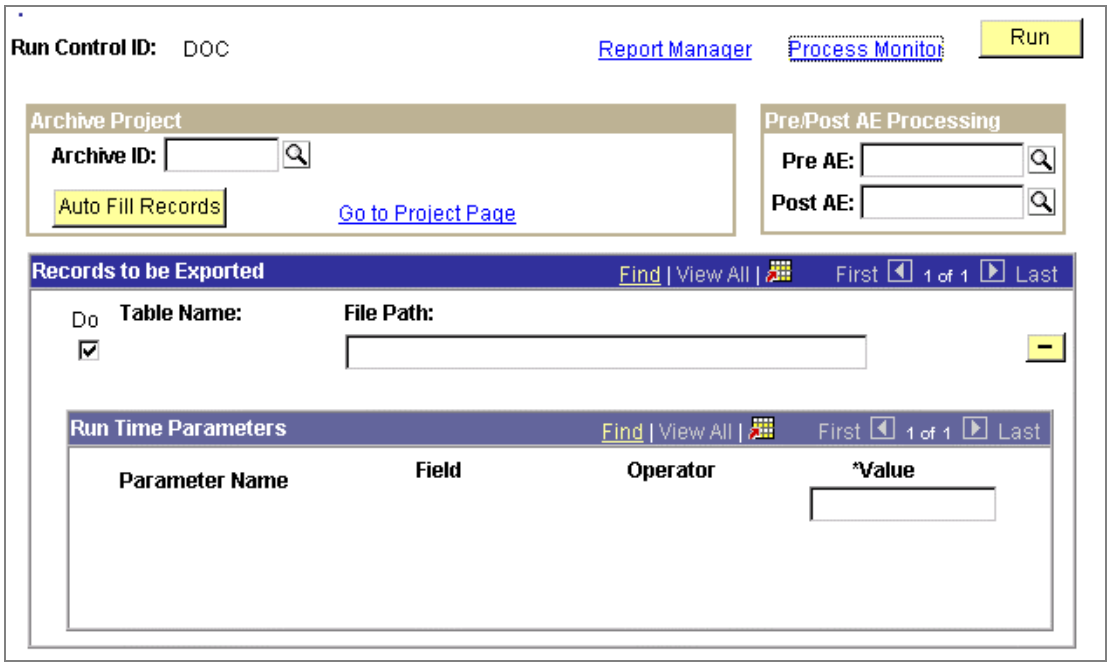
- Selection copies the data from the online tables to the history tables.
- Rollback copies the data back from the history tables

	to the online tables. • Delete deletes the data from the online tables. • Remove from History deletes the data from the history tables.
Commit Processing	Enables the 'Commit After' option, which specifies how many rows of data the system processes before issuing a database commit. Otherwise, the system issues a commit after each record has been processed.
Go to Project Page.	Transfer to the Archive Designer interface.
Pre/Post AE Processing	If you have any custom Application Engine programs that you want to run against your data prior to the archiving and/or after the archiving, specify the appropriate program(s) here. • **Pre AE.** This is the program that runs before the archiving process. • **Post AE.** This is the program that runs after the archiving process.
Do	Check box indicating if the table should be processed at run time
Table Names.	The tables containing the data to be archived.
History Tables.	The tables where the system stores the archived data.
Run Time Parameters	If your archive process contains the runtime parameter markers (%PSPARMnn%), specify a value that the system should substituted into the SQL statement at run time.

Archive Online to Flat Files Page

This page enables you to export data from online tables to flat files.

PeopleTools, Archive Data, Archive Online to Flat Files.



Archive Online to Flat Files Page

Note. This archive process deletes the data from the online tables immediately after the system has exported it to the flat files.

Run — Exports the data to the flat files.

Archive ID — Enter a previously created Archive ID.

Auto Fill Records — Once you've selected an Archive ID, clicking on this button will display the table names. In addition, the user needs to specify the path where the data will be exported.

Go to Project Page — Transfers control to the Archive Designer page.

Pre/Post AE Processing — If you have any custom Application Engine programs that you want to run against your data prior to the archiving and/or after the archiving, specify the appropriate program(s) here.

- **Pre AE.** This is the program that runs before the archiving process.
- **Post AE.** This is the program that runs after the archiving process.

Do — Specify whether to process this table or not by selecting the check box.

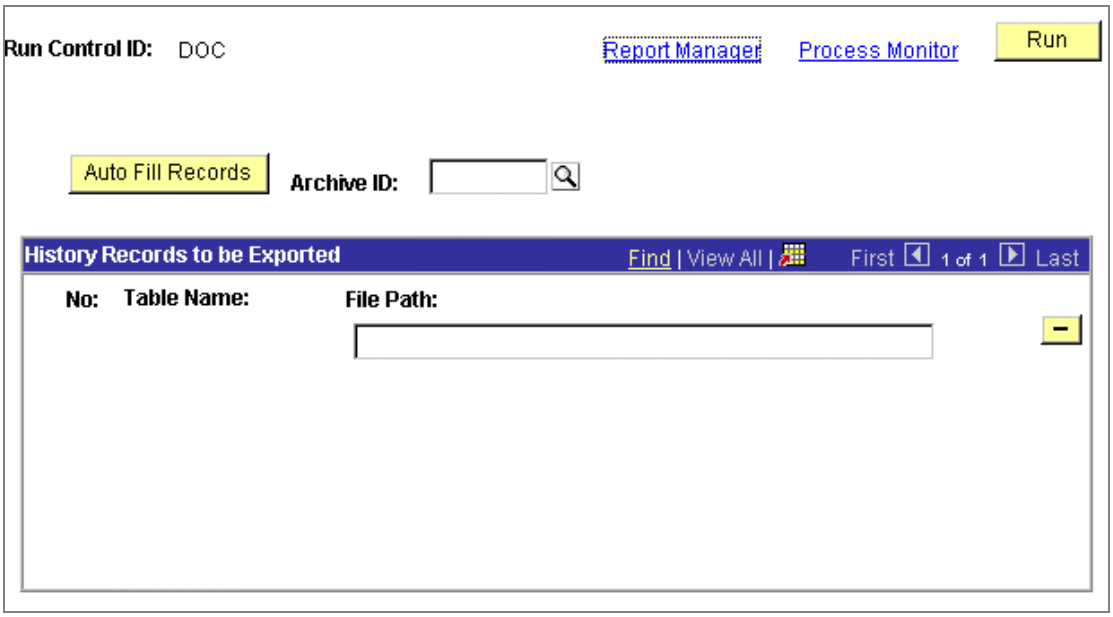
File Path — Enter the path and file names to which the data for each table will be written. Each table can have unique filename and destination.

Run Time Parameters If your archive process contains the runtime parameter markers (%PSPARMnn%), specify a value that the system should substitute into the SQL statement at run time.

Export History to Flat Files Page

Enables you to export the data from history tables to flat files.

Select PeopleTools, Archive Data, Export History to Flat Files



Export History to Flat Files Page

Run Exports the data in the history table to the designated flat file.

Archive ID Enter a previously created Archive ID.

Auto Fill Records Once you've selected an Archive ID, clicking on this button will display the table names. In addition, the user needs to specify the path where the data will be exported.

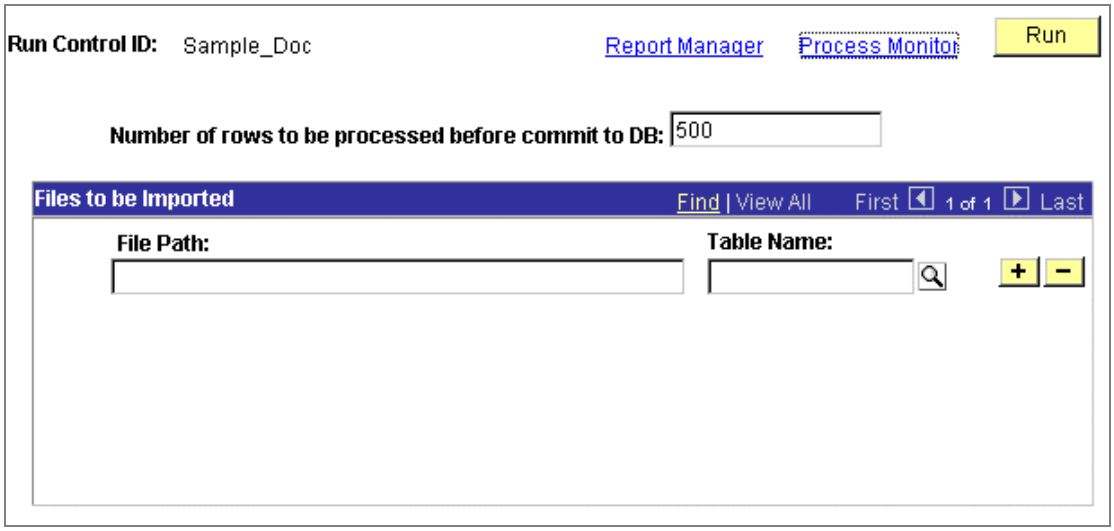
Table Name Name of the table that will be processed. Clicking on the Auto Fill Records button populates this field.

File Path Enter the path and file names where the data will be exported for each table.

Import From Flat Files Page

Use this page to restore archived data back to your system into staging tables.

Select PeopleTools, Archive Data, Import From Flat Files.



Import From Flat Files Page

Run	Imports the data in the flat file into the designated staging table.
Number of rows to be processed before commit to DB	Add the number of rows you want the program to process before the program issues a COMMIT.
File Path	Specify the path and the name of the file containing the data you want to import into the database.
Table Name	Enter the staging table name where the program is to insert the data from the import file.

Running Data Archival Reports and Audits

The following sections cover:

- Running archive reports
- Running audit reports

Archive Report Page

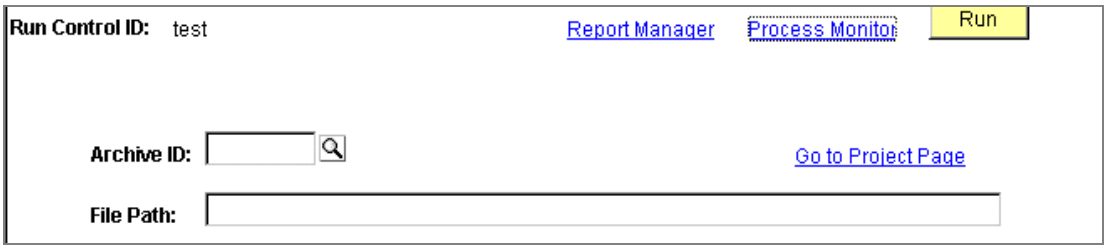
Before running the Archive process, PeopleSoft recommends that you generate reports to verify the data you are archiving before deleting it from the online tables. This report lists the Archive ID definitions, which consist of the following:

- Archiving tables.
- Selection criteria.

- Dependency criteria (criteria from other tables).
- SQL that will run each of the archiving processes.

These definitions also help you create your own reports through PeopleSoft Query.

Select PeopleTools, Archive Data, Archive Report.



Archiving Report Page

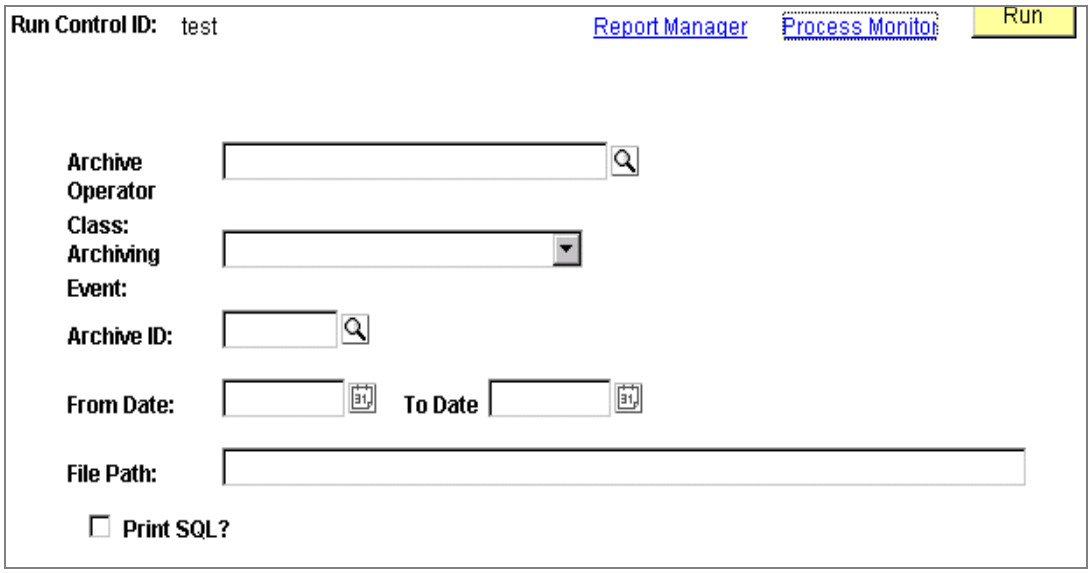
Archive ID	Select an existing Archive ID
Go to Project Page	Takes you to the Archive Designer Interface
File Path	Specify where the generated report is to be saved on the batch server.

Audit Report Page

The Archiving Audit Panel is useful for viewing all processes that have been executed in the Data Archiving Tool. In addition, you can delete the audit if you have the necessary access privileges.

Note. The Purge Audit button will not be displayed if the user does not have proper access.

Select PeopleTools, Archive Data, Audit Report.



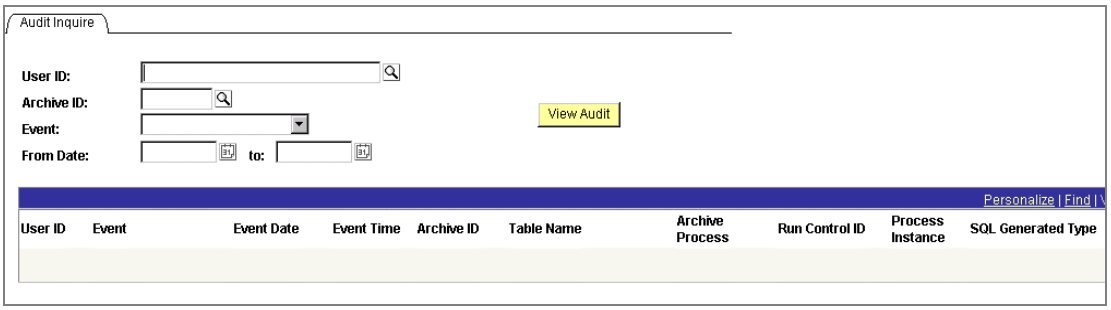
Audit Report Page

Archive Operator Class (Role)	Choose which user/role to audit.
Archiving Event	Choose which Archive Event to audit from the dropdown list.
Archive ID	Choose which Archive ID to audit.
From/To Date	Enter the range of dates that you want to audit
File Path	Specify where the generated report is to be saved on the batch server.
Print SQL?	Select this checkbox if you want the SQL statements for each of the archiving processes printed in the report.

Audit Inquire Page

This page enables you to view the audit results online rather than waiting for the output from the batch process.

PeopleTools, Archive Data, Audit Archiving.



Audit Inquire page

Add your criteria in the provided edit boxes, click View Audit, and view the results arranged by column.

Archiving Tips and Techniques

The following sections provide additional information to help you get started using the archiving features.

Understanding Business Requirements

It is very important to come up with a business strategy before archiving the data. First, you must identify the tables you want to archive. This includes identifying all of the parent/child tables associated to these tables. Failing to identify all of the related tables can cause corruption to the database. Next, you must know exactly which data you want to archive. It is important to recognize which rows are safe to be removed from the online tables. A factor to remember when doing an archive is to remove only the data that are not required to maintain the day-to-day business and reporting.

Let's use General Ledger (GL) for an example. GL contains the greatest amount of data to be archived since it is the module where the majority of reporting is required. There are two sets of data types that need to be maintained: balance information, and transactional information. Balance information is retained in the Ledger records. You may require balance information for online and reporting purposes to be available for a 3-year period. On the other hand, transactional data is maintained in the journal header and line tables. Perhaps you may require 1 year of transactional data to be retained in the system for online purposes and 3 years to be retained for reporting purposes.

Any data beyond the above time frames for balances and transactions can be archived and will only be accessed through reports. The data can be archived to history tables, or as flat files to secondary storage devices. If data were to be archived into history tables, the data would still be available online for reporting purposes. However, it could not be viewed through pages without customizations. In addition, reports would need to be modified to access the data in history tables. Archiving to secondary storage devices is generally used for long-term data retention. This option is preferred for data that are rarely retrieved, and is usually performed to satisfy legal requirements.

Creating History Tables

Before you run the archiving process, you must create/ build the history tables first.

You are required to build one history table for each table to be archived. The history table must be identical to the archive table, with an extra column PSARCH_ID.

The following example uses the JRNL_HEADER.

To build a history table:

1. Open Application Designer.
2. Open the JRNL_HEADER table.
3. Select File, Save As and name the history table your custom name, such as JRNL_HEADER_HST.
4. When prompted to copy the PeopleCode associated to the table, click No.
5. Click Insert > Field and insert the PSARCH_ID field.
6. Save the Record.
7. Build the table by using the Build, Current Object option.
   - Select the following Build Options: Create Tables and Create Indexes.
   - Select the following Build Execute Options: Execute and Build script.
   - Click Build.

Archiving to Flat File

This process deletes the data from the online table and writes the data to a flat file.

To complete the flat file archiving process:

1. Design Business Archiving Strategy
2. Create an archive project and turn on the Archive to Flat File checkbox.
3. Generate the SQL on the SQL Designer page.
4. Run the Archive Project Report Definition.

   Create PS/Query reports (or use your favorite SQL Tool) to verify the data.
5. Run the Archive Online Tables to Flat Files indicating to which file the system writes the data.

Archiving from Online to History Table Process

This process copies the data from the online table to the history tables using the selection process and then removes the data from the online tables using the delete process.

To complete the online to history table process:

1. Create an Archive Project.

   Create a project (with a unique Archive ID) that identifies the tables/rows that are to be archived.

2. Run archiving reports.

   Print an archive project definition report to help you verify the data you have selected to archive.

3. Run Archive Data with the Archive Process Selection.

   Based on the Archive ID, run the selection process. This copies the data the rows for archiving to the history tables.

4. Run Archive Data with the Archive Process Delete.

   This removes the data from the online tables. Do this only when you are confident that the archived data has been successfully stored in the history tables.

Rolling Back History Table Data

To roll back history table data:

1. Run Archive Data with the Archive Process Rollback.

   This copies the data back from the history tables to the online tables. You use this when the data was accidentally deleted from the online tables, and it has already been archived to the history tables.

2. Run Archive Data with the Archive Process Remove from History.

   If the Archive Selection has been run, and it you selected the wrong set of data to be copied to history tables, run the Remove from History process to remove the misplaced data. This returns you to the state where you started prior to the archive selection process.

Archiving from History Table to a Flat File

To archive from history table to a flat file:

1. Run Export History to Flat Files.

   This process copies the data to the flat files.

2. Run Archive Data with the Archive Process Remove from History.

   This deletes the data from the history tables. Only run this process after you have verified that the data has been successfully archived to flat files.

Restoring Archived Data from Flat Files

To restore archived data from flat files:

1. Run Archive Audit Report for the Batch History Process.

   This report lists the definition of the history tables at the time the data was archived. This report provides the names of the flat files that contain the data.

2. Create Staging Tables.

   The staging table is a clone of the online table. The Import process imports the data from the flat files into staging tables.

3. Run Import for Flat Files Process.

4. Run the programs to populate the tables from the flat files.

Understanding Commits

For both batch and online execution, the Archive Selection, Remove from History, Rollback, and Delete Processes issue commits after each record has been processed unless a commit level has been specified otherwise.

Gaining Increased Performance

For better performance and increased speed during archiving processes, try dropping the indexes before inserting data from online tables into history tables.

Modifying Indexes

Your database platform may have a limitation to the number of columns an index can contain. Some have a restriction of 16 columns for an index. If the table that you want to archive already has 16 keys, then you cannot add another key (PSARCH_ID) to the corresponding history table.

The first option for solving this situation is to use the Flat File Archiving Strategy. The second option for solving this situation is to create the history table with the PSARCH_ID as a non-key field. For this situation, it is recommended that you either have different history tables for different archiving projects, or you have a strategy of purging the history tables prior to executing the selection process of another archiving project.

CHAPTER 6

PeopleSoft CTI

This document covers the PeopleSoft Computer Telephony Integration (CTI) console. The intended audience of this document includes the following:

- System administrators who need to install and configure PeopleSoft CTI.
- End users, or call agents, who use PeopleSoft CTI to complete work tasks.

This chapter contains an overview section and covers the following topics:

- PeopleSoft CTI's role within the overall PeopleSoft 8 Media Connect for Genesys CTI solution.
- PeopleSoft CTI installation and configuration.
- Using PeopleSoft CTI.

Note. As a licensee of PeopleTools, you are licensed to use the base portal technology, which is limited to navigation to licensed PeopleSoft applications. If you want to register additional non-PeopleSoft content, you must license PeopleSoft Enterprise Portal. CRM customers have access to CTI functionality by default. To use CTI outside of PeopleSoft CRM you must license PeopleSoft Enterprise Portal.

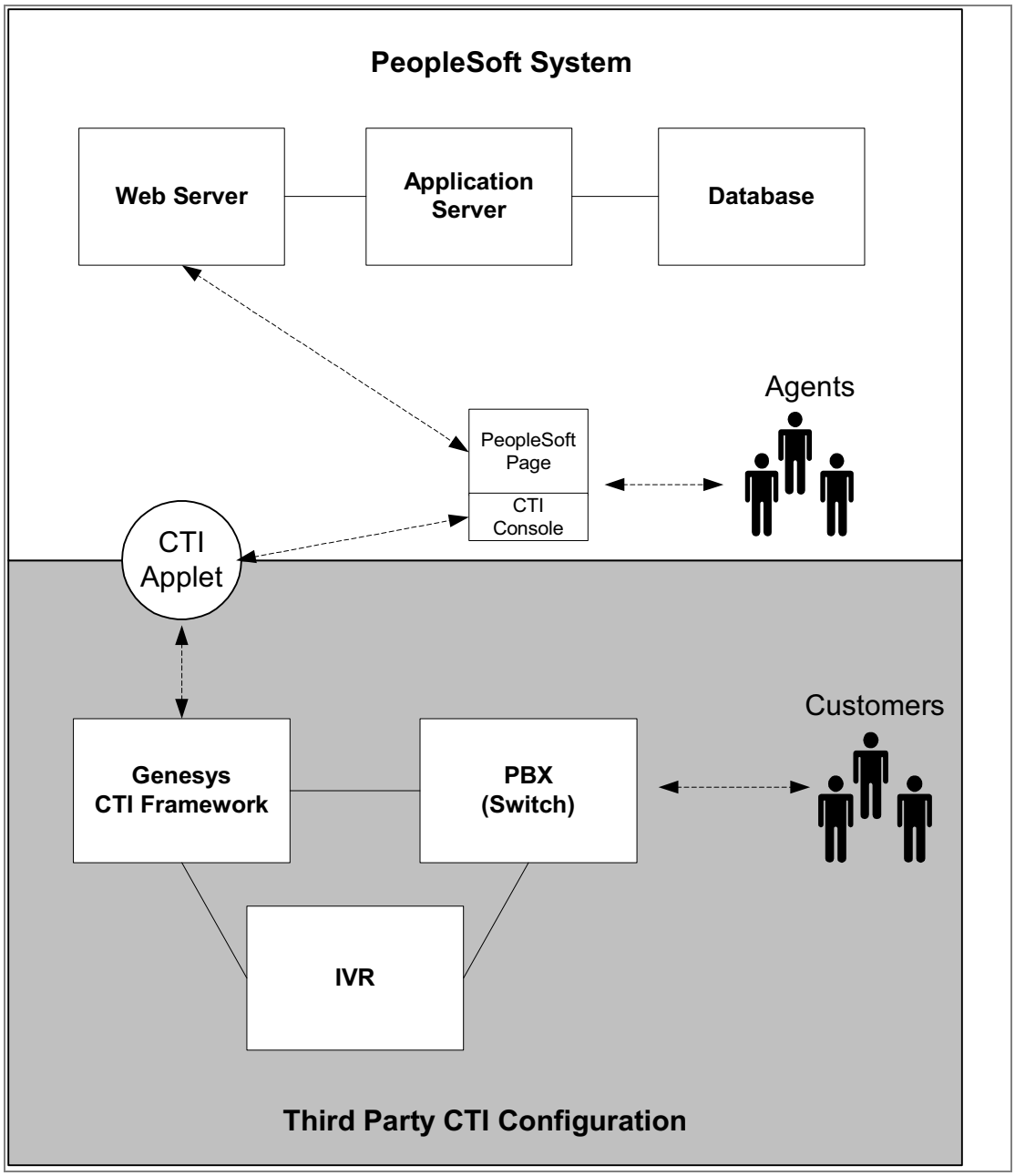
Understanding PeopleSoft CTI

PeopleSoft Computer Telephony Integration enables you to integrate your PeopleSoft applications with your call center. PeopleSoft CTI offers the following benefits:

- Seamlessly integrates your PeopleSoft application with the Genesys CTI Framework to improve agent productivity. "Agents" refer to the individuals who interact with your customers using CTI.
- Requires only that you install a supported web browser on the agent's workstation.
- Enables agents to take advantage of browser-based call management and automatic population of PeopleSoft transaction pages with the relevant customer data associated with an incoming call.

Understanding the Components

The PeopleSoft CTI console works together with the IVR (Interactive Voice Response) system, the Genesys CTI Framework, an Automatic Call Distributor (ACD), and your PeopleSoft application. When a customer calls, the caller enters information using the IVR system. The PBX/ACD system then routes the call to the Genesys T-Server. The T-Server converts the customer's entries into key fields and sends the key information to the PeopleSoft CTI console, which opens the relevant customer record and PeopleSoft transaction page.



Overview of the PeopleSoft Media Connect system

See Also

PeopleTools PeopleBook: PeopleCode Reference, "Internet Script Classes (iScript)"

Understanding the PeopleSoft CTI Console

The PeopleSoft CTI console enables agents to manage their phone sets from their browsers. The CTI console launches a browser when Genesys associates a URL with an incoming call. The browser that the system launches is called a “popup window." The popup window contains the PeopleSoft application page and relevant data for the incoming call. A mini console appears at the bottom of every popup window. The mini console allows the agent to manage calls without having to return to the main console.

The CTI console uses a Java applet that runs within the web browser to communicate directly with Genesys. The CTI console communicates to the Java Applet using JavaScript. The applet is delivered in a file called pCti.cab that is approximately 500KB. The applet resides in the browser cache to reduce network traffic and improve response time.

See Also

Using PeopleSoft CTI

Required Genesys Components

PeopleSoft assumes that you already have a functioning Genesys system configured at your site. PeopleSoft does not ship any Genesys products. You need a Genesys T-Server installed and configured before you begin installing your PeopleSoft CTI system.

In addition, your PeopleSoft application may require the following CTI components to attach data to incoming calls:

- Genesys Strategy Builder or Interaction Router or equivalent.
- An IVR supported by Genesys and capable of passing call data to Genesys.

Note. The Genesys Configuration Server is an optional but supported component.

Note. For detailed information regarding specific versions that PeopleSoft supports, refer to the PeopleSoft Platforms database on Customer Connection.

See Also

Genesys Product Documentation

Required Java Runtime Environment

PeopleSoft CTI Console requires the following:

- Microsoft Internet Explorer 5.0 or greater.
- Microsoft virtual machine (Microsoft VM) installed on a supported Microsoft Windows workstation.

Java applets run within a Java Virtual Machine (JVM) that uses a 'sandbox' to restrict access to what they can do. In order for the PeopleSoft CTI Applet to open a network connection to the Genesys system rather than back to the web server that downloaded it, PeopleSoft has attached a digital signature to the applet.

The digital signature protects the applet against tampering, and it requires the agent to grant permission to run the applet. When doing so, agents need to indicate whether such permission should be granted to any code signed by PeopleSoft for all subsequent sessions or just for the current session only. You need to instruct your end users to select the appropriate option for your site.

Installing and Configuring PeopleSoft CTI

This section describes how to install and configure the PeopleSoft CTI system. This information assumes that you already have a functioning Genesys system installed and configured at your site.

Installing PeopleSoft CTI

When you run the PeopleSoft Internet Architecture setup program, the PeopleSoft CTI files are installed automatically to your web server in the following location:

- WebLogic

```
bea\wlserver6.1\config\peoplesoft\applications\PORTAL\ps\pCti
```

- Websphere

```
C:\Apps\WebSphere\AppServer\installedApps\peoplesoft\PORTAL\ps\pCti
```

Note. You do not need to select any additional options from the install program "wizard." The CTI files are installed by default.

Once you've run the PeopleSoft Internet Architecture setup program, you need to enable the PeopleSoft CTI console and configure the system as discussed in the following sections.

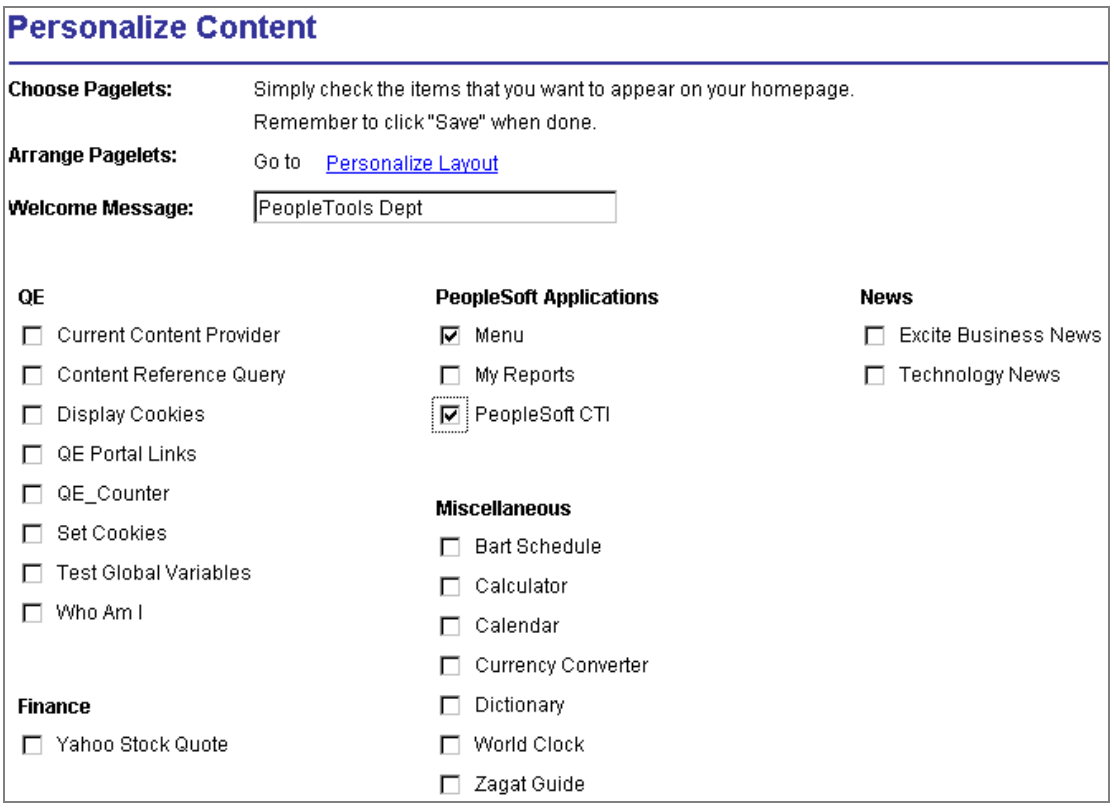
See Also

PeopleTools Installation Guide for your platform

Genesys Product Documentation

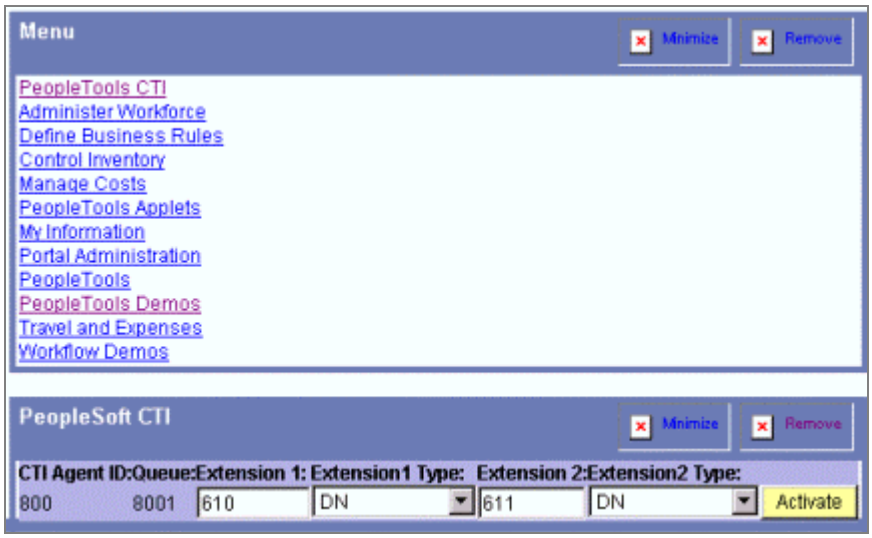
Enabling PeopleSoft CTI

To configure the PeopleSoft CTI to work with the PeopleSoft Portal, you need to enable PeopleSoft CTI in the Personalize Content page. This involves checking PeopleSoft CTI in the PeopleSoft Applications list.



Personalize Content Page

By doing so, the PeopleTools CTI content appears as shown below.



PeopleSoft CTI with the Portal

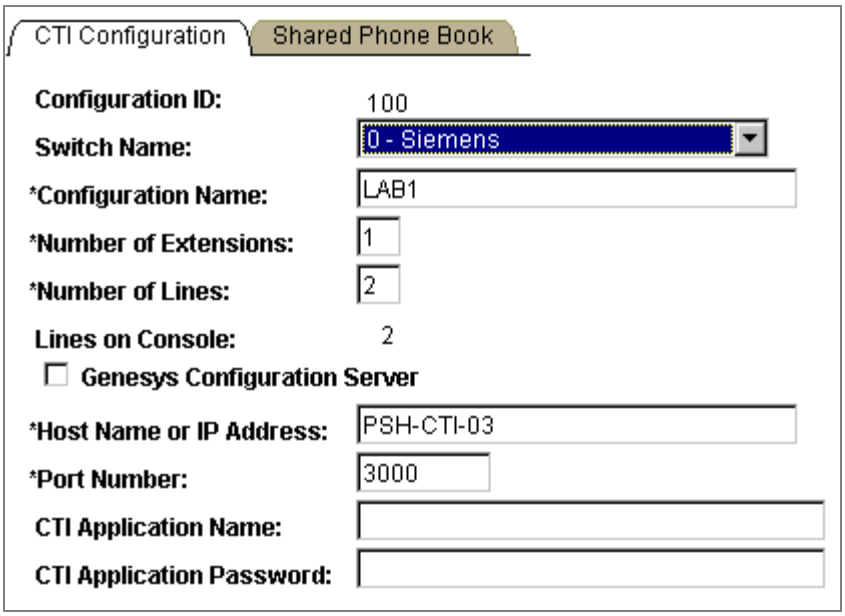
See Also

PeopleTools PeopleBooks: Portal Technology, "Introducing PeopleSoft Portal Technology"

CTI Configuration Page

Select PeopleTools, CTI Configuration, CTI.

On this page, you create CTI configurations. A CTI Configuration contains all the information required for a user to be able to connect to a specific Genesys T-Server or Configuration Server.



CTI Configuration Page

Configuration ID — Displays the name you gave the configuration when you created it. The name can't be modified once created.

Configuration Name — Add a descriptive name to help identify the configuration.

Switch Name — Choose from one of the supported switches. Currently, the supported switches are: Siemens, Nortel, Avaya and Aspect.

Number of Extensions — Number of extensions or directory numbers associated with the telephone.

Number of Lines — Number of lines associated with each extension.

Lines on Console — Currently, the CTI console supports two lines. The only supported configurations are two extensions with one line each or one extension with two lines.

Genesys Configuration Server — Directs the CTI console to get data required for connecting to the T-Server from a Configuration Server instead of from the PeopleSoft database. Using a Configuration Server is transparent to the user/agent. When the agent activates the console, it requests a list of available T-Servers from the Configuration Server, and then the console sequentially attempts to connect to each T-Server in that list until it establishes a connection. If it reaches the end of the list without connecting to a T-Server, an error is returned to the agent.

Note. If you select this option, the Application User group box appears at the bottom of this page.

Host Name or IP Address	Enter the host name or IP address for the Genesys T-Server or Configuration Server.
Port Number	Enter the Port number on which the T-Server or Configuration Server listens.
CTI Application Name and CTI Application Password	Enter the Genesys Application Name and enter the Genesys password required for signing on to the application specified as the CTI Application.
Application User Name and Application User Password	Enter the appropriate application user name and password for the Genesys system.

To create a new configuration:

1. Select PeopleTools, CTI Configuration, CTI.
2. On the Find an Existing Value search page click Add a New Value.
3. On the Add New Value page, enter a Configuration ID.

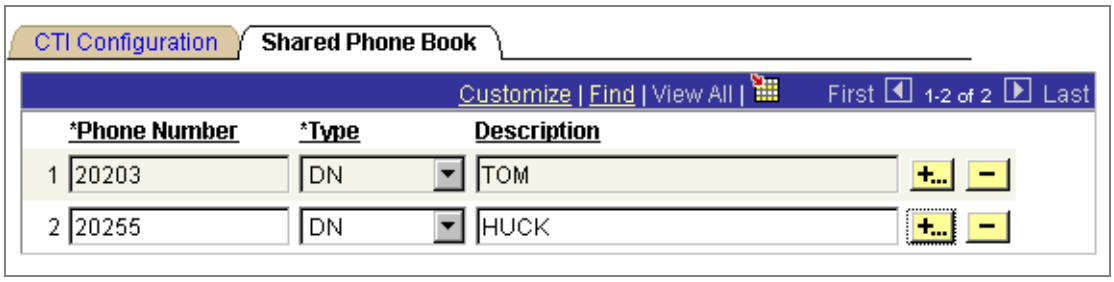
   There is a four-character limit.
4. Click Add.

Shared Phone Book

Select PeopleTools, CTI Configuration, CTI, Shared Phone Book.

On this page, you can manage a list of frequently dialed phone numbers for a specific CTI configuration. These numbers appear when an agent connected to that CTI configuration selects the drop-down list when dialing a number from the CTI console. This saves the agents from manually entering frequently dialed numbers when making outbound calls.

Note. Phone lists are updated on the CTI Console only after the CTI applet launches. To refresh phone lists, refresh the browser and reactivate the console.



Shared Phone Book Page

Phone Number Enter frequently dialed phone numbers associated with this configuration.

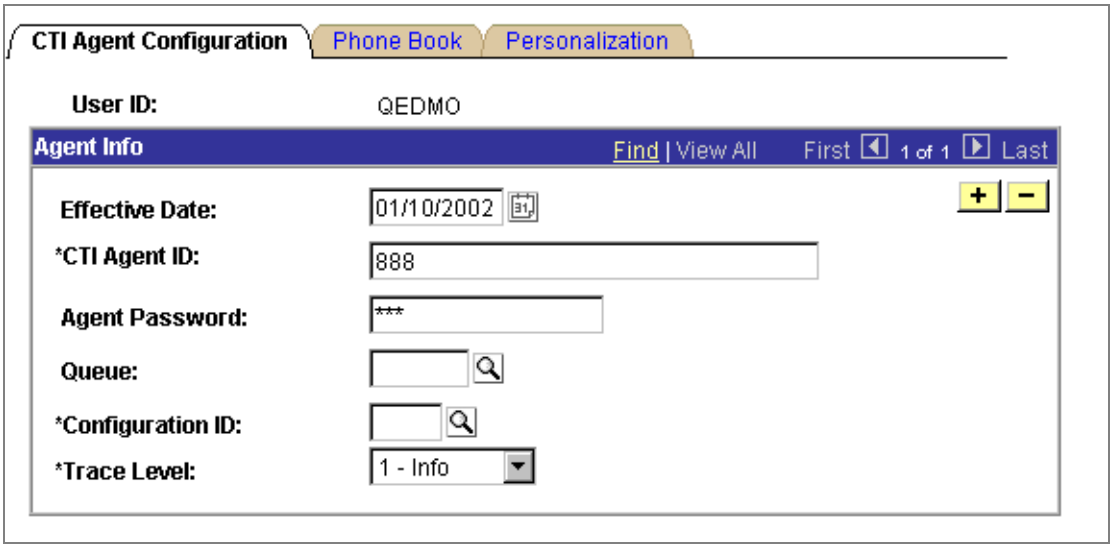
Type Select either DN or Queue.

- **DN.** (Directory Number) This number identifies a telephone set on a PBX or in the public network. The caller dials this number to establish a connection to the addressed party. The DN can be a local PBX extension (a local DN) or a public network telephone number
- **Queue.** Directory Number identifying an ACD queue or group. Calls to a group are distributed to agents belonging to the group, according to ACD algorithms.

Description You can add a description for the telephone number to make the console drop-down list more intuitive

CTI Agent Configuration Page

Select PeopleTools, CTI Configuration, Agent.



CTI Agent Configuration Page

User ID Refers to the PeopleSoft User ID of the agent.

Agent Info

Effective Date Enter the date on which the current configuration should become active.

CTI Agent ID Refers to the Genesys user ID of the agent.

Agent Password Enter the password the agent uses to sign on to Genesys.

Queue

Enter the name of the queue you want to assign to an agent. Use the Queue Configuration page to associate a queue with a Directory Number identifying an ACD group.

Configuration ID

Select the name of the configuration that you want to associate with the agent. The Configuration ID is the name of the configuration you created using the CTI Configuration page.

Trace Level

For Trace Level you have the following options:

- 0-None. Disables tracing.
- 1-Informational. Traces agent actions, such as dialing out, transfers, and so on.
- 2-Debug. Used to troubleshoot crashes and other major errors. If you every need to open a PeopleSoft GSC case regarding a CTI issue, include a level 2-Debug trace.

Trace information is written to the browser's Java Console, which must be enabled.

In Internet Explorer, you enable the Java Console by selecting Tools, Internet Options, Advanced, Java, Java Console.

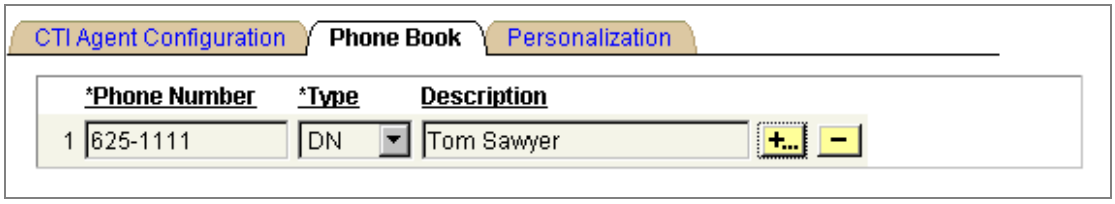
You view the Java Console by selecting View, Java Console. To clear the console, press C on your keyboard.

Phone Book Page

Select PeopleTools, CTI Configuration, Agent, Phone Book.

On this page, you can manage a list of frequently dialed telephone numbers for a *specific* CTI agent. These numbers appear when that agent selects the drop-down list box for a number to dial in the CTI console. This saves the agents having to manually enter frequently dialed numbers when making outbound calls.

Note. Phone lists are updated on the CTI Console only after the CTI applet launches. To refresh phone lists, refresh the browser and reactivate the console.



Phone Number Page

Phone Number Enter frequently dialed telephone numbers associated with a particular agent.

Type Select either DN or Queue.

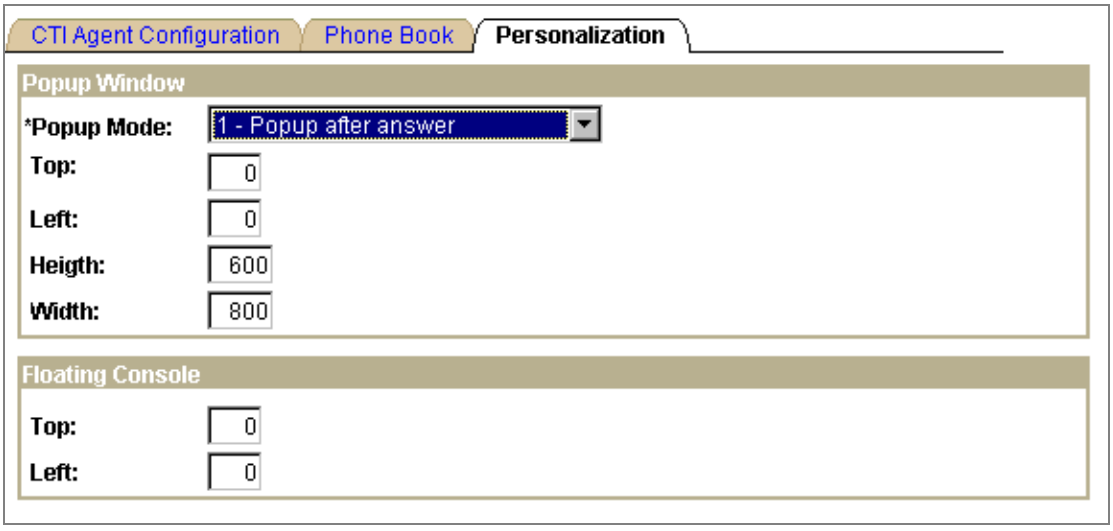
- **DN.** (Directory Number) This number identifies a telephone set on a PBX or in the public network. The caller dials this number to establish a connection to the addressed party. The DN can be a local PBX extension (a local DN) or a public network telephone number
- **Queue.** Directory Number identifying an ACD queue or group. Calls to a group are distributed to agents belonging to the group, according to ACD algorithms.

Description You can add a description for the telephone number to make the console drop-down list more intuitive for the agent.

Personalization Page

Select PeopleTools, CTI Configuration, Agent, Personalization.

Use this page to personalize the popup windows' timing, size, and position on the desktop as well as the position of the floating console.



Personalization Page

Popup Window

Popup Mode — Enables you to configure when the popup window appears. You can have it appear after the call is answered, or you can have it appear when there is an incoming call. If it appear before the call is answered, this enables the agent to determine if they should answer the call based on the information displayed in the popup.

Top — Specifies the top position, in pixels. This value is relative to the upper-left corner of the screen.

Left — Specifies the left position, in pixels. This value is relative to the upper-left corner of the screen.

Height — Specifies the height of the window, in pixels. The minimum value is 100.

Width — Sets the width of the window, in pixels. The minimum value is 100.

Floating Console

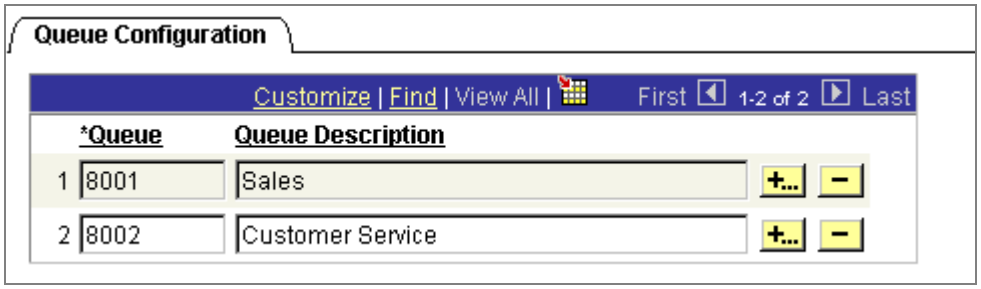
Top — Specifies the top position, in pixels. This value is relative to the upper-left corner of the screen.

Left — Specifies the left position, in pixels. This value is relative to the upper-left corner of the screen.

Queue Configuration Page

Select PeopleTools, CTI Configuration, Queue.

Use this page to add queues for agents.



Queue Configuration Page

Queue — Directory Number identifying an ACD group. Calls to a group are distributed to ACD agents belonging to that group, according to ACD algorithms.

Queue Description — Enables you to add a brief description of the queue.

Miscellaneous Page

Select PeopleTools, CTI Configuration, Miscellaneous.

The Miscellaneous page contains a parameter that enables you to redirect the base URL for users without a Genesys User ID. By doing so, these users do not see the CTI console when signing onto PIA.

Use Default Screen Popup URL	Enter the URL that users should see by default when the popup launches.
Default Screen Popup URL	If the previous setting is selected, enter the URL value for the default URL.

Important! Do not enter the URL that is the same as the URL that users will use to connect to PeopleSoft. The URL entered on the Miscellaneous tab needs to be a URL for a separate PeopleSoft (PIA) site. You create a separate site by installing PeopleSoft (PIA) into a separate directory on your web server. The additional PeopleSoft site needs to point to the same PeopleSoft domain.

Demo: Outbound Call Page

Select PeopleTools, CTI Configuration, Demo: Outbound Call.

The Outbound Call page is an example of how you can customize an application page to allow a user to direct the CTI Console to dial a telephone number displayed on that page. The outbound calling demonstration works only when the CTI console is enabled and the user has registered with Genesys.

Phone Number	Enter the telephone number you want to dial. This field accepts numeric digits only. Do not enter special characters, such as "-", ".", and so on.
Dial	Click this link to dial the telephone number you entered.

Setting up Genesys for Popup Windows

During the setup of the Genesys server, you must create certain user-defined variables that are attached to each incoming call. These variables are then sent to the PeopleSoft CTI application providing instructions on which PIA page displays for the agent. This data is typically created and attached to the call using the Genesys Strategy Builder.

The PeopleSoft CTI can launch and populate transaction pages in the following ways:

- PeopleSoft CTI formats a URL for the browser with a specific target PeopleSoft menu, component, and page. This method can only be used if you are not using the Portal, and have only one database.

- PeopleSoft CTI opens the transaction page using an iScript. This method must be used if you are using more than one database or operating your PeopleSoft system with a portal. The iScript communicates with the targeted database to populate the appropriate transaction page with the caller's data. For more information on iScripts, refer to the PeopleCode PeopleBooks.

Note. The Genesys connection ID is stored in the query string as a variable named "callID." The Genesys ANI call property is stored in the query string as a variable named "otherDN". You can access this variable using PeopleCode as part of the screen pop.

PeopleSoft CTI retrieves the data it needs to determine how to launch popup windows from one of two places:

- Default URL for all calls.
- The calls attached data keys.

Using the URL Based on Attached Data Keys

ICTYPE

Represents the type of PeopleSoft service being called, either a panel (page) or a script. If the ICTYPE is set to Panel, then the following three attached data variables must be set:

- **MENU**. The name of the menu within PeopleSoft containing the destination component.
- **Market**. The market property of the target component
- **PANELGROUP Name or Component**. The target component name in the PeopleSoft Application.

If the ICTYPE is set to Script, then the attached following data variable, needs to be set: ICScriptProgramName. This represents the location of the iScript, which is executed through the screen pop.

DESCR1

Definable data for descriptive purposes only. You can add any descriptive information that might be useful to the agent. This information displays in the control bar. For example, you may want the agent to be aware of the customer's priority status, as in "Gold Customer."

Application Specific Data

Any other attached data keys that are sent to the CTI console by the Genesys telephony server, such as customer number, are passed to the target application page as parameters.

The parameters are separated from the PeopleSoft URL by a question mark (?). Parameters are separated from other parameters by an ampersand (&). If you are

using iScripts, you can use the GetParameter methods to read the parameters in your PeopleCode. If you choose to use ICPanels instead, the parameters are used as the key list.

Refer to your PeopleSoft application documentation for specific instructions on any other attached data keys that must be passed to the CTI console by Genesys.

Sample Default URL

The following example shows a sample URL.

```
http://<<machinename>>/servlets/iclientservlet/<<sitename>>/?ICType=Panel&Menu
=UTILITIES&Market=GBL&PanelGroupName=CTI_HANDLER">
```

Supporting Single Signon

PeopleSoft CTI offers single signon. The console connects to Genesys using the Genesys user ID and password retrieved from the PeopleSoft database.

Implementing "Free Seating"

When users sign on, they do not need to reenter telephone extensions and other user information if they have used the workstation before and the relevant information for the telephone associated with that workstation has not changed.

PeopleSoft enables free seating by maintaining a cookie on the workstation.

Troubleshooting

The following items identify some common issues and their solutions.

- If the CTI console's state becomes inconsistent with that of the telephone, do one of the following:
  - Use the phone set to manage the call, and once you have released the call, either disregister and reregister using the  button.
  - Click the browser's Refresh button to re-set the console.
- If the CTI Console system loses track of the program state, it returns to a neutral status showing both lines available. In this case, use the phone set to manage the call as opposed to using the CTI Console. Once you have released the call, you may need to de-register from and reregister with Genesys.

- If agents attempt to activate the CTI Console, and get an error message indicating that there is already an active console (and there isn't), clear the PeopleSoft CTI cookies stored in the browser's cache.
- If the agents activate the CTI console, but do not get the agent's Register button  , this indicates that the applet could not communicate with Genesys. Check that the CTI configuration data such as the host name and port number are correct and that the Genesys servers are online.
- If you receive an unexpected error and intend to log an incident with PeopleSoft, include the browser's Java Console output with the incident.
- In general, ensure that agents have valid Genesys agent IDs associated with their PeopleSoft user IDs.
- If, when logging on to CTI for the first time, you do not see the security warning described in the Using PeopleSoft CTI section, the system may be installed incorrectly.
- If the agents activate the CTI console, but do not get the agent's Register button (), this may indicate one of the following:
  - The applet could not communicate with Genesys. Check that the CTI configuration data such as the host name and port number are correct and that the Genesys servers are online.
  - You do not have rights to install the applet or some other CTI component on your workstation (security restrictions). Contact your system administrator.

Using PeopleSoft CTI

Note. The following section is intended for PeopleSoft CTI end users—the call agents.

This section contains an overview discussion and covers the following topics:

- Understanding the PeopleSoft CTI interface.
- Signing on.
- Working with the control bar.
- Answering calls and using the call features.

Overview

PeopleSoft CTI is a browser-based call management system that helps call agents work more efficiently with customers. PeopleSoft CTI integrates your Genesys CTI system and your PeopleSoft applications. It exchanges data between the CTI system and your PeopleSoft

applications so that the system automatically fills PeopleSoft transaction pages with the appropriate customer information—the information related to the caller.

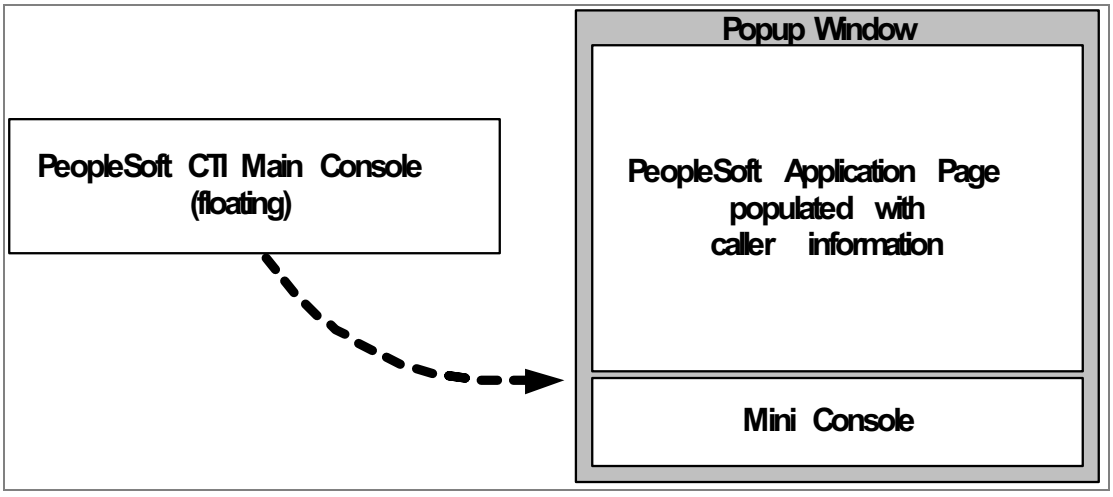
With PeopleSoft CTI, you can perform the following tasks:

- Operate two lines or two extensions.
- Answer incoming calls.
- Release Calls.
- Put a caller on hold.
- Monitor call status.
- Access PeopleSoft applications.
- Transfer callers.
- Initiate conference calls.
- Place an outbound call.

Understanding the Interface

The PeopleSoft CTI interface consists of two main components:

- Main console.
- Mini console.



PeopleSoft CTI Main Console and Mini Console

The main console enables you to perform actions related to the general CTI system, such as connecting to the Genesys system, selecting a call action, selecting an extension, and so on. In

PIA, the main console appears at the bottom of your browser. In the Portal, the console is activated from within your homepage, but runs in a separate window.

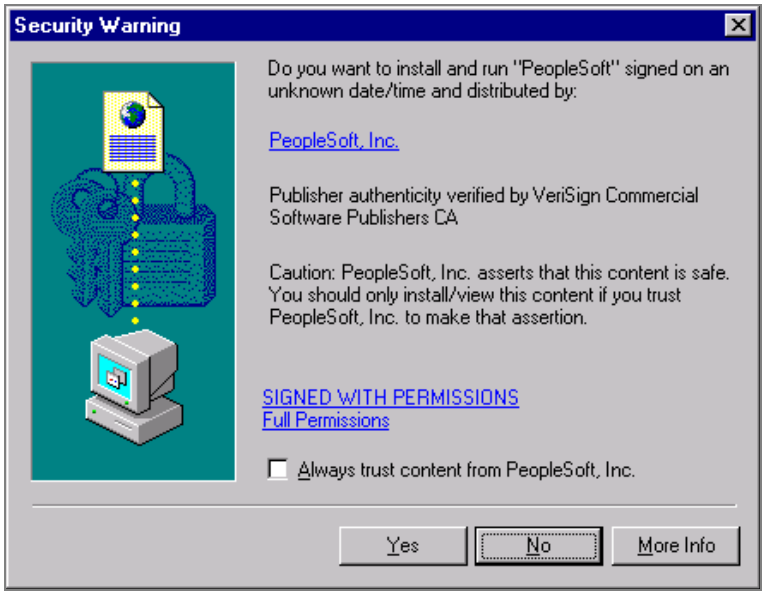
The mini console appears in a popup window when you have an incoming call. The popup window also shows the PeopleSoft application transaction page containing the current caller's information. The mini console only contains options that apply to the current call. When you release a call, the system deactivates the mini-console.

Getting Started

Getting started with PeopleSoft CTI is a three-step process that involves the following:

- Signing on to PeopleSoft.
- Specifying your extension information.
- Connecting to the Genesys system.

The first time you access PeopleSoft CTI, a Security Warning dialog box *may* appear prompting you to "trust" information from PeopleSoft. You need to indicate "Yes."



Security Warning

Note. If you have any questions or concerns about this warning, contact your system administrator.

To sign on to PeopleSoft CTI:

1. On the Peoplesoft signon page, enter your PeopleSoft user ID and password as you normally do to sign on to PeopleSoft.

2. On the control bar at the bottom of the PeopleSoft homepage, set your configuration by doing the following:

   - Make sure that your agent ID appears beneath the Agent ID label.
   - Make sure that the appropriate queue name appears beneath the Queue label. Queues are discussed in a subsequent section.
   - If you are signing on from a workstation with a different extension, specify the current extension(s) in the Extension edit boxes.
   - Press the Activate button to sign on to Genesys.

   Notice that the control bar is replaced by the PeopleSoft CTI main console.

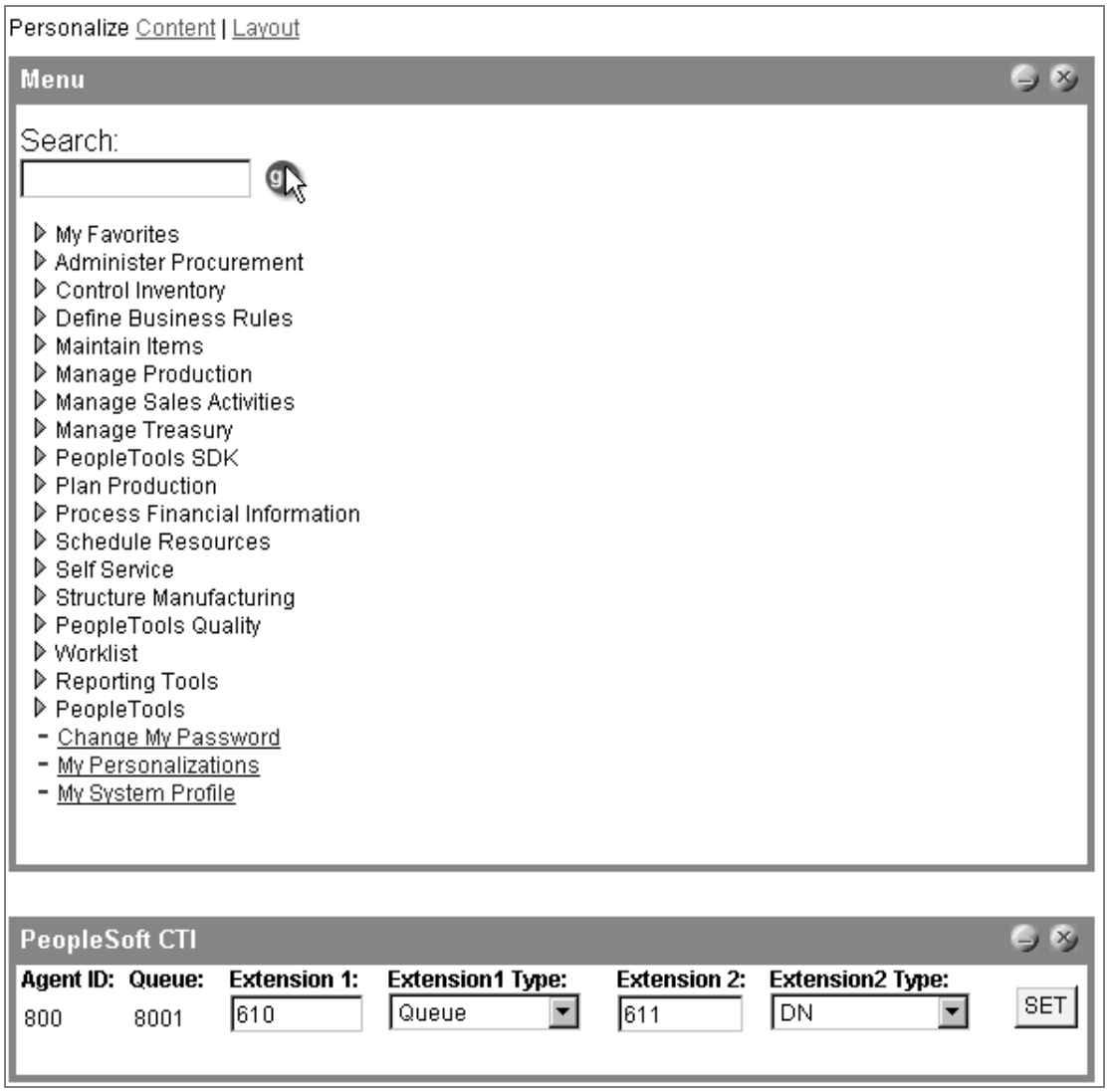
   Note. You can't activate two CTI consoles on one workstation. An error message appears if you attempt to do this.

3. On the Main Console, click the  button to register with the Genesys system.

   When the red 'X' on the button becomes a green check mark, you are registered with Genesys. In most cases, this should not take more than 10-15 seconds.

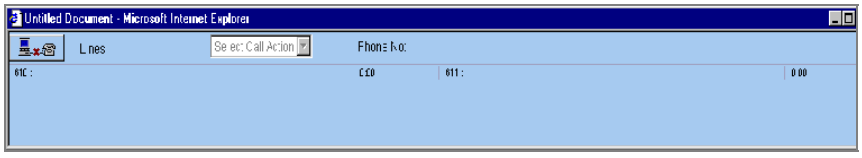
Using the CTI Console with the Portal

If PeopleSoft CTI is enabled in your personalized content, the CTI registration bar appears at the bottom of the PeopleSoft homepage.



CTI Registration Bar on Portal Homepage

Change any registration parameters if necessary and click Set, or Activate (depending on your version). After doing so, a floating console opens in a new window. The floating console appears as follows:



Floating Console in Portal

Important! Do not close the floating console unless you wish to terminate your connection to Genesys.

After you sign on to PeopleSoft CTI, the main console appears at the bottom of your screen. The control bar is always visible at the bottom of your screen so that you can access it easily at any time.

PeopleSoft Main Console

Register (button)

Enables you to register and de-register with Genesys. The button acts as a toggle switch. When the green checkmark appears, you are registered; when the red 'X' appears you are not registered.

Lines

By clicking the radio button to the left of the telephone icon, you activate the associated line. The icon you select determines the active line. All call actions you choose apply only to the *active* line. The color of the icon reveals the activity on the line. The colors are:

- Blue. Inactive.
- Red. Ringing.
- Green. On call.
- Yellow. On hold.

Select Call Action

Select actions related to calls, including Answer, Hold, and Transfer. Which call action options appear depends on your current status. For instance, the Hold call action is only valid while you are on the line with a caller. Call action options are discussed in detail in the following section.

Status

Shows the agent status, as in Ready or Not Ready (to receive calls). It can also show Ready/DND (Do Not Disturb) if the agent is not using a Queue.

Q:

(Queue)

If the agent belongs to an ACD group, the group appears here.

Genesys Messages

Informational messages from Genesys appear in the right corner of the CTI Console. Examples of such messages are “Dialing”, “Connected” and “Released.” These messages do not persist.

Note. Error messages appear in separate windows.

Call Duration

The system tracks the amount of time spent on calls for each line.

Incoming Call Information

Reveals data attached to incoming calls. This is the information that enables the right PeopleSoft transaction page to open containing the correct caller's information.

Understanding Call Actions

The Select Call Action drop-down list contains all of the options you have for handling calls. Depending on the status of the agent and/or the telephone line, certain selections from the drop-down list are not available.

After you select a call action there are two buttons, Go and Cancel, that appear to the right of the Select Call Action drop-down list. Go executes the selected call action, and Cancel stops the call action you executed.

The following list contains the call actions:

Dial	When you are in Agent Ready or Agent Not Ready mode, you can call another party.
Answer Call	Answers an incoming call. The Answer Call button displays and flashes only when there is an incoming call that is waiting to be answered.
Transfer Mute	Transfers the caller to the desired number without speaking to the intended recipient. A dialog appears enabling you to enter the extension of the person to which you want to transfer the caller. **Note.** This action is not supported on Aspect switches.
Transfer	Transfers the caller to the desired number. You will have the opportunity to speak with the recipient before transferring the caller. A dialog appears enabling you to enter the extension of the person to which you want to transfer the caller.
Conference	Enables you to add one or more individuals to your call.
Hold	Places the caller on hold.
Retrieve	Takes the caller out of hold status. Displays only when the caller is on Hold.
Release	Disconnects the caller. This option is only available as a selection once a call is answered.
DND	Do not disturb. This option is available when the extension is not associated with a queue
Ready	Opposite of DND. This option is available when the extension is not associated with a queue.
Agent Ready	Indicates the agent is ready to receive incoming calls. This option is available when the extension is associated with a queue and the status bar reads “Agent Not Ready.”
Agent Not Ready	Stops incoming calls. This option is available when the extension is associated with a queue and the status bar reads “Agent Ready.”

Note. You can transfer to or initiate a conference call with individuals who are not enabled to access PeopleSoft CTI. Their phone rings, but keep in mind that they do not get the popup screen showing customer data.

Answering a Call

Once you have logged on to PeopleSoft CTI, you are ready to receive calls. For each incoming ACD call to your extension, the telephone extension icon turns red. Once you have accepted a call, the system does not send you more incoming calls until you have completed the current call.

To answer a call:

1. Click the radio button to the left of the telephone icon that has turned red.

   The answer option is automatically selected as the current option in the drop-down list when there is an incoming call.

2. Click Go.

   The popup browser launches with the appropriate PeopleSoft transaction page displayed. The system determines which page to display based on caller information sent by the Genesys system.

   Once you have answered a call, you enter the not available status.

Transferring a Caller

Occasionally you need to transfer callers to other agents. PeopleSoft CTI supports two types of transfers:

- Transfer Mute. This option enables you to transfer a call without speaking to the target agent prior to transferring the call.
- Transfer. This option is also known as a "consultative" transfer, which means you consult with the target agent prior to transferring the call.

To perform a Transfer Mute:

1. Make sure the appropriate telephone line is selected and green.
2. From the Select Call Action drop-down list select *TransferMute*.
3. In the Phone No. edit box, select the number you want to dial.

The drop-down list contains all the numbers from the shared phonebook and agent phone book. If the number you want to dial does not appear, click **Dial other number** and manually enter the number.

4. Click Go.

   This connects the caller to the new agent and releases your line.

   The system prompts the recipient of the transfer that it is transferring a call from your extension. When the recipient accepts the transfer, the PIA screen connected to the caller's case opens as it did for you when you first received the call.

To perform a Transfer (consultative):

1. Make sure the appropriate telephone line is selected and green.
2. From the Select Call Action drop-down list select *Transfer*.
3. In the Phone No. edit box, select the number you want to dial.

   The drop-down list contains all the numbers from the shared phonebook and agent phone book. If the number you want to dial does not appear, click Dial other number and manually enter the number.

4. Click Go.

   When using one extension with two lines, the outbound call you make to the agent to whom you are transferring the incoming call gets initiated on your second line and the incoming call gets placed on hold. Once the outbound call is established you can consult with the recipient and place that call on hold. To complete the transfer, you need to go back to the first line and select Complete and click Go. This will release the call on the second line and transfer the call on the first line to the recipient of the transfer.

   When using two extensions each with one line, the CTI Console does not have access to the outbound call to the intended recipient of the transfer. Once the outbound call is established you can consult with the recipient. You do not have to toggle between the two lines, and do not have the ability to put the recipient on hold.

5. To complete the transfer, select *Complete* and click Go.

Initiating Conference Calls

If you find that you need the assistance of other agents to answer a caller's questions, you can use the conference feature to include the appropriate agent(s) on a call.

To initiate a conference call:

1. Make sure the appropriate telephone line is selected and green.
2. From the Select Call Action drop-down list select *Conference*.

3. From the drop-down list of all numbers from the shared and agent phone books, select a number to be dialed.

   If the number is not there, select *Dial other number* to get an edit box and enter the number to be dialed.

4. Click Go.

   The system notifies the target agent of the incoming call (conference). The PeopleSoft page associated to the caller's case opens for the target agent as it did for you when you first received the call.

   This feature depends upon two parameters set up by the administrator:

   - CTI Configuration, Miscellaneous, Default Screen Popup URL.
   - CTI Configuration, Agent, Personalization:Screen Popup Mode.

   If the default URL for screen popup is set and the Screen popup mode is 0 (popup when incoming) for the second Agent, the agent gets the screen popup as soon as the call is transferred.

   If the Screen popup is set to 1(popup after answer), the screen pops up only after the first agent completes the transfer/conference call. However if the default URL for the screen popup is not set then it doesn't matter whether the mode is 0 or 1. In that case, the second Agent gets the screen popup only after the first Agent completes the transfer/conference call.

   When using one extension with two lines, the outbound call you make to the agent to whom you are inviting to the conference gets initiated on your second line and the incoming call gets placed on hold. Once the outbound call is established you can consult with the third party, and place that call on hold. To complete the conference, you need to go back to the first line and select Complete and click Go. This releases the call on the second line and starts the conference on the first line.

   When using two extensions each with one line, the CTI Console does not have access to the outbound call to the third party. Once the outbound call is established you consult with the target agent. You do not have to toggle between the two lines, and do not have the ability to put the recipient on hold. To start the conference, select Complete and click Go.

5. After consulting with the target agent, select *Complete* from the Select Call Action drop-down list, and click Go.

Working with the Hold Status

Putting calls on hold and retrieving calls on hold is likely to be the call action you perform most.

To place a call on hold:

1. Make sure the appropriate telephone line is selected and green.
2. From the Select Call Action drop-down list select *Hold*.
3. Click Go.

To retrieve a call on hold:

1. Make sure appropriate telephone line is selected and yellow.

   The retrieve option is automatically selected as the current option in the drop-down list when there is a call on hold.
2. Click Go.

Disconnecting a Caller

After you have finished with a call in the mini console, follow this procedure to release the call.

To release a call:

1. Make sure you no longer require the call to remain active.
2. On the mini console control bar, select *Release* from the Lines drop-down list.
3. Click Go.

   The system automatically places you in "wrap-up" mode, which enables you to regroup before accepting more incoming calls. Technically, when in "wrap-up" mode, your status is Agent Not Ready. When you are ready to accept incoming calls, select Agent Ready.

Switching "Agent Ready" Status

Your agent status determines whether you can receive incoming calls.

To activate "Agent Ready" status:

1. From the Select Call Action drop-down list, select *Agent Ready*.

   When you are ready, the system routes incoming calls to your extension(s).

To activate "Do Not Disturb" status:

Note. This status is not available to agents associated with an ACD queue.

1. From the Select Call Action drop-down list, select *DND*.

   With Do Not Disturb, your extension/s will not accept incoming calls.

To activate "Agent Not Ready" status:

Note. This status applies only to agents associated with an ACD queue.

1. From the Select Call Action drop-down list, select *Agent Not Ready*.

   This status is typically used when an agent is at their desk, but temporarily unable to receive calls. While you are not ready, the system routes calls to other available agents.

Dialing an Outbound Call

You can use PeopleSoft CTI to place a call, while the agent status is either Agent Ready or Agent Not Ready.

Note. If you have multiple extensions assigned to you, *do not* call one of your extensions from the other.

To place an outbound call:

1. Make sure you are in Agent Ready or Agent Not Ready status.
2. Click the radio button next to the telephone icon representing a free line.

   For example, if you had a customer on hold on one line, you select the icon for the second line.
3. From the Select Call Action drop-down list select *Dial*.
4. From the drop-down list showing all numbers from the shared and agent phone books, select a number to be dialed.

   If the number is not there, select “Dial other number” to get an edit box and enter the number to be dialed.
5. Click Go.

As with any other call you receive, you have access to all the call actions for calls you initiate. You can transfer the person you've called, place the line on hold, or initiate a conference with another party.

Note. The system places you in Agent Not Ready status until you release the call.

See Also

Phone Book

Shared Phone Book

Completing a Call

When you disconnect, or release, a call from the mini console, the system disconnects you from the Genesys system, and the mini console becomes disabled (grayed out). However, the PeopleSoft page remains active so that you can finish updating information if needed.

When you become available to accept incoming calls depends upon how your system administrators have set up your Genesys system. Genesys has a setting known as "wrap-up time," which allows an agent a certain amount of time to update the previous caller's information or regroup before accepting more calls.

Using Hotkeys

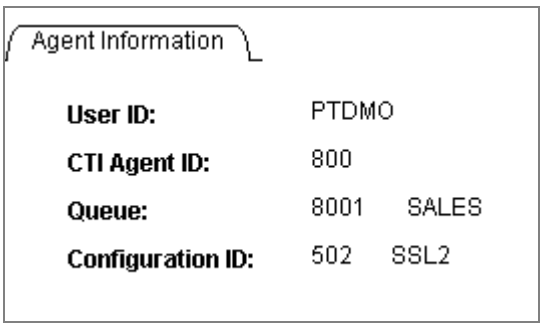
To help you easily select options with PeopleSoft CTI, PeopleSoft offers the following hotkeys. Hotkeys are combinations of keyboard buttons you can press instead of using a mouse.

Hotkey	*Description*
ALT + R	Registers your phone extensions with the Genesys system.
ALT + 1	Makes Extension 1 the active line.
ALT + 2	Makes Extension 2 the active line.
ALT + S	Presents a list of applicable call actions for you to select.
ALT + P	Presents a list of frequently called telephone numbers for you to select.
ALT + G	Enables you to execute a call action.
ALT + C	Enables you to cancel a call action.
ALT + Z	Enables you to check agent status.

Viewing Your Information on the Agent Info Page

Select PeopleTools, CTI Configuration, Agent Information.

The Agent Info page is a read-only page intended to display an agent's CTI information.



Agent Information Page

User ID	The agent's PeopleSoft User ID.
Agent ID	The agent's Genesys ID.
Queue	Reveals the queue to which an agent is assigned.
Configuration ID	Reveals the Configuration ID associated with the agent.

To view agent information:

1. Select PeopleTools, Configure CTI, Agent Information.
2. On the Find an Existing Value search page, enter the appropriate User ID in the Search by edit box.
3. Click Search.

CHAPTER 7

Transaction Set Editor

Note! Transaction Set Editor should not be your tool of choice for future development. PeopleSoft intends to move existing current processes from Transaction Set Editor to Application Engine in future releases.

The PeopleSoft Transaction Set Editor (TSE) provides a batch approach to high-volume editing of application transaction tables. Using TSE, you can apply all the PeopleSoft-inherent table edits to tables created outside of a PeopleSoft application, and then your PeopleSoft system can use those tables. The Transaction Set Editor supports the following table edits:

- Date Range edits
- Prompt Table edits
- Field Required edits
- Translate Table edits
- Yes/No edits

We've designed the TSE record edit process to be integrated into your COBOL batch edit programs. Your programs can make calls to the TSE modules as needed.

This chapter describes the procedures necessary to design PeopleSoft application batch edit processes for standardized database table edit functions. Specifically, it describes how Transaction Set Editor handles the following:

- Record edits
- Log tables
- API services and edits

Understanding Transaction Set Editor

Two important requirements are necessary to provide TSE program interface:

- The batch edit process must have the ability to apply all PeopleSoft record-based field edits. This *record edit* process is the primary function of the Transaction Set Editor, and is necessary to support any tables not subject to the "inherent" online page-based field validations.

- The record edit process must provide the ability to interface directly with TSE record edit functions during the application-specific edit processes. The TSE Application Program Interface (TSE/API) functions enable calling applications to retrieve current edit requests and provide consistent error table logging functions across all batch edit requests.

We've designed the TSE record edit process to be integrated into your COBOL batch edit programs through a call to the TSE modules for each user-defined *transaction set*. Each *set edit* request defines a group of related transaction records requested to be edited by a single SQL statement "set" process. COBOL batch edit programs can request specific TSE record edit functions as follows:

- Apply one or more of the PSRECFIELD defined field edits, based on the Application Designer defined values for that edit table.

- Update each application edit table row that fails a requested field-level edit, setting a column "flag" value to represent the user-defined edit error status in tables with error checking columns.

- Log all *field-level* edit errors, and optionally *edit-level* (specific to each edit error *type*), and/or *set-level* (specific to each transaction set) edit errors, to user defined TSE log tables.

Additionally, application programs can request specific TSE/API functions to:

- Retrieve Application Designer key field and attribute information.

- Retrieve the SQL predicate (WHERE clause) that defines your current transaction set.

- Generate and execute dynamic SQL statements to insert TSE Log table entries based on application-specific edit requests.

For more information on these services see TSE API Services

TSE Record Edits

The TSE record edit process depends on an application edit "request" passed from the calling program. After validating the request, dynamic SQL statements are created based on edits defined through the Application Designer for the transaction record. This section covers the basic steps required to integrate the TSE record edit process into your application.

Step 1 Define Batch Transaction Records

If the requested edit table is already defined to your PeopleSoft application, the requirements for this step are satisfied. If, however, your edit table definitions have *not* been defined to the Application Designer, you must first build (or Copy/Save As) the record structure, and then create the database tables.

Step 2 Reference the Edit Program Template

This program shell provides the basis for defining all tasks necessary to build your application set-edit request and call the TSE edit process. PSPAEDIT calls a second program template, PSPAAPPL, to demonstrate specific TSE/API call requirements.

Step 3 Define the Application TSE Log Records

If TSE *log-mode* is requested (see TSE Process Modes below), edit error rows are inserted into the field-level TSE log table for each field-edit error. Optionally, edit-level errors and set-level errors are logged to their corresponding TSE Log tables. See the attached set of sample TSE Log table definitions. Otherwise, if Log-mode is *not* requested, Log tables do *not* need to be defined.

Step 4 Create an Application Edit Request Record Definition

Optionally, use Application Designer to create an application edit request record definition, then to define the related edit request page. These definitions enable you to define multiple application edit requests, generating multiple TSE transaction set-edit requests, to be processed in a single batch job cycle.

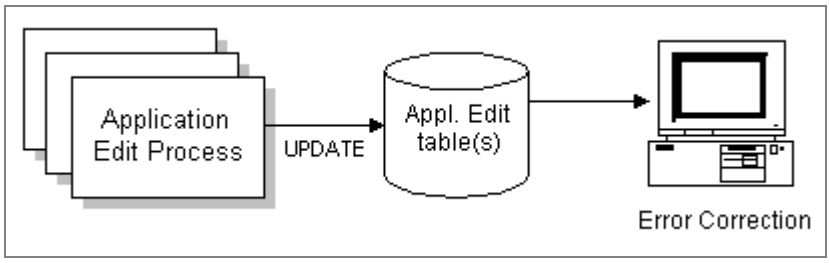
TSE Record Edit Types

The application edit program's call to request TSE record edits will provide, if requested, the following edits against the application edit table:

- **Date Range edit.** Each date field defined with a "reasonable-date" edit must contain a value within a plus-or-minus 30-day range of the requested *as-of-date*.
- **Prompt Table edit.** For each edit table field defined with a Prompt table edit, the field value, if defined as "required," must exist (and be "effective-dated," if applicable) within the defined Prompt table. If edit field is *not* defined as required, value can be blank (character field types) or zero (numeric field types).
- **Field Required edit.** Each field defined as required must be *non-blank* (if character-type), *non-zero* (if numeric-type) or *non-null* (if date-type). All key fields and all fields with any of the previously-defined edits will *not* be re-edited as "required" fields.
- **Translate Table edits.** Each required field value with a Translate table reference must find a matching value in XLATTBL.
- **Yes/No edit.** Each "Yes/No"-defined edit field value must contain only 'Y' or 'N'.

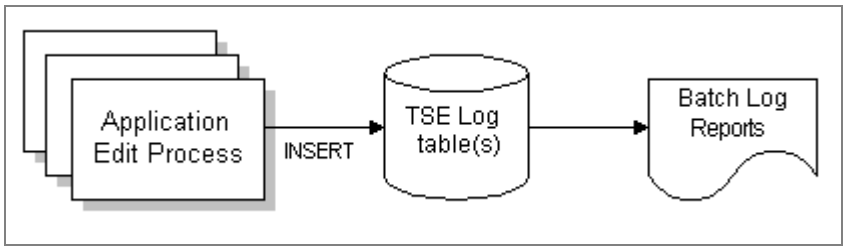
TSE Process Modes

There are two fundamental modes that determine how TSE record edit errors are to be processed. Table *rows* with field edit errors can be "flagged" in error (Update-mode); or specific edit error *fields* can be "logged" (Log-mode) to TSE Error Log tables for future reference or reporting. These modes are *not* mutually exclusive, so you might implement them through one of these three strategies:



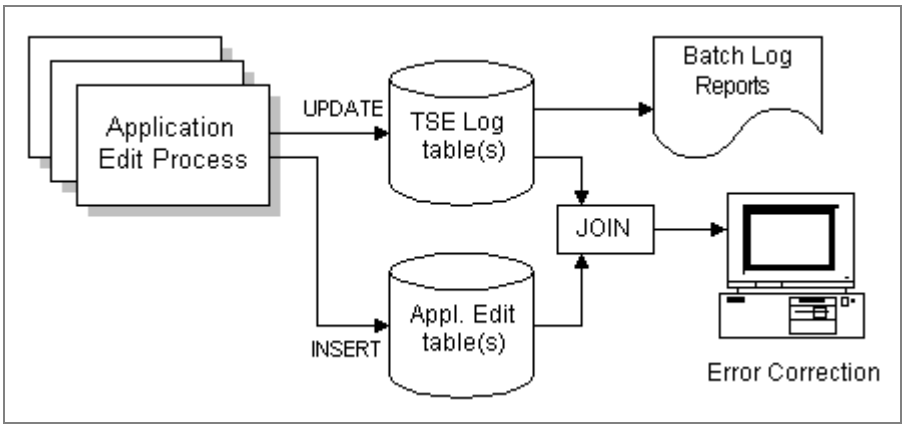
TSE Update-mode

Record edit errors are processed by updating the requested error flag on the table being edited (application edit table) with a user-specified (or default edit-type) value. The online retrieval of these flagged rows will then re-edit all page data enterable fields by activating the PeopleCode *SetReEdit* function, highlighting specific field errors for online correction.



TSE Log-mode

Record edit errors are processed by inserting rows into the requested TSE Log tables. These tables can then be queried for batch error reporting and/or joining with the application edit table for online error retrieval and correction.



Combination TSE Update/Log-modes

The application edit process can request only Update-mode for all TSE record edits against one or more edit tables, updating all rows in error. It would then call the TSE/API function (API Log) to subsequently log only application-based edit errors to the TSE Log tables. The flagged edit table errors and the related application edit errors, if any, can then be joined by PeopleCode to retrieve only those records with edit errors, displaying related edit error messages within a page scroll section.

Although you can request *both* Update and Log-mode options for TSE record edits, this strategy results in additional processing overhead. Consider these factors to determine the most appropriate process mode for your situation:

Issue	***What to Consider***
Performance	On many database platforms, the processing overhead incurred by SQL table row *inserts* (Log-mode) can be somewhat higher than that of row *updates* (Update-mode). In addition, Update-mode requests can exclude all previously-flagged rows in error from subsequent transaction set-edit requests.
Online Error Correction	Used in conjunction with the PeopleCode *SetReEdit* function, Update-mode rows flagged in error can be retrieved in online error correction with the re-edit of all page-enterable fields. This provides a field-level method of identifying the edit errors without incurring the overhead of generating Log-mode detail.
Detail Reporting	TSE Log entries provide a high-level of batch detail reporting capability without requiring additional edit table joins. Log table columns are user-defined; any edit table field can be included in the field-level TSE Log table definition. Also, all edit errors are defined by specific field name and value, with full table key fields included. Users can then create a reporting strategy to manage and produce reports from these Log tables, thereby providing some significant advantages for off-line analysis and batch correction of high-volume transaction edit errors.

TSE Environmental Requirements

Before using the Transaction Set Editor, you must setup your environment properly. This process entails:

- Including copy code members in application edit programs.
- Setting PTCTSEDT parameters.
- Checking for and eliminating reserved TSE fields in application calling programs.

The tables in this section provide information on these procedures.

Copy Code Members

The following copy code members must be included in your application edit programs to pass the required COBOL 01-level definitions to the TSE edit process:

Member	*Description*
SQLRT	Copy member PSCSQLRT: SQL communication.
TSEDT	Copy member PTCTSEDT: Transaction set edit request area (defined below).
LOGMS	Copy member PTCLOGMS: Message log control area.
COLUMN-SETUP	Standard COBOL API column name definitions for Select predicate to define transaction set request columns.
COLUMN-DATA	Column name values for COLUMN-SETUP entries.
TSEDT-SETUP	Standard API column field values that define the size and type of the columns in the SQL Select/Where predicate. Each TSEDT set (setup/data) must be associated with the corresponding COLUMN defined above.
TSEDT-DATA	Column data values for TSEDT-SETUP entries. These values specify which rows in the transaction table are considered part of the current transaction set.

PTCTSEDT Parameters

Copy members PSCSQLRT and PTCLOGMS provide the standard PeopleSoft SQL interface and message logging services, respectively. To request the TSE record edit process, you must set the following parameters, defined in copy code member PTCTSEDT, before the call to PTPTSEDT:

Parameter	*Description*
ACTION-TSE-EDITS	Perform record edits.
APPL-FIELD-ARRAY	Not applicable to TSE record edit requests.

Parameter	*Description*
EDIT-TYPE-FLAGS	Application edit-type request flags, based on Application Designer-defined *field use* (USEEDIT) edits. See Edit-Type Flags.
MESSAGE-NBR	Not applicable to TSE record edit requests (value set by TSE).
MESSAGE-PARM-ARRAY	Not applicable to TSE record edit requests.
MESSAGE-SET-NBR	Not applicable to TSE record edit requests (value set by TSE).
REQUEST-ACTION	Type of Application calling program request to TSE. Required, ***no default***:
REQUEST-FLAGS	Application request flags. See Application Request Flags.
TSE-AS-OF-DATE	Date used to validate reasonable date range and effective date (EFFDT). Required, ***no default***.
TSE-DESCR	Description of edit request from calling program. If blank, defaults to "(BATCH TRANSACTION SET-EDIT)."
TSEDT-WHERE-CLAUSE	Not applicable to TSE record edit requests.
TSE-ERRLOGNAME	Name of the TSE Log table prefix. If blank and Log-mode is requested, defaults to "TSE_LOG." This name is used to define the set of TSE Log tables to select/insert edit error rows as follows: (TSE_LOG)_SET—Transaction set-level; one edit error entry (row) is inserted per transaction set request. (TSE_LOG)_EDT—Field edit level; one entry for each type of error. (TSE_LOG)_FLD—Field edit level; one entry per each edit field in error.
TSE-FLAGNAME	Defines Update-mode request by specifying the edit table column name to update when edit errors are found. If non-blank, Update-mode is implied. Required for Update-mode, ***no default***.
TSE-FLAGVALUE	If Update-mode, this value is used to update the edit table "flag" column (defined by TSE-FLAGNAME) for each edit table row in error.
TSE-JOBID	Unique batch transaction edit job identifier. If blank, defaults to "(SET-EDIT)."
TSE-PROC-INSTANCE	Current batch Run ID (Process Instance) from FTPRUNID. Required, will default to LOGMS value of PROCESS_INSTANCE.

Parameter	Description
TSE-PROGRAM-NAME	Name of application calling program. If blank, defaults to "(PROGNM)."
TSE-RECNAME	Name of the application edit table (or View name) containing transaction sets to be edited. Required, ***no default***.
TSE-REQUEST-PARMS	Not applicable to TSE record edit requests.

Application Request Flags

The flag names listed in this table are used in conjunction with the REQUEST-FLAGS parameter in PTCTSEDT.

Flag	Definition	Default Value
ERRLOG-SET	If "Y", insert TSE Log *set-level* rows (TSE_LOG_SET).	N
ERRLOG-EDIT	If "Y", insert TSE Log *edit-level* rows (TSE_LOG_EDIT).	N
ERRLOG-FLD	If "Y", insert TSE Log *field-level* rows (TSE_LOG_FLD).	N
FIRST-ERROR	If "Y", all *rows* found to contain any field edit errors will be excluded from any subsequent field-level set-edits.	Y
ERRLOG-COUNT	If "Y" and Update-mode requested, return count of the number of rows in error from each set edit request. If Log-mode, return count of the total number of *field-level* edit errors from each set-edit request.	N
EDIT-FOREIGN	If "Y", the edit table is assumed to have been created external to PeopleSoft online (Application Designer) functions and therefore all *character* and *numeric* field types must contain *non-null* (blank or zero) values. However, all field columns defined by the set-edit request are excluded from this additional edit.	N

Edit-Type Flags

The flag names listed in the following table are used in conjunction with the EDIT-TYPE-FLAGS parameter in PTCTSEDT.

Flag	Definition	Default Value
TYPE-DATERANGE	If "Y", perform date check for reasonable value (within 30 days of AS-OF-DATE value). *Note:* During online page entry, date range errors produce only a *warning*.	N

Flag	Definition	Default Value
TYPE-PROMPTTBL	If "Y", perform edit to validate field value against Prompt table values, if specified. If field not *required*, character fields of spaces and numeric fields of zeros are not included in this edit.	Y
TYPE-REQUIRED	If "Y", perform edit to require *character* field type values to be non-blank, *date* values non-null, and *numeric* values non-zero.	Y
TYPE-XLATTBL	If "Y", perform edit to validate field value against defined Translate table values. If field not *required*, character fields of spaces and numeric fields of zeros are not included in this edit.	Y
TYPE-YESNO	If "Y", perform edit to require field value to be only "Y" or "N".	Y

Reserved TSE Fields

The following fields are established by TSE and are, therefore, not to be modified by the application calling programs:

Field	Description
TSE-RETURNED	Values returned by TSE to calling program: **RETURN-STATUS** Returned status from last call to PTPTSEDT. **TSE-ERROR-COUNT** The number of transaction edit errors found (TSE Log Field records inserted) during set edit request. Valid only if the RETURN-STATUS is blank.
TSEDT-CHECK	Internally used to validate integrity of LINKAGE-SECTION copy members.

Log Tables

The following sections describe the log tables associated with the Transaction Set Editor.

Set-Level Log

A typical TSE Log set-level table (TSE_LOG_SET) definition would contain (but not be limited to) the following column name fields (note required fields):

Column Name	Definition	KEY	Required
TSE_JOBID	Unique batch transaction edit job identifier.	Y	Y
TSE_PROC_INSTANCE	Current batch Process Instance.	Y	Y

Column Name	Definition	KEY	Required
TSE_SET_NBR	Transaction set sequence number that uniquely identifies this TSE-Log set-edit request.	Y	Y
TSE_PROGRAM_NAME	Name of application calling program.	N	N
TSE_RECNAME	Name of the application transaction *edit table*.	N	Y
TSE_AS_OF_DATE	Date used to validate reasonable date ranges and effective-date (EFFDT) checking.	N	Y
TSE_DESCR	Calling program's description of transaction set-edit request.	N	N
TSE_ERROR_COUNT	If *Update-mode*, total number of transaction edit errors found (that is, TSE Log field-level rows inserted) during set edit request. If *Log-mode*, total number of transaction rows in error during set edit request.	N	N
(Transaction Set Keys)	Application-defined predicate (SQL Select/Where clause) FIELDNAMEs follow the last required TSE field above. These fieldnames identify the transaction set and should match the fieldnames passed to PTPTSEDT (defined in linkage section COLUMN-DATA buffer). For example, if the application request is to select WHERE BUSINESS_UNIT = 'NEWGN', then column name BUSINESS_UNIT is defined here in the TSE Log Set table definition (column *value* is supplied by PTPTSEDT during SQL set-edit request).	N	N

Note. Each character (CHAR) field type is limited by program array tables to 30 characters in length.

Edit-Level Log

A typical TSE Log edit-level table (TSE_LOG_EDT) definition would contain the following columns:

Column Name	Definition	KEY	Required
TSE_JOBID	Unique batch transaction edit job identifier.	Y	Y

Column Name	Definition	KEY	Required
TSE_PROC_INSTANCE	Current batch Process Instance.	Y	Y
TSE_SET_NBR	Transaction set sequence number that uniquely identifies this TSE-Log set-edit request.	Y	Y
TSE_EDIT_TYPE	Field edit-type, based on Application Designer-defined PSRECFIELD edits (USEEDITS).	Y	Y
TSE_ERROR_COUNT	Number of transaction edit errors found for each *edit-type* during record set-edit.	N	N
MESSAGE_NBR	Message number within message set (value of TSE MESSAGE_SET_NBR is “104”).	N	N

Field-Level Log

A typical TSE Log field-level table (TSE_LOG_FLD) definition would contain the following columns:

Column Name	Definition	KEY	Required
TSE_JOBID	Unique batch transaction edit job identifier.	Y	Y
TSE_PROC_INSTANCE	Current batch Process Instance.	Y	Y
TSE_SET_NBR	Transaction set sequence number that uniquely identifies this TSE-Log set-edit request.	Y	Y
TSE_EDIT_TYPE	Field edit-type, based on Application Designer-defined PSRECFIELD edits (USEEDITS).	Y	Y
TSE_FIELDNAME	The name of the *edit table* field found to contain this edit error.	Y	Y
(Key field entries)	Application transaction *edit table* key FIELDNAMEs that uniquely identify each error field’s row. For example, the GL JRNL_HEADER table edit would require BUSINESS_UNIT, JOURNAL_ID, JOURNAL_DATE, and UNPOST_SEQ column names in the Error Log Field table definition.	Y	

TSE API Services

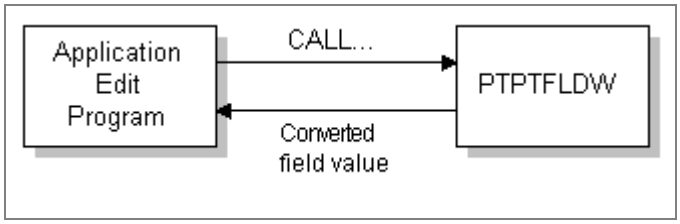
The following sections describe the API options available with the Transaction Set Editor.

Services Provided

Application edit modules can request the following additional services through the TSE Application Program Interface (TSE/API):

Program (Action) To Call	*Service Provided*
PTPTFLDW	Format field values into SQL statement compatible string, depending on type, length, and value of field.
PTPTSEDT	Based on value of REQUEST-ACTION: **ACTION-TSE-LOG** Perform application defined edit **(API Log)** requests to insert TSE Log table rows. **ACTION-TSE-WHERE** Build a SQL-Where clause based on the currently defined transaction set request.
PTPTSUSE	Translate the PSRECFIELD use-edit flags from binary word format to single character (flag value) format.

String Field Conversions



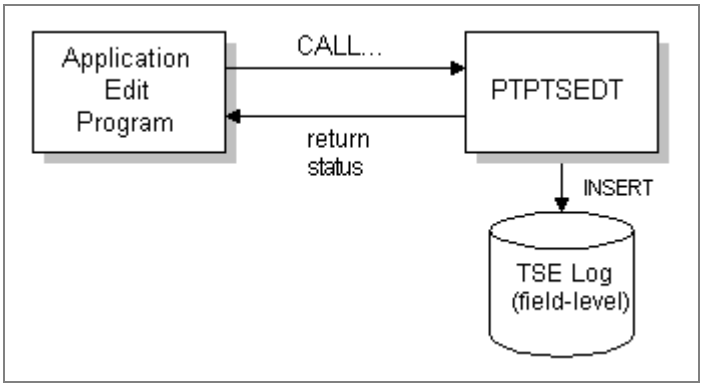
Convert String Values to Dynamic SQL-String Format.

By defining field *value*, *type*, and *length* variables in PTCTFLDW, a call to module PTPTFLDW will convert the input field value as follows:

1. Convert embedded single-quotes to (SQL/API required) double-quotes (character field types).
2. Zero-padding/truncation of numeric fields based on defined field length.
3. Enclose string literal values within single quotes (character/date types).

4. Define end-of-string with low-value byte.

Logging Application Errors



TSE Application-Edit Log (API Log)

This TSE/API function provides the application edit process with a direct interface to the TSE *field-level* Log table. Under TSE Log-mode, application edit errors are logged to the TSE Log table *within the same logical group* as the TSE record edit errors were logged. Once the application edit program completes its own dynamic SQL call request, the entire SQL predicate string is moved to TSEDT-WHERE-CLAUSE and passed to PTPTSEDT, where the appropriate SQL request statement is generated to insert edit error rows into the field-level TSE Log table. If the application does not require a set-edit request for a given field/record edit, a single row insert (SQL-INSERT-ROW) should be requested.

TSE Parameters for API Logging

To request the API Log process, the following parameters, defined in copy code member **PTCTSEDT**, must be set before the call to PTPTSEDT:

Parameter	*Description*
ACTION-TSE-LOG	API Log request to SQL-Insert TSE Log table entries.
APPL-FIELD-ARRAY	Specify up to ten TSE Log column names with values to override during Log-mode SQL-statement build. Note: Required for all column name fields on single-row insert requests. No defaults, ignored if blank:
BUILD-WHERE SQL-INSERT TSE-SET-NBR TSE-FIELDNAME	Retrieve current SQL-Where clause. Based on specific edit requirement, specify multiple-row SQL set-edit or single-row SQL-Insert. Change default TSE Log group by overriding the set number value for TSE Log table inserts. Specify value for single-row insert request (or to override set-edit request) for edit field column.

Parameter	*Description*
EDIT-TYPE-FLAGS	Not applicable to API Log requests.
FIELDNAME FIELDVALUE	Fieldname of TSE Log table column to override. Override-column value.
MESSAGE-NBR	Specify message number value for MESSAGE-SET-NBR. Include 88-level copy member here, if desired. No default.
MESSAGE-PARM MESSAGE-TYPE	Value of message text variable. Defines MESSAGE-PARM value as either a literal (default) or a fieldname.
MESSAGE-PARM-ARRAY	Specify up to three values for error message text variables. Each value will be inserted into the corresponding TSE Log table columns MESSAGE-PARM, MESSAGE-PARM2, and/or MESSAGE-PARM3. No defaults, ignored if blank.
MESSAGE-SET-NBR	Specify the application-based message set number to be inserted into the TSE Log table. Corresponds to values defined in MESSAGE-PARM-ARRAY. No default.
REQUEST-ACTION	Type of Application calling program request to TSE. Required, no default:
REQUEST-FLAGS	Application request flags. See Request Flags for API Logging.
TSE-AS-OF-DATE	Date retained from current TSE record edit request. Required, no default.
TSE-DESCR	Description of edit request from calling program, retained from current TSE record edit request. If blank, defaults to "(BATCH TRANSACTION SET-EDIT)."
TSEDT-WHERE-CLAUSE	Input buffer to pass SQL-Where clause edit statement. Output buffer to receive SQL-Where clause for current set-edit request. No default.
TSE-ERRLOGNAME	Name of the TSE Log table prefix, retained from current TSE record edit request. If blank, defaults to "TSE_LOG." This name is used by API Log request to define the field-level TSE Log table to Select/Insert edit error rows per application edit request.
TSE-FLAGNAME	Not applicable to API Log requests.
TSE-FLAGVALUE	Not applicable to API Log requests.

Parameter	Description
TSE-JOBID	Unique batch transaction edit job identifier, retained from current TSE record edit request. If blank, defaults to "(SET-EDIT)."
TSE-PROC-INSTANCE	Current batch Run ID (Process Instance) from FTPRUNID, retained from current TSE record edit request. Required, will default to LOGMS value of PROCESS_INSTANCE.
TSE-PROGRAM-NAME	Name of application calling program, retained from current TSE record edit request. If blank, defaults to "(PROGNM)."
TSE-RECNAME	Name of the application edit table (or View name) against which the edit request is to be performed. Required, no default.
TSE-REQUEST-PARMS	API Log request parameters. Required, no defaults:
WHERE-PTR WHERE-BUF	SQL-Where clause pointer value. SQL-Where clause buffer (null-terminated string).

Request Flags for API Logging

Name	Definition	Default Value
ERRLOG-SET	Not applicable to API Log requests.	N
ERRLOG-EDIT	Not applicable to API Log requests.	N
ERRLOG-FLD	Insert TSE Log *field-level* rows based on each API Log request, value retained from current TSE record edit request.	N
FIRST-ERROR	Not applicable to API Log requests.	Y
ERRLOG-COUNT	Not applicable to API Log requests.	N
EDIT-FOREIGN	Not applicable to API Log requests.	N

Reserved TSE Fields for API Logging

The following fields are established by TSE and are, therefore, not to be modified by the application calling programs:

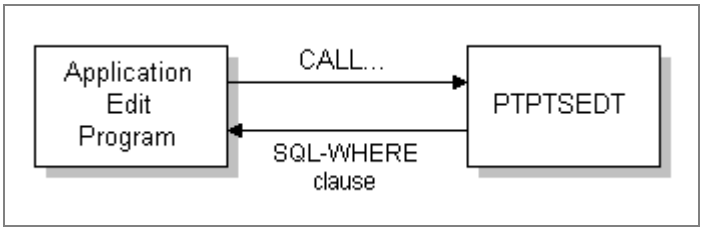
Field	*Description*
TSE-RETURNED	Values returned by TSE to calling program:
	RETURN-STATUS Returned status from last API Log request **TSE-ERROR-COUNT** Not applicable to API Log requests.
TSEDT-CHECK	Internally used to validate integrity of LINKAGE-SECTION copy members.

Note the sample API call to PTPTSEDT in program PSPAAPPL, section TA000-INSERT-TSELOG. Calling parameters are established near the end of section DC000-EDIT-APPL-FIELDA with a perform of DC400-SET-TSE-PARMS. All parameters set in PTCTSEDT will be retained throughout the edit process, therefore the application programs need set many parameters only once, then reset only those necessary for a given edit request. Note that the BUILD-WHERE-NO parameter is set to prevent rebuilding of the SQL-Where clause, which is not necessary at this point (it was already retrieved in prior ACTION-TSE-WHERE call to PTPTSEDT).

If the SQL-Where clause is requested for the API Log function (BUILD-WHERE-YES is set to TRUE), the current set-edit definition is used to create and append the SQL-Where to the application edit request (TSEDT-WHERE-CLAUSE), returning the entire SQL-Where clause string following the API call. Section DC000 then defines the remaining edit-specific parameters before the perform of TA000-INSERT-TSELOG. TSELOG-BAD-FIELD represents an 88-level definition in COPY member PSCATLOG, which relates to the TSE Log table message text variables (initialized here before the API call). If a *fieldname* is desired in a message parameter field, the MESSAGE-FIELDNAME variable must be set to TRUE. This is necessary in MESSAGE-PARM (1) to distinguish column *names* (FIELDA) from the default, column *literals*.

Application edits may also be specific to a *single edit table* record, rather than a *group* of records edited by each set-edit request. This example is shown in program PSPAAPPL, section DE000-EDIT-APPL-FIELDB. By setting the variable SQL-INSERT-ROW to TRUE, the application requests that a *single row* be inserted into the field-level TSE Log table, rather than the default multiple-row (set-edit) insert requests. Because one or more TSE Log table field values are derived from the *edit table* SQL sub-Select statement for each set-edit request, single-row insert requests must provide specific values (literals rather than column names) for each of these fields before the API call. These values are provided by moving the associated fieldnames and field values into APPL-FIELD-ARRAY in PTCTSEDT.

Building a WHERE Clause



Retrieve SQL-Where Clause

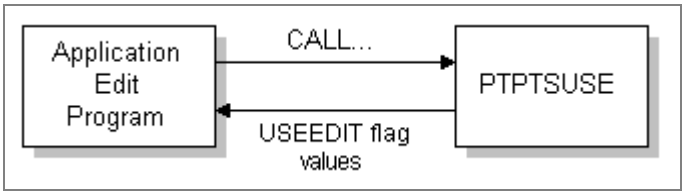
The TSE edit process builds dynamic SQL statements based on the requested record *set* request. This transaction set is specifically qualified by the SQL-*Where* clause, which is requested by calling PTPTSEDT with the TSE/API request ACTION-TSE-WHERE. The null-terminated Where clause string returned in TSEDT-WHERE-CLAUSE can then be included in the application module's own dynamic SQL statements for subsequent application set-edit requests.

To request the current SQL-Where clause from TSE/API, specify the appropriate REQUEST-ACTION, defined in copy code member PTCTSEDT, as follows:

Field	***Description***
REQUEST-ACTION	Type of Application calling program request to TSE. Required, no default.
ACTION-TSE-WHERE	Retrieve the current SQL Where-clause string.

All other parameters in PTCTSEDT should remain unchanged. See the example call to retrieve the SQL-Where clause in sample program PSPAAPPL, section DA000-APPL-SET-EDITS.

UseEdit Flag Translation



TSE/API: Retrieve Application Designer Flags

By passing the USEEDIT value from the *edit table* PSRECFIELD definition (copy member PTCTSUSE) to program PTPTSUSE, the application can retrieve the translated values for all Application Designer use-edit values. These values define application *key* and edit-field attributes useful to the application edit process (See USEEDIT-FLAGS in PTCTSUSE).

Internal Documentation

Program Module Flow

PTPTSEDT is the main control module for PS/BTP batch edit processing. It manages the program flow of control across all Application Designer-based field edits per application calling program request. A summary description of the main program and called sub modules are as follows (listed by internal TSE calling sequence):

Program Module	*Description*
PTPTSEDT	Provide control logic to apply Application Designer-defined field edits against all columns in requested application transaction *edit table*s. Through calls to the following sub-programs, each requested set of table rows are selected by and set-edited against each record's field attribute (USEEDIT) values. If appropriate, status/error messages are logged and a row count of edit errors is passed back to the application calling edit program.
PSPSQLRT	Provide COBOL interface to SQL run-time processing.
PTPLOGMS	Provide message logging interface to MESSAGE_LOG table functions.
PTPTSREQ	Validate all application request parameters passed to PTPTSEDT through copy member PTCTSEDT. All set-edit definition qualifiers passed through PS column/data array table format are also validated. All undefined parameter values are defaulted, if applicable, and TSE Log table name suffixes are appended.
PTPTSTBL	Retrieve PSRECFIELD definitions for the requested application *edit table*, extracting specific column-level information for creating the necessary array tables used to build dynamic SQL statements.
PTPTSUSE	Convert decimal USEEDIT value into corresponding flags that represent each Application Designer-based field edit (date-range, field required, prompt and translate table validations, and yes/no edit).
PTPTLREC	Retrieve PSRECFIELD definitions for the requested TSE Log tables, extracting specific column-level information for creating array tables used to build dynamic SQL statements.
PTPTSUPD	Update internal array tables based on current set-edit request parameters.
PTPTFLDW	Validate fieldvalue types and, if necessary, string field double quotes, enclose character strings in quotes, and/or format numeric field types.
PTPDYSQL	Provide COBOL interface to dynamic SQL statement validation and execution.

Program Module	*Description*
PTPTSFLD	Controls all TSE Log *field-level* set-edit processing. For each requested type of edit and against each table column that qualifies, calls modules PTPTSWHR, PTPTSWHE, and PTPTSLOG to build dynamic SQL statement and perform record edits.
PTPTSWHR	Build dynamic SQL-WHERE clause based on array table definition of *set* request.
PTPTSWHE	Build SQL-WHERE clause segment based on the specific *field edit* to be performed.
PTPDTWRK	Perform platform-specific *date* field computations and validation.
PTPTSLOG	Build SQL statement from program array tables to *update* the application *edit table* and/or *insert* TSE Log table rows with calls to PTPDYSQL.
PTPTSSET	For each requested type of edit and against each table column that qualifies, build dynamic SQL-INSERT and/or UPDATE statements from internal array tables. When passed to PTPDYSQL, these SQL requests perform global field-level set-editing against multiple rows of the transaction *edit table*, inserting error exception rows into the field-level TSE Log table.
PTPSETAD	Establishes address ability between data areas used to define SQL column values and/or bind variables, as defined by the PS interface (SQLSI) to PSPSQLRT.
PTPTSCNT	If requested, dynamic SQL statements are created to insert TSE Log table rows at the *edit* (by edit type) and/or *set* (by set request) levels. These entries include an error *row* count (if Update-mode) or an error *column* count (if Log-mode) at each level.

Narrative

During program initialization, all parameters passed in member PTCTSEDT are validated through a call to the request-validation module PTPTSREQ, where default values are set, as necessary. Each setup column value passed in TSEDT-SETUP and TSEDT-DATA, if any, is retrieved and validated, then stored in an array to define the SQL Select/Where *set-edit* criteria. If there are no errors, each corresponding setup column name in COLUMN-SETUP and COLUMN-DATA is retrieved, validated, and stored in the same array as the column values.

Module PTPTSTBL is called to retrieve all Application Designer (PSRECFIELD) definitions for the requested application *edit table*. Specific field attributes are stored in related array tables, then module PTPTSUSE is called to translate field use values into additional array table entries, as follows:

- FIELDNAME—Table column name.
- FIELDTYPE—Table column field type.
- KEYFIELD—Flag to indicate table key field definition.

- USEEDIT—Flags to define each field's Application Designer-based edits.
- EDITTABLE—Prompt table name (PROMPTTBL), if applicable.

For each field's specific Application Designer defined edit (USEEDIT) value greater than zero, the decimal value is extracted and decoded into its hex equivalent to determine each field edit to be applied as follows:

- DATERANGEEDIT—Reasonable date range edit.
- EDITTABLE—Field table prompt edit.
- REQUIRED—Field value is required.
- EDITXLAT—Translate table edit.
- YESNO—Yes/No field edit.

If Log-mode (TSE Log table row inserts) is requested and the Application Designer definitions have not previously been retrieved, module PTPTLREC is called to select TSE Log table definitions and their column names/attributes, storing the appropriate variables in separate array tables for each level (SET, EDIT, and FIELD) of logging requested. Module PTPTSUSE is again called to translate field attributes for each TSE Log table. The internal array tables are then updated with corresponding values from the parameters passed in PTCTSEDT for all "TSE_"-prefixed fieldnames. As necessary, module PTPTFLDW is called to provide field formatting (for example, stringing quotes around character field values, determining end of string, and so on).

Module PTPTSFLD is called to manage all field-level edit processing. It calls PTPTSWHR to build the WHERE clause that defines the transaction set. It then calls PTPTSWHE to generate the WHERE clause segment that identifies each specific type of edit requested. This module calls PTPTSUSE, if necessary, and PTPDTWRK, to support platform-specific date routines. Finally, PTPTSFLD requests the update/insert activity through module PTPTSLOG.

If requested, the edit process will then call program PTPTSSET to optionally build a dynamic SQL statement to insert a TSE Log Set table row that identifies the transaction set edit request. Each edit table array entry is then examined and, if applicable, used to build additional dynamic SQL statements to edit multiple transaction rows, based on the set criteria and the request for TSE Log table Inserts and/or edit table Updates. If edit error rows were subsequently inserted into the TSE Log Field table, a related TSE Log Edit table row is inserted, if requested. Processing errors are logged and edit results, if any, are returned to the application calling program. Note the following General Ledger application example.

General Ledger Example

If Update-mode is specified against the GL Journal Header table, a single SQL-Update statement is dynamically "strung" together to apply the multiple-row edit against each table column with a target field-edit type. The SQL-Where clause is built from the requested TSEDT-SETUP/DATA column names/values, appended to the Update statement, and passed to the dynamic SQL program, PTPDYSQL, for processing, as shown in the following Yes/No field edit:

```
UPDATE PS_JRNL_HEADER A
   SET JRNL_HDR_STATUS = 'E'
 WHERE (BUSINESS_UNIT = 'NEWGN'
   AND JOURNAL_ID = '300DPTXP'
   AND JOURNAL_DATE = '1993-01-31'
   AND UNPOST_SEQ = 00)
   AND JRNL_HDR_STATUS <> 'E'
   AND BALANCED_FLAG NOT IN ('Y','N')
```

The value of the error flag column, defined by TSE-FLAGNAME of TSEDT, is set to the value passed in FLAGVALUE. If no value was specified, the error flag value is set to one of the following letters:

- D—Date range edit.
- P—Prompt Table edit.
- R—Required Field edit.
- X—Translate Table edit.
- Y—Yes/No Field edit.

If Log-mode is requested, a similar SQL-Insert/Select statement is created to select/edit the specific set of rows for each field edit type, inserting edit error rows into the requested TSE Log *Field* table, as in the following Journal Line table example:

```
INSERT INTO PS_TSE_LOG_FLD
      (TSE_JOBID, TSE_PROC_INSTANCE, TSE_SET_NBR,
       TSE_EDIT_TYPE, TSE_FIELDNAME, BUSINESS_UNIT,
       JOURNAL_ID, JOURNAL_DATE, UNPOST_SEQ, JOURNAL_LINE)
    SELECT 'GLJRNLEDIT',999,1,'Y','BALANCED_FLAG',
           BUSINESS_UNIT, JOURNAL_ID, JOURNAL_DATE,
           UNPOST_SEQ, JOURNAL_LINE
      FROM PS_JRNL_LN
     WHERE (BUSINESS_UNIT = 'NEWGN'
       AND JOURNAL_ID = '300DPTXP'
       AND JOURNAL_DATE = '1993-01-31'
       AND UNPOST_SEQ = 00)
       AND JRNL_LINE_STATUS <> 1
       AND BALANCED_FLAG NOT IN ('Y','N')
```

If SetID is defined as one of the Prompt table key fields, a call to program PTPSHARE provides for table sharing. The returned value can be included for SetID validation, along with any required Effective date/status validation for both Prompt and Translate table edits, as follows:

```
... WHERE (BUSINESS_UNIT = 'NEWGN'
       AND JOURNAL_ID = '300DPTXP'
       AND JOURNAL_DATE = '1993-01-31'
```

```
AND UNPOST_SEQ = 00)
AND NOT EXISTS
     (SELECT 'X' FROM PS_SOURCE_TBL X
       WHERE SOURCE = A.SOURCE
         AND SETID = 'NEWGN'
         AND EFFDT =
              (SELECT MAX(EFFDT) FROM PS_SOURCE_TBL
                WHERE SOURCE = X.SOURCE
                  AND SETID = X.SETID
                  AND EFFDT <= '1992-06-01')
         AND EFF_STATUS = 'A');
```

Important. The WHERE clause is built using SETID = X.*column*, where *column* is SETID or, if not found, then BUSINESS_UNIT. If none of these columns can be found in the prompt table, then *no* SetID clause will be included for that column set-edit.

If an edit error count is requested, a subsequent SQL-Select statement is built and executed in module PTPTSCNT. If in *Update mode*, the generated statement returns a count of the total number of application edit table *rows* with an edit error of *any* type. If in *Log-mode*, the return count represents the total number of field edit-error *columns* (number of rows in TSE Log Field table with same TSE_SET_NBR value).

If the returned count is greater than zero, and TSE Log *Edit-level* processing is requested, a related "parent" row is inserted into the TSE_LOG_EDT table. If *Set-level* processing is requested, a related "grandparent" row is inserted into the TSE_LOG_SET table.

Finally, the error count and set-edit error status value are passed back from program PTPTSEDT to the calling application program through copy member PTCTSEDT. All other fatal processing error conditions (such as SQL errors, array table overflows, and string errors) are logged under standard TSE message numbers (message set 104) with a call to PTPLOGMS, and PTPTSEDT is terminated, as applicable.

TSE Messages

The following messages are defined in member PTCTMSGS, and are generated by the TSE process (MESSAGE_SET_NBR "104"):

Msg Num	*COBOL Reference Name*	*Programs*
1	**MSGID-CALL-FORMAT**	(All)
	Text: `TSE Program call format error: module PTPTxxxx, member xxxxx.`	
	Reason: A called module was unable to validate all Linkage section copy member coremarks (that is, source changes to copy members are not in sync across all compiled program modules).	

Msg Num	COBOL Reference Name	Programs
2	**MSGID-REQUEST-ERROR**	PTPTSREQ PTPTSTBL
	Text: `TSE Request parameter in error: xxxxxxxxxxxxxxxxxxx.`	
	Reason: One or more required set-edit request parameters passed in copy member PTCTSEDT is not valid.	
3	**MSGID-SQL-STMT-OVERFLOW**	(PTCTSTRE) PTPTFLDW PTPTSCNT PTPTSFLD PTPTSSET PTPTSWHE
	Text: `TSE Dynamic SQL statement/buffer overflow: module PTPTxxxx, process xxxxx.`	
	Reason: The size of the dynamic SQL statement buffer has been exceeded while attempting to build the requested statement.	
4	**MSGID-TABLE-OVERFLOW**	(PTCTARRO) PTPTFLDW PTPTLREC PTPTSFLD PTPTSTBL PTPTSWHE
	Text: `TSE Program array table overflow: module PTPTxxxx, process xxxxx.` *Reason:* An internal program array buffer is not large enough to contain the maximum number of requested entries.	
5	**MSGID-RECFLD-NOTFOUND**	PTPTSLOG
	Text: `Record xxxxxxxxxxxxxx not defined.`	
	Reason: TSE was unable to retrieve PSRECFIELD definitions for the requested table.	
6	**MSGID-SETID-NOTFOUND**	PTPTSTBL
	Text: `TSE SetID value not found in record xxxxxxxxxxx.`	
	Reason: The SetID value for the requested application table was not found to have an entry in the PS record definitions (PSRECFIELD table).	
7	**MSGID-PROMPT-KEYS**	PTPTSWHE
	Text: `TSE Prompt table validation could not find all required keys for record xxxxxxxxxxxxxx.`	
8	**MSGID-EDIT-DATERANGE**	PTPTSFLD

Msg Num	COBOL Reference Name	Programs
	Text: TSE Date range edit; value not within reasonable as-of-date range.	
9	**MSGID-EDIT-PROMPTTBL**	PTPTSFLD
	Text: TSE Prompt table edit; value not found in Prompt table.	
10	**MSGID-EDIT-REQUIRED**	PTPTSFLD
	Text: TSE Required field edit; value of required field is blank or zero.	
11	**MSGID-EDIT-XLATTABLE**	PTPTSFLD
	Text: TSE Translate table edit; value not found in Translate table.	
12	**MSGID-EDIT-YESNO**	PTPTSFLD
	Text: TSE Yes/No edit; value of field not "Y" or "N".	

CHAPTER 8

Database Level Auditing

PeopleSoft provides trigger-based auditing functionality as an alternative to the record-based auditing provided by Application Designer. Some countries require that you audit changes to certain data, while some companies take it upon themselves to audit who is making changes to sensitive data. This level of auditing is not only for maintaining the integrity of your data, but it is also a heightened security measure. PeopleSoft takes advantage of database triggers (offered by most RDBMS vendors), and when a user makes a change to a specified field you are monitoring, the changed data "triggers" the audit.

The information that a trigger records could include the user that made a change, the type of change made, when the change was made, and so on. Because the trigger records the user ID of the user modifying the base table, it is essential that you have the Enable DB Monitoring parameter set in PSADMIN.

Note. Also, note that this feature is not supported for Informix or DB2 UDB.

Note. If you implement trigger-based auditing, be aware that there is an unavoidable amount of additional overhead associated with auditing. This overhead can effect your system's overall performance.

The components involved with database level auditing are:

- **Base Record(s).** The base record is the record that you want to monitor, or audit, as in PS_ABSENCE_HIST. Presumably, the base record contains fields that you want to monitor. PeopleSoft recommends limiting the auditing of tables to the application tables and avoid auditing PeopleTools tables.
- **Audit Record.** The audit record is a custom record that you create with Application Designer. It stores the audit information for the fields on the base record that the trigger collects. Audit records begin with an AUDIT_ prefix.
- **Trigger.** The trigger is the mechanism that a user invokes upon making a change to a specified field. The trigger stores the audit information in the audit table. PeopleSoft provides a means by which you can create triggers. A sample name for a trigger might me PS_ABSENCE_HIST_TR.

Note. If you modify the record definition of the base record, then you must modify to the audit record and recreate the associated trigger.

Creating Audit Record Definitions

This discussion assumes that you already have an existing application table that you want to audit.

To audit a record using triggers, you must create a record definition and SQL table in which you store audit information. When creating the audit record, remove any attributes such as PARENT records, Query Security Records, and PeopleCode.

The easiest way to create an audit table is to open the record definition of the base record that you wish to audit. Save it as a new record, prefaced with AUDIT_.

Note. When you create a new audit record definition, be sure to name it with an AUDIT_ prefix. Some processes, such as the Employee ID Change and Employee ID Delete in PeopleSoft HRMS product line, make changes to certain fields, such as EMPLID. These processes will not affect any record definitions that begin with the AUDIT_ prefix, leaving your audit data secure.

Remove the all edit and key attributes from the newly saved record. Add to the top of the audit record the following three special audit-specific fields:

- AUDIT_OPRID
- AUDIT_STAMP
- AUDIT_ACTN

Make these fields required and keys. The following table explains the purpose of each audit-specific field.

Important. When you add these fields to your audit record, add them in the same order that they appear in the following table.

Audit Field Name	*Purpose*
AUDIT_OPRID	Identifies the user who caused the system to trigger the audits—either by performing an add, change, or delete to an audited field.
AUDIT_STAMP	Identifies the date and time the audit was triggered.
AUDIT_ACTN	Indicates the type of action the system audited. Possible action values include: I Row Inserted. D Row Deleted. B Row Updated, Snapshot before update. A Row Updated, Snapshot after update.

The audit table does not have to include all the columns of the base table. In fact, for performance reasons, it's best to only include those fields in your audit record that are deemed

"sensitive" or significant. When adding fields to your audit record, PeopleSoft recommends that you conform to the order that they appear in the base record.

Note. This functionality allows SQL Server requirement of not including ntext, text columns in the trigger syntax. Oracle also has a requirement to exclude longs from audit records.

The following example compares the base table to the audit table, showing the audit-specific fields and the fields that are to be audited in the audit table.

Base Table PS_ABSENCE_HIST	***Audit Table PS_AUDIT_ABSENCE***
	AUDIT_OPRID
	AUDIT_STAMP
	AUDIT_ACTN
EMPLID	EMPLID
ABSENCE_TYPE	ABSENCE_TYPE
BEGIN_DT	
RETURN_DT	
DURATION_DAYS	
DURATION_HOURS	
REASON	REASON
PAID_UNPAID	
EMPLOYER_APPROVED	
COMMENTS	

Note. Text and image fields are not allowed for the Comments field. For Microsoft SQL Server 7 the AUDIT_OPRID field should be defined to accept NULL values.

Once you save the record definition, you need to run the SQL Build procedure to build the SQL table in your RDBMS.

The following is an example of a SQL script for an audit record that would audit the PS_ABSENCE_HIST table:

```
-- WARNING:
--
-- This script should not be run in Data Mover.  It may contain platform
-- specific syntax that Data Mover is unable to comprehend.  Please use the
-- SQL query tool included with your database engine to process this script.
--
USE PT8A
```

```
go
SET IMPLICIT_TRANSACTIONS ON
go
IF EXISTS (SELECT 'X' FROM SYSOBJECTS WHERE TYPE = 'U' AND NAME =
 'PS_AUDIT_ABSENCE') DROP TABLE PS_AUDIT_ABSENCE
go
CREATE TABLE PS_AUDIT_ABSENCE (AUDIT_OPRID CHAR(8) NULL,
   AUDIT_STAMP PSDATETIME NOT NULL,
   AUDIT_ACTN CHAR(1) NOT NULL,
   AUDIT_RECNAME CHAR(15) NOT NULL,
   EMPLID CHAR(11) NOT NULL,
   ABSENCE_TYPE CHAR(3) NOT NULL,
   BEGIN_DT PSDATE NULL,
   RETURN_DT PSDATE NULL,
   DURATION_DAYS SMALLINT NOT NULL,
   DURATION_HOURS DECIMAL(2,1) NOT NULL,
   REASON CHAR(30) NOT NULL,
   PAID_UNPAID CHAR(1) NOT NULL,
   EMPLOYER_APPROVED CHAR(1) NOT NULL)
--   COMMENTS TEXT NULL) Text and Image Fields are not allowed
go
COMMIT
Go
```

If COMMENTS is not allowed during the actual creation of the audit table you should drop the column or not choose the column when creating the audit table definition.

PeopleSoft recommends that you delete the generated index script. Deleting the index eliminates the possibility of the duplicates causing trigger to fail.

Working with Auditing Triggers

A trigger is a database level object that the system initiates based on a specified event occurring on a table. Most RDBMS platforms support a form of database triggers.

Defining Auditing Triggers

Select PeopleTools, Utilities, Audit, Update Database Level Auditing.

The Audit Triggers page contains the following options.

Audit Record Name	Use the Browse button to search the PSRECDEFN table. The Audit name must exist before a trigger can be created.
Trigger name	By default the system names audit triggers using the following naming convention `<base record>_TR` For example, `ABSENCE_HIST_TR`
Audit Options	Select from the options Add, Change or Delete.
Create Trigger Statement	The statement is populated when the Generate Code button is clicked. You can customize the script if you need to. It depends on your preference. One of the following sections contains RDBMS information to help you view the contents of the script.
Generate Code	Click this button when you have completed the above fields in order to generate the Trigger Statement.

To define an audit trigger

1. Select **PeopleTools, Utilities, Audit, Update Database Level Auditing.**
2. Click **Add a New Value.**
3. Enter an existing base record.
4. Once in the Audit Trigger page you need to choose the record to hold the auditing data, the audit record.
5. Select the events to audit, as in when data is added, changed, or deleted. You can select all of the options.
6. Click the **Generate Code.**

   This generates the SQL that ultimately creates the trigger.
7. Click **Save.**

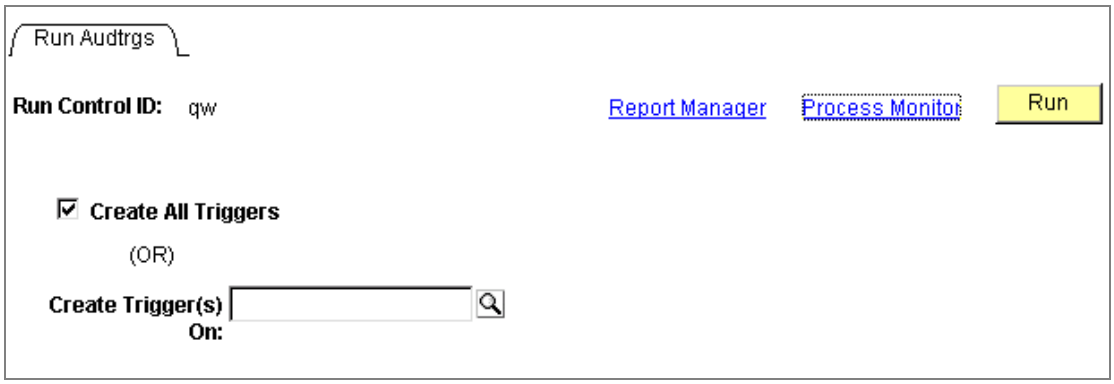
   All of this information—Record Name, Audit Record Name, Trigger Name, and Create Trigger Statement—get saved to the PeopleSoft table, PSTRIGGERDEFN.

   Perform these steps for each trigger you want to create. After you have created all the trigger statements, then you create and run the trigger script, which is described in the following section.

Creating and Running the Auditing Triggers Script

After you have created and modified all of your trigger statements, you need to create and run the trigger script against your database to physically create the triggers.

Select PeopleTools, Utilities, Audit, Perform Database Level Auditing.



Run Audit Triggers page

Create All Triggers If you select this checkbox, the Application Engine writes the Create Trigger statement to a file for every row in PSTRIGGERDEFN.

Create Triggers on Specify the particular table that the Trigger statement should be created for.

To create and run a trigger script

1. Select PeopleTools, Utilities, Auditing, Perform Database Level Auditing.

   This displays the Run Audit Triggers page.

2. Indicate the triggers that you want to be included in the script, all in PSTRIGGERDEFN or just those related to a specific table.

3. Click Run.

   This process invokes an Application Engine program that writes the Create Trigger statement to a file for every row in PSTRIGGERDEFN that you selected (all or for a specific table).

   The system writes the file to the location determined by the run location of the process. If run on the server the file is created in the PS_SRVRDIR directory. If run on a Windows Workstation the file is created in the directory specified by the %TEMP% environment variable.

   The file name is TRGCODEX.SQL where X represents a digit determined by the number of files by the same name that already exist in the output directory.

4. After you have created the SQL script, use your native SQL utility to run the script against your database.

Deleting Auditing Triggers

If you find that you no longer need a trigger you created, delete it using the following steps.

To delete a trigger

1. Select **PeopleTools, Utilities, Audit, Update Database Level Auditing**.
2. Open the trigger you want to delete.
3. Uncheck all the Audit options Add, Change, and Delete.
4. Click **Generate Code.**
5. Click **Save.**
6. Drop the trigger name from the database.

Viewing Audit Information

Viewing the data in the audit record is important. That's why you're storing the information. Because the information resides in a table within your RDBMS, you can extract it and manipulate it to suit your reporting needs. This section provides samples of how the information appears in an audit record and some sample queries you can construct with PS/Query.

The following example presents the contents of PS_AUDIT_ABSENCE after a trigger test.

```
AUDIT_OPRID AUDIT_STAMP                AUDIT_ACTN EMPLID      ABSENCE_TYPE BEGIN_DT
----------- -------------------------- ---------- ----------- ------------ --------------------------
BARNEY07    2000-01-11 16:25:13.380    I          GORD        CNF          1981-09-12 00:00:00.000
BARNEY07    2000-01-11 16:25:36.123    B          8001        CNF          1981-09-12 00:00:00.000
BARNEY07    2000-01-11 16:25:36.123    B          8001        CNF          1983-03-02 00:00:00.000
BARNEY07    2000-01-11 16:25:36.123    B          8001        CNF          1983-08-26 00:00:00.000
BARNEY07    2000-01-11 16:25:36.133    A          8001        VAC          1981-09-12 00:00:00.000
BARNEY07    2000-01-11 16:25:36.133    A          8001        VAC          1983-03-02 00:00:00.000
BARNEY07    2000-01-11 16:25:36.133    A          8001        VAC          1983-08-26 00:00:00.000
BARNEY07    2000-01-11 16:25:40.790    D          GORD        CNF          1981-09-12 00:00:00.000

RETURN_DT                  DURATION_DAYS DURATION_HOURS REASON                         PAID_UNPAID
-------------------------- ------------- -------------- ------------------------------ -----------
1981-09-26 00:00:00.000    14             .0            None                           P
1981-09-26 00:00:00.000    14             .0                                           P
1983-03-07 00:00:00.000    6              .0                                           P
1983-09-10 00:00:00.000    13            2.0                                           P
1981-09-26 00:00:00.000    14             .0                                           P
1983-03-07 00:00:00.000    6              .0                                           P
1983-09-10 00:00:00.000    13            2.0                                           P
1981-09-26 00:00:00.000    14             .0            None                           P

EMPLOYER_APPROVED COMMENTS
----------------- ----------------------------
Y                 This is the comments field
Y
Y
Y
Y                 This is an update
```

```
Y               This is an update
Y               This is an update
Y
```

Note. For Microsoft SQL Server 7 the AUDIT_OPRID field value will be NULL.

Creating Queries to View Audit Records Details

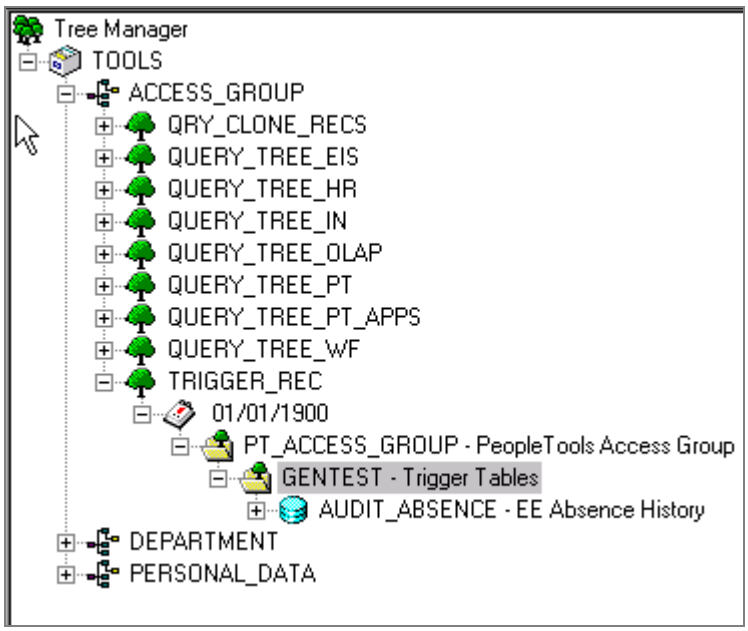
One way to view the information is to use PS/Query. This section provides some sample queries that show the type of information you can expect to view. This section assumes a working knowledge of PS/Query.

Specifically this section shows samples for the following queries:

- List all audit records in PS_AUDIT_ABSENCE
- List all audit records in PS_AUDIT_ABSENCE for a specified OPRID
- List all audit records in PS_AUDIT_ABSENCE that contain invalid OPRID
- List all audit records in PS_AUDIT_ABSENCE for a specified time period.

Creating an Access Group

First, it helps in tracking audit records to create an Access Group in Tree Manager that contains all audit records. This makes it easier to access the audit records under Query.



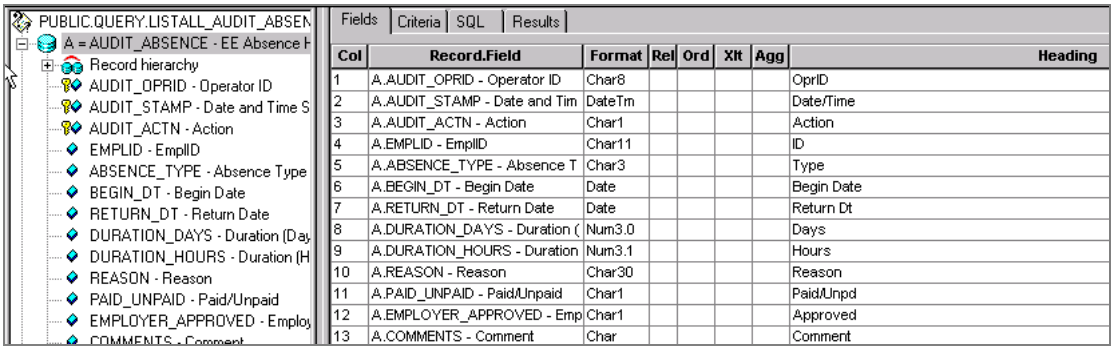
Creating an Access Group

See Also

PeopleTools PeopleBooks: PeopleSoft Tree Manager, Creating Trees

Listing All Audit Records in PS_AUDIT_ABSENCE

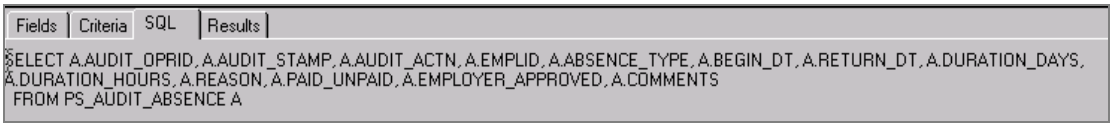
Select all the fields from AUDIT_ABSENCE. There are no extra criteria to add.



Col	Record.Field	Format	Rel	Ord	Xlt	Agg	Heading
1	A.AUDIT_OPRID - Operator ID	Char8					OprID
2	A.AUDIT_STAMP - Date and Tim	DateTm					Date/Time
3	A.AUDIT_ACTN - Action	Char1					Action
4	A.EMPLID - EmplID	Char11					ID
5	A.ABSENCE_TYPE - Absence T	Char3					Type
6	A.BEGIN_DT - Begin Date	Date					Begin Date
7	A.RETURN_DT - Return Date	Date					Return Dt
8	A.DURATION_DAYS - Duration (	Num3.0					Days
9	A.DURATION_HOURS - Duration	Num3.1					Hours
10	A.REASON - Reason	Char30					Reason
11	A.PAID_UNPAID - Paid/Unpaid	Char1					Paid/Unpd
12	A.EMPLOYER_APPROVED - Emp	Char1					Approved
13	A.COMMENTS - Comment	Char					Comment

Query Criteria

The SQL is as follows.



Query SQL

The results are as shown.

Fields | Criteria | SQL | Results

OprID	Date/Time	Action	ID	Typ	Begin Date	Return Dt	Day	Hour	Reason
BARNEY	2000-01-19-11.41.16.043000	I	G205	VAC	01/19/2000	09/09/2000	234	0.0	for fun
PS	2000-01-19-10.27.52.190000	I	GH07	CNF	01/19/2000	08/08/2000	202	0.0	
PTDMO	2000-01-19-10.27.02.760000	I	8665	DSC	01/19/2000	09/09/2000	234	0.0	
PTDMO	2000-01-19-10.27.19.713000	D	8665	DSC	01/19/2000	09/09/2000	234	0.0	
VP1	2000-01-19-10.20.32.630000	B	8001	DSC	09/12/1981	09/26/1981	14	0.0	
VP1	2000-01-19-10.20.32.640000	A	8001	VAC	09/12/1981	09/26/1981	14	0.0	
VP1	2000-01-19-10.20.39.660000	B	8001	PER	03/02/1983	03/07/1983	5	0.0	
VP1	2000-01-19-10.20.39.670000	A	8001	VAC	03/02/1983	03/07/1983	5	0.0	
VP1	2000-01-19-10.20.53.840000	D	8001	VAC	01/19/2000		45	0.0	For Fun in the Sun
VP1	2000-01-19-10.22.50.027000	I	8001	VAC	01/19/2000		34	0.0	For Fun
VP1	2000-01-19-10.24.30.423000	D	8001	VAC	01/19/2000		34	0.0	For Fun

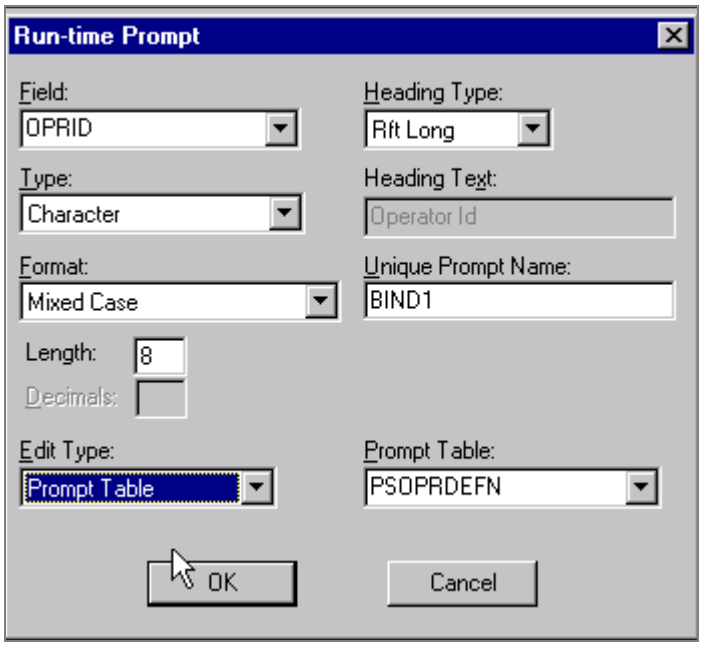
Query Results

Listing All Audit Records for a Specified User ID

This query is similar to the previous one but with the following criteria added.

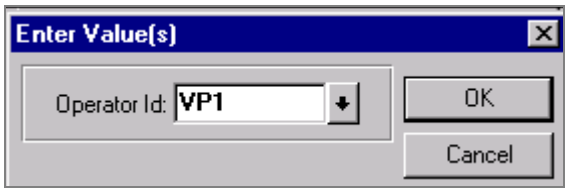
Query Criteria

The prompt for AUDIT_OPRID is defined as follows.



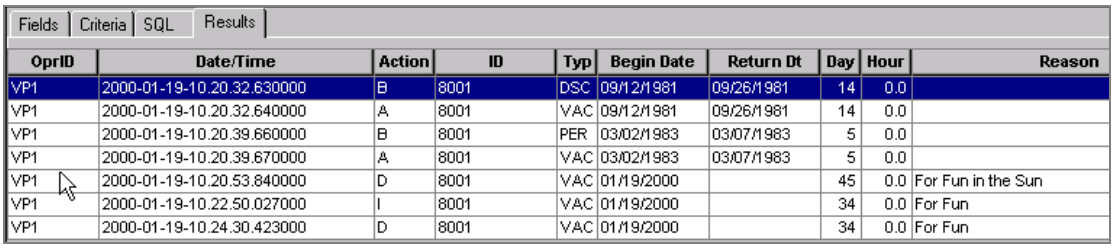
Query Run-time Prompt Dialog

Set up a prompt for User ID against the PSOPRDEFN table. That way when you run the query you can specify a particular User ID. In this case, the query focuses on User ID *VP1*.



Specifying a User ID

The results for the example appear below.

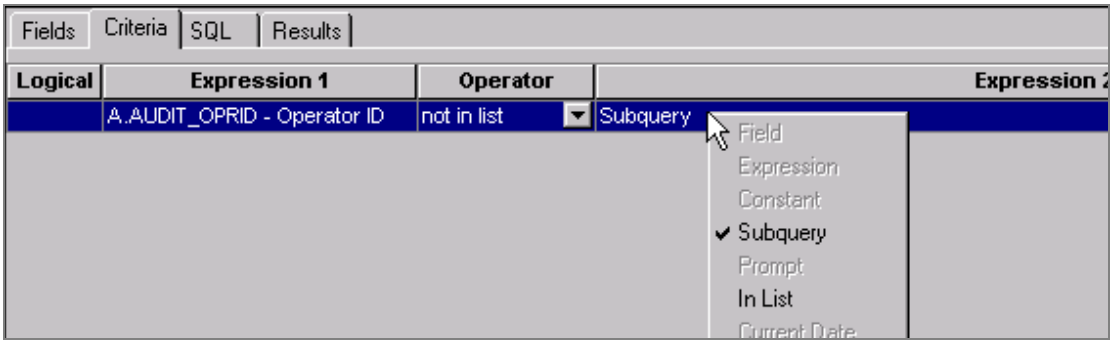


OprID	Date/Time	Action	ID	Typ	Begin Date	Return Dt	Day	Hour	Reason
VP1	2000-01-19-10.20.32.630000	B	8001	DSC	09/12/1981	09/26/1981	14	0.0	
VP1	2000-01-19-10.20.32.640000	A	8001	VAC	09/12/1981	09/26/1981	14	0.0	
VP1	2000-01-19-10.20.39.660000	B	8001	PER	03/02/1983	03/07/1983	5	0.0	
VP1	2000-01-19-10.20.39.670000	A	8001	VAC	03/02/1983	03/07/1983	5	0.0	
VP1	2000-01-19-10.20.53.840000	D	8001	VAC	01/19/2000		45	0.0	For Fun in the Sun
VP1	2000-01-19-10.22.50.027000	I	8001	VAC	01/19/2000		34	0.0	For Fun
VP1	2000-01-19-10.24.30.423000	D	8001	VAC	01/19/2000		34	0.0	For Fun

Viewing Query Results

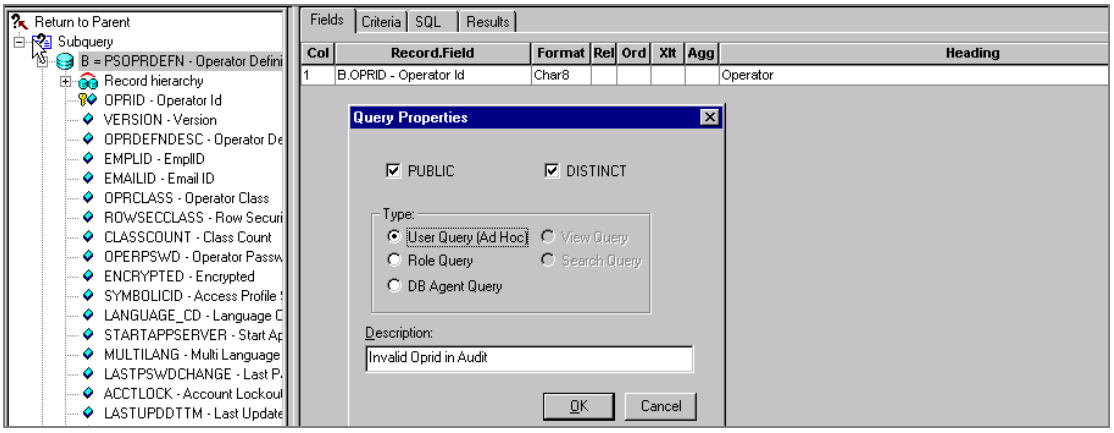
Listing All Audit Records Containing an Invalid OPRID

This query is similar to the previous but you specify different criteria.



Query Criteria

Right click on Expression 2.



Viewing Query Properties

The subquery selects distinct User ID from PSOPRDEFN. The SQL for the query should look like the following.

Fields | Criteria | SQL | Results

```
SELECT A.AUDIT_OPRID, A.AUDIT_STAMP, A.AUDIT_ACTN, A.EMPLID, A.ABSENCE_TYPE, A.BEGIN_DT, A.RETURN_DT, A.DURATION_DAYS,
A.DURATION_HOURS, A.REASON, A.PAID_UNPAID, A.EMPLOYER_APPROVED, A.COMMENTS
 FROM PS_AUDIT_ABSENCE A
 WHERE A.AUDIT_OPRID NOT IN (SELECT DISTINCT B.OPRID
 FROM PSOPRDEFN B)
```

Query SQL

The results of the query are as follows:

Fields | Criteria | SQL | Results

OprID	Date/Time	Action	ID	Typ	Begin Date	Return Dt	Day	Hour	Reason
BARNEY	2000-01-19-11.41.16.043000	I	G205	VAC	01/19/2000	09/09/2000	234	0.0	for fun

Query Results

Listing All Audit Records For a Specified Time Period

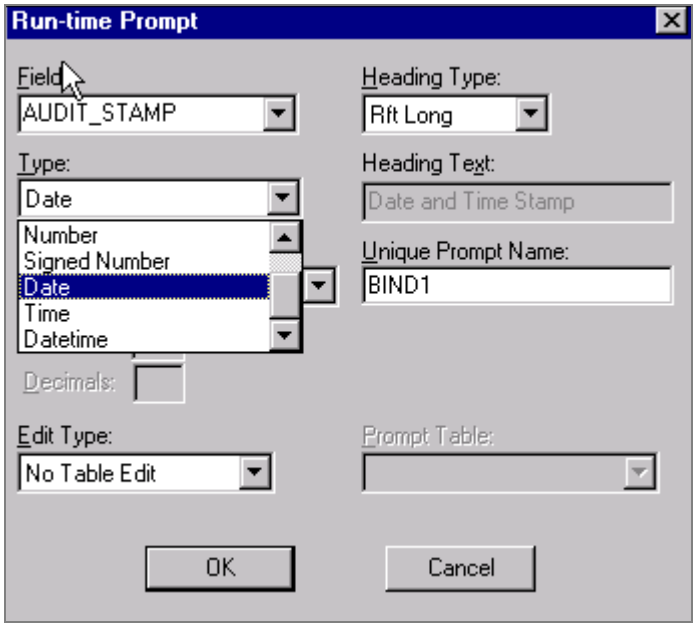
This query contains the same fields as in the previous queries above, just different criteria.

Fields | Criteria | SQL | Results

Logical	Expression 1	Operator	Expression 2
	A.AUDIT_STAMP - Date and Tim	greater than	:1
AND	A.AUDIT_STAMP - Date and Tim	less than	:2

Query Criteria

Set the run-time prompts to reflect the following.



Run-time Prompt

The prompts for the AUDIT_STAMP need to have the type changed from date/time to date. This enables the query to take advantage of the calendar control as a prompt mechanism.

The results of the query are as follows.

Fields | Criteria | SQL | Results

OprID	Date/Time	Action	ID	Typ	Begin Date	Return Dt	Day	Hour	Reason
BARNEY	2000-01-19-11.41.16.043000	I	G205	VAC	01/19/2000	09/09/2000	234	0.0	for fun
PS	2000-01-19-10.27.52.190000	I	GH07	CNF	01/19/2000	08/08/2000	202	0.0	
PTDMO	2000-01-19-10.27.02.760000	I	8665	DSC	01/19/2000	09/09/2000	234	0.0	
PTDMO	2000-01-19-10.27.19.713000	D	8665	DSC	01/19/2000	09/09/2000	234	0.0	
VP1	2000-01-19-10.20.32.630000	B	8001	DSC	09/12/1981	09/26/1981	14	0.0	
VP1	2000-01-19-10.20.32.640000	A	8001	VAC	09/12/1981	09/26/1981	14	0.0	
VP1	2000-01-19-10.20.39.660000	B	8001	PER	03/02/1983	03/07/1983	5	0.0	
VP1	2000-01-19-10.20.39.670000	A	8001	VAC	03/02/1983	03/07/1983	5	0.0	
VP1	2000-01-19-10.20.53.840000	D	8001	VAC	01/19/2000		45	0.0	For Fun in the Sun
VP1	2000-01-19-10.22.50.027000	I	8001	VAC	01/19/2000		34	0.0	For Fun
VP1	2000-01-19-10.24.30.423000	D	8001	VAC	01/19/2000		34	0.0	For Fun

Query Results

Microsoft SQL Server Trigger Information

The following information applies to Microsoft SQL Server triggers.

Note. Microsoft SQL Server Limitation - Image and Text Columns in tables can't be selected from the trigger tables INSERTED and DELETED.

Microsoft SQL Server: Trigger Syntax

To audit INSERTS, UPDATES, and DELETES of your records use trigger with the following format:

Replace the names in ***bold Italics*** with the appropriate names for the trigger you are constructing.

```
CREATE TRIGGER PS_ABSENCE_HIST_TR ON PS_ABSENCE_HIST
FOR DELETE , INSERT , UPDATE
AS
SET NOCOUNT ON
DECLARE @XTYPE CHAR(1), @OPRID CHAR(8)
SET @OPRID = NULL
The code in brackets below will only be generate on SQL Server 2000 platforms.
Context_info is new functionality in SQL Server 2000.
[SELECT @OPRID = substring(cast(context_info as
char(128)),1,(charindex(',',cast(context_info as char(128)))-1))
            FROM master..sysprocesses
            WHERE spid = @@spid]

-- Determine Transaction Type
```

```
IF EXISTS (SELECT * FROM DELETED)
BEGIN
SET @XTYPE = 'D'
END

IF EXISTS (SELECT * FROM INSERTED)
BEGIN
IF (@XTYPE = 'D')
 BEGIN
  SET @XTYPE = 'U'
 END
ELSE
 BEGIN
  SET @XTYPE = 'I'
 END
END
-- Transaction is a Delete
IF (@XTYPE = 'D')
BEGIN
INSERT INTO PS_AUDIT_ABSENCE
(AUDIT_OPRID,AUDIT_STAMP,AUDIT_ACTN,
EMPLID,ABSENCE_TYPE,BEGIN_DT,RETURN_DT,DURATION_DAYS,DURATION_HOURS,REASON,PAI
D_UNPAID,EMPLOYER_APPROVED)
SELECT @OPRID,getdate(),'D',
EMPLID,ABSENCE_TYPE,BEGIN_DT,RETURN_DT,DURATION_DAYS,DURATION_HOURS,REASON,PAI
D_UNPAID,EMPLOYER_APPROVED FROM deleted
END
-- Transaction is a Insert
IF (@XTYPE = 'I')
BEGIN
INSERT INTO PS_AUDIT_ABSENCE
(AUDIT_OPRID,AUDIT_STAMP,AUDIT_ACTN,
EMPLID,ABSENCE_TYPE,BEGIN_DT,RETURN_DT,DURATION_DAYS,DURATION_HOURS,REASON,PAI
D_UNPAID,EMPLOYER_APPROVED)
SELECT @OPRID,getdate(),'I',
EMPLID,ABSENCE_TYPE,BEGIN_DT,RETURN_DT,DURATION_DAYS,DURATION_HOURS,REASON,PAI
D_UNPAID,EMPLOYER_APPROVED FROM inserted
END
-- Transaction is a Update
IF (@XTYPE = 'U')
BEGIN
-- Before Update
INSERT INTO PS_AUDIT_ABSENCE
(AUDIT_OPRID,AUDIT_STAMP,AUDIT_ACTN,
EMPLID,ABSENCE_TYPE,BEGIN_DT,RETURN_DT,DURATION_DAYS,DURATION_HOURS,REASON,PAI
D_UNPAID,EMPLOYER_APPROVED)
SELECT @OPRID,getdate(),'B',
```

```
EMPLID,ABSENCE_TYPE,BEGIN_DT,RETURN_DT,DURATION_DAYS,DURATION_HOURS,REASON,PAI
D_UNPAID,EMPLOYER_APPROVED FROM deleted
-- After Update
INSERT INTO PS_AUDIT_ABSENCE
(AUDIT_OPRID,AUDIT_STAMP,AUDIT_ACTN,
EMPLID,ABSENCE_TYPE,BEGIN_DT,RETURN_DT,DURATION_DAYS,DURATION_HOURS,REASON,PAI
D_UNPAID,EMPLOYER_APPROVED)
SELECT @OPRID,getdate(),'A',
EMPLID,ABSENCE_TYPE,BEGIN_DT,RETURN_DT,DURATION_DAYS,DURATION_HOURS,REASON,PAI
D_UNPAID,EMPLOYER_APPROVED FROM inserted
END
```

Microsoft SQL Server: Capturing Text/Image Columns

If you wish to audit text or image columns with SQL Server you will have to manually alter the trigger scripts that are generated. The trigger scripts generated via the online pages do not support text or image columns. Below is an example of how a join against the base table can capture the value of the COMMENTS field after an insert, or update is performed.

```
CREATE TRIGGER PS_ABSENCE_HIST_TR ON PS_ABSENCE_HIST
FOR DELETE , INSERT , UPDATE
AS
SET NOCOUNT ON
DECLARE @XTYPE CHAR(1), @OPRID CHAR(8)
SET @OPRID = NULL
The code in brackets below will only be generate on SQL Server 2000 platforms.
Context_info is new functionality in SQL Server 2000.
[SELECT @OPRID = substring(cast(context_info as
char(128)),1,(charindex(',',cast(context_info as char(128)))-1))
            FROM master..sysprocesses
            WHERE spid = @@spid]


IF EXISTS (SELECT * FROM DELETED)
BEGIN
SET @XTYPE = 'D'
END

IF EXISTS (SELECT * FROM INSERTED)
BEGIN
IF (@XTYPE = 'D')
 BEGIN
  SET @XTYPE = 'U'
 END
ELSE
 BEGIN
```

```
  SET @XTYPE = 'I'
 END
END
-- Transaction is a Delete
IF (@XTYPE = 'D')
BEGIN
INSERT INTO PS_AUDIT_ABSENCE
(AUDIT_OPRID,AUDIT_STAMP,AUDIT_ACTN,
EMPLID,ABSENCE_TYPE,BEGIN_DT,RETURN_DT,DURATION_DAYS,DURATION_HOURS,REASON,PAI
D_UNPAID,EMPLOYER_APPROVED,COMMENTS)
SELECT @OPRID,getdate(),'D',
A.EMPLID,A.ABSENCE_TYPE,A.BEGIN_DT,A.RETURN_DT,A.DURATION_DAYS,A.DURATION_HOUR
S,A.REASON,A.PAID_UNPAID,A.EMPLOYER_APPROVED,''
FROM deleted A
END
-- Transaction is a Insert
IF (@XTYPE = 'I')
BEGIN
INSERT INTO PS_AUDIT_ABSENCE
(AUDIT_OPRID,AUDIT_STAMP,AUDIT_ACTN,
EMPLID,ABSENCE_TYPE,BEGIN_DT,RETURN_DT,DURATION_DAYS,DURATION_HOURS,REASON,PAI
D_UNPAID,EMPLOYER_APPROVED,COMMENTS)
SELECT @OPRID,getdate(),'I',
A.EMPLID,A.ABSENCE_TYPE,A.BEGIN_DT,A.RETURN_DT,A.DURATION_DAYS,A.DURATION_HOUR
S,A.REASON,A.PAID_UNPAID,A.EMPLOYER_APPROVED,B.COMMENTS
FROM inserted A, PS_ABSENCE_HIST B
WHERE A.EMPLID = B.EMPLID
  AND A.ABSENCE_TYPE = B.ABSENCE_TYPE
  AND A.BEGIN_DT = B.BEGIN_DT

END
-- Transaction is a Update
IF (@XTYPE = 'U')
BEGIN
-- Before Update
INSERT INTO PS_AUDIT_ABSENCE
(AUDIT_OPRID,AUDIT_STAMP,AUDIT_ACTN,
EMPLID,ABSENCE_TYPE,BEGIN_DT,RETURN_DT,DURATION_DAYS,DURATION_HOURS,REASON,PAI
D_UNPAID,EMPLOYER_APPROVED,COMMENTS)
SELECT @OPRID,getdate(),'B',
A.EMPLID,A.ABSENCE_TYPE,A.BEGIN_DT,A.RETURN_DT,A.DURATION_DAYS,A.DURATION_HOUR
S,A.REASON,A.PAID_UNPAID,A.EMPLOYER_APPROVED,''
FROM deleted A

-- After Update
INSERT INTO PS_AUDIT_ABSENCE
(AUDIT_OPRID,AUDIT_STAMP,AUDIT_ACTN,
```

```
EMPLID,ABSENCE_TYPE,BEGIN_DT,RETURN_DT,DURATION_DAYS,DURATION_HOURS,REASON,PAI
D_UNPAID,EMPLOYER_APPROVED,COMMENTS)
SELECT @OPRID,getdate(),'A',
A.EMPLID,A.ABSENCE_TYPE,A.BEGIN_DT,A.RETURN_DT,A.DURATION_DAYS,A.DURATION_HOUR
S,A.REASON,A.PAID_UNPAID,A.EMPLOYER_APPROVED,B.COMMENTS
FROM inserted A, PS_ABSENCE_HIST B
WHERE A.EMPLID = B.EMPLID
  AND A.ABSENCE_TYPE = B.ABSENCE_TYPE
  AND A.BEGIN_DT = B.BEGIN_DT
END
```

Microsoft SQL Server Trigger Maintenance

The following commands may be helpful when administering triggers.

List all triggers in a Database

```
SELECT name  FROM sysobjects WHERE type = 'TR'
```

List the Trigger Definition

```
sp_helptext TRIGGERNAME
```

List Trigger Information

```
sp_helptrigger BASE TABLE NAME
```

Returns the type or types of triggers defined on the specified table for the current database.

```
sp_help TRIGGERNAME
```

Reports information about a database object (any object listed in the sysobjects table), a user-defined data type, or a data type supplied by Microsoft SQL Server.

To remove a trigger

```
drop trigger TRIGGERNAME
```

To modify an existing trigger

```
ALTER trigger …
```

See full definition in SQL Server Books Online.

Alters the definition of a trigger created previously by the CREATE TRIGGER statement.

Disable Trigger

```
ALTER TABLE table     | {ENABLE | DISABLE} TRIGGER          {ALL |
trigger_name[,...n]}
```

{ENABLE | DISABLE } TRIGGER - Specifies that trigger_name is enabled or disabled. When a trigger is disabled it is still defined for the table; however, when INSERT, UPDATE or DELETE statements are executed against the table, the actions in the trigger are not performed until the trigger is reenabled.

- **ALL.** Specifies that all triggers in the table are enabled or disabled.
- **trigger_name.** Specifies the name of the trigger to disable or enable.

Sybase Trigger Information

The follow information applies to Sybase triggers.

Sybase Trigger Syntax

The following example shows the syntax for creating triggers on Sybase

```
CREATE TRIGGER PS_ABSENCE_HIST_TR
ON PS_ABSENCE_HIST
FOR INSERT, UPDATE, DELETE AS
BEGIN
  DECLARE @XTYPE CHAR(1), @OPRID CHAR(8)

  IF EXISTS (SELECT 'X' FROM deleted)
    SELECT @XTYPE = 'D'

  IF EXISTS (SELECT 'X' FROM inserted)
  BEGIN
    IF (@XTYPE = 'D')
      SELECT @XTYPE = 'U'
  ELSE
      SELECT @XTYPE = 'I'
  END

  SELECT @OPRID = substring(clientname, 1, charindex(',', clientname) - 1)
    FROM master..sysprocesses
    WHERE spid = @@spid

  -- Transaction is a Delete and the Delete Part of an Update
  IF (@XTYPE = 'D') OR (@XTYPE = 'U')
  BEGIN
    IF (@XTYPE = 'U')
      SELECT @XTYPE = 'B'
    INSERT INTO PS_AUDIT_ABSENCE
    (AUDIT_OPRID,AUDIT_STAMP,AUDIT_ACTN,
```

```
EMPLID,ABSENCE_TYPE,BEGIN_DT,RETURN_DT,DURATION_DAYS,DURATION_HOURS,REASON,PAI
D_UNPAID,EMPLOYER_APPROVED)
    SELECT @OPRID, getdate(), @XTYPE,

EMPLID,ABSENCE_TYPE,BEGIN_DT,RETURN_DT,DURATION_DAYS,DURATION_HOURS,REASON,PAI
D_UNPAID,EMPLOYER_APPROVED
    FROM deleted
  END

  -- Transaction is a Insert and the Insert Part of an Update
  IF (@XTYPE = 'I') OR (@XTYPE = 'B')
  BEGIN
    IF (@XTYPE = 'B')
      SELECT @XTYPE = 'A'
    INSERT INTO PS_AUDIT_ABSENCE
    (AUDIT_OPRID,AUDIT_STAMP,AUDIT_ACTN,

EMPLID,ABSENCE_TYPE,BEGIN_DT,RETURN_DT,DURATION_DAYS,DURATION_HOURS,REASON,PAI
D_UNPAID,EMPLOYER_APPROVED)
    SELECT @OPRID,getdate(), @XTYPE,

EMPLID,ABSENCE_TYPE,BEGIN_DT,RETURN_DT,DURATION_DAYS,DURATION_HOURS,REASON,PAI
D_UNPAID,EMPLOYER_APPROVED
    FROM inserted
  END
END
```

Sybase Trigger Maintenance

The following topics reveal commands that are useful in conjunction with the trigger feature.

List all triggers in a Database

```
SELECT name  FROM sysobjects WHERE type = 'TR'
```

List the Trigger Definition

```
sp_helptext TRIGGERNAME
```

List Trigger Information

```
sp_help TRIGGERNAME
```

Reports information about a database object (any object listed in the sysobjects table), a user-defined data type, or a data type supplied by Microsoft SQL Server.

To remove a trigger

```
drop trigger TRIGGERNAME
```

Disable Trigger

```
ALTER TABLE table     | {ENABLE | DISABLE} TRIGGER    { trigger_name}
```

{ENABLE | DISABLE } TRIGGER specifies that trigger_name is enabled or disabled. When a trigger is disabled it is still defined for the table; however, when INSERT, UPDATE or DELETE statements are executed against the table, the actions in the trigger are not performed until the trigger is enabled.

- **ALL.** Specifies that all triggers in the table are enabled or disabled.
- **trigger_name.** Specifies the name of the trigger to disable or enable.

Oracle

The following syntax and commands may be helpful as you create and administer your triggers.

The triggers generated on the Oracle platform reference a function that PeopleSoft delivers to obtain the PS_OPRID. This function must be installed into the Oracle database schema for the PeopleSoft database prior to creating the trigger. This function can be installed by executing the following SQL as the PeopleSoft database owner ID:

```
$PS_HOME\scripts\getpsoprid.sql
```

Oracle Trigger Syntax

The following example shows the Oracle trigger syntax.

```
drop function GET_PS_OPRID
/
create function GET_PS_OPRID (v_client_info VARCHAR2 )
        return VARCHAR2 is
        i integer;
/* Title: GET_PS_OPRID                                        */
/* Purpose: Retrieves the operator id (OPRID)                 */
/*          from a VARCHAR2 comma separated field             */
/*          of the format 'OPRID,OS_USER,MACHINE'             */
/*          If no OPRID is found, it returns '!NoOPRID'       */
/* Limitations: (any grants, privileges, etc)                 */
/* Who: PeopleSoft Inc.                                       */
/* Date: 2000-04-07                                           */
begin
        if ( length(v_client_info) IS NULL ) then
                return('!NoOPRID');
        end if;
        if ( substr(v_client_info,1,1) = ',' ) then
                return('!NoOPRID');
```

```
        end if;
        i := 1;
        while ( (substr(v_client_info,i,1)) <> ',' and i < 10) loop
                i := i + 1;
        end loop;
        if ( i > 9 ) then
                return('!NoOPRID');
        else
                i := i - 1;
                return (substr (v_client_info, 1, i));
        end if;
end GET_PS_OPRID;
/
grant execute on GET_PS_OPRID to public
/

/* If Transaction is an Insert Or Update              */
/*    Capture After Values                            */
/* If Transaction is a Delete or Update               */
/*    Capture Before Values                           */

CREATE OR REPLACE TRIGGER PS_ABSENCE_HIST_TR
AFTER INSERT OR UPDATE OR DELETE ON PS_ABSENCE_HIST
FOR EACH ROW
DECLARE
        V_AUDIT_OPRID VARCHAR2(64);
BEGIN
    DBMS_APPLICATION_INFO.READ_CLIENT_INFO(V_AUDIT_OPRID);
  IF :OLD.EMPLID IS NULL
  THEN
        INSERT INTO PS_AUDIT_ABSENCE
        VALUES (
                GET_PS_OPRID(V_AUDIT_OPRID) ,
                SYSDATE                                    ,
                'I'                                        ,
                :NEW.EMPLID                                ,
                :NEW.ABSENCE_TYPE                          ,
                :NEW.BEGIN_DT                              ,
                :NEW.RETURN_DT                             ,
                :NEW.DURATION_DAYS                         ,
                :NEW.DURATION_HOURS                        ,
                :NEW.REASON                                ,
                :NEW.PAID_UNPAID                           ,
                :NEW.EMPLOYER_APPROVED
                );
```

```
ELSE
    IF :NEW.EMPLID IS NULL
    THEN
      INSERT INTO PS_AUDIT_ABSENCE
      VALUES (
              GET_PS_OPRID(V_AUDIT_OPRID) ,
              SYSDATE                                ,
              'D'                                    ,
              :OLD.EMPLID                            ,
              :OLD.ABSENCE_TYPE                      ,
              :OLD.BEGIN_DT                          ,
              :OLD.RETURN_DT                         ,
              :OLD.DURATION_DAYS                     ,
              :OLD.DURATION_HOURS                    ,
              :OLD.REASON                            ,
              :OLD.PAID_UNPAID                       ,
              :OLD.EMPLOYER_APPROVED
              );
    ELSE
      INSERT INTO PS_AUDIT_ABSENCE
      VALUES (
              GET_PS_OPRID(V_AUDIT_OPRID) ,
              SYSDATE                                ,
              'B'                                    ,
              :OLD.EMPLID                            ,
              :OLD.ABSENCE_TYPE                      ,
              :OLD.BEGIN_DT                          ,
              :OLD.RETURN_DT                         ,
              :OLD.DURATION_DAYS                     ,
              :OLD.DURATION_HOURS                    ,
              :OLD.REASON                            ,
              :OLD.PAID_UNPAID                       ,
              :OLD.EMPLOYER_APPROVED
              );
      INSERT INTO PS_AUDIT_ABSENCE
      VALUES (
              GET_PS_OPRID(V_AUDIT_OPRID) ,
              SYSDATE                                ,
              'A'                                    ,
              :NEW.EMPLID                            ,
              :NEW.ABSENCE_TYPE                      ,
              :NEW.BEGIN_DT                          ,
              :NEW.RETURN_DT                         ,
              :NEW.DURATION_DAYS                     ,
              :NEW.DURATION_HOURS                    ,
```

```
                :NEW.REASON                              ,
                :NEW.PAID_UNPAID                         ,
                :NEW.EMPLOYER_APPROVED
                );
      END IF;
  END IF;
END PS_ABSENCE_HIST_TR;
/
```

Oracle Trigger Maintenance

The following command may be helpful when administering your triggers.

List all triggers in a Database

```
SELECT TRIGGERNAME FROM USER_TRIGGERS;
```

Executed from Schema_owner_id

```
SELECT TRIGGERNAME FROM ALL_TRIGGERS;
```

Executed from SYSTEM

The following data dictionary views reveal information about triggers:

- USER_TRIGGERS

```
 SQL> descr user_triggers;
Name                              Null?          Type
--------------------------------  --------       ----
TRIGGER_NAME                      NOT NULL       VARCHAR2(30)
TRIGGER_TYPE                                     VARCHAR2(16)
TRIGGERING_EVENT                                 VARCHAR2(26)
TABLE_OWNER                       NOT NULL       VARCHAR2(30)
TABLE_NAME                        NOT NULL       VARCHAR2(30)
REFERENCING_NAMES                                VARCHAR2(87)
WHEN_CLAUSE                                      VARCHAR2(4000)
STATUS                                           VARCHAR2(8)
DESCRIPTION                                      VARCHAR2(4000)
TRIGGER_BODY                                     LONG
```

- ALL_TRIGGERS

```
 SQL> desc all_triggers;
Name                              Null?          Type
--------------------------------  --------       ----
OWNER                             NOT NULL       VARCHAR2(30)
TRIGGER_NAME                      NOT NULL       VARCHAR2(30)
```

```
TRIGGER_TYPE                                       VARCHAR2(16)
TRIGGERING_EVENT                                   VARCHAR2(26)
TABLE_OWNER                           NOT NULL     VARCHAR2(30)
TABLE_NAME                            NOT NULL     VARCHAR2(30)
REFERENCING_NAMES                                  VARCHAR2(87)
WHEN_CLAUSE                                        VARCHAR2(4000)
STATUS                                             VARCHAR2(8)
DESCRIPTION                                        VARCHAR2(4000)
TRIGGER_BODY                                       LONG
```

- DBA_TRIGGERS

```
 SQL> descr dba_triggers;
Name                                  Null?        Type
------------------------------        --------     ----
OWNER                                 NOT NULL     VARCHAR2(30)
TRIGGER_NAME                          NOT NULL     VARCHAR2(30)
TRIGGER_TYPE                                       VARCHAR2(16)
TRIGGERING_EVENT                                   VARCHAR2(26)
TABLE_OWNER                           NOT NULL     VARCHAR2(30)
TABLE_NAME                            NOT NULL     VARCHAR2(30)
REFERENCING_NAMES                                  VARCHAR2(87)
WHEN_CLAUSE                                        VARCHAR2(4000)
STATUS                                             VARCHAR2(8)
DESCRIPTION                                        VARCHAR2(4000)
TRIGGER_BODY                                       LONG
```

The new column, BASE_OBJECT_TYPE, specifies whether the trigger is based on DATABASE, SCHEMA, table, or view. The old column, TABLE_NAME, is null if the base object is not table or view.

The column ACTION_TYPE specifies whether the trigger is a call type trigger or a PL/SQL trigger.

The column TRIGGER_TYPE includes two additional values: BEFORE EVENT and AFTER EVENT, applicable only to system events.

The column TRIGGERING_EVENT includes all system and DML events.

List the Trigger Definition

```
Select Trigger_Name,  Trigger_Body  from USER_TRIGGERS where Trigger_name=<
TRIGGERNAME>;
```

List Trigger Information

```
Select Trigger_Name, Trigger_Type, Triggering_Event, Table_Owner,Table_Name,
Referencing_Names,When_Clause, Status, Description, Trigger_Body from
USER_TRIGGERS where Trigger_name=< TRIGGERNAME>;
```

To remove a trigger

```
drop trigger TRIGGERNAME
```

To modify an existing trigger

On Oracle to explicitly alter a Trigger definition, user the CREATE OR REPLACE option… see full explanation in the Oracle SQL Reference (CREATE TRIGGER)

Disable Trigger

By default, triggers are enabled when first created. Disable a trigger using the `ALTER TRIGGER` statement with the `DISABLE` option.

For example, to disable the trigger named `REORDER` of the `INVENTORY` table, enter the following statement:

```
ALTER TRIGGER Reorder DISABLE;
```

All triggers associated with a table can be disabled with one statement using the `ALTER TABLE` statement with the `DISABLE` clause and the `ALL TRIGGERS` option. For example, to disable all triggers defined for the `INVENTORY` table, enter the following statement:

```
ALTER TABLE Inventory
    DISABLE ALL TRIGGERS;
```

DB2 for OS/390 Trigger Information

The following topics describe the syntax, commands, and additional tasks, such as the assembler program, involved with DB2 OS/390 triggers.

Before the Trigger Audit can be implemented on DB2 for OS/390 there are several components that must be implemented in the appropriate sequence.

- Work Load Manager (WLM) must be enabled
- Assembler module AUDIT01 must be assembled
- User Defined Function (UDF) AUDIT01 must be defined in DB2
- Trigger statement must be defined

Assembler Program AUDIT01 for DB2 for OS390

To implement triggers for DB2 for OS/390, you need to use an assembler program. Here's a sample of it if needed.

```
AUDIT01  CEEENTRY AUTO=WORKSIZE,MAIN=YES,PLIST=OS
         USING WORKAREA,R13
*
```

```
         LR    R6,R1              SAVE THE PARMLIST ADDRESS
*
         LA    R10,XIFCA          ADDRESS FOR IFI COMM AREA
         LA    R9,XWQAL           ADDRESS FOR IFI QUALIFICATION AREA
         USING IFCA,R10
         USING WQAL,R9
         XC    0(L'XIFCA,R10),0(R10)  CLEAR THE IFCA
         XC    0(L'XWQAL,R9),0(R9)    CLEAR THE WQAL
*
*
         MVC   IFCAID,=CL4'IFCA'   EYE CATCHER
         MVC   IFCALEN,=AL2(L'XIFCA) LENGTH OF IFCA
         MVC   IFCAOWNR,=CL4'PSOFT'
*
         MVC   WQALEYE,=CL4'WQAL' EYE CATCHER
         MVC   WQALLEN,=AL2(WQALLN5)  LENGTH
         MVC   WQALACE,=XL4'5C'   ACE TOKEN?? TO GET OUR OWN 147 ONLY
*
         MVC   RETALEN,=F'32004'  LENGTH FOR RETURN AREA
*
         MVC   AIFICMD,=A(READSCMD) BUILD
         LA    R3,XIFCA               THE
         ST    R3,AIFCA                 PARMLIST
         LA    R4,RETAREA                 FOR
         ST    R4,ARETAREA                  THE
         MVC   AIFCID,=A(XIFCID)              IFI
         LA    R5,XWQAL                         READS
         ST    R5,AWQAL                           FOR
         OI    AWQAL,X'80'                          IFCID=147
*
         LA    R1,IFIPARMS        PARMLIST FOR READS CALL
         L     R15,=V(DSNWLI)
         BALR  R14,R15
*
         MVC   OPRIDLEN,=H'16'    ALWAYS RETURN 16 BYTES
         MVC   OPRIDIND,=H'0'     INDICATOR FOR RESULT ALWAYS RETURNED
*
         CLC   IFCARC1,=F'0'      RETURN CODE = ZERO
         BNE   AUDIT30            NO, RETURN WITH ERROR INDCATOR
*
         CLC   IFCABM,=F'0'       ANY DATA RETURNED
         BE    AUDIT35            NO, RETURN WITH ERROR INDCATOR
*
         LA    R4,4(,R4)          ADDRESS THE RETURNED DATA
         USING QWIW,R4
```

```
         CLC   QWIWLEN,=H'0'      DATA INDICATED BY IFI WRITER HDR
         BE    AUDIT40            NO, RETURN WITH ERROR INDICATOR
         DROP  R4
*
         LA    R4,4(0,R4)         ADDRESS SELF DEFINING SECTION
         USING QWA0,R4
         CLC   QWA01PSO,=F'0'     PRODUCT SECTION OFFSET
         BE    AUDIT50            NO, RETURN WITH ERROR INDICATOR
*
         A     R4,QWA01PSO        ADDRESS THE STANDARD HEADER
         DROP  R4
         S     R4,=F'4'
         USING QWHS,R4
         CLC   QWHSLEN,=H'0'      STANDARD HEADER HAVE DATA
         BE    AUDIT60            NO
*
         MVC   HDRTYPE,QWHSTYP    SAVE TYPE IN CASE OF ERROR
         CLI   QWHSTYP,QWHSHS01   STANDARD HEADER TYPE = 1
         BNE   AUDIT65            NO
*
         AH    R4,QWHSLEN         ADDRESS THE CORRELATION HEADER
         DROP  R4
         USING QWHC,R4
         CLC   QWHCLEN,=H'0'      COORELATION HEADER
         BE    AUDIT70            NO
*
         MVC   HDRTYPE,QWHCTYP    SAVE TYPE IN CASE OF ERROR
         CLI   QWHCTYP,QWHSHC02   CORRELATION HEADER TYPE = 2
         BNE   AUDIT75            NO
*
         MVC   OPRIDVAL,QWHCEUID  OPRID FROM CORRELATION HEADER
         DROP  R4
*
AUDIT20  EQU   *
         L     R5,4(,R6)          ADDRESS OF THE INDICATOR FOR RETURN
         L     R6,0(,R6)          ADDRESS OF THE RESULT FOR RETURN
         MVC   0(18,R6),OPRID     RESULT IS VARCHAR(16)
         MVC   0(2,R5),OPRIDIND   INDICATE A RESULT IS RETURNED
*
         CEETERM  RC=0
*
AUDIT30  EQU   *
         MVC   OPRIDVAL(4),=CL4'RC1='
         MVC   OPRIDVAL+4(4),IFCARC1
         MVC   OPRIDVAL+8(4),=CL4'RC2='
```

```
         MVC   OPRIDVAL+12(4),IFCARC2
         B     AUDIT20
*
AUDIT35  EQU   *
         MVC   OPRIDVAL,=CL16'IFCABM=0'
         B     AUDIT20
AUDIT40  EQU   *
         MVC   OPRIDVAL,=CL16'QWIWLEN=0'
         B     AUDIT20
AUDIT50  EQU   *
         MVC   OPRIDVAL,=CL16'QWA11PSO=0'
         B     AUDIT20
AUDIT60  EQU   *
         MVC   OPRIDVAL,=CL16'NO QWHS STD HDR'
         B     AUDIT20
AUDIT65  EQU   *
         MVC   OPRIDVAL,=CL16'QWHS BAD TYPE=X'
         MVC   OPRIDVAL+14(1),HDRTYPE
         B     AUDIT20
AUDIT70  EQU   *
         MVC   OPRIDVAL,=CL16'NO QWHC COOR HDR'
         B     AUDIT20
AUDIT75  EQU   *
         MVC   OPRIDVAL,=CL16'QWHC BAD TYPE=X'
         MVC   OPRIDVAL+14(1),HDRTYPE
         B     AUDIT20
*
*********************************************************************
*  VARIABLE DECLARATIONS AND EQUATES                                *
*********************************************************************
         YREGS
PPA      CEEPPA  ,                 CONSTANTS DESCRIBING THE CODE BLOCK
READSCMD DC    CL8'READS'
XIFCID   DC    AL2(XIFCIDL)      SET LENGTH OF BLOCK
         DC    H'0'               RESERVED
         DC    H'147'             READS FOR IFCID=147 ONLY
XIFCIDL  EQU   *-XIFCID
         LTORG ,                  PLACE LITERAL POOL HERE
*
WORKAREA DSECT
         ORG   *+CEEDSASZ         LEAVE SPACE FOR DSA FIXED PART
*
OPRID    DS    0F                 RESULT AREA FOR OPRID
OPRIDLEN DS    H                  LENGTH
OPRIDVAL DS    CL16               OPRID FROM COORELATION HEADER
```

```
OPRIDIND DS    H                 OPRID INDICATOR FOR UDF INTERFACE
*
HDRTYPE  DS    X
         DS    3X
*
IFIPARMS DS    0F                PARMS FOR IFI READS CALL
AIFICMD  DS    A(READSCMD)       READS COMMAND
AIFCA    DS    A(XIFCA)          IFCA COMMUNICATION AREA
ARETAREA DS    A(RETAREA)        RETURN AREA FOR OUR 147 IFCID
AIFCID   DS    A(XIFCID)         IFI AREA TO SELECT 147 ONLY
AWQAL    DS    A(XWQAL)          IFI QUAL AREA TO SET OUR ACEADDR
*
XIFCA    DS    XL(IFCEND-IFCA)   STORAGE FOR IFCA
XWQAL    DS    XL(WQALEND-WQAL)  STORAGE FOR WQAL
*
RETAREA  DS    0C
RETALEN  DS    F
RETRECS  DS    XL32000
WORKSIZE EQU   *-WORKAREA
*
         DSNDIFCA ,              MAPPING OF IFI-COMM-AREA
         DSNDWQAL ,              MAPPING OF IFCID-QUAL-AREA
         DSNDQWIW ,              MAPPING OF IFI-WRITER-HEADER
         DSNDQWA0 ,              MAPPING OF ACCT SELF DEFINING SECT
         DSNDQWHS ,              MAPPING OF IFCID STANDARD HEADER
         DSNDQWHC ,              MAPPING OF IFCID CORRELATION HEADER
         CEEDSA ,                MAPPING OF THE DYNAMIC SAVE AREA
         CEECAA ,                MAPPING OF THE COMMON ANCHOR AREA
         END   AUDIT01
```

Sample JCL to compile AUDIT01

```
//PROC  JCLLIB ORDER=(PSHLQ.PPVVV.PROCLIB)
//AUDIT01     EXEC PSASM,PSLIST='*',MEM=AUDIT01,
//            PSCOPY= 'PSHLQ.PPVVV.COPYLIB',
//            PSSRCE= 'PSHLQ.PPVVV.SOURCE',   --> Where you have the AUDIT
program Source Code
//            PSLOAD='SYS2.WLMDSND.LOAD',   --> Load Library defined in WLM
for the subsystem
//            MACLIB2='CEE.SCEEMAC',
//            MACLIB3='DSN610.SDSNMACS',
//            LKEDLIB='CEE.SCEELKED',
//            LKEDLIB2='DSN610.SDSNLOAD'
//*
//ASM.SYSLIB  DD  DISP=SHR,DSN=&MACLIB
//            DD  DISP=SHR,DSN=&MACLIB2
```

```
//            DD  DISP=SHR,DSN=&MACLIB3
//            DD  DISP=SHR,DSN=&PSCOPY
//LKED.SYSLIB DD DISP=SHR,DSN=&LKEDLIB
//            DD DISP=SHR,DSN=&LKEDLIB2
//LKED.SYSLIN DD
//            DD  DDNAME=SYSIN
//LKED.SYSIN  DD *
  INCLUDE SYSLIB(DSNRLI)
  ENTRY AUDIT01
  NAME AUDIT01(R)
/*
```

User Defined Function (External Scalar) requirements

```
Module Name:       AUDIT01
Description:       Upon invoked from the trigger, it makes IFI READS call to
get an operator ID and pass the information back to the caller.
Note:       This program need to run under WLM managed Address Spaces.
Module Type:       IFI READS call program.
Language Type: Assembler
Entry Point:       AUDIT01
Input:             None
Output:            Operator ID
Ext Serv:   WLMAPPLENV - WLM Application Environment
```

Sample DB2 Syntax to Create UDF Function AUDIT01

```
CREATE FUNCTION AUDIT01()
       RETURNS VARCHAR(16)
       EXTERNAL NAME 'AUDIT01'
       NO EXTERNAL ACTION
       WLM ENVIRONMENT WLMDSNZ
       PARAMETER STYLE DB2SQL
       LANGUAGE ASSEMBLE         ;
```

Verifying Status of UDF Function

After the User Defined Function is created, verify that the status is STARTED using this command:

```
-DIS FUNCTION SPECIFIC(PSOFT.*)

DSNX975I < DSNX9DIS DISPLAY FUNCTION SPECIFIC REPORT FOLLOWS -
------- SCHEMA=PSOFT
```

```
FUNCTION           STATUS ACTIVE QUEUED MAXQUE TIMEOUT WLM_ENV
AUDIT01            STARTED     0      0      1       0 WLMDSND
DSNX9DIS DISPLAY FUNCTION SPECIFIC REPORT COMPLETE
DSN9022I < DSNX9COM '-DISPLAY FUNC' NORMAL COMPLETION
```

If the function is not in Started status, you can start it using the Command:

```
-START FUNCTION SPECIFIC(PSOFT.AUDIT01)
```

DB2 OS390 Trigger Syntax

A trigger for each SQL operation type, as in INSERT, UPDATE and DELETE, need to be defined separately with a different trigger name for a given triggering table – allowable trigger name length is 8-characters long. There is a user-defined scalar function which returns a single-value of User ID by making an IFI READS call each time it is invoked. The following is a sample of the trigger syntax.

```
CREATE TRIGGER _AUD_TRI
 AFTER  INSERT ON PS_ABSENCE_HIST
 REFERENCING NEW AS C_ROW
 FOR EACH ROW MODE DB2SQL
 INSERT INTO PS_AUDIT_ABSENCE
 VALUES (PSOFT.AUDIT01(),CURRENT TIMESTAMP,'I',
C_ROW.EMPLID,
C_ROW.ABSENCE_TYPE,
C_ROW.BEGIN_DT,
C_ROW.RETURN_DT,
C_ROW.DURATION_DAYS,
C_ROW.DURATION_HOURS,
C_ROW.REASON,
C_ROW.PAID_UNPAID,
C_ROW.EMPLOYER_APPROVED);

CREATE TRIGGER _AUD_TRD
 AFTER DELETE ON PS_ABSENCE_HIST
 REFERENCING OLD AS C_ROW
 FOR EACH ROW MODE DB2SQL
 INSERT INTO PS_AUDIT_ABSENCE
 VALUES (PSOFT.AUDIT01(),CURRENT TIMESTAMP,'D',
C_ROW.EMPLID,
C_ROW.ABSENCE_TYPE,
C_ROW.BEGIN_DT,
C_ROW.RETURN_DT,
C_ROW.DURATION_DAYS,
C_ROW.DURATION_HOURS,
C_ROW.REASON,
```

```
C_ROW.PAID_UNPAID,
C_ROW.EMPLOYER_APPROVED);

CREATE TRIGGER AUD_TRUB
 AFTER UPDATE ON PS_ABSENCE_HIST
 REFERENCING OLD AS C_ROW
 FOR EACH ROW MODE DB2SQL
 INSERT INTO PS_AUDIT_ABSENCE
 VALUES (PSOFT.AUDIT01(),CURRENT TIMESTAMP,'B',
C_ROW.EMPLID,
C_ROW.ABSENCE_TYPE,
C_ROW.BEGIN_DT,
C_ROW.RETURN_DT,
C_ROW.DURATION_DAYS,
C_ROW.DURATION_HOURS,
C_ROW.REASON,
C_ROW.PAID_UNPAID,
C_ROW.EMPLOYER_APPROVED);
```

DB2 OS390 Trigger Maintenance

The following commands may be useful for administering your triggers.

List all triggers in a Database

```
SELECT name  FROM SYSIBM.SYSTRIGGERS
```

List the Trigger Definition

```
SELECT text FROM SYSIBM.SYSTRIGGERS WHERE NAME = <trigger name>
```

List Trigger Information

```
SELECT text FROM SYSIBM.SYSTRIGGERS WHERE NAME = <trigger name>
```

To remove a trigger

```
drop trigger TRIGGERNAME restrict
```

To modify an existing trigger

Alters the definition of a trigger created previously by the CREATE TRIGGER statement.

```
ALTER trigger …
```

See a complete definition in DB2 UDB for OS/390 V6.1 Books Online.

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