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PeopleSoft

PeopleTools 8.62: Getting Started with PeopleTools

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PeopleTools 8.62: Getting Started with PeopleTools
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Preface

Understanding the PeopleSoft Online Help and PeopleBooks

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

Hosted PeopleSoft Online Help

You can access the hosted PeopleSoft Online Help on the Oracle Help Center. The hosted PeopleSoft Online Help is updated on a regular schedule, ensuring that you have access to the most current documentation. This reduces the need to view separate documentation posts for application maintenance on My Oracle Support. The hosted PeopleSoft Online Help is available in English only.

To configure the context-sensitive help for your PeopleSoft applications to use the Oracle Help Center, see Configuring Context-Sensitive Help Using the Hosted Online Help Website.

Locally Installed PeopleSoft Online Help

If you're setting up an on-premises PeopleSoft environment, and your organization has firewall restrictions that prevent you from using the hosted PeopleSoft Online Help, you can install the online help locally. Installable PeopleSoft Online Help is made available with selected PeopleSoft Update Images and with PeopleTools releases for on-premises installations, through the Oracle Software Delivery Cloud.

Your installation documentation includes a chapter with instructions for how to install the online help for your business environment, and the documentation zip file may contain a README.txt file with additional installation instructions. See *PeopleSoft 9.2 Application Installation* for your database platform, "Installing PeopleSoft Online Help."

To configure the context-sensitive help for your PeopleSoft applications to use a locally installed online help website, see Configuring Context-Sensitive Help Using a Locally Installed Online Help Website.

Downloadable PeopleBook PDF Files

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

Common Help Documentation

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

- Application Fundamentals

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- Using PeopleSoft Applications

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

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

Field and Control Definitions

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

Typographical Conventions

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

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

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Typographical Convention	*Description*
⇒	This continuation character has been inserted at the end of a line of code that has been wrapped at the page margin. The code should be viewed or entered as a single, continuous line of code without the continuation character.

ISO Country and Currency Codes

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

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

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

Region and Industry Identifiers

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

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

Region Identifiers

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

- Asia Pacific
- Europe
- Latin America
- North America

Industry Identifiers

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

- USF (U.S. Federal)

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- E&G (Education and Government)

Translations and Embedded Help

PeopleSoft 9.2 software applications include translated embedded help. With the 9.2 release, PeopleSoft aligns with the other Oracle applications by focusing our translation efforts on embedded help. We are not planning to translate our traditional online help and PeopleBooks documentation. Instead we offer very direct translated help at crucial spots within our application through our embedded help widgets. Additionally, we have a one-to-one mapping of application and help translations, meaning that the software and embedded help translation footprint is identical—something we were never able to accomplish in the past.

Using and Managing the PeopleSoft Online Help

Select About This Help in the left navigation panel on any page in the PeopleSoft Online Help to see information on the following topics:

- Using the PeopleSoft Online Help.
- Managing hosted Online Help.
- Managing locally installed PeopleSoft Online Help.

PeopleTools Related Links

PeopleTools 8.62 Home Page

PeopleSoft Search and Insights Home Page

“PeopleTools Product/Feature PeopleBook Index” (Getting Started with PeopleTools)

PeopleSoft Online Help

PeopleSoft Information Portal

PeopleSoft Spotlight Series

PeopleSoft Training and Certification | Oracle University

My Oracle Support

Oracle Help Center

Contact Us

Send your suggestions to psoft-infodev_us@oracle.com.

Please include the applications update image or PeopleTools release that you’re using.

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Chapter 1

Getting Started with PeopleTools

PeopleTools Overview

PeopleTools provides the underlying technology for PeopleSoft applications. All PeopleSoft applications, such as Human Capital Management and Customer Relationship Management are built, deployed, and maintained using PeopleTools.

With PeopleTools you can:

- Develop new applications or customize existing applications.
- Administer applications that you have deployed within your organization.
- Provide decision support and reporting functionality to decision makers.
- Integrate PeopleSoft applications with other PeopleSoft applications or third party applications.
- Upgrade and update your applications as part of system lifecycle management.

The area of PeopleTools technology contains over 40 tools, utilities, and technologies. This document provides brief introductions of each tool or technology, and presents two frameworks with which you can gain a better understanding of the delivered technology, how to categorize the tools, and when to use particular tools.

PeopleTools Categories

This framework divides the PeopleTools technologies, tools, and utilities into these categories:

- Development Tools.
- Administration Tools.
- Analytic Tools.
- Integration Tools.
- Lifecycle Management Tools.

Implementation Phases

This framework provides a sample set of implementation phases and lists the tools and technologies that are likely to be used or implemented within a particular phase. The implementation phases are:

- Installation.
- Application Configuration.
- System Configuration.

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- Decision Support Configuration.
- Business Process Integration.
- Maintenance.

Note: The implementation phases in this framework are intended to help you gain a better understanding of PeopleTools. The implementation phases in no way imply strict dependencies between phases or tools. Every implementation is unique.

Other Sources of Information

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

Related Links

Understanding Development Tools
Understanding Administration Tools
Understanding Reporting and Analysis Tools
Understanding Integration Tools
Understanding Lifecycle Management Tools
Understanding the Phases of Implementation

PeopleTools Implementation

Implementing PeopleTools requires the installation of the PeopleTools software within a supported environment as described in the PeopleTools Installation documentation. An installation guide is provided for each supported database platform. Each PeopleSoft application also provides supplemental installation instructions specific to that application.

PeopleTools Product/Feature PeopleBook Index

The table lists the PeopleBooks that provide information for the each product or functional area in Oracle's PeopleSoft PeopleTools product line. The top three books are listed in order of importance.

See the production documentation for PeopleCode Language Reference and PeopleCode API Reference for information about PeopleCode functions, classes, methods, and properties.

Product/Functional Area	***PeopleBook***
Activity guides	• Portal Technology • Applications User's Guide

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Product/Functional Area	***PeopleBook***
Analytic Calculation Engine	• Analytic Calculation Engine • PeopleCode Developer's Guide • Optimization Framework
Application Data Sets	• Lifecycle Management Guide • Global Technology
Application Designer	• Application Designer Developer's Guide • Lifecycle Management Guide
Application Engine	• Application Engine • Application Designer Developer's Guide
Application servers: Oracle WebLogic	• System and Server Administration • Portal Technology
Application Services Framework	Integration Broker
Approval framework	Workflow Technology
Automated Configuration Manager	Automated Configuration Management
Branding	Portal Technology
Change Assistant	• Change Assistant and Update Manager • Application Designer Developer's Guide • Lifecycle Management Guide
Change Impact Analyzer	• Change Impact Analyzer • Change Assistant and Update Manager • Test Framework
Charting	• PeopleCode API Reference • Application Designer Developer's Guide

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Product/Functional Area	*PeopleBook*
COBOL	• Application Engine • Global Technology
Component interfaces	• Component Interfaces • Integration Broker
Composite Query	• Query • Pivot Grid
Conditional navigation	Portal Technology
Configuration Manager	• System and Server Administration • Application Designer Developer's Guide
Connected Query	Query
Connectivity	• System and Server Administration • Data Management
CTI	MultiChannel Framework
Dashboards	• Portal Technology • Applications User's Guide
Data Archive Manager	Data Management
Data Distribution Framework	Data Distribution Framework
Data Migration Workbench	Lifecycle Management Guide
Data Mover	• Lifecycle Management Guide • Change Assistant and Update Manager • Portal Technology
Database servers	• Data Management • System and Server Administration

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Product/Functional Area	***PeopleBook***
Diagnostic framework	Data Management
Drop zones	Application Designer Developer’s Guide
Event mapping	• Portal Technology • PeopleCode Developer’s Guide
Feeds	Feed Publishing Framework
Global technology	Global Technology
Health Center	Performance Monitor
Homepages	• Portal Technology • Applications User’s Guide
Integration Broker	• Integration Broker • Integration Broker Administration
Interwindow communication	Portal Technology
LDAP	Security Administration
Materialized views	• Data Management • Application Designer Developer’s Guide
Microsoft SQL Server	• Data Management • Application Designer Developer’s Guide
MultiChannel Framework	• MultiChannel Framework • System and Server Administration
Navigation collections and pages	• Portal Technology • Applications User’s Guide

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Product/Functional Area	***PeopleBook***
nVision	• PS/nVision • Tree Manager • Process Scheduler
OpenSearch	Search Technology
OpenSearch Dashboards	Search Technology
PeopleSoft Fluid User Interface	• Fluid User Interface Developer’s Guide • Portal Technology • PeopleCode API Reference
PeopleSoft Update Manager	• Change Assistant and Update Manager • Lifecycle Management Guide
Optimization Framework	• Optimization Framework • Analytic Calculation Engine • System and Server Administration
Optimization plug-in	Optimization Framework
Oracle RDBMS	• Data Management • Application Designer Developer’s Guide
Pagelet Wizard	• Portal Technology • Pivot Grid
Panel processor	• Application Designer Developer’s Guide • PeopleCode Developer’s Guide
PeopleCode	• PeopleCode API Reference • PeopleCode Language Reference • PeopleCode Developer’s Guide

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Product/Functional Area	***PeopleBook***
Performance	• Performance Monitor • Data Management • System and Server Administration
Performance Monitor	• Performance Monitor • System and Server Administration • Portal Technology
Pivot grids	• Pivot Grid • Applications User’s Guide
Portals and portal registry	• Portal Technology • System and Server Administration • Application Designer Developer’s Guide
Process Modeler	• Analytic Calculation Engine • Pivot Grid • Data Management
Process Scheduler	• Process Scheduler • System and Server Administration
PSADMIN	• System and Server Administration • Integration Broker Administration • Process Scheduler
Push notifications	• Fluid User Interface Developer’s Guide • Process Scheduler
QAS	• Reporting Web Services • Performance Monitor • Integration Broker Administration

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Product/Functional Area	***PeopleBook***
Query	• Query • PS/nVision • Reporting Web Services
Real Time Indexing	Search Technology
Related Content Framework	Portal Technology
Ren Server	• MultiChannel Framework • Process Scheduler
Report distribution	• Process Scheduler • PS/nVision • BI Publisher for PeopleSoft
Reporting	• Query • PS/nVision • BI Publisher for PeopleSoft
Rich Text Editor	• Application Designer Developer’s Guide • Applications User’s Guide • BI Publisher for PeopleSoft
Search	• Search Technology • System and Server Administration
Security	• Security Administration • Portal Technology • Integration Broker Administration
Setup Manager	• Setup Manager • System and Server Administration
Simplified Analytics	Pivot Grid

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Product/Functional Area	*PeopleBook*
SQR	• SQR for PeopleSoft Developers • SQR Language Reference for PeopleSoft • Process Scheduler
Style sheets	• Application Designer Developer's Guide • Portal Technology
Test Framework	Test Framework
Tile Wizard	Portal Technology
Tree Manager	• Tree Manager • PS/nVision • System and Server Administration
Tuxedo	• System and Server Administration • Performance Monitor • Process Scheduler
Unified navigation	Portal Technology
Updates - Change Assistant	• Change Assistant and Update Manager • Lifecycle Management Guide • Application Designer Developer's Guide
Updates - Change Packager	• Change Assistant and Update Manager • Lifecycle Management Guide • Change Impact Analyzer
Upgrade	• Change Assistant and Update Manager • Lifecycle Management Guide • Application Designer Developer's Guide
Usage Monitor	Usage Monitor

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Product/Functional Area	*PeopleBook*
Web servers	• System and Server Administration • Portal Technology • Performance Monitor
Windows client	• Application Designer Developer's Guide • System and Server Administration • PS/nVision • Change Assistant and Update Manager
WorkCenters	• Portal Technology • Applications User's Guide
Workflow	• Workflow Technology • Security Administration

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Chapter 2

Development Tools

Understanding Development Tools

The development tools that PeopleTools provides offer a powerful application development environment in which you can build and customize PeopleSoft applications to suit your specific enterprise needs quickly, easily, and comprehensively. By using PeopleTools development tools you can complete a variety of tasks including:

- Design and define application objects.
- Enable applications to serve different locations and languages while sharing the same data.
- Define end-to-end processes in a user-friendly, graphical design environment.

Application Designer

Application Designer is a metadata driven, integrated development environment (IDE) used to customize PeopleSoft applications.

Every PeopleSoft application contains a collection of related definitions, such as fields, records, pages, and components (groups of pages) that work together to provide the functionality of PeopleSoft applications. Developing and adapting PeopleSoft applications is a step-by-step process in which you configure and build the definitions, establish relationships among definitions, implement security, register your PeopleSoft application to the PeopleTools portal environment, and test every aspect thoroughly.

To perform the majority of these development activities, you use one interactive tool, Application Designer, in an integrated development environment that enables you to work with all the definitions of a business application in a single work area.

Application Designer enables you to perform numerous development tasks including:

- Create and modify field and record definitions.
- Build and run SQL scripts that create and alter tables and indexes.
- Create and modify pages for classic applications and fluid applications.
- Create, modify, and register components (groups of pages).
- Create and debug PeopleCode.
- Work with style sheets to customize the appearance of applications.
- Upgrade your existing applications to newer PeopleSoft versions.

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Related Links

Application Designer Developer's Guide

PeopleCode

PeopleCode is the PeopleSoft proprietary integrated programming language that touches virtually every aspect of PeopleSoft applications. PeopleCode is a powerful programming language, enabling you to include object-oriented business logic to your application as well as modify interface display based on application context.

PeopleCode enables you to create programs using structured and object-oriented techniques. PeopleSoft delivers numerous PeopleCode functions, classes, methods, and properties.

For example, with PeopleCode you can:

- Control presentation of information to the user and validate user inputs.
- Implement complex business logic that cannot be defined with metadata.
- Perform calculations and data manipulation.
- Maintain data integrity.
- Update database tables.
- Manage portal navigation and administer security.
- Integrate with other PeopleSoft applications and with third-party applications.
- Manage workflow.

PeopleCode is used in:

- The component processor flow: on components, pages, record fields, and menus.
- PeopleSoft Application Engine programs.
- Integration (through component interfaces and PeopleSoft Integration Broker).
- Workflow.
- Signon security.

Related Links

PeopleCode Developer's Guide
PeopleCode Language Reference
PeopleCode API Reference

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Application Engine

Application Engine enables you to develop, test, and run Application Engine programs, which are batch or online programs that perform high-volume, background processing against your data. Application Engine programs can be compared to COBOL programs, except the Application Engine program definition is stored in the database itself, making upgrades and updates more efficient.

In Application Engine, a program is a set of SQL statements, PeopleCode, and program control actions that enable looping and conditional logic. Common batch programming needs, like parallel processing and restartability, are built into Application Engine programs.

You define Application Engine programs in Application Designer.

Related Links

Application Engine

Global Technology

PeopleSoft applications are built on a robust framework enabling you to deploy your applications across the globe, regardless of language. PeopleTools is designed so that a single implementation can serve users in different regions. Users can share the same data while operating in different languages and applying different date, time, and numeric formatting conventions.

PeopleSoft's global technology provides the core global abilities that are common to all PeopleSoft application products enabling you to:

- Operate in your own language.
- Apply different numeric formatting.
- Use any currency and market rate.
- Support multiple languages in a single database.
- Display formatted data using standards that users expect based on their language and country.
- Deploy systems spanning multiple time zones.

Related Links

Global Technology

Portal Technology

In PeopleTools, portal technology consists of PeopleSoft Pure Internet Architecture and the various systems, code, and standards used for creating and managing portals.

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PeopleSoft Pure Internet Architecture enables internet application deployment through a browser, and enables you to take advantage of PeopleSoft intranet solutions, internet solutions, and integration technologies. PeopleSoft Pure Internet Architecture runs seamlessly in portals created and managed by PeopleTools portal technology.

In PeopleTools, portals are built on top of PeopleSoft Pure Internet Architecture and enable you to easily access and administer content from a variety of providers, such as PeopleSoft FSCM, CRM, and HCM applications; other Oracle applications; and many third party content suppliers. PeopleTools portals enable you to combine content from these multiple sources and deliver the result to users in a unified, consistent, and intuitive interface.

PeopleTools portal technology includes:

- Portal definitions, which include templates, style sheets, and navigation settings along with the portal registry of available content.
- PeopleTools features that organize and aggregate content including pagelets, tiles, navigation pages, and navigation collections.
- PeopleTools features that determine the organization and layout of content access points including homepages, dashboards, activity guides, and WorkCenters.
- Additional PeopleTools features that organize, highlight relationships between, or index content including search, related content, and feeds, among others.
- The PeopleSoft security model, which controls access to content by users, roles, and permission lists.
- Features of the PeopleSoft user interface including the drop-down menu, breadcrumbs, type ahead, AJAX, modal windows, and others.

Important! Breadcrumbs, drop-down menus, and other forms of classic navigation are no longer supported. The default navigational interface for PeopleSoft applications in the current release is based on the fluid banner, which can be used for both classic and fluid applications. For information on working with the fluid user interface, see “Working with Fluid Pages and Controls” (Applications User’s Guide).

Related Links

Portal Technology

Documents Technology

PeopleTools documents technology includes a Document Builder, a PeopleCode API, and several utilities that enable you to create, manage, and test documents.

The Document Builder enables you to build XML documents from the ground up, by importing schema definitions, or from PeopleSoft table definitions. A PeopleCode API is provided to enable you to populate and retrieve document data. PeopleSoft delivers a number of document utilities to help you validate documents during and after construction, validate schema, resolve copy project, import, and upgrade metadata issues, and more.

Extensible Markup Language (XML) is the default physical representation of PeopleSoft documents.

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Documents are used to simplify integrations with third-party integration partners, as an alternative to using stand-alone rowsets, as a mechanism to distribute complex data.

Related Links

Documents Technology

Search Technology

PeopleSoft Search Technology consists of these features:

- PeopleSoft Search Framework.
- PeopleSoft Search.

Related Links

Search Technology

PeopleSoft Search Framework

The PeopleSoft Search Framework enables application developers and implementation teams, to create search artifacts in a declarative manner, using PeopleSoft Query and Connected Query and to deploy and maintain searchable objects, using one standard interface, regardless of PeopleSoft application. The PeopleSoft Search Framework consists of PeopleSoft components (pages and records provided by PeopleTools), which provide a centralized interface for configuring PeopleSoft integration with the search engine, creating search definitions, search categories, and building and maintaining search indexes.

PeopleSoft Search

Once the PeopleSoft Search Framework is configured, you can enable these PeopleSoft Search features for your end users:

- Global search.
- Search pages.

These end user search options enable users of the system to execute searches on application data similar to running a Google search on the internet. Users access the pages for viewing and updating application data by clicking on search results rather than needing to remember navigation to various pages in a business process.

With Global Search enabled, a Global Search icon is provided in the header of the PeopleSoft application, which displays the Global Search bar. The Global Search bar provides a drop-down list for selecting a specific search category against which to run a search. The results enable the end user to navigate to the appropriate record or transaction simply by clicking a link.

If you’ve enabled the Search Pages features, a Keyword Search tab appears amongst the search pages the end user encounters when navigating into a component. The Keyword Search page enables users to execute a deeper, more free-form search to access application data than the traditional "Find an Existing Value" tab. The traditional "Find an Existing Value" tab is limited to level 0 data (high-level keys), where

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the Keyword Search tab lets the users enter custom keywords and the system will search indexed data from level 0-3, regardless of strict key assignments.

In fluid user interface, keyword search and master-detail search are available, which can be configured as tiles to launch search in a component. While keyword search is against a search engine index, the master-detail search is configured in Pivot Grid.

Fluid User Interface

Designed as a significant improvement over the PeopleSoft classic user interface, the PeopleSoft Fluid User Interface moves away from pixel-perfect page layout and provides greater flexibility with the enhanced use of cascading style sheets (CSS3), HTML5, and JavaScript. PeopleSoft fluid application pages scale gracefully from large screen devices, such as laptops and desktops, to the reduced viewing space of tablets and smart phones. Many commercial websites use a similar design model whereby the presentation and layout of information is adjusted dynamically to conform to the dimensions of the user's device. The fluid design approach gives developers just this type of control over the user experience. When a larger screen size (a screen with more "real estate") is detected, the application content will adjust and conform accordingly to fill the space effectively. Similarly, if a smaller screen size is detected, non-essential information can be removed and the presentation of content will adjust to flow in a usable way. Just like PeopleSoft classic pages, fluid page definitions are created and maintained using Application Designer, and the application developer will have the ability to define and apply conditional formatting appropriate to smart phone, tablet, or large-screen devices. At runtime, the PeopleSoft system applies the corresponding formatting according to the device in use. A user can interact with fluid pages using a conventional mouse and keyboard or using a touch interface, which is common on tablets and smart phones. These new pages are device-independent and will operate on any certified device browser.

Related Links

Fluid User Interface Developer's Guide

Data Distribution Framework

PeopleTools Data Distribution Framework provides a mechanism to extract and flatten PeopleSoft data, which can be used for the purpose of machine learning.

PeopleTools Data Distribution Framework is built using the technology from PeopleSoft Search Framework, such as mappings used to create search index definitions, search instance for defining search server, and Direct Transfer technology used to index data from PeopleSoft to the search engine. The data available from this framework can be used by Oracle Cloud Infrastructure Data Science service to create models that are used for prediction.

Related Links

Data Distribution Framework

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Chapter 3

Administration Tools

Understanding Administration Tools

With Information Technology infrastructure becoming more complex, PeopleTools offers state-of-the-art tools to make maintenance easy and cost-effective. The PeopleTools administration tools enable system administrators to manage the applications you have deployed within your organization. The administration tools enable you to perform numerous system management tasks, such as configure security, monitor performance, troubleshoot, and configure servers. Most of the tasks can be completed using the same browser interface that is used for completing business transactions in PeopleSoft applications.

Security Administration

The PeopleSoft security approach is tailored for the internet. As you implement PeopleSoft, you need a robust and scalable means by which you can grant authorization to users efficiently. When you deploy your applications to the internet, the number of potential users of your system increases exponentially. Suddenly, you have customers, vendors, suppliers, employees, and prospects all using the same system.

Just as PeopleTools provides the foundation for PeopleSoft applications, PeopleTools security provides the foundation for PeopleSoft security and for managing the user life cycle within the application.

You can apply security to all users, including employees, managers, customers, contractors, and suppliers. You group your users according to roles to give them different degrees of access. For instance, there might be an Employee role, a Manager role, and an Administrator role. PeopleTools security enables you to manage the role-based system, including directory group import capabilities, to leverage your Lightweight Directory Access Protocol (LDAP) directory facilities.

Users who belong to a particular role require a specific set of permissions, or authorizations, within your system so that they can complete their daily tasks. Because of the increase in users due to the internet deployment, PeopleTools security enables you to perform numerous maintenance tasks programmatically, which enables your system administrators to focus on other tasks. PeopleTools security also delivers robust encryption methods to provide additional custom data protection.

PeopleTools security also provides the capability for easily integrating enterprise user management and access applications like Oracle Access Manager and Oracle Identity Manager.

Additionally PeopleTools security implements the WS-Security framework to protect web services-based integrations.

Related Links

Security Administration

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Performance Monitor

PeopleSoft Performance Monitor is a built-in diagnostic utility that enables system administrators to monitor performance of the main elements of your PeopleSoft system, such as web servers, application servers, and PeopleSoft Process Scheduler servers. You can monitor real-time performance as well as analyze historical data.

PeopleSoft Performance Monitor reports:

- Durations and key metrics of PeopleTools runtime execution, such as SQL statements and PeopleCode events.
- Key resource metrics, such as host CPU utilization and web server execution threads.

The metrics provided by PeopleSoft Performance Monitor enable system administrators to:

- Monitor real-time system performance.
- Identify poorly performing tiers, hosts, domains, servers, application code, and SQL in a PeopleSoft environment.
- Identify performance trends.
- Address and isolate performance bottlenecks.

Related Links

Performance Monitor

Usage Monitor

PeopleSoft Usage Monitor lets you to collect usage monitor data.

You can enable Usage Monitor from the Lifecycle Tools Options page.

With Usage Monitor, you can:

- Track usage data for any PeopleSoft environment.
- Use the data for impact analysis when applying updates or change packages.

Related Links

Usage Monitor

Diagnostics Framework

The Diagnostics Framework is designed to facilitate the diagnosis and resolutions of incidents by Oracle Global Customer Support. It enables the critical system data to be packaged and sent to Oracle Support

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without the need for IT intervention. This reduces administration overhead and can help Oracle solve customer issues more quickly.

The diagnostics framework retrieves diagnostic information from a PeopleSoft database enabling you to:

- Discover problematic application-related data.
- Explore setup details.
- Present information to Oracle Global Customer Support in a common format.

Related Links

"Understanding Diagnostics Framework" (Data Management)

Data Archive Manager

In any enterprise application, the ability to purge and archive transactional data is critical to data management. You need to have consistent methods to archive transactional data before your database increases to unmanageable sizes. PeopleSoft Data Archive Manager provides an integrated and consistent framework for archiving data from PeopleSoft applications. Using a predefined template, you can select any queries and multiple objects that meet your archiving and restoration requirements. Leveraging the Archive Query in PeopleSoft Query, you can easily define and customize your archive template.

Related Links

"Understanding PeopleSoft Data Archive Manager" (Data Management)

Data Integrity Tools

PeopleSoft provides several tools to ensure the integrity of the data that is stored in the PeopleSoft system. Typically, you use these tools during installations, upgrades, and system configuration to verify the PeopleSoft system and compare it to the underlying SQL objects to ensure synchronization. Data Integrity tools include:

Field or Control	*Description*
SYSAUDIT	The System Audit (SYSAUDIT) identifies orphaned PeopleSoft objects and other inconsistencies within the system. An example of an orphaned object is a module of PeopleCode that exists, but which does not relate to any other objects in the system.
DDDAUDIT	The Database Audit Report (DDDAUDIT) finds inconsistencies between PeopleTools record and index definitions and the database objects. This audit focuses on tables, views, and indexes.

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Field or Control	*Description*
SQL Alter	The PeopleSoft Application Designer SQL Alter function brings SQL tables into accordance with PeopleTools record definitions.

Related Links

“Understanding Data Integrity Tools” (Data Management)
“Using Audit Utilities” (System and Server Administration)

Automated Configuration Management

This framework enables you to store your environment configuration settings in a persistent state in the form of a properties file. After setting up the basic infrastructure of a PeopleSoft environment, including database, application server, Process Scheduler server, and PIA domain, you run an Application Engine program, which reads your environment properties from the stored properties file, and inserts the stored values into the database, saving you from updating the settings manually each and every time you create or refresh an environment.

Related Links

“Understanding Automated Configuration Management” (Automated Configuration Management)

PeopleTools Utilities

As you work with the PeopleSoft system, you find that there are some administrative tasks that you only need to perform occasionally. The PeopleTools Utilities provide a set of tools for accomplishing some of these more infrequent tasks. Although use of these utilities may be infrequent, they provide an easy means to manage important aspects of your PeopleSoft environment. Examples of tasks that require the use of the PeopleTools Utilities are:

- Setting your base language.
- Specifying a specific style sheet.
- Setting PeopleSoft Online Help locations.
- Editing messages in the message catalog.
- Entering values in the URL catalog.
- Setting PeopleCode and SQL trace options.

Related Links

“Understanding the PeopleTools Utilities” (System and Server Administration)

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Configuration Manager

PeopleSoft Configuration Manager simplifies Windows workstation administration by enabling you to adjust PeopleSoft registry settings from one central location. The Configuration Manager applies only to workstations being used by developers and system administrators who need access to the development environment. For example, developers who need to access PeopleSoft Application Designer to view and modify pages, records, components and so on need the appropriate options set in the PeopleSoft Configuration Manager.

PeopleSoft Configuration Manager contains a variety of controls that let you set up workstations for connecting to the database, connecting to application servers, or setting trace options. You can set up one development workstation to reflect the environment at your site, and then export the configuration file, which can be shared among all the development workstations at your site.

Related Links

"Understanding PeopleSoft Configuration Manager" (System and Server Administration)

Additional Administration Utilities

With PeopleTools, you can also take advantage of Oracle Enterprise Manager.

Oracle Enterprise Manager

Oracle Enterprise Manager provides a comprehensive, integrated management solution that helps you achieve high levels of performance and availability, and reduce the costs of managing applications. Oracle Enterprise Manager monitors the health of all application components, the hosts that they run on, and the key business processes that they support. Oracle Enterprise Manager's diagnostic tools help to identify system issues for you to address. In addition to monitoring and diagnostics, Oracle Enterprise Manager also manages the configuration of application environments through its integrated configuration management tool. This tool provides the ability to configure application environments properly by keeping an inventory of application and infrastructure components, tracking the changes that are made, and validating the changes to make sure that they are correct. Oracle Enterprise Manager provides the tools that help organizations achieve the required application performance and availability, improve management productivity, better utilize resources, and drive down costs.

To integrate the Oracle Enterprise Manager with your PeopleSoft implementation, you can install the PeopleSoft Application Management Plug-in for Oracle Enterprise Manager (licensed separately from PeopleTools).

For more information, download the PeopleSoft Application Management Plug-in for Oracle Enterprise Manager documentation available on the Oracle Technology Network.

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Chapter 4

Reporting and Analysis Tools

Understanding Reporting and Analysis Tools

The PeopleSoft reporting and analysis tool solutions span the wide-ranging information access needs of your organization, from end-user querying and exploration, to multidimensional reporting and analysis, to production reporting.

These include the standard reports we deliver, as well as the reporting tools you can use to customize reports or create new ones. PeopleTools reporting and decision support capabilities enable you to perform numerous tasks, such as create queries, create reports, and create online analytical processing (OLAP) cubes.

Your database contains a wealth of information that you've carefully entered, maintained, and secured for the ultimate purpose of generating timely, meaningful, presentation-quality reports as well as provide online analytical options. Our reporting and decision support capabilities enable you to access the data you need and present it in the form that is most useful for the decision makers in your organization.

Query

PeopleSoft Query provides a user friendly, intuitive way to generate ad-hoc and scheduled reports quickly from any data stored in your PeopleSoft tables. Users can design and run queries using any supported web browser. Designers of queries do not need to write or be familiar with Standard Query Language (SQL). In addition, users who are less technically savvy can run predefined queries. Queries can be as simple or as complex as necessary. You can run queries from a web browser and then download the data as a Microsoft Excel spreadsheet

Related Links

Query

Pivot Grid

PeopleSoft Pivot Grid supports operational dashboard reporting within the PeopleTools framework to provide a pivot table and chart representation of data using PSQuery data source. The framework also enables users to see different views of the data as in an Microsoft Excel pivot table, and the same data is also available in a chart view.

Using Pivot Grid, users can view consolidated data. Pivot Grid provides the following features:

- Presents data in different visualizations for example, chart only, grid only, grid and chart only.
- Enables you to use actions like dragging and filtering to display multi-dimensional data.

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- Enables administrators to create pivot grid models using the wizard with query, composite query, or the component as a data source.
- Provides options to attach the model to a homepage, NavBar, and fluid dashboards.
- Provides easy configuration with the PeopleSoft Related Action Framework.

Pivot grid models uses Personal Analytic Notifications for thresholds. If threshold boundaries are exceeded, the system sends you a notification.

Simplified Analytics

Simplified Analytics enables end users of a fluid application page to create contextual analytic reports. They can create their own reports based on the pre-defined templates by selecting the fields, filling the prompt fields, defining the layout, and selecting different types of visualizations.

Related Links

Pivot Grid

Analytic Calculation Engine

PeopleSoft Analytic Calculation Engine combines a calculation engine plus several PeopleTools features that enable application developers to define both the calculation rules and the display of calculated data within PeopleSoft applications. The calculated data is used for the purposes of multidimensional reporting, data editing, and analysis.

Application developers create *analytic models* which define the rules used to calculate data. To display the data to end users, application developers create PeopleSoft pages that include a specific type of grid—an analytic grid.

End users can view, analyze, and even make changes to analytic model data. When end users save any changes made to the analytic model, PeopleSoft Analytic Calculation Engine recalculates the data and sends the calculated data to the application database.

Related Links

Analytic Calculation Engine

PS/nVision

PS/nVision is a sophisticated tool for creating business reports in Microsoft Excel. Working within Microsoft Excel, you create a report layout that defines both the data to retrieve and the format of the report. Using PS/nVision, you can create report layouts that summarize information from your PeopleSoft database and use the drill down feature to expose the supporting details. You can share report layouts across multiple business units and time periods, creating reports that "roll" from unit to unit or period to period without changing the data-retrieval criteria.

PS/nVision works within spreadsheets. You access PS/nVision features from a special PS/nVision menu within Microsoft Excel to create templates (layouts) for data retrieval. Once you create a report layout

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(XNV file), you can use it to automatically format data. PS/nVision selects data from your PeopleSoft database using ledgers, trees, and queries.

PS/nVision enables you to extend the rich querying features that PeopleSoft Query offers. For example:

- With PeopleSoft Query you can generate tabular reports without formatting, and with PS/nVision you can deliver well formatted, easy-to-read reports.
- PS/nVision enables you to produce matrix reports in which you can use multiple ledgers or queries to define the reports.
- PS/nVision provides dynamic features, such as bursting and nPlosion, unavailable in static query results.
- PS/nVision offers built-in logic to detect detailed ledger metadata in multiple financial environments.

Related Links

PS/nVision

BI Publisher for PeopleSoft

Oracle provides a standalone Java-based reporting technology named BI Publisher (BIP) that streamlines report and form generation. PeopleTools is leveraging this technology with BI Publisher for PeopleSoft, which provides native BIP technology for PeopleSoft Query as well as any PeopleSoft application.

BIP separates the data extraction process from the report layout. BIP provides the ability to design and create report layout templates with the more common desktop applications of Microsoft Word, Microsoft Excel, and Adobe Acrobat, and renders XML data based on those templates. With a single template, you can generate reports in many formats (PDF, RTF, Excel, HTML, and so on) and in many languages.

BI Publisher for PeopleSoft provides an environment for the power business user to manage templates, data sources, reports, translations, content components, and to produce reports according to a user-defined criteria. BI Publisher for PeopleSoft also can burst reports, such as annual wage statements for employees, electronically.

Related Links

BI Publisher for PeopleSoft

SQR for PeopleSoft

SQR for PeopleSoft is a powerful enterprise reporting system that provides direct access to multiple data sources. The SQR for PeopleSoft tools make it possible to create clear, professional reports from complex arrays of information systems.

SQR is a specialized programming language for accessing, manipulating, and reporting enterprise data. With SQR, you build complex procedures that perform multiple calls to multiple data sources and implement nested, hierarchical, or object-oriented program logic.

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The high-level programming capabilities that SQR provides enable you to add procedural logic and control to data source calls. You can use SQR to write other types of applications, such as those for database manipulation and maintenance, table loading and unloading, and interactive querying and displaying.

Related Links

SQR for PeopleSoft Developers

Tree Manager

The PeopleSoft Tree Manager enables you to arrange data into a hierarchal format that can then be used in other areas, such as report generators, OLAP, ChartField field combination editing in PeopleCode, and security. Casual users have a familiar and easy-to-understand interface, as well as all of the functionality required for creating and maintaining trees.

PeopleSoft Tree Manager enables you to:

- Present summarization rules visually.
- Give the system a single place to look for summarization rules.
- Provide simpler selection and updating of values in reports, ledgers, or security profiles.

Related Links

Tree Manager

Process Scheduler

PeopleSoft Process Scheduler enables you to schedule and manage the execution of PeopleSoft batch processes. With PeopleSoft Process Scheduler you can:

- Schedule recurring processes to run on any date or time interval that your business requires, such as monthly, daily, hourly, or by the minute.
- Create jobs (groups of processes) that run several processes and conditionally schedule successive processes based on the status of a previous process in the job.

The primary role of Process Scheduler is to support the PeopleSoft application environment. With a PeopleSoft application, you might want to run certain processes (batch programs, reports, and so on) behind the scenes of the online system. Running reports, posting journal entries, loading benefit enrollment forms, and calculating payroll deductions are all examples of processes that you might want to perform offline.

Using PeopleSoft Process Scheduler can streamline your business practices by enabling you to take advantage of the distributed computing environment at your site, whereby you can schedule performance-sensitive jobs to run on a powerful server while the online system is still available to end users.

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Note: While the PeopleSoft Process Scheduler runs all types of online and offline programs, it's primarily used to support your reporting environment.

Related Links

Process Scheduler

Reporting Web Services

Reporting Web Services are services published through the Integration Broker that can be consumed by third-party applications to facilitate creating and running reports on the PeopleSoft system. Web Services are available for Query Access and Process Scheduler. Each web service contains multiple service operations to perform specific tasks relating to reporting.

Related Links

Reporting Web Services

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Chapter 5

Integration Tools

Understanding Integration Tools

IT departments continue to be challenged by:

- Multiple types of disparate systems.
- Lack of communication standards.
- Islands of automation (business applications) operating in a standalone fashion.

These conditions can lead to:

- Duplicate data entry.
- Unavailable or inaccurate information.
- Inefficient operations.

The PeopleTools integration tools enable you to share information seamlessly with other PeopleSoft applications, third party ERP vendors, legacy applications, and your business partners.

Integration Broker

PeopleSoft Integration Broker provides service oriented architecture (SOA) technology that facilitates the transmission of synchronous and asynchronous service operations. Use the PeopleSoft Integration Broker to:

- Perform asynchronous and synchronous messaging among internal systems and third-party systems.
- Expose PeopleSoft business logic as web services to PeopleSoft and third-party systems.
- Consume and invoke web services from third-party and PeopleSoft systems.

The two major components of PeopleSoft Integration Broker are the integration gateway and the integration engine. The integration gateway is a platform that manages the receipt and delivery of service operations passed among systems through PeopleSoft Integration Broker. The integration engine is an application server process that routes service operations to and from PeopleSoft applications as well as transforms the structure of service operations and translates data according to specifications that you define.

PeopleSoft Integration Broker offers the following benefits:

- PeopleSoft Integration Broker is provided with PeopleTools so you don't need to purchase additional, third party integration tools.

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- Consistent infrastructure using PeopleSoft Application Servers and web servers.
- Ability to reuse development staff skills.
- "Out-of-the-box" integration to all PeopleSoft applications.
- Supports all major integration methods, such as web services.

Related Links

Integration Broker

Feed Publishing Framework

The Feed Publishing Framework provides user interfaces and APIs for feed definition creation and maintenance, feed searching and subscription, as well as feed document generation and delivery.

A web feed, news feed, or feed is a data format that provides users with access to frequently updated content. A feed contains entries, which might be headlines, full-text articles, excerpts, summaries, digital media, and links to content on a web site, along with various metadata. PeopleSoft applications, news organizations, external web sites, and other content distributors publish or syndicate web feeds, which enables users to subscribe to them.

The Feed Publishing Framework provides:

- A set of APIs and code samples to assist application developers in creating new type of feeds and integrating them with existing features
- Unified interfaces for content owners and administrative users to create, configure, and maintain feed definitions of various types.
- Interfaces for end users to discover related feeds and search feed definitions.

Related Links

Feed Publishing Framework

Component Interfaces

Component interfaces provide a mechanism to access PeopleSoft components programmatically. A component interface encapsulates a PeopleSoft component, which is a logical grouping of PeopleSoft pages representing a complete business transaction. You create component interfaces using PeopleSoft Application Designer.

A PeopleSoft component provides all of the business rules, through PeopleCode and edits, for interacting with the PeopleSoft database. Components are based on pages and are presented to the user to view and update with a browser. The component interface takes this same functionality and exposes it to third-party systems without using a graphical user interface.

Component interfaces:

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- Enforce all of the business rules defined on the component.
- Provide synchronous access to the PeopleSoft database.
- Provide access to PeopleSoft components through APIs.

Component interfaces expose the rich functionality delivered in the hundreds of components within PeopleSoft products. A component is an atomic transaction that implements a business process or function. A component interface provides real-time synchronous access to the PeopleSoft business rules and data associated with a business component.

The interface is exposed via standard access methods: Java, and C/C++. Component interfaces encapsulate PeopleSoft data and business processes, and they hide the details of the structure and implementation of the underlying page and data. The actual interface consists of a set of clearly defined properties and methods that follow an object-oriented programming model. External applications can access component data only by using the properties or methods specified in the component interface.

Related Links

Component Interfaces

File Interfaces

File-based integrations provide the ability to exchange files with third-party systems or legacy systems that do not support messaging. Files are exchanged using file layouts or PeopleSoft Application Engine programs. File layouts are used to graphically define where data is located in a file. The file definition layout is then accessible to the PeopleSoft Application Engine program to import or export the file.

The PeopleCode File class provides methods and properties for reading from and writing to external files. Most application interfaces to files require complex parsing of file data. Files that allow for this kind of complexity in a PeopleSoft application are based on a File interface.

A File Interface is a definition (or mapping) of a file to be processed. It identifies where data fields are located in the file. This powerful interface enables application developers to access data from a file as they would a message or a page buffer (scroll). There is no need to parse each file record into fields.

File interfaces are unique to a specific format and may only process that particular type of formatted file. The definition created in Application Designer retains a consistent look and feel regardless of format.

File layouts support the following file types:

- Fixed format sequential files.
- Comma delimited files.
- XML files.

Related Links

“Understanding File Layouts” (Application Designer Developer’s Guide)

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Supported Integration Tools

PeopleSoft supports these additional integration utilities:

- EDI Manager.
- Outgoing Forms API.
- Open Query ODBC Driver and API.

Electronic Data Interchange (EDI) is a standard means of exchanging data between companies so they can transact business electronically. For example, using EDI a company can submit an order to a vendor, and the vendor can acknowledge and fulfill the order without any paper changing hands or any contact between company representatives.

With PeopleSoft Application Designer, you can implement routings, which transfer data from one step in a business process to another. One type of routings is a forms routing. With a forms routing, the system takes data from a PeopleSoft page the user is working on, enters it onto a third-party form, and mails the completed form to designated users by means of the forms product's mail capabilities.

The PeopleSoft Open Query ODBC driver and API allow third-party reporting tools or applications to access PeopleSoft data in conformance with the PeopleSoft Query access architecture (the embedded SQL access intelligence provided by PeopleSoft Query).

Related Links

Supported Integration Technologies

Integration Testing Tools

PeopleSoft provides these tools for testing your integration development:

- Send Master Utility.
- Simple Post Utility.
- Automated integration point testing.
- Transformation Test Utility.
- Handler Tester.
- Schema Tester.

Related Links

Integration Broker Testing Utilities and Tools

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Send Master Utility

The Send Master utility enables you to test PeopleSoft Integration Broker messaging interactions with PeopleSoft and third-party web servers, application servers, and integration gateways. It can test listening connector functionality, target connector functionality, connector introspection and transactions. Send Master enables you to post any data format, including the PeopleSoft Multipurpose Internet Mail Extensions (MIME) message format, to web and application servers over HTTP and HTTPS. You can also use Send Master to simultaneously test groups of different types of messages, as well as stress test your system.

Related Links

"Understanding Send Master" (Integration Broker Testing Utilities and Tools)

Simple Post Utility

The Simple Post utility enables you to use shell scripts or a Java API to post XML messages from third-party systems to the integration gateway. The utility wraps the incoming messages in the PeopleSoft XML wrapper format and posts them to the HTTP listening connector. The Simple Post utility reads ASCII, UTF-8 and UTF-16 file formats for incoming messages and converts them to UTF-8 to send to the integration gateway.

Related Links

"Understanding the Simple Post Utility" (Integration Broker Testing Utilities and Tools)

Automated Integration Point Testing

PeopleSoft provides a means for automated integration point testing. You can perform automated integration point testing as a means to unit test, perform cross-application business process testing, or regression test integration points. Automated integration point testing is suitable for testing integration points between PeopleSoft systems, PeopleSoft systems and third-party systems, and PeopleSoft systems and open interfaces. You can use automated integration point testing with the following PeopleSoft integration technologies:

- Messaging, including asynchronous and synchronous publishing and subscribing.
- Component interfaces.
- Flat files.
- Staging tables.

Related Links

"Understanding Automated Integration Point Testing" (Integration Broker Testing Utilities and Tools)

Transformation Test Utility

PeopleSoft Integration Broker provides the Transformation Test utility, which you can use to test Application Engine transform programs without sending messages, and with minimal development effort.

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Related Links

"Understanding the Transformation Test Utility" (Integration Broker Testing Utilities and Tools)

Handler Tester

The Handler Tester allows you to test handlers defined for rowset-based and nonrowset-based service operations from within the PeopleSoft Pure Internet Architecture. You can test handlers without setting up a routing, without having pub/sub booted on your application server, and without impacting other developer activity on the system.

Related Links

"Understanding the Handler Tester Utility" (Integration Broker Testing Utilities and Tools)

Schema Tester

The Schema Tester Utility enables you to validate rowset-based and nonrowset-based messages against message schemas during development to determine if messages adhere to defined message schemas.

Related Links

"Understanding the Schema Tester Utility" (Integration Broker Testing Utilities and Tools)

Enterprise Integration Utilities

In addition to the integration technology provided by PeopleTools, there is a set of utilities shipped with your PeopleSoft applications that are also a part of the PeopleSoft integration solution.

Note: The documentation for these utilities is not part of the PeopleTools documentation; it is included with your PeopleSoft application documentation and resides in the PeopleSoft Enterprise Components for <your application> Online Help.

These additional utilities include:

- Publish utility.
- Error Handling utility.
- Effective Date Publish utility.
- Flat File utility.
- XML Schema utility.

Publish Utility

The Publish utility automates the process of copying the contents of an entire table into a remote database or legacy system. Use the utility to synchronize data from an existing system when a new PeopleSoft system is installed. The data is chunked based on the maximum size set for a message. You can control the size, number, and frequency of these data messages by using a series of data publishing rules and:

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- Whether to create header and trailer records.
- Where the data comes from.
- Whether to chunk the message.
- Which related languages to publish.

The publishing rules include pages for full table publishing rules, batch publishing rules, record mapping, languages, and batch programs.

Error Handling Utility

The Error Handling utility is a PeopleTools application that you use to view and correct messages that are received by the subscriber. You can also use this utility to correct data that is stored in staging tables.

PeopleSoft applications that receive flat file data from other systems through batch processes have built-in facilities to validate and correct data prior to updating the main application tables. Likewise, before updating core PeopleSoft application tables, the subscription process detects data errors in the messages that it receives. These error messages are stored in either message queues or staging tables.

In some cases, however, errors can’t be sent back to the third party for correction (such as when data is in a flat file). In these cases, you must provide error processing on incoming data so that messages that contain information on business objects, such as items and vendors, can be corrected and reprocessed in the PeopleSoft system. The Error Handling utility enables you to achieve this task.

Effective Date Publish Utility

The Effective Date Publish utility enables you to design processes to update external systems that process only current data and don't use or recognize effective dating.

For example, for full data messages that are intended for vendors who do not handle effective dating, the Effective Date Publish utility enables you to publish only those rows that are currently active. Any future-dated rows are not published and written to the delay table instead.

Flat File Utility

The Flat File utility enables you to develop complementary processes to translate incoming files into messages or translate outbound messages into files. You use this utility when external systems send you flat files, when external systems only accept flat files sent to them.

The Flat File utility reads the data in an incoming flat file and copies the rowsets of the data file into a message. When the utility sends the message to the subscribers, the subscribing systems receive the message an initiate normal inbound data processing. This process works in reverse for outbound flat files.

XML Schema Utility

PeopleSoft Open Integration Framework enables near real-time messaging and transactions by using a format that is based on XML to convey information between diverse applications in a standard way. To take advantage of this standardization, you must obtain clear XML definitions (schemas) for each application message, component interface, or business interlink.

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The XML Schema utility provides the following features:

- Output options for the XML Schema utility, document type definition (DTD), or BizTalk definition for all application messages.
- The ability to create an XML definition for a single object, for all of the objects, or for all of the objects by a specific owner.
- A single flat file for each XML definition that is written to your system's %TEMP directory (when you use the Microsoft Windows client) or the server's common access file directory (when you use PeopleSoft Internet Architecture).
- An application foundation for future standards of XML definitions.

Workflow Technology

Workflow enables collaboration between applications, organizations, and people. PeopleSoft Workflow enables you to:

- Automate paper-based business processes.
- Increase collaboration between employees, customers, and suppliers.
- Integrate your system according to business processes.

The main elements of PeopleSoft Workflow include:

- Business process definitions, which reflect the business process—from beginning to end.
- Activities, which are a set of logically ordered steps in a process.
- Worklists, which are the automated "to-do" lists.
- Rules, which determine the activities that are required to process your business data.
- Roles, which describe how people fit into the workflow.
- Routings, which specify where information goes and what form it takes (email message or worklist entry).

Related Links

Workflow Technology

MultiChannel Framework

PeopleSoft MultiChannel Framework delivers an integrated infrastructure to support multiple interaction channels for call center agents or other PeopleSoft users who must respond to incoming requests and notifications. The PeopleSoft MultiChannel Framework can be used from any PeopleSoft application.

A "channel" refers to the technology used to communicate during an interaction. PeopleSoft MultiChannel Framework supports the following channels:

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- Voice (telephone).
- Web collaboration (chat).
- Email.

Related Links

MultiChannel Framework

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Chapter 6

Lifecycle Management Tools

Understanding Lifecycle Management Tools

PeopleTools Lifecycle Management Tools enable you to manage your investment in your PeopleSoft application infrastructure. Lifecycle management tools help you to upgrade and update your system with the latest releases and patches using automated tools that enable you to apply only what you need as well as determine the impact to your existing version level.

Change Assistant and Update Manager

Update Manager is a lifecycle management process that is used with the PeopleSoft Update Manager PIA application, which runs on the PeopleSoft Image database. There is one PeopleSoft Image per product family (database instance) and they will be released periodically according to the image schedule posted on the PeopleSoft Update Manager Home Page. The PeopleSoft Image is the master source environment from which you will pull the updated objects, create an update change package, and apply updates to your environment. The PeopleSoft Image for your application is cumulative so you will download the most current PeopleSoft Image and get all of the updates that you need. The PeopleSoft Update Manager PIA Application and the PeopleSoft Image work together; the PeopleSoft Image contains the updates and the PeopleSoft Update Manager PIA Application is the searching tool and custom change package definition generator.

PeopleSoft Change Assistant orchestrates the entire process flow to apply updates and upgrades to your PeopleSoft applications. Each PeopleSoft Update Image DPK for your application includes the entire PeopleSoft environment including a tools client directory that has the corresponding version of Change Assistant. Change Assistant supports Update Manager tasks, as well as traditional updates for non-PUM enabled applications. The Update Manager action in Change Assistant includes Update Manager tasks such as defining, creating and applying change packages. Application Upgrade tasks include upgrading to a new application release and applying updates required for upgrade. PeopleTools tasks include applying a PeopleTools patch, upgrading to a new release of PeopleTools and applying tools delta package. Other tasks include exporting and importing Change Assistant settings.

Related Links

Change Assistant and Update Manager

Application Data Sets

Application Data Sets enable developers to use a PeopleSoft Pure Internet Architecture (PIA) browser page to define data set definitions as a hierarchy of records and assign collective properties. The two main components in data sets are the Data Set Designer used to define the structure of the data set and the Data

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Migration Workbench, used to define the Data Migration project content and to orchestrate copy and compare.

Data Migration Workbench

Data Migration Workbench facilitates the Configuration Management process using Application Data Sets as its underlying transport technology. Data Migration Workbench shows the current status of a project and prevents inconsistent actions.

The Data Migration Workbench is designed to manage the complexity of migrating configuration data across numerous PeopleSoft systems. It is very common to have multiple databases (four or more) in a single PeopleSoft environment, including one or more for development, another for quality assurance, not to mention the primary production system. PeopleTools migrates managed objects between environments using PeopleSoft Application Designer projects that are extracted from one database and imported into another, which works well for PeopleTools metadata. However, projects do not handle application configuration data. The Data Migration Workbench addresses the application configuration data.

Related Links

Lifecycle Management Guide

Data Mover

PeopleSoft Data Mover enables the database administrator or system programmer to perform a number of functions, including:

- Transfer application data between PeopleSoft databases.
- Move PeopleSoft databases across operating systems and database platforms.
- Execute Structured Query Language (SQL) statements against any PeopleSoft database, regardless of the underlying operating system or database platform.
- Create, edit, and run scripts.

PeopleSoft Data Mover provides a development interface that enables you to create scripts using specific commands. You can run scripts from the development environment or from a command line. You use PeopleSoft Data Mover during the PeopleSoft installation, but it is also used for a variety of maintenance tasks.

Related Links

“Understanding PeopleSoft Data Mover” (Lifecycle Management Guide)

Change Impact Analyzer

Change Impact Analyzer is a tool installed separately from PeopleTools that helps you determine the impact of specific changes you plan to make to your application. It's an interactive program where you can see the relationships of PeopleSoft definitions in a hierarchical view. Change Impact Analyzer

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displays several views of analyses in tabular and text views. It's delivered with a set of rules that are used to determine the relationships between definitions. Rules define the impact or effect on definition(s) when another definition changes. For example, if a database field changes, it would impact the record containing that field. You can add custom rules to the rules files, if needed, to assess the impact of additional relationships.

Related Links

Change Impact Analyzer

Setup Manager

Setup Manager supports application configurations with a step-by-step process for identifying, managing, and executing setup tasks based either on business processes or the PeopleSoft products and features you select. Based on specific configuration templates the PeopleSoft Setup Manager actually generates a setup task list and pages you can use to manage the completion of setup tasks.

Setup Manager reduces the time and cost required to implement your PeopleSoft applications by ensuring the application setup is completed accurately and in the correct sequence, thus eliminating costly rework.

The Setup Manager also provides links to relevant integration points, which include the documentation for and online pages used for managing the data.

Related Links

Setup Manager

Application Designer

Application Designer is the main application development tool of the PeopleTools suite, and it also offers a rich set of lifecycle management features that you will use frequently when upgrading, applying updates provided by Oracle, or applying customizations to your production database. These features enable you to:

- Copy projects between databases.
- Compare definitions in one database to like definitions in another to assess the upgrade or update impact.
- Merge definitions from one database to another.
- Create change packages to apply updates to your system automatically using Change Assistant.

Related Links

Lifecycle Management Guide

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Test Framework

PeopleSoft Test Framework (PTF) is a tool that automates various tasks within the PeopleSoft application – primarily functional testing. Automating functional testing allows you to run more tests with greater accuracy during a shorter time window.

PTF works by replicating the actions of a single user running functional tests against a PeopleSoft browser-based application. Users can capture or “record” manual test procedures and save them within the framework. Later, perhaps after an application upgrade or patch, those tests can be run against the application to verify whether the application still behaves as expected. This method for capturing and executing tests is often called the “record and playback” approach to automation.

Test assets (tests, test cases, logs, and runtime options) are stored in a database as Application Designer objects, which means they can be compared and copied between databases.

PTF includes a number of features that many other commercially-available record-and-playback automation tools lack, including:

- The ability to validate recorded objects against PeopleSoft’s object metadata definitions. This enables the tester to assertively verify the existence of test objects before running a test rather than running the test to identify invalid object definitions by trial and error.
- Functionality to run existing tests with real-time data using query based testing.
- Features to help manipulate data within PeopleSoft’s rowset-oriented data structure.
- Feature to record JET Charts and drag and drop actions used in the Fluid applications.
- Functionality to automate numerous PeopleSoft-specific functions, such as running processes through Process Scheduler.
- Built-in commands to interface with other PeopleSoft tools, such as Data Mover and PeopleSoft Query.
- Feature to restrict user privileges on a test folder for specific PTF roles.

PTF allows you to export and import runtime options through command line or the PTF client. You can even create runtime options through the command line.

Related Links

Test Framework

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Chapter 7

Viewing PeopleTools Within Implementation Phases

Understanding the Phases of Implementation

Although few implementations follow exactly the phases of a system development lifecycle (SDLC) or implementation plan, the following implementation phases are provided as a framework through which you can gain an understanding of how and when specific PeopleTools are intended to be used. This framework should be viewed as a high-level educational guide rather than a strict, implementation model.

Note: Some PeopleTools may be used in multiple phases of an implementation.

Note: The implementation phases in this framework are intended to help you gain a better understanding of PeopleTools regarding how and when they may be used. The implementation phases in no way imply strict dependencies between phases. Every implementation is unique.

Using PeopleTools within Implementation Phases

The following table describes the implementation phases and lists the tools and technologies that are likely to be used within the particular phases.

Phase	*Description*	*Tools and Technologies Used*
Installation	This phase covers the activities involved in installing the PeopleSoft software and setting up your demonstration PeopleSoft environment. A demonstration environment includes application servers, Process Scheduler servers, web servers, and a PeopleSoft database.	• Data Mover • Configuration Manager • Application Designer • Security • Data Integrity Tools (DDDAUDIT and SYSAUDIT) • Automation Configuration Manager

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Phase	*Description*	*Tools and Technologies Used*
Application Configuration	This phase covers the activities involved in configuring the PeopleSoft applications you have purchased to fit the business processes of your organization. This phase includes setting up security access, customizing pages, creating custom batch programs, and so on.	• Security • Application Designer • Global Technology • PeopleCode • Search • Application Engine • Setup Manager • Portal Technology
System Configuration	This phase covers the activities involved in setting up and configuring the infrastructure that supports the deployment of your application configuration. For example, in this phase you would set up the servers, the security, and processes required to be in place for your end users to use the PeopleSoft system to complete business transactions with a browser or other device.	• Portal Technology • PeopleTools Security • Application Server • Process Scheduler • Search Framework • MultiChannel Framework • Setup Manager • Application Engine • Integration Broker
Decision Support Configuration	This phase covers the activities involved with setting up the reporting and decision support systems that decision makers will use to gather business information. This includes developing predefined queries and reports, setting up a system to generate reports at scheduled times, set up access to OLAP cubes, and so on.	• Process Scheduler • PeopleSoft Tree Manager • PS/nVision • Cube Builder • SQR for PeopleSoft • PeopleCode • Pivot Grid

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Phase	*Description*	*Tools and Technologies Used*
Business Process Integration	This phase covers the activities involved in setting up systems that enable your business processes to span multiple business areas, such as HR and Finance, within your organization. This phase includes setting up our XML-driven integration technology that enables disparate systems to exchange data seamlessly, and it also includes setting up PeopleSoft Workflow to enable multiple users within a business process to easily route data and notifications to each other.	• Integration Broker • Workflow Technology • Component Interfaces • Application Designer • PeopleCode • Application Engine • Portal Technology
Maintenance	This phase covers the activities that are involved in maintaining your PeopleSoft system once you have rolled out the system to your end users. This phase includes monitoring system performance, upgrading to new releases, applying patches, and so on.	• Performance Monitor • Test Framework • Diagnostic Framework • Data Archive Manager • Change Assistant • Application Data Sets • Utilities • Application Management Plug-in for Oracle Enterprise Manager • Environment Management Framework

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Chapter 8

PeopleSoft Internet Architecture

Understanding the PeopleSoft Topology

The PeopleSoft Internet Architecture is comprised of these main server types:

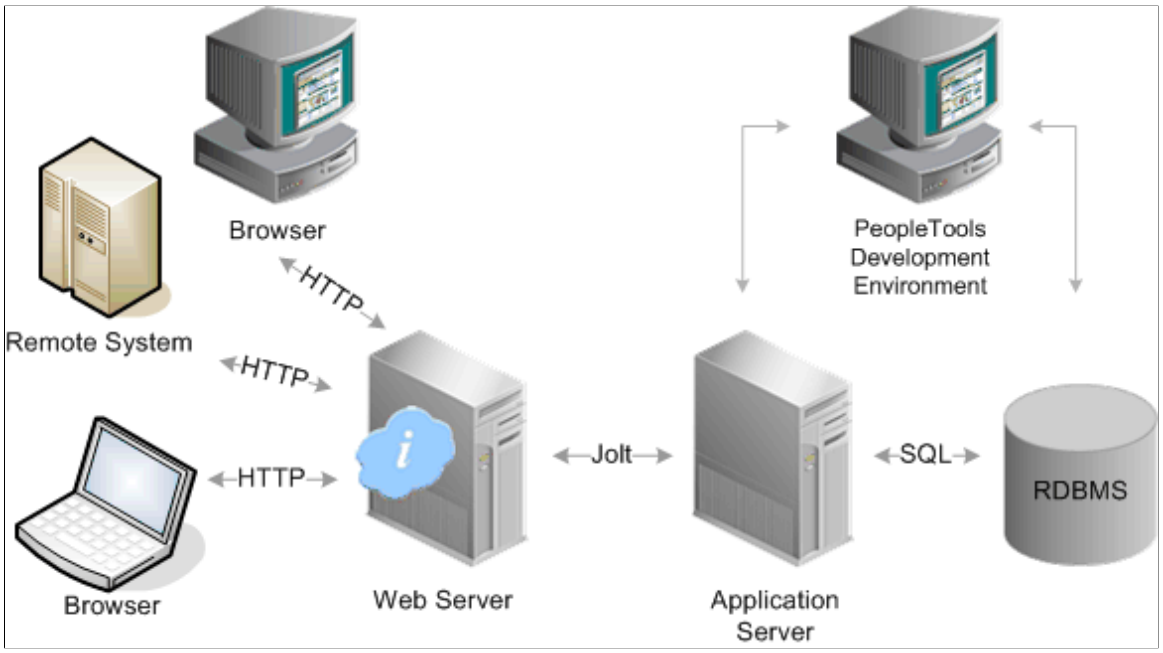
- RDBMS.
- PeopleSoft Application Server(s).
- Web server(s).

The servers facilitate connections and process requests from:

- PeopleTools Development Environment: A Windows workstation running a development tool, such as PeopleSoft Application Designer.
- Browser: A supported browser type and version displaying a PeopleSoft application or administrative interface. The browser can be running on a desktop, laptop, or supported tablets and smartphones.
- Remote system: A PeopleSoft or third-party system integrated through PeopleSoft Integration Broker's service oriented architecture (SOA).

The following diagram illustrates the relationship between the elements of the PeopleSoft Internet Architecture.

The following image illustrates how application requests are received at the web server, then sent to application server, which finally submits the SQL to the RDBMS



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PeopleSoft Database

PeopleSoft has a long history of offering customers a choice of market-leading databases. PeopleTools provides an abstraction layer, which insulates application developers from the intricacies of each of the specific database platforms. Customer databases choices include:

- Oracle
- IBM Db2
- Microsoft SQL Server

After you install your database engine there are three distinct layers within the database that work in concert to store and manage data for your PeopleSoft system. The database system tables manage both the PeopleTools and PeopleSoft application database objects, while the PeopleSoft application tables reside within the infrastructure defined by the PeopleTools metadata.

The following image describes three distinct yet integrated database layers for PeopleSoft system.

The following table describes each layer of a PeopleSoft database.

PeopleSoft Database Layer	***Description***
System Tables	System tables, also called system catalog tables, are analogous to a table of contents for a book or to file allocation tables on a hard drive. The structure and table names vary depending on which RDBMS you use. System catalog tables: • Keep track of all of the objects that reside in the database instance. • Are created by and owned by the RDBMS. • Are often described as system metadata.

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PeopleSoft Database Layer	*Description*
PeopleTools metadata	PeopleTools tables provide the infrastructure for PeopleSoft applications by storing and managing PeopleSoft application metadata. This metadata consists of information that defines the application, such as records, fields, pages, PeopleCode, and security. PeopleTools tables: • Define the structure of all object definitions that make up an application. • Use the same table structure for all applications. • Contain data that is added and updated only when the application is installed, or when using development tools such as PeopleSoft Application Designer or Data Mover.
PeopleSoft application data tables	Application data tables store data entered through a PeopleSoft application. The specific tables and their structures vary by application. Application data tables: • Contain transactional data entered by users. • Are empty prior to data entry (except the demo databases).

PeopleSoft Application Server

The application server handles the bulk of the workload within the PeopleSoft system. It runs the business logic and processes all application requests. The application server relies on Oracle Tuxedo middleware to process transaction requests. Oracle Jolt provides the Java interface making Oracle Tuxedo available for web-based requests.

Unique server processes run on the application server, with each server process type designed to handle specific types of transactions. For example, some server processes are designed to handle browser requests, while others are designed to handle Integration Broker requests.

Server processes are configured to boot within a domain. The number of and type of server processes that boot within a particular domain varies depending on the purpose of the domain. For example, if the domain is configured to handle application requests, primarily, it can contain only server processes designed to handle such requests. Likewise, if a domain is configured to handle Integration Broker processing, it can contain a predominant amount of the integration server processes. A domain can connect to one, and only one, database, while a database can accept connections from multiple domains.

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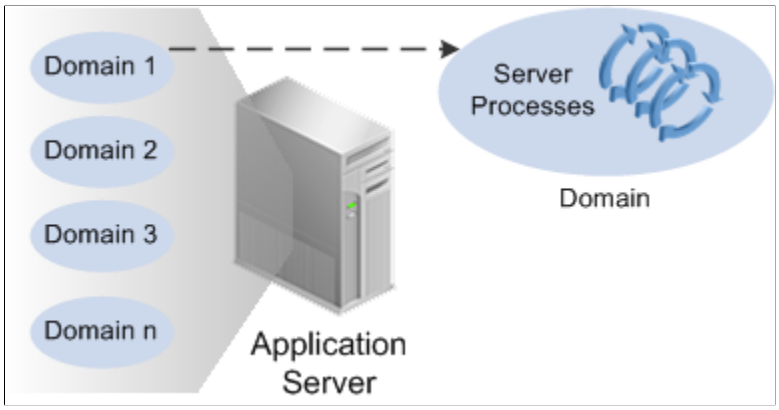
The following image illustrates that an application server can contain multiple domains, with each domain containing multiple server processes



To enhance the scalability of your system, you can configure multiple domains on a single application server machine, and you can also incorporate multiple application server machines to meet the demands of your system.

Web Server

The web server receives application requests from the web environment (internet and intranet) and forwards the requests to the Oracle Jolt port on the application server. A collection of PeopleSoft servlets running on the web server handle incoming requests. Like the server processes on the application server, each PeopleSoft servlet is designed to perform unique functions. For example, the portal servlet handles browser requests while the gateway servlet handles service oriented architecture (SOA) messages and requests.

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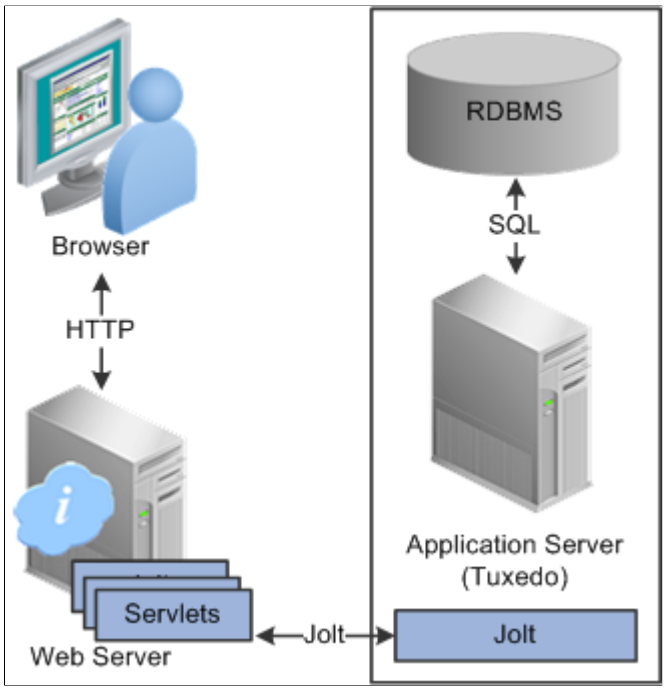
The following image illustrates how PeopleSoft servlets on the web server receive web-based requests and then forward these requests to the Oracle Jolt port present on the application server:



The web server currently supported by PeopleSoft is Oracle WebLogic.

PeopleTools Development Environment

While many development and administrative tools and interfaces are accessible by browser, some tools are only available from a Windows-based workstation. The PeopleTools Development Environment refers to the Microsoft Windows workstations that run the collection of Windows-based PeopleTools, which enables application developers, technical specialists, and system administrators to perform a variety of tasks.

For example, application developers use PeopleSoft Application Designer in the development environment to create and modify application definitions such as fields, records, pages, and components. System administrators use PeopleSoft Data Mover in the development environment to import data into the database, for example.

The PeopleTools Development Environment can access the system using these connection types:

Connection Type	***Description***
Two-tier	Involves connecting directly to the database. A two-tier connection requires connectivity software per the RDBMS to be installed and configured on the workstation. A two-tier connection is required for many upgrade and installation tasks.

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Connection Type	*Description*
Three-tier	Involves connecting to the database through the application server. A three-tier connection requires no connectivity software to be installed on the workstation. In a three-tier connection, the application server maintains the connection to the database for transmitting SQL statements between the application server and the database. Only lightweight Tuxedo messages are sent between the workstation and the application server.

Application Access Types

The PeopleSoft Internet Architecture enables these application access types:

Connection Type	*Description*
Browser	All PeopleSoft applications as well as many PeopleTools interfaces are rendered within a browser. No connectivity software is required on the workstation or device running the browser, nor are there any applets downloaded to the browser. All processing occurs within servlets on the web server and server processes on the application server. The system sends to the browser only HTML, JavaScript, and XML. Supported browser types include Mozilla Firefox, Chrome, and Safari. The browser can be running on a desktop or laptop computer as well as supported tablets and smartphones.
Remote system	A remote system may be a separate PeopleSoft application, a third-party system, or a legacy system. The service oriented architecture (SOA) provided by PeopleSoft Integration Broker enables you to configure your PeopleSoft system to produce services for and consume services from other systems.

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