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PeopleSoft 9.2: Events and Notifications Framework

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PeopleSoft 9.2: Events and Notifications Framework
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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.

PeopleSoft Hosted Documentation

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

Locally Installed Help

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

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

See *PeopleTools 8.53 Installation* for your database platform, "Installing PeopleSoft Online Help." If you do not use Secure Enterprise Search, see the documentation for your chosen search engine.

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

Downloadable PeopleBook PDF Files

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

Common Help Documentation

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

- Application Fundamentals

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- Using PeopleSoft Applications

Most product lines 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 line. Whether you are implementing a single application, some combination of applications within the product line, or the entire product line, 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: PeopleSoft 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***
Bold	Highlights PeopleCode function names, business function names, event names, system function names, method names, language constructs, and PeopleCode reserved words that must be included literally in the function call.
Italics	Highlights field values, emphasis, and PeopleSoft or other book-length publication titles. In PeopleCode syntax, italic items are placeholders for arguments that your program must supply. Italics also highlight references to words or letters, as in the following example: Enter the letter *O*.
Key+Key	Indicates a key combination action. For example, a plus sign (+) between keys means that you must hold down the first key while you press the second key. For Alt+W, hold down the Alt key while you press the W key.
`Monospace font`	Highlights a PeopleCode program or other code example.
. . . (ellipses)	Indicate that the preceding item or series can be repeated any number of times in PeopleCode syntax.

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Typographical Convention	*Description*
{ } (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.
⇒	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

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- North America

Industry Identifiers

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

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

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Documentation Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc.

Using and Managing the PeopleSoft Online Help

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

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

PeopleSoft Enterprise Components Related Links

PeopleSoft Information Portal on Oracle.com

My Oracle Support

PeopleSoft Training from Oracle University

Contact Us

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

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Chapter 1

Getting Started with PeopleSoft Events and Notifications Framework

PeopleSoft Events and Notifications Framework Overview

The PeopleSoft Events and Notifications framework provides three features that can be configured and used to monitor business processes and create messages when unusual situations or errors occur within a PeopleSoft process or table. These messages can be routed to different users (PeopleSoft or non-PeopleSoft) to prompt the user to resolve the issue. Links can take the user directly to the page for correction or resolution. The three features are:

- Events
- Notifications
- Alerts

Events

Events is a feature and framework that enables you to define, implement, and run business logic for business events.

Using the Events framework, you can define the business events that the system raises when you change certain data in application components or run certain PeopleTools Application Engine processes. You can also define the event handlers that the Events framework executes to react to these specific event instances. *Raising* an event is the act of creating an event instance. If an event is raised, the Events framework automatically executes the business logic for the registered event handlers of the event.

Events allow you to:

- Isolate, automatically process, and monitor the business logic asynchronously.
- Define your own business events and build your own event handlers for these events with minimal impact to the delivered code.
- Troubleshoot based on detail provided in the Event Monitor.

Notifications and Alerts

The notifications feature enables you to monitor the transaction flow and alert your organization to any errors, changes, and stalled transactions.

With notifications and alerts, you can:

- Monitor PeopleSoft processes and receive notifications when exceptions are found.
- Scan PeopleSoft tables using PeopleSoft Query and receive notifications when exceptions are found.

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- Use the Notification Dashboard to monitor messages and link to the PeopleSoft page where you can review or correct the issue.
- Receive notifications to your email account.
- Receive notifications to your PeopleSoft worklist.
- Pass messages to a third-party system using the XML format.
- Create a custom action for a notification using an PeopleSoft application class.

Events and Notifications Framework Implementation

Many PeopleSoft applications are delivered with pre-defined events and notifications. Refer to your specific application for implementation details.

PeopleSoft Setup Manager enables you to review a list of setup tasks for your organization for the products that you are implementing. The setup tasks include the components that you must set up, listed in the order in which you must enter data into the component tables, and links to the corresponding product documentation.

Other Sources of Information

In the planning phase of your implementation, take advantage of all PeopleSoft sources of information, including the installation guides, table-loading sequences, data models, and business process maps.

For more information, refer the product documentation for *PeopleTools: PeopleSoft Setup Manager*.

Implementing Events

To implement Event Manager into your application processing:

Step	***Reference***
Identify the business events that drive the execution of your business logic and, if necessary, define a new event.	See Defining and Registering Events.
Write the event handlers in PeopleTools Application Designer to execute the business logic that is specific to the event.	See Creating Event Handlers.
Register the event handlers to the event through the Event Registry component.	See Defining and Registering Events.
Test your event and its registered event handlers.	See Event Manager - Test an Event Handler Page.

Implementing Notifications

To implement notifications:

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Step	*Reference*
Add your process name and category to the Notification Registry page.	See Notification Registry Page.
Create a message context record to pass all transactional data through the message framework.	All context records must include the EOEN_LOG_KEY subrecord. Any additional transactional fields can be added to the context record.
Implement the EOEN interface object within your application process by using the EOEN_MVC:EOEN_MODEL.EOEN_INTERFACE class.	See Modifying PeopleSoft Processes to Create Notifications.

Implementing Alerts

Use these steps to implement alerts:

Step	*Reference*
Define the query to use with the alert.	See Defining PeopleSoft Queries in the Alert Setup Component.
Define the Alert Setup	See Defining PeopleSoft Queries in the Alert Setup Component.
Run the Alert process.	See Running the Alerts Process.

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Chapter 2

Understanding the Events and Notifications Framework

Understanding the Process Flow of the Events and Notifications Framework

As your organization processes the continuous stream of transactions within your PeopleSoft system, the events and notifications feature enables you to monitor the transaction flow and alert your organization to any errors, changes, and stalled transactions. The messages generated by the events and notifications feature can notify you of the problem, give you a detailed description of the issue, and provide a link to the PeopleSoft page where you can resolve it.

The events and notifications delivers a flexible way for you to route these messages to different individuals, job roles, or departments to insure that the correct person handles any potential problems before they cause trouble. Based on your setup of the events and notifications feature, you can view these messages:

- On the Notification Dashboard page. This dashboard provides a central location to view all of these messages.
- (optional) Within a PeopleSoft Worklist.
- (optional) Within an email account.
- (optional) Within a third-party system as an XML-formatted message.
- (optional) Using a custom action created by an application class.

There are three ways to use notifications:

- *Use pre-defined notifications:* Some PeopleSoft applications are delivered with batch and online processes that have been pre-defined to generate notification messages. Once you complete the notification setup steps, the notification messages are delivered to the appropriate user.
- *Define new notifications for a PeopleSoft process:* Use the PeopleSoft Application Designer to alter an existing PeopleSoft process to generate messages. Then complete the notification setup steps for the new notifications. This method alters the PeopleCode of an existing PeopleSoft process and requires the assistance of your IT department.
- *Use PeopleSoft Query:* Create a PeopleSoft Query on one or more PeopleSoft tables, add the Alert using the Alert Setup component, and then complete the Alert setup steps. When the Alerts process is run, the PeopleSoft table is queried and the Alert messages can be generated. This method enables you to monitor data within a PeopleSoft table; for example, searching for stalled transactions, instead of looking at the results of a PeopleSoft process.

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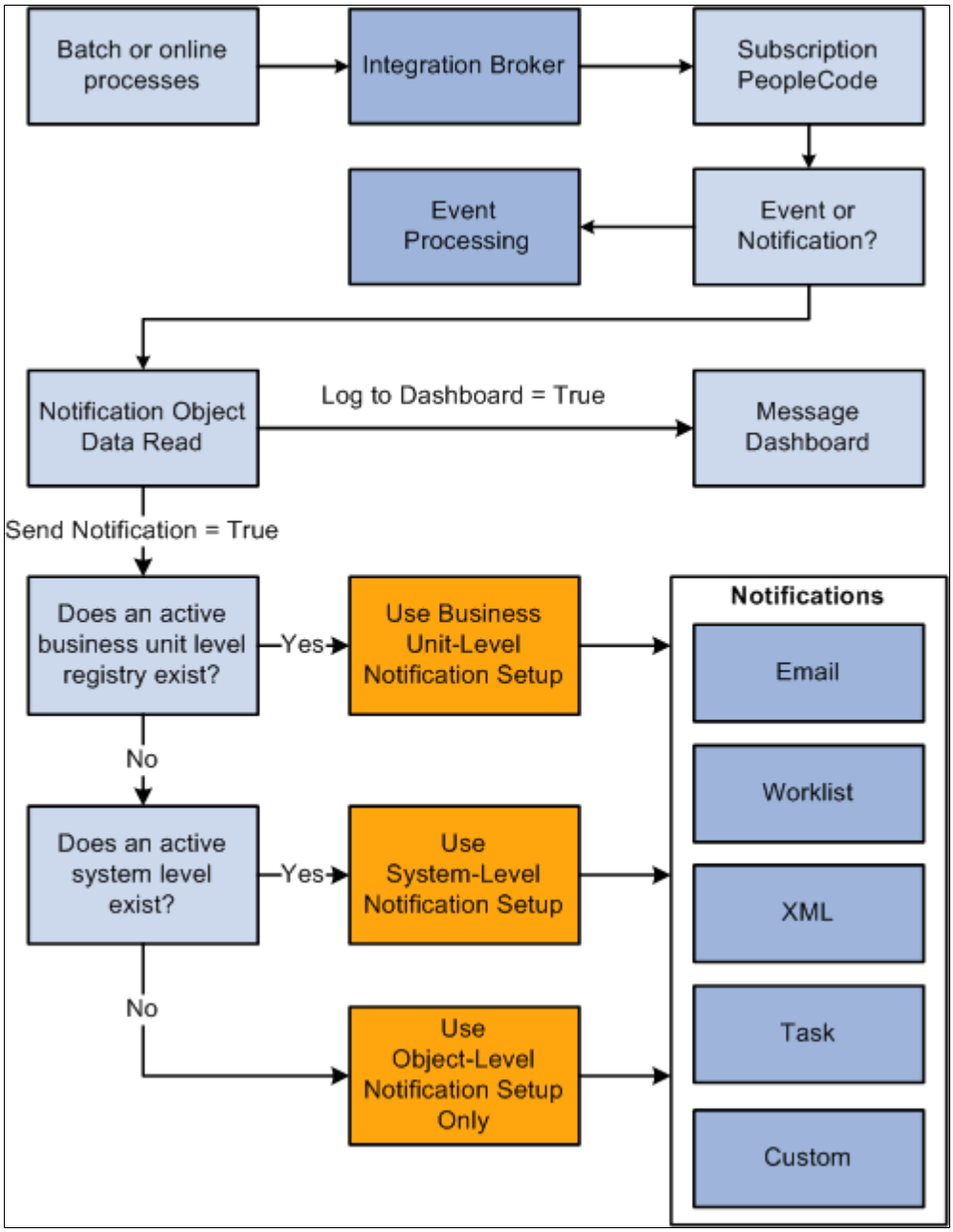
The Process Flow of Notification Messages Generated by a PeopleSoft Process

Image: Generating notification messages from a PeopleSoft process

This diagram illustrates the process flow of notifications produced by a batch or online PeopleSoft process. The PeopleSoft process creates message object data that includes values such as, who to notify and where to post the message (Notification Dashboard, Worklist, email, XML notification, or custom action). The message is sent through Integration Broker and subscription PeopleCode determines whether it is an event or a notification. The system checks for override values at the notification registry, the business unit level, or the system level, and then notifies the appropriate person using the Notification Dashboard page, an email, a worklist entry, an XML message, or a custom action.



A PeopleSoft batch or online process, that has been coded to use the notification feature, generates message object data when certain conditions are met. For example, the reservations process in PeopleSoft Inventory sends message data when someone uses the Shortage Workbench to unreserve quantity on a

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material stock request. The PeopleSoft process provides several values to the notification framework, including:

- Where to log the message (any combination of the Notification Dashboard, PeopleSoft Worklist, email, XML notification, and custom action).
- The message set and message number.
- User roles, user IDs, email addresses, or PeopleSoft nodes needed to route the message to the correct location.
- Links to the PeopleSoft page where the transaction can be viewed or resolved.

The Notification Registry page is reviewed for the specific process name and process category to determine if:

- Overrides were turned on at the system-level and business unit level for worklist, email, or XML notifications.
- A custom action was created.
- A pre-processing user exit was created.

The PeopleSoft system then checks to see if override values have been entered at the business unit level using the BU-Level Notifications page. The business unit level values override the values provided by the PeopleSoft process.

If there are no entries on the BU-Level Notifications page for this process name and process category, then the PeopleSoft system checks to see if the values have been overridden at the system level using the System-Level Notifications page. The system-level values override the values provided by the PeopleSoft process.

The messages are posted to the Notification Dashboard and other locations based on the values used. If the notification is sent using an email or a worklist entry, a link is provided to take the individual to the message detail page of the Notification Dashboard.

Note: Integration Broker must be configured and active for the Notification and Events framework to function.

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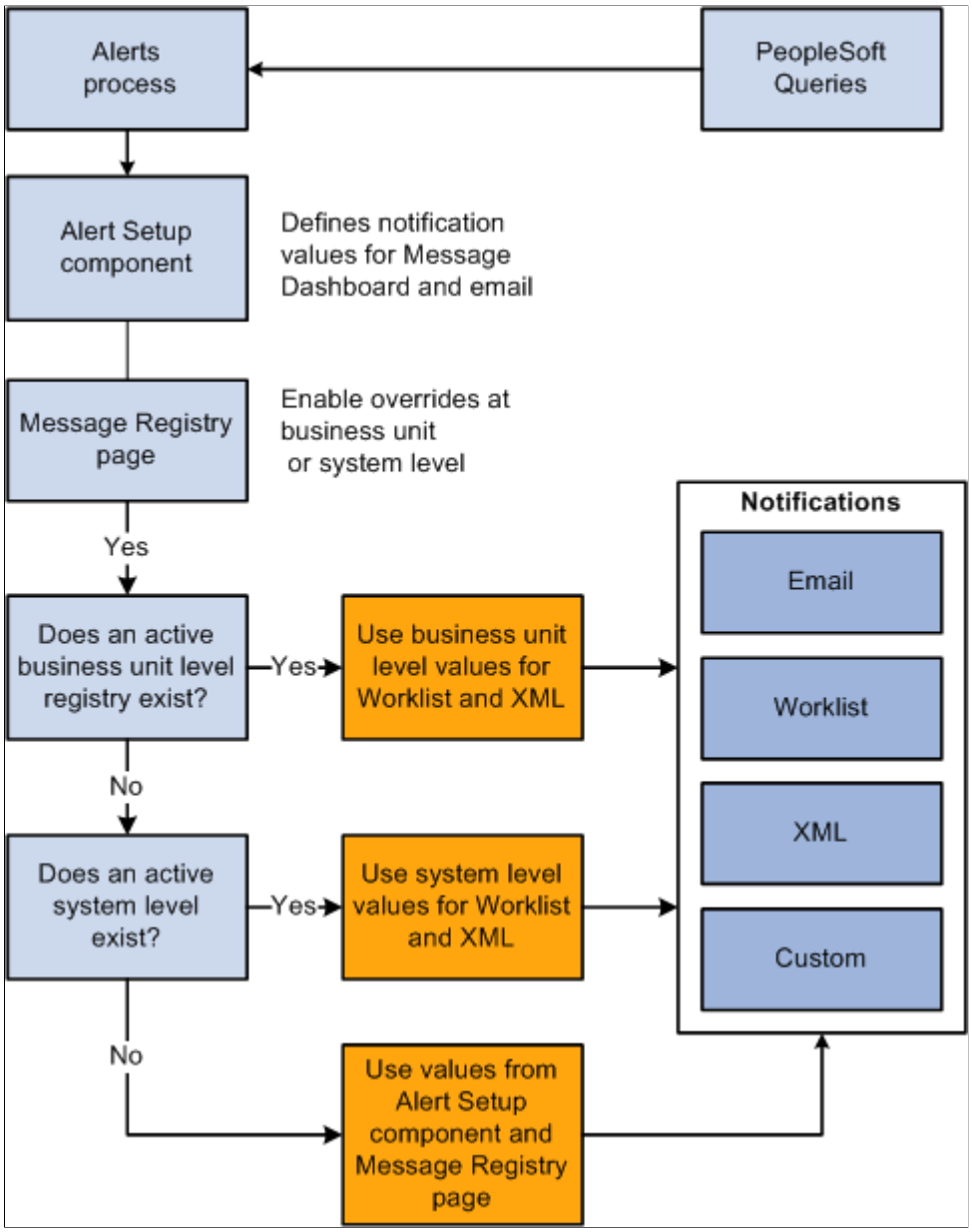
The Process Flow of Alert Messages Generated by a PeopleSoft Query

Image: Generating Alert messages from a PeopleSoft Query

This diagram illustrates the process flow of notifications produced by a PeopleSoft Query in combination with the Alert feature. The Alert process is run for one or more PeopleSoft Queries. If issues are found, then message object data is generated using the values included in the Alert Setup component, the BU-Level Notifications page, or the System-Level Notifications page. The appropriate person is notified using the Notification Dashboard page, an email, a worklist entry, or an XML message.



One or more PeopleSoft Queries are run using the Alerts process page.

Values are collected from the Alert Setup component, the BU-Level Notifications page, or the System-Level Notifications page based on process name, process category, and query name. These values include:

- Where to log the message (any combination of the Notification Dashboard, PeopleSoft Worklist, email, and XML notification).

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- The message set and message number.
- User roles, user IDs, email addresses, or PeopleSoft nodes needed to route the message to the correct location.
- Links to the PeopleSoft page where the transaction can be viewed or corrected.

You must use the Notification Registry page to enable the overrides for the process name and process category.

The Alert Setup component defines values for the Notification Dashboard and email notifications. The BU-Level Notifications page or the System-Level Notifications page define values for the PeopleSoft Worklist and XML notifications. If there are no entries on the BU-Level Notifications page for the process name and the process category, then the PeopleSoft system checks to see if the values have been defined at the system level using the System-Level Notifications page.

The message is posted to the Notification Dashboard and other locations based on the values used. If the notification is sent using an email or a worklist entry, a link is provided to take the individual to the message detail page of the Notification Dashboard.

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Chapter 3

Setting Up Notifications

Understanding Notification Setup

The Notification setup steps are:

1. Use the Notification Registry page to identify the notifications to be used and to enable any overrides at the system or business unit levels. In addition, the Notification Registry page can create custom actions or allow a pre-processing user exit.

2. Use the System-Level Notifications page to override information from the message that determines who should be notified (user, user role, email address, or node) and how they should be notified (worklist, email, or XML notification). You can also disable worklist, email, or XML notifications. These overrides are applied for the process name and process category combination to the entire PeopleSoft system.

3. Use the BU-Level Notifications page to override information from the message that determines who should be notified (user, user role, email address, or node) and how they should be notified (worklist, email, or XML notification). You can also disable worklist, email, or XML notifications for a specific business unit. These overrides are applied for the process name, process category, and business unit combination. Values at the business unit level override any system-level overrides.

4. Set up and activate the EOEN Notify Message to enable the PeopleSoft Integration Broker to send a message to a third-party system using a XML-formatted messages.

Additional steps are necessary if you are modifying a PeopleSoft process to generate new messages or are using PeopleSoft Query to monitor PeopleSoft tables.

Understanding System and Business Unit Level Overrides

A notification message includes values used to build the message, such as:

- Where to log the message (any combination of the Notification Dashboard, PeopleSoft Worklist, email, and XML notification).

- A message set and message number. (optional)

- User roles, user IDs, email addresses, or PeopleSoft nodes needed to route the notification message to the correct location.

- Links to the PeopleSoft page where the transaction can be viewed or corrected.

The values are obtained from the PeopleSoft process generating the notification or in the case of Alerts from the Alert Setup component, BU-Level Notifications page, and System-Level Notifications page.

For notifications that are not Alerts, you can override the values from the initial PeopleSoft process in order to accommodate a temporary change or permanently provide more specific values using:

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- System-Level Notifications page.
- BU-Level Notifications page.

System-level notifications are defined by the process name and the category and enable you to override the notification for the entire system. For example, if Bob receives all of the notifications for the OM_PEGGING / RECEIPT process and he goes on an extended vacation, you can set up an override at the system level to route all of these specific messages to Steve.

Business unit-level notifications are defined by the process name, the category, and the business unit and enable you to override the notification at the business unit level. For example, if the notifications for the OM_PEGGING / RECEIPT process need to be specific to the inventory warehouse, you can set up an override at the business unit level to route all of the messages for business unit US001 to Steve and to route all of the messages for business unit US008 to Ralph.

When you set up system and business unit level notification overrides, you determine who should be notified when a notification occurs and how they should be notified. As with most default hierarchies in the PeopleSoft system, the more specific information overrides the more general information. In this case, if values are defined at both levels for the same process name and category, then the values defined at the business unit level (BU-Level Notifications page) override the values defined at the system-level (System-Level Notification page).

Setting Up the Notification Registry and Override Pages

This section discusses how to:

1. Set up notification registries.
2. Set up the registry notifications at the system level.
3. Set up the registry notifications at the business unit level.

Pages Used to Set Up the Notification Registry and Registry Notification Pages

Page Name	***Definition Name***	***Navigation***	***Usage***
Notification Registry	EOEN_NTF_REGISTRY	Enterprise Components, Events & Notifications, Notifications Framework, Notifications Registry	Set up the notification registry to identify the notifications to be used and to enable any overrides at the system or business unit levels. In addition, the Notification Registry page can create custom actions or allow a pre-processing user exit.
System-Level Notifications	EOEN_NTF_REG_SYS	Enterprise Components, Events & Notifications, Notifications Framework, Notifications System Overrides	Set up system-level notifications, which define overrides at the system level for each process name and process category.

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Page Name	Definition Name	Navigation	Usage
BU-Level Notifications	EOEN_NTF_REG_BU	Enterprise Components, Events & Notifications, Notifications Framework, Notifications BU Overrides	Set up business unit level notifications, which define overrides at the business unit level for each process name, process category, and business unit.

Notification Registry Page

Use the Notification Registry page (EOEN_NTF_REGISTRY) to set up the notification registry to identify the notifications to be used and to enable any overrides at the system or business unit levels.

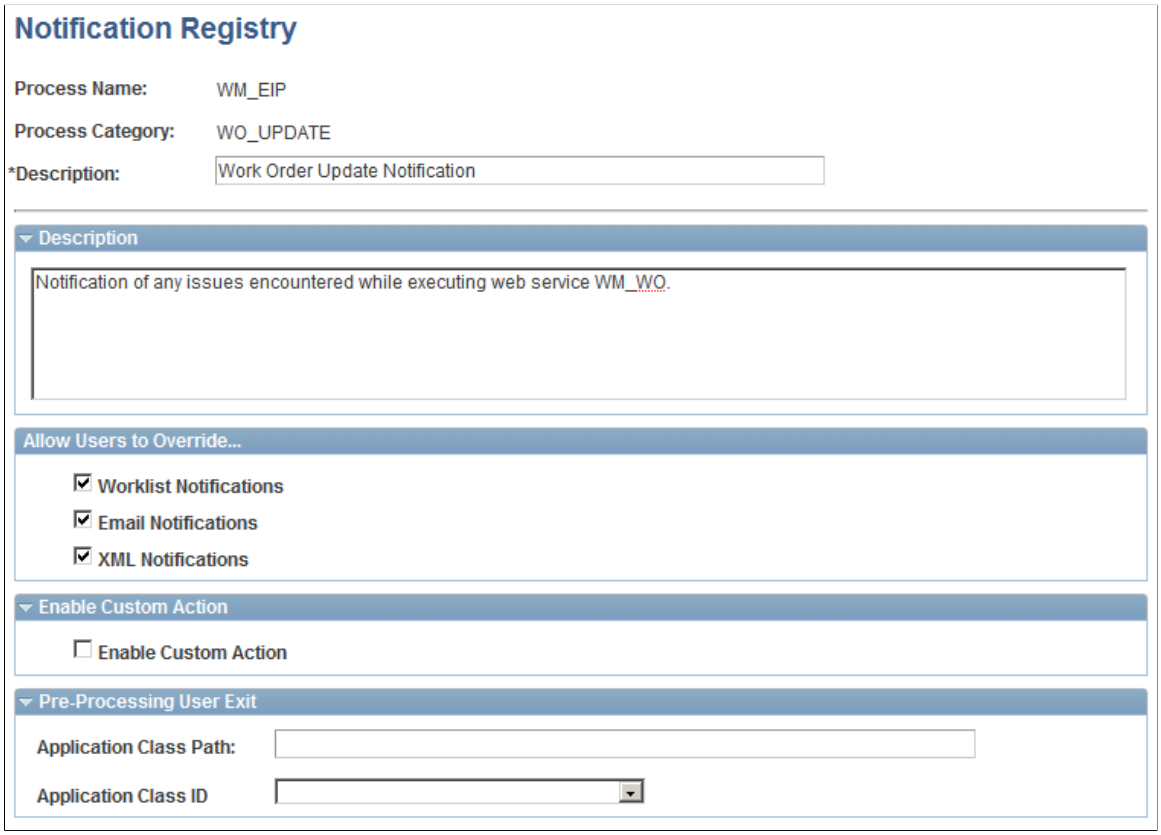
In addition, the Notification Registry page can create custom actions or allow a pre-processing user exit.

Navigation

Enterprise Components, Events & Notifications, Notifications Framework, Notifications Registry

Image: Notification Registry page

The notification registry contains all delivered processes and categories. If you have customized your system with additional processes and categories, you must add them to the Notification Registry page.



Process Name Enter or view the process using notifications. This field can contain an application batch or online process. For Alert notifications, a user-defined value is entered in this field.

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Process Category Enter or view the category. The category is a logical partition of the Process Name.

For PeopleSoft processes, the category names are defined when the process is developed. For example, when the Reservation process runs, multiple messages are related to item ID. All of these item ID-type messages are grouped into one category so that one user can be notified when a message occurs. For each delivered process, the PeopleSoft system has categories that are delivered with the PeopleSoft product.

Description Enter or view the extended description for this notification message by process name and category combination.

Allow Users to Override

Select the appropriate check boxes Worklist Notifications, Email Notifications, and XML Notifications to enable overrides at the system and business unit levels for this notification message. If you do not allow overrides then the notification method and destinations contained in the notification will always be used. If there are no notification methods or destinations in the notification then the notification dashboard will be the only way to view the notification.

Enable Custom Action

For PeopleSoft processes, select Enable Custom Action, to enable a customized action. Use this option if you have written your own application class for a customized action. Enter the Application Class Path and Application Class ID fields, which are extensions of the EOEN_MVC:MODEL:EOEN_PostProcessingUserExit class.

Pre-Processing User Exit

For PeopleSoft processes, enter the Application Class Path and Application Class ID fields. A preprocessing user exit tells the system to run another process before it determines who to notify. For example, a purchase order approval process is created that is based on the purchase order value. Purchase orders under 500.00 USD are approved by the department manager, and purchase orders over 500.01 USD are approved by the department director. The preprocessing user exit tells the system to run the purchase order approval process before determining who to notify. The preprocessing user exits are extensions of the EOEN_MVC:MODEL:EOEN__PreProcessingUserExit class.

System-Level Notifications Page

Use the System-Level Notifications page (EOEN_NTF_REG_SYS) to set up system-level notifications, which define overrides at the system level for each process name and process category.

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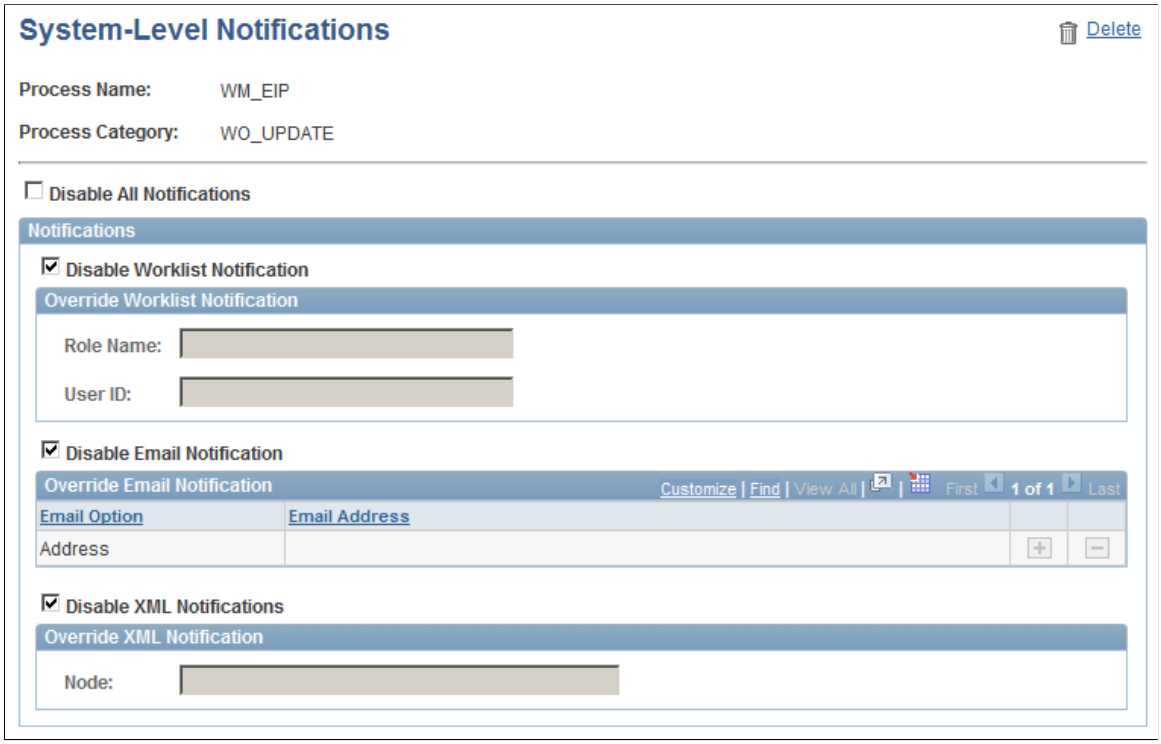
Navigation

Enterprise Components, Events & Notifications, Notifications Framework, Notifications System Overrides

Image: System-Level Notifications page

This example illustrates the fields and controls on the System-Level Notifications page. You can find definitions for the fields and controls later on this page.



The Override Notification sections of this page are determined by the options selected on the Notification Registry page.

Disable All Notifications

Select to disable all notifications for this message.

Note: Notifications will still be posted to the Notification Dashboard.

Disable Worklist Notification

Select to disable only worklist notifications for this message.

Role and User ID

Select a role or a user ID for the worklist notification. This determines the person to notify for this message.

Note: If the Worklist Notifications check box is selected on the Notification Registry page and the Role field or the User ID field are blank on the System-Level Notifications page and the BU-Level Notifications page, then the worklist notification for the original message object (either User ID or Role) is used.

Disable Email Notification

Select to disable only email notifications for this message.

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Email Option

Select *Address* or *UserID* for the email notification. Depending on which option you select, the field to the right will change to *Email Address* or *User ID.* You may add multiple rows if needed.

Note: If the Email Notifications check box is selected on the Notification Registry page and you do not enter an Email Address on the System-Level Notifications page or the BU-Level Notifications page, then the Email Address notification for the original message object is used.

Disable XML Notification

Select to disable only XML notifications for this message.

Node

Select the node name for the XML notification.

Note: If the XML Notifications check box is selected on the Notification Registry page and you do not enter a Node on the System-Level Notifications page or the BU-Level Notifications page, then the XML notification (node) for the original message object is used.

Note: The delivered notifications contained in some PeopleSoft processes are controlled by the owner of the transaction. For example, notification messages for pegging purchase orders goes to the buyer on the purchase order. Therefore, overriding notifications at the business unit level or system level is not enabled.

BU-Level Notifications Page

Use the BU-Level Notifications page (EOEN_NTF_REG_BU) to set up business unit level notifications, which define overrides at the business unit level for each process name, process category, and business unit.

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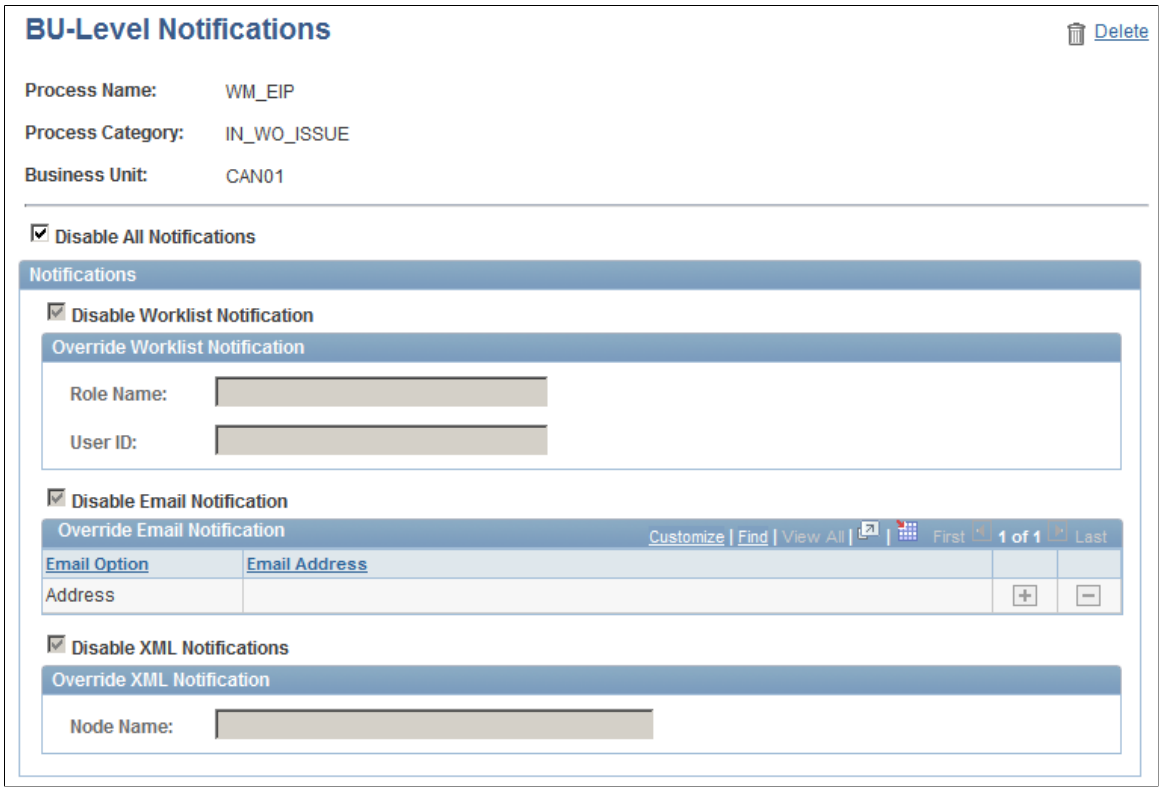
Navigation

Enterprise Components, Events & Notifications, Notifications Framework, Notifications BU Overrides

Image: BU-Level Notifications page

This example illustrates the fields and controls on the BU-Level Notifications page. You can find definitions for the fields and controls later on this page.



The BU-Level Notifications page operates exactly like the System-Level Notifications page except that it enables you to specify a business unit as a key for notifications. Values defined at the business unit level (BU-Level Notifications page) override the same values defined at the system-level (System-Level Notification page).

Related Links

System-Level Notifications Page

Setting Up Notifications Using XML Messages

The Notify Message enables the PeopleSoft Integration Broker to send a message to a third-party system using a XML-formatted messages. The notification framework can publish an outbound message using the Notify Message (EOEN_NOTIFY_MSG) service operation to notify an external system that an error or warning has occurred in the PeopleSoft system.

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Setting Up the Notify Message

PeopleSoft delivers the service operation EOEN_NOTIFY_MSG with a default status of *Inactive.* You must activate each service operation before attempting to send or receive data from a third-party source or another PeopleSoft system, such as CRM.

For more information, refer the product documentation *PeopleTools: PeopleSoft Integration Broker*.

Using the Pre-Defined Notifications

Several PeopleSoft processes are delivered with the ability to produce notification messages. These notifications are displayed on the Notification Registry page.

Use the Notification Registry page, BU-Level Notifications page, and System-Level Notifications page to customize who should be notified (user, user role, email address, or node) and how they should be notified (worklist, email, XML notification, or custom action).

Some PeopleSoft applications deliver processes with pre-defined coding to generate notification messages, refer to the specific application documentation for a list of delivered processes and categories in the Notification Registry.

Modifying PeopleSoft Processes to Create Notifications

This section discusses how to modify PeopleSoft processes to generate notifications. Not all PeopleSoft processes are delivered with the ability to produce notifications. Your IT department can alter a batch and online process to generate notifications based on your needs.

Once you have added a new process name and process category to the Notification Registry page, you can customize a PeopleSoft process to send notifications.

Follow these steps to add to the notification registry:

1. Add your process name and category to the Notification Registry page.

   a. Add the description and long text description, which describes the functionality of the message that is logged into the registry so that you can assign the appropriate user to the notification classification.

   b. Disable any notification feature that your application does not allow you to override at the system and business unit levels.

      These notifications are handled within the object interface directly.

2. Create a message context record to pass all transactional data through the message framework.

   a. All context records must include the EOEN_LOG_KEY subrecord.

   b. Any additional transactional fields can be added to the context record.

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3. Implement the EOEN interface object within your application process by using the EOEN_MVC:EOEN_MODEL.EOEN_INTERFACE class.

For more information, see *PeopleTools: PeopleSoft Applications User's Guide*

PeopleTools: PeopleCode Developer's Guide

PeopleTools: Application Engine

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Chapter 4

Setting Up Events

Understanding Event Setup

To implement Event Manager into your application processing:

1. Identify the business events that drive the execution of your business logic and, if necessary, define a new event.

   In many cases, the event is already defined in the local event registry that is accessible through the Event Registry component. If the event is not yet defined, you must define a new business event. To define a new event:

   a. Create an Application Package in PeopleTools Application Designer.

      This Application Package is a container for your Handler application classes. It needs to contain a sub-package named *Handlers* with individual application classes under it for each Handler you wish to register.

   b. Register the event to the Event Manager framework through the Event Registry component.

2. Write the event handlers in PeopleTools Application Designer to execute the business logic that is specific to the event.

   To develop an event handler, create an Application Class with a method named ProcessEvent() that includes the Event Manager interface code that is provided in this topic. Event handlers can be for one or more business events.

3. Register the event handlers to the event through the Event Registry component.

4. Test your event and its registered event handlers.

   To test event handlers and events:

   a. Test the event handler in standalone mode through the Handler Tester component.

      Note: This test method does not require Integration Broker to be running.

   b. Test the event independent of the business process that raises the event through the Event Tester component.

      Note: This test method requires Integration Broker to be up and running.

   c. Test the event in the context of the business process by executing the business process that raises the event through the component or PeopleTools Application Engine process.

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The Event Manager framework automatically executes the registered event handlers for an event when you raise the business events.

Understanding Event Handlers

Business events are the functions in a business environment, such as adding a person, changing an employee's compensation rate, terminating an assignment, promoting an employee, and so on. After the events are created, you register events in the Event Registry component. Event handlers are modules of business logic that react to instances of particular events to which they are registered. You must register event handlers to events so that the Event Manager framework executes the event handlers whenever the event is raised.

You can assign multiple event handlers to a single business event, and you can assign a single event handler to react to multiple events. When defining events in the Event Registry component, you can assign event handlers to function in either synchronous mode or asynchronous mode with respect to the process that raises the associated event. When a process raises a registered event, the Event Manager framework determines whether the event handlers that are registered to that event are synchronous or asynchronous. If an event handler is synchronous, the Event Manager framework executes that event handler inline as part of the process that raises the event. If the event handler is asynchronous, the Event Manager framework executes the event handler as a detached process that is out of the critical path of the mainline process. You can register both synchronous and asynchronous event handlers concurrently to the same event. The Event Manager framework executes the registered event handlers in whichever mode you configure them to operate, always executing synchronous event handlers first. When defining event handlers for registry in multiple events, you should include some code in the event handler to examine the Name property of the passed-in event object so that you know which type of event caused the event handler to be executed.

The Event Manager framework is based upon a simple notify and respond model. For the notification side, the Event Manager framework broadcasts that event has occurred, along with the data that caused the creation of the event instance. For the respond side, the individual applications link business logic into the Event Manager framework to respond to the business event. By linking PeopleTools Application Classes to the event in the Event Registry component, the Event Manager framework knows when to execute the registered event handlers for the event when the event is raised.

An event handler that fails during execution causes a disruption to the execution of any other event handlers for that event or the mainline process. The Event Manager framework therefore provides many options for monitoring and troubleshooting event handlers and events. You can monitor event instances and the executions and exceptions of the event handlers through the Event Monitor component or the Event Summary component. You can also test event handlers and events outside of the mainline business process through the Handler Tester component and the Event Tester component.

Local and Remote Nodes

The Event Manger framework enables you to manage events that have influence over more than one database instance. You can use the Event Manager framework to process business events that occur on either a local or remote database (also called a node). A remote node can execute only event handlers that are implemented locally and registered to events in its local event registry. For example, an event that is raised in an HCM database might be important to a separate PeopleSoft Enterprise Learning Management (ELM) database or a PeopleSoft Financials database.

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The Event Manager Framework is currently not integrated with the Service Oriented Architecture (SOA) distributed registry. Instead, each database has its own local event registry. Within a local event registry, you can define events that you can raise by local process as well as events of interest to applications on the local database that are raised by remote databases. To support the processing of an event in a remote database, remote databases must implement the Event Manager framework. Also, each local event registry must contain entries for the remote events of interest along with their associated local event handlers.

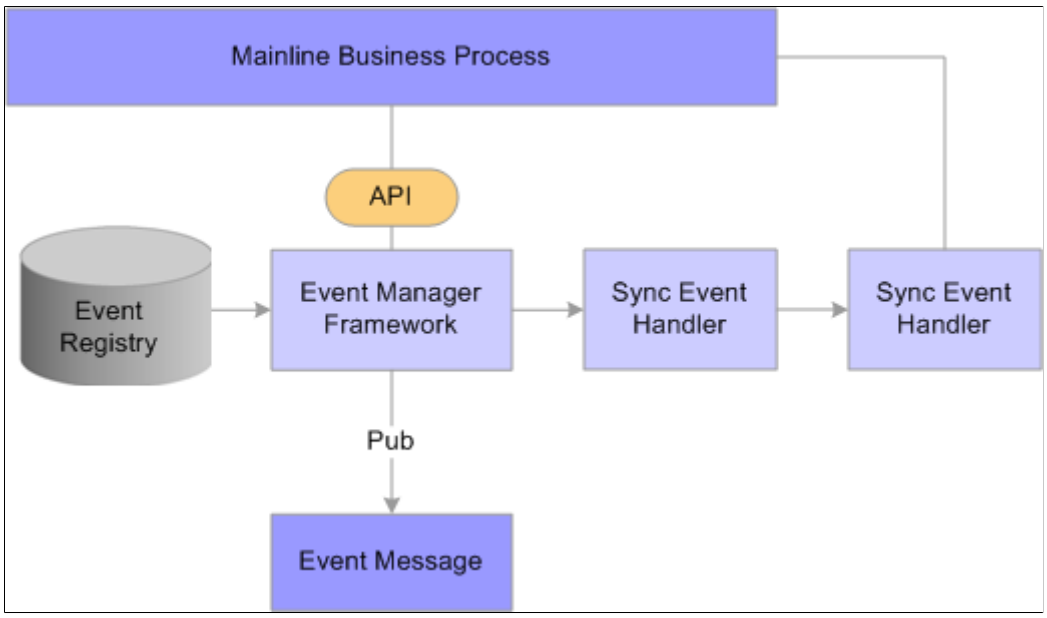
From the perspective of the Event Manager framework, virtually no difference exists between the way that asynchronous handlers are supported for remote events and local events. You register event handlers to events in the event registry, configuring the Event Manager framework to execute event handlers for events that are raised in the local database, a remote database, or both types of databases. Thus, a single event handler can respond to instances of the same event that are raised on the local database as well as a remote database.

Event handlers for remote events are by definition asynchronous. Thus, on the local database the Event Manager framework executes these remote events only after completing the execution of synchronous handlers that you have registered for the event.

Example: Local Event with Synchronous Event Handlers

Image: Local event with synchronous handlers

This example illustrates the processing of a mainline business process on a local database using an event with two registered synchronous event handlers. In this scenario, the mainline business process calls the application program interface (API) for the Event Manager framework to raise the event. The framework executes inline the two event handlers in order, publishes the generic PeopleTools Integration Broker event message, and then returns processing control back to the mainline business process.



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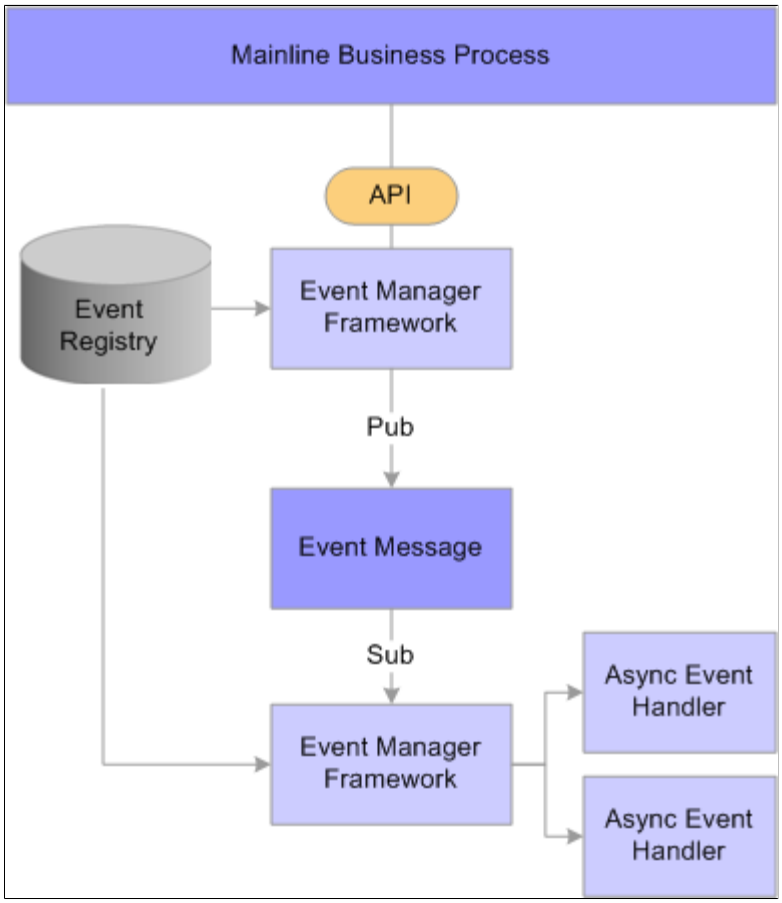
Example: Local Event with Asynchronous Event Handlers

Image: Local event with asynchronous handlers

This example illustrates the processing of a mainline business process on a local database using an event with two registered asynchronous event handlers. In this scenario, the mainline process calls the API for the Event Manager framework to raise the event. The framework immediately publishes the generic PeopleTools Integration Broker event message, and returns processing control back to the mainline process without delay. A normal PeopleTools Integration Broker local subscription picks up the generic event message and invokes the framework to execute the asynchronous event handlers that are registered to the event.



Example: Local Event with Both Synchronous and Asynchronous Event Handlers

This example illustrates the processing of a mainline business process on a local database using an event with two registered synchronous handlers and two registered asynchronous event handlers. In this scenario, the mainline process waits while the Event Manager framework executes the synchronous event handlers. The Event Manager framework executes the asynchronous event handler as detached processes launched by the local subscription to the generic PeopleTools Integration Broker event message.

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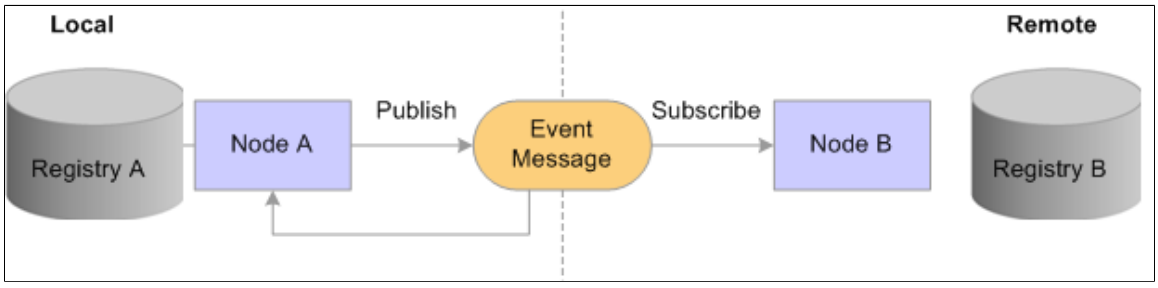
Example: Remote Event

Image: Remote Event

This example illustrates event processing that spans across local and remote databases.

In Registry A, the event has both registered synchronous and asynchronous event handlers. The event handler that is registered to this event is set for a local source. When the event in raised in Registry A, the Event Manager framework logs the event (if it is configured for logging), publishes the generic event message, executes synchronous event handlers that are registered to the event, and then subscribes locally to the generic event message to execute asynchronous event handlers that are registered locally to the event.

Registry B has the same event active in its local event registry. The event handler that is registered to this event is set for a remote source. Because Registry B subscribes remotely to the same event message that Registry A publishes, Registry B logs the occurrence of the event and then executes the registered asynchronous handler.



Defining and Registering Events

To register business events and their event handlers, use the Event Registry (EOEN_EVENT_REG) component.

This section provides an overview of new events and discusses how to define and register events.

Pages Used to Define and Register Events

Page Name	*Definition Name*	*Navigation*	*Usage*
Define Events	EOEN_EVENT_REG	Enterprise Components, Events & Notifications, Event Framework, Event Registry	Register the business events that you want to be able to raise within the Event Manager framework.
Registered Handlers	EOEN_EVENT_REG2	Enterprise Components, Events & Notifications, Event Framework, Event Registry Select the Registered Handlers tab.	Register event handlers to the selected business event. The Event Manager framework executes event handlers according to the rules that you specify on this page whenever it receives notification that the specified type of event has been raised.

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Understanding New Events

Occasionally, you need to create new events that you can raise in the system for use by the Event Manager framework. As stated in the overview, the first step is to identify the business events that drive the execution of your business logic and, if necessary, define a new event. Recall that to define a new event you must:

- Create a new application package for a new event in PeopleTools Application Designer.
- Register the new event to the Event Manager framework through the Event Registry component.

If you want to register a new event handler to an existing business event, you can bypass this step.

Define Events Page

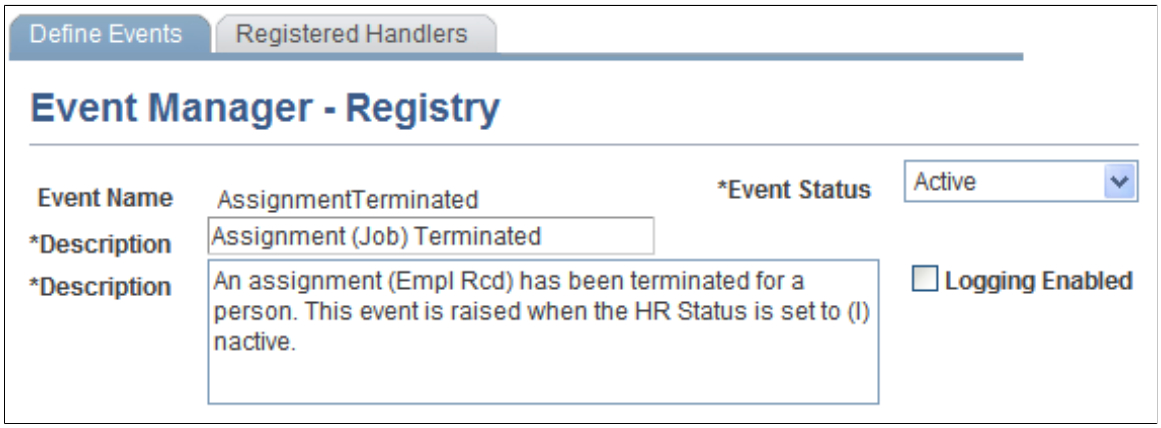
Use the Define Events page (EOEN_EVENT_REG) to register the business events that you want to be able to raise within the Event Manager framework.

Navigation

Enterprise Components, Events & Notifications, Event Framework, Event Registry

Image: Define Events page

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



Event Name The system displays the name of the business event that you want to be able to raise within the Event Manager framework. If you are adding a new business event, enter the name of the event when accessing the component through the Add mode.

Event Status Select whether the status of the event is *Active* or *Inactive.* The system only raises events in the local database that are active. Note that the system ignores inactive events that are raised in remote databases.

Description and (Long) Description Enter a short and long description of the business event. The system uses the short description in search pages. You should provide enough detail of the business event in the long

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description so that anyone accessing the event knows what it represents.

Logging Enabled

Select to have the system write a row to a log table for each instance of this event. The system writes to the log each time that this event is raised in the local database. For events that are raised in remote databases, the system writes to the local log each time it receives a generic event message for this event.

Registered Handlers Page

Use the Registered Handlers page (EOEN_EVENT_REG2) to register event handlers to the selected business event.

The Event Manager framework executes event handlers according to the rules that you specify on this page whenever it receives notification that the specified type of event has been raised.

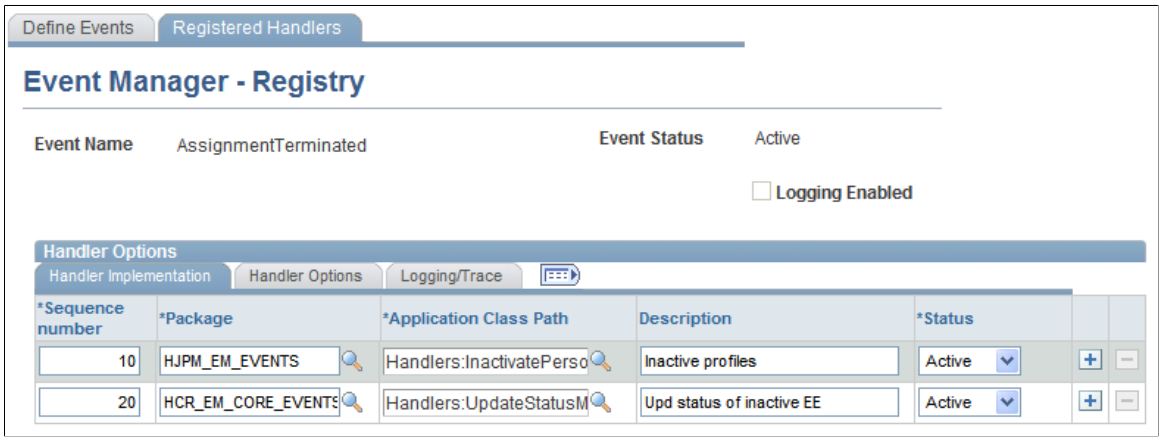
Navigation

Enterprise Components, Events & Notifications, Event Framework, Event Registry

Select the Registered Handlers tab.

Image: Registered Handlers page, Handler Implementation tab

This example illustrates the fields and controls on the Registered Handlers page, Handler Implementation tab. You can find definitions for the fields and controls later on this page.



The number of different events to which you can register a particular event handler is not restricted.

Handler Implementation

Sequence number

Enter a number to indicate the sequence in which the system executes the registered handlers when this event is raised. The execution sequence is important when more than one event handler is registered to an event.

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Note: The sequence of event handler execution is relative to other event handlers that are operating in the same mode, either synchronous or asynchronous.

Sys Data (system data)

If this check box is selected, then PeopleSoft Human Resources delivers the event handler registration for this event as system data. You should not modify this system data unless PeopleSoft Human Resources instructs otherwise.

Package

Select the root application package that contains the application class for the event handler. The application class can reside within any application package; however, the application class must reside under a sub-package named *Handlers.*

Application Class Path

Select the application class that implements the event handler. The system displays as possible values all application classes that reside within the selected package as part of the *Handlers* subpackage.

Description

For information purposes, enter a short description of what the event handler does.

Status

Select whether the status of the event handler is *Active* or *Inactive.* The system executes event handlers that are in *Active* status only when this event is raised.

Handler Options

Event Source

Select the source from which you want the system to execute the event handler for this event. The Event Manager framework supports both local and remote events.

Possible values are:

- *Local & Remote:* Select to have the system execute the event handler for instances of this event that are raised in either the local database or remote databases.
- *Local Only:* Select to have the system execute the event handler for instances of this event that are raised in the local database only.
- *Remote Only:* Select to have the system execute the event handler for instances of this event that are raised in remote databases only.

Handler Mode

Select the mode by which you want the system to execute the event handler for this event. This setting applies only to events that are raised in the local database.

Possible values are:

- *Asynchronous:* Select to have the system execute the event handler as a detached or background process. The

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process that raises the event *does not* wait for all registered asynchronous event handlers to execute.

- *Synchronous:* Select to have the system execute the event handler inline with the business process that raises the event. The process that raises the event *does* wait for all registered synchronous event handlers to execute.

Note: The Event Manager framework always executes synchronous handlers before asynchronous handlers, regardless of the values that you specify in the Order column.

Logging/Trace

Logging

Select how you want the system to log execution of event handlers. This option applies only if you select the Logging Enabled check box for the selected event on the Define Events page.

Possible values are:

- *All:* Select to log every execution of this event handler. This option is available only if you select the Event Logging check box for the event of the Define Events page.
- *Errors:* Select if you want to log execution of this event handler only when the execution fails. If you select this option for the event handler but do not enable logging for the event, then if the event handler fails, the system creates an event log entry along with the event handler log entry.
- *None:* Select if you do not want to log execution of this event handler.

Trace

Select to include trace/debug entries in the execution log for this event handler. Use this option for debugging the event handler. This option is available only if you select to log all exceptions of the event handler by selecting the *All* value in the Logging field.

Creating Event Handlers

An event handler is the application-specific code that responds to a particular type of event. You must register event handlers to events so that when an event is raised, the Event Manager framework executes the appropriate event handlers.

Requirements for Creating Event Handlers

To be compatible with the Event Manager framework, when creating event handlers, you must implement all business logic for the event handlers to abide by the following set of standards and code requirements:

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- You must implement the entry point to the event handler in a method named ProcessEvent() within an application class.

  The Event Manager framework executes the ProcessEvent() method whenever the associated event is raised. Within the ProcessEvent() method, you are free to reference or execute code in other methods, classes, or function libraries. This application class can be an extension of any other application class if necessary.

- You can create the event handler in any new or existing application package within your application, but you must create the event handler under the *Handlers* subpackage.

- The application class and the application package that it resides in must be owned by the application, not the Event Manager framework.

- You must import the baseEvent class definition from the Event Manager framework application package into the application class that implements the event handler.

  The ProcessEvent() method in the application class of the event handler receives as an input parameter an instance of this baseEvent class object.

- If you want to be able to communicate detailed errors, warnings, or any other messages back to the Event Manager framework, then you must populate the HandlerStatus property with appropriate entries.

  The HandlerStatus property is a complex property that is part of the baseEvent object that the Event Manager framework makes available to the event handler. The structure of this property is defined by EOEN_EVENT_MANAGER:Base:baseEvent. The property contains both an overall status indicator and an exception array. The Event Manager framework examines the contents of this property after executing this class and takes appropriate action.

  The HandlerStatus complex type also carries a method that facilitates appending an entry to the ExceptionArray structure. This method is named AddException() and takes as an argument the structure defined by EOEN_EVENT_MANAGER:Base:Types:ExceptionType.

  Note: If event logging is enabled, the Event Manager framework automatically creates an exception entry that lists the event data that was made available to the event handler. The system displays the event data in the pages of the Event Monitor component. If event logging is not enabled in the registry an exception entry containing the data for the event is created only if the Handler ExecutionStatus is set to *F* (Fail). This is done to allow re-processing of the event from the Event Monitor.

  The structure within the HandlerStatus property is:

  - ExecutionStatus (string – values "S"uccess, "F"ail)

  - ExceptionArray (array):

    EXCEPTION_TYPE (string – values "E"xception, "K"eys, "T"race)

    MESSAGE_SET_NBR (number)

    MESSAGE_NBR (number)

    MSG_SEVERITY (string – values "M"essage, "W"arning, "E"rror)

    MESSAGE_TEXT (string)

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EXPLAIN_TEXT (string)

Details of the baseEvent Class

When the Event Manager framework invokes the baseEvent class, it passes the baseEvent class into the ProcessEvent() method of the application class of the event handler. This enables you to use the properties and methods of the base class to obtain more information about the event instance to direct internal processing of the event.

This table lists public properties of the event object that are of interest to application developers who are implementing the Event Manager framework:

Public Properties	***Description***
EventName	A string that is populated with the name (type) of the event instance. Examples are "AssignmentTerminated", "PersonAdded", and so on. If you are registering the same event handler to multiple events but these events have slightly different logic depending upon the exact event that is being processed, you can use this property to control your processing.
EventID	A numeric that is populated with the unique serial number that identifies this event instance for an originating node. Generally, event handlers do not have any need for this property. The event handler uses this property primarily inside the framework for audit and monitoring purposes.
ContextRecord	The context record associated with the event.
HasContextRecord	A Boolean set to True if the raised event has a context record.
IsLocal	A Boolean set to True if the event was raised by an activity in the local database. (The term *local* is relative to the domain in which the event handler code is executing).
EventNode	A string that is populated with the node name of the database in which the activity that raised the event occurred.
HandlerTraceEnabled	A Boolean that indicates whether the user wants the current event handler to create trace and debug information in the event handler log.
EventLoggingEnabled	A Boolean that indicates whether the user wants the current event to create event logging information in the event log. Must be set to true if Event Handler logging is desired.

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Public Properties	*Description*
HandlerLoggingSwitch	A Boolean that indicates whether the user wants the current event handler to create event handler log information in the event log.

Event Handler Skeleton Code

You can use the following skeleton code as a starting point when building an event handler class:

```
import EOEN_EVENT_MANAGER:Base:baseEvent;
import EOEN_EVENT_MANAGER:Base:Types:ExceptionType;

class MyHandlerClass
   /** Dummy Constructor. */
   method MyHandlerClass();
   /** Process Event. */
   method ProcessEvent(&inEvent As EOEN_EVENT_MANAGER:Base:baseEvent);
end-class;

method MyHandlerClass
end-method;

method ProcessEvent
   /+ &inEvent as EOEN_EVENT_MANAGER:Base:baseEvent +/

   Local Record &recContext;

/* the following lines are required only if you want to pass detail information
    about Errors, Warnings  or other messages back to the Event Framework */
  Local EOEN_EVENT_MANAGER:Base:Types:ExceptionType &myExceptionType =
  create EOEN_EVENT_MANAGER:Base:Types:ExceptionType();


   If Not &inEvent.HasContextRecord Then
      &myExceptionType.MESSAGE_SET_NBR = 18137;
      &myExceptionType.MESSAGE_NBR = 6509;
      &myExceptionType.MSG_SEVERITY = "E";
      &myExceptionType.MESSAGE_TEXT = MsgGetText(18137, 6509,
      "no message found", &inEvent.EventID, &inEvent.EventNode);
      &myExceptionType.EXPLAIN_TEXT = "";
      &inEvent.HandlerStatus.AddException(&myExceptionType);

   Else
/*================================================================== */
/* ----------------   Business Logic goes here ------------------*/
/*================================================================== */
   End-If;
end-method;
```

Addressing Errors and Warnings

During execution, an event handler might encounter errors, warnings, or other issues that a user needs to be made aware of. In most cases, you want to pass this information back to the Event Manager framework so that users can view the information through the Monitor Events component. Although you do not have to pass this information back to the Event Manager framework, the more information that you do pass back, the easier it is for the administrator to resolve the problem.

The Event Manager framework uses a simple exception-array scheme to receive status information that is passed back to it from an event handler and subsequently displays that information in the Monitor Events component. The structure of the exception array is the same as the structure of a message in the message catalog. It contains a message set number, message number, severity level, message text, and

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explanation text in each row of the array. The message set number and message number are significant only if the information that you want to pass back to the Event Manager framework is described in a Message Catalog entry. If not, you can leave these two properties blank and just populate the message text, explanation text, and severity properties.

As mentioned previously, the event object that is passed into your event handler contains a complex property that is used to communicate the status of your event handler. At a minimum, you should populate the overall-status simple property with either (S)uccess or (F)ail prior to quitting your ProcessEvent() method. If you do not populate the overall status property, the Event Manager framework assumes that the event handler executed successfully. PeopleSoft recommends that you pass back information through the exception array of the complex property, although this is optional. For example, if the event object is passed into your handler as &inEvent, you populate the overall status property as:

```
&inEvent.HandlerStatus.ExecutionStatus = "S";
     /* Handler terminated successfully */
```

You never have to deal directly with the exception array that is embedded in the event object that the event handler receives. Instead, whenever you want to add an item to this array, you call the AddException() method, thus passing in an object that the system has already populated with exception information. This object that you pass in is an instance of the ExceptionType TypeClass. This class has the following properties:

- Message Set Number
- Message Number
- Message Severity
- Message Text
- Explain (Long) Text

The following example shows how to add a message to the exception array for a message that does not come from the Message catalog, assuming that the event object is passed into your event handler as &inEvent:

```
&myExceptionType = create EOEN_EVENT_MANAGER:Base:Types:ExceptionType();
&myExceptionEntry.MESSAGE_SET_NBR = 0;
&myExceptionEntry.MESSAGE_NBR = 0;
&myExceptionEntry.MSG_SEVERITY = "M";
&myExceptionEntry.MESSAGE_TEXT = "Hello World!";
&myExceptionEntry.EXPLAIN_TEXT = "";

&inEvent.HandlerStatus.AddException(&myExceptionType);
```

For a Message Catalog entry, you must include the message set number and the message number. You must also retrieve the text and explain text from the Message Catalog because substitution tokens might be involved that the Event Monitor framework cannot pass or resolve.

Note: If you use the AddException() method to create an exception array entry with the MSG_SEVERITY property set to (E)rror, then the system automatically sets the overall execution status indicator for the event handler to (F)ail. This means that you do not need to separately set the overall status property.

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Note: The Event Manager framework executes all event handlers that you register to an event. If a particular event handler fails, the Event Manager framework still executes the remaining event handlers that are registered to the event. The Event Manager framework can catch exceptions that an event handler raises rather than terminating before it has finished executing all of the registered event handlers. However, the Event Manger framework does not contain any exception processing or error handling subsystems, and because of this you must ensure that event handler code does not raise an exception that the Event Manager framework cannot catch. One such exception is the PeopleCode error statement. Therefore, you must never raise an exception for an error statement in your event handler. Otherwise, the Event Manager framework stops and does not execute any remaining event handlers that are registered to the event.

Component Interface and SOA Service Exceptions

If you have PeopleSoft Human Resources two additional exception methods are available: Component Interfaces (CIs) and Service Oriented Architecture (SOA) services. The Event Manager framework therefore provides assistance to facilitate passing exceptions from these sources back to the Event Manager framework and ultimately into the Event Monitor component.

The system displays exceptions that are raised by CIs or SOA services on the Handler Exceptions page of the Event Monitor component, much like any other exceptions that are written to the log. For severity information, the system prefaces the message with “[CI] ” or “[SOA]”, respectively.

The structure of the event-handler exception log is similar to the exception structure within PeopleTools for CIs and within the SOA framework for SOA services. Essentially, you must pass these exceptions back to the Event Manager framework when they arise. Two methods are available within the Event Manager framework that enable you to do this easily. One method is:

```
HandlerStatus.AddCIException(&arrExceptions as array of Record, &Severity as
string)
```

This method copies all exceptions from a standard CI exception array to the exception log of the event handler according to the specified severity of the exception. Severity codes are (E)rror, (W)arning, and (M)essage.

You can specify multiple severity codes by concatenation. Thus, if you want to copy both errors and warnings, then specify a severity code of EW. A blank severity code causes the copying of all exceptions regardless of severity.

The structure of the exception array that is passed into this method is identical to the exception array that the FUNCLIB_CI version of the standard HCM CI wrapper uses. This is an array of Record.CI_EXCEPTIONS. If you're using the FUNCLIB_CI wrapper, you can pass the exception array that you use with those functions into this method.

If you are calling a CI directly, then you need to first ensure that you have instructed PeopleTools to redirect CI exceptions from the screen to the %Session.PSMessages object. Then, you need to copy the items from PSMessages into an array of Record.CI_EXCEPTIONS so that these exceptions can be passed into this method.

Another method is:

```
HandlerStatus.AddSOAException(&inException As
HMCR_TYPES:ExceptionTypes:ExceptionType_v1_0:ExceptionType)
```

This method copies all exceptions from a standard SOA exception type structure to the exception log of the event handler.

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When invoking SOA services, the system always executes them in a try/catch block. Typically, the event handler executes the services and catches certain defined exceptions that arise. A catch-all exception always catches any exceptions that have not been specifically called out.

SOA exceptions differ slightly from CI exceptions in that when invoking an SOA service, you manage only one (if any) exception. The exception that you pass into this method is the exception structure that you catch in your try/catch block.

The following example shows an SOA service invocation passing exceptions back to the Event Manager:

```
*     try
*        &MyService.MyServiceManager.LocateService(&ServiceName);
*        &MyService.DoService();
*          catch <NamedException1> &e1
*                &myEvent.HandlerStatus.AddSOAException(&e1.ServiceException);
*                --- other exception processing ---
*          catch <NamedException2> &e2
*                &myEvent. HandlerStatus.AddSOAException(&e2.Service
                 Exception);
*                --- other exception processing ---
*          . . .
*          catch HMCR_FRAMEWORK:ServiceFramework:baseClasses:baseException
           &e0
*                &myEvent. HandlerStatus.AddSOAException(&e0.Service
                 Exception);
*                --- other exception processing ---
*      end-try
```

In this code, the items appearing as <NamedExceptionX> represent the application-specific exceptions that are registered in the SOA registry. These are exceptions that are known to be thrown by the indicated SOA service. The class named HMCR_FRAMEWORK:ServiceFramework:baseClasses:baseException is for the catch-all exception, defining the shape of the generic SOA exception.

Providing Trace/Debug Information

The Registered Handlers page of the Event Registry component provides a Trace check box to indicate whether to write trace/debug information to the execution log of the event handler. This functionality is available only when you set the Logging field for the event handler to the *All* value.

When you select the Trace check box, the event handler produces trace/debug in the handler execution log. The amount of trace/debug information that the system writes to the log is determined by the developer of the event handler. Generally, you must provide enough information so that anyone examining the event handler log can trace the path of the execution that the event handler has taken.

The system makes the selected value of this check box available to the event handler using the HandlerTraceEnabled Boolean property of the event. When this property is True, the event handler creates trace/debug entries in the exceptions structure. PeopleSoft software provides the following method to make the creation of these entries easier:

```
&myEvent.HandlerStatus.AddTraceEntry(&Heading, &Detail);
```

In the preceding code, &Heading is the string that appears as the first line of the entry, and &Detail is a long string containing whatever detailed trace/debug information you want to create.

The system displays the trace/debug information in the Event Monitor component.

No fixed rules are associated with the trace/debug entries that the event handler generates. This is a judgement call. You should provide whatever entries you think are useful to debug or troubleshoot the event handler code.

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Create trace/debug entries only when the .HandlerTraceEnabled property is True. Thus, the code looks similar to:

```
   If &myEvent.HandlerTraceEnabled Then
      &myEvent.HandlerStatus.AddTraceEntry("Method ABC()",
"No data returned for: " | &Emplid);
   End-If;
```

Testing Event Handlers and Events

This section provides an overview of event testing and discusses how to:

- Test an event handler.
- Test an event.

Pages Used to Test Event Handlers and Events

Page Name	*Definition Name*	*Navigation*	*Usage*
Event Manager - Test an Event Handler	EOEN_HNDLR_TEST	Enterprise Components, Events & Notifications, Event Framework, Handler Tester	Execute a single event handler as a standalone process without raising an event. Use this feature for testing and debugging event handlers.
Event Manager - Raise an Ad-Hoc Test Event	EOEN_EVENT_TEST	Enterprise Components, Events & Notifications, Event Framework, Event Tester	Raise a selected business event that you have defined on an ad hoc basis without invoking the business process that normally raises the event. This enables you to test events without having to perform the business operation that normally raises the event. Execute a single event handler as a standalone process without raising an event. Use this feature for testing and debugging event handlers.

Understanding Event Testing

Generally in a production environment, you raise events by making a change to application data through a component or by running a PeopleTools Application Engine process. When the event is raised, the Event Manager framework executes the event handlers registered with the event as defined in the Event Registry component. When testing events, you should begin at the lowest level, which is the event handler, and then work your way up to the highest level, which is the business process that raises the event. Thus, to test events:

1. Test the event handler in standalone mode through the Handler Tester component.

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2. Test the event independent of the business process that raises the event through the Event Tester component.

3. Test the event in the context of the business process by executing the business process that raises the event through the component or PeopleTools Application Engine process.

Event Manager - Test an Event Handler Page

Use the Event Manager - Test an Event Handler page (EOEN_HNDLR_TEST) to execute a single event handler as a standalone process without raising an event.

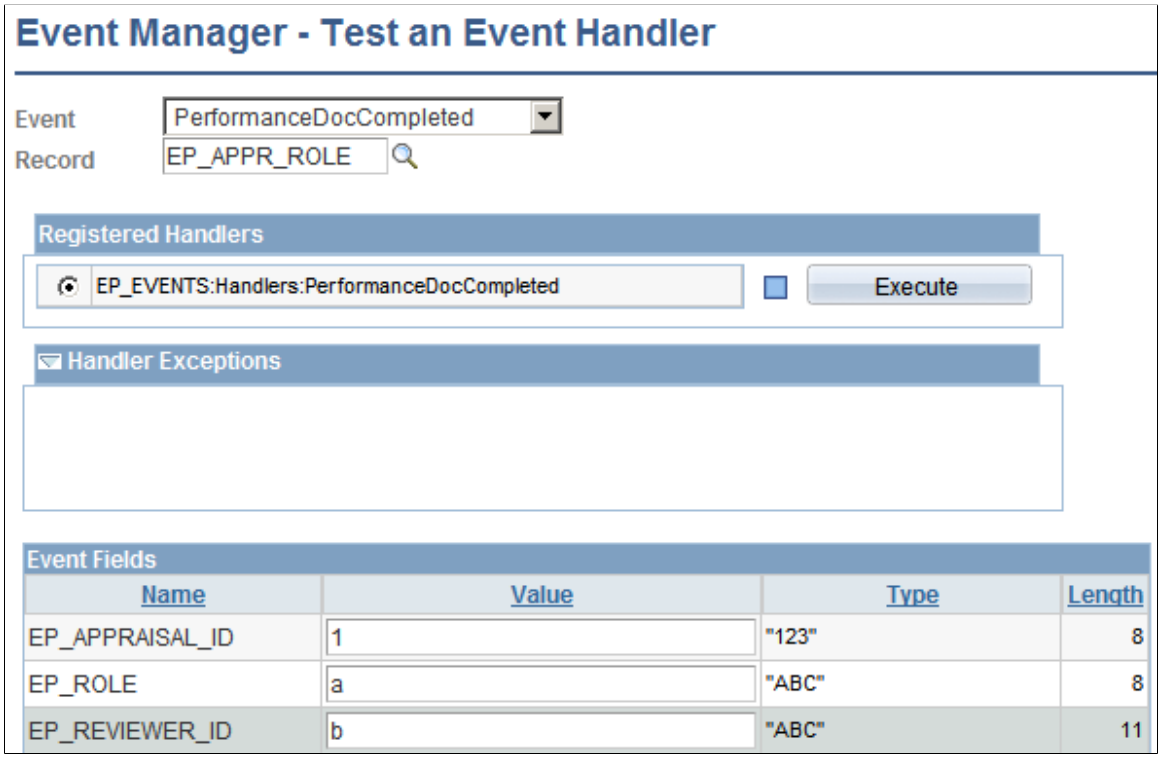
Use this feature for testing and debugging event handlers.

Navigation

Enterprise Components, Events & Notifications, Event Framework, Handler Tester

Image: Event Manager - Test an Event Handler page

This example illustrates the fields and controls on the Event Manager - Test an Event Handler page. You can find definitions for the fields and controls later on this page.



Event

Select the event to which the event handler that you want to execute is registered. Event handlers must always execute within the context of an event.

Record

When you select an event, the system also allows you to select a record to provide data for the event. Typically, this is the record in the database from which a data change normally raises the event. however you can select a different record. The record must have the same keys as the record that normally raises the

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event. After you select a record the fields from the record are populated on the page with fields to enter values, expected types and lengths. Enter your sample data for your Event Test in the value fields and click the Execute button.

The system displays in the Registered Handlers group box the event handlers that are registered with the selected event in the local database through the Event Registry component.

Registered Handlers

This group box displays the event handlers that you have registered with the selected event in the Event Registry component.

Execute

Click to execute the selected event handler. Before you can execute an event handler, you must select the event, record, and event handler and enter the event data that you want to pass to the event handler. You can execute only one event handler at a time.

The system executes the event handler immediately regardless of any settings in the Event Registry component. When testing an event handler through this page, the system does not raise an event, publish the generic PeopleTools Integration Broker message, or generate log entries.

The system displays the status of the event handler execution to the left of this button and displays any exceptions that the event handler creates in the Handler Exceptions group box directly on this page.

Indicates that you have not yet executed the event handler.

Indicates successful execution of the event handler.

Indicates that the system executed the event handler with a fatal error.

Handler Exceptions

Use this group box to view results of the event handler execution. The system displays event keys, exceptions, and trace information that is associated with the execution of the event handler.

The system displays the event data that the system used during the execution of the event handler. At a minimum, the system displays the event data in the Handler Exceptions group box after execution of the event handler.

The system displays the exception information that the system generated during execution of the event handler.

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	The warnings that the system generated during execution of the event handler.
	The errors that the system generated during execution of the event handler.
	The trace information that the system generated during execution of the event handler.

Event Fields

Use this group box to enter values for each of the fields that are part of the selected event and record. These are the values that the system passes into the event handler during the test. The system does not perform any validation on the data that you enter in the Value fields. Be sure to enter the correct format for data values and use uppercase or lowercase values for character data as appropriate. The system makes this data available to the event handlers as the Context Record for the Event.

Event Manager - Raise an Ad-Hoc Test Event Page

Use the Event Manager - Raise an Ad-Hoc Test Event page (EOEN_EVENT_TEST) to raise a selected business event that you have defined on an ad hoc basis without invoking the business process that normally raises the event.

This enables you to test events without having to perform the business operation that normally raises the event.Execute a single event handler as a standalone process without raising an event. Use this feature for testing and debugging event handlers.

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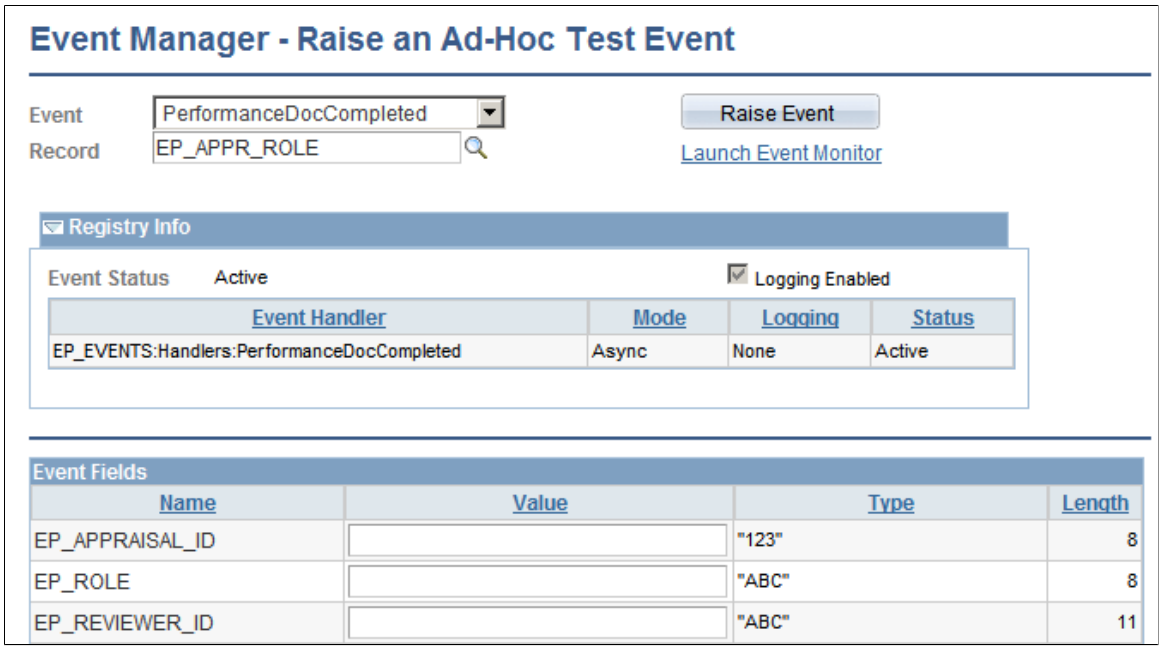
Navigation

Enterprise Components, Events & Notifications, Event Framework, Event Tester

Image: Event Manager - Raise an Ad-Hoc Test Event page

This example illustrates the fields and controls on the Event Manager - Raise an Ad-Hoc Test Event page. You can find definitions for the fields and controls later on this page.



Event

Select the event that you want to raise. You can only raise events that are active in the local event registry. If you are unsure of the status of an event, select the event in the Event field and click the Event Info button.

Record

When you select an event, the system allows you to select a record to provide data for this event. Typically, this is the record in the database from which a data change normally raises the event.

The system displays the Event Fields grid so that you can enter data to pass to the event.

Click the Event Info button to view select information from the Event Registry component about the selected event and its registered event handlers. The system displays the Registry Info group box, which contains the event details.

Raise Event

Click this button to have the Event Manager framework raise the event with the specified event data.

The system processes the event and executes all active event handlers that you have registered to the event exactly as if you have raised it from the normal business process such as through a component or PeopleTools Application Engine process.

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The system displays a message below the Record field indicating whether you have successfully raised the event. This message also includes the event ID on the local node and, for multichannel events, the event channel.

Launch Event Monitor After you raise the event, click this link to view the execution status of the raised event. The system launches the Event Monitor component in a new browser window and automatically displays information for this particular event instance.

Registry Info

Use this group box to view select information from the Event Registry component about the selected event and its registered handlers. The system displays this group box only if you select an event and click the Event Info button. To change any of this data, you must access the Event Registry component for the selected event.

Event Fields

Use this group box to enter values for each of the event fields that are part of the event that you are raising. The system does not perform any validation on the data that you enter in the Value fields. Be sure to enter the correct format for data values and use uppercase or lowercase values for character data as appropriate. The system makes these field values available to the event handlers as the context record for the event.

Raising Events

After you determine that an occurrence of the business event exists that the event in the Event Manager framework represents, you can raise the event in the Event Manager framework.

The Event Manager framework provides an API that creates and raises events. The API code is:

```
import EOEN_MVC:EOEN_MODEL:EOENInterface;
Local EOEN_MVC:EOEN_MODEL:EOENInterface &myEvent;
         Local Record &recContext;

         &myEvent = create EOEN_MVC:EOEN_MODEL:EOENInterface("", 0);

         &recContext = &rsContextRec(1).GetRecord(Record.CONTEXT_REC);
         &myEvent.AddContextRecord(&recContext);
         &myEvent.RaiseEvent("EventName");
```

Pass the name of the event to the Event Interface, which returns an instance of the event object. Add the context record and then execute the RaiseEvent method on the event object.

Important! Instantiating an event object does not automatically raise the event. You must invoke the event's RaiseEvent method to raise the event and initiate subsequent Event Manager framework processing.

In the following example, assume that we have created an event called AssignmentMilitaryRankChanged. This event represents the business event of assigning or updating the military rank of a person's assignment (Job record) instance. Whenever the rank attribute of the assignment

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(Job record row) changes, we want to raise the event. Here is the pseudocode to add to the JOB_MIL.MIL_WORN_RANK:SavePostChange PeopleCode event for the Job component:

```
import EOEN_MVC:EOEN_MODEL:EOENInterface;

/*******************************************************/
/* FUNCTION:    GetPriorRank                           */
/* Inputs:      &rsJOB As Rowset, &CurrentRow as number   */
/* Returns:     none                                   */
/*                                                     */
/* Get Prior Worn Rank                                 */
/*******************************************************/
Function GetPriorRank(&rsJOB As Rowset, &CurrentRow As integer, &PRIOR_ROW As integ⇒
er, &PRIOR_RANK As string);

   Local date &PRIORDT = Date3(1900, 1, 1);
   Local integer &PRIORSEQ = 0;
   Local date &JOB_Effdt = &rsJOB(&CurrentRow).JOB.EFFDT.Value;
   Local integer &JOB_Effseq = &rsJOB(&CurrentRow).JOB.EFFSEQ.Value;
   Local integer &i;

   &PRIOR_ROW = 0;
   &PRIOR_RANK = " ";
   For &i = 1 To &rsJOB.RowCount;
      Local date &FETCH_EFFDT = &rsJOB(&i).JOB.EFFDT.Value;
      Local integer &FETCH_EFFSEQ = &rsJOB(&i).JOB.EFFSEQ.Value;
      If (&FETCH_EFFDT < &JOB_Effdt Or
            (&FETCH_EFFDT = &JOB_Effdt And
               &FETCH_EFFSEQ < &JOB_Effseq)) And
            (&FETCH_EFFDT > &PRIORDT Or
               (&FETCH_EFFDT = &PRIORDT And
                  &FETCH_EFFSEQ > &PRIORSEQ)) Then
         &PRIORDT = &FETCH_EFFDT;
         &PRIORSEQ = &FETCH_EFFSEQ;
         &PRIOR_ROW = &i;
      End-If;
   End-For;
   If &PRIOR_ROW > 0 Then
      &PRIOR_RANK = &rsJOB(&PRIOR_ROW).GetRowset(Scroll.JOB_MIL)(1).JOB_MIL.MIL_WOR⇒
N_RANK.Value;
   End-If;
End-Function;

/*********************************************************************/
/* FUNCTION:    RaiseMilitaryRankEvent                               */
/* Inputs:      JOB_MIL rowset, Current row                          */
/* Returns:     none                                                 */
/*                                                                   */
/* Check if MilitaryRankEvent event should be raised                 */
/* if a change has been done:                                        */
/*    - Worn rank changed                                            */
/*    - Row deleted and the worn rank is different from the previous one   */
/*    - Row inserted and the worn rank is different from the previous one  */
/* the event will be raised                                          */
/*********************************************************************/
Function RaiseMilitaryRankEvent(&rsJOB As Rowset)
   If INSTALLATION.MILITARY = "Y" Then
      Local integer &PRIOR_ROW;
      Local string &PRIOR_RANK;
      Local boolean &RaiseEvent = False;
      Local integer &i;

      For &i = 1 To &rsJOB.RowCount
         /* Get current Job row and Worn Rank value */
         Local Row &rowJOB = &rsJOB.GetRow(&i);
         Local Rowset &rsJOB_MIL = &rowJOB.GetRowset(Scroll.JOB_MIL);
         /*************************/
         /* Rank has been updated */
         /*************************/
         If &rsJOB_MIL(1).JOB_MIL.MIL_WORN_RANK.IsChanged Or
```

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```
                (&rowJOB.JOB.EFFDT.IsChanged And
                   Not &rowJOB.IsNew) Then
             If All(&rsJOB_MIL(1).JOB_MIL.MIL_WORN_RANK.Value) Then
                &RaiseEvent = True;
                Break;
             End-If;

          Else
             /***************/
             /* New JOB row */
             /***************/
             If &rowJOB.IsNew Then
                /* Get previous Rank */
                GetPriorRank(&rsJOB, &i, &PRIOR_ROW, &PRIOR_RANK);
                If &PRIOR_ROW > 0 Then
                   If &rsJOB_MIL(1).JOB_MIL.MIL_WORN_RANK.Value <> &PRIOR_RANK And
                         All(&rsJOB_MIL(1).JOB_MIL.MIL_WORN_RANK.Value) Then
                      &RaiseEvent = True;
                      Break;
                   End-If;
                Else
                   /* No previous Rank */
                   If All(&rsJOB_MIL(1).JOB_MIL.MIL_WORN_RANK.Value) Then
                      &RaiseEvent = True;
                      Break;
                   End-If;
                End-If;
             Else
                /****************************/
                /* JOB row has been deleted */
                /****************************/
                If &rowJOB.IsDeleted Then
                   /* Get previous Rank */
                   GetPriorRank(&rsJOB, &i, &PRIOR_ROW, &PRIOR_RANK);
                   If &PRIOR_ROW > 0 Then
                      If &rsJOB_MIL(1).JOB_MIL.MIL_WORN_RANK.Value <> &PRIOR_RANK An⇒
d
                            All(&rsJOB_MIL(1).JOB_MIL.MIL_WORN_RANK.Value) Then
                         &RaiseEvent = True;
                         Break;
                      End-If;
                   Else
                      /* No previous Rank */
                      If All(&rsJOB_MIL(1).JOB_MIL.MIL_WORN_RANK.Value) Then
                         &RaiseEvent = True;
                         Break;
                      End-If;
                   End-If;
                End-If;
             End-If;
          End-If;
       End-For;
       If &RaiseEvent Then

          Local EOEN_MVC:EOEN_MODEL:EOENInterface &myEvent;
          Local Record &recContext;

          &myEvent = create EOEN_MVC:EOEN_MODEL:EOENInterface("", 0);

          &recContext = &rsJOB_MIL(1).GetRecord(Record.JOB_MIL);
          &myEvent.AddContextRecord(&recContext);
          &myEvent.RaiseEvent("AssignmentMilitaryRankChanged");
       End-If;
    End-If;
End-Function;

If GetLevel0()(1).GetRowset(Scroll.JOB).GetRow(CurrentRowNumber(1)).RowNumber = 1 T⇒
hen
   RaiseMilitaryRankEvent(GetLevel0()(1).GetRowset(Scroll.JOB));
End-If;
```

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The lines in the preceding code that deal with the action of raising the event are:

```
Local EOEN_MVC:EOEN_MODEL:EOENInterface &myEvent;
         Local Record &recContext;

         &myEvent = create EOEN_MVC:EOEN_MODEL:EOENInterface("", 0);

         &recContext = &rsJOB_MIL(1).GetRecord(Record.JOB_MIL);
         &myEvent.AddContextRecord(&recContext);
         &myEvent.RaiseEvent("AssignmentMilitaryRankChanged");
```

Important! During the course of raising an event, the framework causes certain tracking and logging information to be stored in the database. Because of this, events can be raised only from PeopleCode events that normally allow database updates. More specifically, events can be raised only from SavePreChange, SavePostChange, and Workflow PeopleCode events.

Monitoring Events

This section discusses how to:

- Review event instances.
- Review event handler executions.
- Review event handler exceptions.

Pages Used to Monitor Events

Page Name	*Definition Name*	*Navigation*	*Usage*
Event Manager - Monitor	EOEN_EVENT_MON	Enterprise Components, Events & Notifications, Event Framework, Event Monitor	Review the status of raised or processed business events and their associated event handler executions.
Event Monitor - Handlers	EOEN_EVENT_MON2	Enterprise Components, Events & Notifications, Event Framework, Event Monitor Click the Handlers link for an event instance on the Event Manager - Monitor page.	Review the details of registered event-handler executions on the local node for a selected event instance.
Event Monitor - Handler Exceptions	EOEN_EVENT_MON3	Enterprise Components, Events & Notifications, Event Framework, Event Monitor Click the Handlers link for an event instance on the Event Manager - Monitor page. Click the Display Exceptions button on the Event Monitor - Handlers page.	View the data, exceptions, and trace information that the selected event handler logged during execution and passed back to the Event Manager framework.

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Event Manager - Monitor Page

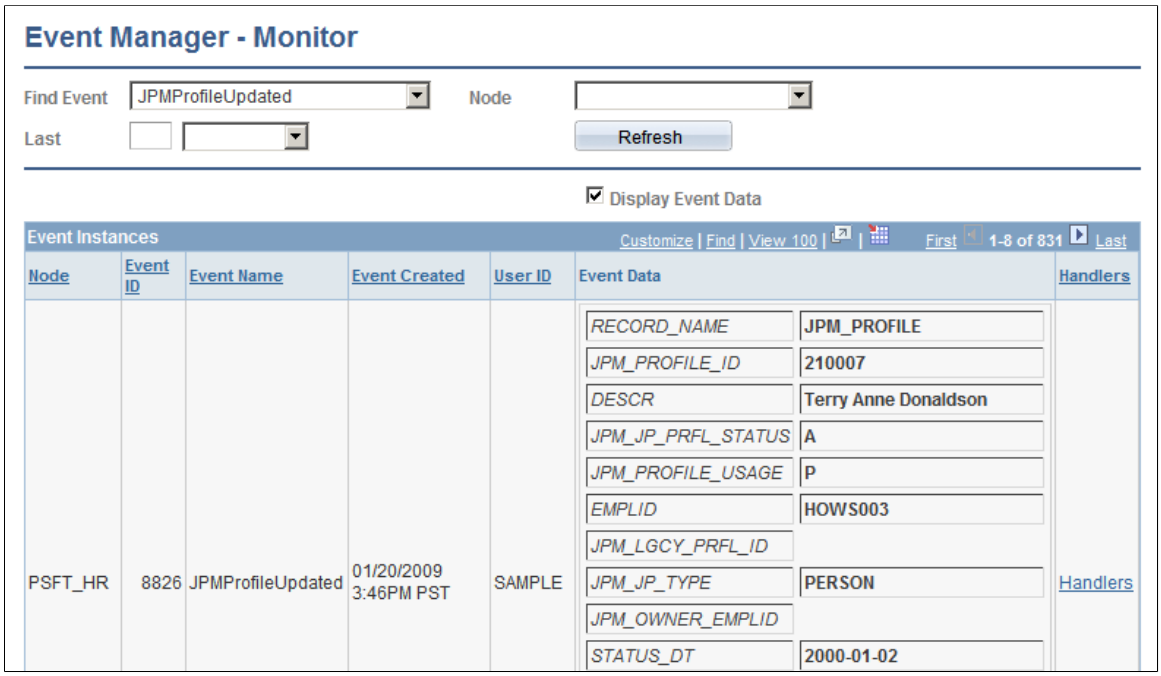
Use the Event Manager - Monitor page (EOEN_EVENT_MON) to review the status of raised or processed business events and their associated event handler executions.

Navigation

Enterprise Components, Events & Notifications, Event Framework, Event Monitor

Image: Event Manager - Monitor page

This example illustrates the fields and controls on the Event Manager - Monitor page. You can find definitions for the fields and controls later on this page.



Search Criteria

Enter the search criteria for retrieving event instances. At a minimum, you must select at least one criterion to retrieve results. Use the remaining fields to narrow your search results.

Find Event Select the event from the local Event Registry component for which you want to review event instances.

Last Specify the time period in which the event was raised. For remote events, this is the time period in which the event appeared in the local node. In the first box, specify a numeric quantity. Then select a time qualifier: *Days, Hours,* or *Minutes.*

Node Select a node name to limit the search results to event instances of raised events within a specific node.

Refresh Click to refresh the list of event instances after changing any of the search criteria.

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Display Event Data Select to display the event data for each event instance. The system displays the Event Data column in the Event Instances grid.

Event Instances

Review the logged event instances that meet your search criteria. The system displays instances for only the events and event handlers that you have configured in the local Event Registry component to be logged. You set the logging option for an event by selecting the Logging Enabled check box for an event on the Define Events page. Note that the process that raises the event waits for all registered synchronous event handlers to execute.

Node The system displays the node from which the event instance was raised.

Event ID The identification code of the event. The combination of this value and the node value uniquely identify the event instance on the originating node.

Event Name The event name.

Event Created The date and time that the event was raised in the source database (node). The system displays the time zone for this field because events could be raised in a node that operates in a time zone that differs from the local node.

User ID The ID of the user that raised the event. This field is applicable only to event instances that are raised in the local database.

Event Data The data for the event instance. To view the data, you must select the Display Event Data check box.

Handlers Click this link for a specific event instance to access the Event Monitor - Handlers page, where you can view information about the registered event handlers that were executed on the local node for the selected event instance.

Event Monitor - Handlers Page

Use the Event Monitor - Handlers page (EOEN_EVENT_MON2) to review the details of registered event-handler executions on the local node for a selected event instance.

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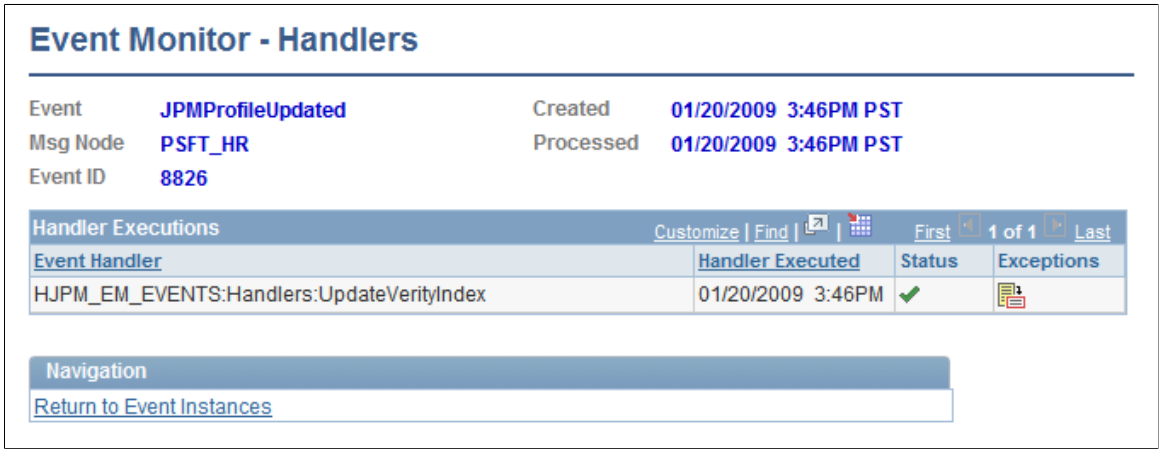
Navigation

Enterprise Components, Events & Notifications, Event Framework, Event Monitor

Click the Handlers link for an event instance on the Event Manager - Monitor page.

Image: Event Monitor - Handlers page

This example illustrates the fields and controls on the Event Monitor - Handlers page. You can find definitions for the fields and controls later on this page.



The system displays information for only the event handlers that you have configured to log executions. To log event handler executions, you must set the Logging option for a specific event handler and event combination on the Registered Handlers page.

The upper portion of the page displays information about the selected event instance that caused the event handler execution as well as the date and time that the local node began processing the event. For local events, the Processed date and time is generally the same as the date and time that the event was created. For remote events, the Processed date and time indicates when the local node received notification of the remote event from PeopleTools Integration Broker.

Handler Execution

This grid lists the event handlers that the system executed on the local database in response to the selected event instance.

If no event handler execution information is available, the system displays an informative message that indicates the possible reasons why no information is available. Possible reasons are that no event handlers are registered for the selected event, no event handlers are configured to log execution for the selected event, no synchronous event handlers are registered for the selected event and PeopleTools Integration Broker has not yet executed any asynchronous event handlers, or no event handlers executed for the event.

Event Handler The system displays the full path of the application class that implements the event handler.

Handler Executed The system displays the date and time that the system executed the event handler.

The system displays the event instance data.

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	The system displays information about the event handler exceptions.
	The system displays the event handler exception warnings.
	The system displays the event handler exception errors.
	The system displays event-handler trace information. To view trace information, you must select the Trace check box on the Registered Handlers page for this event handler and event combination.

Event Monitor - Handler Exceptions Page

Use the Event Monitor - Handler Exceptions page (EOEN_EVENT_MON3) to view the data, exceptions, and trace information that the selected event handler logged during execution and passed back to the Event Manager framework.

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Navigation

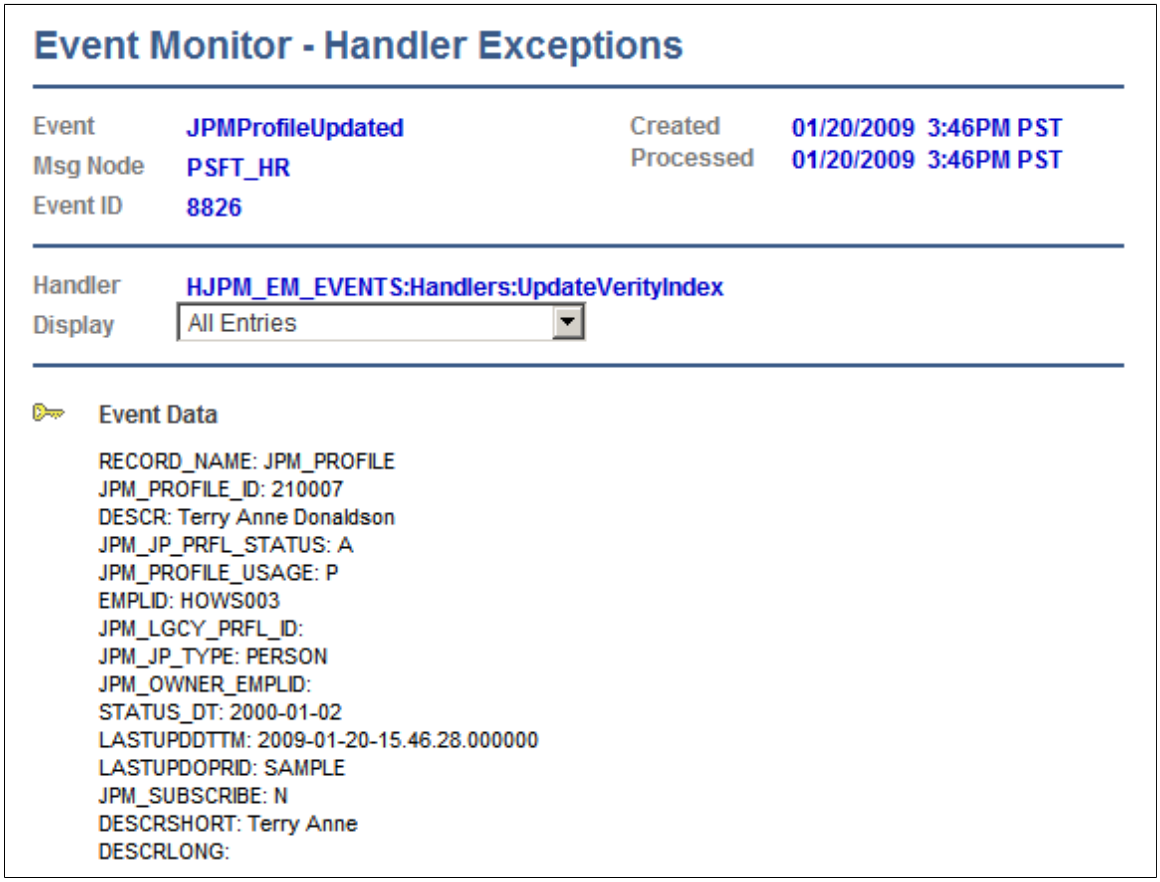
Enterprise Components, Events & Notifications, Event Framework, Event Monitor

Click the Handlers link for an event instance on the Event Manager - Monitor page.

Click the Display Exceptions button on the Event Monitor - Handlers page.

Image: Event Monitor - Handler Exceptions page

This example illustrates the fields and controls on the Event Monitor - Handler Exceptions page. You can find definitions for the fields and controls later on this page.



The upper portion of the page displays information about the selected event instance that caused the event handler execution as well as the date and time that the local node began processing the event.

Events raised in a remote database are visible in the Event Monitor component only after the local node receives and processes the asynchronous event message, and only if you have enabled logging for the event when registering the event in the local database through the Event Registry component.

Note: If you inactivate the PeopleTools Integration Broker Service Operation for the generic event message, then the local Event Manager framework does not process any remote events and thus no remote events will be visible in the Event Monitor component.

Handler The system displays the full path of the application class that implements the event handler.

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Display Select a value to filter the type of information that displays on the page.

Possible values are *All Entries, Exceptions, Event Data,* and *Trace Entries.* The system displays the information that is produced by the event handler in the order in which the event handler produced the information.

The system displays the event instance data.

The system displays information about the event handler exceptions.

The system displays the event handler exception warnings.

The system displays the event handler exception errors.

The system displays event-handler trace information. To view trace information, you must select the Trace check box on the Registered Handlers page for this event handler and event combination.

Viewing Event Summaries

This section discusses how to:

- View a summary of event instances.
- View failed event handlers.

Pages Used View Event Summaries

Page Name	***Definition Name***	***Navigation***	***Usage***
Event Manager - Event Summary	EOEN_EVENT_SUM	Enterprise Components, Events & Notifications, Event Framework, Event Summary	View a summary of all the logged event instances in the local database. This is useful for quickly identifying problems, such as researching the cause of failed event-handler executions to determine a resolution.
Event Manager - Failed Handlers	EOEN_EVENT_SUM2	Click the Failed Handlers link for an event handler on the Event Manager - Event Summary page.	View a list failed event handlers across all instances of a selected event and node combination.

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Page Name	*Definition Name*	*Navigation*	*Usage*
Event Monitor - Handler Exceptions	EOEN_EVENT_MON3	Click the Details button for a failed event handler on the Event Manager - Failed Handlers page.	View the exceptions that failed event handlers produced.

Event Manager - Event Summary Page

Use the Event Manager - Event Summary page (EOEN_EVENT_SUM) to view a summary of all the logged event instances in the local database.

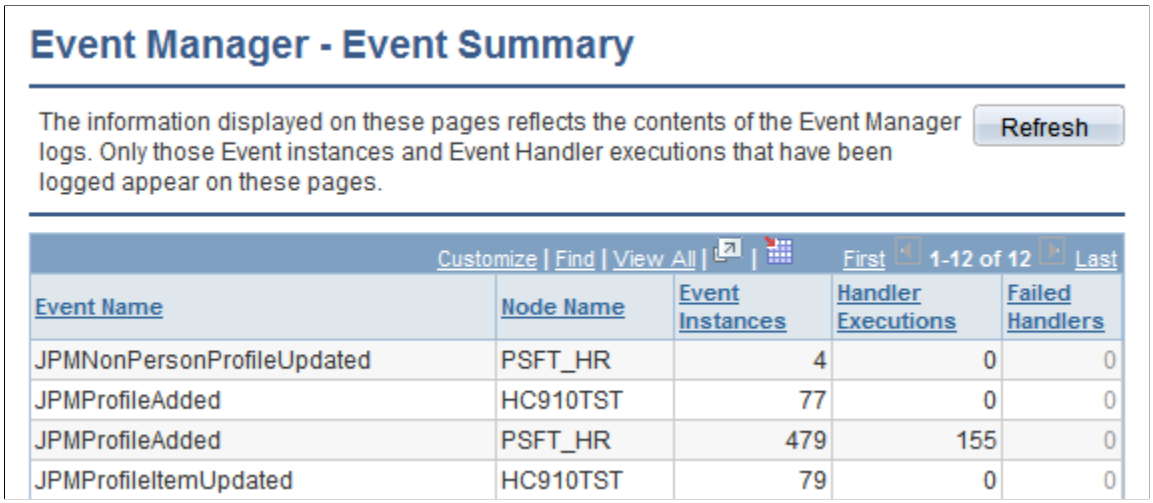
This is useful for quickly identifying problems, such as researching the cause of failed event-handler executions to determine a resolution.

Navigation

Enterprise Components, Events & Notifications, Event Framework, Event Summary

Image: Event Manager - Event Summary page

This example illustrates the fields and controls on the Event Manager - Event Summary page. You can find definitions for the fields and controls later on this page.



Refresh Click to refresh the statistics that the system displays on this page. The option to refresh is useful in production environments in which the raising and processing of events occurs frequently.

Summary Grid

Use this group box to review statistics for every event that has logged instances in the local database. The system displays event instances for only the events that are configured for logging through the Event Registry component in the local database. The system groups the logged event instances by event and node combination.

Event Name The system displays the name of the event for which the system logged event instances for the event and node combination.

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Node Name The name of the originating node from which the system raised the event instances for the event and node combination.

Event Instances The number of event instances that the system logged for the event and node combination. This equates to the number of times that the system raised the event.

Handler Executions The total number of event handlers that the system has executed for the corresponding event and node combination.

Failed Handlers The total number of event handlers that the system executed for the corresponding event and node combination that returned a failed status. The system displays this number as a link. Click the link to access the Event Manager - Failed Handlers page, where you can view a list of failed event handlers across all instances of the event and node combination. From that page you can view the exceptions that the failed event handlers produced.

Event Manager - Failed Handlers Page

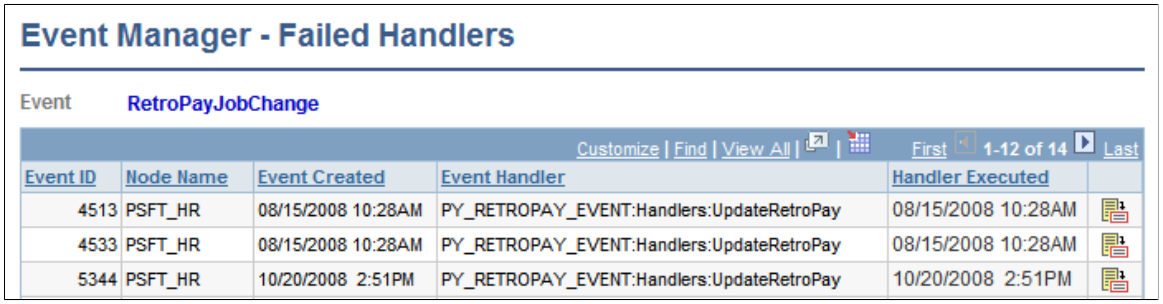
Use the Event Manager - Failed Handlers page (EOEN_EVENT_SUM2) to view a list failed event handlers across all instances of a selected event and node combination.

Navigation

Click the Failed Handlers link for an event handler on the Event Manager - Event Summary page.

Image: Event Manager - Failed Handlers page

This example illustrates the fields and controls on the Event Manager - Failed Handlers page. You can find definitions for the fields and controls later on this page.



The system lists information about each failed event handler. Click the Details button to access the Event Monitor - Handler Exceptions page, where you can view the exceptions that the failed event handlers produced.

Event Manager - Handler Exceptions Page

Use the Event Monitor - Handler Exceptions page (EOEN_EVENT_MON3) to view the exceptions that failed event handlers produced.

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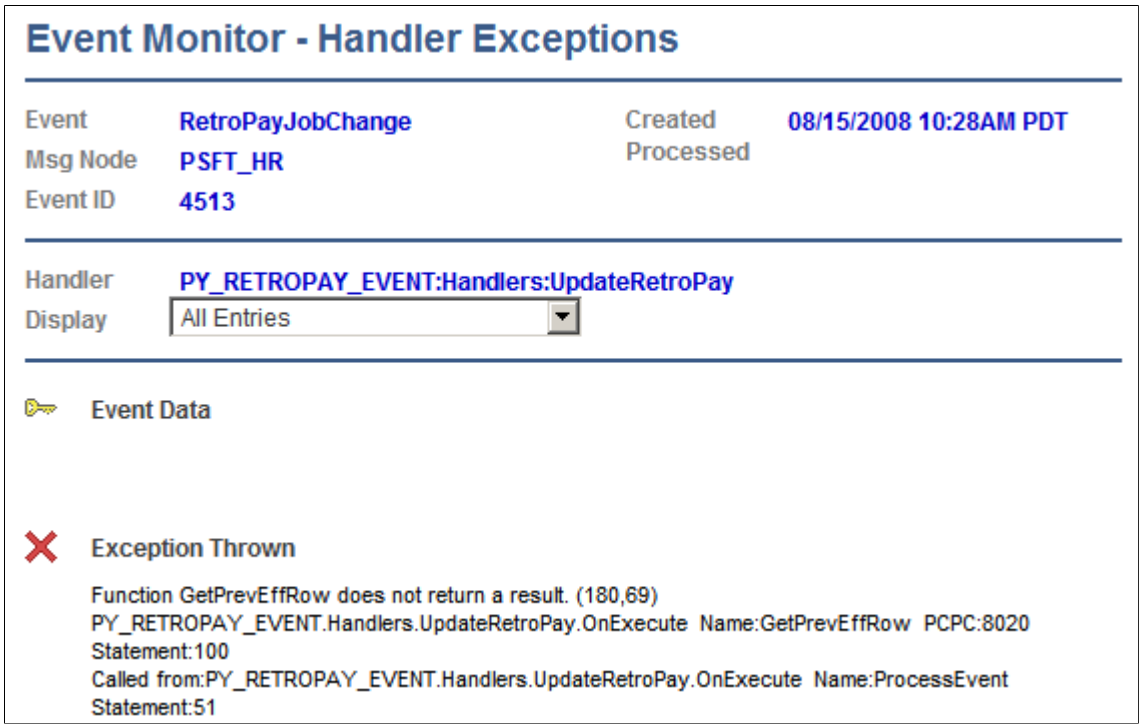
Navigation

Click the Details button for a failed event handler on the Event Manager - Failed Handlers page.

Image: Event Monitor-Handler Exceptions page

This example illustrates the fields and controls on the Event Monitor-Handler Exceptions page. You can find definitions for the fields and controls later on this page.



Details for the exception are displayed.

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Chapter 5

Creating Alerts

Understanding PeopleSoft Queries Within the Alert Framework

PeopleSoft Query can be used in combination with the Events and Notifications Framework feature to generate alert messages based on data within one or more PeopleSoft tables.

Using PeopleSoft Query, you can scan one or more PeopleSoft tables and then generate an alert message for any problems or stalled transactions. The steps to set up alert notifications based on a PeopleSoft Query are:

1. Write the PeopleSoft Query.
2. Use the Notification Registry page to add the new notification. Add the Process Name and Process Category that identifies this specific query/notification. Add a description of the new notification.
3. Use the Alert Setup component to define the values to be included in the alert message. The message object data is defined by the PeopleSoft Query name, the Process Name, and the Process Category. The Alert Setup component contains the values used to build the notifications to the Notification Dashboard and email.
4. Enter the Notification Registry page again to enable overrides. You must select the override check boxes. The values used to build the notifications to the PeopleSoft Worklist and XML messages are defined at the System-Level Notifications page or the BU-Level Notifications page.
5. Use the System-Level Notifications page to define values used to build the notifications to the PeopleSoft Worklist and XML messages. These values determine who should be notified (user role and node) and how they should be notified (worklist and XML notification). These values are applied for the process name and process category combination to the entire PeopleSoft system. If you enter values for email notification, the entries on the Alert Setup component override these values.
6. Use the BU-Level Notifications page to define values used to build the notifications to the PeopleSoft Worklist and XML messages. These values determine who should be notified (user role and node) and how they should be notified (worklist and XML notification). These overrides are applied for the process name, process category, and business unit combination. Values at the business unit level override any system-level overrides. If you enter values for email notification, the entries on the Alert Setup component override these values.
7. For XML notifications, setup and activate the EOEN Notify Message to enable the PeopleSoft Integration Broker to send a message to a third-party system using a XML-formatted messages.
8. Setup the Alerts process run control to query the PeopleSoft tables on a regular schedule.

For more details, refer the product documentation *PeopleTools: PeopleSoft Query*

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Defining PeopleSoft Queries in the Alert Setup Component

This section discusses how to define PeopleSoft queries in the Alert Setup component.

When using PeopleSoft Query with the alert framework feature you must set up the Alert Setup component. The values defined on the Alert Setup component are used to build the notifications sent to the Notification Dashboard and to email. The values are defined by the PeopleSoft Query name, the Process Name, and the Process Category. The values include:

- The message set and message number.
- User IDs and email addresses needed to route the alert message to the correct location.
- Links to the PeopleSoft page where the problem can be viewed or resolved.
- Consolidation of email notifications.
- Frequency and content of notifications.

Pages Used to Define PeopleSoft Queries in the Alert Setup Component

Page Name	*Definition Name*	*Navigation*	*Usage*
Alert Setup	EOEN_ALERT_SETUP	Enterprise Components, Events and Notifications, Alerts, Alert Setup	Enter the alert framework notification methods and recipients of the alert messages when using one or more PeopleSoft Queries with the alert framework feature.

Alert Setup Page

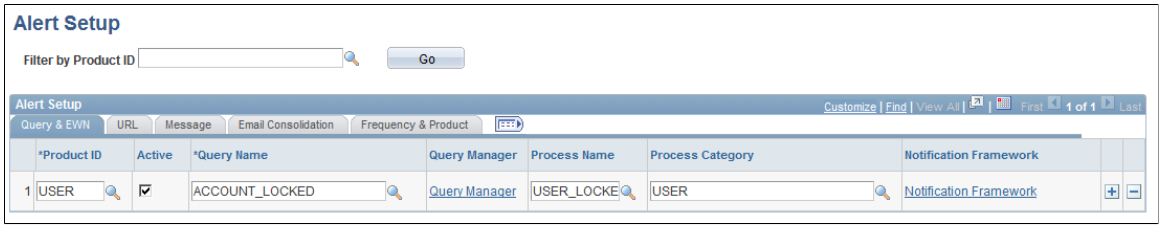
Use the Alert Setup page (EOEN_ALERT_SETUP) to enter the alert framework notification methods and recipients of the alert messages when using one or more PeopleSoft Queries with the alert framework feature.

Navigation

Enterprise Components, Events and Notifications, Alerts, Alert Setup

Image: Alert Setup: Query & EWN page

This example illustrates the fields and controls on the Alert Setup: Query & EWN page. You can find definitions for the fields and controls later on this page.



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Active

Select this check box to activate this PeopleSoft query within the notification feature.

Query Name

(required) Specify a query that is defined in the PeopleSoft Query Manager. Insert additional rows to this component to define additional queries to be used for notification.

Query Manager

Select this link to go to the PeopleSoft Query Manager where you can view a PeopleSoft query.

Process Name

(required) Enter or view the process for the notifications. The notification is sent to the user based on the setup for the Process Name and Process Category combination.

Process Category

(required) Enter or view the category for the notifications. The category is a logical partition of the Process Name.

The notification is sent to the user based on the setup for the Process Name and Process Category combination. The Process Category field is blanked out when the Process Name is changed.

Notification Framework

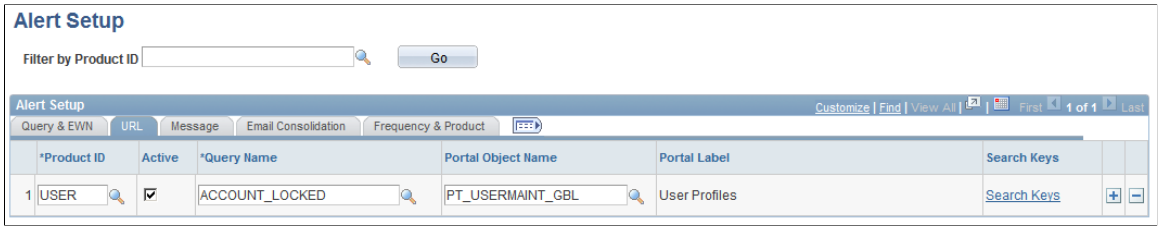
Select this link to access the Notification framework setup pages. If business unit-level setup exists for the Process Name and Process Category combination, then the BU-Level Notifications page is displayed; otherwise the System-Level Notifications page is displayed. If the Process Name is blank or both Process Name and Process Category fields are blank then the Notification Registry page is displayed.

See Setting Up Notifications Using XML Messages.

Access the Alert Setup: URL page (select the URL tab on the Alert Setup page).

Image: Alert Setup: URL page

This example illustrates the fields and controls on the Alert Setup: URL page. You can find definitions for the fields and controls later on this page.



Use the Alert Setup-URL page to provide a link from the notification message to the PeopleSoft page where you can resolve issue.

Query Name

Identifies the query for this notification.

Portal Object Name

Enter a portal object name to define the URL linking the notification message to the transaction page where the user can resolve the issue discovered by the query. This URL is placed on

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the notification message on the Notification Dashboard page as well as in the email to the user.

Search Keys

Select this link to access the Alert Setup - Search Keys page where you can enter search keys or parameters for the transaction page. An error message is displayed if the Portal Object Name field is blank when trying to launch this secondary page.

Access the Alert Setup: Message page (select the Message tab on the Alert Setup page).

Image: Alert Setup: Message page

This example illustrates the fields and controls on the Alert Setup: Message page. You can find definitions for the fields and controls later on this page.

Business Unit Field

Specify which field from the query should be used to map the business unit level setup of the notifications. A warning message is issued if this field is blank and the BU-Level Notifications page for this process name/process category is populated. The prompt list for this field is the output fields of the query.

User ID Field

For email notifications, specify which field from the PeopleSoft query has the user ID. If a user ID is entered in this field and you have enabled email notifications, then the email address is derived from the user's profile. The hierarchy for determining which email address to use is as follows:

1. The User ID from the Alert Setup - Message page. If none is found, then:
2. The User ID from the BU-Level Notifications page. If none is found, then:
3. The User ID from the System-Level Notifications page.

Message Set Number and Message Number

For email notifications, specify which message defined in the PeopleSoft Message Catalog is used in the notification message.

Message Parameters

Select the link to access the Alert Setup - Message Parameters page where you can enter the sequence numbers and field names (parameters) for the message. If the Message Set Number field or the Message Number field is blank then you cannot access the Alert Setup - Message Parameters page and an error message is displayed.

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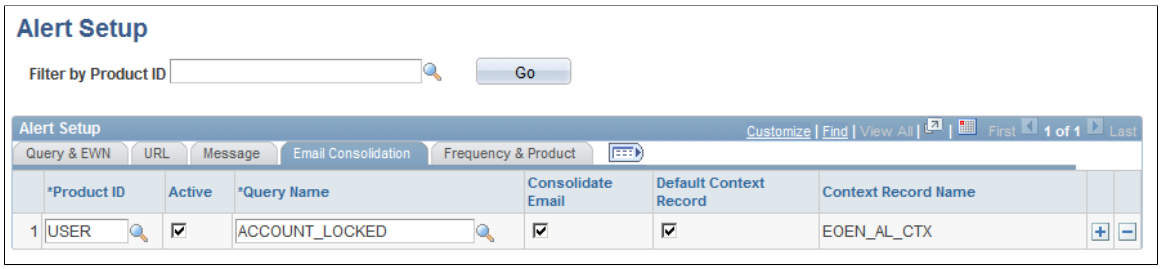
Access the Alert Setup: Email Consolidation page (select the Email Consolidation tab on the Alert Setup page).

Image: Alert Setup - Email Consolidation page

This example illustrates the fields and controls on the Alert Setup - Email Consolidation page. You can find definitions for the fields and controls later on this page.



Consolidate Email

Select this check box to consolidate email notifications from this PeopleSoft query. When this check box is selected, each email address receive one consolidated email notification per query. If this check box is not selected, then each email address receives one email per transaction or problem found.

Default Context Record

Select this check box to use the default context record in the notifications. A context record holds transaction-related information. This information can be accessed in the Notification Dashboard page. You can choose to use the default context record or add a user-defined context record.

If this check box is selected the Context Record field becomes display-only and is populated with the default context record name, *EOEN_AL_CTX*.

If this check box is un-selected, the Context Record field becomes available for input and you can choose a user-defined context record. EOEN_LOG_KEY and EOEN_AL_CTX_SBR subrecords are required for user-defined context records. The prompt list for the Context Record field is the records that have EOEN_LOG_KEY and EOEN_AL_CTX_SBR subrecords.

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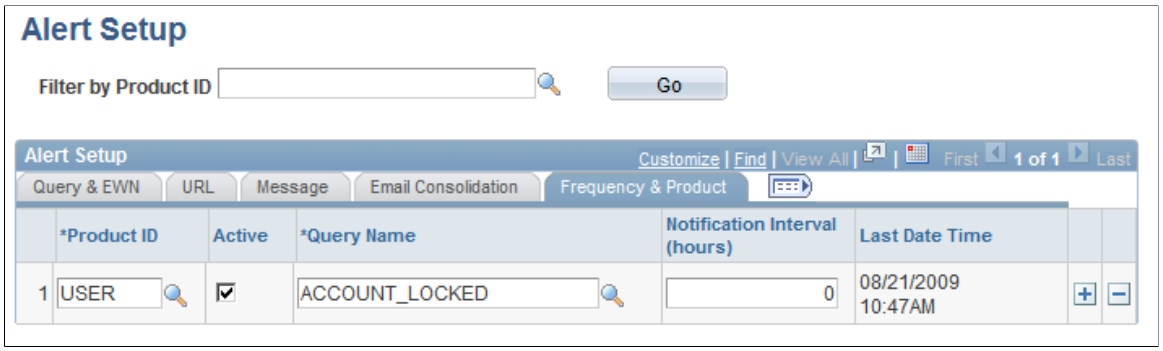
Access the Alert Setup: Frequency & Product page (select the Frequency & Product tab on the Alert Setup page).

Image: Alert Setup: Frequency & Product page

This example illustrates the fields and controls on the Alert Setup: Frequency & Product page. You can find definitions for the fields and controls later on this page.



Notification Interval (hours)

Specify the number of hours between notifications. The Alerts process checks the time interval and the last run date/time stamp to determine whether the notification should be sent.

For example without the notification interval feature if the Alert process is run every hour using a query to check for unpaid invoices and the user cannot resolve the issue within one hour, then a repeat notification is issued for the same unpaid invoices. These repeat notifications on the same problems can crowd up a user's email account. If we add a notification interval of 4 hours and the Alert process is run every hour, then the Alert process checks the last run date/time stamp and only sends the notification if 4 hours have past since the last notification.

Note: Interval does not limit dashboard, worklist and XML notifications. These will always be created regardless of the interval setting.

Product ID

Identify the PeopleSoft application of the query. This field enables the Alerts process page to run a group of queries for a particular PeopleSoft product.

Running the Alerts Process

This section discusses how to set up the Alerts process page to query the PeopleSoft tables on a regular schedule and generate any necessary alert messages.

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Page Used to Run the Alerts Process

Page Name	*Definition Name*	*Navigation*	*Usage*
Alerts	RUN_EOEN_ALERT	Enterprise Components, Events & notifications, Alerts, Run Alerts	Enter the run control parameters for the EOEN_ALERT process. This process generates the alert messages from the PeopleSoft queries.

Alerts Page

Use the Alerts page (RUN_EOEN_ALERT) to enter the run control parameters for the EOEN_ALERT process.

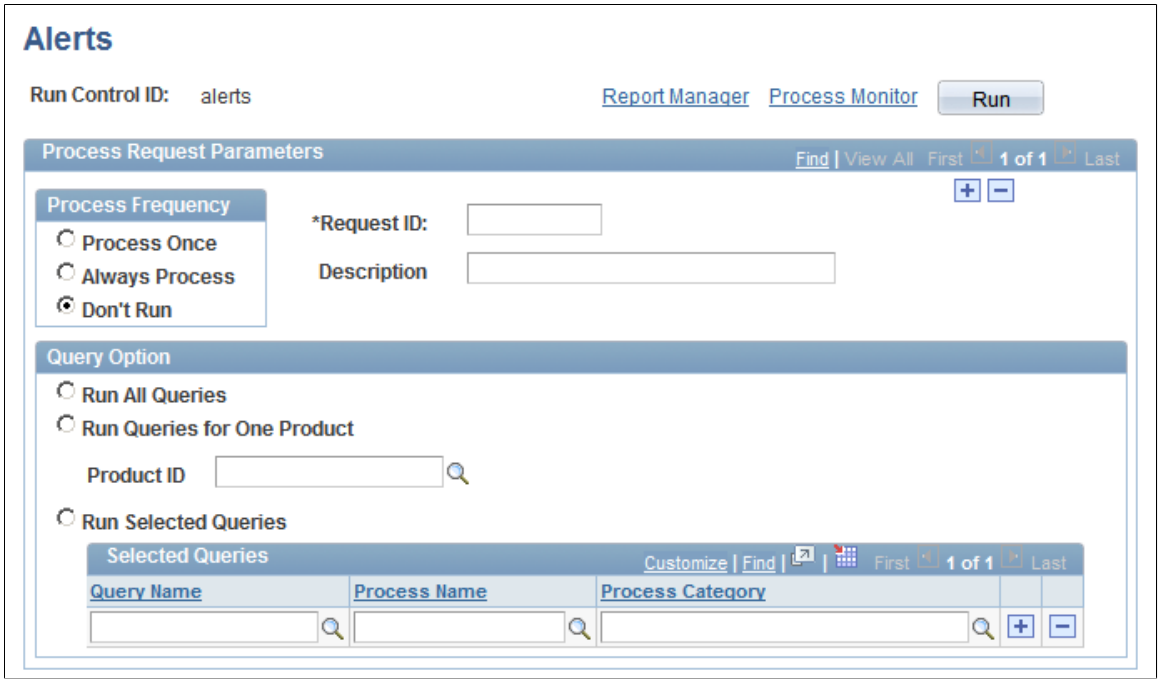
This process generates the alert messages from the PeopleSoft queries.

Navigation

Enterprise Components, Events & notifications, Alerts, Run Alerts

Image: Alerts page

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



Use the EOEN_ALERT process to run the PeopleSoft queries and generate the alert messages based on these queries.

Query Option

Select the PeopleSoft queries to be run. The options are:

- *Run All Queries:* Select to run all PeopleSoft queries defined for the alert notification. When you select this button, the

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PeopleSoft Product ID field and the Selected Queries group box are disabled.

- *Run Queries for One Product:* Select to run the PeopleSoft queries defined for one PeopleSoft application. Selecting this button, enables a PeopleSoft Product ID field to the right where you can select the PeopleSoft applications defined on the Alert Setup component on the Frequency & Product tab.
- *Run Selected Queries:* Select to run the PeopleSoft queries defined in the Selected Queries group box at the bottom of this page.

Query Name Identifies one or more PeopleSoft queries linked to the alert notification. This column is used by the Alerts process if the Run Selected Queries button is selected.

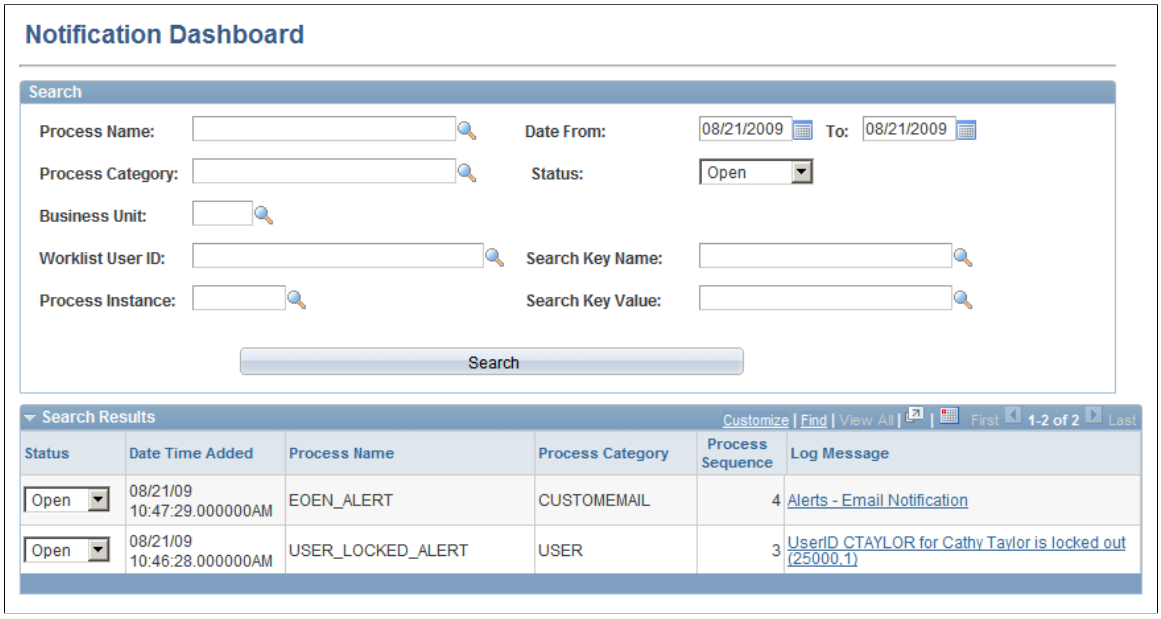
Process Name Enter the process defined for the PeopleSoft query on the Alert Setup component.

Process Category Enter the category defined for the PeopleSoft query on the Alert Setup component. The category is a logical partition of the Process Name.

You can view alerts on the Notification Dashboard page (select Enterprise Components, Events & Notifications, Notification Framework, Notification Dashboard).

Image: Notification Dashboard showing Alerts

This example illustrates the fields and controls on the Notification Dashboard showing Alerts. You can find definitions for the fields and controls later on this page.



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Chapter 6

Using the Notification Dashboard

Searching and Viewing the Notification Dashboard

This section discusses how to:

- Search for a message.
- View message details.

The Notification Dashboard is a central location to view and resolve errors, warnings, and notifications generated by the Events & Notification framework.

Pages Used to Search and View the Notification Dashboard

Page Name	*Definition Name*	*Navigation*	*Usage*
Notification Dashboard	EOEN_NTF_DSH_SRCH	Enterprise Components, Events and Notifications, Notifications Framework, Notifications Dashboard	Search for notification messages that were created from a PeopleSoft process or a PeopleSoft Query.
Message Detail	EOEN_NTF_DASH_DTL	Enterprise Components, Events and Notifications, Notifications Framework, Notifications Dashboard	View the details of a notification message that was displayed on the Notification Dashboard page.

Notification Dashboard Page

Use the Notification Dashboard page (EOEN_NTF_DSH_SRCH) to search for notification messages that were created from a PeopleSoft process or a PeopleSoft Query.

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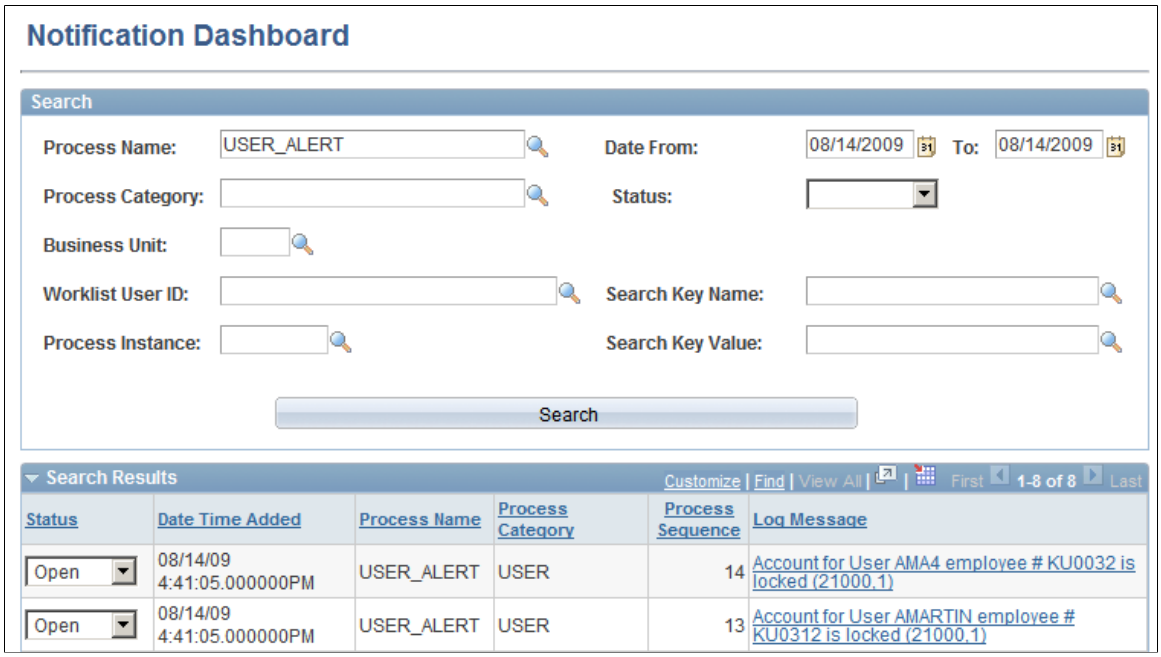
Navigation

Enterprise Components, Events and Notifications, Notifications Framework, Notifications Dashboard

Image: Notification Dashboard search page

This example illustrates the fields and controls on the Notification Dashboard search page. You can find definitions for the fields and controls later on this page.



The Notification Dashboard page is used to search for notification messages based on selected search criteria. Select the link in the Log Message column to access the Message Detail page where you can see further details and access the specific PeopleSoft page for correction of the issue.

Selection Criteria group box

The Selection Criteria group box displays the search criteria that you can enter to narrow the display of notification messages.

Process Name

Enter the process that generated the notification messages that you wish to view. The process name can be a PeopleSoft process or a user-defined name for a PeopleSoft query.

From Date and To

Enter the date range for the notification messages that you wish to view. The date of the notification message is the date that the PeopleSoft process was run.

Process Category

Enter the process category that generated the notification messages that you wish to view. The category is a logical partition of the Process Name. The notification messages are sent to the Notification Dashboard based on the Process Name and Process Category combination.

Status

Enter the status of the notification messages that you wish to view. The options are:

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- *Open:* Indicates that the notification message is still unresolved and has not been set to the closed status.
- *Closed:* Indicates that the notification message has been resolved and set to the closed status using the Status field in the Search Results group box of this page or the Message Detail page.

Business Unit Enter a PeopleSoft business unit to narrow your search results to notification messages related to one business unit.

Worklist User ID Enter a PeopleSoft User ID to limit the search results to the notification messages that would appear on a specific PeopleSoft Worklist.

Process Instance Enter the process instance number of a single PeopleSoft process. This enables you to view just one specific process run. You can locate the instance number in the Process Monitor component.

Search Key Name Enter search keys or parameters for the transaction or problem in the notification message.

Search Key Value Enter the value within the Search Key Name field.

Search Click this button to initiate the search based on your search criteria. The results display in the Search Results group box.

Search Results group box

The Search Results group box displays all notification messages that meet the search criteria after you click the Search button.

Status Displays the current status of the notification message. Change to *Closed* when the issue is resolved.

Log Message Displays the message of the notification message. Click this link to access the Message Details page where you can view additional information about this specific notification message.

Notification Detail Page

Use the Notification Detail page (EOEN_NTF_DASH_DTL) to view the details of a notification message that was displayed on the Notification Dashboard page.

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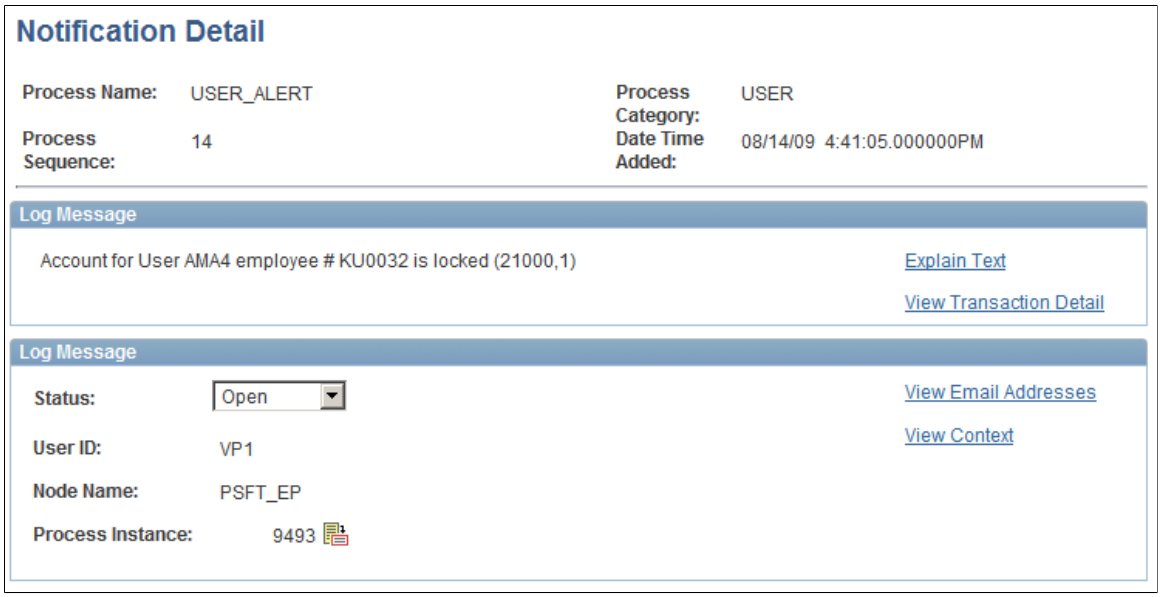
Navigation

Enterprise Components, Events and Notifications, Notifications Framework, Notifications Dashboard

Image: Notification Detail page

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



The Message Detail page provides the user with valuable information for responding to the message. The message includes valuable links.

View Transaction Detail	Select this link to access the specific PeopleSoft page for correction of the message. For PeopleSoft processes, this link is dependent on the employee servlet setup on the URL Maintenance page. For PeopleSoft queries, this link is dependent on the Alert Setup - URL page.
Status	Displays the current status of the message. Change to *Closed* when the issue is resolved.
View Email Address	Select this link to view the email addresses where the alert was sent.
View Context	Select this link to view key data from the message; including, process name, process category, process instance number, and the record name.

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Chapter 7

Using PeopleSoft Worklists to View Notification Messages

Using the PeopleSoft Worklist to View Notification Messages

Worklists are prioritized lists of the work items that a person (or group of people) has to do. A worklist is a standard PeopleTools grid. Therefore, the user can use grid personalization features to order and sort columns. When work is routed to a PeopleSoft user, it is put in the user's worklist. To work on an item, the user selects it from the worklist and is presented with the appropriate page to begin work. Users accessing worklists through a browser see worklist entries prioritized in a predefined order (set on a properties page). For example, worklists for accounts receivable clerks can be sorted by days overdue, amount overdue, or credit class.

For more information about using PeopleSoft Worklists, see the *PeopleTools: Workflow Technology*

Page Used to View Notification Messages on a PeopleSoft Worklist

Page Name	*Definition Name*	*Navigation*	*Usage*
Worklist	WORKLIST	Worklist, Worklist	View, assign priority to, reassign, and process worklist items.

For more information, refer the product documentation *PeopleTools: Workflow Technology*.

Worklist Page

Use the Worklist page (WORKLIST) to view, assign priority to, reassign, and process worklist items.

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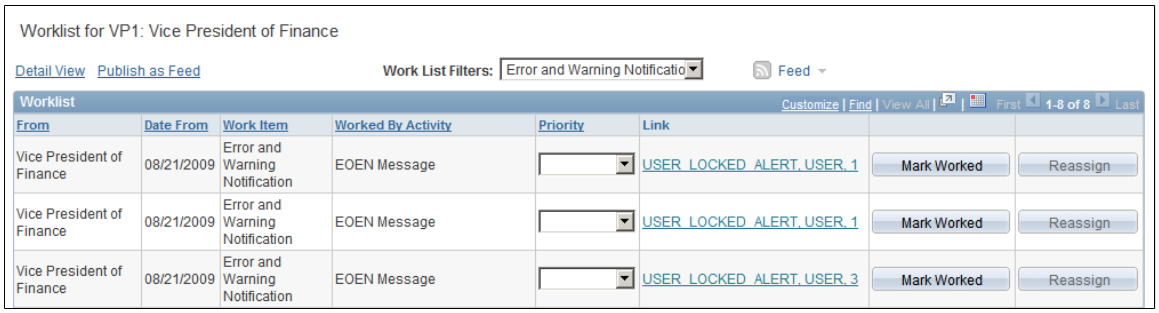
Navigation

Worklist, Worklist

Image: Worklist

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



Work List Filters Select *Error and Warning Notification* in this field to view just your notification messages.

From Displays the individual who triggered the work item.

Date From Displays the date when the work item was triggered.

Link Click to access the Message Detail page of the Notification Dashboard.

Mark Worked Click this button to mark an item as worked if you have performed the necessary actions.

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