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PeopleSoft 9.2: Approval 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

- 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.

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

- 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

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Chapter 1

Getting Started with Approval Framework

Approval Framework Overview

Use this product documentation for information about the Approval Framework, including:

- Setting up Approval Framework process definitions.
- Defining the approval transaction registry.
- Defining notification templates and users for Approval Framework.
- Defining dynamic approvals.
- Setting up email collaboration.
- Setting up the notification and escalation manager.
- Configuring and use Approval Framework Monitor.
- Using Approval Framework PeopleCode classes.

Approval Framework Implementation

Many PeopleSoft applications are delivered with predefined Approval Framework processes. In order to configure and use predefined processes you will:

Configuring Approval Processes

Use the following steps to configure predefined approval processes for your application:

Step	***Reference***
Activate workflow	Refer to the appropriate product documentation for your product implementation.
Define user lists	See User List Definition Page.
Set up approval framework	See Defining the Setup Process Definitions Component.
Configure the approval user monitor	See Configuring the Approval Monitor.

Creating New Approval Processes

The approval framework can be used to create new approval processes. Application developers can set up workflow approvals using a transaction-definition component. The following steps are used to create a new approval process.

Step	*Reference*
Identify the transaction entry component	Identify the component that will be used for transaction entry.
Identify an approval component	Identify or create a component that will be used for transaction approval. This is usually a new component, but can be the same as the transaction component. The approval component will include the necessary push buttons to approve or deny transactions, as well as any other actions that can be taken.
Create an approval cross reference table	The cross reference table must include the subrecord EOAW_XREF_SBR. See Setting Up the Transaction Registry.
Create a view of all users that can be an approval participant	The view is used by the approval monitor to display the person's name and contact information.
Develop an approval transaction handler class	Define an application class used to monitor events for the transaction. The application class must extend the ApprovalEventHandler class and enable applications to receive notifications. See ApprovalEventHandler Class Methods.
Create code to launch approvals	Create the code to launch Approval Framework. The code must extend the LaunchManager application class and at a minimum define a submit button. See LaunchManager Class Methods.
Create code to manage approvals	Create the code to manage the approvals using the ApprovalManager application class. See ApprovalManager Class Methods.
Define notifications	See Defining Notification Templates for Approval Framework.
Create the approvals transaction registry	See Understanding the Approval Transaction Registry.
Configure the approval transactions	See Configuring Approval Transactions.
Define user lists	See User List Definition Page.
Set up approval framework	See Defining the Setup Process Definitions Component.
Configure the approval user monitor	See Configuring the Approval Monitor.

Chapter 2

Understanding the Approval Framework

Understanding the Approval Framework Feature

Many daily tasks are part of a larger process that involves several steps and people working together. The term *workflow* refers to this process, which could encompass, for example, the approval of a purchase requisition or a job change request form. To facilitate this type of multiuser process, the PeopleSoft product can automatically trigger workflow notifications to inform the next approver in the process of work awaiting them.

A specialized designer is available to address workflow approvals. This designer enables you to configure Approval Frameworks using existing components without writing code.

Three types of users come together to set up approvals. They include application developers, functional business analysts, and users, who include requesters, approvers, and reviewers. Approval Framework brings these roles together to define an approval process workflow.

Application developers set up Approval Framework using a transaction-definition component. Examples of a transaction might include a job change request or leave of absence request. Transactions are made up of an approval process, routing rules and steps, and a set of users who approve and review the transaction.

Using Approval Framework, you can:

- Approve or deny individual line items in a transaction.
- Approve and deny multiple transactions one at a time.
- Include multiple approvers for individual steps.
- Assign additional approvers and reviewers during the approval process.
- Escalate approvals.
- Approve, deny, or push back approvals.
- Reassign approval tasks to another approver.
- Use worklist and email notifications.

Understanding the Approval Framework Process Flow

Approval Frameworks are triggered when requesters originate a transaction, such as a purchase requisition or a job change request, and a set of approvers carry out tasks related to the transaction. The PeopleSoft Approval Framework process is a framework that enables three levels of users to develop, configure, and use transaction approvals that meet their organizational requirements. For example, the

process of submitting a job change request and getting it approved requires defining who will approve the request, the order in which they will approve it, and how it will be routed to approvers.

In contrast to the standard PeopleSoft workflow, which requires advanced technical skills in PeopleSoft PeopleTools to create and maintain, the Approval Framework provides an alternative workflow that is much easier to create and maintain. For example, all of the steps in Approval Framework are defined using PeopleSoft pages rather than underlying PeopleSoft PeopleCode, so functional users can design and maintain workflow using these online PeopleSoft pages instead of requiring technical developers to create workflow rules.

Many PeopleSoft products are delivered with integrated Approval Frameworks, consult your application documentation.

To implement the Approval Framework process, the framework for building and interpreting workflow approvals brings together these users:

- Application developers

  Application developers adapt applications for approval with minimal coding, using a defined setup process. Making this possible is the Approval Framework, which provides a common implementation that other applications can use. Application developers integrate their applications with the Approval Framework using the Register Transactions page, where they register an application and describe its components, event handler, and records. The register stores the approval process IDs that developers create for applications.

  Note: The PeopleSoft product delivers the transaction registry for delivered Approval Framework processes.

  After an end user creates an application transaction and submits it for approval, the application hands the transaction over to the Approval Framework, which finds the appropriate approval process definition and launches the Approval Framework.

- Functional business analysts

  Functional business analysts design Approval Framework for use with an application. This includes setting up stages, paths, steps, recipients, and notifications for each approval process ID. Analysts identify the application-supplied transaction definition on which to base approval process definitions. They use the Approval Process Definition page to define processes for approving transactions. These processes can be used repeatedly to guide transactions through their approval process.

  Many businesses need different approval routings for different types of transactions. To support such variations, you can configure multiple approval process definitions for each transaction within an application. In addition to process IDs, approval process definitions are effective-dated.

- End users

  End users create transactions and then use an approval process with approvers and reviewers within an approval flow. Using this process, the different end users can approve or deny requests, monitor transaction statuses, and audit approvals.

Understanding Transaction Approval Flows

After an approval process is defined, validated, and made active, the system can submit a transaction for approval. Each PeopleSoft application typically has a top-level database record that distinguishes one transaction from the next. These top-level records are called header records. When a transaction is submitted for approval, the Approval Framework combines the approval process definition with the header record instance and line records, if line level approval is configured, to create a unique approval process instance. This approval process instance is routed from approver to approver, as configured in the approval process definition.

Approvals use two levels of processing: header and line. Business analysts set up the approval process definition that determines the flow of the approval at both levels. The approval process consists of:

- Stages

  A stage is one part of an approval process that can contain multiple parallel paths but must be at the same header or line record level. The system executes stages in sequence where one must complete before the next one begins. A stage can be at either a header level or at a line level. Stages at a line level make it possible for approvers to sign off separately on individual line items for a single transaction. Approval Framework sees each header and each line as individual pieces. A line is a child of the header. A header stage acts on the unique header while a line stage acts on each line. A stage consists of one or more paths.

- Paths

  A path contains a sequence of steps. Within a stage, paths execute in parallel. Path entry criteria determines whether or not a path executes for a given transaction or transaction line.

- Steps

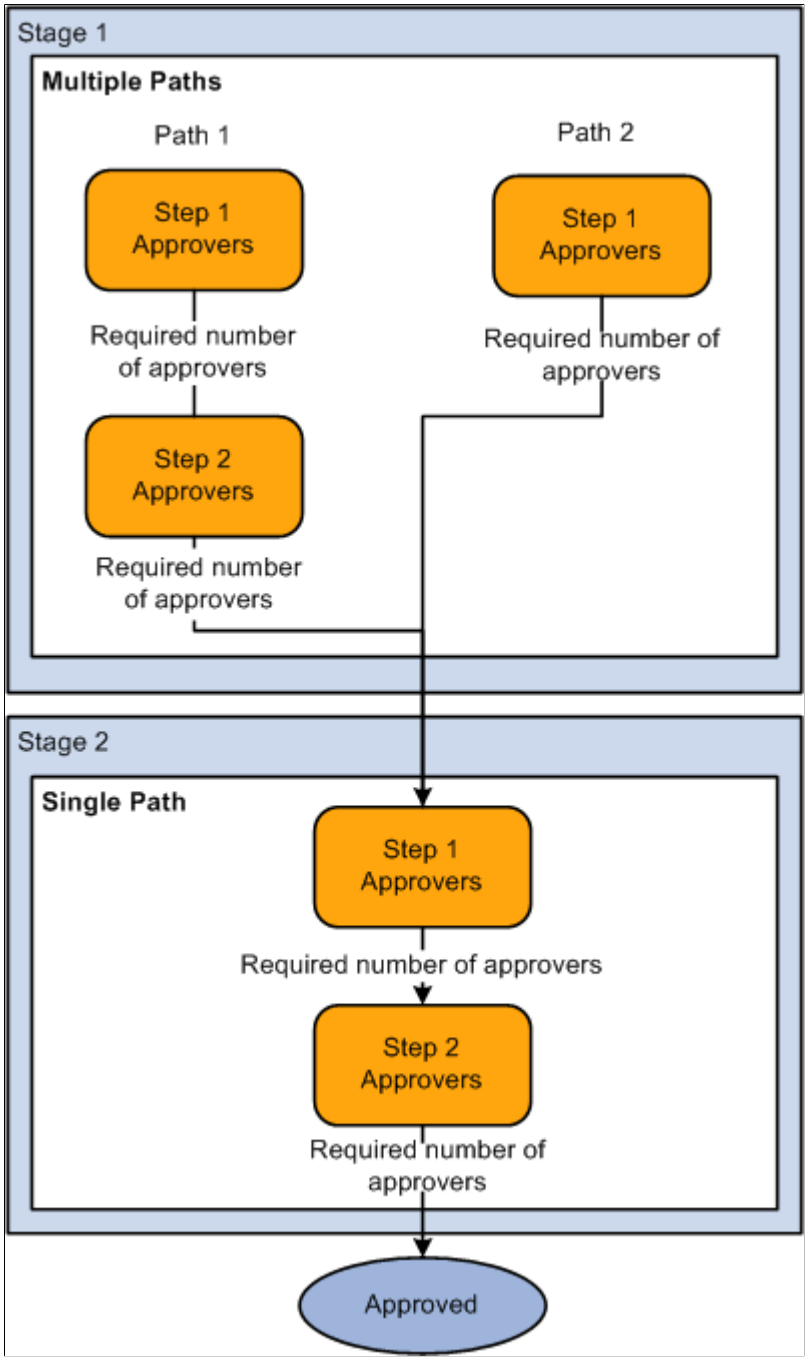
  A step represents one or more approvers or reviewers. Steps within a path execute in sequence. Separate criteria for each step determines whether or not that step executes. Each step can also have a set of reviewers. Reviewers are notified about transactions that are pending approval by email, through the worklist, or both. However, the workflow proceeds without waiting for reviewers to act.

  The system notifies approvers by using email, worklist, or both, of pending approval steps, which can require one, all, or a fixed number of approvers. You can specify approvers by roles, queries, fixed lists, or by using custom application classes. Once the required number of approvers have approved a step, the Approval Framework advances to the next step. If the workflow has no further steps, it advances to the next stage.

Note: While the configuration may require multiple approvers to approve a step before it advances, any single approver can deny a step. The moment an approver denies a step, the transaction stops moving forward in the approval process. If the transaction is at a line level, other lines will continue to move forward. If the denial is at a header level, the approval process terminates, and the entire transaction is denied.

This diagram illustrates how the approval process uses stages, paths, and steps for routing approvals:

Image: Example Approval Framework showing stages, paths and step



In this example there are 2 stages. In stage 1 there are 2 paths. Each step within the path is executed in sequence, when the required number of approvers have approved a step, it is advanced to the next step within the path. Paths are executed in parallel. When all paths within the stage are approved, the workflow advances to the first step in the next stage.

Understanding Header- and Line-Level Approvals

Many PeopleSoft transactions have a top-level record (known as a header) with keys that uniquely identify a single transaction in an application. In addition to the header record, a transaction may also contain a more detailed line level record (known as line-level).

The Approval Framework process uses an application's header keys to correlate approval processes and application transactions. For example, when you open an application transaction, the Approval Framework enables you to submit the request for approval only if you haven't already submitted it. This check is possible because the system correlates the application header keys with the approval process instance keys.

If a particular transaction supports line level processing, an analyst can configure the approval process so that different line-items in the same request follow different routes.

You can deny some lines of the request and approve others, making line-level approvals independent for each line. For example, a request can contain multiple lines, and you might want to use special approvers for certain lines based on their area of expertise.

Note: If a transaction has multiple line items, 1 of which is denied and the rest are approved, the overall transaction is approved.

An Approval Framework process might have mixed header and line-level approval routings. For example, department managers might exercise budgetary control over the request as a whole, while commodity approvers still examine only those line-items which fall within their expertise. Final approval requires both types of approvers to sign off on the request.

When a request is approved, the Approval Framework notifies the application, which then takes source end actions:

- End actions.

  An approval of one transaction often leads to the creation of another transaction, or triggers another business process. The Approval Framework supports this trigger by providing a call-back mechanism for event notification. For example, when a requisition is approved, it can be sourced—an action follows final approval, which is the end action.

- Line-level versus header-level end actions.

  Use line-level approvals to make it possible for an action to be taken on different line items upon their approval, without waiting for the approval of other line items in the requisition. You can source line items as soon as they are approved.

  This action is possible only if line-level approval routings are at the end of the process and require no further review. In this case, the application can act on the individual lines as they get approved. The Approval Framework notifies the application of significant approval-related events.

  Header actions allow the transaction lines to be grouped together and processed as one unit.

Understanding Criteria for Approval Framework Processes

Criteria is an entity that evaluates to true or false. It uses transaction-specific information to determine if a transaction requires approvals and follows the approval paths and steps that evaluate to true. To set the context for the criteria, the approval process definition provides the transaction keys as bind values.

Criteria is set up at three levels as shown in this table:

Set Up Level	***Description***
Process Definition ID	This criteria is used to determine which Process Definition ID to use to process the approval.
Path	This criteria is used to determine if the approval will follow the path.
Step	This criteria is applied to the individual Approvers defined for the step.

There are 3 different types of criteria you can apply to an approval process.

Criteria Type	***Description***
Always True	No criteria is needed, the approval process will always be triggered.
Application Class	An application class contains the logic used to determine if the workflow approval task evaluates as true.
User Entered	Criteria is based on record and field combinations. The criteria can be either value or monetary-based. A logical operator and a value are used to evaluate the condition.

Understanding Approval Features

Using a combination of features, you can create rules for different types of approvals. This section discusses:

- Ad hoc path approval
- Ad hoc review
- Self-approval
- Route to requester
- Skip prior path
- Auto approval
- Alternate approvers

- Push back
- Approval comments

Ad Hoc Path Approval

If Ad Hoc Approval Status Monitor is implemented for an approval transaction, then during the approval process, approvers can add other approvers or reviewers to the current or a later stage of the approval process. This action is called *ad hoc approval,* and it only applies to the approval instance in which the addition occurs and does not affect the underlying process definition used for other requests.

You can insert ad hoc approvers and reviewers in serial or parallel with existing approvers:

- For serial approvals, each approval in the process is sequential.

  Users can add approvers and reviewers only after the current pending step or later.

- For parallel approvals, the sequence does not matter.

  Users can insert an ad hoc step in an ad hoc path in any currently pending or subsequent stage.

You can add ad hoc approvers once the transaction is submitted. The Approval Framework launches the previewed approval process instance if requested by the application developer's code.

If you have an ad hoc approver user list defined in the transaction registry, only the users within that list can be added as an ad hoc approver or reviewer.

See Register Transactions Page.

Ad Hoc Review

Ad hoc reviewers are users that an approver or requester would like to review a transaction. Ad hoc reviewers are notified and provided with a link in a worklist entry or email to the transaction, if the process is so configured. Ad hoc reviewers do not approve or deny transactions, they can add comments. However, the comments should not contain the % symbol as this is not recognized as a valid character and the application will remove this from the comments.

Self-Approval

A requester can also be an approver. If requesters approve their own transactions, it's called self-approval. A check box setting enables self-approval. If enabled, the requester’s approval is assumed, and the process continues. However, you can establish criteria that helps control the requester's approval authority. For example, you can place a limit on the dollar amount for the requester so that if the transaction is over that amount, the requester is not used as an approver.

If self-approval is not enabled, then the requester must manually approve the transaction.

If self-approval is enabled, then the self-approval criteria must be specified. Then, if the requester appears as an approver, the criteria is evaluated. If the criteria are met, then the requester's approval is assumed and the minimum approvers for that step decrements by one.

When a requester is an approver, you can configure the path to skip the steps in that path prior to the requester's step.

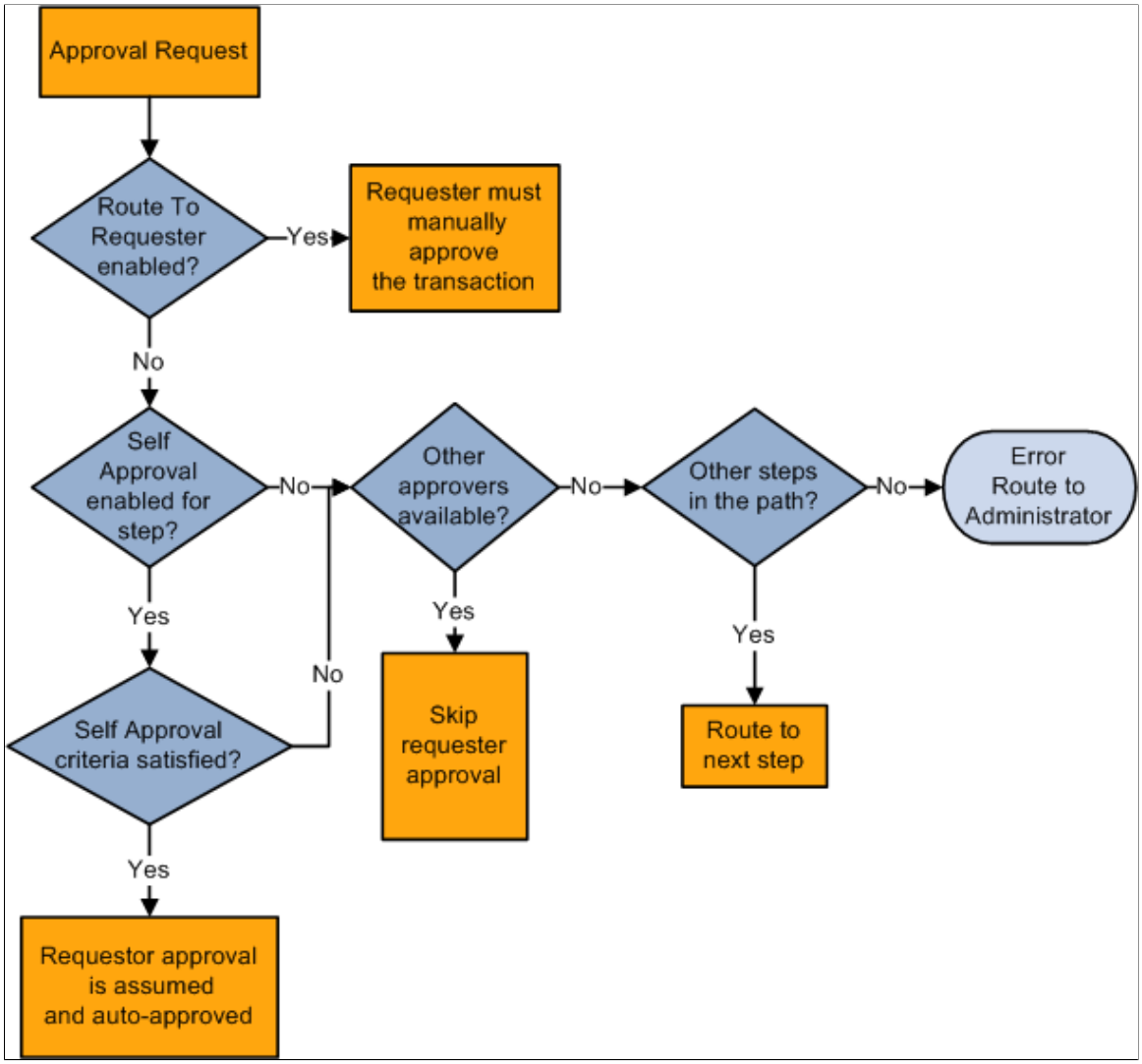
Self-approval is configured at the step level.

Route to Requester

Route to requester is a feature that informs the system that an approval should be sent to a requester. In some cases the requester may already be listed in the approval path. The flow of this option is also dependant on the self-approval feature as displayed in this diagram:

Image: Route to requester and self-approval feature flow

Diagram illustrating the route to requester and self-approval feature flow.



- If route to requester is selected, the requester must always manually approve the transaction regardless of the self-approval setting.

  Note: Even if the self-approval criteria is met, the requester must manually approve the transaction.

- If neither route to requester nor self-approval are selected, and the requester is the only approver, the system tries to identify additional steps in the path and routes the transaction to the next step if available. If no additional steps are available, it generates an error and routes the transaction to the administrator.

- If neither route to requester nor self-approval are selected, and there are other approvers in the path, the requester approval is skipped.

- If route to requester is not selected and self-approval is selected, the self-approval criteria are checked. If the requester meets the approval criteria, the approval is assumed and auto-approved.

  If the requester does not meet the approval criteria, and other approvers are available, the requester approval is skipped. If self approval criteria are not met and there aren't other approvers in the same step, the system routes the transaction to the next step in the process if applicable, or to the administrator if there are no more steps in the path.

Skip Prior Path

When skip prior to requester is enabled, the system begins the approval flow at whatever step in which the requester is an acknowledged approver.

For example, if a vice president orders supplies for herself, the system skips application approval steps leading up to the step for which the vice president is an acknowledged approver.

Auto Approval

When auto approval is enabled, the system remembers an approver's action for that process at the header- or line-level, and applies the same action automatically for any subsequent appearance in the Approval Framework routing.

For example, if the approver approves line one and the line appears again as a required approval for the specific approver, the approval is remembered for the line. In this example, the approval is given only to that specific line in the process. However, if an approval is made at the header level, approval is granted to all of its lines automatically.

As a hierarchical system, the Approval Framework supports auto approval in these situations:

- Header stage that is followed by another header stage.
- Header stage that is followed by a line stage.
- Header stage that is followed by a line stage, which is followed by another header stage.
- Line stage that is followed by another line stage.

Auto approval is not supported in processes where a line stage is followed by a header stage. The reason being that the approver of a line may only have approval privileges to some but not all lines within the same header and therefore should not be given the power to approve the header through the Auto Approval option.

Alternate Approvers

Alternate workflow approvers are users who are assigned to receive emails and worklist notifications for the primary approver when the primary approver is not available. When you identify an alternate approver, you enter a date range during which you want the alternate to fill in. The system determines if the alternate is in place for the date range.

Note: Alternate users are defined in the User Profile. Navigate to PeopleTools, Security, User Profiles, User Profile.
You can also use the *FindAlternate* method in the EOAW_CORE:Utils class to select alternate approver.

Push Back

Push back is an optional feature that can be implemented in the Approval Monitor. If implemented, push back takes a currently pending step out of pending status and requeues the previous step to its approvers. The meaning of push back is that the approver is questioning the prior step's approval and is requesting clarification. Push back is only possible within a path, therefore, the first step of a path cannot push back.

Note: The push back feature ignores auto self-approval.

See Approval Monitor Configuration Page .

Approval Comments

Requesters can add comments to transactions, and approvers can associate their comments with the approval process rather than the request transaction directly. The Approval Framework Monitor provides a mechanism for associating comments with a particular approval process instance, which is tied to a particular application transaction. Approvers can view comments added by another approver, but they cannot change previous comments. Approvers should not use the % symbol while adding comments to transactions as this is not recognized as a valid character by the application and will be removed.

Understanding Tasks in the Approval Framework

This section details the steps to implement and use Approval Framework. It describes tasks that application developers, business analysts, and end users perform in conjunction with Approval Framework.

To implement and use Approval Framework:

1. Application developers register information with the Approval Framework by using the Register Transactions page.
2. Functional business analysts define the approval process definition for an application transaction.

   Essentially, analysts determine the approval transaction registry entry on which the process definition is to be based and then define the details of the process. The approval process definition includes definitions of stages, paths, steps, and criteria.
3. Requesters submit a transaction for approval.

   This action launches the approval process. The Approval Framework reads the approval process definition and queues the transaction for approvers.
4. The system queues an approval task to an approver or reviewer using email notification, worklist entry, or both.

   The URL encoded in the worklist entry points to the corresponding approval component.
5. Approvers and reviewers take actions on transactions using the Approval Monitor. Reviewers may only add comments.

   When an error or violation of criteria or rules occurs during the approval process, the error is routed to the administrator for resolution, if there are no additional steps in the path.

Note: The error conditions for static steps are no approvers or not enough approvers at a step.

Chapter 3

Setting Up Approval Framework Process Definitions

Defining the Setup Process Definitions Component

Business analysts use the Setup Process Definition page to define an approval definition process. The process is made up of stages and their paths and steps. The approval steps that you place on the approval path represent the approval levels that are required for a transaction.

This section discusses how to:

- Define Approval Framework processes.
- Define criteria for Approval Framework processes.
- Define paths for Approval Framework processes.
- Define steps for Approval Framework processes.

Pages Used to Define Approval Framework Processes

Page Name	*Definition Name*	*Navigation*	*Usage*
Setup Process Definitions	EOAW_PRCS_MAIN	Enterprise Components, Approvals, Approvals, Approval Process Setup	Define approval process stages.
Criteria Definition	EOAW_CRITERIA	• Click the Definition Criteria link on the Setup Process Definitions page. • Click the Alert Criteria link on the Setup Process Definitions page. • Click the Criteria link from the Setup Process Definitions page in the Path section. • Click the Criteria link from the Setup Process Definitions page in the Steps section.	Define criteria for workflow approvals.

Page Name	*Definition Name*	*Navigation*	*Usage*
Notifications	EOAW_NOTIFY_DEF	Click the Definitions Notifications link from the Setup Process Definitions page.	Define notification options.
Timeout Options	EOAW_TIMEOUTDEF	Click the Timeout Options link from the Setup Process Definitions page.	Define global timeout and escalation settings.
Approval Path Definition	EOAW_PATH_SEC	Click the Details link within the Paths group box on the Setup Process Definitions page.	Set up workflow approval paths.
Approval Step Definition	EOAF_STEP_SEC	Click the Details link within the Steps group box on the Setup Process Definitions page.	Define steps for workflow approvals.

Setup Process Definitions Page

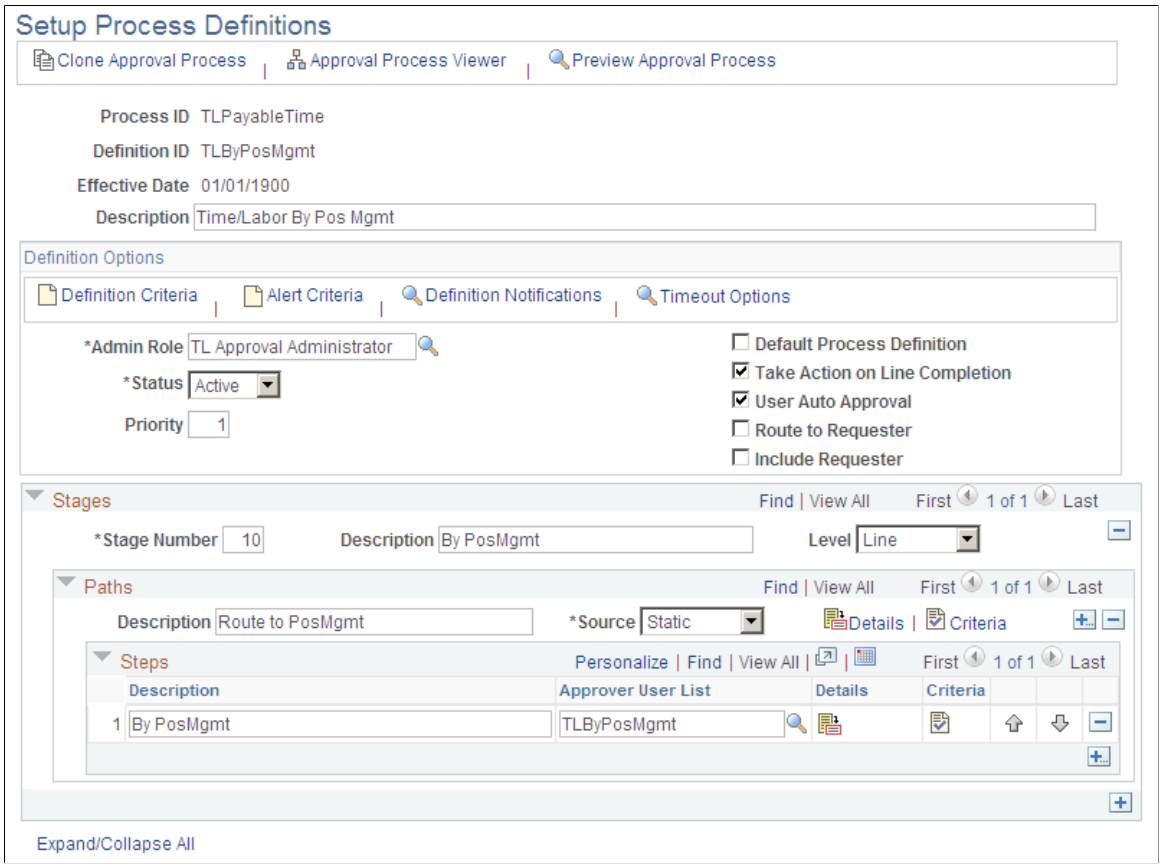
Use the Setup Process Definitions page (EOAW_PRCS_MAIN) to define approval process stages.

Navigation

Enterprise Components, Approvals, Approvals, Approval Process Setup

Image: Setup Process Definitions page

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



Business analysts use this page to define an approval definition process. The process is made up of stages and their paths and steps. The approval steps that you place on the approval path represent the approval levels that are required for a transaction.

You can develop approval processes that:

- Meet organizational or tiered approval limits.
- Use parallel processing to allow multiple transaction entities to be processed at the same time.
- Use staged approvals that require one sequence of processing to complete before another can begin.

Typical approval processes might include:

- Monetary based approval criteria.
- Two different approvers for each step, where both approvers at a step must approve the request for it to advance to the next step.

Process ID The Process ID created on the Register Transactions page.

See Understanding the Approval Transaction Registry.

Definition ID Enter any identification code that provides meaning to you. This identifier is used as a search field on the Monitor Approvals page.

Note: When upgrading from a previous release, the SetID field is used for the Definition ID.

Effective Date Indicates the date on which this approval process became effective and ready for system use. This value applies to approval processes for a particular approval process ID and definition ID, and it includes PeopleSoft functionality associated with effective-dated entities. For instance, if multiple approval processes are active with the approval process ID, definition ID, and effective-date specification, then the system uses the most current effective dated row.

Description Enter a description for the approval process.

Clone Approval Process Click this link to clone the approval process.

Approval Process Viewer Click this link to access a graphical tool, which enables you to view each stage, path, and step of the approval process.

Note: An SVG Viewer is required for this feature.

Note: When you are viewing the graphic tool in the Approval Process Builder page, if you elect to make changes the system will return you to the standard Approval Process Definition page.

Preview Approval Process Click this link to view what a workflow instance would look like if it were running.

Definition Options

This section of the page is used to define options for the approval process.

Definition Criteria Click to access the Criteria Definition page, where you can define user and field criteria along with monetary and application class criteria for this process. This page works similar to the other Criteria Definition pages that are used for paths and steps, however this criteria is used to determine which Definition ID is to be used to process the Approval.

See Criteria Definition Page.

Alert Criteria Click to access the Criteria Definition page, where you can define user and field criteria along with monetary and application class criteria for this process. This criteria can be evaluated by applications to highlight conditions of a transaction

to be approved. For example, a one-time shipping address used only on this request.

Alert Criteria is not used to determine how an approval should route. It is used by the application to determine if messages (Alerts) should be displayed as part of the approval process.

Definition Notifications

Click to access Approval Framework Notifications page, where you can define notification options to the override one or more of the process definition notification options defined in the Configure Transactions component.

See Configure Transactions Page.

Timeout Options

Click to access Approval Framework Timeout Options page, where you can set global timeout and escalation settings at the Approval Definition level. Path level timeout settings will override the Approval Definition level settings if they differ.

Admin Role (administrative role)

Select the PeopleSoft role used by workflow to route the transaction to all users filling that role in case of an error during approval processing.

Note: The error conditions are no approvers or not enough approvers.

See User List Definition Page.

Status

Select the current state of this approval process. The values are:

Active: Indicates the approval process is available for use.

Inactive: Indicates the approval process is not available for use.

A transaction that has started with a specific definition continues using that definition, even if the status is *Inactive.*

Priority

Enter the priority for the definition. Priority 1 is the highest. When a definition is not explicitly passed to the Approval Framework by the calling application, the Approval Framework uses the Definition Level Criteria to determine which definition to use. If multiple definitions return a criteria of true, the definition with the highest priority is used.

Note: Multiple Definition ID’s with the same priority may result in inconsistent behavior, in the event that multiple definition ID’s match.

Default Process Definition

Select to indicate that the system should use this process definition as the default when no other definition ID matches the criteria entered.

Take Action on Line Completion

Select to allow each line to continue to the next step of the approval process, with out waiting for other lines within

the transaction to complete. This setting applies to approval processes that have a line-level stage at the end of the process.

When this check box is selected, the approved lines of a transaction can move forward to the next approval step even though some of the lines in the transaction have not yet completed the approval process. As each line completes the approval process, the header and line status are updated immediately so that the individual line can move forward without having to wait for the all the lines of the transaction to complete workflow approval.

When this check box is clear, all lines within a transaction must complete the approval process before any line of the transaction can flow to the next approval step. For example, a requisition line cannot be sourced to a purchase order until all lines of the requisition have completed the approval processing. The header and line statuses remain in a pending status until the last line of the transaction has completed the approval process. Once that last line has had an approval action made against it, then the header status is updated, as well as each line status. An approval action could be a denial as well as an approval. For example, if there are two lines on a transaction, one line is approved and the second line is denied, then the approval process is complete and the approved line can move forward to the next step.

User Auto Approval

Select to enable the system to remember an approver's action for this process. The next time this approval process is presented to the approver, the system automatically applies the approver's selections. The automatic application of steps in the process is left in place until you clear the User Auto Approval check box.

This setting applies to the specific line or header the approver had previously approved in this process only. A header approval implies line approvals for all lines.

Route to Requester

Select this check box to route this approval to the requester. When this check box is selected and the requester is also an approver, the requester must manually approve the transaction, unless the minimum approvals have already been satisfied.

If this check box is not selected and the requester is also an approver, the system will check is self-approval is active. If self-approval is active, the criteria will be checked.

See Understanding Approval Features.

Include Requester

Select to enable the user to insert the requester in the event the requester is not equal to the originator.

Stages

This section of the page is used to define the stages. An approval process can contain multiple parallel paths but they must be at the same header or line record level. The system executes stages in sequence where one must complete before the next one begins.

Stage Number Enter a number indicating sequence for this stage.

Description Enter a description for the stage.

Level Select either *Line* or *Header*.

The system executes stages in sequence where one must complete before the next one begins. A stage can be at either a header level or at a line level. Stages at a line level make it possible for approvers to sign off separately on individual line items for a single transaction. The Approval Framework sees each header and each line as individual pieces. A line is a child of the header. A header stage acts on the unique header while a line stage acts on each line. A stage consists of one or more paths.

Paths

This section of the page is used to define the paths for the stage. Use the Details and Criteria links to add the information for each path.

See Criteria Definition Page, Approval Path Definition Page.

Steps

This section of the page is used to define the steps for the path. Use the Details and Criteria links to add the information for each step.

See Criteria Definition Page, Approval Step Definition Page.

Criteria Definition Page

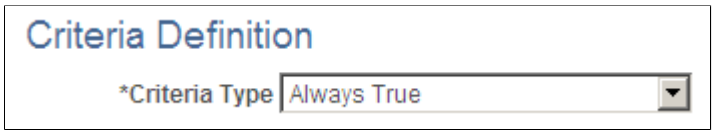
Use the Criteria Definition page (EOAW_CRITERIA) to define criteria for workflow approvals.

Navigation

- Click the Definition Criteria link on the Setup Process Definitions page.
- Click the Alert Criteria link on the Setup Process Definitions page.
- Click the Criteria link from the Setup Process Definitions page in the Path section.
- Click the Criteria link from the Setup Process Definitions page in the Steps section.

Image: Criteria Definition page

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



Use this page to define the different types of criteria you want to apply to an approval process. You can create definitions consisting of a field with a logical operator and a value of definitions consisting of an application class that takes in transaction data to process the approval.

Criteria Type Select one of these options:

- *Always True* informs the system to trigger this approval process. No criteria is needed. The system will only follow paths that evaluate as true.
- *Application Class* requires you to define which specific application class the system uses to determine if the workflow approval task evaluates as true.

  Note: Use the *Application Class* criteria type when the user entered criteria does not contain the necessary level of detail.

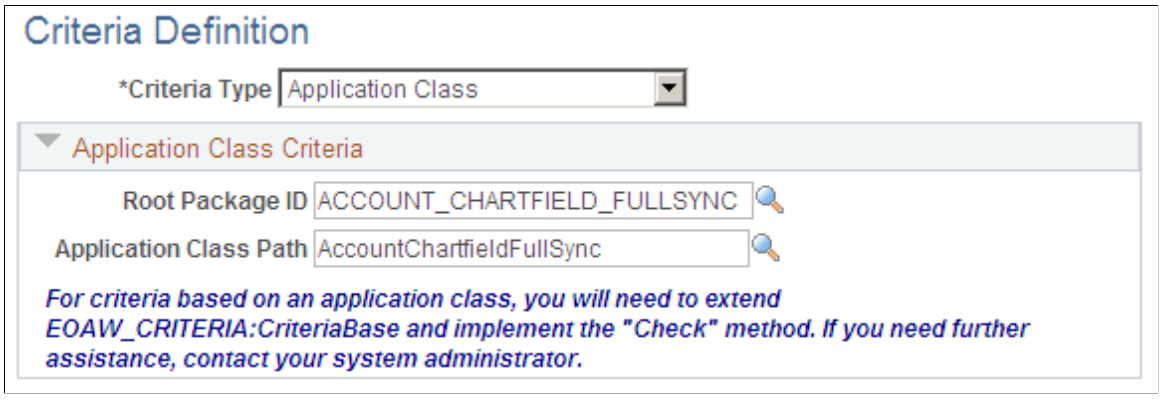
- *User Entered* requires you to enter all record and field combinations, either value- or monetary-based, that will trigger the workflow to evaluate as true.

Application Class Criteria (Section)

Use this section to assign application packages as criteria for the approval process definition. When you define a class, the system uses it along with other criteria you enter to process the approval.

Image: Criteria Definition page showing criteria type Application Class

This example illustrates the fields and controls on the Criteria Definition page showing criteria type Application Class. You can find definitions for the fields and controls later on this page.



Root Package ID Select the primary application package. This selection is the parent class for other packages or for child application classes.

Application Class Path Select a path that describes a specific class within the root package.

Application Class: Example

Here is an example of an application class written for approval criteria that extends EOAW_CRITERIA:CriteriaBase and implements the “Check” method. This example can also be found in EOAW_CRITERIA:EXAMPLES.

```
import EOAW_CRITERIA:DEFINITION:*;

class CriteriaClassExample extends EOAW_CRITERIA:DEFINITION:CriteriaBase
  1- method CriteriaClassExample(&rec_ As Record);
  2- method Check(&recBind As Record) Returns boolean;
  3- method CheckwithComments(&recBind As Record) Returns array of string;
private
   instance Record &rec;
   method CheckSQL(&recBind As Record) Returns boolean;
end-class;

method CriteriaClassExample
   /+ &rec_ as Record +/
   %Super = create EOAW_CRITERIA:DEFINITION:CriteriaBase(&rec_.EOAWCRTA_ID.Value);
   &rec = &rec_;
end-method;

method Check
   /+ &recBind as Record +/
   /+ Returns Boolean +/
   /+ Extends/implements EOAW_CRITERIA:DEFINITION:CriteriaBase.Check +/
   Local boolean &queryStatus;
   rem %This.CheckQuery(&recBind);
   Local boolean &sqlStatus = %This.CheckSQL(&recBind);

   Return &sqlStatus;

end-method;

method CheckwithComments
   /+ &recBind as Record +/
   /+ Returns Array of String +/
   /+ Extends/implements EOAW_CRITERIA:DEFINITION:CriteriaBase.CheckwithComments +/
   Local array of string &aryComments = CreateArrayRept(" ", 0);

   Return &aryComments;

end-method;

method CheckSQL
   /+ &recBind as Record +/
   /+ Returns Boolean +/
   Local string &sqlDef, &SQLText;
   Local integer &i;
   Local Rowset &rsResults;

   &SQLText = "SELECT 'X' FROM PS_INSTALLATION";
   Local string &output;
   REM ***** Specify a query that uses some or all of the transaction keys as input⇒
;
   SQLExec(&SQLText, &output);
   If All(&output) Then
      Return True
   Else
      Return False
   End-If;
end-method;
```

Note that:

1. *CriteriaClassExample* is the class name. It should match at all levels. The input is a record that contains the field EOAWCRTA_ID. The method must have this parameter.

2. The *Check* method is the main method doing the work. It validates if the criteria is true or false. It can call anything you want to add. In this case, it is calling a private method called *CheckSQL*. The &recBind parameter is the transaction cross reference record. The cross reference record ties the approval workflow engine to the transaction. The transaction keys are fields on the cross reference record. There is also a field called RECNAME so that it is possible to reconstruct the transaction record.

3. The *CheckwithComments* method is nearly identical to the *Check* method. The difference is that it returns any "descriptions" from the criteria page for criteria that was true. This is useful in the area of *Alert Criteria* on the Approval Process Definition page. If there are simple notifications (messages) that the application wants to display, they can be done with the *CheckwithComments* method. One example of this is the *one-time* address check in eProcurement.

Here is an example of how the call is made from *Self Criteria*:

```
If (All(&c) And
           &c.Check(%This.path.thread.rec)) Then
         &self_ok = %This.utils.SELF_OK;
      End-If;
```

And this is the constructor for the Criteria object:

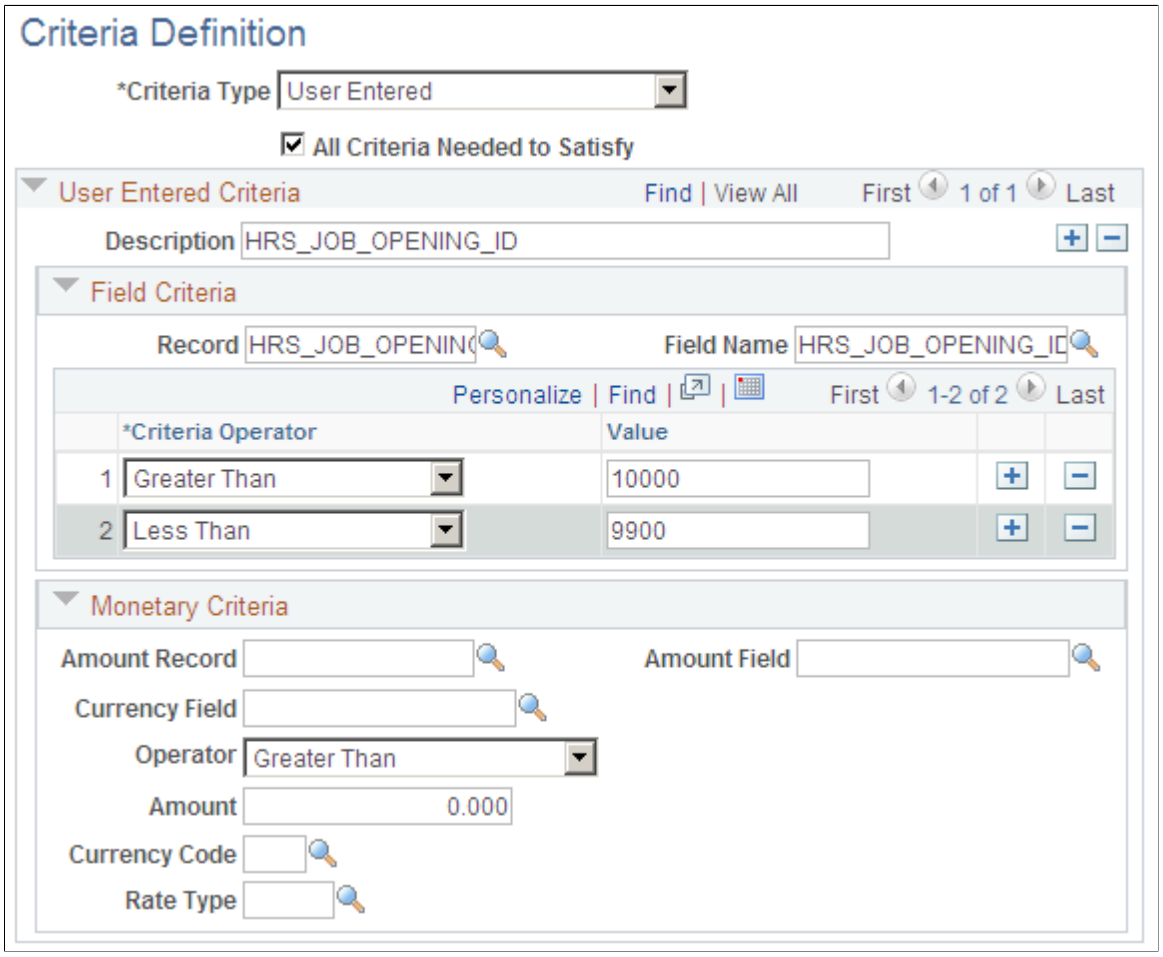
```
&SelfAppCriteria = &fact.GetCriteria(&rec.EOAWSELF_CRTA_ID.Value);
```


User Entered Criteria (Section)

Use this section to define additional criteria for the approval.

Image: Criteria Definition page showing criteria type User Entered

This example illustrates the fields and controls on the Criteria Definition page showing criteria type User Entered. You can find definitions for the fields and controls later on this page.



Description Enter purpose of the alert.

For example, if you are using a one-time ship-to address, create a description that indicates that a one-time ship-to address is attached to the requisition.

All Criteria Needed to Satisfy Select to indicate that all criteria defined on the Criteria Definition page must be met in order to trigger the workflow to evaluate as true.

Field Criteria (Section)

Use this section to select a record and field on which to control and filter ranges of data or types of data placed in the file you want to use in the approval process. As you add rows in this section to build your approval criteria, they get translated into a long SQL string by the approval framework, each of them

connected by the OR operator. For example, the *where* clause of the SQL generated for the criteria that is specified in the screenshot above looks like this:

“where HRS_JOB_OPENING_ID > '10000' OR HRS_JOB_OPENING_ID < '9900'”

Important! If the *Not Equal To* criteria operator is used in a row, subsequent rows will be connected using the AND operator instead of the OR operator. Here is an example of an SQL constructed for field criteria that contains the *Not Equal To* operator:
“where HRS_JOB_OPENING_ID <> '10500' AND HRS_JOB_OPENING_ID > '10000' AND HRS_JOB_OPENING_ID < '11000'”
The approval framework *does not* support the insertion of parentheses around specified criteria values in SQLs.

Record Name

Select a record that you want to use in defining approval criteria.

For example, if you are indicating a one-time address, identify *PO_ADDR_REQ_VW* as the record.

Field Name

Select a field you want to use to define approval criteria. The values you define in the remaining field criteria grid are those that are used in determining the approval criteria.

Criteria Operator

Select the operator to build the approval criteria.

These operators are available:

- *Between:* The specified field has a value that is within the range identified using the Value fields.
- *Equals:* The specified field has the same value that is entered in the Value field.
- *Greater Than:* The specified field has a value that is grater than the value entered in the Value field.

  Note: The *greater than or equal to* operator (as typically represented by the >= symbol) is not supported.

- *Is Blank:* The specified field has no value. When selected, the Value field is not displayed.
- *Is Not Blank:* The specified field has a value. When selected, the Value field is not displayed.
- *Less Than:* The specified field has a value that is less than the value entered in the Value field.

  Note: The *less than or equal to* operator (as typically represented by the <= symbol) is not supported.

- *Not Equal To:* The specified field has a value that is either greater than or less than the value entered in the Value field.

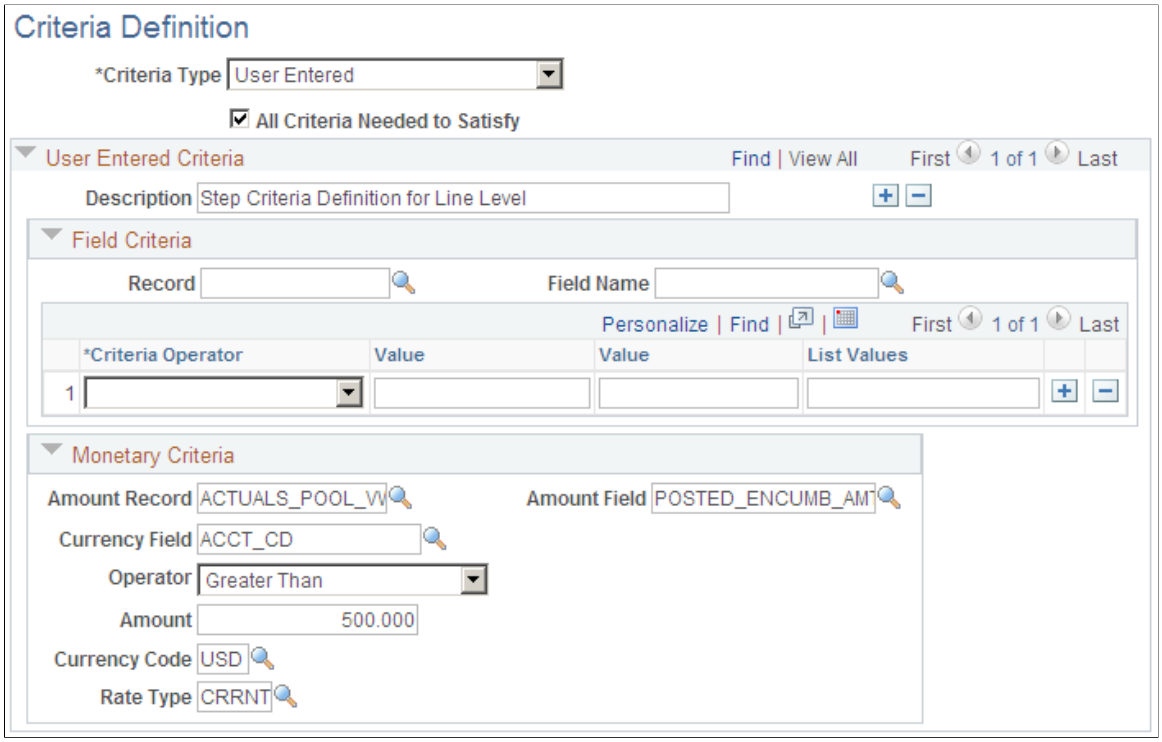
Value Use the two Value fields to define a range upon which you want the operator criteria to evaluate. The second value is only used when the selected criteria operator is *Between.*

Monetary Criteria (Section)

Use this section to establish approval criteria for requisition amounts. The system uses the values you define to determine the routing for approving the requisition. When the system evaluates the criteria for an approval process or a step or path within the process, it uses monetary values you define in this section.

Image: Criteria Definition page showing criteria type User Entered for monetary amount

This example illustrates the fields and controls on the Criteria Definition page showing criteria type User Entered for monetary amount. You can find definitions for the fields and controls later on this page.



The system uses values from fields in this section in conjunction with the Operator field to determine whether to run a step.

Amount Record Select the record name containing the amount in the original transaction to be used when comparing the minimum amount required to trigger the step.

Amount Field Select the field within the amount record to be used when comparing the requisition to the minimum amount required to trigger the step. The system uses the value you select to evaluate the Amount field.

Currency Field Select the currency field that corresponds to the currency code you select in the Currency Code field.

Operator Select a value that determines how the system processes the values in the Amount fields. Values include *Between, Greater Than,* and *Less Than.*

Amount Use the Amount fields to define an amount range for use with the Operator field.

In the first field, enter the minimum amount required on the transaction in order to trigger the step. The system identifies all lines in the transaction that meet the criteria defined in the Amount Record and Amount Field fields. The amounts on these lines are totaled based on the Amount Record and Amount Field specified. If the requisition total is higher than this minimum amount, the criteria is met. If no amount is specified, zero is considered the minimum.

Note: If you select Operator with a value of *Between,* a second Amount field becomes active.

Currency Code Select the monetary unit you want to use for the approval.

Rate Type Select how the system arrives at the currency value, such as the current rate or a financial rate.

Approval Path Definition Page

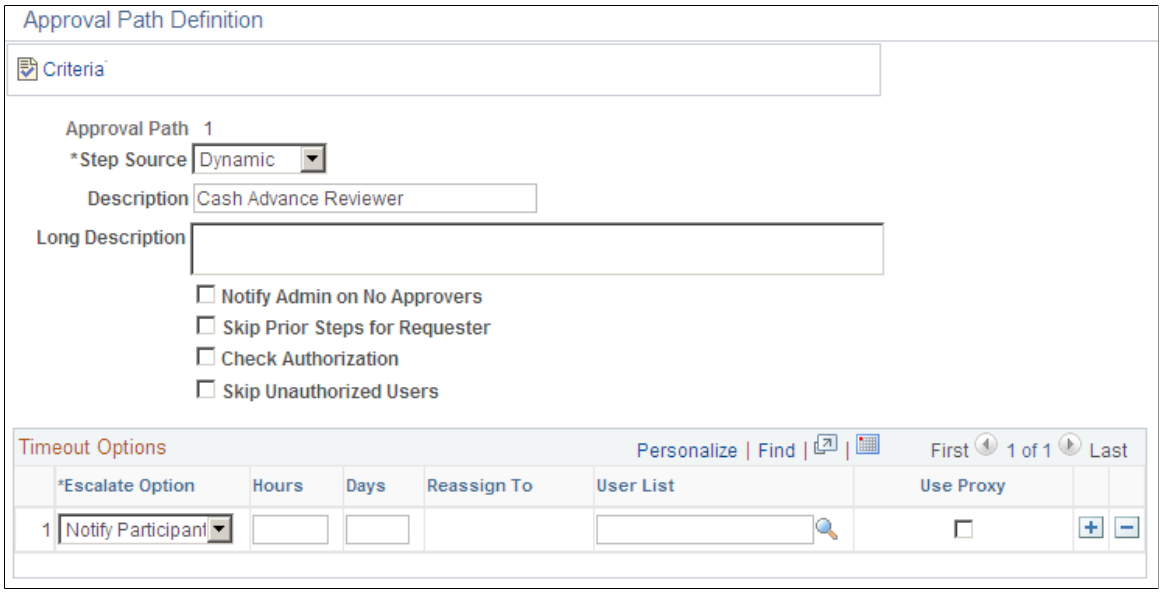
Use the Approval Path Definition page (EOAW_PATH_SEC) to set up workflow approval paths.

Navigation

Click the Details link within the Paths group box on the Setup Process Definitions page.

Image: Approval Path Definition page

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



Use this page to set up additional parameters that determine how the system processes an approval path. Use the escalations feature to define time elements for when an approver takes too long to approve or deny a pending request.

Criteria Click to access the Criteria Definition page where you can define user and field criteria along with monetary and application class criteria.

Approval Path Displays the path name that you are creating or updating. The path provides the sequence of approvers of a request, usually from a single reporting (or other) hierarchy.

Step Source *Static:* Select this source to indicate that you want the system to use the individual user-defined steps when it processes an approval.

Dynamic: A dynamic path definition contains only one step. When begun, the single step definition could yield any number of instances in sequence.

When using the *Dynamic* source, the system uses the user list on the step definition to initialize the steps in the path. The single step definition is repeatedly run, until the step's user list returns no more approvers. All these instances are queued in sequence.

See User List Definition Page.

Notify Admin on No Approvers (notify administrator on no approvers)

Select to indicate that the administrator is to be notified if the system does not find an approver for the path. This option is only available when the selected step source is *Dynamic*.

Note: This is the default behavior for static paths.

Skip Prior Steps for Requester

Select to indicate that if one of the approvers in this path is also the requester, then the system is to skip all steps in this path prior to that approver's step.

Check Authorization

This option is only available when the selected step source is *Dynamic*.

Select to bypass the existing criteria and use the Authorize Approvers component and criteria definitions.

Check Authorization enforces an exit point for dynamic paths.

Skip Unauthorized Users

This option is only available when the selected step source is *Dynamic*.

Select to bypass an approver that is not qualified to approve the transaction. and exits when an approver is qualified to approve a transaction.

For example, if the first approver can approve transactions less than 500 and the second approver can approve transactions less than 5000 and the transaction is for 675, the first approver would be skipped and the transaction would go directly to the second approver. Since the second approver is qualified, no further approvals are necessary.

Timeout Options

Escalate Option

Advanced Approval: Skip the current approver. Advance Approval will not advance if it is on the last step of the last stage.

Notify Participant: Sends an email, or whatever notification is defined in the transaction registry, to the individual.

Reassign Approval: Reassigns to a user ID or a user list.

Note: If you select *Advanced Approval* and defined a User List, a notification is sent to the user list members.

Hours

Enter the number of hours a transaction can remain at one workflow step before being escalated. This field is combined with number of days to determine the total time an approver has to take action on an approval request.

Days

Enter the number of days a transaction can remain at one workflow step before being escalated. This is the length of time

an approver has to do something such as approve or deny a transaction.

Reassign To If you have selected *Reassign* as the option, you can enter a user name or a specific user list.

Note: A user list will reassign to the first user in the list that does not match the current user.

User List Select the list of users the workflow should be routed to.

Use Proxy Select this check box to indicate that the escalation should be routed from the perspective of the current approver (proxy). If the check box is not selected, the escalation is routed from the perspective of the original approver (delegator).

Approval Step Definition Page

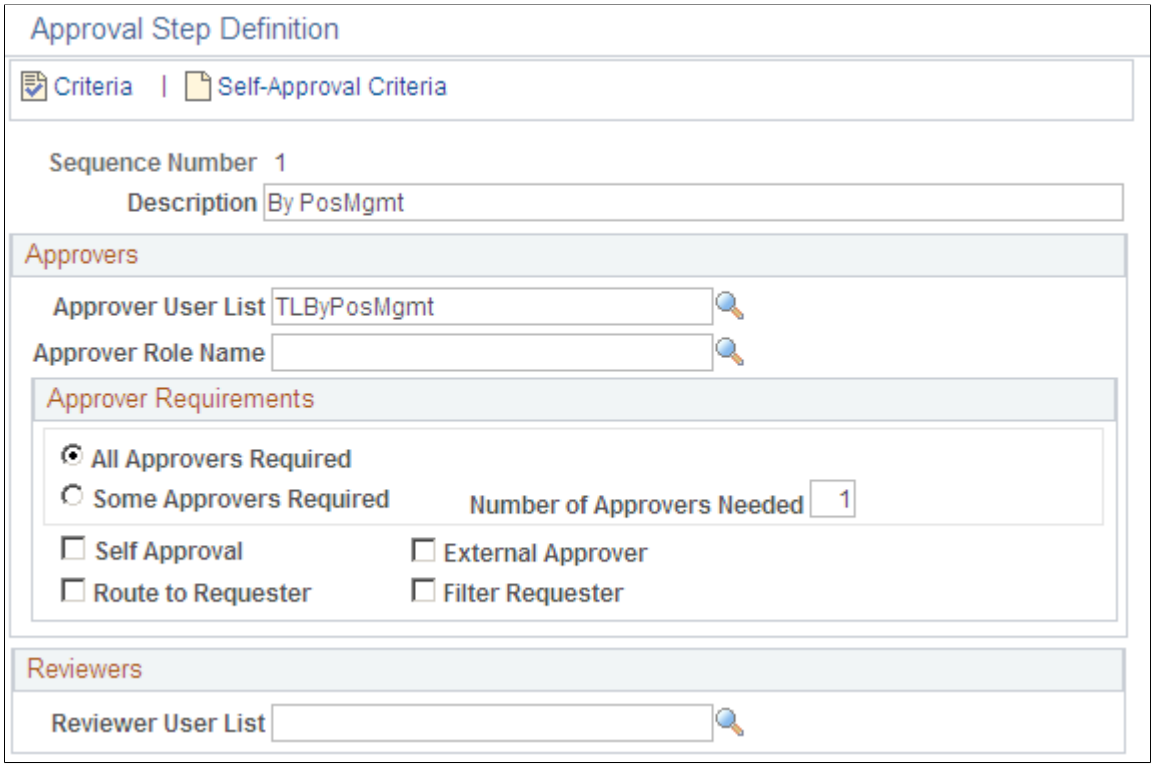
Use the Approval Step Definition page (EOAF_STEP_SEC) to define steps for workflow approvals.

Navigation

Click the Details link within the Steps group box on the Setup Process Definitions page.

Image: Approval Step Definition page

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



Use this page to set up additional parameters for the step definition.

Criteria

Click to access the Criteria Definition page, where you can define field criteria along with monetary and application class criteria.

Self-Approval Criteria

Click to access the Criteria Definition page, where you can set up self-approval criteria for a user, including field criteria and monetary and application class criteria.

Sequence Number

Displays the sequence number in which the approval is routed. Each step typically represents a routing to an approver. However, it is possible to route to multiple approvers or reviewers within a step.

Approver User List

Select the type of approver you want to use for this step based on the user list.

Approver Role Name

In addition to a User List, a role can be added to check for additional authorization checking. Select a role that specifies the authority that a user has. The Approval Framework filters approvers returned by the user list for this role. It also enforces the role at the time the approver acts. If the role assignment changes, such as the approver is no longer in the role, the approver is blocked from acting on the requisition.

All Approvers Required

Select to indicate that all approvers at this step are required to approve the transaction at this step. You can select to have all approvers or some approvers approve the transaction at this step.

Some Approvers Required

Select to indicate that it's not required for all approvers to sign off on a transaction. If you select this option, you can define the number of approvers required in the Number of Approvers Needed field.

Note: After the number is met, the approval advances to the next step.

Number of Approvers Needed

Enter the minimum number of approvers you want to sign off for a requisition at this step. When an approval process is launched and this number can't be met, the system notifies the approval *Admin Rolename.*

Self Approval

Select to indicate that requesters can also approve their own requisition. This setting only applies if the requester also appears as an approver in the step. You can establish criteria that controls the requester's approval authority by using the Self-Approval Criteria link. If the associated criteria evaluate to true, then self-approval is acceptable. For example, you can place a limit on the dollar amount for the requester so that if the transaction is over that amount, the requester is not used as an approver.

If you select self-approval and the criteria is not met, the Approval Framework requires that there be at least one more step after this one in the path. This does not apply to ad hoc steps. Clearing the check box means that self approval is never acceptable.

Note: If the criteria is not met and no later step exists, the system inserts an additional step. This selection is then routed to the administrator.

Route to Requester

Select this check box to route this approval to the requester. When this check box is selected, the requester must always manually approve the transaction.

Route to requester works in conjunction with the self-approval flag.

See Understanding Approval Features.

External Approver

Select to indicate that an external approver is supplied the email information. This feature is used to notify someone that is not part of the Employee Portal.

Note: Notification information for the external approver must be set up on the Configure Transaction page.

See Configure Transactions Page.

Filter Requester

This check box is only visible if Route to Requester is not selected. When this check box is selected, requester's user Id is filtered from the result set whenever it is encountered.

Reviewer User List

Select the type of reviewer you want to use for this step. Use a user list to map users to certain functional roles. The system then uses the list and its users to run automated business processes. The list defines the user sources who can be used in approval and review steps.

See Understanding Approval Features.

See product documentation for *PeopleTools: Workflow Technology*.

Chapter 4

Defining the Approval Transaction Registry

Understanding the Approval Transaction Registry

The approval transaction registry is the interface application that developers use to register an application with the Approval Framework. Transactions that require approvals are candidates for being linked to Approval Framework. You use the Register Transactions page to link the components, event handler, records, and classes that you created into the approval process for an application transaction, such as a requisition or purchase order. Application developers register the main records and components that make up the transaction, then functional business analysts select the approval transaction on which to base the approval process definition.

Note: Any PeopleSoft delivered approvals will already have the Approval Transaction Registry populated. No additional configuration is typically needed.

Prerequisites

Before defining the transaction registry:

1. Create a Transaction Handler Application class that extends an approved event handler class delivered by Approval Framework.
2. Create transaction data sources, as needed.
3. Create views on transaction tables that will serve as criteria sources.

Setting Up the Transaction Registry

Use the Register Transactions component to register an approval transaction. The transaction definition is the metadata that describes the transaction setup to the Approval Framework.

Page Used to Set Up the Transaction Registry

Page Name	*Definition Name*	*Navigation*	*Usage*
Register Transactions	EOAW_TXN	Enterprise Components, Approvals, Approvals, Transaction Registry	Register the approval transaction.

Register Transactions Page

Use the Register Transactions page (EOAW_TXN) to register the approval transaction.

Navigation

Enterprise Components, Approvals, Approvals, Transaction Registry

Image: Register Transactions page (1 of 3)

This example illustrates the fields and controls on the Register Transactions page (1 of 3). You can find definitions for the fields and controls later on this page.

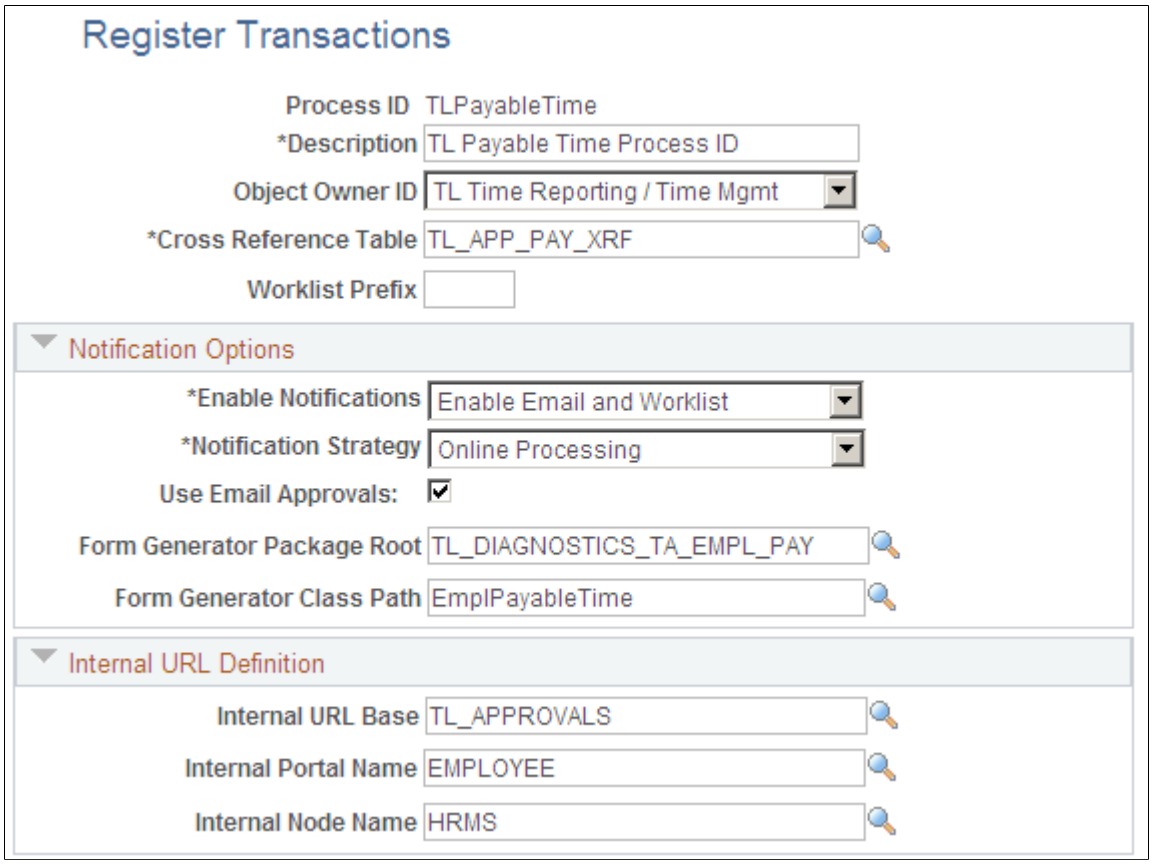


Image: Register Transactions page (2 of 3)

This example illustrates the fields and controls on the Register Transactions page (2 of 3). You can find definitions for the fields and controls later on this page.

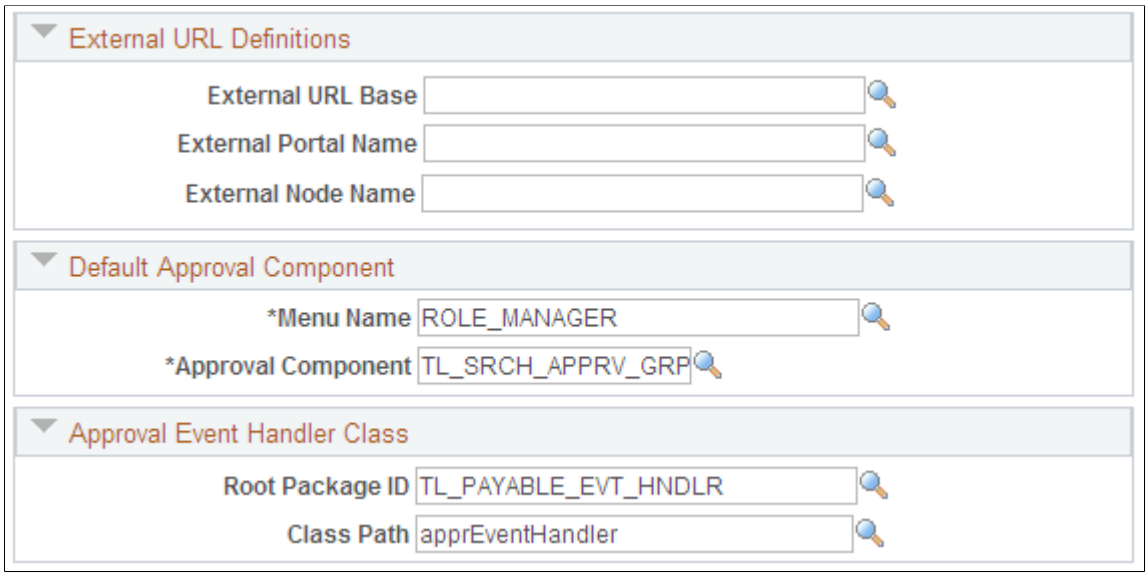
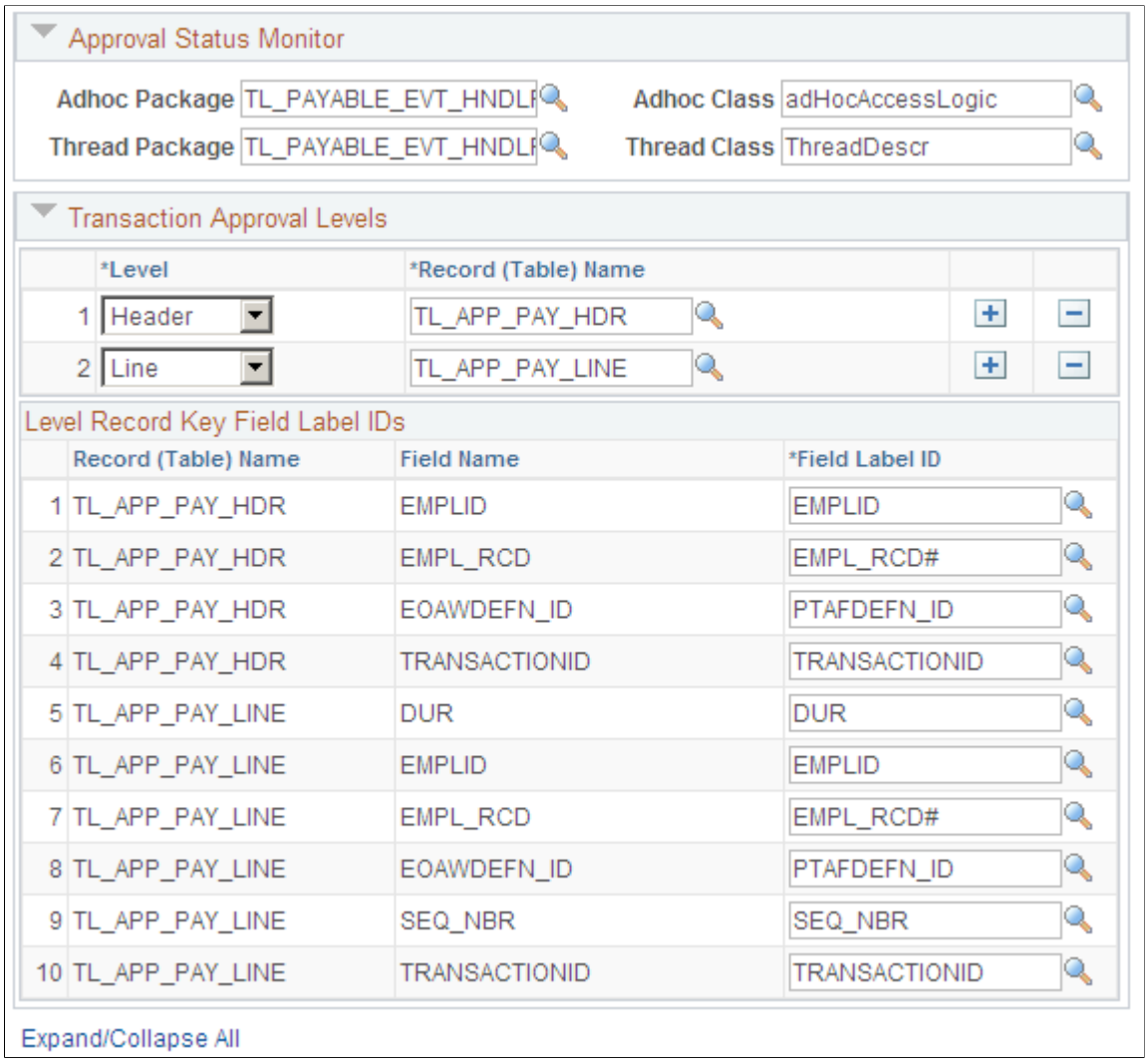


Image: Register Transactions page (3 of 3)

This example illustrates the fields and controls on the Register Transactions page (3 of 3). You can find definitions for the fields and controls later on this page.



Application developers use this page to register a PeopleSoft application, such as eProcurement or job offer, with the Approval Framework. Using this page, you can define how the system interacts with portions of the application that you have defined for approvals. The transaction definition is the metadata which describes the transaction make up to the approval framework. In some cases, you might add a transaction to enhance an existing transaction or make changes to a transaction.

Use this page to define:

- Worklist approvals.
- Approval event handler class.
- Transaction approval levels.
- Email notifications.
- Ad hoc approver class logic.

Process ID Enter a name the system uses to track this Approval Framework process for a transaction. You can also enter a description for the approval process.

Object Owner ID Select the PeopleSoft application to which this object belongs.

Cross Reference Table Select the table used to manage application specific transaction records and associate them with the approval process run time instances. Each time a request launches an approval process, the system tracks the process by the header and line-level records of the application. To relate the approval process instance to the transaction instance, the cross-reference table holds the correspondence.

For a given application transaction record, this cross-reference information helps you determine the pending Approval Framework process and to define to the application which transaction is being approved or denied.

Application developers must create a record containing the applications keys, and include the Approval Framework-supplied subrecord EOAW_XREF_SBR. Developers must also build the underlying table.

Worklist Prefix Enter a prefix to identify the worklist to a specific application. Every application using the Approval Framework shares the same business process and activities, which can cause a problem identifying specific worklist instances. This prefix will allow worklists to be sorted by application. The prefix should be used:

- If Enterprise Portal is used and users have worklist items from multiple applications. For example Expenses and HCM in the same portal.
- If the application creates dashboards, the dashboard needs to be able to differentiate between the different application's approvals.

Notification Options

Identify whether you will be using email or worklist notification, or both.

Enable Notifications Determine what type of notifications your company will use. The options include:

- *Disable Email and Worklist*
- *Email Notification Only*
- *Enable Email and Worklist*
- *Worklist Notification Only*

Notification Strategy	It allows the email to be processed immediately *(Online Processing)* or offline *(Offline Processing)* through NEM (Notification and Escalation Manager).
Use Email Approvals	Defines that you are going to use email approvals with workflow.
Form Generator Package Root	This package root reads the threads provided by the Form Generator Class, and creates a form from an existing email collaboration definition.
Form Generator Class Path	Calls the From Generator Class which receives a list of threads to be approved and a language code. This class returns a runtime class, which will add the appropriate recipients and send the emails.

Internal URL Definition

Use this section to define the internal URL to identify the URL base, portal and node. Internal URL is used to send email to a user either in batch or Integration Broker process. When the process is run online, the built-in properties %Portal and %Node are used.

External URL Definition

Use this section to define the external URL to identify the URL base, portal and node. External URL is used to notify any step that has a been set to *External*.

Default Approval Component

Identifies the default component that users should go to when selecting a worklist entry.

Menu Name	Select the menu name that contains the component you want to register for the Worklist.
Approval Component	Select the component on which the approval is going to be based.

Approval Event Handler Class

Use this section to define the application class used to monitor events for this transaction. Each time an event occurs, the Approval Framework notifies the application. For applications to receive the notifications, application developers must extend the event handler class, ApprovalEventHandler.

When a transaction results in an action from the Approval Framework, the event handler class you specify how to proceed with the transaction.

The event handler base class defines the handler methods that you can override by extending classes. The extending class must have a no-argument constructor, since the system instantiates the class with no arguments.

This table explains some of the various event handler methods for which the system passes arguments to provide the specific context for each event, and gives examples of how an application, in this case PeopleSoft eProcurement, may act:

Event	*Parameters*	*Possible Application Actions*
PROCESS_LAUNCHED	1. Header record 2. Approval Process Instance	• Disable edits of the application transaction. • Display status information.
HEADER_DENIED	Header record	• Delete transaction. • Disable resubmission. • Log the event on the transaction, possibly highlighting previous denial if the system allows resubmission.
LINE_DENIED	Line-level record	Deduct the line amount from the header, and delete or otherwise deactivate the line item.
HEADER_APPROVED	Header record	• Source the transaction if it's a requisition. • Reimburse the employee if it's an expense report.
LINE_APPROVED	Line level record	Source the line item if it's configured for sourcing.
PROCESS_TERMINATED	Header record	Log the event on the application, possibly highlighting changes since the previous submission. This might be useful for approvers who acted on the previous submission of this request.
ALL_LINES_PROCESSED	Header record	**Note:** The system calls this method only if the last stage is at the line-level, and the analyst has configured the process to trigger LINE_APPROVED end calls as individual lines are approved. The action the system takes depends on how the application developer defines the line sourcing. If the lines are sourced as they are approved, then nothing has to be done when all the lines are processed. This event is distinct from HEADER _APPROVED, and having a distinct notification simplifies the process.

Root Package ID Select the parent application class through which events are exposed. This defines the action to take based on events.

Path Select a path that uses a specific class within the root package.

See *PeopleTools: PeopleCode Developer's Guide*

See Understanding Approval Framework Base Classes.

Approval Status Monitor

Use this section to control how the system processes ad hoc approvers. Any approver can add or remove ad hoc approvers.

Adhoc Package Select the ad hoc application class package that you want to use for ad hoc approvals.

Adhoc Class Select the ad hoc application class path. Adding approvers and reviewers is handled by the class you define here. If no class is specified, then the system default class is used. If the transaction has further restrictions an application developer needs to create a class that will be defined here.

Thread Package The package here defines how the transaction details are displayed in the system in the status monitor. Behind the scene approvals are defined with a sequence number, this allows for a user friends display.

Important! Leave this field blank if the transaction is set up on the Configure Transactions page to send notifications to participants with a URL pointing to an alternate page other than the default destination (as specified in the Events section). For example, you might configure the transaction to generate a URL within each notification that takes an approver to the default component page to approve or deny any given request, and generate another URL for other participants to access a separate page (as specified for that group of users in the Notifications section) and perform other actions pertaining to the request. To ensure that the URLs are created correctly for all approval participants, do not enter a thread package.

Thread Class Enter the specific class within the thread description package and the worklist description that sets the display details.

Transaction Approval Levels

Use this section to define if the transaction is to be approved at the header or line level and what level the application supports.

Level Select *Header* or *Line*, which determines the levels that are enabled by the application for approvals. The first row will always be the header level.

Record (Table) Name Select the database table that represents this transaction level.

Level Record Key Field Label IDs Use this section to identify the label IDs that are used when viewing the Monitor Approvals page. All key field names appear for each record (table) name that is listed.

Configuring Approval Transactions

Use the Configure Transactions page to select and define elements that determine what triggers a notification, who receives the notification, and the content of the notification. Notifications are mapped to work with the approval transaction registry and include menus and components and SQL definitions.

Page Used to Configure Approval Transactions

Page Name	*Definition Name*	*Navigation*	*Usage*
Configure Transactions	EOAW_TXN_NOTIFY	Enterprise Components, Approvals, Approvals, Transaction Configuration	Use the Configuration Transactions page to configure how the system uses the particular implementation of approval triggers.

Configure Transactions Page

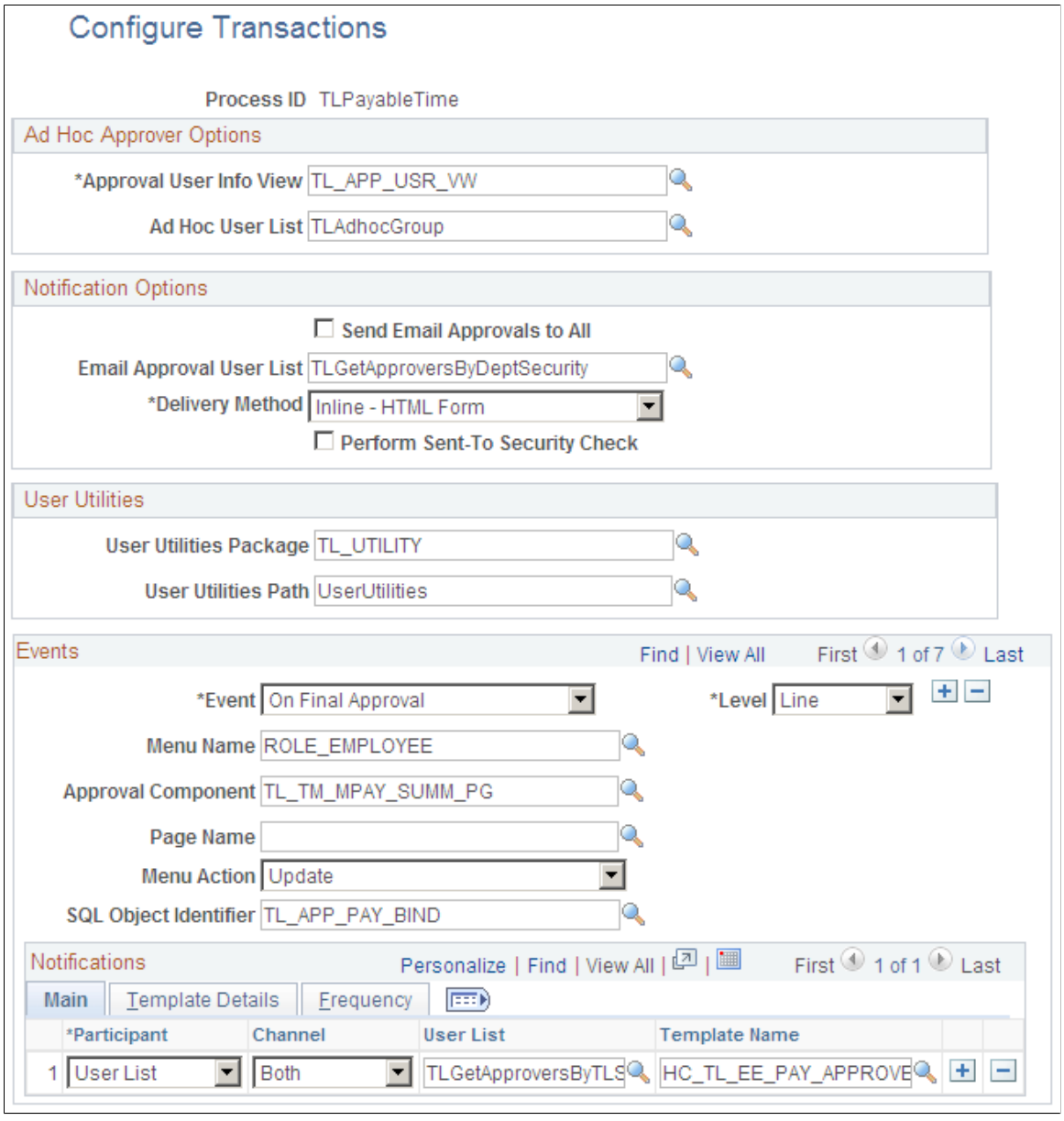
Use the Configure Transactions page (EOAW_TXN_NOTIFY) to configure how the system uses the particular implementation of approval triggers.

Navigation

Enterprise Components, Approvals, Approvals, Transaction Configuration

Image: Configure Transactions page

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



Use this page to select and define elements that determine what triggers a notification, who receives the notification, and the content of the notification. Notifications are mapped to work with the approval transaction registry and include menus and components and SQL definitions. The events for which the system sends notifications include:

- Launch of the approval process on a transaction.
- Queue of approval step to an approver.

- Queue of a review step to a reviewer.
- Denial of a line or header.
- Approval of a line or header.
- Completion of the approval process.

Recipients of notifications include requesters, approvers, and reviewers, who can receive their notifications through either worklist entries or email notification. When using email notifications, business analysts must create email templates.

Ad Hoc Approver Options

Approver User Info View Provides details about which view a user sees when using the Approval Monitor.

Note: Data in this view dictates what is displayed in the approver links.

Ad Hoc User List This is a filter used to display only a list of users who can be ad hoc approvers.

Notification Options

This section appears when the Use Email Approvals check box is selected for the Process ID on the Register Transactions page.

Send Email Approvals to All Select to send email notifications to all approvers.

Email Approval User List Specify exactly which users should be allowed to do their approval by using email.

Note: If the user receiving the notification also falls into the email approval user list, then they receive an email approval rather than a standard email notification.

Delivery Method Define whether you wish the users to receive their email approvals as text within the email, or as attachments.

Perform Sent-To Security Check Selecting this check box informs the system that you want it to verify the security of the person the notification is sent to.

Note: This security check is only performed on new approvals.

User Utilities

User Utilities are the mechanism that the user changes to modify the behavior of delegation and reassignment.

User Utilities Package Select the parent application class through which alternate users are selected.

User Utilities Path Select a path that uses a specific class within the root package.

Events

Use the events section to define event parameters to trigger workflow notification.

Level Select *Header* or *Line* to determine the level at which you want a notification sent for an event. For each of these events to be notified, you must select the level of the transaction.

Event Select the event for which you want to send a notification. Participants will be notified when the selected event is triggered.

Event values include:

Ad Hoc Delete: Send a notification when a step is removed from the approval process through the status monitor.

Ad Hoc Insert: Send a notification when a step is added to the approval process through the status monitor.

Hold Step: Send a notification when a thread is placed on hold.

Locked Out: Send a notification when the application workflow engine (AWE) encounters a user whose account has been locked out.

No Approver Necessary: Send a notification when a thread does not route because no approval is necessary.

On Error: Send a notification when a thread encounters a routing error.

On Escalate: Send a notification when a thread is escalated through the NEM process.

On Final Approval: Send a notification when a thread is approved and there are no more steps to process.

On Final Denial: Send a notification when a thread is denied and there are no more steps to process.

On Process Launch: Send a notification when an approval process is submitted.

On Reactivate: Send a notification when a step is reactivated for a thread.

On Reassign: Send a notification when a thread is reassigned to a new approver.

On Step Complete: Send a notification when a step no long has pending threads.

On Terminate: Send a notification when a thread is terminated.

Processing Complete: Send a notification when an approval process is complete.

Push Back: Send a notification when a thread is pushed back from one step to the prior step.

Request Information: Send a notification when the Request Information action is called by the application.

Request Information Added: Send a notification when a comment is added for a thread and that thread has been placed on hold.

Route for Approval: Send a notification when a thread is routed to an approver.

Route for Review: Send a notification when a thread is routed to a reviewer.

Note: The *Lock Out, On Process Launch,* and *Processing Complete* events are for header level only.

Menu Name

Select the menu name that contains the component you want the notification recipient to link to. This identifies where the person should go upon notification. If you do not enter values, the recipient is sent to the same menu and component that is defined for the Worklist Approval component.

Approval Component

Select the component you want to make available to the notification recipient.

Page Name

The page defined is the page approvers are redirected to from the URL sent within the email notification.

Menu Action

This is the action of the page users see when directed to the page from the URL sent within the email notification.

SQL Object Identifier (structured query language object identifier)

Select the SQL definition identifier you want to use to get content for the email. The SQL must accept bind inputs equal to the number of keys at the notification level. For example, header or line keys.

Notifications

Use the Notifications section to define who to notify and how to notify them in addition to the defaults determined in the Events section of this page.

Participant

Define the user who is notified when this event takes place.

- *A-Delegate:* the approver that the approval was originally assigned to.
- *A-Proxy:* the approver who performed the actual approval.

- *Admin*
- *Approvers*
- *Dynamic*
- *External*
- *R-Delegate:* the person who created the request for someone else.
- *R-Proxy:* the person who requested the transaction to be created.
- *Requester*
- *Reviewers*
- *User List*

Channel Defines how the participant will be notified. Values are:

- *Both*
- *Email*
- *None*
- *User*
- *Worklist*

Note: Routing preferences can also be set up in PeopleTools, Security, User Profiles, Workflow. From there you have two options. You can select *Worklist User* and or *Email User*.

User List Select either *Dynamic* or *User List* as the participant. The option becomes active when you select one of these values.

Template Name Select the generic template you want to use for the email content of this notification. You define the contents of the email using the Generic Template page.

See Generic Template Definition Page.

Menu Name, Approval Comment, Page Name, Menu Action, and SQL Object Identifier All of these fields have the same definition as the corresponding fields in the Events section of this page.

Number of Hours Enter a number that determines how many hours between notifications.

Max Notification (maximum notification) Enter a number that determines the maximum number of notifications sent. If the approver does not take action, an escalation is sent to the administrator.

Chapter 5

Defining Notification Templates and Users for Approval Framework

Defining Notification Templates for Approval Framework

This section discusses how to enter generic template definitions.

Pages Used to Define Notification Templates for Approval Framework

Page Name	*Definition Name*	*Navigation*	*Usage*
Generic Template Definition	WL_TEMPLATE_GEN	PeopleTools, Workflow, Notifications, Generic Templates	Enter generic template definitions.
URL Maintenance	URL_TABLE	PeopleTools, Utilities, Administration, URLs	Use this page to identify the URL that the notification process places within the email. The user then uses this URL to navigate back into their system to perform the required task. An example of the format to use is *http://servername/psp/employeeportaldomain/*.

Generic Template Definition Page

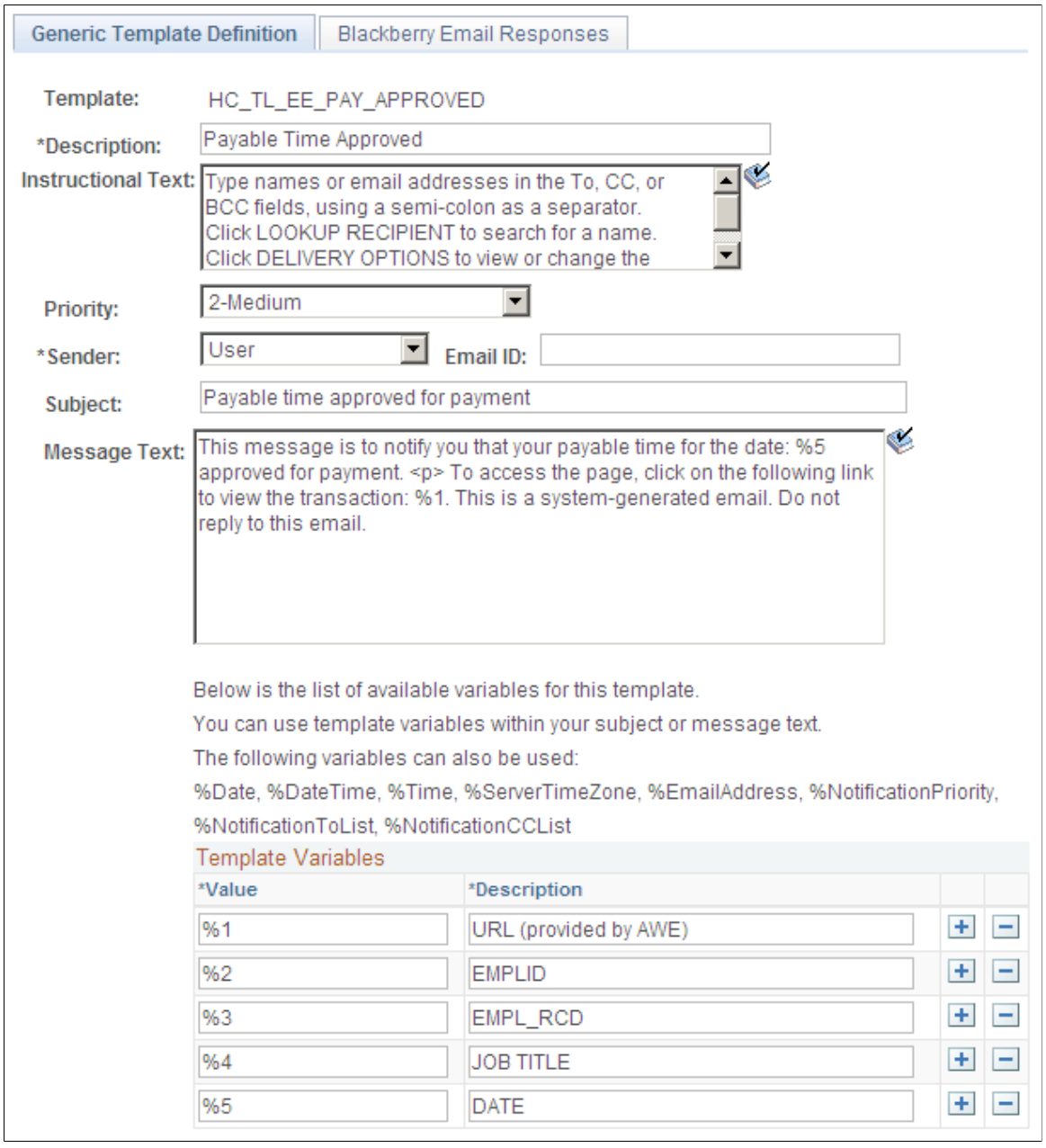
Use the Generic Template Definition page (WL_TEMPLATE_GEN) to enter generic template definitions.

Navigation

PeopleTools, Workflow, Notifications, Generic Templates

Image: Generic Template Definition page

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



You use generic templates to establish common formats for ad hoc notifications.

For approvals, the first bind variable is used to store the URL that appears in the email.

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

Defining Users for Approval Framework

This section discusses how to:

- Attach workflow roles to users.
- Define workflow for user profiles.
- Define user lists.

Pages Used to Define Users for Approval Framework

Page Name	*Definition Name*	*Navigation*	*Usage*
User Profiles - Roles	USER_ROLES	PeopleTools, Security, User Profiles, User Profiles, Roles	Attach workflow roles to users.
User Profiles - Workflow	USER_WORKFLOW	PeopleTools, Security, User Profiles, User Profiles, Workflow	Define workflow for user profiles.
User List Definition	EOAW_USER_LIST	Enterprise Components, Approvals, Approvals, User List Setup	Define user lists.

User Profiles - Roles Page

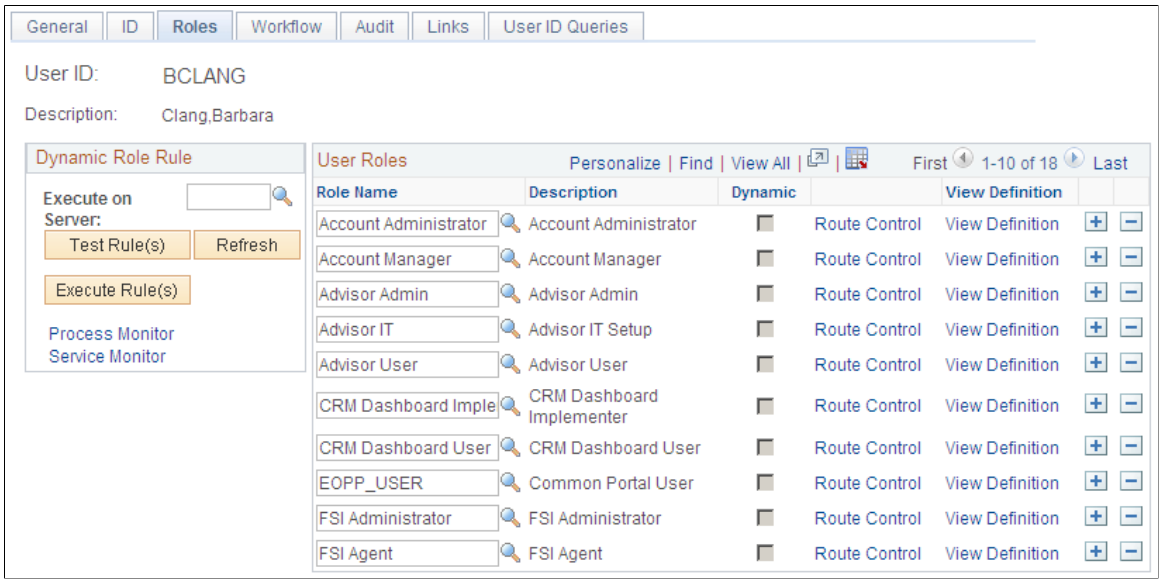
Use the User Profiles - Roles page (USER_ROLES) to attach workflow roles to users.

Navigation

PeopleTools, Security, User Profiles, User Profiles, Roles

Image: User Profiles - Roles page

This example illustrates the fields and controls on the User Profiles - Roles page. You can find definitions for the fields and controls later on this page.



Use this page to attach workflow roles to users. A role is a class of users who perform the same type of work, such as clerks, buyers, or managers. A role describes how people fit into workflow.

Role user IDs determine how to route worklist items to users and how to track the roles that users play in the workflow.

Role Name Select a role to assign to this user. Role users are the people who participate in automated business processes.

Dynamic Appears if the definition of this role is dynamic. This value is driven by PeopleSoft PeopleCode. Dynamic users can obtain membership in a role programmatically. You can run a batch process that executes predefined role rules and assigns roles to user profiles according to these rules. This approach is called dynamic membership, and users who become role users of a particular role programmatically are dynamic role users.

Static role users, on the other hand, obtain their membership through an administrator adding a role to their user profile manually.

Route Control Select to access the User Route Control Profiles page, where you can select a route control profile for the workflow.

The PeopleSoft Workflow Administrator enables you to define route controls. For example, suppose you want to route requisitions to different buyers, depending on which vendor supplies the ordered items, which business unit is requesting the

items, and which department needs the items. You can define a route control for each factor—vendor ID, business unit, and department—and specify a range of values for each buyer.

Note: Not used with eProcurement Approval Framework.

View Definition

Select to access the Roles - General page, where you can change the role name definition. You can also view the user ID of the role member to ensure that you selected the appropriate definition for inclusion in the role.

User Profiles - Workflow Page

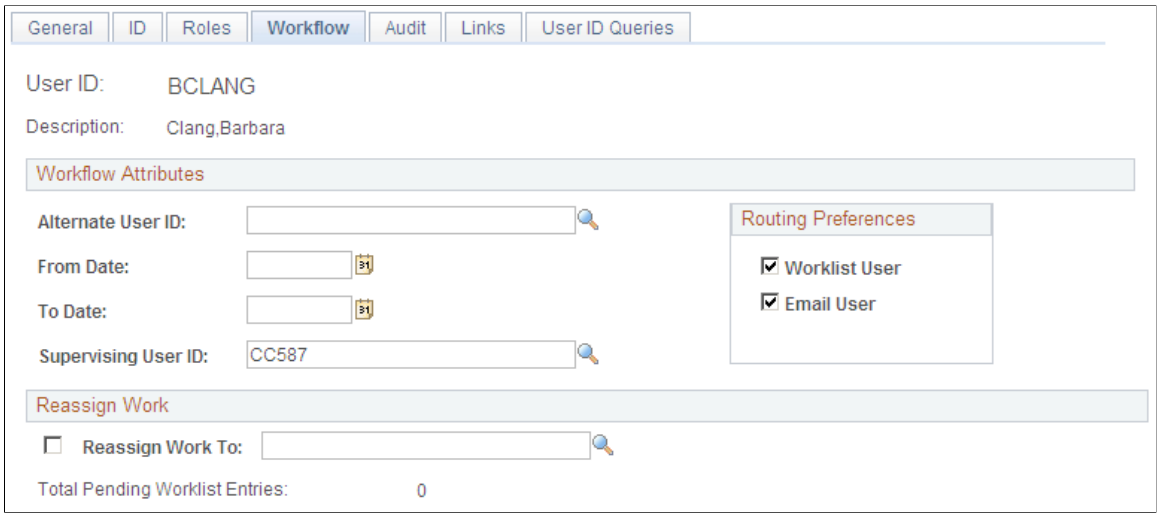
Use the User Profiles - Workflow page (USER_WORKFLOW) to define workflow for user profiles.

Navigation

PeopleTools, Security, User Profiles, User Profiles, Workflow

Image: User Profiles - Workflow page

This example illustrates the fields and controls on the User Profiles - Workflow page. You can find definitions for the fields and controls later on this page.



Use this page to define alternate users who are part of the workflow process. You can define alternate users to handle approvals during the absence of the primary approver and supervisor.

Alternate User ID

Select a user to receive worklist items when this user ID is temporarily unavailable. In situations where the current role user is unavailable, the system automatically forwards the current role user's new work items to the specified alternate role user. The system doesn’t reassign items already in the user’s worklist.

Note: For workflows that are built using the Approval Framework, if the current role user is unavailable for assignment, the system checks for a alternate user recursively until it either creates a cycle or finds a valid substitute. In other words, the system sends routings down multiple levels of alternate user IDs if necessary. For example, suppose that user A specifies user B as his alternate user, and user B specifies user C as his alternate user. If both user A and user B are out of the office the same time, the system sends workflow routings originally intended for user A to user C.

From Date and To Date Enter a date range when the current user ID is not going to be available. The system uses these values to forward routings to the alternate user.

Supervising User ID Select the user ID of this user's supervisor. The system uses this value when forwarding information to the user's supervisor and uses the PERSONAL_DATA record to determine the supervisor.

Note: If you're using PeopleSoft Human Capital Management (PeopleSoft HCM) applications, this field shouldn't appear. If it does, you must set your workflow system defaults.

Worklist User Select to indicate that this role user can receive approval routings. Clear the check box if the user is not a PeopleSoft user. You can select Worklist User, Email User, or both.

Email User Select to specify that this role user can receive email. Clear the check box if email is not available.

Reassign Work To This option is not used in Approval Framework. It will reassign the worklist, but not the underlying data in Approval Framework.

User List Definition Page

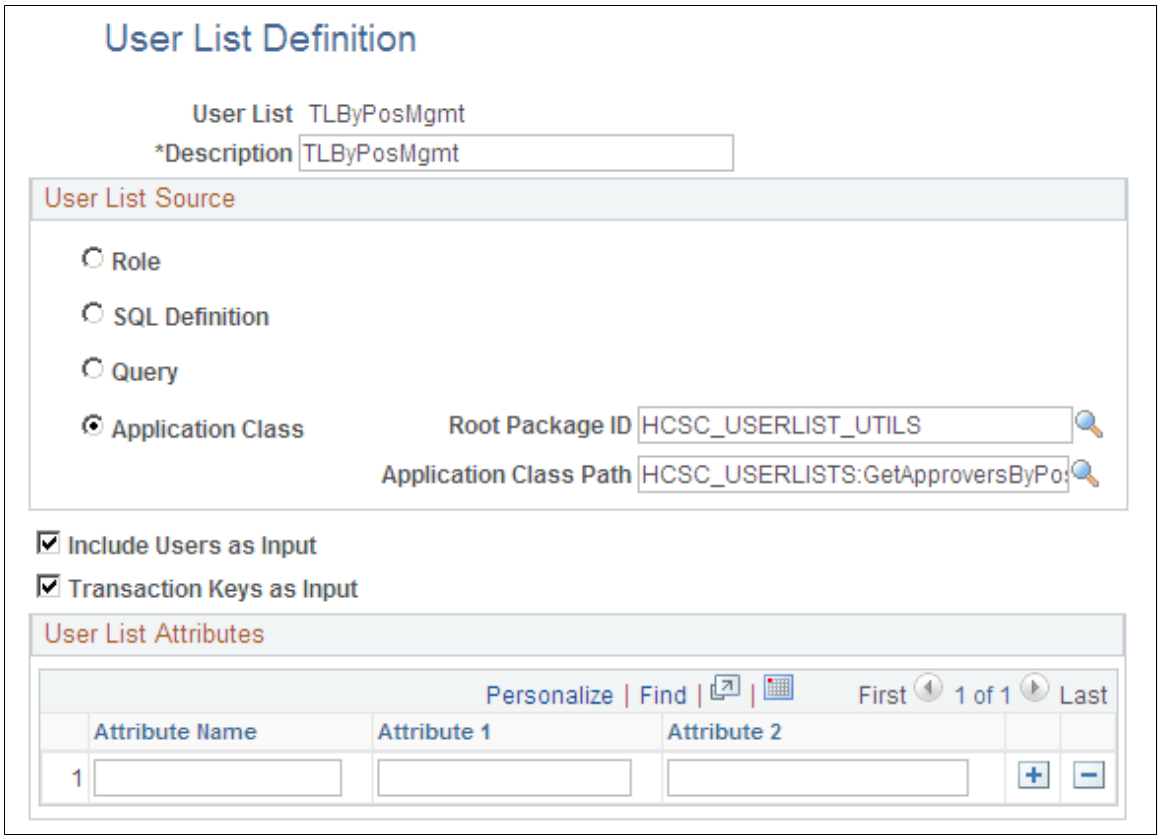
Use the User List Definition page (EOAW_USER_LIST) to define user lists.

Navigation

Enterprise Components, Approvals, Approvals, User List Setup

Image: User List Definition page

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



Use this page to define user sources for use with steps in the approval process. The PeopleSoft product delivers a set of default user list roles corresponding to the roles within an organization.

When you select a user list source type, you must also select a corresponding value. You can add a new user list or change a current list.

Note: You can only select one user list source for a user list.

Note: The SQL Definition, Query, and Application Class user list sources are dynamic, and can use input values to help identify users.

Role — Select to use a role as the source for this user list. A role is a list of users who perform the same type of work, such as buyers or managers. Each role has a set of parameters that determine the limits of the role in the organization and in the workflow process.

SQL Definition (structured query language definition) — Select to use an SQL definition as the source for this user list. The SQL must return OPRID field.

Query Select to use a query as the source for this user list. When a source is defined as a query, the system determines who should receive a work item based on the field values on the page that triggers the routing.

Application Class Select to use an application class as the source for this user list.

When you select an application class, the system passes the originator of the transaction and then determines the approver for that originator. For subsequent approval steps, the system passes the approver from the previous step.

Include Users as Input Select to indicate that the system uses the originator of a transaction as the first step in each path. For subsequent steps in each path, the system uses the approver from the previous step.

This field is not available when the User List Source is User List.

Transaction Keys as Input Select to have the system base the approval routing on transaction keys. Transaction keys are key fields in a database table. System actions depend on the approval level at which a user list is being used. If the approval is at the header level, the system uses transaction record keys from the header record.

This field is not available when the User List Source is User List.

User List Attributes This section is only available when the User List Source is Application Class.

Note: UserList Attributes are used for application class User Lists and Route Control is used for role based user lists.

Route Attributes

If User List Source is Role, the Route Attributes section is displayed. This option enables the Route Control filters.

Route Control Profile Select the route control profile to use.

Record Name Record the user passes in that stores the values used in the route control.

Note: Route control checks against fields, Approval Framework needs to know which record contains the field.

Route Control Type Route control attribute.

Note: Route control attribute is defined on the User Profile Roles page in the route control link.

Field Name	Field on the record mapped to the attribute.

Chapter 6

Defining Dynamic Approvals

Understanding Dynamic Paths

To use dynamic approvals, create one approval step that determines a list of approvers without setting up every step individually within the path.

Workflow processes are defined in stages, paths, and steps. The system looks at the stage to determine if the trigger for the workflow is recognized at the header or line level. Within each stage, there is a minimum requirement of one path. The path contains steps, which define the workflow triggers and the action to take if the criteria is met. Without dynamic paths, the administrator creates a step for every possible approver. With dynamic workflow, the administrator creates a single path where the system uses a user list for the approval hierarchy.

Note: When self-approval is used and the transaction creator is on the list of authorized approvers, that role is counted as one approval.

Related Links

User List Definition Page

Understanding Dynamic Approval Authorizations

PeopleSoft applications can define Approval Framework paths to be either static or dynamic. Static path approvals define every approval in step-by-step fashion. Dynamic approvals enable you to create a single step that systematically identifies every potential approver, searches to find out if that approver has enough authority to complete the approval, and creates a visual path for users to view of all necessary approvers in the process. You can configure a dynamic path allowing supervisor roles to approve or deny a transaction, and stop the approval path when the system has determined that all criteria has been satisfied. The administrator creates a user list that the system uses to select the appropriate supervisory approvers for a transaction and then checks for authorization. The dynamic path takes the prior approver into consideration.

To configure the dynamic approval authorization, the administrator must:

- Define user lists.
- Create an approver authorization.
- Define a dynamic approval path.

Two keys to creating approval authorizations for dynamic paths are the system's ability to:

- Check authorizations.

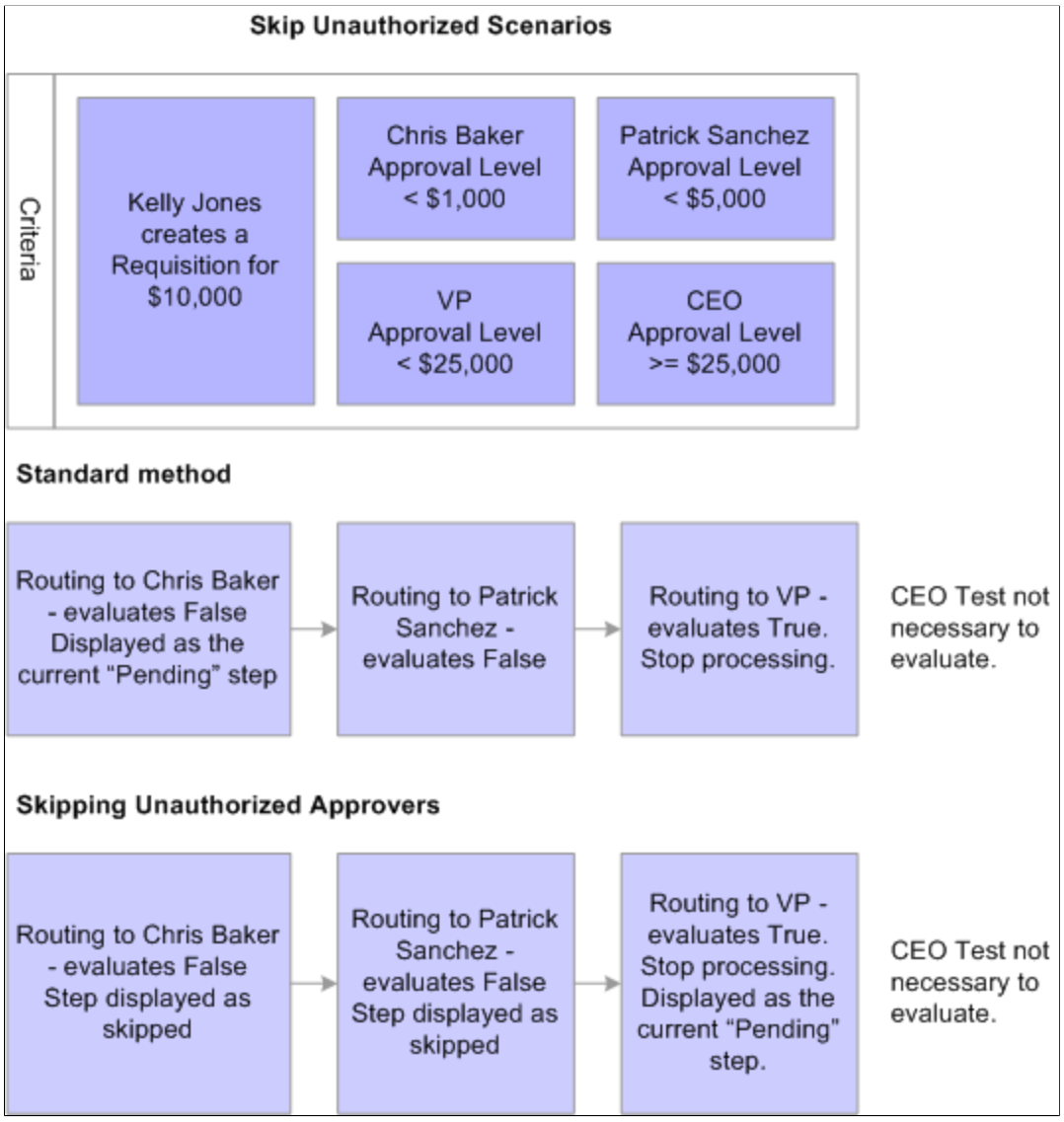
- Skip unauthorized users.

The system looks at the user list and the approval authorization to determine which users are required to complete the authorization. The system displays the non-required users as a skipped step instead of a pending step in the event that Skip Unauthorized is selected.

This diagram illustrates an example of a workflow routing setup for the standard method and a workflow routing that skips unauthorized users:

Image: Example of Skip Approval scenario

Diagram illustrating an example of a workflow routing setup for the standard method and a workflow routing that skips unauthorized users.



In the example, the criteria for the workflow approval path is set up for Chris Baker to have approval authority for less than 1,000.00 USD, Patrick Sanchez to have authority for less than 5,000.00 USD, VP to have approval for less than 25,000.00 USD, and CEO to have approval for a requisition equal to or more than 25,000.00 USD.

Kelly Jones creates a requisition for 10,000.00 USD.

If the system is not set up to skip unauthorized users, the system displays Chris Baker, Patrick Sanchez, and the VP as pending steps in the approval path.

If the system is set up to skip unauthorized users, the system displays the approval path with the VP as the only listed approver, and will display Chris Baker and Patrick Sanchez as skipped.

Related Links

User List Definition Page

Understanding Approval Authorizations

You can identify the approval authorization by role or user in conjunction with a dynamic step. To accomplish this, the Approval Framework selects the appropriate supervisory approver from the user list and verifies that the approver meets the criteria for authorization.

You establish approval authorizations for each transaction. The authorization can accommodate approvals by role or user ID.

You can set authorization across Definition IDs, which are defined on the Setup Process Definition page.

For each authorization, the system checks the specific user ID to see if that individual can authorize the transaction. If found, it checks the authorization criteria. If criteria are met, the user has authorization.

If no authorization is found for a specific user ID, then the system looks for role-based authorizations using the approval hierarchy.

For approval hierarchy, the system first looks for authorization by Definition ID. If no authorization is found, the system then seeks authorization for rows without a Definition ID. If no authorization approval criteria is matched, the system process is deemed Not Authorized.

You can establish dynamic authorizations for either the header or line level, but not both.

When workflow is initiated for a change order or requisition, the system compares the approval authorization data to the user list to verify the approval process. To verify the approval, the system:

1. Checks the user list and assigns the first approver to the first user that is returned.
2. Looks at the roles that are established for the user ID.
3. Identifies the approval limits that are set for that user ID.
4. Routes the requisition status to the first approver if the amount is satisfied for the requisition and the approver list is complete.
5. Continues to look for additional approvers until all conditions are met.
6. Routes the approval to the administrator if the approver criteria is never met.

Related Links

User List Definition Page

Defining Dynamic Approvals

This section includes:

- Define user lists for dynamic authorizations.
- Setting up approval authorizations.
- Define dynamic approval paths.

Pages Used to Define Dynamic Approvals

Page Name	*Definition Name*	*Navigation*	*Usage*
Approval Authorization	EOAW_AUTH	Enterprise Components, Approvals, Approvals, Authorize Approvers	Authorize roles and approvers for dynamic paths.
Criteria Definition	EOAW_CRITERIA	Click theCriteria link on the Approval Authorization page.	Define criteria for the workflow approver.
Setup Process Definitions	EOAW_PRCS_MAIN	Enterprise Components, Approvals, Approvals, Approval Process Setup	Define approval process stages.
Approval Path Definition	EOAW_PATH_SEC	Click the Path Details button or the Details link on the Setup Process Definitions page.	Set up workflow approval paths.
User List Definition	EOAW_USER_LIST	Enterprise Components, Approvals, Approvals, User List Setup	Set up list of users for workflow approval.
User Profile - General	USER_GENERAL	PeopleTools, Security, User Profiles, User Profiles, General	Set up user IDs and assign roles.

User List Definition Page

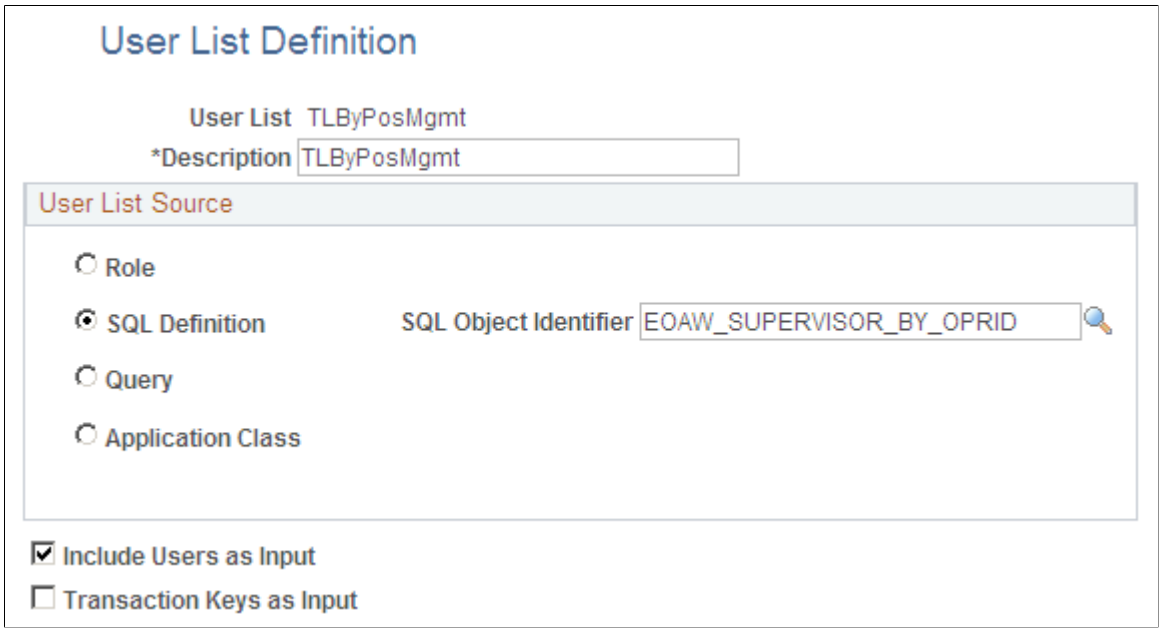
Use the User List Definition page (EOAW_USER_LIST) to set up list of users for workflow approval.

Navigation

Enterprise Components, Approvals, Approvals, User List Setup

Image: User List Definition page

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



Related Links

User List Definition Page

Approval Authorization Page

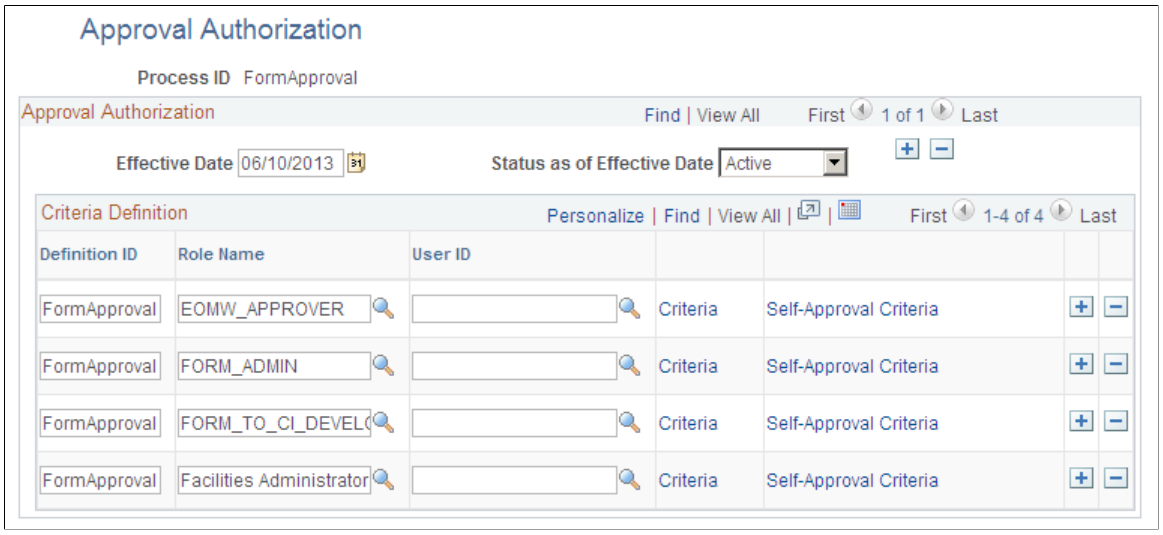
Use the Approval Authorization page (EOAW_AUTH) to authorize roles and approvers for dynamic paths.

Navigation

Enterprise Components, Approvals, Approvals, Authorize Approvers

Image: Approval Authorization page

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



If you don't specify a Definition ID, the authorization is generic. To create an approval authorization for specific definition IDs, you must add a line for each Definition ID.

Select either a role name or User ID. For each role or user, you can configure the criteria and self-approval criteria, using the links provided.

Note: If you activate self-approval on the Approval Authorization page, it replaces the self-approval on static path steps.

Approval Path Definition Page

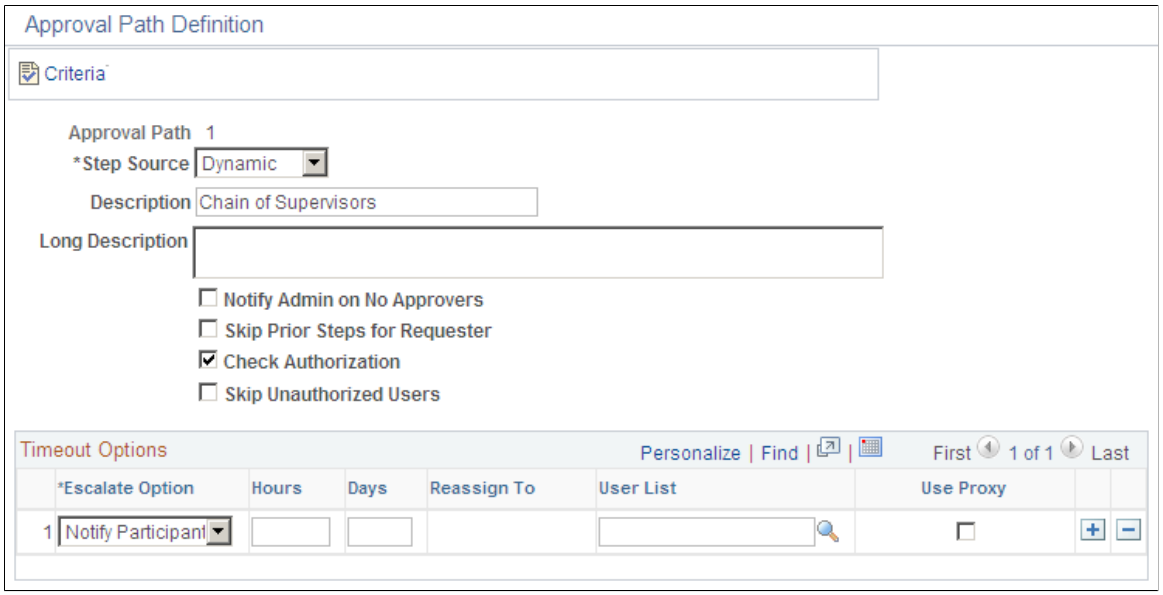
Use the Approval Path Definition page (EOAW_PATH_SEC) to set up workflow approval paths.

Navigation

Click the Path Details button or the Details link on the Setup Process Definitions page.

Image: Approval Path Definition page

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



Step Source Select *Dynamic* for a dynamic approval path.

Notify Admin on No Approvers (notify administrator on no approvers) Select to indicate that the administrator is to be notified if the system does not find an approver for the path. This option is only available when the step source is *Dynamic*.

Skip Prior Steps for Requester Select to indicate that if one of the approvers in this path is also the requester, then the system is to skip all steps in the path prior to that approver's step.

Check Authorization Select to enable the approval authorization. The data set up in Authorize Approvers component is used.

Skip Unauthorized Users Select to enable the approval process to skip users within the user list if the system determines that they can't satisfy all of the criteria for approval.

Note: When creating criteria within the path that will trigger the approval process to activate, be certain that you set up the final approver as *Greater Than* so that no gaps occur.

Chapter 7

Using Email Collaboration

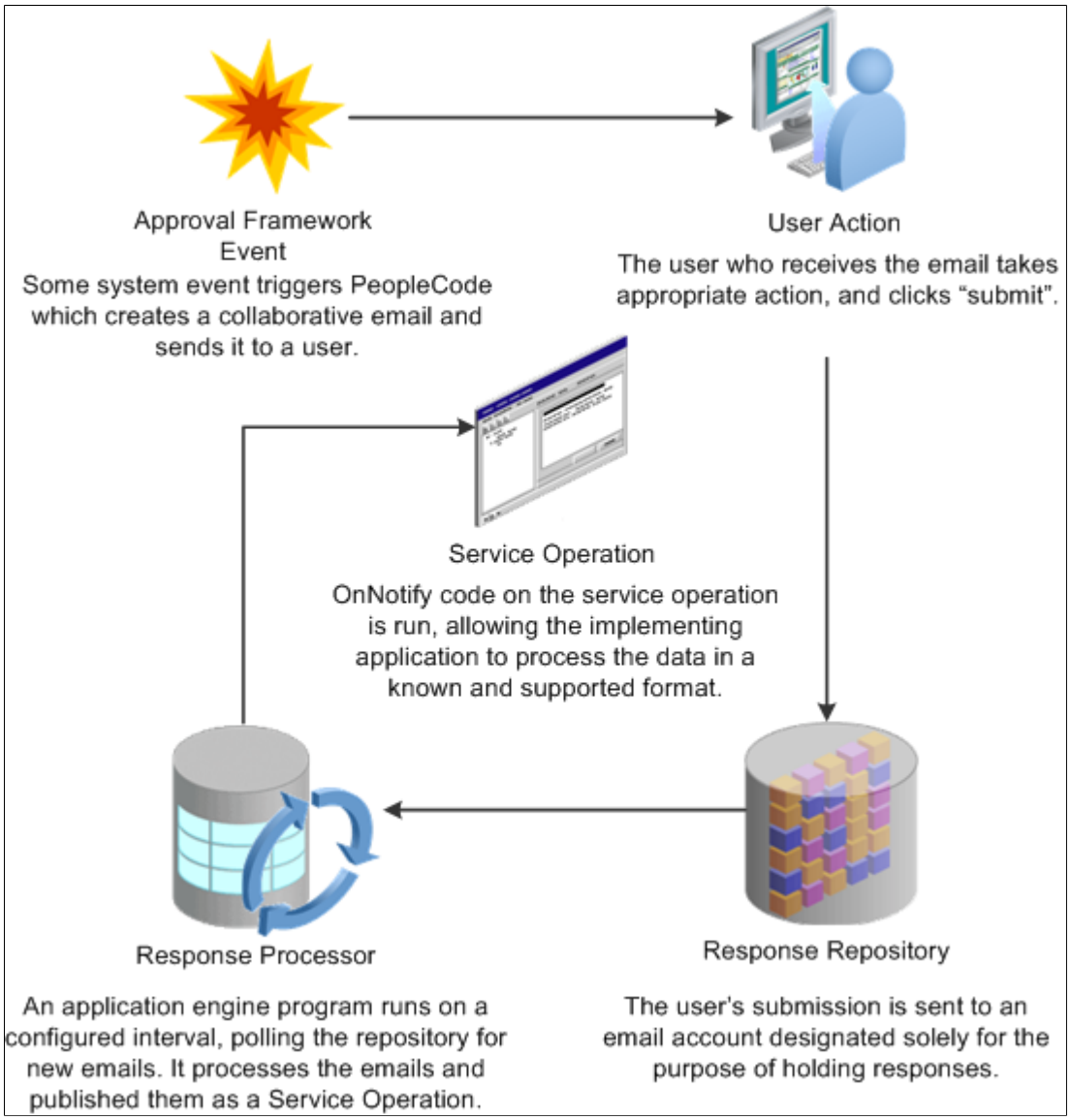
Understanding Email Collaboration

The Email Collaboration Framework (EMC) allows applications to send, receive, and process emails with interactive content. You can send an HTML form to a user, and they do not need to log into their system to perform tasks.

This diagram shows the email collaboration flow:

Image: Email Collaboration flow

Diagram showing the email collaboration flow.



1. A system event triggers PeopleSoft PeopleCode, which creates a collaborative email and sends it to a user.
2. The user who receives the email takes appropriate action and clicks Submit.
3. The user's submission is sent to an email account that is designated for holding responses.
4. An application engine program runs on a configured interval, polling the repository for new emails.

   It processes the emails and publishes them as service operations.
5. The service operation runs, allowing the implementing application to process the data in a known and supported format.

Email Collaboration Support Matrix

This table covers the general email clients supported for email collaboration.

Client	*Inline Support*	*Attachment Support*	*Enhanced Attachment Support*
Outlook 2003 **Note:** Outlook 2003 uses Internet Explorer to render the HTML message.	Y	Y	Y
Outlook 2007 **Note:** Outlook 2007 uses an internal tool to render the HTML. The actionable fields (buttons, check boxes, and so on) are rendered as text.	N	Y	Y
Lotus Note	Y	Y	Y
Thunderbird	Y	Y	Y
Hotmail **Note:** The HTML actions are controlled by the Hotmail Client. Since Hotmail is a web client, they circumvent the form submission calls that are in the HTML client. The user may be required to download the attachment prior to opening.	N	Y	Y
Gmail **Note:** Similar to Hotmail.	N	Y	Y
Yahoo **Note:** Similar to Hotmail.	N	Y	Y

Client	*Inline Support*	*Attachment Support*	*Enhanced Attachment Support*
Internet Explorer (IE) **Note:** Internet Explorer is listed because it responds differently based on the version of Outlook. IE 7 does not support the basic attachment when used with Outlook 2007. The email is created, but the body is not populated. If using IE 6, there is no issue.	N	Y	Y
FireFox **Note:** Listed to compare to Internet Explorer. No issues have been reported with the way the email is populated using either attachment type.	N	Y	Y

Setting Up Email Collaboration

To set up email collaboration, you need to:

- Set up the PSFT_EMC_GETMAIL node.
- Create Integration Broker message.
- Create Integration Broker service operation.
- Define EMC forms, EMC Layout and fields mapping.
- Update an Approval Process notification option.
- Schedule the application engine program EOAWEMC.

Setting Up the PSFT_EMC_GETMAIL Node

Email collaboration uses the Integration Broker framework to retrieve new emails from the response repository. The node PSFT_EMC_GETMAIL is used to retrieve these emails. Integration Broker must be configured and pub/sub must be enabled.

See *PeopleTools: PeopleSoft Integration Broker Administration*, Administering Messaging Servers for Asynchronous Messaging.

Pages used to Set Up the PSFT_EMC_GETMAIL Node

Page Name	*Definition Name*	*Navigation*	*Usage*
Node Definitions	IB_NODE	PeopleTools, Integration Broker, Integration Setup, Nodes	Set up the PSFT_EMC_GETMAIL node.
Node Properties	IB_NODEPROP	Click the Properties link on the Node Definitions page.	Modify the node properties required for email collaboration to function.

Setting Up the PSFT_EMC_GETMAIL Node

To set up the PSFT_EMC_GETMAIL node:

1. Access the Node Definitions page (PeopleTools, Integration Broker, Integration Setup, Nodes), activate the *PSFT_EMC_GETMAIL* node.
2. Click the Properties link to access the Node Properties page.
3. Enter the email address of the email repository in the EMC_REPOSITORY_EMAILADDRESS property.
4. (Optional) On the Node Properties page, enter appropriate values for EMC_BCC_LIST and EMC_CC_LIST properties to automatically send a copy of all collaborative emails to the address specified.
5. Access the Connector page.

   This node uses the GETMAILTARGET target connector. You will need to configure the GETMAILTARGET properties.

   See *PeopleTools: PeopleSoft MultiChannel Framework,* Configuring the Email Channel, Configuring PeopleSoft Integration Broker for the Email Channel.
6. Save the node.

Defining Message and Service Operation

This section provides discusses how to:

- Define Integration Broker message.
- Define service operation.

Pages Used to Define Message and Service Operation

Page Name	*Definition Name*	*Navigation*	*Usage*
Message Definition	IB_MESSAGE_BUILDER	PeopleTools, Integration Broker, Integration Setup, Messages, Message Definition	Define a message.
Services	IB_SERVICEDEFN	PeopleTools, Integration Broker, Integration Setup, Services, Services	Define or update a service.
Service Operation Definition - General	IB_SERVICE	PeopleTools, Integration Broker, Integration Setup, Service Operations, General	Define or update a service operation.
Service Operation Definition - Handler	IB_SERVICEHDLR	PeopleTools, Integration Broker, Integration Setup, Service Operations, Handler	Specify handler name, the handler type, and the implementation method for the handler.
Handler Details	IB_SERVICEHDLR_SEC	Click the Details link on the Service Operation Definition - Handler page.	Specify the handler details.

Defining Integration Broker Message

The Integration Broker message created for EMC needs to be a rowset-based message that includes the EMC records listed in this table:

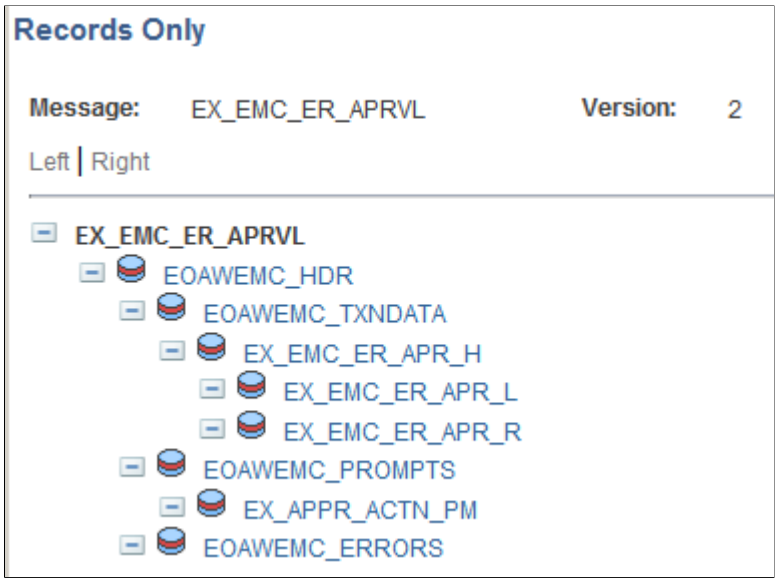
Record	*Level*	*Description*
EOAWEMC_HDR	0	Header record for EMC.
EOAWEMC_TXNDATA	1	Transactional data record for EMC.
EOAWEMC_PROMPTS	1	Prompting record for EMC. Application will add records for the specific prompt action.
EOAWEMC_ERRORS	1	Error record for EMC.

The application transaction record structure is added at level 2 under EOAWEMC_TXNDATA.

This example shows the Record Only view for a message created to approve expense reports. In this example, the application records that contain transactional data start with EX_EMC.

Image: Records Only view of a message used for EMC

This example illustrates the fields and controls on the Records Only view of a message used for EMC. You can find definitions for the fields and controls later on this page.



Defining Service

All service operations must be associated with one or more services. You can create a new service operation for an existing service or create a new service with which to associate your service operation.

See *PeopleTools: PeopleSoft Integration Broker*, Managing Services, Adding and Configuring New Service Operations for Services.

Defining Service Operation

You will need to create an asynchronous one-way service that uses the EMC message structure.

Note: The service operation must have the same name as the message.

See *PeopleTools: PeopleSoft Integration Broker*, Managing Service Operations, Adding Service Operation Definitions.

You will also need to create an application class that will to process the EMC form, to be used as the handler.

The application class created to process inbound subscriptions needs to extend the EOAW_EMC:API:emailFormManager and EOAW_EMC:utils classes.

When creating this object, you will need to pass it 2 parameters:

1. Your full instantiated and populated service operation.

2. The language code of the user(s) that will receive this email.

Note: EMC engine will handle transaction of things like field labels , however you will need to translate any values contained within your message yourself.

See Understanding EMC Classes.

EMC Runtime-Inbound

EMC inbound processing takes all the values retrieved from the user's submission and merges them with the values sent out to the user (overriding outbound values with inbound values). It then inserts those values into the same service operation used to define your form, and publishes it. You will need add a piece of subscription code to catch the published message and process the data.

Using the utils class method getErrorCodesRS(), you can get a list of error codes inserted by the EMC engine while the inbound message was being processed. The list of codes is as follows:

Error Code	*Description*
0	No Error.
1	Duplicate Response Received - The user submitted the form more than once.
2	Sent-To Check Failed - The user to whom the email was sent is not the user from whom the response was received. Keep in mind when dealing with this error that some users have more than one email alias.
3	Invalid date value error.
4	Invalid number value error.

The fields in the error codes rowset are ERROR_CODE, ROW_PATH, RECNAME, FIELDNAME, and RECEIVED_VALUE. Not all fields are used for all errors, though. ROW_PATH, RECNAME and FIELDNAME for instance are only used when an invalid date or number value is received.

Defining and Mapping EMC Forms

This section provides an overview of EMC forms and discusses how to:

- Define EMC form.
- Define EMC form layout.
- Define field mapping.

Pages Used to Define and Map EMC Forms

Page Name	*Definition Name*	*Navigation*	*Usage*
Form Element Designer	EOAWEMC_ELEMENTS	Enterprise Components, Approvals, Email Collaboration, EMC Form	Define metadata used as system data when you deliver an email collaboration.
Form Layout Designer	EOAWEMC_LAYOUT	Enterprise Components, Approvals, Email Collaboration, EMC Layout	Define the layout of the email.
Field Mapping	EOAWXLAT_SYMBOL	Enterprise Components, Approvals, Email Collaboration, Field Mapping	Map field values to the form.

EMC Forms

EMC allows applications to send, receive and process emails with interactive content. The EMC forms are created based on service operations. The service operation defines the messages structure and the handler necessary to process the EMC forms.

Form Element Designer Page

Use the Form Element Designer page (EOAWEMC_ELEMENTS) to define metadata used as system data when you deliver an email collaboration.

Navigation

Enterprise Components, Approvals, Email Collaboration, EMC Form

To create a new form:

1. Select the Add a New Value page.
2. Enter the Message name.

Note: The message name must be the same as the service operation name.

Upon entering this component, a grid will auto-populate with all of the fields in your message definition , except those that are part of the EMC required records and any that are not marked *include* in your message definition.

Rebuild List If you change your message definition, use this button to regenerate the field list. Changes are not automatically updated. This will also remove any Form Layout Definitions associated with this message.

Element Type Select the element type.

Label ID Label ID prompts against a field's list of available labels. If you leave this field blank, the field will appear on your form without a label.

Element Types

This table lists the valid element types:

Element Type	*Description*
Blank	A value may be stored in this field by the application, however it will not be transmitted in the email form, and thus may be used to store sensitive data.
Input	Will be represented as a standard text input field.
Output	Will be represented as plain text. This will be the application developers method for providing contextual data to the user.
Secret	Similar to an input field, however it provides superficial security, as the contents of the field appear as a set of masked characters, such as bullets, asterisks, question marks, and so on.
Select	This type of field may be represented in one of two ways: check boxes or multi-select boxes. It gives the user the ability to select multiple values for a single field.
Select1	Similar to the Select, it may be represented in multiple ways: radio buttons or drop-down lists. It gives the user the ability to select a single value for a field from a list of available values. **Note:** While radio buttons are available as a design option, some email servers do not enforce mutual exclusion of radio button selections in HTML.
Textarea	This field type gets represented as a long edit box, useful for areas where longer strings of text must be entered or displayed to the user.

Form Layout Designer Page

Use the Form Layout Designer page (EOAWEMC_LAYOUT) to define the layout of the email.

Navigation

Enterprise Components, Approvals, Email Collaboration, EMC Layout

The layout rules are fairly rigid on this page. Grids will be automatically created for each new level and fields may not move outside their current grid. Inserting a line break at the header level has the expected result of simply wrapping information to a new line. Should the line break be inserted inside a grid, however, the effect will be like having a “special grid row.” That is, the fields after the line break will not be shown as grid columns, but rather as label:field, as in level 0.

On this page, you can change grid labels, field sizes, and number of columns for check boxes and radio buttons. You can also add line breaks and move fields up or down.

Use the Preview button to see a preview of your form layout.

Field Mapping Page

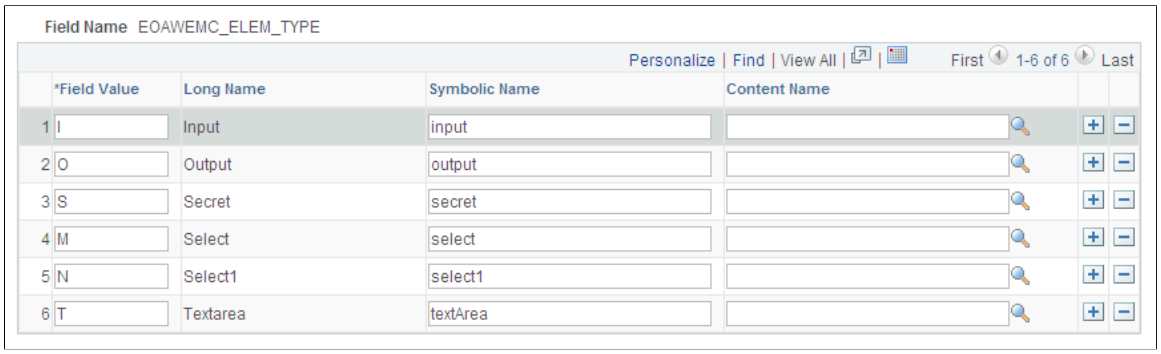
Use the Field Mapping page (EOAWXLAT_SYMBOL) to map field values to the form.

Navigation

Enterprise Components, Approvals, Email Collaboration, Field Mapping

Image: Field Mapping page

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



Use the field mapping page to define values for fields that are used with drop-down lists in your form.

Triggering Email Collaboration

This section discusses how to:

- Update approval transaction registry to send email approvals.
- Configure transaction for email approval.
- Schedule the application engine program EOAWEMC.
- Add or modify email addresses for users.

Pages Used to Trigger Email Collaboration

Page Name	*Definition Name*	*Navigation*	*Usage*
Register Transaction	EOAW_TXN	Enterprise Components, Approvals, Approvals, Transaction Registry	Create and update the transaction registry.
Configure Transactions	EOAW_TXN_NOTIFY	Enterprise Components, Approvals, Approvals, Transaction Configuration	Configure how a specific approval process uses email notification options.

Page Name	Definition Name	Navigation	Usage
Recurrence Definition	PRCSRECURDEFN	PeopleTools, Process Scheduler, Recurrences	Define how often you want the process scheduler to run processes.
Application Engine Request	AE_REQUEST	PeopleTools, Application Engine, Request AE	Set up the Request AE for EOAWEMC.
Email Addresses	USER_EMAIL	PeopleTools, Security, User Profiles, User Profiles, General Select the Email Addresses link on the User Profiles - General page.	Modify email addresses.

Register Transactions Page

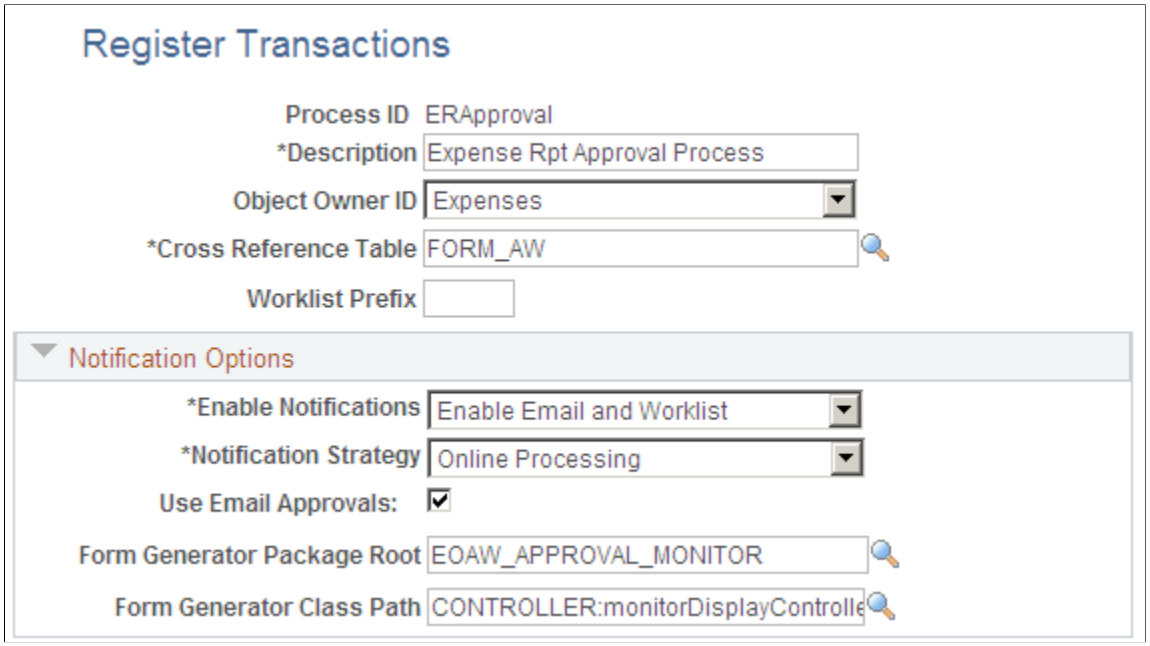
Use the Register Transactions page (EOAW_TXN) to register the approval transaction.

Navigation

Enterprise Components, Approvals, Approvals, Transaction Registry

Image: Register Transactions page

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



Use Email Approvals Select this check box to use Email Approvals.

Form Generator Package Root Enter the package name that contains the class that contains the form generator application class for this transaction, or use the Lookup button to search for and select one.

Form Generator Class Path Enter the application class path that contains the form generator application class for this transaction, or use the Lookup button to search for and select one.

Application Class for Form Generator

The application class for the form generator must be an extension of EOAW_EMC:API:formGeneratorBase. When the approvals engine determines that it needs to send out an email approval, it will create an instance of the class you specify on this page. It will pass to it 2 parameters:

- &threads as array of EOAW_CORE:ENGINE:Thread - This is an array of Approval Engine Threads.
- &userID as String - The userid of the individual receiving the email.

The base class provided takes the parameters passed in and makes them protected properties. Immediately after instantiating your object, the approvals engine will call the only method defined in the base class: returnEFM(). In this method you should take the threads and userid, create an instance of the emailFormManager, and return it. The approvals engine will then call the sendEmails() method on the object you return.

Configure Transactions Page

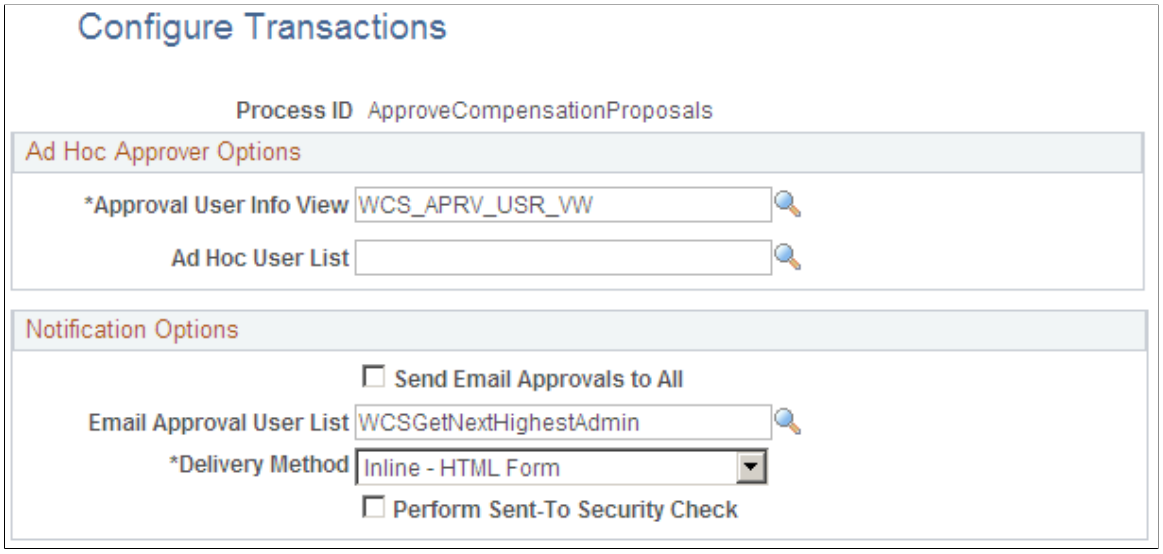
Use the Configure Transactions page (EOAW_TXN_NOTIFY) to configure how a specific approval process uses email notification options.

Navigation

Enterprise Components, Approvals, Approvals, Transaction Configuration

Image: Configure Transactions page

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



The Notification Options section is only available if the *Use Email Approvals* check box is selected for this transaction on the Transaction Registry page.

See Configure Transactions Page.

Scheduling the Application Engine Program EOAWEMC

To schedule the application engine program EOAWEMC:

1. (Optional) Access the Recurrence Definition page (PeopleTools, Process Scheduler, Recurrences), and specify an interval for the process scheduler recurrence.
2. Select PeopleTools, Process Scheduler, Processes for the application engine program EOAWEMC and up the process definition.
3. Access the Process Definition Option page and specify the process schedule server and the recurrence.

   See *PeopleTools: PeopleSoft Process Scheduler*, Defining PeopleSoft Process Scheduler Support Information, Defining Process Definitions.

Email Addresses Page

Use the Email Addresses page (USER_EMAIL) to modify email addresses.

Navigation

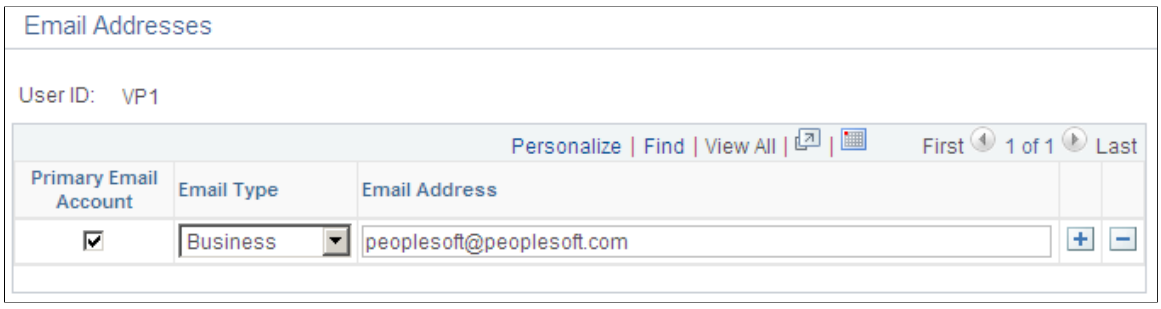
PeopleTools, Security, User Profiles, User Profiles, General

Select the Email Addresses link on the User Profiles - General page.

To update your own email address, select System Profile.

Image: Email Addresses page

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



Chapter 8

Using EMC Classes

Understanding EMC Classes

EMC classes provide the functions to send and retrieve email approvals. They are included in the application package EOAW_EMC.

EmailFormManager Class

This class provides the utility methods to send collaborative emails.

EmailFormManager Class Methods

This section describes the public methods of interest to application developers for emailFormManager, in alphabetical order.

addRecipient

Syntax

addRecipient(*&emailAddress, &userID*)

Description

Users added via this method will be allowed to act on the email form.

Parameters

Parameter	***Description***
&emailAddress	Email address, as string. Required.

Parameter	***Description***
&userID	User ID, as string. Optional.

Returns

None.

addCC

Syntax

addCC(*&emailAddress*)

Description

Email addresses added via this method will be copied on every email sent out.

Parameters

Parameter	*Description*
&emailAddress	Email address, as string. Required.

Returns

None.

addBCC

Syntax

addBCC(*&emailAddress*)

Description

Email addresses added via this method will be blind copied on every email sent out.

Parameters

Parameter	*Description*
&emailAddress	Email address, as string. Required.

Returns

None.

addAttachment

Syntax

addAttachment(*&filePath*, *&filePathType*, *&fileName*, *&fileTitle*)

Description

Adds an attachment to be sent along with the email.

Parameters

Parameter	*Description*
&filePath	A string consisting of the complete path to the file and the filename itself.
&filePathType	A number representing type of file path used in first parameter. Use tools system variables such as %FilePath_Relative.
&fileName	A string representing the name of the file being attached.
&fileTitle	A string consisting of the title of the file. The titles appear near the attachment icons in place of the fully qualified filename.

Returns

None.

sendEmails

Syntax

sendEmails(*&sentToCheckOnReturn*)

Description

Does the actual send of the email once all other information is ready.

Parameters

Parameter	*Description*
&sentToCheckOnReturn	If set to true, the EMC will verify that the user to whom the email was sent is the same as the user who sent the response. If this is not true, an error will be inserted into the error stack allowing the implementing application to handle it as they see fit.

EmailFormManager Class Properties

This section describes the emailFormManager class properties.

inlineText

Description

A string of text that the user will see if the deliveryMethod property is set to inline but their mail client does not support HTML emails. A default is provided. inlineText and attachmentText will never be delivered in the same email.

attachmentText

Description

A string of text that the user will see if the deliverMethod property is set to attachment. This text will generally be used as instructional text telling them to detach the html form and submit it. A default is provided. inlineText and attachmentText will never be delivered in the same email.

subject

Description

The subject of the email to be sent. Default is *PeopleSoft Collaborative Email Routing*. Keep language considerations in mind when using this property.

submitMessage

Description

A string of text that the user will see if the deliveryMethod property is set to inline but their mail client does not support HTML emails. A default is provided. inlineText and attachmentText will never be delivered in the same email.

from

Description

The name of the person or account sending this email.

fromEmail

Description

The email address of the person or account sending this email.

replyTo

Description

The address users should reply to if there is a problem. This defaults to the same email address that form responses are fielded from.

propendText

Description

Use this variable to include any text you would like inserted before the form being emailed.

appendText

Description

Use this variable to include any text you would like inserted after the form being emailed.

deliveryMethod

Description

Specifies whether to send the emails as inline html or attachments. Attachments will include a better user interface as the browser used to view the html attachment is likely to support more JavaScript and DHTML than email clients like Lotus Notes. Valid values are *I* for Inline and *A* for attachment.

EOAW_EMC:utils Class

This class contains methods that support the main functionality of EMC.

EOAW_EMC:utils Class Methods

This section describes utils class methods.

getAppRS

Syntax

getAppRS(*&msgRS*)

Description

This method provides a single point from which to retrieve the applications rowset from the message definition rowset, as the message definition should have the application rowset starting at level 2. Given the rowset object representing your entire message, this rowset will return just the part of the overall rowset representing your transaction.

Parameters

Parameter	***Description***
&msgRS	The rowset object representing your entire message.

Returns

Rowset.

getErrorCodesRS

Syntax

getErrorCodesRS(*&msgRS*)

Description

This method provides a single point from which to retrieve the error codes rowset from the message definitions rowset.

Parameters

Parameter	*Description*
&msgRS	The rowset object representing your entire message.

Returns

Rowset.

getPromptsRS

Syntax

getPromptsRS(*&msgRS*)

Description

This method provides a single point from which to retrieve the prompts rowset from the message definition's rowset, as the message definition should have the prompts rowset starting at level 2.

Parameters

Parameter	*Description*
&msgRS	The rowset object representing your entire message.

Returns

Rowset.

getRowFromPath

Syntax

getRowFromPath(*&startingRS*, *&path*, *&createIfNull*)

Description

This method is useful for error processing. When your message expects a date or number field to be returned by the user, but the EMC cannot cast the value it gets back into one of those data types, it will put an error code in the exceptions stack. Along side that code in the stack, will be a row path. A row path is the path you need to follow to get to a specific row in a rowset. It follows the format (n)SCROLLNAME[(n)...] where n is a row number and SCROLLNAME is the name of the record comprising the rowset you want to retrieve in that row. When you get an error of one of these 2 types, you can call this method, passing in your message rowset, the rowpath in the error stack, and *false*. You will be returned the exact row where the error occurred (the name of the record and field are also in the error stack.

Parameters

Parameter	***Description***
&startingRS	The rowset from which to start searching for a row, as rowset.
&path	Path to the desired row, as string. Syntax - (n) [SCROLLNAME(n)...] where n is the row in the scroll preceding it. The rowset preceding the first n is &startingRS.
&createIfNull	If set to true, the method will insert as many rows as necessary to retrieve the row successfully. If set to false and the row is not present, an exception will be thrown.

Chapter 9

Using the Notification and Escalation Manager

Understanding Notification and Escalation Manager

Notification and Escalation Manager (NEM) is a mechanism used to process notifications and escalations on a specified interval.

For example, escalations are used when an approver has not responded within a specified time period to a transaction that is pending approval. You can specify the time period (timeout) and you can specify alternate approvers to whom to notify and escalate the approval for further action. Timeout options are defined on the Approval Path Definition page.

Pages Used to Set Up the Notification and Escalation Manager

Page Name	*Definition Name*	*Navigation*	*Usage*
Event Type	EOAW_NEM_EVENTS	Enterprise Components, Approvals, Notification and Escalations, Events	Associate events to a server.
Notification and Escalations	EOAW_NEM_SETUP	Enterprise Components, Approvals, Notification and Escalations , Notifications and Escalations	Set up an escalation event and define the evaluation and action details.
Event Status	EOAW_NEM_STATUS	Enterprise Components, Approvals, Notification and Escalations, Status	Check status of notification.
Schedule JobSet Definitions	SCHDLDEFN	PeopleTools, Process Scheduler, Schedule JobSet Definitions	Set up a NEM to define the job to run, and how often you want it to run.

Event Type Page

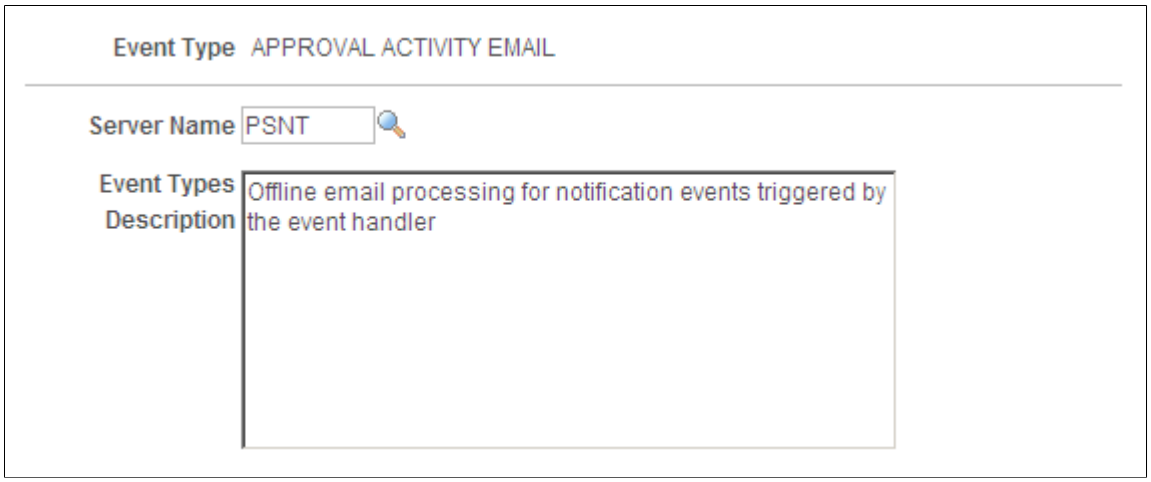
Use the Event Type page (EOAW_NEM_EVENTS) to associate events to a server.

Navigation

Enterprise Components, Approvals, Notification and Escalations, Events

Image: Event Type page

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



Event Type Select an event type. PeopleSoft applications deliver some event types, such as *ESCALATION_EVENT* and *APPROVALACTIVITYEMAIL*.

Server Name Select the server on which to run the notification.

Notification and Escalations Page

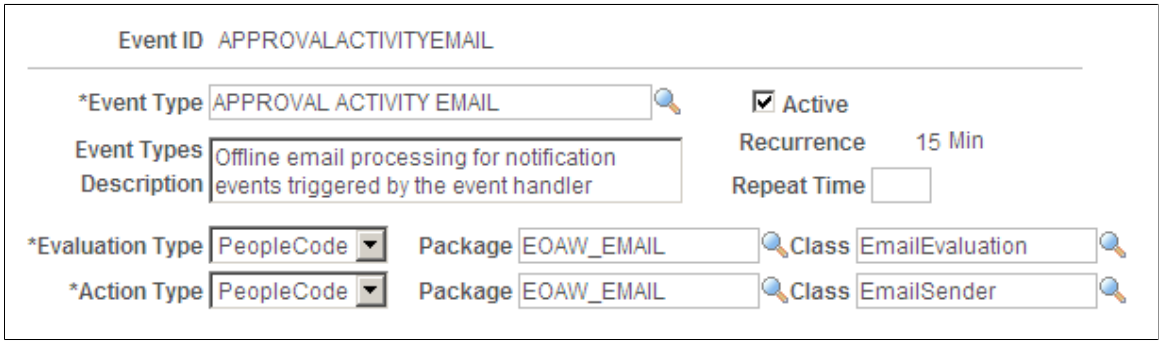
Use the Notification and Escalations page (EOAW_NEM_SETUP) to set up an escalation event and define the evaluation and action details.

Navigation

Enterprise Components, Approvals, Notification and Escalations , Notifications and Escalations

Image: Notification and Escalations page

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



Event Type The server information that was entered on the Event Type page.

Event Types Description The value entered in the Description field on the Events Type page.

Active Select to enable the escalation process.

Recurrence Enter a time interval at which to run the evaluation process.

Repeat Time Enter a time period to limit the number of times the action step is run.

Evaluation Type Select a method for evaluation. Possible values are:

- *PeopleCode:* Select if you are using a custom application package or class written using PeopleSoft Application Designer.
- *Query Object:* Select if you are using a query set up using the PeopleSoft Query Manager tool.
- *SQL View:* Select if you are using a record object created using the PeopleSoft Application Designer.

Note: For escalations, the evaluation type should be *SQL View.*

Name Displays the name of the query object or SQL view, depending on which is selected as the evaluation type.

Action Type Select an action:

- *PeopleCode:* Select if you are using a custom application package or class written using the PeopleSoft Application Designer.
- *Email:* Enter an email address and notification template.

Note: For escalations, the action type should be *PeopleCode.*

Package Select the application package that contains the escalation utility.

Note: For escalations, the package should be *EOAW_CORE*.

Class For escalations, select *Escalator.*

Schedule JobSet Definitions Page

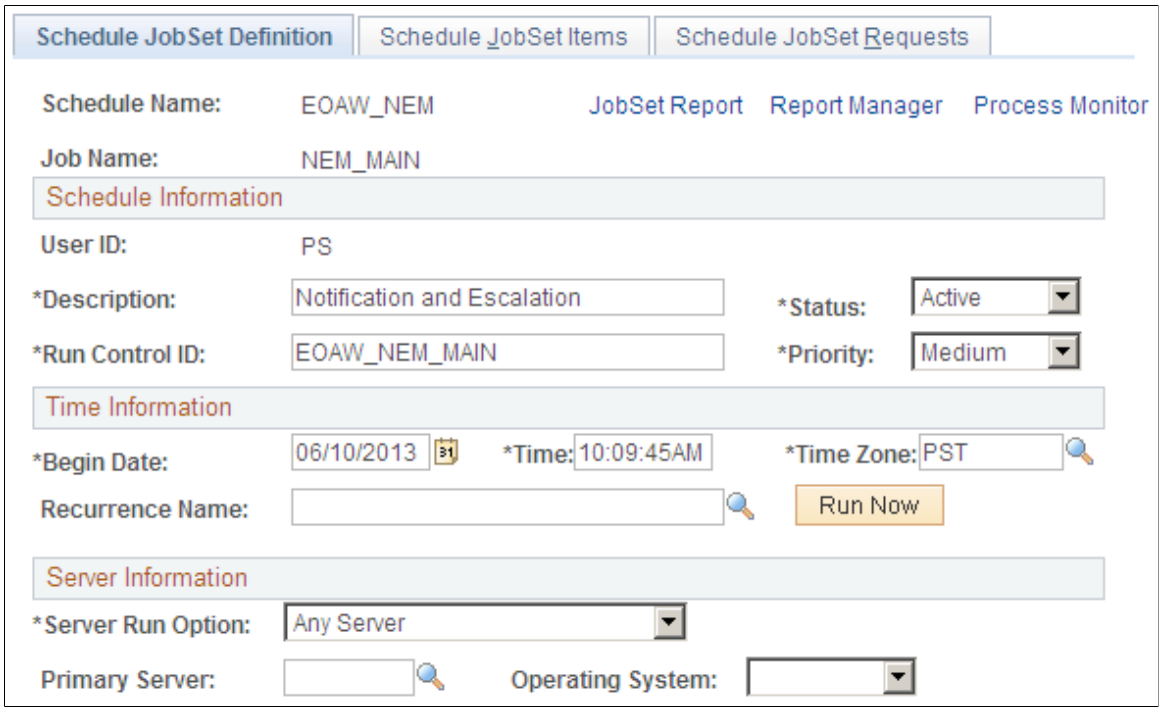
Use the Schedule JobSet Definitions page (SCHDLDEFN) to set up a NEM to define the job to run, and how often you want it to run.

Navigation

PeopleTools, Process Scheduler, Schedule JobSet Definitions

Image: Schedule JobSet Definition page

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



Schedule Name Select *EOAW_NEM* for the notification and escalation manager.

Job Name Select *NEM_MAIN* for the notification and escalation manager.

Status Select *Active* for the notification and escalation manager.

Run Control ID Enter the run control that has the run configuration desired.

Recurrence Name Enter a value that specifies how often the process runs.

See *PeopleTools: PeopleSoft Process Scheduler*, Defining Jobs and JobSets.

Chapter 10

Using the Approval Monitor

Understanding the Approval Monitor

The Approval Monitor gives administrators a view into all approvals to which they have access, as well as the ability to take necessary actions on pending approvals. Administrators are provided access to Approval Transactions based on the Role defined as System Administrator on the Approval Process Definition page. Actions available for the administrator are:

Reassignment	Allows the system administrator to reassign pending approvals to a new approver based on search criteria.
Approve	Allows the administrator to act on behalf of the assigned approver. The approval is initiated for a specific user, wherever that user may be pending within a specific transaction. Once the administrator takes action, the approval resumes the approval process.
Denial	Allows the administrator to act on behalf of the assigned approver. The denial is initiated for a specific user, wherever that user may be pending within a specific transaction.
Ad Hoc	Allows the administrator to add a reviewer or approver to a specific transaction.
Resubmit	Allows the administrator to resubmit a completed transaction to all approvers in the approval path.
Push Back	Allows the administrator to send the process back to the previous approver.

Understanding Approval Reassignment

The administrator can reassign pending tasks to another approver, or an administrator can reassign all tasks that belong to a specific approver to another approver. Use reassignment in the following situations:

- The approver chooses to redirect the task to another approver, thus delegating a specific task (step) to another approver.
- The administrator decides to reassign all pending tasks within a step that belong to an approver to another approver.

  This reassignment usually occurs when an approver is unexpectedly absent and the administrator reassigns all pending tasks to another.

When the administrator redirects a workflow task to another approver, the administrator can modify the approval process map.

Note: The Approval Framework is set up for administrative reassignment and escalations only.

Configuring the Approval Monitor

This section discusses how to configure the Approval Monitor.

You can configure the Approval Monitor to display the information necessary for an administrator to approve a transaction when the original approver is not available. You can also configure the actions that can be performed by the administrator. Each process ID can be configured.

Page Used to Configure the Approval Monitor

Page Name	*Definition Name*	*Navigation*	*Usage*
Approval Monitor Configuration	EOAW_MONDIS_CONFIG	Enterprise Components, Approvals, Approvals, Monitor Configuration	Configure the approval monitor.

Approval Monitor Configuration Page

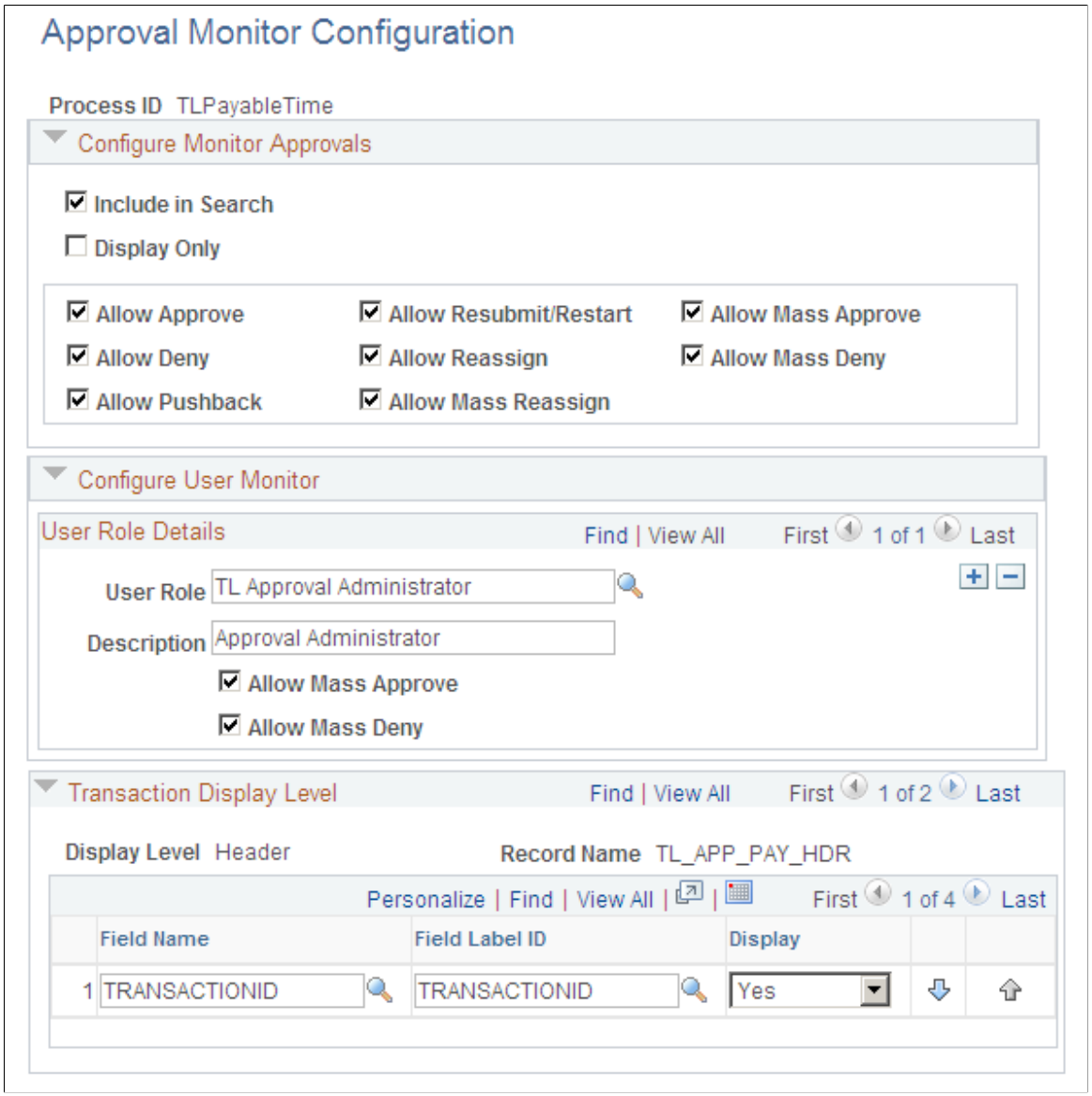
Use the Approval Monitor Configuration page (EOAW_MONDIS_CONFIG) to configure the approval monitor.

Navigation

Enterprise Components, Approvals, Approvals, Monitor Configuration

Image: Approval Monitor Configuration page

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



Configure Monitor Approvals

Use this section to control the actions available in the Monitor Approvals page for this approval process.

Include in Search Select to have the approval process available on the Monitor Approvals page.

Display Only Select to have approval process available in display only mode.

Allow Approve, Allow Deny, Allow Pushback, Allow Resubmit/ Restart, Allow Reassign, Allow Mass Reassign, Allow Mass Approve, and Allow Mass Deny

Select each action that will be available in the Approval monitor for this approval process.

See Monitor Approvals Page.

Configure User Monitor

Use this section to assign user roles and approval functions for monitoring this approval process.

Transaction Display Level

Use this section to select which fields at the header and line level should be displayed in the User Monitor for this approval process.

Using the Approval Monitor

This section discusses how to:

- Use the Approval Monitor search page.
- View search results.
- Utilize the Approval Monitor for a specific approval process.

The approval monitor gives administrators a view into all approvals to which they have access, as well as the ability to take necessary actions on pending approvals.

Warning! Due to the complex rules used by PeopleSoft Expenses, the Monitor Approvals page should not be used to approve or deny expense transactions. To approve and deny expense transactions use the PeopleSoft Expenses approval pages. For more information, refer to *PeopleSoft FSCM: Expenses*, Managing Approvals in PeopleSoft Expenses.

Pages Used to Use the Approval Monitor

Page Name	*Definition Name*	*Navigation*	*Usage*
Monitor Approvals	EOAW_ADM_MON_SRC	• Enterprise Components, Approvals, Approvals, Monitor Approvals • Enterprise Components, Approvals, Approvals, User Monitor	Use the Monitor Approvals page as a system administrator to search approval processes and perform mass reassignments.
Monitor Approvals	EOAW_ADM_MON_ACT	From the Monitor Approvals Search page, select the link for the approval step you want to modify.	Use this page to perform an action on a specific approval process.

Monitor Approvals Page

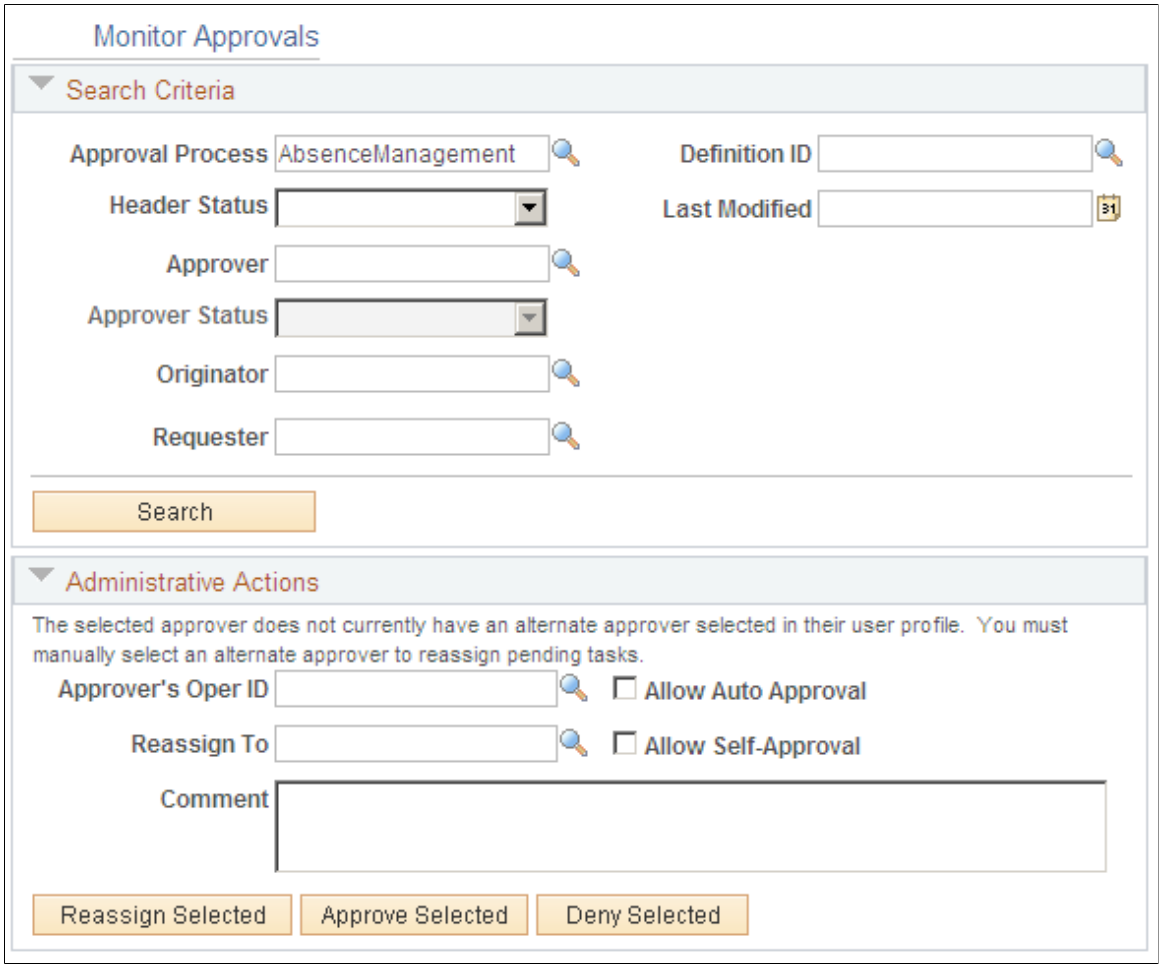
Use the Monitor Approvals page (EOAW_ADM_MON_SRC) to use the Monitor Approvals page as a system administrator to search approval processes and perform mass reassignments.

Navigation

- Enterprise Components, Approvals, Approvals, Monitor Approvals
- Enterprise Components, Approvals, Approvals, User Monitor

Image: Monitor Approvals-Search Criteria page

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



Approval Process Select an approval process. The list of approval processes available is determined by the administrator role associated with the approval process definition. If a user is associated with the role specified in the Admin Role field on the Setup Process Definitions page, they can view or act on that process ID within the Approval Monitor.

Definition ID Select the process definition that is determined on the Setup Process Definition page.

Header Status

Select a status in this field to display the selected status. Choices are:

- *Approved*
- *Complete*
- *Denied*
- *Hard Deny*
- *Initial*
- *Not Active*
- *Pending*
- *Pending Denial*
- *Suspended/Pending Denial*
- *Terminated*

Approver

Select an approver. In order to view or take action on an approval processes for a specific approver this field is required.

Approver Status

Select a status from those available. This field is only available when a specific approver is selected in the Approver field. The statuses available for selection are based on the statuses of that specific approver in the cross-reference table associated with the approval process ID.

Originator

Select the user who entered the transaction that started the approval process.

Requester

Select the user who requested the transaction that started the approval process. The originator is not always the requester.

Reassign Pending Tasks

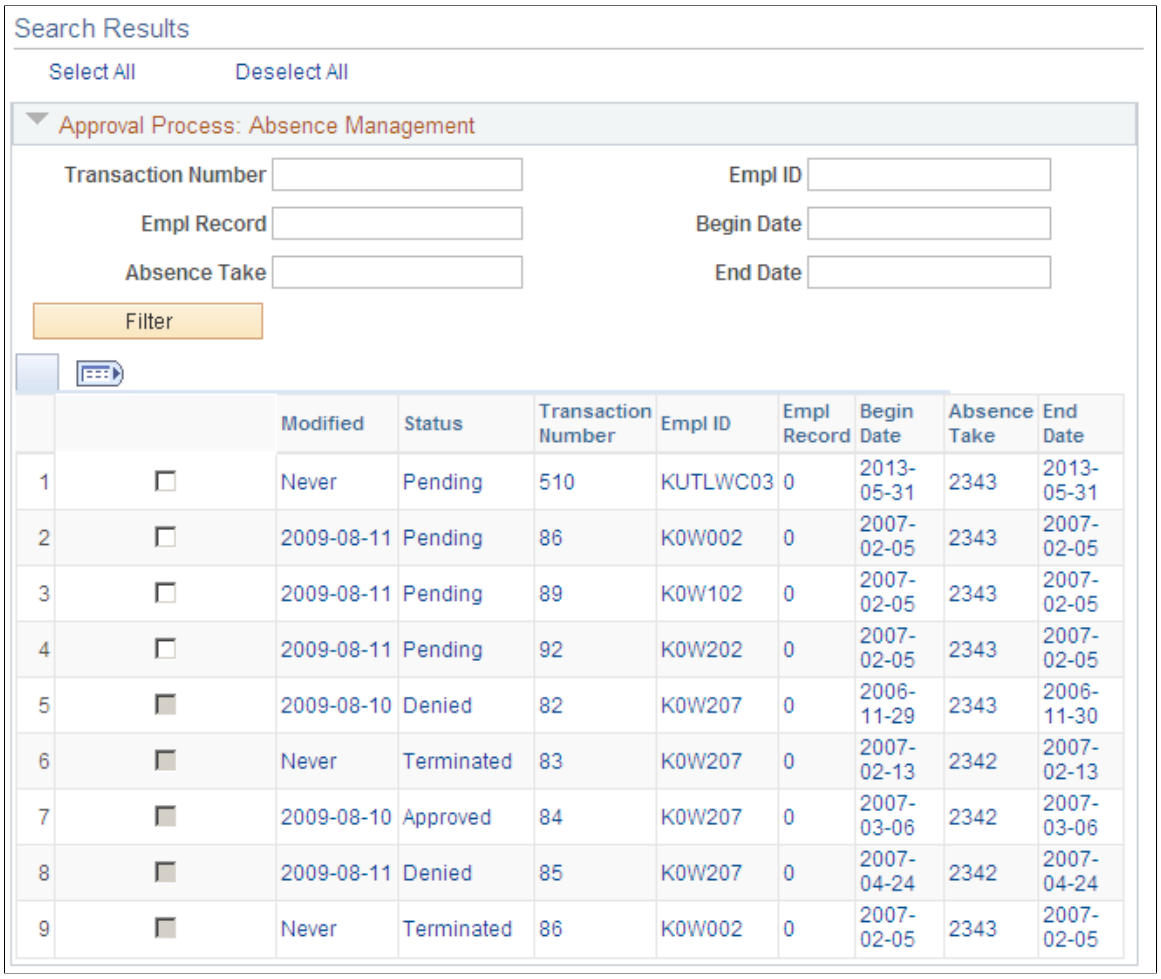
Use this section to reassign approvals to another user. This section is only available if the process allows reassignment.

Viewing Search Results

After entering the selection criteria on the Monitor Approvals page, click the Search button.

Image: Approval Monitor Search results

This example illustrates the fields and controls on the Approval Monitor Search results. You can find definitions for the fields and controls later on this page.



		Modified	Status	Transaction Number	Empl ID	Empl Record	Begin Date	Absence Take	End Date
1	☐	Never	Pending	510	KUTLWC03	0	2013-05-31	2343	2013-05-31
2	☐	2009-08-11	Pending	86	K0W002	0	2007-02-05	2343	2007-02-05
3	☐	2009-08-11	Pending	89	K0W102	0	2007-02-05	2343	2007-02-05
4	☐	2009-08-11	Pending	92	K0W202	0	2007-02-05	2343	2007-02-05
5	☐	2009-08-10	Denied	82	K0W207	0	2006-11-29	2343	2006-11-30
6	☐	Never	Terminated	83	K0W207	0	2007-02-13	2342	2007-02-13
7	☐	2009-08-10	Approved	84	K0W207	0	2007-03-06	2342	2007-03-06
8	☐	2009-08-11	Denied	85	K0W207	0	2007-04-24	2342	2007-04-24
9	☐	Never	Terminated	86	K0W002	0	2007-02-05	2343	2007-02-05

For the approval process selected, specific fields will be displayed based on the transaction display level configured for the approval process.

See Approval Monitor Configuration Page .

Filter Use this button to filter the result set based on criteria entered.

Toggle Header and Line If the approval process contains header and line approvals, you can use this button to toggle the display to view the details.

Monitor Approvals Page

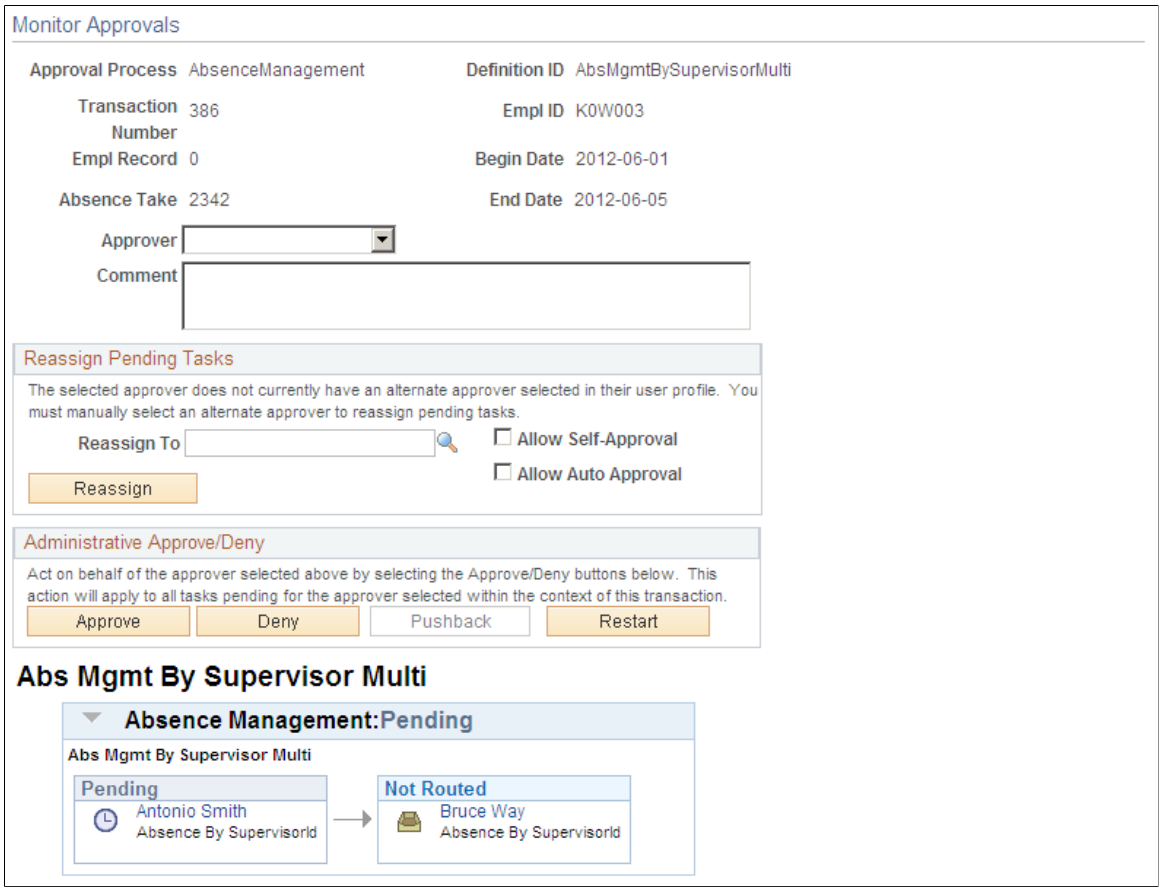
Use the Monitor Approvals page (EOAW_ADM_MON_ACT) to use this page to perform an action on a specific approval process.

Navigation

From the Monitor Approvals Search page, select the link for the approval step you want to modify.

Image: Monitor Approvals page for a specific approval process

This example illustrates the fields and controls on the Monitor Approvals page for a specific approval process. You can find definitions for the fields and controls later on this page.



This page will reflect the options selected when you configured the approval monitor for the process. The Reassign Pending Tasks section and the buttons available in the Administrative Approve/Deny section will display as configured on the Approval Monitor Configuration page.

Warning! Due to the complex rules used by PeopleSoft Expenses, the Monitor Approvals page should not be used to approve or deny expense transactions. To approve and deny expense transactions use the PeopleSoft Expenses approval pages. For more information, refer to *PeopleSoft FSCM: Expenses*, Managing Approvals in PeopleSoft Expenses.

Approver Select an approver. All approvers associated with pending steps within the approval process are listed.

Comment Enter text to appear under the approval graphic in the Approval Comment History section.

Reassign Pending Tasks

Reassign To Select an approver to whom to reassign all pending steps within the approval process.

Reassign Click the button to initiate task reassignment. At the end of the procedure, all pending task of the corresponding approval process instance is assigned to the user who is specified in the Reassign To field.

Reassignment history is captured as comments and viewable in the approval graphic at the bottom of this page.

Allow Self-Approval Select to enable self-approval. When it is enabled, the approval is assumed and the process continues.

Allow Auto Approval Select to enable auto-approval. When it is enabled, the system remembers an approver's action for that process at the header or line level, and applies the same action automatically for any subsequent appearance in the Approval Framework routing.

Administrative Approve/Deny

Approve Click the button to act on behalf of the selected approver. This action applies to all tasks pending for the approver selected within the context of the approval process.

Deny Click the button to act on behalf of the selected approver. This action will apply to all tasks pending for the approver selected within the context of the approval process.

Pushback Click to requeue the previous step to its approver. This button is only available at a step that is greater than one.

For example, a transaction has three approvers. The first approver has approved the transaction, therefore, the transaction is pending at step two. The administrator needs additional information from the requester and, therefore, pushes the transaction back to the requester.

Restart Click to restart a pending transaction to all approvers in the approval path. This button is only available when the transaction is pending.

Resubmit Click to resubmit a completed transaction to all approvers in the approval path. This button is only available when the transaction is complete. The transaction can only be resubmitted in its current state and cannot be modified before resubmitting for approval.

View/Hide Comments Click to expand the Comments section and view comments regarding reassignment or text that is captured in the Comment field when any of the action buttons is clicked.

Request Information	Click to request additional information about this transaction from another user in the system. This selected user might not be an approver of this transaction, but he or she must respond to the request before the approval process can move forward to the next level. The system displays a new approval graphic, showing that more information has been requested as well as the user responsible for the request. As the requester, you can use the comments section to clarify the type of information you are requesting.

Requesting Additional Information About the Transaction

When you click the Request Information link in the approval graphic, the system:

1. Places the current transaction on hold. Doing so prevents anyone from coming in and approving the transaction before the approver (who requested the information) gets the chance to review the returned information.
2. Inserts the requester as a reviewer of the transaction for that step.
3. Triggers the *Request Information* event. Any processing in the applications event handler is triggered; any notifications that is defined in the transaction configuration is sent as well.

The approver (who requested the information) can act on the transaction by clicking any action button at any time.

Here is a use case of the Request Information link:

1. Jane Doe submits a requisition request to purchase a monitor and a hard drive.

   The request routes to three group managers at step 1. Two of the three managers' approvals are required.

2. Manager Jen Smith wants to know why Jane needs to purchase such a large monitor, so she clicks the Request Information link on the approval graphic trying to gather more information about this requisition.

   The requisition transaction is now on hold and awaiting her action. The other two managers can still issue their approvals at any time, but the transaction will not move until the hold is lifted.

3. Depending on the how the application implemented the approval feature, Manager Jen Smith can enter comments in the Comments field, which will render in the Status Monitor, or seek information by any other means of communication (for example, by phone, by email, walk to my office and ask).

   Similarly, depending on the implementation, Jane Doe can respond by either entering comments through the application (this will trigger the Request Information Added event), or communicating to Jen Smith through other means (for example, by phone, by email, or other).

4. Jen Smith can either approve or deny the transaction after (or before) she receives a response. Normal processing resumes.

See ApprovalManager Class Methods, ApprovalEventHandler Class Methods.

Reassigning Tasks Assigned to You

To reassign your tasks to another approver, select a step assigned to you as an approver and request that the step be reassigned to an alternate. You must have an administrator role to perform this task.

The Approval Framework reassigns that step to the newly appointed approver, and deletes the original approver's worklist entry. The system creates a new worklist entry for the new approver, and notifies the new approver.

The Approval Framework adds a comment to the approval thread to log the reassignment.

Reassigning Tasks as an Administrator

To reassign a specific approver's pending tasks to another approver:

1. Filter the display to present pending approval processes for the specific approver.
2. Indicate the steps to be reassigned and the users affected.

   The system submits a request to the Approval Framework to reassign all of the pending steps.

Once you have reassigned the pending tasks to a new approver, the approval path is updated and the approval transaction is routed to the new approver.

Note: You can create reassignments through the user profile. However, workflow reassignments through the user profile don't alter the actual approval process. Reassigning using the Monitor Approvals component performs the reassignment and creates the worklist for the new user.

The administrator can also take action instead of reassigning.

Comment History

Expand the Comment History section to view the previous workflow streams. This section is available when the system has resubmitted the transaction due to a change in the transaction.

For example, a requisition is approved by two out of three approvers. Then the requisition is changed before the third approver sees it. The system resubmits the requisition and begins the approval path from the beginning. The Comment History section retains the original stream, indicating that the first two approvers had approved the original requisition.

Using the User Monitor

This section discusses how to use the User Monitor.

The User Monitor provides a generic approval page that is very similar to the Approval Monitor. The only difference is that is designed to only display approval items where the signed on user is either the approver or the requester.

Page Used to Use the User Monitor

Page Name	*Definition Name*	*Navigation*	*Usage*
User Monitor - Monitor Approvals	EOAW_ADM_MON_SRC	Enterprise Components, Approvals, Approvals, User Monitor	Approve and review transactions.

User Monitor - Monitor Approvals Page

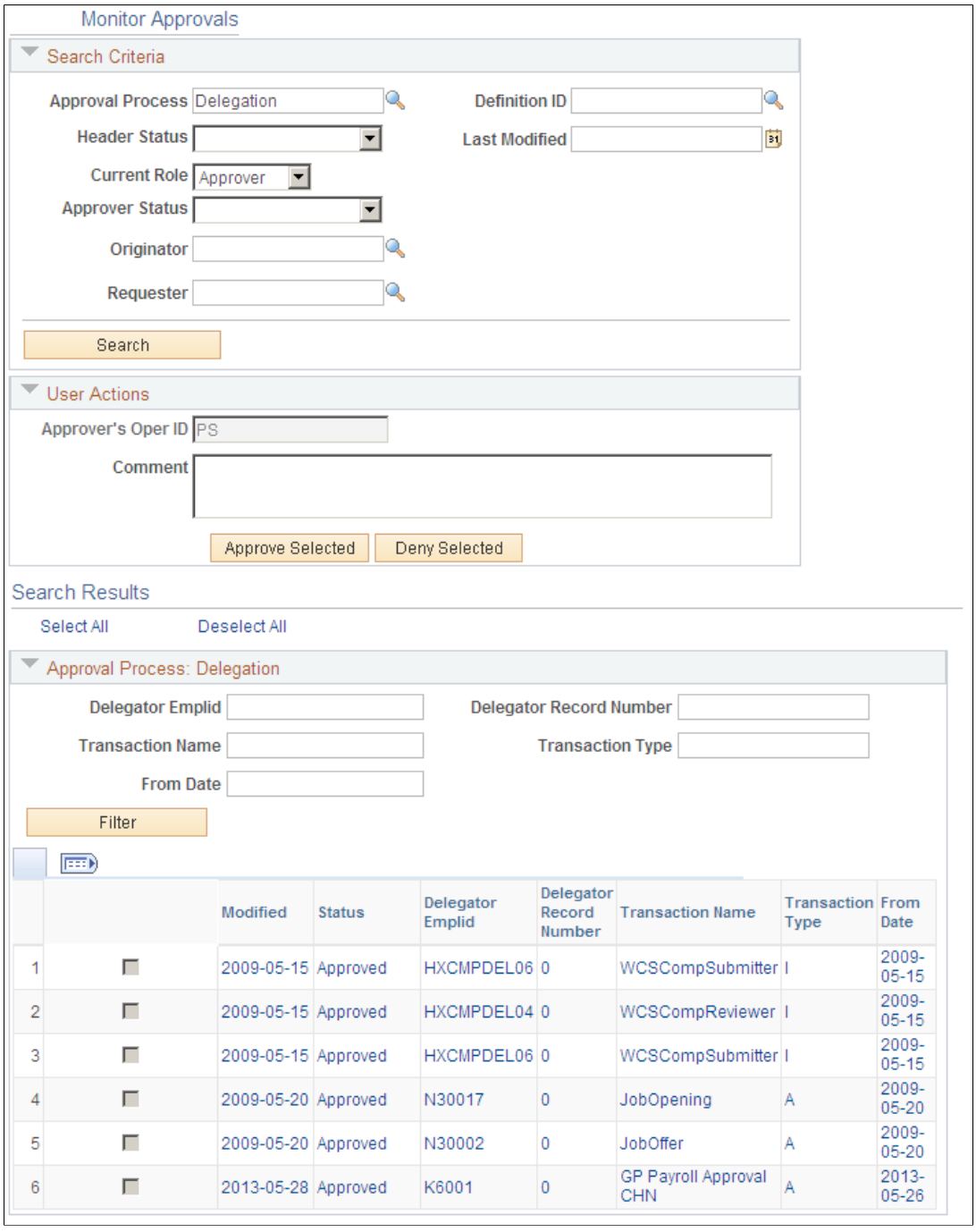
Use the User Monitor - Monitor Approvals page (EOAW_ADM_MON_SRC) to approve and review transactions.

Navigation

Enterprise Components, Approvals, Approvals, User Monitor

Image: User Monitor - Monitor Approvals page for current role Approver

This example illustrates the fields and controls on the User Monitor - Monitor Approvals page for current role Approver. You can find definitions for the fields and controls later on this page.



Select your current role, either Approver or Requester and click the search button to display the transactions.

See Monitor Approvals Page.

Chapter 11

Using Approval Framework Base Classes

Understanding Approval Framework Base Classes

Approval Framework Base Classes provide functions to launch workflow, manager approvals, display approval monitor. In order to build custom Approval Framework processes, you will need to extend these class in your PeopleCode.

How to Import Approval Framework Base Classes

The Approval Framework base classes are not built-in classes, like Rowset, Field, Record, and so on. They are application classes. Before you can use these classes in your PeopleCode program, you must import them to your program.

An import statement names either all the classes in a package or one particular application class. For importing Approval Framework base classes, Oracle recommends that you import the functions class in the application package that is specific to your needs.

The function classes are stored in EOAW_CORE application packages:

You should use construct your import statement to include the classes necessary for your code. Some examples are:

```
import EOAW_CORE:*;
import EOAW_CORE:LaunchManager;
import EOAW_CORE:ApproverManager
```

LaunchManager Class

This class provides the utility methods to launch Approval Framework.

LaunchManager Class Methods

Application developers should instantiate this class as a component-scoped variable. The best place to initialize this class is in the component post-build event. This section describes the LaunchManager class methods. The methods are discussed in alphabetical order.

LaunchManager

Syntax

LaunchManager(*&awprcs_id*, *&hdr_* , *&requester_*)

Description

Launches the Approval Framework process.

Parameters

Parameter	*Description*
&awprcs_id	The approval Process ID that has been defined in the Transaction Registry, as string.
&hdr_	The header record defined for the approval processes in the Transaction Approval Levels in the Transaction Registry, as record.
&requester_	The Operator ID of the user initiating the approval process, as string.

Returns

None.

Example

This is an example to launch Approval Framework for VoucherApproval.

```
import EOAW_CORE:*;
Component EOAW_CORE:LaunchManager &launchMgr;

If VOUCHER.VCHR_APPRVL_FLG = "W" Then
   &vchrRecord = CreateRecord(Record.VCHR_AF_HDR_VW);   GetLevel0()(1).GetRecord(Re⇒
cord.VOUCHER).CopyFieldsTo(&vchrRecord);
   &launchMgr = create EOAW_CORE:LaunchManager("VoucherApproval", &vchrRecord, %Ope⇒
ratorId);
```

DoSubmit

Syntax

DoSubmit()

Description

Used to submit a new transaction for approval. An exception is thrown if the property submitEnabled is not true.

Parameters

None.

Returns

None.

Example

This is an example of submitting the transaction.

```
import EOAW_CORE:*;

Component EOAW_CORE:LaunchManager &launchMgr;

&launchMgr.DoSubmit();
```

DoReSubmit

Syntax

DoReSubmit()

Description

Used to resubmit a transaction which was previously submitted, and the previous approval processes have completed (approved, denied or terminated). An exception is thrown if the property resubmitEnabled is false.

Parameters

None.

Returns

None.

Example

This is an example to resubmit a process:

```
import EOAW_CORE:*;

Component EOAW_CORE:LaunchManager &launchMgr;

&launchMgr.DoReSubmit();
```

DoRestart

Syntax

DoRestart()

Description

Used to restart a currently running approval process. An exception is thrown if the property restartEnabled is false.

For example, in eProcurement, a requisition can be modified after has been approved. Since it was approved, Approval Framework sees it as closed (ended) and will not allow it to be resubmitted. The only option is to restart the transaction. Restart will reset all approval actions and route to the first approver regardless of the previous approvals.

Parameters

None.

Returns

None.

PrepareToSubmit

Syntax

PrepareToSubmit()

Description

This method instantiates an approval process, but does not save or launch it. Repeated calls to this method do nothing, if an approval process has been instantiated (or if an approval process is running), this method simply returns. The point is that the requester can add ad-hoc approvers while previewing which will be included in the process launched by DoSubmit(). The DoSubmit(), DoResubmit(), DoPreview() and DoRestart() methods all call this method. So any approval process instantiated by DoPreview() will be reused by the above methods. When this behavior is not desired, application developers use the Reset() method.

Note: Repeated calls to prepare to submit can result in performance problems. Typically, this method is only used when ready to submit or when previews are necessary.

Parameters

None.

Returns

None.

SetHeader

Syntax

SetHeader(*&hdr_*)

Description

When creating a new application transaction, some applications do not fully populate the key fields until it is saved. For instance, eProcurement uses a generated id number for requisitions, but does not populate the id field until a new transaction is saved. Since applications need to initialize the LaunchManager object in the component post-build event code, this poses a challenge. In such situations, application developers can safely call this method to reset the header record before submitting a new transaction for approvals. It is always safe to call this method as long as the header record being passed in is valid. However when this method will re-instantiate the approval process, which eliminates any performance improvements achieved by caching previewed instances.

Parameters

Parameter	*Description*
&hdr_	The header record defined for the approval processes in the Transaction Approval Levels in the Transaction Registry, as record.

Returns

None.

Example

```
&reqRecord = CreateRecord(Record.PV_REQHDR_AW_VW);
GetLevel0()(1).GetRecord(Record.REQ_HDR).CopyFieldsTo(&reqRecord);
&launchMgr.SetHeader(&reqRecord);
&launchMgr.DoSubmit();
```

Reset

Syntax

Reset()

Description

This method clears the approval process instance cached by the DoPreview() method. Approval process instances are cached between DoPreview() and DoSubmit() calls because a requester can add ad-hoc approvers to the previewed process before submitting. If ad-hoc approvers are added, using DoSubmit() to regenerate the approval process instance would cause the ad-hoc approvers to be lost. However, application developers must take care to call Reset() if the requester changes any significant fields between calls to DoPreview() and DoSubmit(). Since the Approval Framework does not know which fields are significant, this responsibility falls to the application developer. If concerned about catching all such situations, developers can adopt the strategy of always calling Reset() before calling DoSubmit() or any of its cousins. But this runs the risk of losing any ad-hoc approvers added by the requester during preview. Finally, if the application allows users to change the requester (for instance, when one user submits a transaction on behalf of another), the LaunchManager property *requester* needs to be updated. Updating the requestor property automatically calls the Reset() method.

Parameters

None.

Returns

None.

FindDefinitionID

Syntax

FindDefinitionID()

Description

This method will return all definition IDs that have criteria matches. A developer can set the definition ID using the definitionID property. If a method such as DoSubmit or DoResubmit is called before this property is set, Approval Framework will use the first definition ID returned based on priority order.

Parameters

None.

Returns

Array of records.

TerminateRunningProcess

Syntax

TerminateRunningProcess()

Description

Terminates a running process.

Parameters

None.

Returns

None.

LaunchManager Class Properties

This section describes the LaunchManager class properties.

hasTxn

Description

True if the application's process id valid.

definition

Description

Set the definition and re-initialize the AppDef.

hasAppDef

Description

True if an approval process has been defined.

hasAppInst

Description

True if an approval process is currently running on this application transaction.

hasEndedAppInst

Description

True if an approval process has previously been run on this application transaction.

EOAW_CORE:DEFN:AppDef appDef

Description

The approval process definition currently active on this application.

resubmitEnabled

Description

Used to determine if this transaction can be re-submitted for approval. This will be true when:

1. A transaction registry entry exists.
2. An approval process has been defined.
3. One or more approval processes were launched on this transaction, but none are currently running (they were either approved, denied, or terminated.

Example

```
If &launchMgr.resubmitEnabled = True Then
      &launchMgr.DoReSubmit();
 End-If;
```

submitEnabled

Description

Used to determine if the submit action (which triggers launching of the Approval Framework) is currently enabled on this application transaction. Submit will be enabled when:

1. A transaction registry entry exists.
2. An approval process has been defined.
3. No approval process has previously been launched on this transaction.

Example

```
If (&launchMgr.submitEnabled) Then
   &launchMgr.DoSubmit();
End-If;
```

restartEnabled

Description

Used to determine if this transaction's approval process be restarted. This will be true if an approval process is currently running.

monitorEnabled

Description

Used to determine if the Approval Monitor is enabled. The monitor is enabled if an approval process is running.

previewEnabled

Description

Preview is enabled if a process is not currently running on this transaction. The DoPreview() method only presents a preview of the approval process to be launched going forward. It is not meant for a review of prior processes.

Note: DoPreview does not display completed approval processes for this transaction.

EOAW_CORE:ENGINE:AppInst appInst

Description

The approval process instance currently running. Can be null.

EOAW_CORE:DEFN:AWTxn txn

Description

The application transaction registry entry.

This property is read-only.

requester

Description

Use this property to get or set the requester on whose behalf this transaction is to be submitted for approval. Note that this property is not read-only. Applications may change the requester even after constructing the LaunchManager, but with certain caveats.

Approval Manager Class

This class provides the methods to manage the approval process.

ApprovalManager Class Methods

The approval manager object is the application developers interface to the Approval Framework. Most developers will not find it necessary to directly access any other Approval Framework objects. Application developers should instantiate this class as a component-scoped variable. The best place to initialize this class is in the component post-build event. The class can be instantiated with information readily available to developers at component post-build time. Developers should examine the boolean-valued properties of this object to know whether or not the user entering the approval component has any pending approvals work. If there are any pending approvals, the GetPending() method will identify what is pending, and the action methods such as DoApprove(), or DoDeny(), will enable them to implement the full approval functionality.

This section lists the Approval Manager class methods in alphabetical order.

ApprovalManager

Syntax

ApprovalManager(*&awprcs_id*, *&hdr_*, *&approver_*)

Description

Developers need to know their transaction id, and need to pass in an instance of their application's main record, which describes the request being submitted for approval. They also need to explicitly tell the Approval Framework who the approver is.

Parameters

Parameter	*Description*
&awprcs_id	The approval Process ID that has been defined in the Transaction Registry, as string.
&hdr_	The header record defined for the approval processes in the Transaction Approval Levels in the Transaction Registry, as record.
&approver_	The Operator ID of the user approving the transaction, as string.

Example

```
import EOAW_CORE:*;
Component EOAW_CORE:ApprovalManager &approvalMgr;
&vchrRecord = CreateRecord(Record.VCHR_AF_HDR_VW);
GetLevel0()(1).GetRecord(Record.VCHR_FS).CopyFieldsTo(&vchrRecord);
&approvalMgr = create EOAW_CORE:ApprovalManager("VoucherApproval",&vchrRecord, %Use⇒
rId);
```

DoApprove

Syntax

DoApprove(*&rec*)

Description

Use this method to approve the transaction for the record.

Parameters

Parameter	*Description*
&rec	The record defined for the approval processes in the Transaction Approval Levels in the Transaction Registry, as record.

DoApproveRowSet

Syntax

DoApproveRowSet(*&rs*)

Description

Use this method to approve transactions for the entire rowset. If this is a line-level record, then all paths which had routed this record to the approver are advanced.

For example, if an expense report has 3 lines o and you want to approve all 3 lines, you would insert the records into a rowset and pass that rowset to DoApproveRowset. Approval Framework will approve each line in that rowset. This avoids repeated calls to Approve.

Parameters

Parameter	*Description*
&rs	Rowset to approve, as rowset.

Returns

None.

DoReassign

Syntax

DoReassign(*&rec*, *&reassignee*, *&bAllowAutoApprove*, *&bAllowSelfApprove*, *&comment*)

Description

Use this method to reassign the record instance to a different approver.

Parameters

Parameter	*Description*
&rec	The transaction record to be reassigned, as record.
&reassignee	The user to reassign the approval to, as string.
&bAllowAutoApprove	Indicate whether or not auto approval is active, as boolean.
&bAllowSelfApprove	Indicate whether or not self approval is active, as boolean.
&comment	Include any comments, as string.

Returns

String.

DoReassignAll

Syntax

DoReassignAll(*&reassignee*, *&bAllowAutoApprove*, *&bAllowSelfApprove*, *&comment*)

Description

Note: Use this method to reassign all line items for the transaction to a different user for approval.

Parameters

Parameter	*Description*
&reassignee	User ID to reassign the transactions to, as string.
&bAllowAutoApprove	Indicate whether or not auto approval is active, as boolean.
&bAllowSelfApprove	Indicate whether or not self approval is active, as boolean.
&comment	Include any comments, as string.

Returns

String.

DoDeny

Syntax

DoDeny(*&rec*)

Description

Use this method to deny approval on a record instance. If the record is a header record, then the approval process ends. If the record is a line-level record, that particular line's processing ends, while the other records in that transaction continue.

Parameters

Parameter	*Description*
&rec	The record name defined for the approval processes in the Transaction Approval Levels in the Transaction Registry, as record.

Returns

None.

Example

```
&approvalMgr.DoDeny(&reqRecord);
```

DoDenyRowset

Syntax

DoDenyRowset(*&rs*)

Description

Use this method to deny approval on a rowset. This is used to enable Approval Framework to deny multiple lines at once rather than looping through each line.

Parameters

Parameter	*Description*
&rs	Name of the rowset, as rowset.

Returns

None.

DoDenyWithAllowUndeny

Syntax

DoDenyWithAllowUndeny(&rs)

Description

Use this method to deny approval on a rowset, where resubmits are not allowed.

Parameters

Parameter	*Description*
&rs	Name of the rowset, as rowset.

Returns

None.

DoHardDeny

Syntax

DoHardDeny(*&rec*)

Description

Use this method to deny approval on a record instance and not allow re-submits. If the record is a header record, then the approval process ends. If the record is a line-level record, that particular line's processing ends, while the other records in that transaction continue.

Parameters

Parameter	*Description*
&rec	The record name defined for the approval processes in the Transaction Approval Levels in the Transaction Registry, as record.

Returns

None.

DoLineResubmit

Syntax

DoLineResubmit(*&rec*, *&start*)

Description

Allows the line being passed in to be resubmitted to a running transaction. The user decides if the line is restarted from the current stage or the beginning. If it starts from the beginning, all history after the first header stage is lost.

Parameters

Parameter	*Description*
&rec	The record defined for the approval processes in the Transaction Approval Levels in the Transaction Registry, as record.
&start	Use *True* to start at the beginning of the approval process or *False* to start at the current stage.

Returns

None.

Example

```
&approvalMgr.DoLineResubmit(&reqLnRecord, True);
```

DoAddNewLine

Syntax

DoAddNewLine(*&rec*, *&start*)

Description

Use to allow the line being passed in to be added to a running transaction. The user decides if the line is restarted from the current stage or the beginning. If it starts from the beginning, all history after the first header stage is lost.

Parameters

Parameter	*Description*
&rec	The record defined for the approval processes in the Transaction Approval Levels in the Transaction Registry, as record.
&start	Use *True* to start at the beginning of the approval process or *False* to start at the current stage.

Returns

None.

GetPending

Syntax

GetPending()

Description

This method returns a rowset in the form of the applications header or line record that includes any header row or line row that is pending.

Parameters

None.

Returns

Rowset containing pending transactions.

Example

```
&LINERS = CreateRowset(Record.PV_REQLIN_AW_VW);
&LINERS = &approvalMgr.GetPending();
```

DoPushback

Syntax

DoPushback(*&rec*)

Description

Use this method to send the process back to the previous approver. This is used to give the approver a means of requesting a prior approver to make a clearer case for approving the transaction.

Note: Pushback only works to push back the workflow to a prior step in the same path. Calling Pushback() on the first step its path does nothing.

Parameters

Parameter	*Description*
&rec	The record defined for the approval processes in the Transaction Approval Levels in the Transaction Registry, as record.

Returns

None.

Example

```
&approvalMgr.DoPushback(&reqRecord);
```

AddComments

Syntax

AddComments(*&username*, *&rec*, *&comments*)

Description

Use this method to add comments in the approval process.

Parameters

Parameter	*Description*
&username	The user name for the current user, as string.
&rec	The record defined for the approval processes in the Transaction Approval Levels in the Transaction Registry, as record.

Parameter	Description
&comments	Comments for the approval transaction, as string.

Returns

None.

Example

```
&approvalMgr.AddComments(getUserName(%OperatorId), &reqRecord, PV_REQ_APPPG_WK.COMM⇒
ENTS_2000);
```

TakeNoAction

Syntax

TakeNoAction(*&rec*)

Description

Use this method to update the user's status as no action taken. If all approvers at this step take no action, then the step will advance and the current step will store the status for No Action Taken.

Parameters

Parameter	Description
&rec	The record defined for the approval processes in the Transaction Approval Levels in the Transaction Registry, as record.

Returns

None.

PutOnHold

Syntax

PutOnHold(*&rec*)

Description

Used to put the record instance passed in on hold for this step. If this is a line-level record, then all paths which had routed this record to the approver are advanced.

Parameters

Parameter	*Description*
&rec	The record defined for the approval processes in the Transaction Approval Levels in the Transaction Registry, as record.

Returns

None.

PutOnHoldCount

Syntax

PutOnHoldCount(*&rec*)

Description

This method is used to count how many approvers have put an approval transaction on hold. For example, if there are 10 approvers and 5 approvals are needed, checking to see that 3 approvers put it on hold will tell you that there are still 7 approvers that have not looked at the transaction yet.

Parameters

Parameter	*Description*
&rec	The record defined for the approval processes in the Transaction Approval Levels in the Transaction Registry, as record.

Returns

Array of string.

GetPushedBack

Syntax

GetPushedBack()

Description

Use this method to retrieve all the rows in a transaction that were pushed back.

Returns

Rowset.

GetPertinentThreads

Syntax

GetPertinentThreads(*&checkApprover*, *&userType*)

Description

Use this method to determine what threads are pending review or approval.

Parameters

Parameter	*Description*
&checkApprover	As string.
&userType	As string.

Returns

Rowset.

GetStage

Syntax

GetStage(&rec)

Description

Use this method to retrieve the current stage of the approval process for a transaction.

Parameters

Parameter	*Description*
&rec	The record defined for the approval processes in the Transaction Approval Levels in the Transaction Registry, as record.

Returns

EOAW_CORE:ENGINE:StageInst

GetPendingSteps

Syntax

GetPendingSteps()

Description

Use this method to determine all pending steps for an approval process. This method returns a list of step-instance objects pending for this transaction.

Parameters

None.

Returns

Array of EOAW_CORE:ENGINE:UserStepInst.

DoLineTerminate

Syntax

DoLineTerminate(*&LineRec*)

Description

Use this method to terminate the given line level approval.

Parameters

Parameter	*Description*
&LineRec	The line level record for the approval process.

GetParticipant

Syntax

GetParticipant(*&username*)

Description

Use this method to determine whether or not the user is a participant in the approval process. This method returns the participation status for a user that is currently pending or has taken an action.

Parameters

Parameter	*Description*
&username	User ID, as string.

Returns

Returns a string to determine user participation in the approval process:

- *N*- if the user is not a participant in the approval.

- *AA*- if the user is the actual approval.
- *OA*- if the user is the original approval.
- *RR*- if the user is a reviewer.
- *O*- if the user is the originator.
- *R*- if the user is the requestor.

GetAllActiveParticipants

Syntax

GetAllActiveParticipants()

Description

Use this method to retrieve a list of all users that have either been flagged as Approvers, Reviewers, requestor or initiator.

Parameters

None.

Returns

Array of string.

RequestInformation

Syntax

RequestInformation(*&user*, *&rs*)

Description

Use this method to put a step on hold until the specified user provides more information.

Parameters

Parameter	***Description***
&user	UserID to insert as a reviewer and request information from, as string.
&rs	Rowset to push the reviewer onto the step, as rowset.

Returns

None.

SetAttributeObject

Syntax

SetAttributeObject(*&attrObj_*)

Description

Use this method to set the Approval Attribute class on the Appinst class.

Parameters

Parameter	*Description*
&attrObj	As EOAW_CORE:ENGINE:AppAttributes.

Returns

None.

ApprovalManager Class Properties

This section describes the ApprovalManager class properties.

hasAppInst

Description

True if the current transaction (header record) has a currently pending Approval Framework instance.

definition

Description

Get the current definition ID set on the App Def.

level

Description

The level of the pending approval work--*0* for header, *1* for line-level. The Approval Framework architecture guarantees that header and line-level approval work cannot be pending at the same time.

This property is read-only.

hasPending

Description

True if the user has any pending approval tasks for the current transaction.

Note: Typically this will be the signed on user, but it does not have to be.

pushbackEnabled

Description

This method is used to determine if there is any path that is pending with a step number greater than one. If there is a step greater than one, *True* is returned and push back is enabled.

This is a read-only property.

EOAW_CORE:ENGINE:AppInst the_inst

Description

The current approval process instance.

isReviewer

Description

True if the user is a reviewer in the approval process.

This is a read-only property.

Approval Event Handler Class

This class provides methods to monitor events and notify the approval framework.

ApprovalEventHandler Class Methods

The ApprovalEventHandler class is used to perform actions that are required at the specific points in the process. For instance, if a new Employee has been approved, then the required action would be to activate that user. The purpose of this class is to move the check for specific statuses or actions from the Component to Approval Framework. This sections lists the ApprovalEventHandler class methods.

ApprovalEventHandler

Syntax

ApprovalEventHandler()

Description

This method is the constructor for the ApprovalEventHandler class. Its only purpose is to create an object that can be used to access the other methods.

OnProcessLaunch

Syntax

OnProcessLaunch(*&appInst*)

Description

This method is called with the newly-launched approval process instance, after the launch operation is successful.

Parameters

Parameter	*Description*
&appInst	As EOAW_CORE:ENGINE:AppInst.

Returns

None.

Example

```
method OnProcessLaunch

   /+ &appInst as EOAW_CORE:ENGINE:AppInst +/

   /+ Extends/implements EOAW_CORE:ApprovalEventHandler.OnProcessLaunch +/

   &appInst.thread.SetAppKeys(&vndrRecord);

   %This.updateProcessFlag(&PENDING);

end-method;
```

OnStepActivate

Syntax

OnStepActivate(*&stepinst*)

Description

Use this method when a step instance is activated, the approvers and reviewers associated with the step will receive a worklist entry, if they do not already have one). The activated step instance itself is passed in as the argument.

Parameters

Parameter	*Description*
&stepinst	The activated step instance, as EOAW_CORE:ENGINE:StepInst.

Returns

None.

OnStepHold

Syntax

OnStepHold(*&userinst*)

Description

Use this method to put this step on hold when a user performs an action. On Hold means that the user plans to take action at a later time.

Parameters

Parameter	*Description*
&userinst	As EOAW_CORE:ENGINE:UserStepInst.

Returns

None.

OnStepReassign

Syntax

OnStepReassign(*&userinst*, *&origApprover*)

Description

Use this method to indicate the action when a step is reassigned.

Parameters

Parameter	*Description*
&userinst	As EOAW_CORE:ENGINE:UserStepInst.
&origApprover	As string.

Returns

None.

OnStepComplete

Syntax

OnStepComplete(*&stepinst*)

Description

Use this method to indicate the action to take place when the step is complete.

Parameters

Parameter	*Description*
&stepinst	The active step instance, as EOAW_CORE:ENGINE:StepInst.

OnStepPushback

Syntax

OnStepPushback(*&userinst*)

Parameters

Parameter	*Description*
&userinst	As EOAW_CORE:ENGINE:UserStepInst.

OnStepReactivate

Syntax

OnStepReactivate(*&stepins*)

Description

Use this method when a step is reactivated.

Parameters

Parameter	*Description*
&stepinst	The current step instance, as EOAW_CORE:ENGINE:StepInst.

OnFinalHeaderDeny

Syntax

OnFinalHeaderDeny(&appinst As EOAW_CORE:ENGINE:AppInst);

Description

Use this method for the final denial.

Parameters

Parameter	*Description*
&appinst	Application instance, as EOAW_CORE:ENGINE:AppInst.

Returns

None.

OnHeaderDeny

Syntax

OnHeaderDeny(*&userinst*)

Description

Use this method for header denial.

Parameters

Parameter	*Description*
&userinst	As EOAW_CORE:ENGINE:UserStepInst.

OnHeaderApprove

Syntax

OnHeaderApprove(*&appinst*)

Description

Use this method to indicate the action to take when the header is approved.

Parameters

Parameter	*Description*
&appinst	Application instance, as EOAW_CORE:ENGINE:AppInst.

OnNoApprovalNecessary

Syntax

OnNoApprovalNecessary(&appinst)

Description

Use this method when no approval is necessary.

Parameters

Parameter	*Description*
&appinst	Application instance, as EOAW_CORE:ENGINE:AppInst.

OnLineDeny

Syntax

OnLineDeny(*&userstep*)

Description

Use this method to indicate the action to take when a line is denied.

Parameters

Parameter	*Description*
&userstep	User step, as EOAW_CORE:ENGINE:UserStepInst.

OnLineApprove

Syntax

OnLineApprove(*&appinst*, *&thread*)

Parameters

Parameter	*Description*
&appinst	Application instance, as EOAW_CORE:ENGINE:AppInst.
&thread	As EOAW_CORE:ENGINE:Thread.

OnAllLinesProcessed

Syntax

OnAllLinesProcessed(*&appinst*, *&approved*, *&denied*)

Description

Use this method when all lines are processed.

Parameters

Parameter	*Description*
&appinst	Application instance, as EOAW_CORE:ENGINE:AppInst.
&approved	As array of EOAW_CORE:ENGINE:Thread.
&denied	As array of EOAW_CORE:ENGINE:Thread.

OnTerminate

Syntax

OnTerminate(*&appinst As EOAW_CORE:ENGINE:AppInst*);

Description

Use this method when the application instance is terminated.

Parameters

Parameter	*Description*
&appinst	Application instance, as EOAW_CORE:ENGINE:AppInst.

OnError

Syntax

OnError(*&stepinst*)

Description

Use this method when an error occurs in a step.

Parameters

Parameter	*Description*
&stepinst	Step instance, as EOAW_CORE:ENGINE:StepInst.

OnStepReview

Syntax

OnStepReview(*&stepinst*, *&reviewers*)

Description

Use this method to indicate the action to take when the step instance is reviewed.

Parameters

Parameter	*Description*
&stepinst	Step instance, as EOAW_CORE:ENGINE:StepInst.
&reviewers	UserIds for the reviewers, as an array of string.

OnTimeout

Syntax

OnTimeout(*&userinst*, *&notify*)

Parameters

Parameter	*Description*
&userinst	As EOAW_CORE:ENGINE:UserStepInst.
&notify	As string.

OnAdHocInsert

Syntax

OnAdHocInsert(*&stepinst*, *&approver*)

Description

Use this method when new adhoc reviewers are inserted.

Parameters

Parameter	*Description*
&stepinst	As EOAW_CORE:ENGINE:AdHocStepInst.
&approver	UserID for approvers, as an array of string.

OnAdHocDelete

Syntax

OnAdHocDelete(*&stepinst*)

Description

Use this method when an adhoc step is deleted.

Parameters

Parameter	*Description*
&stepinst	As EOAW_CORE:ENGINE:AdHocStepInst.

OnUserLocked

Syntax

OnUserLocked(*&userinst*)

Description

Use this method to indicate the action to be taken if a user is locked out. If a user is locked out, then the administrator should be notified. This acts more as a warning because the system will still route the approval to that person.

Parameters

Parameter	*Description*
&userinst	As EOAW_CORE:ENGINE:UserStepInst.

OnStepRequestInformation

Syntax

OnStepRequestInformation(*&userinst*)

Description

Use this method when there is a request for information.

Parameters

Parameter	*Description*
&userinst	As EOAW_CORE:ENGINE:UserStepInst.

OnRequestInformationAdded

Syntax

OnRequestInformationAdded(*&appinst As EOAW_CORE:ENGINE:AppInst, &level As number, &notifyList As array of string*);

Description

Use this method when request information has been added.

Parameters

Parameter	*Description*
&appinst	Application instance, as EOAW_CORE:ENGINE:AppInst.
&level	Approval level, as number.
&notifyList	UserIds to notify, as array of string.

ProcessNotifications

Syntax

ProcessNotifications(*&appinst*)

Description

Use this method to process notifications.

Parameters

Parameter	*Description*
&appinst	Application instance, as EOAW_CORE:ENGINE:AppInst.

OnLineTerminate

Syntax

OnLineTerminate(*&appinst*, *&thread*)

Description

Use this method when a line is terminated.

Parameters

Parameter	*Description*
&appinst	Application instance, as EOAW_CORE:ENGINE:AppInst.
&thread	As EOAW_CORE:ENGINE:Thread.

ApprovalEventHandler Class Properties

This section lists the ApprovalEvent Hander Class properties.

wlPrefix

Description

Worklist prefix.

wlBusinessProc

Description

Business process.

wlActivityName

Description

Activity name.