
Portal Solutions 9.1 PeopleBook: Active Analytics Framework

September 2009

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Contents

Preface

Active Analytics Framework Preface	vii
Overview of Active Analytics Framework	vii
PeopleBooks and the Online PeopleSoft Library	vii

Chapter 1

Understanding PeopleSoft Active Analytics Framework	1
Understanding PeopleSoft Active Analytics Framework	1
Understanding Policies and Trigger Points	1
Understanding the Data Library	2
Understanding the Action Framework	3

Chapter 2

Building and Managing Policies	5
Building Policies	5
Prerequisites to Building Policies	5
Pages Used to Build, Edit, and Activate Policies	6
Building, Editing, and Activating Policies	6
Managing Trigger Points	17
Removing a Policy or Policy Groups	18
Reordering Policy or Policy Groups	19
Adding a Policy or Policy Group	19
Reusing Policies	19
Adding a Precondition	20
Setting Execution Options	21
Understanding Execution Options	21

Chapter 3

Setting Up the Data Library	27
Understanding the Data Library	27

Using Data Library Components	27
Pages Used to Set Up the Data Library	27
Creating Implementations	28
Registering an Implementation	29
Creating Terms	30
Defining Term Properties	30
Using Generic Implementations	32
Using Contextual Implementations	32
Managing Terms	33
Testing Term Implementations	35

Chapter 4

Managing Contexts	37
Understanding Contexts	37
Configuring Contexts	38
Pages Used to Configure Contexts	38
Generating Context Objects	38
Managing Context Objects	41

Chapter 5

Setting Up the Action Framework	45
Understanding the Action Framework	45
Architecture of the Action Framework	45
Understanding Action Types	45
Understanding How Actions Execute	46
Registering Action Types and Action Type Bundles	47
Pages Used to Register Action Types and Action Type Bundles	47
Registering Action Types	47
Registering Action Type Bundles	49

Chapter 6

Administering the PeopleSoft Active Analytics Framework	51
Pages Used to Administer the PeopleSoft Active Analytics Framework	51
Pages Used to Administer the PeopleSoft Active Analytics Framework	51
Setting Logging and Installation Options	52
Setting the Data Library Logging Options	53
Setting the Installation Options	54
Registering Action Objectives	56

Registering Trigger Types and Trigger Points	56
Registering Trigger Types	56
Registering Trigger Points	57
Defining Subject Areas	58
Registering Operators and Operator Sets	60
Registering Operators	60
Registering Operator Sets	62
Registering Resolution Methods	62
Registering Business Domains and Categories	63
Registering a Business Domain	64
Registering a Category	64

Chapter 7

Considerations for Enabling the Framework	67
Considerations for Creating Contexts	67
Considerations for Creating Custom Operator Expressions	68
Considerations for Creating a Trigger Point	70
Considerations for Enabling a Trigger Point in a PeopleCode Event	70
Considerations for Enabling the Display Action in a PeopleSoft Application Page	70
Considerations for Creating a New Action Type	71
Configuring the Action Type	71
Creating Design and Runtime Application Class Code	75
Considerations for Creating an Application Class Implementation	76
Technical Details of Application Class Implementations	76
Example of an Application Class Accessing Implementation Binds	77
Sample Methods of an Application Class Resolving Terms	77
Example of How a Value Can Be Passed to the Data Library	78
Sample Code of an Application Class Implementation	78
Considerations for Creating a PS Query Implementation	79
Considerations for Creating a Policy	80

Index	81
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Active Analytics Framework Preface

This preface provides an overview of Oracle's PeopleSoft Enterprise Components Active Analytics Framework documentation included in this PeopleBook.

Overview of Active Analytics Framework

PeopleSoft Active Analytics Framework provides a closed-loop decision-making system in which business-intelligent applications or transactions can respond when specific conditions are met. This PeopleBook describes how to build, manage, and administer the framework.

Note. Some of the page elements and colors that your product uses may differ from the sample pages presented in this PeopleBook. This book uses a generic style sheet for the purposes of illustration only.

PeopleBooks and the Online PeopleSoft Library

A companion PeopleBook called PeopleBooks and the Online PeopleSoft Library contains general information, including:

- Understanding the PeopleSoft online library and related documentation.
- How to send PeopleSoft documentation comments and suggestions to Oracle.
- How to access hosted PeopleBooks, downloadable HTML PeopleBooks, and downloadable PDF PeopleBooks as well as documentation updates.
- Understanding PeopleBook structure.
- Typographical conventions and visual cues used in PeopleBooks.
- ISO country codes and currency codes.
- PeopleBooks that are common across multiple applications.
- Common elements used in PeopleBooks.
- Navigating the PeopleBooks interface and searching the PeopleSoft online library.
- Displaying and printing screen shots and graphics in PeopleBooks.
- How to manage the PeopleSoft online library including full-text searching and configuring a reverse proxy server.
- Understanding documentation integration and how to integrate customized documentation into the library.
- Glossary of useful PeopleSoft terms that are used in PeopleBooks.

You can find this companion PeopleBook in your PeopleSoft online library.

Chapter 1

Understanding PeopleSoft Active Analytics Framework

This chapter provides an overview of PeopleSoft Active Analytics Framework and discusses:

- Policies and trigger points.
- The data library.
- The action framework.

Understanding PeopleSoft Active Analytics Framework

PeopleSoft Active Analytics Framework is a suite of tools that make up a closed-loop decision-making system in which business-intelligent applications or transactions can respond when conditions are met and specific actions are recommended, for example:

- Giving a priority service or a better discount for high-value customers.
- Sending pertinent email messages or notifications.
- Displaying alerts and warning messages.

PeopleSoft Active Analytics Framework provides components for setting up the analytic framework that enable you to manage the data library, build policies, and manage trigger points and actions. These components provide a way to define flexible business rules, called policies, that can be altered without modifying application code. Business analysts and other functional users define policies with an intuitive user interface.

Functional users can create policies that use data elements of various forms and shapes residing in different sources such as the transactional environment, data warehouses, legacy systems, and so on. The data elements are exposed to the business user as terms defined in the PeopleSoft Active Analytics Framework data library.

The extensible action framework supports the definition and execution of consequential actions. Application developers can create customized action types within product lines to accommodate their functional needs. PeopleSoft Active Analytics Framework also delivers a built-in action type for displaying alerts to the user.

Understanding Policies and Trigger Points

Policies are the result of combining trigger points, conditions, and defined actions to complete a desired business request. The framework includes components for building policies.

Application developers and functional business analysts use a wizard-like interface to build, manage, and associate trigger points with policies. Business analysts can create interactive policies that react to customer behavior of particular interest to them. For example:

- If a banking customer deposits more than ten thousand dollars, a banking analyst can create a regulatory IRS notification.
- If a high-value customer has logged three or more critical support issues with a call center within a week, a business executive could send a letter of apology.

Policies supplement, but do not alter, normal transactional processing. Therefore, a policy cannot be used to stop a particular behavior due to some specified restriction. If the condition portion of a policy evaluates to true, the policy causes an action to be performed. If the specified condition evaluates to false, then no consequential actions occur. Policies are evaluated independently from each other. Therefore, if more than one policy is to be evaluated at the same time, the consequential actions of one policy cannot alter or influence the actions of another. Likewise, the sequence of policy execution cannot affect the results of another policy.

You construct a policy by defining one or more conditions, specifying one or more actions, and associating them with a trigger point. A policy cannot be activated without defining at least one condition and action. You can reuse defined policies with multiple trigger points if the elements of the policy agree with the contexts of the trigger points.

Trigger points are events from which the analytic decision engine is invoked by the application. The framework supports the registration of new trigger points, when needed. Examples of trigger points are:

- When a customer is identified.
- When a product is selected.
- After you sign in to a self-service application.

Registration of a trigger point involves specifying:

- The type of actions to be invoked.
- The *context* in which the associated policies are to be carried out.

During runtime, policies are triggered by specific trigger points within application components, resulting in defined actions being taken.

Note. Registration of a trigger point also involves introducing necessary code in the application to request the decision engine to evaluate the policies pertaining to a trigger point.

Understanding the Data Library

The data library is a repository for information within the PeopleSoft Active Analytics Framework. Each element in the data library is exposed by way of a *term*, which is a pointer to a unit of data within the PeopleSoft system. This data may reside in a relational database, or it may be derived at runtime.

Terms in the data library are organized hierarchically into functional categories called *subject areas*. Terms can be assigned to more than one subject area at a time; for example, if a term represents a customer it could be located both in a marketing subject area and in a financial subject area.

The data library enables functional users to:

- Access data (terms) residing in different sources such as an operational CRM environment, data warehouses, legacy systems, and so on.
- Use the data in variety of contexts, such as input in rule applications, tokens in correspondence templates, or placeholders for customized text in questions or for presenting disparate pieces of information in different screen applications.

PeopleSoft Active Analytics Framework includes components to define new terms in the data library and can automatically create terms for data elements in a component.

Understanding the Action Framework

The action framework is a suite of components that are designed to manage actions and to invoke actions at runtime. The primary purpose of the action framework is to enable functional users to specify and configure the actions to be performed when policy conditions evaluate to true.

Also, Oracle designed the action framework to enable application developers and IT personnel to introduce new action types for use in policies and to invoke them at runtime.

The action framework components:

- Register and maintain *action types*. An action type is metadata pertaining to a class of actions that can be performed at runtime.
- Register and maintain *action bundles*. Action bundles are groups of combinable action types.
- Embed and configure consequential actions within policies.
- Provide a display alert action type for use with all product lines.

Chapter 2

Building and Managing Policies

This chapter discusses how to:

- Build policies.
- Manage trigger points.

Building Policies

You build and manage policies with a wizard-like interface called a policy builder. During the creation of policies, you associate them with trigger points. At runtime, policies are evaluated by specific trigger points in application components, resulting in defined actions being taken.

The policy builder enables business analysts to change conditions, actions, or both in policies to enable a business process change in an application component without having to modify application code or needing the help of IT personnel.

Note. Policies cannot be shared among different setIDs.

Prerequisites to Building Policies

Before you build a policy:

- Define trigger points.
- Define data library terms.
- Define action types, categories, and action objectives.

See [Chapter 6, "Administering the PeopleSoft Active Analytics Framework," Registering Trigger Types and Trigger Points, page 56](#); [Chapter 3, "Setting Up the Data Library," page 27](#) and [Chapter 5, "Setting Up the Action Framework," page 45](#).

Pages Used to Build, Edit, and Activate Policies

<i>Page Name</i>	<i>Definition Name</i>	<i>Navigation</i>	<i>Usage</i>
Manage Policies	EOCF_RULE_CFGSRCH	Enterprise Components, Active Analytics Framework, Policies, Manage Policies	Build and manage policies.
Manage Trigger Point	EOCF_MANAGE_TP	Enterprise Components, Active Analytics Framework, Policies, Manage Trigger Point	Manage trigger points.

Building, Editing, and Activating Policies

Access the Manage Policy page (Enterprise Components, Active Analytics Framework, Policies, Manage Policies).

Use the Manage Policy (EOCF_RULE_CFGSRCH) page to build a new policy or edit an existing policy.

Manage Policies

▼ Search

Policy Name	begins with	<input type="text"/>				
Status	=	<input type="text"/>	<input type="text"/>			
Category	=	<input type="text"/>	<input type="text"/>			
Start Date	=	<input type="text" value="07/13/2009"/>	<input type="text"/>			
End Date	=	<input type="text"/>	<input type="text"/>			
Trigger Point	=	<input type="text"/>	<input type="text"/>			
Context	=	<input type="text"/>	<input type="text"/>			
Term	=	<input type="text"/>	<input type="text"/>			
Action Type	=	<input type="text"/>	<input type="text"/>			
Action Objective	=	<input type="text"/>	<input type="text"/>			
SetID	=	<input type="text"/>	<input type="text"/>			

Case Sensitive

Policy Name	SetID	Trigger Point Name	Status	Category Name	Start Date	End Date
Display alert when case presented	SHARE	When a Support Case is Presented	In Design		07/13/2009	12/31/2099
I need worklist entry	SHARE	After a HelpDesk Case is Saved	Active		07/13/2009	12/31/2099
BS_Test1	SHARE	When Order Capture is Presented	Active		07/13/2009	12/31/2099

Manage Policies page - Search page

If you want to edit an existing policy, use the search criteria to find the desired policy, then click the policy name on the results grid to open the policy definition.

Note. If you select a trigger point name as a search criterion, only policies directly associated with the trigger point are retrieved. To retrieve policies associated with *policy groups* of a trigger point, specify search criteria other than the trigger point name.

To create a new policy, click the Build a Policy button to access the Build a Policy (EOCF_RULE_DEFN) page.

Build a Policy

Policy

*Policy Name Status In Design

*Trigger Point Name *SetID

Category Name

Description

▼ Conditions

IF
No condition specified.

▼ Actions

THEN
No action specified.

▼ Activate

Start Date End Date

This object was added and is maintained by the customer.

Date Created
Last Modified

Build a Policy page

- Policy Name** Enter a unique and descriptive name for the policy.
- Trigger Point Name** Select a trigger point from the drop-down list box.
A policy is always associated with at least one trigger point.
- Category Name** Select a policy category name from the drop-down list box.
This name is used to functionally classify policies and aid in searching for policies.
- SetID** Select from a list of set IDs that are defined within the PeopleSoft system.
Specify a setID and a trigger point for every policy. This value is used to select the valid set of policies associated with a trigger point at runtime. This value also constrains the prompt list for the right-hand side values entered in conditions by performing a setID to setID indirection.

- Status** The default value for a new policy is *In Design*.
When you click the Activate button and activate the policy, the status changes to *Active*.
- Start Date and End Date** Enter the start and end dates. These dates define the validity of a policy at runtime.

Complete the appropriate fields and click Add Conditions.

Adding and Editing Conditions

Click the Add Condition button on the Build a Policy page to access the Add Condition page.

Build a Policy

Add Condition

Policy

Name NS_TEST	Status In Design
Description New Self-Service HD Presents, Customer Service, CRM02	

[Switch to Advanced Mode](#)

Conditions First 1 of 1 Last

Term	Operator	Value
Select Term		

+ -

Add Condition page

Two modes are available for specifying conditions:

- Basic.
This is the default mode; the default logical operator is AND.
- Advanced.
You can group condition rows using parentheses, specify logical operators (AND, OR), and specify terms as values in the right-hand side.

To add a condition row:

1. Select a term. Configure the term if it is linked.
2. Select an operator.
3. Enter or select one or more values on the right-hand side.

Selecting Available Terms

Click Select Term on the Add Condition page to access the Term Selection page.

The screenshot displays the 'Policy' configuration page for a policy named 'NS_TEST' with a status of 'In Design'. The 'Conditions' section is active, and the user has switched to 'Search Mode'. On the left, a tree view under 'Select Subject Area' lists numerous categories such as '360 Degree View', 'Accounts', 'Agreement', 'Call Center', 'Case History', 'Change Management', 'Client Manager', 'Correspondence Template Terms', 'Customer History', 'Customer Scorecard KPIs', 'Eligibility Criteria', 'FieldService', 'Financial Accounts', 'Group Offers', 'Individuals', 'Installed Product', 'Leads', 'Marketing', 'Order Capture', 'Order History', 'Organizations', 'Policy and Claim Presentment', 'Product Registration', 'Quality', 'Sales', 'Service', 'Services Plus', 'SmartViews', 'Solutions', 'Strategic Account Planning', 'System Terms', 'Task Management', 'TeleSales', and 'Workers'. On the right, the 'Select Term' pane shows two search criteria: 'Count of times <Product> installed at customer' and 'Count of times <product group> of <group type> installed at customer'. The interface includes navigation controls like 'Find | View All | First | 1-2 of 2 | Last'.

Term Selection page

The Term Selection page has two modes by which to search for and select terms for a condition: browsing by subject area and searching by entering search criteria. Terms that appear are limited to those that can be resolved by the trigger point. Therefore, all terms having contextual implementations for the context pertaining to this trigger point and all terms having generic implementations in which binds can be supplied by the context are available.

Terms returning multiple rows are not available for use in conditions. Terms that retrieve data from detail rows in the component buffer cause the decision engine to evaluate the condition once for each row. The decision engine generates actions for every row for which the condition is true.

Configuring a Term

If you select a term that is configurable—it has design time binds—it must be configured when you build the condition. Configurable terms are displayed as links. Subsequently, while building the condition, click the link of the term to access the Configure Term page and configure the term.

Configure Term section

The prompt of valid values displayed for configurable terms relies on the prompt configuration specified in the Manage Terms component.

See [Chapter 3, "Setting Up the Data Library," Creating Terms, page 30.](#)

Selecting an Operator

The list of operators available when you select a term depends on the return data type defined for that term and the context of the selected trigger point.

Each operator defined in the Register Operators page supports certain data types; this determines which operators are available when you select a term in the condition builder. Furthermore, the selection of an operator determines how many fields are required on the right-hand side for entering values.

For example, if you select the is between operator, two right-hand side fields appear to enter values.

See [Chapter 6, "Administering the PeopleSoft Active Analytics Framework," Registering Operators and Operator Sets, page 60.](#)

Entering Right-Hand Side Values of a Condition

Prompt options that you specify when defining a term determine the right-hand side field type. The field may be a prompt, drop-down list box, or multiselect prompt. SetID-based prompt tables specified in the term definition use the setID value specified on the policy definition page to perform a setID to setID indirection, thus constraining the prompt list.

Note. Use a semicolon as a separator in multiselect prompts.

In advanced mode, you can specify a term on the right-hand side of a condition—this term is resolved at runtime and the resolved value used as the right-hand side value.

After you enter the condition, click Done to save the condition. Before a successful save, the system validates that right-hand side values are present and are of the appropriate data types; that parentheses match; and that configurable terms have been configured.

Adding, Editing, and Configuring Actions

Click Add Actions or Edit Actions on the Build a Policy page to access the Add or Edit Actions page.

Build a Policy

Add Actions

Policy

Name NS_TEST Status In Design

Description

Conditions

MyTerm is unknown

Actions

	Action Type	Action Name	Status	Action Objective		
1	Display Alert	Testing Install	Active	Case Update	Configure	+ -

First 1 of 1 Last

Add Actions page

If the action type is configurable, the Configure button is enabled on the page. Individual action types have specific configuration pages.

Display Alert Configuration

Action Name	
Action Type	Display Alert
Action Name	Testing Install

Policy	
Name	NS_TEST
Status	In Design
Description	

▼ Conditions

MyTerm is unknown

Display Alert Text
Enter Alert text below, with each term alias in braces: example, {Name} and {Age}
Count of times <> installed at customer is between 1 and 5
<input type="button" value="Extract Aliases"/>

Term Alias		Get Term
		

Display Alert Configuration page

Note. PeopleSoft Active Analytics Framework delivers a display alert action type. Other action types may be delivered by individual product lines. Please refer to the appropriate product line PeopleBooks to get more information about delivered action types.

See [Chapter 5, "Setting Up the Action Framework," Registering Action Types and Action Type Bundles, page 47.](#)

Configuring the Display Alert Action

Access the Display Alert page by selecting *Display Alert* action type.

Display Alert Configuration

Action Name	
Action Type	Display Alert
Action Name	Testing Install
Policy	
Name	NS_TEST
Status	In Design
Description	
▼ Conditions	
MyTerm is unknown	
Display Alert Text	
Enter Alert text below, with each term alias in braces: example, {Name} and {Age}	
<input type="text" value="Count of times <=> installed at customer is between 1 and 5"/>	
<input type="button" value="Extract Aliases"/>	
<div style="text-align: right;"> Customize Find First Last </div>	
Term Alias	Get Term

Display Alert Configuration page

1. Click Configure.

The Display Alert Configuration page appears.

2. Enter text in the Display Alert Text field and include any term aliases in braces.

Term aliases are placeholders for dynamic content to be merged in the alert text at runtime.

3. Click Extract Aliases to extract term aliases to populate the grid, thus enabling you to map each alias to a term.

4. Click Get Term to map a term for each term alias in the grid.

Only terms that return a single value can be used within the display text. Return data types of record or rowset, or terms with *Many* rows specified are not allowed.

5. Click OK or Apply to save the display alert configuration.

This configuration is retrieved at runtime to generate the alert text and display it in a popup box.

Activating a Policy

Access the Build a Policy page (Enterprise Components, Active Analytics Framework, Policies, Manage Policies).

Build a Policy

Policy

*Policy Name Status **In Design**

*Trigger Point Name *SetID

Category Name

Description

▼ **Conditions**

IF

MyTerm is unknown

▼ **Actions**

THEN

Display Alert - Count of times <=> installed at customer is between 1 and 5

▼ **Activate**

Start Date End Date

This object was added and is maintained by the customer.

	Date Created
	Last Modified

Build a Policy page

On the Build a Policy page, click the Activate button.

The system sets the status to active after executing validations. Activating a policy disables field editing; however, the policy can still be copied and associated with another trigger point.

Note. upon activation of the policy, any modifications made are in effect only in new user sessions. Therefore, you must sign out and sign in again to see any changes made to the policy.

Associating a Policy to Another Trigger Point

A policy can be associated with more than one trigger point within the same setID. Do this by:

1. Adding a new row to the Associated Trigger Points grid.
2. Selecting a valid trigger point from the drop-down list box

Select Trigger Point

	<u>Trigger Point Name</u>	<u>*SetID</u>
<input type="radio"/>	When a HelpDesk Case Adhoc Notification is Sent	SHARE <input type="text"/> 
<input type="radio"/>	When a Support Case Adhoc Notification is Sent	SHARE <input type="text"/> 
<input type="radio"/>	Before a HelpDesk Case is Saved	SHARE <input type="text"/> 
<input type="radio"/>	After a Support Case is Saved	SHARE <input type="text"/> 
<input type="radio"/>	Before a Support Case is Saved	SHARE <input type="text"/> 
<input type="radio"/>	When a HelpDesk Case is Escalated	SHARE <input type="text"/> 
<input type="radio"/>	After a HelpDesk Case is Saved	SHARE <input type="text"/> 
<input type="radio"/>	When a Support Case is Escalated	SHARE <input type="text"/> 

Select Trigger Point page

Note. The trigger points available for selection in the drop-down list box are constrained by the terms used in the policy condition and the actions configured in the policy. Also, a policy cannot be associated with multiple trigger points spanning multiple setIDs.

3. Saving the policy to associate the policy with the new trigger point.

Copying a Policy

Create a new policy by copying an existing one, provided that you can use the same condition and actions. While copying a policy, you'll be prompted for a trigger point and setID. Selecting from the list of valid trigger points results in creating a new policy, which appears on the screen.

Build a Policy

Policy

*Policy Name Status Active

*Trigger Point Name *SetID

Category Name

Description

Conditions

IF

Case Note Type equals COMNT
Or Case Note Type equals RSRCH

Actions

THEN

Log case History
Notifications & Workflow - Notify Call Center Agent via EMAIL Process the Application Engine Program:

Activate

Start Date **End Date**

Associated Trigger Points

This object was added and is maintained by the customer.

Date Created	07/29/09 9:35:50.000000PM	HELPA
Last Modified	07/30/09 3:52:29.000000AM	VP1

[Return to Search](#)

Build a Policy page showing Copy button clicked to copy that policy

Note. When you copy a policy, the condition and actions, but not the action configurations, are copied to the new policy. Therefore, you need to reconfigure the actions by clicking Edit Actions. A reminder message appears when you're transferred to the new policy.

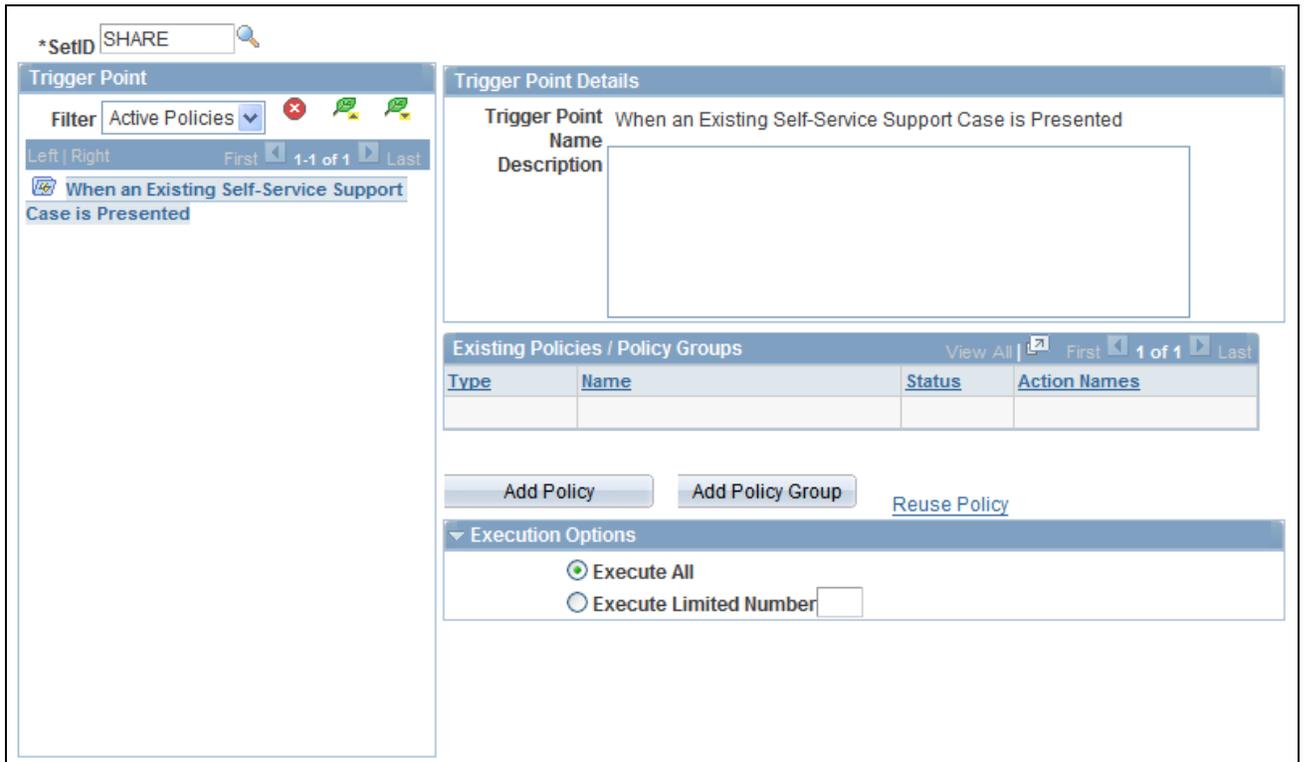
Managing Trigger Points

The Manage Trigger Point page provides a comprehensive view of policies that are associated with a specific trigger point. This page displays policies and policy groups in a hierarchy, with the trigger point as the root and policy groups (if any) as parents of policies.

In addition, this page enables you to assign execution options at the trigger point level and at the policy group level, facilitating policy arbitration and better policy management.

Access the Manage Trigger Point page (Enterprise Components, Active Analytics Framework, Policies, Manage Trigger Point).

Use the Manage Trigger Point (EOCF_MANAGE_TP) page to manage and update trigger points.



Manage Trigger Point page

The trigger point hierarchy on the left-hand side of the page displays all the policies and policy groups associated with the selected trigger point. The trigger point appears as the highest-level item in the hierarchy while policy actions appear as the lowest level items.

Filter This field applies only to policies displayed in the hierarchy and the Existing Policies/ Policy Groups grid. It displays active policies, in-design policies, or all policies depending on the selection.

SetID Toggle the value in this field to view policies for this setID.

Removing a Policy or Policy Groups

You can remove a policy or policy group from a trigger point by selecting the policy or policy group to be deleted, and then clicking the Delete icon. Removing a policy or policy group from the trigger point disassociates it from the trigger point, but does not delete it from the database.

A policy group is not reusable—once the policy group is disassociated from a trigger point, it can not be referenced.

Any changes made to a trigger point by adding or removing policies or policy groups or by modifying execution options take effect at runtime and only for new user sessions. Therefore, you must sign-out and sign-in again to see any changes made.

Note. A policy that is associated with a single trigger point (either directly or within policy groups) cannot be removed from the trigger point. To disable such a policy, you must edit it and set the status to *In Design*.

Reordering Policy or Policy Groups

To set priorities to policies, you may need to reorder policies or policy groups within a trigger point or a parent policy group. Reorder policies and policy groups by using the Reorder icon.

Adding a Policy or Policy Group

Click Add Policy to create a new policy and associate it with the trigger point. The Build a Policy page appears.

Click Add Policy Group to create a new policy group and to associate it with this trigger point.

A policy group may be used to set policy priority within a group, to deactivate policies, to nest child policy groups, and to assign preconditions.

Reusing Policies

Reuse a policy in multiple trigger points and policy groups if the contexts are compatible.

Click the Reuse Policy link in the Existing Policies/Policy Groups section of the Manage Trigger Points page to reuse an existing policy.

Select one of the policies listed in the grid by selecting the appropriate option. Click OK. The selected policy is associated with the trigger point or policy group.

Reuse Policies								
Policy Group Details								
Policy Group New Policy Group								
Existing Policies / Policy Groups					View All	First	1 of 1	Last
Type	Name	Action Names						
Policy Name	Status	Category Name	End Date	Start Date				
<input checked="" type="radio"/> CSS:3 Minute Response SLA Warning-Agent Assigned	Active	Call Center Agreement/Warranty Policies	12/31/2099	04/05/2004				
<input type="radio"/> CSS:Self Service Case Created - Assigned To Provider Group	Active	Call Center Operational Policies	12/31/2099	01/01/1900				
<input type="radio"/> Case Updated by Employee - Provider Group Assigned	Active	Call Center Operational Policies	11/20/2020	01/01/1900				
<input type="radio"/> CSS:Customer Has Requested Contact - No Provider Group or Agent Assigned	Active	Call Center Operational Policies	12/31/2099	01/01/1900				

Reuse Policies page

Note. If a policy is reused within a single trigger point through direct association with the trigger point, or by association with a policy group within the trigger point, you cannot remove this policy from either the trigger point or the policy group within the trigger point. If you want to remove such a policy, you must deactivate the policy by setting its status to In Design.

Adding a Precondition

Preconditions are combinations of one or more conditions. They are optional and only policy groups can have preconditions.

At runtime, the policies within a policy group are not evaluated unless the precondition evaluates to true.

For example, you could have a precondition defined for a self-service policy group, such as "Is this user on the internet?" Consequently, all policies within that policy group would not be executed unless the precondition of being on the internet evaluates to true.

Click Add Precondition to access the Add Precondition page.

Add Precondition

Policy Group Details

Policy Group New Policy Group
Description NS Test Policies

[Switch to Advanced Mode](#)

Conditions First ◀ 1 of 1 ▶ Last

Term	Operator	Value
Select Term		

Add Precondition page

Select terms and operators; specify values on the right-hand side.

Setting Execution Options

The following execution options can be specified for a trigger point or a policy group:

Execute All	This is the default, if specified for a trigger point. This option enables execution of all policies within a trigger point or policy group. During runtime, when executing policies within a policy group, the system adheres to the execution option specified for the policy group.
Execute Limited Number	Enables execution of a maximum (of the number specified) policies that evaluate to true.
Use Parent Execution Options	(Policy groups only). This is the default for policy groups. At runtime, this uses the execution options of either the trigger point or the parent policy group.

Understanding Execution Options

This section describes the execution options and various scenarios of how they can be used.

Execute All

The *Execute All* option tests all policies in a trigger point; that is, all policies in the trigger point can cause actions to occur if their conditions prove true.

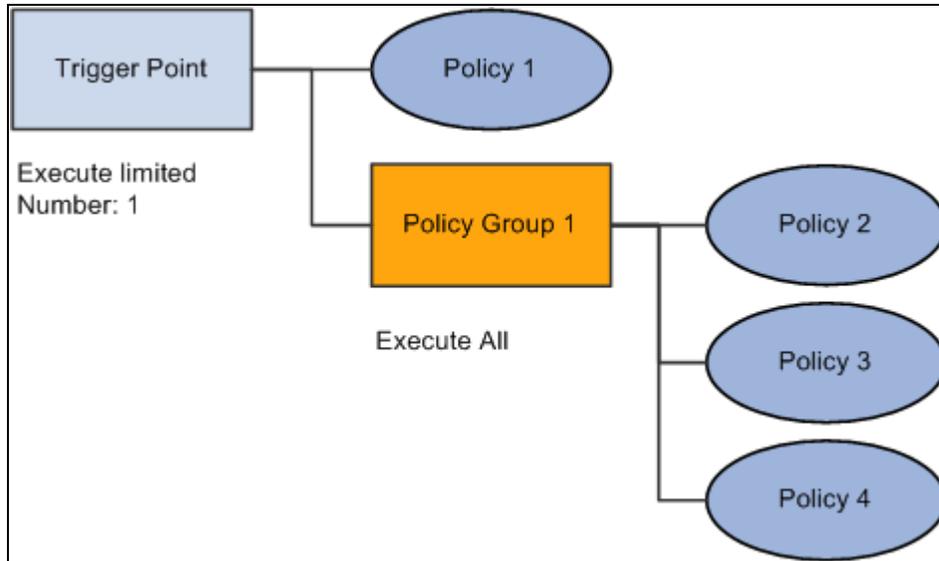
For example, if a trigger point has three policies and the execution option is set to *Execute All*, all three policies are evaluated.

Execute Limited Number

The *Execute Limited Number* option evaluates all policies in the trigger point until one of the policies' conditions evaluates to true. Therefore, suppose that you set Execute Limited Number to 1 for a trigger point that has three policies, where Policy 1 evaluates to false and Policy 2 evaluates to true; Policy 3 will not be considered and Policy 2 is executed.

Various Scenarios of Execution Options

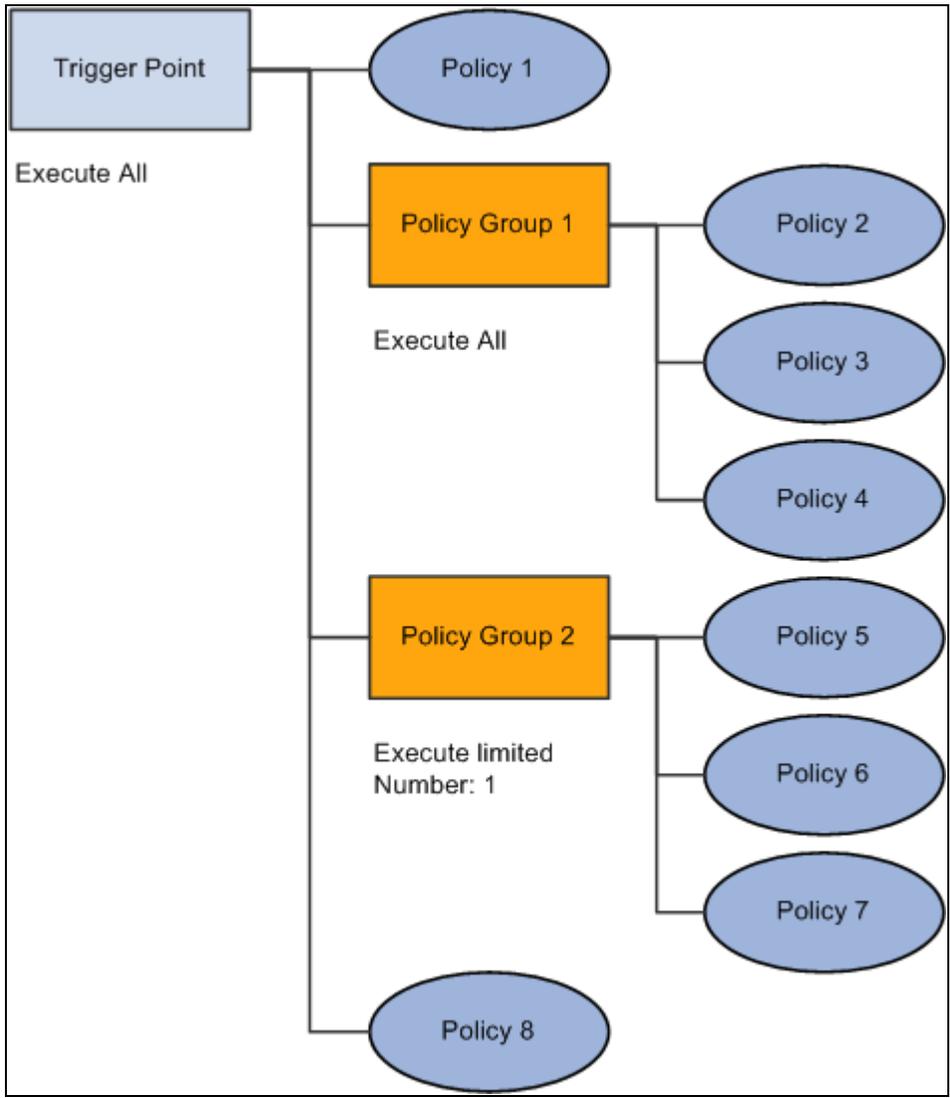
Policy groups may have their own execution options that could affect the option setting. For example, consider the following diagram:



Execution Options: Scenario 1

In Scenario 1, if Policy 1 proves false, then all policies in Policy Group 1 are evaluated because its execution option overrides the trigger point's execution option. Therefore, even though the trigger point is set to execute one policy, if Policy 2, 3, and 4 evaluate to true, those three policies' actions will execute.

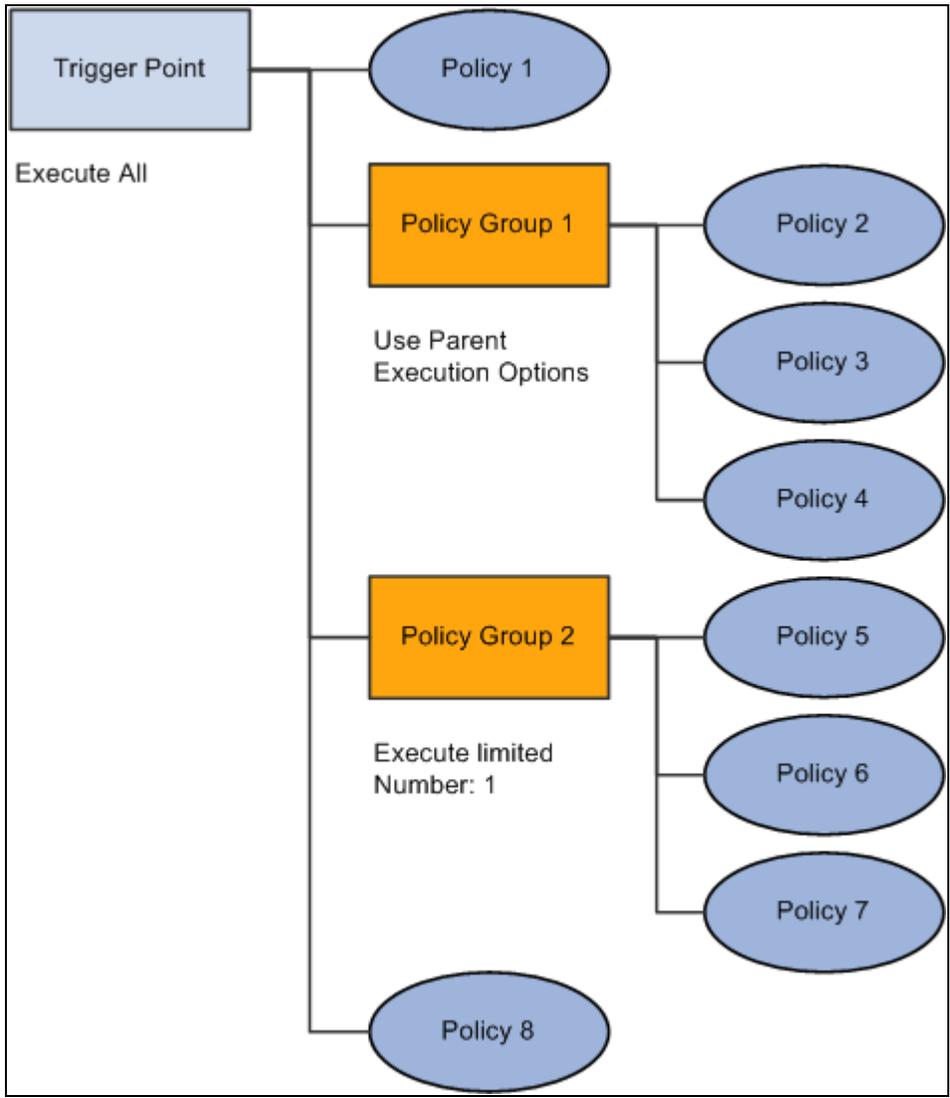
Consider Scenario 2:



Execution Options: Scenario 2

In this scenario, assume that all policy conditions are true; actions from Policy 1, 2, 3, 4, 5, and 8 will execute.

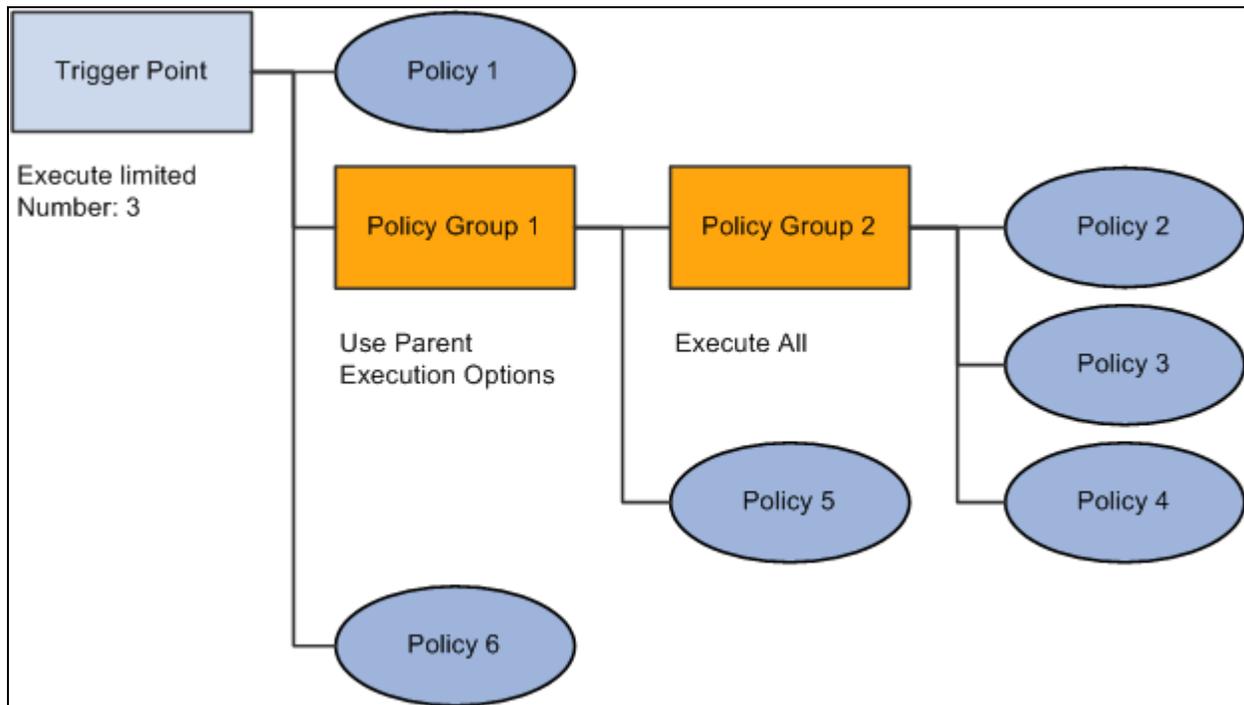
Consider Scenario 3:



Execution Options: Scenario 3

In this scenario, the trigger point's execution option is the default (as is Policy Group 1). Assuming that all policy conditions are true, this trigger point executes exactly as in Scenario 2; that is, actions from Policy 1, 2, 3, 4, 5, and 8 will execute.

Consider Scenario 4:



Execution Options: Scenario 4

In this scenario, assume that all policy conditions are true. The execution option for Policy Group 2 overrides that for Policy Group 1; therefore, all of the policy actions for Policy Group 2 execute. However, Policy 5 is not considered, nor is Policy 6 because three policy actions have already executed (Policy 2, 3, and 4).

Guidelines for Setting Execution Options

Unless you have a specific reason to set options, Oracle recommends using the default execution options. If only a few conditions could be true for a trigger point, and these conditions are logically exclusive (only one could be true at a time), set the number of policies considered to one (Execute Limited Number = 1) to improve performance.

If, for whatever reason, only a few policy options should be considered, and no policy groups exist, setting a limitation for the trigger point is a good practice.

If you have a trigger point containing unrelated policies and a category of possible conditions that may be true, for which only one set of consequent actions should be taken, the best practice is to separate the unrelated policies into a separate policy group with a limitation on the number of policies allowed to fire.

Chapter 3

Setting Up the Data Library

This chapter gives an overview of the data library and discusses how to:

- Use the data library components.
- Create implementations.
- Create terms.
- Manage terms.
- Test term implementations.

Understanding the Data Library

The data library is a repository for information within the PeopleSoft Active Analytics Framework. Each element in the data library is exposed by way of a *term*, which is a pointer to a unit of data within the PeopleSoft system. This data may reside in a relational database, or it may be derived at runtime.

Using Data Library Components

This section lists the components used to set up the data library.

Pages Used to Set Up the Data Library

<i>Page Name</i>	<i>Definition Name</i>	<i>Navigation</i>	<i>Usage</i>
Manage Terms	EOCF_TERM_CFGSRCH	Enterprise Components, Active Analytics Framework, Data Library, Manage Terms, Term Definition	Define and manage terms.
Subject Areas	EOCF_TERM_SUBAREA	Enterprise Components, Active Analytics Framework, Data Library, Manage Terms, Subject Area	Define the subject area details.

<i>Page Name</i>	<i>Definition Name</i>	<i>Navigation</i>	<i>Usage</i>
Policy Options	EOCF_TERM_INACTION	Enterprise Components, Active Analytics Framework, Data Library, Manage Terms, Policy Options	Define policy options.
Extended Attributes	EOCF_TERM_ATTR	Enterprise Components, Active Analytics Framework, Data Library, Manage Terms, Extended Attributes	Add additional attributes to terms.
Define Implementation	EOCF_IMPL_DEFN	Enterprise Components, Active Analytics Framework, Data Library, Define Implementation	Define an implementation.
Test Term Implementation	EOCF_TEST_TERM	Enterprise Components, Active Analytics Framework, Data Library, Manage Terms, Test Term Implementation	Test a term's implementations.

Creating Implementations

Use the Define Implementations component (EOCF_IMPL_DEFN) to create and define implementations.

An *implementation* refers to the mechanism through which the data is retrieved, derived, or computed. The implementation knows either where the data physically resides or it knows the algorithm for deriving the value. All terms must be associated with an implementation unless the data to which the term refers is present in the component buffer.

An implementation can be associated with more than one term. Conversely, a term may require multiple implementations if it needs to be resolved from multiple contexts. Typically, application developers or IT personnel develop implementations.

Note. Terms that are resolved by accessing data available in the current operating component's buffer do not need implementations to be developed. PeopleSoft Active Analytics Framework provides mechanisms to access data that is available in the component buffer.

Oracle recommends that when multiple related terms will be accessed during a single business event, you create a single implementation to return a rowset containing the data for several terms; then, specify which data element or field position in the rowset or record is to be used for the term.

You develop Implementations using:

- Application class.

Use application class implementations when retrieval or derivation of data involves writing procedural code, or as a resolution method when data must be retrieved from an external source such as another PeopleSoft database or legacy systems. The application class can return data to the data library in a variety of forms: rowset, record, date, datetime, string, number, date array, datetime array, string array, number array, and array of any. Use PeopleSoft Application Designer to develop the application classes.

Note. Oracle does not recommend: 1) Using an application class to retrieve data from a component buffer; 2) Using an application class to retrieve the values for the binds directly by accessing the component buffer without registering them as implementation binds. Application classes must use Application Programming Interfaces (APIs) to retrieve the values for the implementation binds (input parameters).

- PS Query.

Use Query Manager in PeopleSoft Application Designer to develop PS Query-based implementations. PS Query implementations are not appropriate for applications that get data from external databases or systems. The data library invokes the appropriate queries based on the information provided when you register the implementation. The data returned is available to the data library in the form of a rowset.

- SQL object.

Use this implementation when the SQL used needs to be platform-independent and the data need not undergo complex transformations. SQL object implementations are not appropriate for applications that get data from external databases or systems. The data library invokes the appropriate SQL object based on the information provided when you register the implementation. The data returned is available to the data library in the form of a record or an array of any objects. Use PeopleSoft Application Designer to create a SQL object.

- Record.Field.

Create a Record.Field-based implementation when the data can be retrieved directly from a table without going through complex transformations. The data returned is available to the data library in the form of string, date, datetime, number, string array, date array, datetime array, and number arrays.

Registering an Implementation

With the exception of component buffer implementations, all implementations must be registered in the PeopleSoft Active Analytics Framework. Before you register an implementation, you must define the PeopleSoft Application Designer objects if using application class, PS Query, or SQL Object implementation methods.

Specify the following items in the registration component:

- Functional name.
- Resolution method used for that implementation.
- Values for the parameters needed for invoking the implementation. The list of parameters varies depending upon the resolution method.
- List of binds that are expected by this implementation.

Note. The binds specified for an application class implementation are referenced in the application class object for retrieving the values. Therefore, changing these implementation bind names can have an adverse effect on the term resolution.

For IT users, the list of implementation binds specified are used for two purposes:

- To allow implementations to access these bind values.

For any implementation, bind values are passed by position regardless of the resolution method used. Application class-based implementations alone have the additional capability to access the bind values by name.

- To allow the data library engine to use these binds to uniquely tag the data in application cache.

If IT users take a shortcut by retrieving the necessary data by directly accessing the context (by not registering the data as implementation binds), the data library engine may, as a result, tag the data with incomplete key information. This could cause the same cached data to be incorrectly reused for resolving terms for which it is not valid.

Creating Terms

A *term* is a user-friendly name that refers to the data library content. It's essentially a piece of information that could exist in the PeopleSoft system or an external system, or it could be derived. For example, the data could be available in the component buffer; retrieved using a PS Query or an SQL object; or computed using an application class.

Terms are the building blocks in policies. Functional users can build conditions for a policy using terms present in the data library. Terms must be registered in the PeopleSoft Active Analytics Framework before they can be used.

Registering a term is a multistep process that includes:

1. Developing an implementation.
2. Registering the implementation.
3. Defining the term.
4. Associating the term with one or more subject areas.
5. Testing and activating the term.

Defining Term Properties

Defining a term involves specifying:

- Term name, code, and type (constant or variable).
- Data type.

The data library supports primitive data types of string, number, datetime, date, time; and PeopleSoft-specific data types of record and rowset.

- Number of rows to be returned and whether they are scalar or vector (returning an array).

Terms that are record or rowset data types have number of rows set to *One*.

Note. Terms returning a vector (where value of number of rows is many) do not appear in the term list while you are building a condition for a policy.

- User binds.

These are values that would be supplied either during the construction of a condition or at the time of associating the term with the application. Not all terms will have the binds; however, user binds may make a term more reusable.

- Optionally, details about how the data needs to be captured for user binds: whether a prompt or drop-down list box needs to be shown and how to derive the values.
- Which implementation needs to be used for resolving the term.
- Whether the term can potentially be resolved from any context, or only from specific contexts
- How the data library needs to extract the data from the content returned by the implementation.
- Prompt details for the term.

Specifying prompt details for a term is needed only when the term will be used to build a condition. The prompt details convey how the data needs to be captured on the right-hand side for a term participating in a condition.

- Configuration details for prompts.

The details that you provide are used during the construction of a condition. When a term is selected as an element in a condition, the right-hand side widget will be constructed based on the configuration details specified for the prompts. You can configure the following prompt types :

- Translate

Specify a translate field name in which its values appear to the end user on the right-hand side of a condition.

- Dropdown

Specify a record name, data field name, and description field name. The record and data field names supply the valid data values to display in the drop-down list box; the description field provides a user-friendly description of the data value.

- Prompt

Specify a record name, data field name, and description field name. The record and data field names supply the valid data values to display in the prompt; the description field provide a user-friendly description of the data value.

- Custom

Specify a custom application class, a data field name, and a description field name. Valid values are retrieved by execution of the specified application class method and presented as a prompt.

- Scope of each term implementation.
 - When caching is activated for a term, data that is cached is uniquely identified by the implementation ID and all of the implementation bind values for that implementation.
 - When scope is specified as the trigger point, after the first invocation of a term, subsequent references to the same term in one or more policies associated with the same trigger point force the data library engine to retrieve the data from the cache, provided that all the values for the implementation binds match those of the ones belonging to the data present in the cache.
 - When scope is defined as a component, the longevity of the data is for a specific instance of the transaction.
 - When scope is defined as global, the cached data is available for the entire user session.
 - When scope is defined as *Do Not Cache*, data is retrieved by invocation of the implementation every time.
- Association of a term with subject areas.

Subject areas act as file cabinets. You must assign a term to at least one subject area, but you can associate it with more than one.

Note. PeopleSoft Active Analytics Framework does not format the data. The term user or term implementer is responsible for formatting it according to his or her needs. For example, the term Current Date is always resolved using the standard YYYYMMDD format.

Using Generic Implementations

A generic implementation can resolve terms within the requesting context. You define generic implementations for terms when they can be used in various contexts and when any new contexts may want to use that term.

Examples of generic implementations are:

- Customer-specific measures such as customer value, the number of cases reported in a period of time, or the number of telephone interactions with the customer.
- Customer profile information, such as first and last name, email address, and customers within a segment.

Using Contextual Implementations

If the input data needed for invoking an implementation is too specific and cannot be supplied outside of the component, then the implementation must be associated with the component's context. For example, terms such as case status, order creation date, and case description cannot be resolved from components other than those in which they are present.

Terms that have different implementations depending upon their contexts will have an implementation associated with a specific context. For example, the term *Revenue for a customer/ segment / segment group* is computed based on the context from which it originates. The implementation specific to the customer context calculates the revenue value from that customer. The implementation specific to a segment context calculates the revenue value generated from all the customers belonging to that segment, and so on for each segment group.

Managing Terms

Before defining a term:

- Create context definitions if you're using a contextual implementation.
- Register any implementations if the term is not accessing the component buffer.
- Create prompt records in PeopleSoft Application Designer if prompt options need to be specified.

Access the Manage Terms page (Active Analytics Framework, Data Library, Manage Terms).

Use the Manage Terms (EOCF_TERM_DEFN) page to define and manage terms.

The screenshot displays the 'Manage Terms' page with the following sections and fields:

- Term Definition** (selected tab):
 - Term Information:**
 - *Term Name: History Email Last Name
 - Term Code: [Empty]
 - *Term Type: Variable
 - *Number of Rows: One
 - *Status: In Design
 - *Data Type: String
 - [View Policies Using This Term](#)
 - Run-Time Display:**
 - Enter text for how the Term will be displayed to end-users. Enclose Binds configured by end-users within angled brackets <>. You will map these to the Implementation Binds in the steps below.
 - Display: History Email Last Name
 - [Update User Binds](#)
 - Prompt Users for Bind Values:**
 - Tab: User Binds
 - Table:

Bind Name	Data Type
 - Generic Implementation:**
 - *Implementation: RB:Retrieving Parent Email Person Name Record
 - Description: [Empty]
 - Resolution Method: [Empty]
 - Data Type: [Empty]
 - *Cache: Component
 - [View Applicable Contexts](#)
 - Input Mapping:**

Bind Name	Value From	Value
 - Output Mapping:**
 - Extraction Type: [Empty]

Manage Terms page (1 of 2)

Contextual Implementation
View All First 1 of 1 Last

*Context Name

*Implementation

Description

*Type Implementation

*Cache Trigger Point

Resolution Method

Bind Name	Value From	Value

Output Mapping

Extraction Type ▼

Test Term Implementation

This object was added and is maintained by the customer.

Date Created	Last Modified

Manage Terms page (2 of 2)

Term Name	The unique identifier of the term. This is the label that will be displayed to the functional users. Though allowed, Oracle recommends that special characters not be used in term names.
Term Type	Select to specify whether a term is a variable or constant. Variable terms must have at least one implementation.
Term Code	Uniquely identifies a term when you access a term programmatically. This is user-defined.
Number of Rows	The number of rows to be returned, one or many (scalar or vector). If this field is <i>Many</i> , the term cannot participate in policy conditions.
<p>Note. Applications directly integrating with the data library are responsible for converting the resolved output value of a term (which will be of data type <i>any</i>) to the appropriate data type.</p>	
Status	Valid values are <i>Active</i> , <i>Inactive</i> , and <i>In-Design</i> . Only active terms are used in policy conditions and other applications.
Data Type	Returns the data type of the term. Possible values are string, number, date, datetime, time, record, and rowset.
Run-Time Display	Specify user binds for this term, which will be needed when the resolved value of the term depends on user-defined binds.

Prompt Users for Bind Values	Specify the bind name; (optional) specify prompt options.
Generic Implementation	Specify a generic implementation. Generic implementations are resolved by deriving the bind values from the runtime context. Terms having generic implementations can be resolved by multiple contexts. You specify a generic implementation by selecting an existing implementation from the prompt or creating a new one using the Create button. Click the View applicable contexts link to view the list of contexts in which this term would be resolved.
Contextual Implementation	Select an implementation that is specific to a context. Contextual implementations are resolved by deriving the bind values from this specific context.
Input Mapping	Maps the implementation binds to context variables or to constant values. If the term has user binds, one or more implementation binds must be mapped to the user binds. For generic implementations, this mapping is critical for this term to be resolved by multiple contexts.
Output Mapping	Specify the extraction parameters for a term implementation such that a subset of the value returned by the implementation is returned as the resolved value of the term.

Note. Use caution when making changes to the term definition after the term has been associated with one or more policies. Changes to term attributes such as data type, number of rows, implementation category, and implementation details; or changing a non-configurable term to a configurable term and vice versa, could have significant impact on the policies that reference this term. These changes could possibly result in invalidating these policies. Before making any of these changes, view the policies using a term by clicking the link [View Policies Using This Term](#).

Testing Term Implementations

Access the Test Term Implementation page (Enterprise Components, Active Analytics Framework, Data Library, Manage Terms, Test Term Implementation).

Use the Test Term Implementation (EOCF_TEST_TERM) page to test the implementations of a term.

Test Term Implementation

Term Information

Term Name	Total Order Amount		
Number of Rows	One	Data Type	Number

Specify Implementation

<input checked="" type="radio"/> Generic <input type="radio"/> Contextual	*Context 360-Degree View <input type="text"/>
<input checked="" type="checkbox"/> Flush Cache	

Implementation	RA:Total Order Amount	Data Type	Number
-----------------------	-----------------------	------------------	--------

List Values Expected by Implementation

Implementation Binds	Data Type	Source	Mapped Alias	Input Value*
BO_ID_CUSTOMER	Number	System	BO_ID_CUSTOMER	<input type="text" value="1"/>

Test Results

Results	0
Elapsed Time	0.734 (in milliseconds)

Test Term Implementation page

Specify Implementation Specify whether you want to test the generic or contextual implementation defined for the term.

- If you select Contextual, you must specify a context name from the drop-down list box to display a list of bind values that are required by this implementation in a grid.
- If you select Generic, the context from which the term is resolved must be specified.

Select Flush Cache if you do not want the system to fetch the value for this implementation from the memory cache.

List values Enter sample values for the parameters expected by the implementation and click Run Test.

Test Results Displays the resolved value of a term implementation being tested and the elapsed time to retrieve the value.

Note. Context-variable implementations of a term cannot be tested. Also, terms that have application class implementations accessing data from a component buffer or directly from the context cannot be tested in the Term Tester page. Testing these terms will result in an error message.

Chapter 4

Managing Contexts

This chapter provides an overview of contexts and discusses how to configure contexts.

Understanding Contexts

Contexts are a key component of how the PeopleSoft Active Analytics Framework works—their purpose is to describe the computing environment from which the decision engine is invoked and select the appropriate term implementation at runtime.

Online and Generic Contexts

Contexts can be online or generic. Online contexts must be associated with a PeopleSoft online page, whereas generic contexts can be used anywhere (including online pages).

The data elements within a context are called *context variables*. Online contexts have built-in context variables—they are the fields of the online page. However, the data elements in an online context are not limited to the online fields; both online and standalone contexts can have additional context variables defined.

Within a given context, all context variables must be assigned unique code names called *aliases*. Aliases are used to associate data with the input binds required by term implementations. For example, a field representing the customer ID may be named CUSTOMER_ID in the application page, but may have an alias of CUST_ID. Using aliases enables terms to be used in the largest possible set of contexts. Page variables exist on a one-to-one basis with their underlying fields; that is, two or more context variables may point to the same page field as long as the aliases of these context variables are distinct. This enables the context user to have aliases named both CUSTOMER_ID and CUST_ID, thereby facilitating term reuse. Context variables are exposed to the user by corresponding term definitions.

At runtime, applications can request the data library engine to automatically populate the online context in memory, provided that the request is made from the component from which the online context can be constructed. In case of generic contexts, applications can either construct the context explicitly by populating values for these context variables, or request the data library to automatically copy values from level 0 context variables of an online context to similar context variables of a generic context.

Context variables can be:

- Page variables that correspond to fields within PeopleSoft application pages.

Page variables are also referred to as native context variables, because they are native to the pages from which their values come.

Note. Use caution when altering the component structure after generating page variables for an online context (using the Generate Context component). Changes made to existing fields on the application page might invalidate the corresponding context variables and the terms from which they are resolved.

- Constants.

Generic contexts usually consist of named constants. Constant-type context variables may not have specific values associated with them when the context is registered; some of these variables may get values at runtime.

- Term variables.

These context variables are data library terms that have been inserted into the context. A context may have any number of terms included within it. However, if a term's implementations require binds, then the context must provide them from its page variables and constants. Term variables can be used to add extended data elements for implementation binds and actions without your having to customize the application.

Configuring Contexts

This section discusses how to:

- Generate context objects.
- Manage context objects.

Pages Used to Configure Contexts

<i>Page Name</i>	<i>Definition Name</i>	<i>Navigation</i>	<i>Usage</i>
Generate Context Object	EOCF_CTX_IMPORT	Enterprise Components, Active Analytics Framework, Setup, Generate Context Object	Generate context objects.
Manage Context Object	EOCF_CONTEXT_DEFN	Enterprise Components, Active Analytics Framework, Setup, Manage Context Object	Manage context objects.

Generating Context Objects

Access the Generate Context Object page (Enterprise Components, Active Analytics Framework, Setup, Generate Context Object).

Use the Generate Context Object (EOCF_CTX_IMPORT) page to generate context objects.

Generate Context Object

1 2 3 **Step 1 - Select a Component Interface**

Context Properties

*Component Interface Name

*Context Name

*Description

*Library Subject Name

Primary Context

<< Previous Next >> Cancel

Generate Context Object page (1 of 4)

Component Interface Name	Used to extract the contents of a PeopleSoft component for use in generating the context. A component interface is required to create an online context.
Context Name	The required, unique, and descriptive name of a context.
Description	The required, appropriate description of the intent of this context.
Library Subject Name	The default subject area for terms created by this process. The prompt for this field shows the subject area selection list.
Primary Context	Select to denote the context to be generated as the primary context for this online transaction.

Generate Context Object

1 — 2 — 3 **Step 2 - Enter Variable and Term details**

Context Properties

*Component Interface Name

*Context Name

*Description

*Library Subject Name

Primary Context

Context Details Find | View All | First 1-10 of 11 Last

Context Variable | Term Options | Subject Area

	Context Scroll	Type	Context Field	Alias	Log	
<input type="checkbox"/>	1 PS_ROOT:CURRENCY_CD_TBL:	Rowset	<input checked="" type="checkbox"/>	PS_ROOT:CURRENCY_CD_TBL	<input type="checkbox"/>	+ -
<input type="checkbox"/>	2 PS_ROOT:CURRENCY_CD_TBL:CURRENCY_CD_TBL	Record	<input checked="" type="checkbox"/>	CURRENCY_CD_TBL	<input type="checkbox"/>	+ -
<input type="checkbox"/>	3 PS_ROOT:CURRENCY_CD_TBL:CURRENCY_CD_TBL.CURRENCY_CD	Field	<input checked="" type="checkbox"/>	CURRENCY_CD	<input type="checkbox"/>	+ -
<input type="checkbox"/>	4 PS_ROOT:CURRENCY_CD_TBL:CURRENCY_CD_TBL.EFFDT	Field	<input checked="" type="checkbox"/>	EFFDT	<input type="checkbox"/>	+ -
<input type="checkbox"/>	5 PS_ROOT:CURRENCY_CD_TBL:CURRENCY_CD_TBL.EFF_STATUS	Field	<input checked="" type="checkbox"/>	EFF_STATUS	<input type="checkbox"/>	+ -
<input type="checkbox"/>	6 PS_ROOT:CURRENCY_CD_TBL:CURRENCY_CD_TBL.DESCR	Field	<input checked="" type="checkbox"/>	DESCR	<input type="checkbox"/>	+ -
<input type="checkbox"/>	7 PS_ROOT:CURRENCY_CD_TBL:CURRENCY_CD_TBL.DESCRSHORT	Field	<input checked="" type="checkbox"/>	DESCRSHORT	<input type="checkbox"/>	+ -
<input type="checkbox"/>	8 PS_ROOT:CURRENCY_CD_TBL:CURRENCY_CD_TBL.COUNTRY	Field	<input checked="" type="checkbox"/>	COUNTRY	<input type="checkbox"/>	+ -
<input type="checkbox"/>	9 PS_ROOT:CURRENCY_CD_TBL:CURRENCY_CD_TBL.CUR_SYMBOL	Field	<input checked="" type="checkbox"/>	CUR_SYMBOL	<input type="checkbox"/>	+ -
<input type="checkbox"/>	10 PS_ROOT:CURRENCY_CD_TBL:CURRENCY_CD_TBL.DECIMAL_POSITIONS	Field	<input checked="" type="checkbox"/>	DECIMAL_POSITIONS	<input type="checkbox"/>	+ -

Delete

<< Previous Next >> Cancel

Generate Context Object page (2 of 4)

Review and configure the context variables and terms that were automatically generated based on the component interface that you selected. Select the Log check box to denote that the field should be logged when a context is persisted at runtime (this is a key to the transaction, and the process automatically sets this field).

Select the Term Options tab to create a new term for each context variable that is created. Also, you can add a contextual implementation to an existing term for this context variable.

Select the Subject Area tab if you want to override the default subject area chosen on the first page.

Generate Context Object

1 2 3 **Step 3 - Import Context Definition**

Context Properties

*Component Interface Name: CURRENCY

*Context Name: USD

*Description: US Dollars

*Library Subject Name: Financial Accounts

Primary Context

<< Previous Next >> Cancel Import

Generate Context Object page (3 of 4)

Select Import to create the context and terms. The Generate Context Object page displays the import details.

Generate Context Object

1 2 3 **Step 3 - Import Context Definition**

Context Properties

Context Import Details

(Generate Context Import Results
Context Import started: 23.49.54.606000
Context CURRENCY created...
Context Variable PS_ROOT:CURRENCY_C created...
Data Library Term Currency Code_1(3536286986000813556336490041562) modified...
Context Import ended: 23.49.54.716000)

Generate Context Object page (4 of 4)

Managing Context Objects

Access the Manage Context Object page (Enterprise Components, Active Analytics Framework, Setup, Manage Context Object).

Use the Manage Context Object (EOCF_CONTEXT_DEFN) page to manage context objects.

Definition
Notes

***Context Name**

***Context Type**

Corresponding Generic Context

Description

Component Interface Name SS - Support Create Case CI

Component Name **Market** Global

Primary

Context Variables - Page Find | First 1-55 of 55 Last

Select Component Field	Type	Data Type	Level	*Alias	L0 Key		
PS_ROOT::DERIVED RC SS. BUSINESS UNIT	Field	String	0	<input type="text" value="BUSINESS_UNIT"/>	<input checked="" type="checkbox"/>	<input type="button" value="+"/>	<input type="button" value="-"/>
PS_ROOT::DERIVED RC SS. BO ID CONTACT	Field	Number	0	<input type="text" value="BO_ID_CONTACT"/>	<input type="checkbox"/>	<input type="button" value="+"/>	<input type="button" value="-"/>
PS_ROOT::DERIVED RC SS. CASE SUBTYPE	Field	String	0	<input type="text" value="CASE_SUBTYPE"/>	<input type="checkbox"/>	<input type="button" value="+"/>	<input type="button" value="-"/>
PS_ROOT::DERIVED RC SS. INST PROD ID	Field	String	0	<input type="text" value="INST_PROD_ID"/>	<input type="checkbox"/>	<input type="button" value="+"/>	<input type="button" value="-"/>
PS_ROOT::DERIVED RC SS. PRODUCT ID	Field	String	0	<input type="text" value="PRODUCT_ID"/>	<input type="checkbox"/>	<input type="button" value="+"/>	<input type="button" value="-"/>
PS_ROOT::DERIVED RC SS. PROBLEM TYPE	Field	String	0	<input type="text" value="PROBLEM_TYPE"/>	<input type="checkbox"/>	<input type="button" value="+"/>	<input type="button" value="-"/>
PS_ROOT::DERIVED RC SS. RC CATEGORY	Field	String	0	<input type="text" value="RC_CATEGORY"/>	<input type="checkbox"/>	<input type="button" value="+"/>	<input type="button" value="-"/>
PS_ROOT::DERIVED RC SS. RC DETAIL	Field	String	0	<input type="text" value="RC_DETAIL"/>	<input type="checkbox"/>	<input type="button" value="+"/>	<input type="button" value="-"/>
PS_ROOT::DERIVED RC SS. RC TYPE	Field	String	0	<input type="text" value="RC_TYPE"/>	<input type="checkbox"/>	<input type="button" value="+"/>	<input type="button" value="-"/>
PS_ROOT::DERIVED RC SS. RC CONTACT	Field	String	0	<input type="text" value="RC_CONTACT"/>	<input type="checkbox"/>	<input type="button" value="+"/>	<input type="button" value="-"/>
PS_ROOT::DERIVED RC SS. RC PRIORITY	Field	String	0	<input type="text" value="RC_PRIORITY"/>	<input type="checkbox"/>	<input type="button" value="+"/>	<input type="button" value="-"/>
PS_ROOT::DERIVED RC SS. RC SEVERITY	Field	String	0	<input type="text" value="RC_SEVERITY"/>	<input type="checkbox"/>	<input type="button" value="+"/>	<input type="button" value="-"/>
PS_ROOT::DERIVED RC SS. RC SUCCESS TEXT	Field	String	0	<input type="text" value="RC_SUCCESS_TEXT"/>	<input type="checkbox"/>	<input type="button" value="+"/>	<input type="button" value="-"/>

Manage Context Object page (1 of 2)

PS_ROOT:RC_CASE.WARRANTY_NAME	Field	String	0	<input type="text" value="WARRANTY_NAME"/>	<input type="checkbox"/>	<input type="button" value="+"/>	<input type="button" value="-"/>
PS_ROOT:RC_CASE.URGENCY	Field	String	0	<input type="text" value="URGENCY"/>	<input type="checkbox"/>	<input type="button" value="+"/>	<input type="button" value="-"/>

Context Variables - Term							
Find First 1 of 1 Last							
*Term Name	Data Type	*Alias	Log Value				
1	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="button" value="+"/>	<input type="button" value="-"/>		

Context Variables - Constant Value							
First 1 of 1 Last							
Constant Value	*Data Type	*Alias	Log Value				
1	<input type="text" value="RC_CASE"/>	String	<input type="text" value="PRIMARY_RECORD"/>	<input type="checkbox"/>	<input type="button" value="+"/>	<input type="button" value="-"/>	

Operator Set

This object was delivered by PeopleSoft but updated by the customer.

Date Created	07/29/09 9:35:39.000000PM	HELPA
Last Modified	07/29/09 9:35:39.000000PM	HELPA

Manage Context Object page (2 of 2)

Corresponding Generic Context This field is used to programmatically create a standalone context from its corresponding online context. Applications directly embedding data library terms need this information to supply context information to the data library runtime engine.

Context Variables Page This section is used to define the page context variables.

- **Select Component Field.** Click to select a component field from the displayed component buffer hierarchy.
- **Type.** This column specifies the object type of the selected component field. Valid values are *Field*, *Record*, and *Rowset*.
- **Data Type.** Specifies the PeopleSoft data type of the selected component field.
- **Level.** Specifies the scroll level of the selected component field.
- **Alias.** The unique identifier for a context variable.
- **L0 Key.** Specifies whether a component field is a key field for this component.

Context Variables Term This section defines the context variables of the type term.

- **Term name.** Select a term name from the prompt.
The resolved value of this term is used as the value of this context variable.
- **Data Type.** Specifies the data type of the term selected.

**Context Variables
Constant**

This section defines the context variables of the type constant.

- Constant Value.
 - Specify a constant value to be used as the runtime value for this context variable.
 - Leave blank and a value has to be supplied at runtime.
- Data Type. Specify the data type of this context variable.

Note. A constant value specified for a context variable cannot be overridden at runtime.

Operator Set

Optionally, specify an operator set to be used for this context. This operator set is used to present the list of valid operators for selected terms in policy conditions. A default operator set is automatically entered.

Notes Tab

Enter descriptive information in the text box.

Chapter 5

Setting Up the Action Framework

This chapter provides overviews of the action framework, action types, and how actions execute and discusses how to register action types and action bundles.

Understanding the Action Framework

The action framework enables users to specify the actions to be executed when policy conditions evaluate to true within a trigger point.

Architecture of the Action Framework

The architecture of the action framework comprises:

- An action type registration component for creating and maintaining action types by programmers and IT staff. An *action type* is metadata pertaining to a particular class of actions that might be performed at runtime.
- An action type bundle registration component for creating and maintaining action type bundles, or classes of actions that can be combined. An action type can be in only one action type bundle.

Note. In this release, if other display action types are created by a PeopleSoft product line, they must be combinable with the delivered display alert action type and must be registered in the display action type bundle.

- A design-time environment facilitating the embedding and configuring of consequent actions within policies.
- A runtime environment that enables the decision engine to invoke particular actions as needed.
- A generic display alert action type, which is available to all product lines using the framework. It can be used to display important information about a customer or a suggestion for a course of action. For example, if a high-value customer calls on the phone, a pop-up window appears with an alert and a suggestion that the phone connection be routed to a manager.

Understanding Action Types

An *action type* refers to a category of actions that can be associated with a policy. For use in the framework, an action type must be registered with the following information:

- Location of the code that handles the design-time and runtime aspects of the action type.
- Configuration requirements.

When adding actions of specific action type to a policy, policy-specific configuration requirements must be set before the policy can be enacted.

- Whether actions of an action type terminate the analytic processing.

For example, if the action is a transfer from an application page to another page, the action terminates the framework processing that was triggered by a trigger point associated with the original page.

Note. A terminal action type is not combinable.

- Whether the action can be combined with other actions at runtime. Such an action is referred to as a *combinable* action.

For example, the display alert action type can be combinable; therefore, when two display alert actions are specified, they are combined, and a single window appears that includes both alerts.

- Whether the action is part of an action bundle.

If actions of *different* action types are combinable with each other, the action types must be included in an action type bundle. Consequently, if combinable action types are not combinable with certain other action types, then the action type does not need to be part of an action type bundle.

- Triggering environment—where the action can be deployed.

For example, the display alert action executes only from an application page, not from an Application Engine program.

- The trigger types and trigger points that include the action type as a valid action type.

For example, you may want an action to be valid for a ComponentPostBuild trigger type, specifically the *When a Customer is Presented* trigger point, associated with this trigger type.

Understanding How Actions Execute

After the framework evaluates conditions for all a trigger point's policies, the actions associated with the policies having true conditions are forwarded to the action framework. The action framework is responsible for firing the actions.

Only one terminal action can be fired for any trigger point. Because a trigger point may be associated with one or more policies, and each policy may include more than one action, more than one terminal action might be associated with a trigger point. In this case, the first terminal action in the first policy that evaluates to true is executed. If present, a terminal action fires after executing all the nonterminal actions.

Individual action types determine how actions can be combined. Some action types, such as the display alert, combine all their actions from the same trigger point. Therefore, at runtime all the display items appear in the same pop-up window.

Note. For display actions to execute, pop-up blockers must be turned off.

An action that is not combinable will not affect the execution of another action.

Registering Action Types and Action Type Bundles

This section discusses how to:

- Register action types.
- Register action type bundles.

Pages Used to Register Action Types and Action Type Bundles

<i>Page Name</i>	<i>Definition Name</i>	<i>Navigation</i>	<i>Usage</i>
Register Action Type	EOCF_ACTN_TYPE_REG	Enterprise Components, Active Analytics Framework, Action Framework, Register Action Type	Register an action type.
Action Type Triggers	EOCF_ACT_TYP_EVNTS	Enterprise Components, Active Analytics Framework, Action Framework, Register Action Type, Action Type Triggers	Specify.
Register Action Type Bundle	EOCF_ACTION_BUNDLE	Enterprise Components, Active Analytics Framework, Action Framework, Register Action Type Bundle	Register action type bundles.

Registering Action Types

Access the Register Action Type page (Enterprise Components, Active Analytics Framework, Action Framework, Register Action Type).

Use the Register Action Type (EOCF_ACTN_TYPE_REG) page to register an action type.

Register Action Type		Action Type Triggers
Action Type		
Action Type Name	Recommendations for OCI	
Description	Display Advisor Recommendation	
Long Description	Display Advisor Recommendations for Order Capture in AAF Display Window	
DesignTime Action Behavior		
Design Time Application Class	DisplayAdvisorQuietCfg	Package Tree Viewer
Design Time Class Path	RAD_AAF_ACTIONS	
Action Text Application Class	AdvisorActionText	Package Tree Viewer
Action Text Class Path	RAD_AAF_ACTIONS	
<input checked="" type="checkbox"/> Configuration required		
RunTime Action Behavior		
Run Time Application Class	OCIDisplayAdvisorRecs	Package Tree Viewer
Run Time Class Path	RB_AAF_ACTIONS	
<input type="checkbox"/> Actions of this type will terminate Active Analytics Framework processing		
<input type="checkbox"/> Commit before triggering actions of this type		
<input checked="" type="checkbox"/> Actions of this type are combinable		
Triggering Environment		
<input type="checkbox"/> Can be triggered by application engine		
<input type="checkbox"/> Can be triggered by application messages		
<input checked="" type="checkbox"/> Can be triggered from PeopleSoft pages		
<input type="checkbox"/> Can be triggered by component interfaces		
Modify System Data		
This object is maintained by PeopleSoft.		
Date Created	04/30/04 12:00:00.000000AM	PPLSOFT
Last Modified	04/30/04 12:00:00.000000AM	PPLSOFT

Register Action Type page

Action Type Name The name of a class of similar actions.

DesignTime Action Behavior Specify the design time details of the action type. When you add actions of this action type in a policy, these design time specifications are used to present the action type configuration page and store the configuration.

RunTime Action Behavior Specify the runtime details of the action type. The application class details specified here are executed at runtime to trigger actions of this type.

Triggering Environment Specify the triggering environments to be supported for this action type.

Registering Action Type Triggers

Access the Action Type Triggers page (Enterprise Components, Active Analytics Framework, Action Framework, Register Action Type, Action Type Triggers).

Use the Action Type Triggers (EOCF_ACT_TYP_EVNTS) page to specify the action type triggers.

Trigger Types		Trigger Type Name	SavePostChange	Select
	<input type="checkbox"/>			<input checked="" type="checkbox"/> Select
1	<input type="checkbox"/>	After a Worker is Saved		
2	<input type="checkbox"/>	After a HelpDesk Case is Saved		
3	<input type="checkbox"/>	After a Lead is Saved		
4	<input type="checkbox"/>	After a Opportunity is Saved		
5	<input type="checkbox"/>	After an Existing Self-Service Support Case is Saved		
6	<input type="checkbox"/>	After a Campaign is Saved		
7	<input type="checkbox"/>	After an Installed Product is Saved		
8	<input type="checkbox"/>	After a New Self-Service Support Case is Saved		
9	<input type="checkbox"/>	After a Marketing Event is Saved		
10	<input type="checkbox"/>	After Modify Account is Saved		

Action Type Triggers page

Select the appropriate check boxes to associate this action type with listed trigger types and trigger points.

- Selecting a trigger type makes this action type available for the selected trigger type.
- One or more trigger points can be selected only if the corresponding trigger type is selected.

Registering Action Type Bundles

Access the Register Action Type Bundle page (Enterprise Components, Active Analytics Framework, Action Framework, Register Action Type Bundle).

Use the Register Action Type Bundle (EOCF_ACTION_BUNDLE) page to define the bundles of combinable action types.

Register Action Type Bundle

Define a bundle of combinable Action Types. An Action Type can be a part of only one bundle.

Bundle Name

Description

Please select the combinable Action Types

Select combinable Action Types Find | First 1-9 of 9 Last

	Action Type
1	Display Alert
2	Display Advisor Recommendation
3	Display ActivityRecommendation
4	Recommend Advisor Dialogs
5	Display Activity Advisor Link
6	Recommend Branch Scripts
7	Recommend Link for OCI
8	Recommendations for OCI
9	Display Offer Alerts

Register Action Type Bundle page

Enter a name and description for this action type bundle. Select the action types that can be combined from the drop-down list box in each row.

Chapter 6

Administering the PeopleSoft Active Analytics Framework

This chapter discusses how to:

- Use the setup components.
- Set logging and installation options.
- Register action objectives.
- Register trigger types and trigger points.
- Define subject areas.
- Register operators and operator sets.
- Register resolution methods.
- Register business domains and categories.

Pages Used to Administer the PeopleSoft Active Analytics Framework

This section lists the components used to administer the PeopleSoft Active Analytics Framework.

Pages Used to Administer the PeopleSoft Active Analytics Framework

<i>Page Name</i>	<i>Definition Name</i>	<i>Navigation</i>	<i>Usage</i>
Data Library Logging Settings	EOCF_DL_LOG_SET	Enterprise Components, Active Analytics Framework, Setup, Data Library Logging	Set Data Library logging options.
Install Options	EOCF_INSTALL	Enterprise Components, Active Analytics Framework, Setup, Install Options	Set Active Analytics Framework installation options.

Page Name	Definition Name	Navigation	Usage
Register Trigger Type	EOCF_EVTYP_DEFN	Enterprise Components, Active Analytics Framework, Setup, Register Trigger Type	Define trigger types.
Register Trigger Point	EOCF_EVENT_DEFN	Enterprise Components, Active Analytics Framework, Setup, Register Trigger Point	Define trigger points.
Define Subject Areas	EOCF_SUBJ_HIER	Enterprise Components, Active Analytics Framework, Setup, Define Subject Area	Define subject areas.
Register Operators	EOCF_OPERATOR_DEFN	Enterprise Components, Active Analytics Framework, Setup, Register Operators	Define operators.
Register Operator Sets	EOCF_OPERSET_DEFN	Enterprise Components, Active Analytics Framework, Setup, Register Operator Sets	Define operator sets.
Register Method	EOCF_DEF_RESLMTHD	Enterprise Components, Active Analytics Framework, Setup, Register Resolution Method	Define the resolution method.
Register Business Domain	EOCF_BUS_DOMAIN	Enterprise Components, Active Analytics Framework, Setup, Register Business Domain	Define a business domain, which is used to functionally classify trigger points.
Register Category	EOCF_IACATEGORY	Enterprise Components, Active Analytics Framework, Setup, Register Category	Use to functionally classify policies.
Register Action Objective	EOCF_ACTION_OBJ	Enterprise Components, Active Analytics Framework, Action Framework, Register Action Objective	Use to functionally categorize actions defined in policies.

Setting Logging and Installation Options

This section discusses how to:

- Set the data library log options.
- Set the installation options.

Setting the Data Library Logging Options

Access the Data Library Log Settings page (Enterprise Components, Active Analytics Framework, Setup, Data Library Logging).

Use the Data Library Log Settings (EOCF_DL_LOG_SET) page to set the data library logging options.

Data Library Log Settings

Log Properties

Log File Name

Append To Existing File

Save Log to File

Data Library Log Flags

Processing Messages

Term Resolution

Context Generation

Bind Substitution

Cache Management

Object Factory Processing

[Save Log Settings](#) [Return to Install Options](#)

Data Library Log Settings page

Log File Name	Enter a name for the log file and select Append to an Existing File, if desired.
Term Resolution	Log technical details of the resolution of individual terms.
Context Generation	Log technical details about the generation of contexts.
Bind Substitution	Log technical details about implementation binds substituted with values from the runtime context.
Cache Management	Log technical details about usage of cache.
Object Factory Processing	Log technical details about the loading of framework object definitions.

Setting the Installation Options

Access the Install Options page (Enterprise Components, Active Analytics Framework, Setup, Install Options).

Use the Install Options (EOCF_INSTALL) page to set the Active Analytics Framework installation options.

Install Options page

Data Source	The product line for this database, for example CRM or HMS.
Default SetID	The setID value to use for a component that does not use set control
% of Trigger Points to Log	When you are logging for performance monitoring, the impact of logging can be alleviated only by logging a percent of trigger points executed. Specify a percent value between 1 and 100.
Disable Runtime	This option disables all trigger points from running.
Log to Database	Determines whether the log will be written to the database or to a text file.

Log File Name Prefix	If a file is logged instead of the database, this prefix is prepended to each user's log file.
	<hr/> Note. The decision engine log file is created in the default files directory for this application server instance. Typically, the application server uses the directory %PS_CFG_HOME%\appserv\<servername>\files. The application server creates this directory as needed; therefore, if no log files have been written, it may not yet exist. <hr/>
Log Everything	If selected, causes all normal logging options to be activated.
Data Library Logging	Includes the data library log entries in the decision engine log.
Log Driver Keys	Log the primary key values driving each trigger point's context (transaction).
Log Messages	Log messages that policies or actions may generate.
Context Bind Values	Log values retrieved directly from the operant context.
Elapsed Trigger Point Time	Log the time required to complete a trigger point.
Elapsed Term Evaluation Time	Log the time required to evaluate a term.
Term Values	Log the values of evaluated data library terms.
Trigger Point Action Count	Log the number of actions created by the execution of a trigger point.
Trigger Point Policy Count	Log the number of policies evaluated for a trigger point.
Trigger Point created Actions	Log the actions created during the evaluation of policy conditions for a trigger point.
Elapsed Policy Time	Log the time required to evaluate the condition portion of a policy.
Policy Fired	Log whether a policy condition was true or false.
Action Counts per Policy	Log the number of actions created by a policy.
Terminal Actions Generated	Log terminal actions created by a policy.
Elapsed Action Time	Log the time that an action takes to finish.
Actions Combined Together	Log actions that were combined during execution.
Ignored Terminal Actions	Log any terminal actions that could not be invoked.

Debug Trace

Log debugging information; this option is not normally used.

Registering Action Objectives

Access the Register Action Objective page (Enterprise Components, Active Analytics Framework, Action Framework, Register Action Objective).

Use the Register Action Objective (EOCF_ACTION_OBJ) page to functionally categorize actions that are defined in policies.

Register Action Objective

*Action Objective Name: *Status: ▼

Description:

Date Created	03/31/04 12:00:00.000000AM	PPLSOFT
Last Modified	03/31/04 12:00:00.000000AM	PPLSOFT

Register Action Objective page

Enter the action objective name and a description.

Registering Trigger Types and Trigger Points

This section discusses how to:

- Register trigger types.
- Register trigger points.

Registering Trigger Types

Access the Register Trigger Type page (Enterprise Components, Active Analytics Framework, Setup, Register Trigger Type).

Use the Register Trigger Type (EOCF_EVTYP_DEFN) page to define trigger types.

Register Trigger Type

Trigger Type Name Component PostBuild Status Active

Description Component PostBuild

Valid Action Types	
Action Type Name	
1	Recommendations for OCI
2	Offer Icon in Telemarketing
3	Recommend Link for OCI
4	Display Activity Advisor Link
5	Recommend Branch Scripts
6	Case Suggest Action
7	Display Alert
8	UpSell/CrossSell Advice on 360
9	Initiate Offer Rec Session
10	Case Display Template
11	Case Update
12	Upsell Indicator on Case
13	Display ActivityRecommendation
14	Display Offer Alerts
15	Display Offer Icon in 360

[Modify System Data](#)

Register Trigger Type page

Enter details about the trigger type that you are defining and select the valid actions.

Registering Trigger Points

Access the Register Trigger Point page (Enterprise Components, Active Analytics Framework, Setup, Register Trigger Point).

Use the Register Trigger Point (EOCF_EVENT_DEFN) page to define trigger points.

Register Trigger Point

Trigger Point Name When an Existing Self-Service Support Case is Presented **Status** Active

Trigger Type Name Component PostBuild

Code Name SSSWCASE_OPEN

Context Name Manage Self-Service Support Case

Business Domain

Description

Action Type
Display Activity Advisor Link
Display Alert
Case Display Template
Display ActivityRecommendation

Modify System Data

Register Trigger Point page

- Trigger Point Name** The unique and descriptive name of the trigger point.
- Trigger Type** Used by IT developers to determine which PeopleSoft event in the component needs to be enabled with this trigger point. This option also restricts the list of valid action types that can be used when you are creating policies for this trigger point.
- Code Name** Use to reference the trigger point when programmatically enabling this trigger point for a PeopleSoft component. Changes made to the code name, after you enable this trigger point for a PeopleSoft component, may disrupt the execution of policies for this trigger point at runtime.
- Context Name** Defines the context for the trigger point.

Defining Subject Areas

Access the Define Subject Areas page (Enterprise Components, Active Analytics Framework, Setup, Define Subject Area).

Use the Define Subject Areas (EOCF_SUBJ_HIER) page to define the subject areas.

Define Subject Areas

Subject Area Tree

Subject Area Detail

Element Type Term

*Subject Name 360 Degree View

Description

Apply Subject Name Show Associated Terms

Library Terms Find | View All | First 1-9 of 9 Last

Term Name	Define Order
Count of times <Product> installed at customer	
Count of times <product group> of <group type> installed at customer	
Customer BO ID	10
Customer Role Type ID	20
Contact BO ID	30
Contact Role Type ID	40
Customer Value	50
Customer's Churn Score	60
User Preferred Market	70

OK Cancel

Define Subject Areas page

Subject Area Detail

Enter a subject name and description and click Apply Subject Name. The subject area name does not need to be unique.

Click Show Associated Terms to display the list of terms associated with this subject area node. Order the terms appearing for a subject area node by specifying display order numbers. The order depicts how the terms are displayed for a subject area node in the term list presented in the condition builder.

Subject Area Tree

The subject area tree displayed on the left-hand side has the following icons:

- *Expand All*: Expands all subject area nodes.
- *Collapse All*: Collapses all subject area nodes.
- *Add Sibling*: Adds a new sibling node under the subject area node currently selected. Enter a subject area name and description on the right-hand pane and click Apply Subject Name to apply changes.
- *Add Child*: Adds a new child node for the subject area node currently selected. Enter a subject area name and description on the right-hand side and click Apply Subject Name to apply changes.
- *Delete Node*: Deletes the selected node.
- *Cut*: Cuts the currently selected node.
- *Paste as Sibling*: Pastes the node previously cut as a sibling of the currently selected node.
- *Paste as Child*: Pastes the node previously cut as a child of the currently selected node.

Registering Operators and Operator Sets

This section discusses how to:

- Register operators.
- Register operator sets.

Operators within PeopleSoft Active Analytics Framework are defined in text expressions that are used to evaluate a condition at runtime. The operand values in the text expressions must be substituted for an operator definition for integration with policies. The substitution of operand values is ensured by the correct placement of metatext corresponding to the desired operand or source term.

To refer to the left-hand side of a condition, use *%0* as the value. To refer to right-hand-side operands 1–4, use the text values *%1*, *%2*, *%3*, and *%4*, respectively. For example, the following operator expression determines whether the numeric term's value is less than a right-hand-side value:

```
%0 < %1
```

Note. If you edit operators, policies that reference them must be recompiled. Do this by editing and saving the policy.

Registering Operators

Access the Register Operators page (Enterprise Components, Active Analytics Framework, Setup, Register Operators).

Use the Register Operators (EOCF_OPERATOR_DEFN) page to define operators.

Register Operators

Operator Name is changed to

Number of RHS Parameters 1 Status Active

Description This operator is to test whether the LHS term's value is changed to a specific value. Applicable only for rowset.record.field

Left operand data types

Number String Date Time Datetime Record Rowset Other

Right operand specifications

RHS1 Label	RHS1 Type
	Match LHS Type

Expression ["EOCF_OPER_FUNCLIB:OnlineFields.ChangedTo" CtxPtr.ctxvar \$0 To:%1] = 1

Modify System Data

Register Operators page

Register custom operators by defining the left-hand-side and right-hand-side operand specifications and entering expression text.

Operator Name Enter the name of the operator you are defining. Operator names do not need to be unique as long as the expression texts are different.

Number of RHS (right-hand side) Parameters Specify the number of right-hand-side parameters that are required to evaluate the Boolean value for this operator. The condition builder uses this to display one or more right-hand-side fields to enter values.

Note. In this release, the condition builder interface supports a maximum of two right-hand-side parameters for an operator.

Left operand data types Specify the supported data types for the left-hand-side operand of this operator. This data is used to constrain the list of operators in the condition builder.

Right operand specifications Specify the type for each of the right-hand-side parameters.

- *Match LHS Type.* Supports the left-hand operand data types.
- *Fixed Type.* Specify a fixed data type for this parameter.
- *Multi-Select.* Enables selection of multiple values for this parameter at condition building time.

Expression Specify the technical expression defining how the operator works.

Registering Operator Sets

Access the Register Operator Sets page (Enterprise Components, Active Analytics Framework, Setup, Register Operator Sets).

Use the Register Operator Sets (EOCF_OPERSET_DEFN) page to define operator sets.

Register Operator Sets

Operator Set Name Status **Active**

Description

Operators Find <input type="text"/> First 1-63 of 63 Last									
	Operator Name	String	Number	Date	Datetime	Time	Record	Rowset	Other
1	is none	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	includes any	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	is changed to	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
4	is known	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	is known	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	is later than	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Register Operator Sets page

Operator sets define the list of valid operators for a term selected on the left-hand side of a condition.

Enter a unique operator set name and description, and add valid operators for this set.

Registering Resolution Methods

This section discusses how to register a resolution method.

Resolution methods are used to build implementations. Oracle supports the following resolution methods:

- Application class
- PS Query
- SQL Object
- Record.Field

Access the Register Method page (Enterprise Components, Active Analytics Framework, Setup, Register Resolution Method).

Use the Register Method (EOCF_DEF_RESMTHD) page to define the resolution method.

Register Method
Notes

***Resolution Method Name**

Description

Driver Class

***Application Class** [Package Tree Viewer](#)

***Class Path**

▼ 1. List out the parameters that need to be supplied by implementation using this method

*Parameter Name	*Parameter Label	Required	Prompt Table	Prompt Field		
<input style="width: 100%;" type="text"/>	<input style="width: 100%;" type="text"/>	✓	<input style="width: 100%;" type="text"/>	<input style="width: 100%;" type="text"/>	+	-

▼ 2. List out the data types that can be returned by the implementation

#	*Data Type		
1	<input style="width: 80%;" type="text"/>	+	-

This object was added and is maintained by the customer.

Date Created

Last Modified

Register Method page

Resolution Method Name	The unique name of the resolution method.
Driver Class	The application class that encapsulates the data retrieval mechanism for this resolution method.
Parameters	Lists the parameters that an implementation using this method needs to supply.
Datatypes	Lists the valid data types that can be returned by an implementation using this resolution method.

Registering Business Domains and Categories

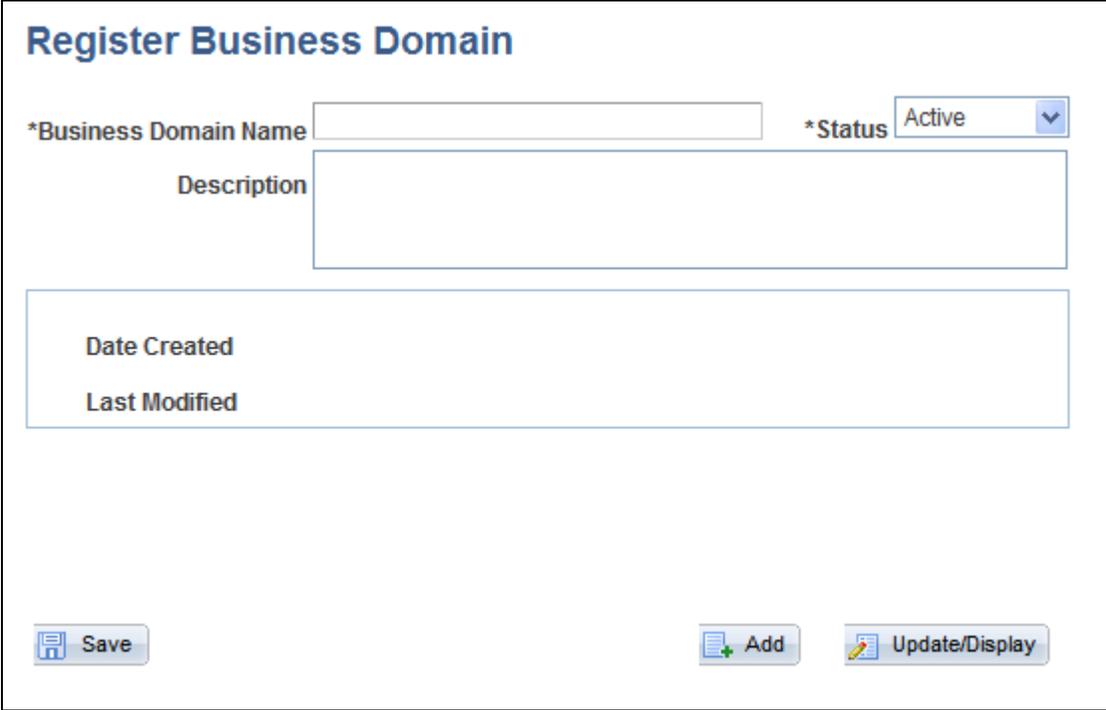
This section discusses how to:

- Register a business domain.
- Register a category.

Registering a Business Domain

Access the Register Business Domain page (Enterprise Components, Active Analytics Framework, Setup, Register Business Domain).

Use the Register Business Domain (EOCF_BUS_DOMAIN) page to define a business domain to use to functionally classify trigger points.

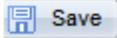


Register Business Domain

*Business Domain Name *Status Active ▼

Description

Date Created	Last Modified
--------------	---------------

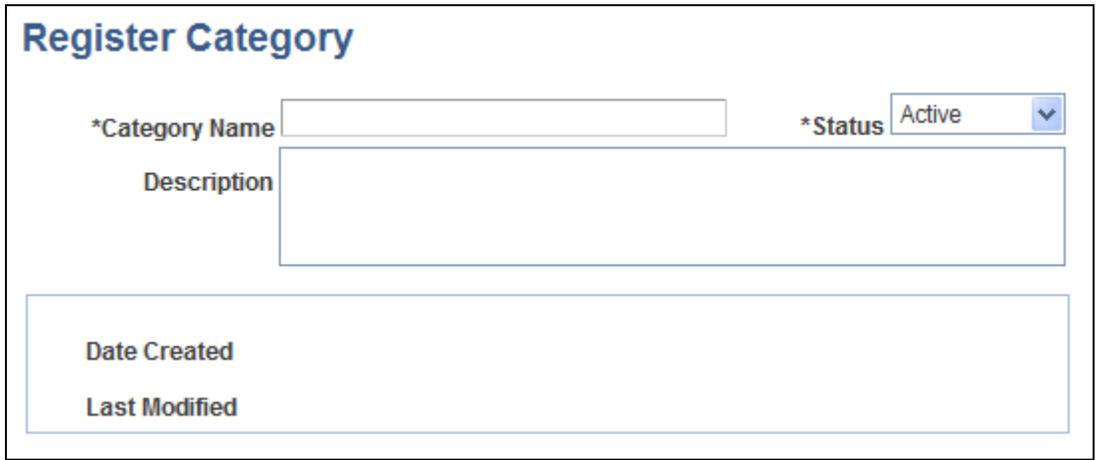
Register Business Domain page

Enter the business domain name and description and select the appropriate status.

Registering a Category

Access the Register Category page (Enterprise Components, Active Analytics Framework, Setup, Register Business Domain).

Use the Register Category (EOCF_IACATEGORY) page to classify policies by function.



The image shows a web form titled "Register Category". It contains the following fields and controls:

- *Category Name**: A text input field.
- *Status**: A dropdown menu with "Active" selected.
- Description**: A large text area.
- Date Created**: A text field.
- Last Modified**: A text field.

Register Category page

Enter the category name and description and select the appropriate status.

Chapter 7

Considerations for Enabling the Framework

This chapter discusses things you should consider when:

- Creating contexts.
- Creating custom operator expressions.
- Creating a trigger point.
- Enabling a trigger point in a PeopleCode event.
- Enabling a display action.
- Creating a new action type.
- Creating an application class implementation.
- Creating a PS query implementation.
- Creating a policy.

Considerations for Creating Contexts

To create an online context, you must be able to specify a component interface. You may encounter situations in which sets of components share the same base records and display the same information on-screen, but for different purposes. In this case, decide whether you need to create two contexts or whether you can use one.

Whether to Create One or Two Contexts

Determine whether the common terms for the two contexts should be registered as the same term objects or as different term objects. When common terms have the same meaning, the most economical practice is to reuse the common term definitions for both contexts.

Create two contexts if:

- The components have actionable fields that they do not share in common.
- One or the other of the components needs significant customization.

Considerations for Exposing Component Buffer Fields as Terms

Carefully consider which component buffer fields are to be made available as terms.

- Remember the big picture—select terms that can be reused at some point.

However, you do not want to expose every component field as a term. Some of the transactional components that enable users to perform complex tasks may have component fields that are used as work fields to implement the component, but which do not represent functional data. Exposing these fields as terms could overpopulate the data library.

- Oracle recommends that you expose terms of those data elements on the component that are displayed to the end user and the elements that make up the component's search keys.
- Work-fields may contain valuable data and may be exposed as terms, but if these fields have not yet been populated by the time that the values from the corresponding terms are requested, unpredictable results may occur. If you know for certain that the work-fields will contain data at the appropriate times, such as in the example of a work-field for which data is computed as part of component prebuild, then exposing the data element as a term is not harmful. Although a Manage Context component is available for adding terms to a context, configuring terms is easier in the Generate Context component.

Considerations for Naming Terms

Note the following guidelines when you name terms:

- The framework prefixes each alias with the name of the context to reduce the creation of duplicate names.
- In record and rowset objects, the default term name is the name of the page buffer scroll, which will not be meaningful for the end user.

Oracle recommends this name be changed to something that is meaningful for the user.

- Generally, rowset object names should be plural and record object term names should be singular.

For example, if a component's scroll-level 1 contained purchase order line items, the rowset object is named Detail Items and the record object is named Line Item.

- If any terms are filed under alternate subject areas and you want your alternate heading to override, use the Overridden Subject Area prompt.

Oracle recommends that you carefully consider whether all the names generated are meaningful before importing the context. Whenever context terms have the same functional meaning, have the context refer to preexisting terms rather than creating new ones.

Considerations for Creating Custom Operator Expressions

Each operator definition contains an *operator expression*, a text template that defines the meaning of the operator and how operands are integrated into the expression. All operator expressions must be Boolean expressions.

Comparisons supported in operator expressions are =, <, >, <=, >=, <> (not equal). All comparisons are type-driven; for example, a number cannot be compared to a string.

If type conversion is necessary, the value to be converted may be preceded by the token's string, number, date, datetime, or time, as needed.

Values are placed in expression text with two types of substitution tokens, location number and ? (question mark).

Location Number As an Operand

Location number determines the operand in the expression that is being referred to. For the left-hand-side term, the location number is zero; for the right-hand-side elements, the range is from one to four, depending on which right-hand-side parameter is being referred to. Usually, the location number is preceded by a percent sign. The percent sign and location number combination form a complete operand token.

A complete operand token refers to the value of the configured operand. When you create a condition, an expression-text entry is substituted for the operand token. This expression-text entry corresponds to the definition of the operand value's source.

Sometimes a term ID value needs to be provided in the expression instead of a location number. In this rare case, instead of a percent sign, a dollar sign is used to precede the location number.

Parentheses around subexpressions are allowed, so long as each left parenthesis has a corresponding right parenthesis, and so long as the subexpressions denoted within parentheses are valid. (While "(%0) > %1" and "(%0 > %1)" are valid, "(%0 >) %1" is not.) Constants are available for the current date, date-time, and current time by means of the items "%today", "%timestamp" and "%now".

Use of Term Code

In addition to referring to the results of terms that have been configured in the Operator Definition page, references to terms can be embedded directly in the expression text by means of the term code. A reference to a term is made by placing the term code name (which may not contain spaces) within square brackets. The bind parameters needed for the term must be part of the context; therefore, the operator should be part of a restricted operator set that is available only where the operator will be known to be valid.

You can also manually specify parameters for a term by following the term code name with a parameter specification, which consists of a name, a colon symbol, and the value to be bound to the parameter.

In the following example, a term is used as an input to another term in a condition to detect whether a customer's car is out of warranty:

```
[WarrantyExpirationDate VIN:[PrimaryVehicle DriversLicense:%0]] < %today
```

Generally, this type of construction is awkward and difficult to maintain, but it is available if needed. A more maintenance-friendly facility that doesn't require the configuration overhead of a term definition is a member-function call on an application class.

Two rules must be satisfied to use this facility:

- The class must not require any constructor arguments.
- The method to be invoked must accept an *array of any* as its only parameter.

To use this facility, set up an operator expression as if you are referring to a term; instead of using a term code name, use a quoted string value giving the fully qualified name of the class to be instantiated followed by a period and the name of the member function to be invoked. For example:

```
["MyAppPackage:MySubPackage:MyClass.MyMethod" MyParm1:%0 MyParm2:%2] = %1
```

Should an application class method need to return a Boolean result, the standard practice is to return a number, and to compare the number to 0 for false values or to 1 for true values.

Note. Be aware that when you create operators for a specific purpose, they are neither valid nor relevant except in a specific situation. Therefore, the operator should belong to an operator set that corresponds to the context or term for which the custom operator makes sense.

Considerations for Creating a Trigger Point

Use caution when introducing new trigger points, especially in the Field Change PeopleTools event. These trigger points, depending on where they are set, could result in significant overhead to the system.

In addition, introducing a new trigger point increases the likelihood of adding policies. These policies, depending on the number of terms and the mode of retrieval, could increase system overhead. This can result in an unfavorable user experience and throughput.

Oracle recommends that Field Change event trigger points be introduced only when it is critical. Consider deferring the execution of policies to a Save event.

Considerations for Enabling a Trigger Point in a PeopleCode Event

The events in which a trigger point is to be executed must include PeopleCode. The following is a minimal example:

```
Declare Function GetRuleService PeopleCode FUNCLIB_EOCF.EOCF_DE_PUBLIC Field⇒
Formula; GetRuleService().reset.SET_CONTROL = &mySetControlValue;
GetRule Service.fireEvent(My_Trigger_Point_Code_Name);
```

Note. The use of the reset property on the first line is critical to the framework's correct functioning. If reset is not used, the state of the RuleService (the runtime API for triggering the decision engine) is unknown from previously executed PeopleCode.

Considerations for Enabling the Display Action in a PeopleSoft Application Page

To enable the provided display alert action type:

- Add the PeopleTools subpage EOCF_DISPLAY_SUBPG at Level 0 to each page within the component.
- Ensure that no other fields overlap the read-only display alert subpage; otherwise, the display alert action will not work correctly.
- Ensure that the roles having access to the transactional component that requests the framework to evaluate policies have access to the EOCF9002 permission list.
- Ensure that all pop-up blockers have been disabled.

Note. Any display action types created must be registered in the display action type bundle in addition to the delivered display alert action type.

Considerations for Creating a New Action Type

When creating a new action type, consider:

- The location of the code that handles the design-time and runtime aspects of the action type.
- The configuration requirements of the new action type before being enabled.
- Whether the action type is a terminal action.

For example, the action is to transferring to another page terminates the framework processing. If several terminal actions are associated with a trigger point, only the first of the terminal actions is chosen, and it fires after all other nonterminal actions have been fired.

Configuring the Action Type

If your action type requires a configuration page:

- Create record definitions, keyed by EOCF_ACTION_ID, to capture design time configuration data.
- Create an action configuration component and page.
- Insert EOCF_ACTN_CFG_SBPG in the configuration page.

This displays the action type and action name on the configuration page.

- Insert the policy information subpage, EOCF_RULEINFO_SBP, on the page.

This displays policy information, including the policy name and condition text.

- If you need to access terms, put a clone of EOCF_SRCH_DSP_AL as a secondary page on your action configuration page, and add the following code in the page's activate code.

See the display alert action configuration page, EOCF_DSPL_ALRT_CFG, as an example of a configuration page.

```
import EOCF_CLF_RB:Definition:Rule:Rule;
import EOCF_CLF_RB:UI:*;

Component SearchBuilder &cobjSearchBuilder;
Component SearchConfig &cobjSearchConfig;
Global Rule &gobjRule;
Local RuleBuilder &objRuleBuilder = create RuleBuilder();
  &cobjSearchConfig = create EOCF_CLF_RB:UI:SearchConfig();

/** Build Search page display */
/** Add where clause to filter terms by scalar */
&cobjSearchConfig.AddCustomWhereClause(FetchSQL(SQL.EOCF_WHERECL_TMSCALAR), 0,
  "");
&cobjSearchBuilder = create SearchBuilder(EOCF_ACTION_WRK.EOCF_CONTEXT_ID,
  &cobj SearchConfig);
&cobjSearchBuilder.BuildDisplay();
/** Populate Rule info */
&objRuleBuilder.PopulateRuleInfo(&gobjRule);
```

- Insert a push button on the configuration page to transfer to this secondary page (for the purpose of choosing a term).

Some of the terms on your configuration page may be configurable. Therefore, you must paste another subpage, EOCF_TERMCFG_SBP, on the configuration page for this purpose.

- Insert the following page activate code on your action configuration page to initialize the term configuration subpage:

```

import EOCF_CLF_RB:Definition:Rule:Rule
import EOCF_CLF_RB:UI:*;
import EOCF_CLF_RB:UI:ConfigBuilder;
import EOCF_CLF_RB:Definition:RuleTermConfig;
import EOCF_CLF_DL:Factory:DataLibraryFactory;
import EOCF_CLF_DL:Definition:Term:TermDefn;
import EOCF_CLF_DL:Utility:DLConstants;
Local Rowset &rs_level0, &rsActionTypeDefn;
Local number &bundleId, &actionId;
Local number &actionTypeId;
Local string &isTerminal, &isCombinable, &isConfigurable;
Local string &aeTriggered, &appMsgTriggered, &ciTriggered, &piaTriggered;
Local string &commit, &path, &id, &dtAppClassId, &appClsPath, &dtAppClsPath,
    &rtApp ClassId, &rtAppClsPath, &actTypeName, &actionName;
Global EOCF_CLF_RB:Definition:Rule:Rule &gobjRule;
Local EOCF_CLF_RB:UI:RuleBuilder &objRuleBuilder = create EOCF_CLF_RB:UI:
    Rule Builder();
Local EOCF_CLF_RB:Definition:RuleTermConfig &objRuleTermConfig = create
    EOCF_CLF_RB: Definition:RuleTermConfig();
Local EOCF_CLF_DL:Factory:DataLibraryFactory &objDlFactory = create
    EOCF_CLF_DL: Factory:DataLibraryFactory();
Local EOCF_CLF_DL:Definition:Term:TermDefn &objTermDefn = create
    EOCF_CLF_DL: Definition:Term:TermDefn();
Local EOCF_CLF_DL:Utility:DLConstants &objDLConstants = create EOCF_CLF_DL:
    Utility: DLConstants();
/*****
/* CREATE A CONFIG BUILDER TO CREATE UI ELEMENTS THAT ENABLE TERM
/* CONFIGURATION-TO BE DONE ONLY BY ACTIONS THAT NEED TO ACCESS DATA
/* LIBRARY TERMS, AND THUS HAVE THE TERM-PICKER SCROLL AND THE TERM
/* CONFIGURATION SUBPAGE ON THE PAGE */

Local ConfigBuilder &objConfigBuilder;
Local Rowset &rs1 = GetLevel0()(1).GetRowset(Scroll.EOCF_DS_ALT_TRM);
&objConfigBuilder = create ConfigBuilder();
&objConfigBuilder.InitDisplay();
For &i = 1 To &rs1.ActiveRowCount
    &termId = &rs1(&i).EOCF_DS_ALT_TRM.EOCF_LIB_TERM_ID.Value;
    If All(&termId) Then
        If All(&rs1(&i).EOCF_DS_ALT_TRM.EOCF_CONFIG_ID.Value) Then
            /*****
            &objRuleTermConfig = create EOCF_CLF_RB:Definition:RuleTermConfig();
            /*****
            &objRuleTermConfig.EOCF_CONFIG_ID = &rs1(&i).EOCF_DS_ALT_TRM.
                EOCF_CONFIG_ID.Value;
            &objRuleTermConfig.getConfiguredTerm( True);
            &rs1(&i).EOCF_DS_AL2_WRK.EOCF_GOTO_BTN.Label = &objRuleTermConfig.
                Get ConfigTermLabel(EOCF_ACTION_WRK.SETID.Value);
            &rs1(&i).EOCF_DS_AL2_WRK.EOCF_GOTO_BTN.Enabled = True;
        Else
            &objTermDefn = &objDlFactory.getTermDefn(&termId, False,
                &obj DLConstants.ALLOCATIONTYPE_READONLY);
            &rs1(&i).EOCF_DS_AL2_WRK.EOCF_GOTO_BTN.Label = &objTermDefn.
                EOCF_TERM_LABEL;
            &rs1(&i).EOCF_DS_AL2_WRK.EOCF_GOTO_BTN.Enabled = False;
        End-If;
    Else
        /*****
&rs1(&i).EOCF_DS_AL2_WRK.EOCF_GOTO_BTN.Label = " ";
&rs1(&i).EOCF_DS_AL2_WRK.EOCF_GOTO_BTN.Enabled = False;
    End-If;

```

```

End-For;

Local Grid &TERMGRID;
Local GridColumn &TERMCOLUMN, &LOOKUPCOLUMN;

&TERMGRID = GetGrid(Page.EOCF_DSPL_ALRT_CFG, "EOCF_DS_ALT_TRM");
&TERMCOLUMN = &TERMGRID.GetColumn("EOCF_GOTO_BTN");
&TERMCOLUMN.Label = " ";
&LOOKUPCOLUMN = &TERMGRID.GetColumn("EOCF_CONFIGURE");
&LOOKUPCOLUMN.Label = MsgGetText(18112, 2541, "Message not found - Get Term");
/*****
/*POPULATE RULE INFO - NEEDS TO BE DONE BY ALL CLF ACTIONS, i.e., */
/*ACTIONS WHOSE CONFIG PAGES HAVE BEEN NAVIGATED TO VIA RULE BUILDER */

&objRuleBuilder.PopulateRuleInfo(&gobjRule);
/*****
/* GET THIS ACTION'S ACTION TYPE NAME - TO BE DONE BY ALL ACTIONS */

&rs_level0 = GetLevel0();
&actionId = &rs_level0(1).EOCF_ACTION_WRK.EOCF_ACTION_ID.Value;
&actionTypeId = &rs_level0(1).EOCF_ACTION_WRK.EOCF_ACTION_TYP_ID.Value;
&actionName = &rs_level0(1).EOCF_ACTION_WRK.EOCF_ACTION_NAME.Value;

/* Get details of Action Type */
rem SQLExec(SQL.EOCF_ACTTYP_DTLS2_SEL, &actionTypeId, &actTypeName,
&dtAppClassId, &dtAppClsPath, &rtAppClassId, &rtAppClsPath, &isTerminal,
&isConfigurable, &isCombinable, &aeTriggered, &appMsgTriggered,
&ciTriggered, &piaTriggered, &CommitFlag, &dtCommit, &descr);

/***** Get details of Action Type *****/
/**** Modified by SB to enable rel. language processing for action type name *****/

&rsActionTypeDefn = CreateRowset(Record.EOCF_ACTN_TYPE);
&numrows = &rsActionTypeDefn.Fill("WHERE EOCF_ACTION_TYP_ID = :1",
&actionTypeId);

If &numrows > 0 Then
&actTypeName = &rsActionTypeDefn(1).GetRecord(1).EOCF_ACT_TYP_NAME.Value;
&dtAppClassId = &rsActionTypeDefn(1).GetRecord(1).EOCF_DT_APPCLASSID.Value;
&dtAppClsPath = &rsActionTypeDefn(1).GetRecord(1).EOCF_DT_APPCLSPATH.Value;
&rtAppClassId = &rsActionTypeDefn(1).GetRecord(1).EOCF_RT_APPCLASSID.Value;
&rtAppClsPath = &rsActionTypeDefn(1).GetRecord(1).EOCF_RT_APPCLSPATH.Value;
&isTerminal = &rsActionTypeDefn(1).GetRecord(1).EOCF_IS_TERMINAL.Value;
&isConfigurable = &rsActionTypeDefn(1).GetRecord(1).EOCF_IS_CFG_FLAG.Value;
&isCombinable = &rsActionTypeDefn(1).GetRecord(1).EOCF_IS_CMBIN_FLAG.Value;
&aeTriggered = &rsActionTypeDefn(1).GetRecord(1).EOCF_AE_TRIGGERED.Value;
&appMsgTriggered = &rsActionTypeDefn(1).GetRecord(1).EOCF_APPMSG_TRIGGR.Value;
&ciTriggered = &rsActionTypeDefn(1).GetRecord(1).EOCF_CI_TRIGGERED.Value;
&piaTriggered = &rsActionTypeDefn(1).GetRecord(1).EOCF_PIA_TRIGGERED.Value;
&CommitFlag = &rsActionTypeDefn(1).GetRecord(1).EOCF_COMMIT_FLAG.Value;
&dtCommit = &rsActionTypeDefn(1).GetRecord(1).EOCF_DT_COMMIT.Value;
&descr = &rsActionTypeDefn(1).GetRecord(1).DESCR.Value;
End-If;

/* Populate the ActionTypeName field for display */
&rs_level0(1).EOCF_DSTIME_WRK.EOCF_ACT_TYP_NAME.Value = &actTypeName;

/*****
/* PLEASE DO THE FOLOWING IF YOU NEED THE DETAILS OF THE ACTION TYPE */
/* THAT WERE ENTERED AT THE TIME OF ACTION TYPE Registration*/
/* This Display Alert action Does not need these details*/
/*
&rs_level0(1).EOCF_DSTIME_WRK.EOCF_DT_APPCLASSID.Value = &dtAppClassId;
&rs_level0(1).EOCF_DSTIME_WRK.EOCF_DT_APPCLSPATH.Value = &dtAppClsPath;

```

```

&rs_level0(1).EOCF_DSTIME_WRK.EOCF_RT_APPCLASSID.Value = &rtAppClassId;
&rs_level0(1).EOCF_DSTIME_WRK.EOCF_RT_APPCLSPATH.Value = &rtAppClsPath;
&rs_level0(1).EOCF_DSTIME_WRK.EOCF_IS_CFG_FLAG.Value = &isConfigurable;
&rs_level0(1).EOCF_DSTIME_WRK.EOCF_IS_CMBIN_FLAG.Value = &isCombinable;
&rs_level0(1).EOCF_DSTIME_WRK.EOCF_IS_TERMINAL.Value = &isTerminal;
&rs_level0(1).EOCF_DSTIME_WRK.EOCF_APPMSG_TRIGGR.Value = &appMsgTriggered;
&rs_level0(1).EOCF_DSTIME_WRK.EOCF_CI_TRIGGERED.Value = &ciTriggered;
&rs_level0(1).EOCF_DSTIME_WRK.EOCF_AE_TRIGGERED.Value = &aeTriggered;
&rs_level0(1).EOCF_DSTIME_WRK.EOCF_PIA_TRIGGERED.Value = &piaTriggered;
&rs_level0(1).EOCF_DSTIME_WRK.EOCF_COMMIT_FLAG.Value = &CommitFlag;
&rs_level0(1).EOCF_DSTIME_WRK.EOCF_DT_COMMIT.Value = &dtCommit;
&rs_level0(1).EOCF_DSTIME_WRK.DESCR.Value = &descr;
*/
/*****
/* PLEASE DO THE FOLLOWING IF THE ACTION IS A COMBINABLE ONE AND YOU */
/* NEED THE INFO REGARDING THE ACTION BUNDLE OF WHICH IT IS A PART */
/* This Display Alert Action , though combinable, does not need this */
/*
SQLExec(SQL.EOCF_ACT_BUNDLE_SEL, &actionTypeId, &ActnBundleId);
&rs_level0(1).EOCF_DSTIME_WRK.EOCF_ACT_BUNDLE_ID.Value = &ActnBundleId;*/
/*****/

```

Creating Design and Runtime Application Class Code

To create the design-time and runtime application class code:

1. Create an application package named *<your product code>_AAF_ACTIONS*.
2. Create a class in the package to be your design-time action application class.

It must extend the EOCF_CLF_AF: ActionCfgBase and must implement the designAction() method.

This class is responsible for transferring from the policy builder page to the action configuration page previously created.

All relevant information regarding the rule and the context will be available to the configuration page.

(See the EOCF_CLF_ACTIONS: DisplayAlertCfg as an example.)

3. Create another class in the package to be your runtime application class.

This class must extend EOCF_CLF_AF:ActionBase and must implement the runAction() method.

This class is responsible for launching the action.

In order to perform the action, all of the relevant information will be available.

(See the EOCF_CLF_ACTIONS: DisplayAlert as an example.)

4. Register the action type in the Register Action Type page.

Specify the name of your new action type, the names of your design-time and runtime application classes, and other action type characteristics.

Specify the trigger types and trigger points that may have policies using this action type.

For example, you may want an action to be triggered during ComponentPostBuild trigger types, specifically the trigger point "When a Defect is Presented, in Quality Management." After you complete these configuration steps, the action type is available for use.

5. If an action type is combinable with other action types, register it in an action type bundle in addition to the other combinable action types.

All display action types must be included in a single action type bundle.

6. If your new action is configurable, click Configure on the page.

This transfers you to the action configuration page for more specifications.

7. Insert the subpage EOCF_DISPLAY_SUBPG in Level 0 on all pages that you want display-enabled.

Note. This display subpage must not overlap any other field and no pop-up blockers should be running.

Considerations for Creating an Application Class Implementation

Oracle recommends that:

- Implementations of related terms be grouped in a single class in which different methods are responsible for deriving the term's value.

This practice facilitates maintaining a manageable number of application classes.

- In situations in which the probability is high that multiple related terms are accessed during a single business event:
 - You have a single implementation return a rowset, record, or vector containing the data for as many of the terms as possible.
 - When defining the term, you specify which data element in the rowset, record, or vector is to be used for the term.

Technical Details of Application Class Implementations

The data library calls the appropriate application class based on the class and package information registered with the implementation. The application class is instantiated automatically and the specified application class method is invoked. The application class constructor must be coded to accept an instance of the `AccessMethod` class.

For example:

```
class LeadOppMetrics
  method LeadOppMetrics(&_oAccessMethod As EOCF_CLF_DL:Runtime:AccessMethods:
    Access Method);
  method LeadCountbyBO();
    private instance EOCF_CLF_DL:Runtime:AccessMethods:AccessMethod
      &ioAccess Method;
end-class;
```

The `AccessMethod` object enables the application class to access values for all the implementation binds (input parameters) that are needed by the implementation and all the information about the term being resolved.

Example of an Application Class Accessing Implementation Binds

The following partial code shows how an application class can access any of its implementation binds.

```
method GetCaseID Local any &CaseID;
    &CaseID = &ioAccessMethod.getBindValueByName("CASE_ID");
    Local EOCF_CLF_DL:Runtime:Results:ResultsScalar &oResultsScalar;
    &oResultsScalar = create EOCF_CLF_DL:Runtime:Results:ResultsScalar(&CaseID);
    &ioAccessMethod.Results = &oResultsScalar;
end-method;
```

The application class does not need to know how the data is retrieved and passed by the data library engine. The data could have been passed by the calling application, defined as a constant in context definition, or defined as a term and resolved by the data library engine. The application class can retrieve the data either by position or by name.

```
/* BO_ID is the name of the implementation bind;the bind name specified
   here matches the one to be specified at the time of registering the
   implemenation in &nBOID = &ioAccessMethod.getBindValueByName("BO_ID");
   Here the request is made to retrieve the value for the first bind. */
&nBOID = &ioAccessMethod.getBindValueByPosition(1);
```

Another way that the calling application can pass additional information to implementations or policy actions is to have the calling application use the `addUserVariable` method to add the information to the context object. To access this information, the application class uses the `getUserVariable` method.

For example:

```
&AdditionalData = &oAccessMethod.AMContext.getUserVariable("ExtraInfo");
```

Note. The shape of the data received by an application class using any of the previous methods will be a `PeopleCode Any` object. Therefore, the application class is responsible for converting the object to the appropriate data type before the value is consumed. If the application class has a method to be invoked by the data library engine, then that method should not require any parameters.

Sample Methods of an Application Class Resolving Terms

The following code is an example of an application class that has several methods for resolving terms.

```
class OperatorInfo
    method Get_Person_Name();
    method Get_Person_Salutation();
    method Get_Person_Title();
    method Get_Person_Gender();
    method Get_Person_BirthDate();
    method OperatorInfo(&oAccessMethodParam As EOCF_CLF_DL:Runtime:
        AccessMethods: AccessMethod);
    private
        instance EOCF_CLF_DL:Runtime:AccessMethods:AccessMethod &ioAccessMethod;
end-class;
```

If the data library engine invokes an application class method, that method is responsible for deriving the results and for inserting the results in the `AccessMethod` object. The data library engine transmits the results to the calling application. If an application class method is not specified in the implementation definition, the constructor is responsible for performing these tasks.

The data library provides several mechanisms through which the application class can return the output value to the data library:

- The application class instantiates one of the following application classes with the output value that needs to be passed to the engine.
 - `ResultsRecord Record &oResultsRecord = create EOCF_CLF_DL:Runtime:Results:ResultsRecord(RecordVariable);`
 - `ResultsRowset Rowset &oResultsRowset = create EOCF_CLF_DL:Runtime:Results:ResultsRowset(RowsetVariable);`
 - `ResultsScalar Scalar &oResultsScalar = create EOCF_CLF_DL:Runtime:Results:ResultsScalar(ScalarVariable);`
 - `ResultsVector Vector &oResultsVector = create EOCF_CLF_DL:Runtime:Results:ResultsVector(VectorVariable);`
- The type of class to be instantiated depends upon the type of data that needs to be returned.
- The instantiated object is assigned to the member of `AccessMethod` object.

Note. Application class objects are not cached. When the data library engine invokes the application class because the data is not available in the cache, the application class is instantiated by invoking the constructor, then the method specified in the implementation. Therefore, the instance variables created in the constructor cannot be shared across multiple methods of the same class to resolve different terms.

See [Chapter 3, "Setting Up the Data Library," Defining Term Properties, page 30.](#)

Example of How a Value Can Be Passed to the Data Library

The following example is a partial code listing of how a value can be passed to the data library:

```
method GetCaseID
Local any &CaseID;
  &CaseID = &ioAccessMethod.getBindValueByName("CASE_ID");
/* use the appropriate sub class of Results class for assigning value */
Local EOCF_CLF_DL:Runtime:Results:ResultsScalar &oResultsScalar;
&oResultsScalar = create EOCF_CLF_DL:Runtime:Results:ResultsScalar(&CaseID);
&ioAccessMethod.Results = &oResultsScalar;end-method;
```

Sample Code of an Application Class Implementation

The following is an example of an application class implementation.

```

import EOCF_CLF_DL:Runtime:AccessMethods:*;
import EOCF_CLF_DL:Runtime:Resolution:*;
import EOCF_CLF_DL:Contexts:*;
import EOCF_CLF_DL:Runtime:Results:*;

class CaseRecordInformation
  method CaseRecordInformation(&oAccessMethod As EOCF_CLF_DL:Runtime:
    Access Methods:AccessMethod);
  method GetResultRecord();

private
  instance EOCF_CLF_DL:Runtime:AccessMethods:AccessMethod &ioAccessMethod;
end-class;

method CaseRecordInformation
  /+ &oAccessMethod as EOCF_CLF_DL:Runtime:AccessMethods:AccessMethod +/

  &ioAccessMethod = &oAccessMethod;
end-method;

method GetResultRecord
  Local Record &result;
  Local number &nResolved_value, &nCaseID;
  Local string &sBusUnit;

/* Retrieving the implementation bind using the API */
&nCaseID = &ioAccessMethod.getBindValueByName("CASE_ID");

SQLExec("SELECT BUSINESS_UNIT FROM PS_RC_CASE WHERE CASE_ID = :1",
  &nCaseID, &s BusUnit);
&result = CreateRecord(Record.RC_CASE);
&result.CASE_ID.Value = &nCaseID;
&result.BUSINESS_UNIT.Value = &sBusUnit;
&result.SelectByKey();
/* Passing the values (in this case, it is a record) back to the data
library engine - this record could be used to resolve multiple terms */
&ioAccessMethod.Results = (create EOCF_CLF_DL:Runtime:Results:
  ResultsRecord (&result));

end-method;

```

Considerations for Creating a PS Query Implementation

Oracle recommends that you perform these tasks when multiple related terms may be accessed during a single business event:

1. Create a single PS Query implementation to return a rowset containing the data for several terms.
2. Specify which data element or field position in the rowset or record is to be used for the term.
3. Ensure that appropriate privileges have been set for accessing the objects present in the query.

Note. Use caution when using this type of implementation because the query may execute very slowly.

Considerations for Creating a Policy

The PeopleSoft Active Analytics Framework is neither a programming tool nor a substitute for PeopleCode. Do not use the framework as a way to program policies that do not need to be configurable. If policies are static, the use of PeopleCode is the best method. The framework should not be used as a tool to configure the presentation layer: for dynamically hiding or unhiding fields, making the fields editable, and so on. Furthermore, the data library should not be used when no need exists for the data abstraction layer.

Use the PeopleSoft Active Analytics Framework when a need exists for business users to configure business processes with business rules, without having to customize the application.

Before building policies, consider that each term used in conditions or in actions within policies could negatively affect performance of the application component, especially if the term's retrieval mechanism is time consuming.

Index

A

- action bundles 3
- action framework
 - architecture 45
 - definition of 3
 - overview 45
- action objectives, registering 56
- actions
 - adding, editing, configuring 12
 - display alert 13
 - understanding execution 46
- action type bundles, registering 47, 49
- action types 3
 - configuring 71
 - creating 71
 - overview 45
 - registering 47
- action type triggers, registering 49
- aliases 37
- application class
 - code, creating for design and runtime 75
 - example of accessing binds 77
 - sample of resolving terms 77
- application class implementation 29
 - creating 76
 - sample code 78

B

- binds, accessing application class 77
- business domains, registering 64

C

- categories, registering 64
- combinable action 46
- conditions
 - adding 9
 - selecting terms for 9
 - setting right-hand side values 11
- context objects
 - managing 41
- contexts 2
 - configuring 38
 - creating 67
 - managing 37
 - online and generic 37
 - overview 37
- contextual implementations 32
- context variables 37
 - characteristics of 37
- custom operator expressions, creating 68

D

- data library
 - components 27
 - definition of 2
 - how a value is passed 78
 - overview 27
 - setting log options 52
 - subject areas 2
- display action
 - enabling 70
- display alert action
 - configuring 13
- display alert action type 45

E

- example, application implementation binds 77
- Execute All option 21
- Execute Limited Number option 21
- execution options 21

F

- formatting data 32

G

- generic contexts 37
- generic implementations 32

I

- implementations
 - contextual 32
 - creating an application class 76
 - creating a PS query 79
 - definition 28
 - definition of 28
 - generic 32
 - registering 29
 - testing terms 35

L

- location numbers 69

M

managing contexts 37

N

naming terms 68

O

online contexts 37

operands

location number 69

operator

selecting 11

operators

registering 60

operator sets

registering 62

P

PeopleSoft Active Analytics Framework

definition of 1

installation options 54

policies

activating 15

associating to another trigger point 15

building and managing 5

copying 16

creating 80

definition of 1

editing 6

prerequisites to building 5

reusing 19

policy

activating 15

policy groups 7

setting execution options 21

policy or policy group

adding 19

removing 18

reordering 19

preconditions

adding 20

PS query implementation 79

PS Query implementation 29

R

Record.Field implementation 29

registering

action objectives 56

action type bundles 47, 49

action types 47

action type triggers 49

resolutions methods 62

resolution methods, registering 62

S

setting execution options 21

guidelines 25

SQL object implementation 29

subject areas 2

defining 58

T

term codes 69

term implementations

testing 35

term properties 30

terms

configuration of 31

configuring 11

creating 30

exposing component buffer fields 68

managing 33

methods of an application class resolving 77

naming 68

prompt details 31

registering 30

scope of implementation 32

user binds 31

trigger points

creating 70

definition of 1

enabling in a PeopleCode event 70

hierarchy 18

managing 17

registering 57

registration of 2

setting execution options 21

trigger types

registering 56

U

Use Parent Execution Options option 21