Inline Processing Engine User Guide

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Preface

This guide explains the concept behind the Inline Processing Engine (IPE) and step-by-step instruction to use the framework.

This preface includes the following topics.

- Audience
- Related Documents
- Conventions

Audience

This guide is intended for the following users:

- **Business Users and Administrators** who are instrumental in solution designing and creation of statistical models using historical data and also to maintain and execute batches, make the Infrastructure Application secure and operational.

Related Documents

For more information about the Inline Processing Engine, refer to the following documents in OHC:

- *OFS Inline Processing Engine Configuration Guide 8.0.2.0.0*
- *OFS Inline Processing Engine Sample Application Installation Guide 8.0.2.0.0*
- *OFS Advanced Analytical Applications Infrastructure Application Pack Installation and Configuration Guide 8.0.2.0.0*
- *OFS Analytical Applications Environment Check Utility Guide 8.0.2.0.0*
- *OFS Advanced Analytical Applications Infrastructure User Guide 8.0.2.0.0*

Conventions

Table 1 provides the conventions used in this guide.

Table 1. Conventions Used in this Guide

Convention	Meaning
Italics	• Names of books, chapters, and sections as references • Emphasis
Bold	• Object of an action (menu names, field names, options, button names) in a step-by-step procedure • Commands typed at a prompt • User input
`Monospace`	• Directories and subdirectories • File names and extensions • Process names • Code sample, including keywords and variables within text and as separate paragraphs, and user-defined program elements within text
<Variable>	Substitute input value

Acronyms

This guide uses the following acronyms.

Table 2. Acronyms

Acronyms	Meaning
HTML	Hyper Text Markup Language
HTTP	Hypertext Transfer Protocol
Infodom	Information Domain
IP	Internet Protocol
IPE	Inline Processing Engine
OFSAA	Oracle Financial Services Analytical Applications
OFSAAA	Oracle Financial Services Advanced Analytical Applications
LHS menu	Left hand side menu
OFSAAI	Oracle Financial Services Analytical Applications Infrastructure
PDF	Portable Data Format
URL	Uniform Resource Locator
XML	Extensible Markup Language

CHAPTER 1 About Inline Processing Engine (IPE)

The Oracle Financial Services Inline Processing Engine application creates an infrastructure for real time monitoring of incoming messages. This capability will enable you to identify fraud events earlier, avert more losses, and minimize customer service and retention issues.

This chapter covers the following topics:

- Overview
- Workflow of Inline Processing Engine application
- Users and User Groups

Overview

The Inline Processing Engine supports the ability to rapidly provide knowledge of related suspicious behavior back to individual business units, and even alert customers about any unpredicted activity.

This capability helps to identify events earlier, avert more losses, and minimize customer service and retention issues. This combination of real-time detection and interdiction, real-time alert correlation, and sophisticated behavior detection provided by the application, will result in a competitive fraud prevention offering.

The system uses cases from risk and performance OFSAA Applications, where real time monitoring is required.

Key Features

The Inline Processing Application has the following key features:

- **Association and Configuration**- The Association and Configuration menu has the following sections:
  - Processing Segments
  - Business Entities
  - Inline Datasets
  - Traversal Path
- **Expressions** - Expressions are used in Evaluation scoring and Filters.
- **Post Processing Actions** - Post Processing Actions are the actions which can be triggered by the outcome of the Assessment.
- **Profiles** - A profile is an aggregation of information. Profiles can be based on different grouping entities (for example, account, customer, and so on). This can be filtered to only look at particular kinds of transactions. Profiles can be based on time (last three months) or transaction counts (last 100 transactions).

- **Evaluations** - An assessment is made up of multiple individual evaluations. These evaluations start with information on the incoming transaction and check logical conditions.
- **Assessments** - When a transaction is received, an Assessment is performed. The assessment is a collection of individual evaluations, each of which can return a score.

Workflow of Inline Processing Engine application

The process flow of the Inline Processing Engine application is shown below.

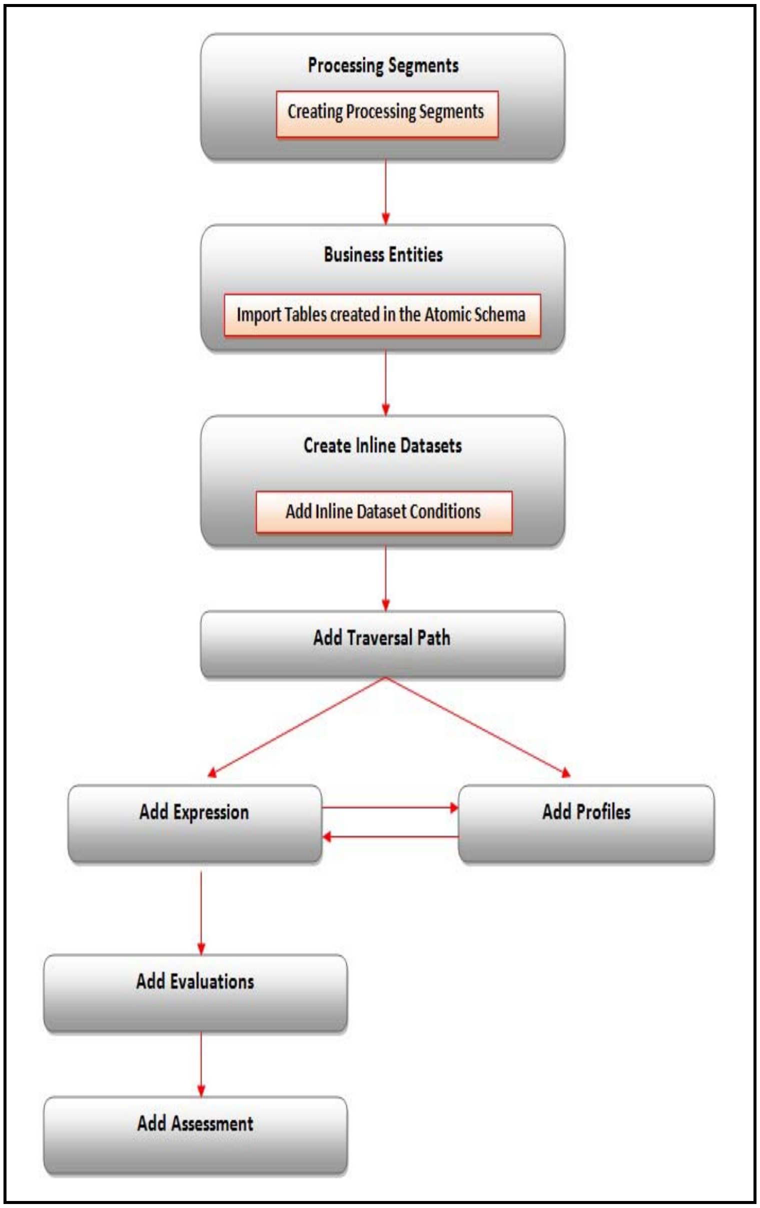


Figure 1. IPE Workflow

Users and User Groups

The Inline Processing Engine application consists of the following users and their actions:

Users

- IPE Administrators who maintain and execute batches, make the Infrastructure Application secure and operational, and configure users and security.

User Groups

The user group IPEADMN must be mapped to the user to access IPE.

CHAPTER 2 Getting Started

This chapter describes how to get started with Inline Processing Engine.

This chapter discusses the following topics:

- Accessing OFSAA Applications
- Navigating to Inline Processing Engine Home Page
- Using Common Buttons in IPE

Accessing OFSAA Applications

To access the OFSAA Applications, follow these steps.

1. Enter the URL in the following format in your Internet Explorer browser.

   `<scheme/ protocol>://<ip address/ hostname>:<port>/<context-name>/login.jsp (for example, https://myserver:9080/ofsaaapp/login.jsp)`. The OFSAA Login page is displayed.

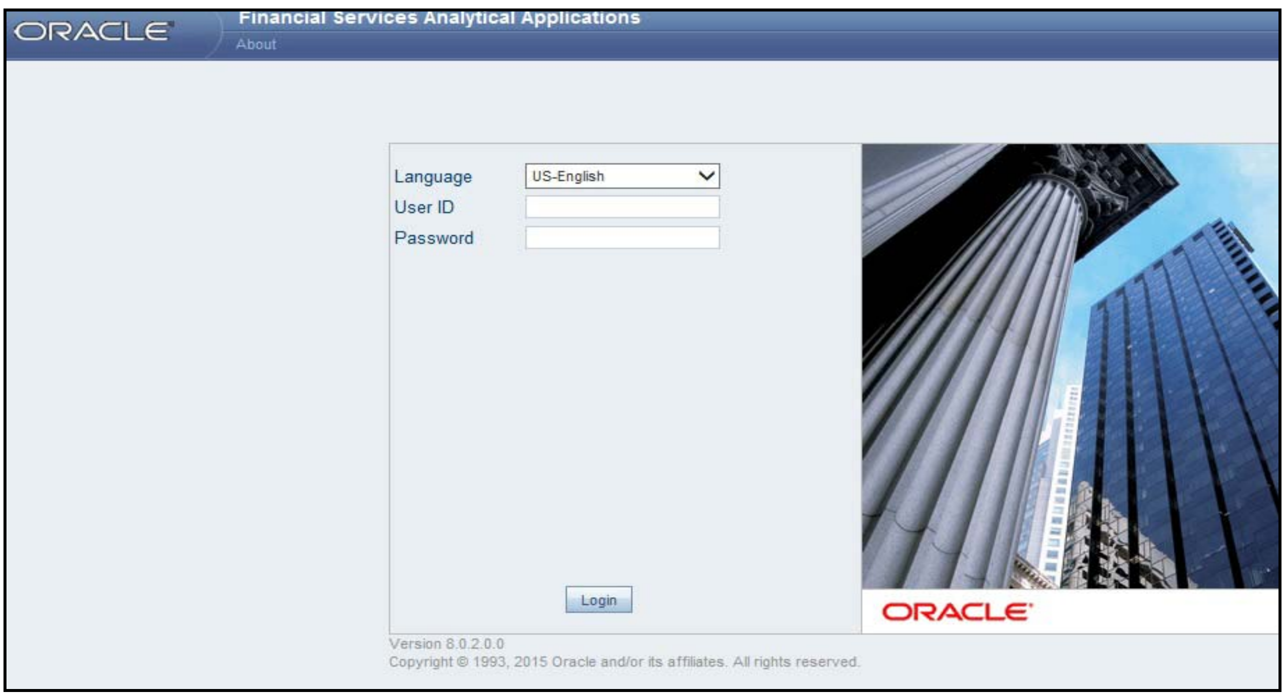


Figure 2. OFSAA Login page

2. Select the Language from the Language drop-down list.
3. Enter your User ID and Password.

4. Click **Login**. The OFSAA Application page is displayed.

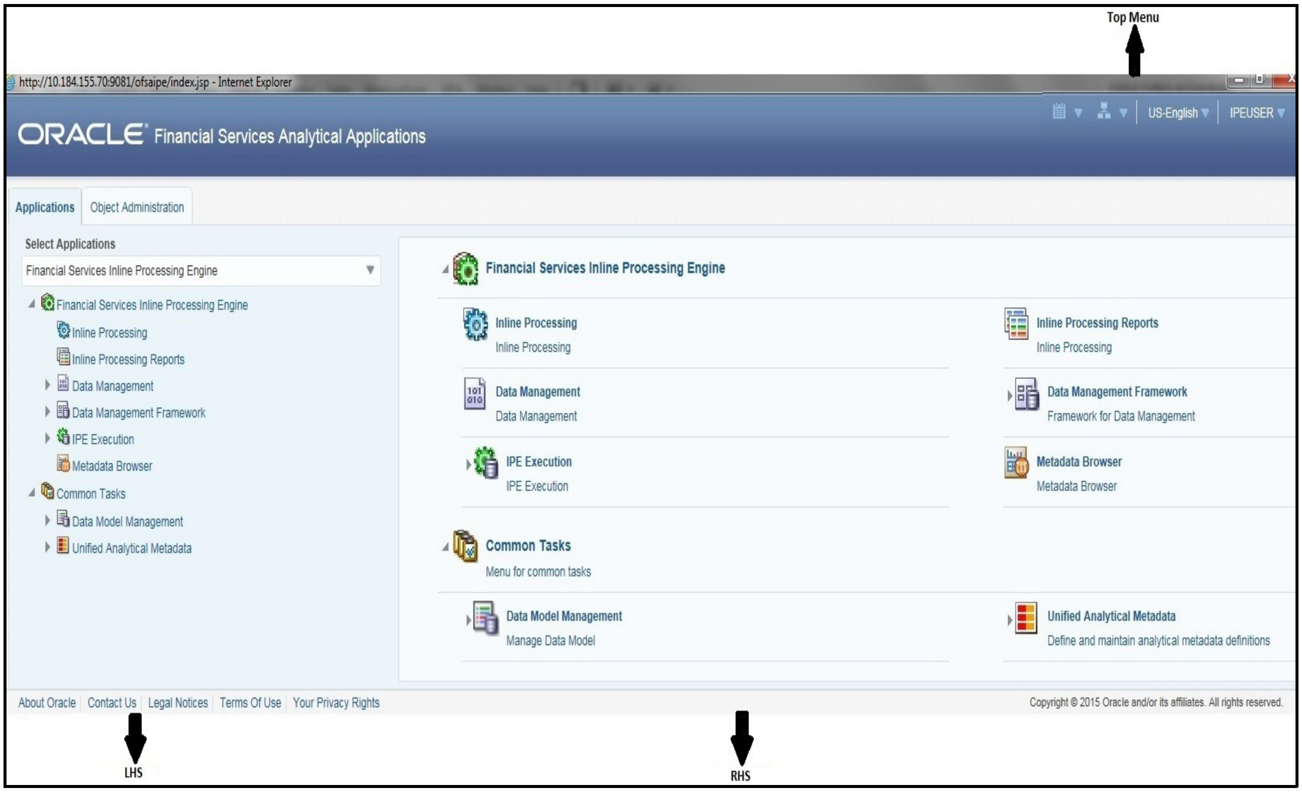


Figure 3. OFSAA Home page

The OFSAA Home page has multiple tabs and each tab has specific links to OFSAA Infrastructure and/or Application modules. Depending on the user roles, you are mapped and depending on the OFSAA Application you select, the relevant tabs and links are displayed.

This page contains the following sections:

- Top menu
- Left Hand Side (LHS)
- Right Hand Side (RHS)

Top Menu

This section displays the logged in User information and Information Domain. The Top menu contains the following buttons:

- **Last Login Date**: This option allows you to view the last login date and time. It also displays the last failed login date and time.
- **Connected To**: This option allows you to view the Information Domain you are connected to and the Environment Details set in the Configuration page.

- **Language**: This option allows you to view the language selected.
- **User Name**: Displays the user name of the person logged in. click the user name to view the following options:
    - **Preferences:** This option allows you to set the Home Page.
    - **About**: This option displays the copyright information.
    - **Change Password**: This option opens the Change Password window.
    - **Logout**: This option allows you to log out of the application.

Left Hand Side (LHS)

This section displays the menu which allows you to navigate to the required module. The items displayed in the Menu depend upon the access rights of the logged in user.

The LHS menu changes depending on the application selected from the Select Application drop-down list. For more details, refer to the Oracle Financial Services Analytical Application Infrastructure User Guide.

When you select **Financial Services Inline Processing Engine**, the following menu items are displayed in the Home Page:

- Applications Tab
- Object Administration Tab
- Sandbox Tab
- System Configuration and Identity Management Tab

Applications Tab

The following menu items are available in the Applications tab:

- Financial Services Inline Processing Engine
    - Inline Processing
    - Inline Processing Reports
    - Data Management

      For more information, refer to the *Oracle Financial Services Advanced Analytical Applications Infrastructure User Guide.*
    - Data Management Framework

      For more information, refer to the *Oracle Financial Services Advanced Analytical Applications Infrastructure User Guide.*
    - IPE Execution

      This module allows the user to execute an assessment in IPE. For more information, refer to the Rules Run Framework module and Operation module in *Oracle Financial Services Advanced Analytical Applications Infrastructure User Guide*. To execute the assessment in batch mode for IPE, refer *Executing an Assessment Batch*.
    - Metadata Browser

For more information, refer to the *Oracle Financial Services Adcanced Analytical Applications Infrastructure User Guide*.

- Common Tasks

  For more information, refer to the *Oracle Financial Services Advanced Analytical Applications Infrastructure User Guide*.

  - Data Model Management
  - Unified Analytical Metadata

Object Administration Tab

Object Administration is an integral part of the Infrastructure system and facilitates system administrators to define the security framework with the capacity to restrict access to the data and metadata in the warehouse, based on a flexible, fine-grained access control mechanism. These activities are mainly done at the initial stage and later, when required.

This document deals with the information related to the workflow of Infrastructure Administration process with associated procedures to assist, configure, and manage the administrative tasks effectively.

The Object Administration tab lists the various OFSAA Information Domains created in the OFSAA setup based on the logged in user and the mapped OFSAA Application User Group(s).

To access the Object Administration tab, select the required Information Domains from the Select Information Domains drop-down list.

Based on your selection, the page refreshes the menus and links across the pane.

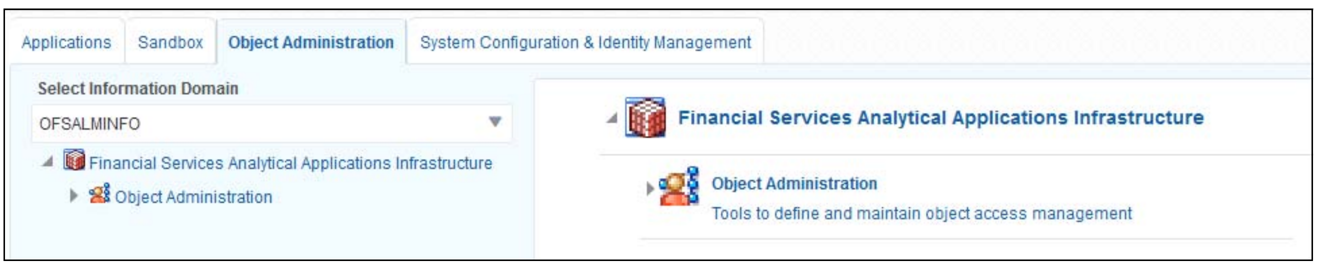


Figure 4. Figure 4: Object Administration tab

Sandbox Tab

Sandbox is a restricted environment in which you can analyze the data on a trial and errors basis and come up with actual analysis that helps predict the risks and business opportunities for banking institutions. You can create a sandbox by selecting the required datasets and the information domain which you want to implement as the sandbox.

The Sandbox tab lists the various Sandboxes created in the OFSAA setup based on the logged in user and mapped OFSAA Application User Group(s).

To access the Sandbox tab, select the required Sandbox from the Select Sandbox drop-down list.

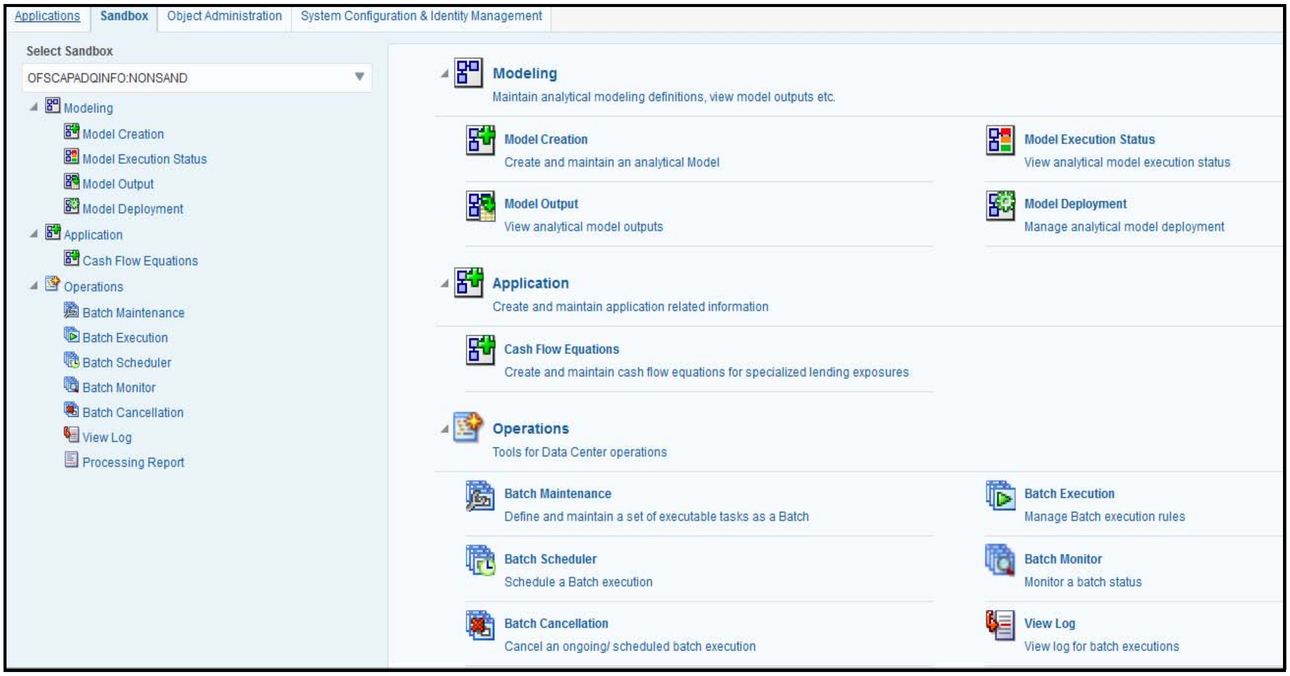


Figure 5. Sandbox tab

System Configuration and Identity Management Tab

System Configuration and Object Administration is an integral part of Infrastructure administration process and facilitates System Administrators to provide security and operational framework required for Infrastructure.

System Administrators can configure the Server details, Database details, OLAP details, and Information Domain along with the other Configuration process such as segment and metadata mapping, mapping segment to security and rules setup. System Configuration is mostly a one time activity which helps System administrator to make the Infrastructure system operational for use.

The System Configuration and Identity Management tab lists the OFSAA Infrastructure System Configuration and Identity Management modules.

The Create New Application feature allows you (System Administrator) to create a new Application other than the standard OFSAA Applications and associate the standard/default platform framework menu with it, thereby enabling the new application for usage. The standard platform framework menu is seeded and rendered.

After you create an Application, a new Role is created as <APP_CODE>ACC. This role along with the IPE Write role (RTIADMIN) need to be mapped to the user group IPEADMN. The users mapped to that user group will get the new Application listed in the Select Applications drop-down from the Applications tab. Only Enabled applications are listed in the drop-down list.

To access the System Configuration and Identity Management tab, select the required Information Domains from the Select Information Domains drop-down list.

Based on your selection, the page refreshes the menus and links across the pane.

Figure 6. System Configuration and Identity Management Tab

Right Hand Side (RHS)

This section displays user options available for the application selected.

Navigating to Inline Processing Engine Home Page

Once the application is installed and configured, you can access Oracle Financial Services Inline Processing Engine. To access Oracle Financial Services Inline Processing Engine, follow these steps:

1. Select **Inline Processing Engine** from the Select Application drop-down list.

Figure 7. OFSAA Home page (Inline Processing Engine)

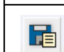
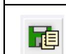
2. Click **Inline Processing** on the right pane. The Inline Processing Home Page is displayed.

Using Common Buttons in IPE

Table 3. Common Buttons

Button	Description
	To create a function.
	To view the details of a function.
	To edit the details of a function.
	To clear the fields and reset to default values.
	To select a new member.
	To select a filter / run condition/ define sub process.
	To select a source / component / job.
	To select a hierarchies / measures / job condition.
	To set precedence for members.
	To execute a Run definition.
	To select hierarchical members
	To delete a function.
	To select the entities.
	To validate grid data.
	To save the details.
/ /	To view the properties.
	To Refresh the grid details.
	To erase a specific value.
	To define an expression.
	To generate source model.
	To add attributes / add Source Configuration / Authorize a function.
	To generate Source Models.
	To generate a logic and view the SQL query / check syntax of the stored procedure.
	To add the source database configuration details.
	To view the dependencies of the selected Object.
/	To Export data.
	To trace a definition details.

Table 3. Common Buttons

	To receive instant on-window help.
	To view the log.
	To specify a date using calendar.
	To View Dependencies.
	To run the object migration rule.
	To interrupt the object migration rule.
 / 	To add and view the source database configuration details
 /   / 	To authorize or reject a function / definition.
 / 	To map / un-map source tables to columns.
	To view the time dependencies.
	To view the pagination option.
 / 	To view SQL statement.
	To view and enter the details in the *Expression* window.
	To create a Rule function.
	To open and view the rule details.
	To save a Rule function.
 /  / 	To search / find a member.
	To Save with customized details.
	To view the rule properties.
	To map between hierarchies.
	To select a member.
	To deselect a member.
	To sort in ascending order.
	To sort in descending order.
Help or 	To access the documentation resources.

CHAPTER 3

Association and Configuration

This chapter provides detailed information about Association and Configuration functionality and step-by-step instructions to use this module.

Association and Configuration allows a user to define the base metadata required for usage of other components of IPE.

This chapter discusses the following topics:

- Accessing Association and Configuration Menu
- Managing Processing Segments
- Managing Business Entities
- Managing Inline Datasets
- Managing Traversal Paths

Accessing Association and Configuration Menu

To access the Association and Configuration menu, follow these steps:

1. Navigate to the Inline Processing Home Page.
2. Click **Association and Configuration**. The Association and Configuration page is displayed.

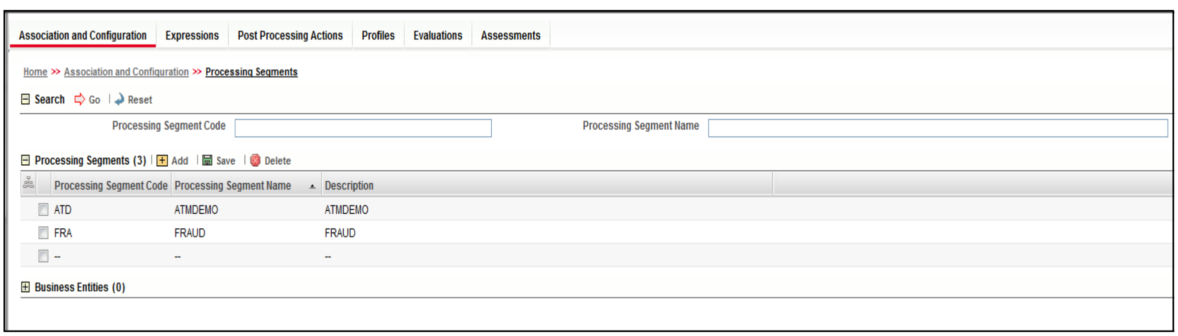


Figure 8. Association and Configuration page

Managing Processing Segments

Processing segments allows the user to logically group the metadata required for Assessments and its sub-components. Through Processing Segments, you can add and save a new segment or search for existing segments (for modification) or remove a segment.

Processing segment can be used for segregating assessments in run paradigm of IPE. This helps the client to selectively run a group of assessments in both real time or batch mode.

This section covers the following topics:

- Accessing Processing Segments
- Adding Processing Segment
- Searching Processing Segment
- Editing Processing Segment
- Deleting Processing Segment

Accessing Processing Segments

To access the Processing Segment page, follow these steps:

1. Navigate to the Inline Processing Home Page.
2. On the Association and Configuration menu, click **Processing Segments**. The Processing Segments page is displayed.

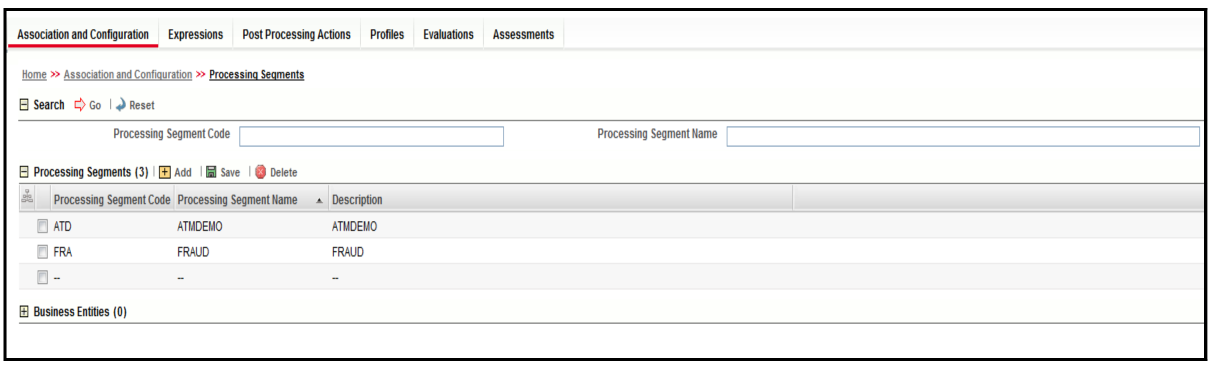


Figure 9. Processing Segments page

Adding Processing Segment

This option allows you to add a new processing segment, which is used to classify all the metadata in the selected Infodom logically.

To add a Processing Segment, follow these steps:

1. Navigate to the Processing Segments page.

2. Click **Add**. A new empty row is displayed in the list. Select the checkbox. The Add Processing Segment fields are enabled.

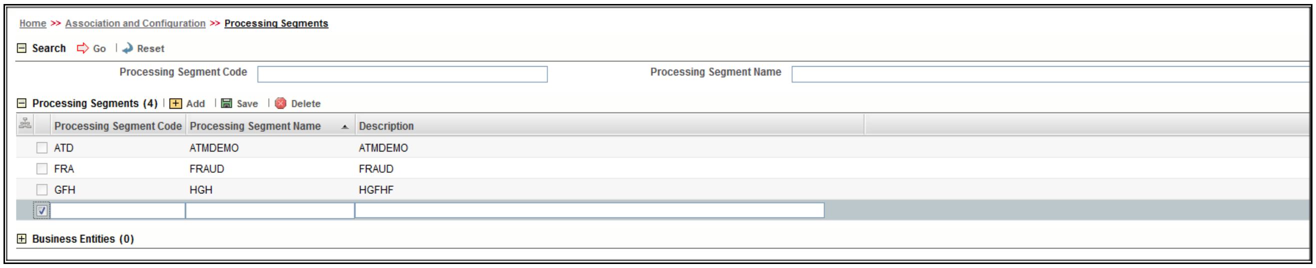


Figure 10. Adding Processing Segment

> **Note:** If you click **Add** when a row is empty in the list, then the following warning message is displayed: *Row is empty in Processing segment.*

3. Enter the following details:

Table 4. Add Processing Segment

Fields	Description
Processing Segment Code	Enter a distinct processing segment code. It allows only three characters.
Processing Segment Name	Enter a distinct processing segment name.
Description	Enter description for processing segment.

4. Click **Save**. A confirmation message is displayed.

Searching Processing Segment

To search Processing Segments, follow these steps.

1. Navigate to the Processing Segments page.
2. Enter the following details:

Table 5. Searching Processing Segment

Fields	Description
Processing Segment Code	Enter the unique code for the processing segment.
Processing Segment Name	Enter a unique name for the processing segment.

3. Click Go. The search details are displayed.

Editing Processing Segment

To edit a Processing Segment, follow these steps:

1. Navigate to the Processing Segments page.
2. Select the check box corresponding to the Processing Segment that you want to modify. The Processing Segment fields are enabled. You can also view the business entities mapped to this Processing Segment in the Business Entities section.

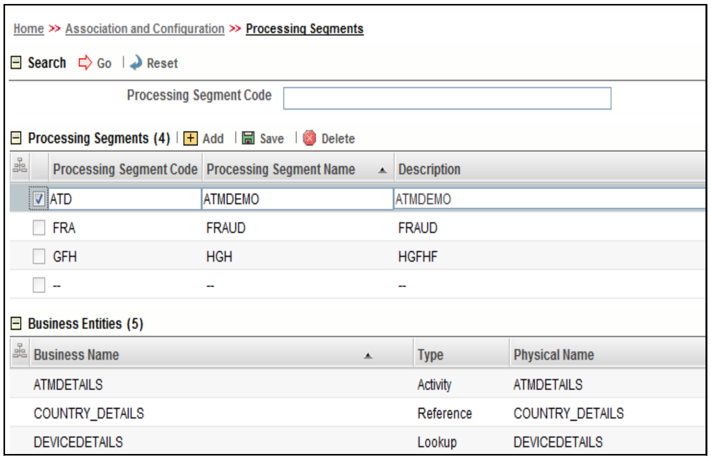


Figure 11. Modifying Processing Segment

3. Modify the necessary information. For more information on the Processing Segment fields, refer to the *Adding Processing Segment* table.
4. Click **Save**. A confirmation message is displayed.

Deleting Processing Segment

To delete a Processing Segment, follow these steps.

1. Navigate to the Processing Segments page.
2. Select the check box corresponding to the Processing Segment you want to delete.
3. Click **Delete**.

Note: System does not allow the user to delete the selected Processing Segment if it is used in other IPE Metadata.

Managing Business Entities

Business Entity is a business metadata layer on Database Tables. The user can import tables from the uploaded datamodel. For more information on Data Model upload, refer *Oracle Financial Services Advanced Analyitcal Applications Infrastructure User Guide.*

Through importing tables functionality, the tables are imported to IPE Business layer for referring the entity for further processing.

Business Entity is a virtual layer that can be added on an existing table. Through Business Entities menu, you can add a new business entity and also search for existing business entities to modify or remove a business entity. To add a table in Data Model, refer *Oracle Financial Services Advanced Analyitcal Applications Infrastructure User Guide.*

This section covers the following topics:

- Accessing Business Entities
- Importing Entity

- Updating Entity Details
- Deleting an Entity
- Adding Business Entities
- Editing Business Entity
- Deleting Business Entity
- Synchronizing Business Entities
- Updating Business Entity Attributes

Accessing Business Entities

To access the Processing Segment page, follow these steps:

1. Navigate to the Inline Processing Home Page.
2. On the Association and Configuration menu, click **Business Entities**. The Business Entities page is displayed.

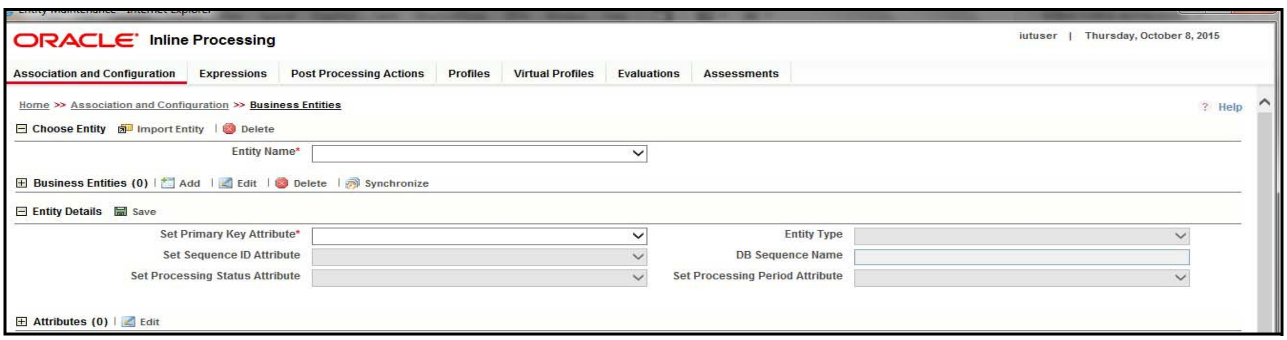


Figure 12. Business Entities page

Importing Entity

This option allows you to import data model tables to Inline Processing.

To import a Table, follow these steps:

1. Navigate to the Business Entities page.
2. Go to **Choose Entity** section. Click **Import Entity**. The Import Entity page is displayed.

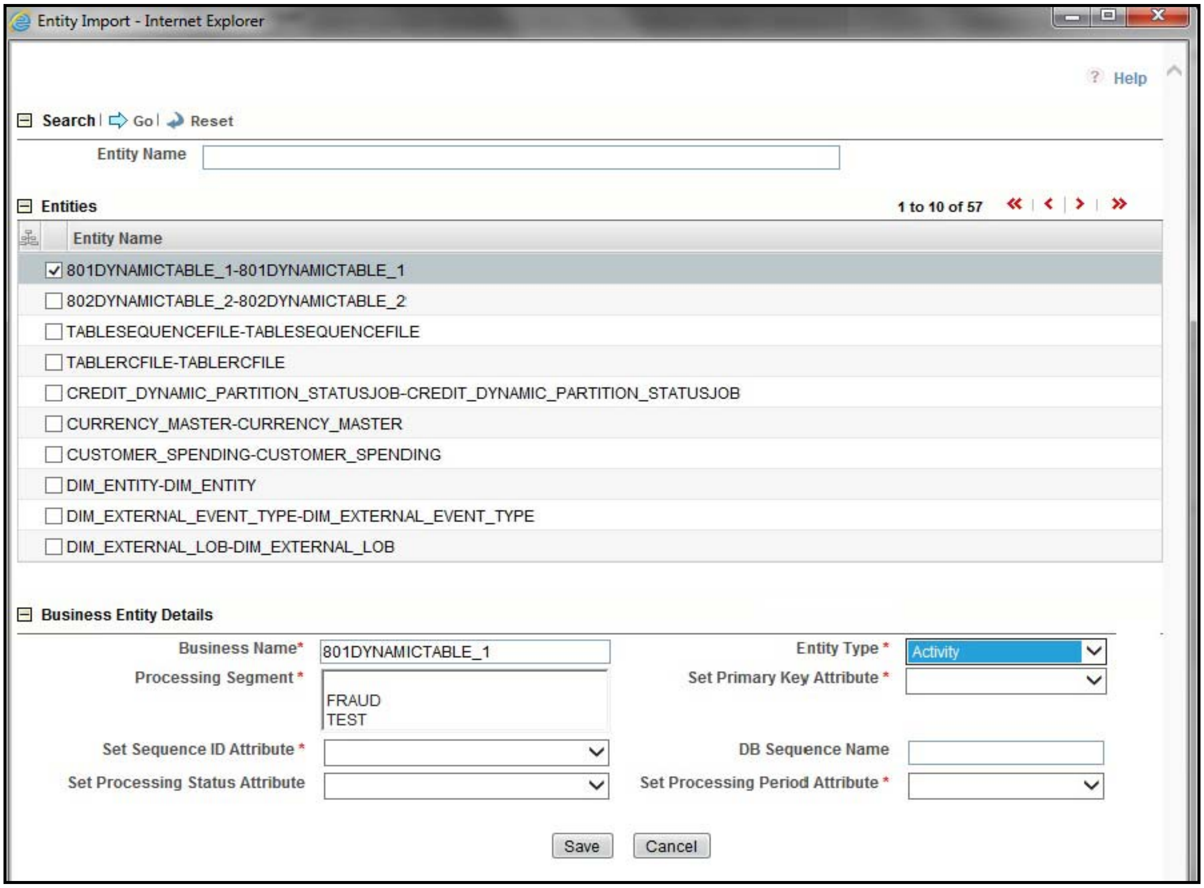


Figure 13. Importing Tables page

3. By default, all the tables defined in the data model are displayed. The Entity name is displayed in the format <Logical Name>-<Physical Name>. Search for the required Entity and select it. The Business Entity fields are enabled.

4. Enter the following details:

Field	Description
Business Name	Enter a distinct Business Name of the Entity. By default, the Business Name is populated as the logical name provided for the Table in the data model. The details of this field can be modified.
Entity Type	Select the Entity Type from the drop-down list. ● **Activity**: Select a table as Activity if the data is to be processed by IPE as a part of assessment execution. To use Activity as a Reference, relevant Inline Datasets and Traversal Paths should be created. For example, if wire transaction and cash transaction are two activities, then there should be inline datasets created for them and a traversal path connecting the two. ● **Reference:** Select a table as Reference if the table has static values for IPE. A reference data cannot be processed by IPE. ● **Lookup**: Select a table as Lookup if it is used as a scoring table in Evaluations. This can be used as a Reference. **Note:** Once a table is imported, you cannot change the entity type of the table.
Processing Segment	Select the Processing Segment from the multi-select drop-down list.
Set Primary Key Attribute	Select the Primary Key Attribute from the drop-down list. This shows all the columns of the table. This is a unique attribute of the table which is imported. It is a mandatory field. **Note:** Composite Primary Keys are not supported.
Set Sequence ID Attribute	This is a unique attribute that helps in identifying the ID of the Activity Table. The results of IPE will provide the Sequence ID. This is a mandatory field if it is an activity. The Sequence ID will be auto-populated by the IPE Engine if it is a real time mode. In batch mode, this value is pre-populated and should be unique. Select the sequence ID attribute from the drop-down list. **Note:** This field is enabled if you select Activity as the Entity Type.
DB Sequence Name	Enter the DB sequence name. A DB Sequence has to be created in the Atomic Schema. The name of that Sequence has to be provided in this field. It is not a mandatory field and it is applicable for Real time processing. **Note:** This field is enabled if you select Activity as the Entity Type.
Set Processing Status Attribute	Select the processing status attribute from the drop-down list. This attribute will be updated by IPE to indicate the result of the assessments, if it has passed or failed. It is not a mandatory field and it is applicable for Real time processing. **Note:** This field is enabled if you select Activity as the Entity Type.
Set Processing Period Attribute	Select the processing period attribute from the drop-down list. This attribute defines the date or time when the activity has occured. For example, Transaction Time. **Note:** This field is enabled if you select Activity as the Entity Type.
Score Attribute	Select the Score Attribute from the drop-down list. This attribute can be used in evaluation scoring. **Note:** This field is enabled if you select Lookup as the Entity Type.

5. Click **Save**. A confirmation message is displayed.

Updating Entity Details

To update entity details, follow these steps.

1. Navigate to the Business Entities page.
2. Select the table from the **Choose Entity** drop-down list.

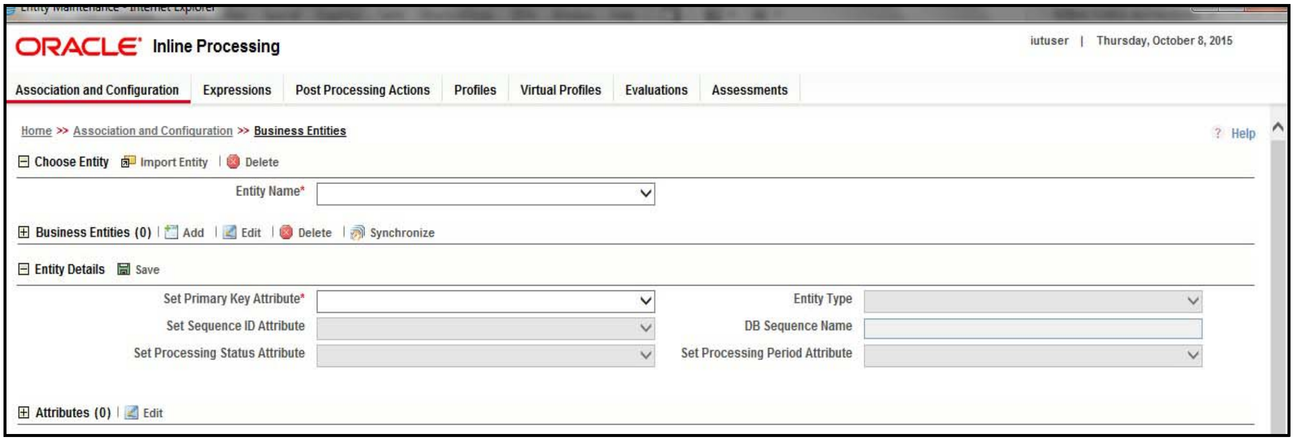


Figure 14. Updating Table

3. Enter or modify the necessary information. For more information on Business Entity fields refer to the *Updating Business Entity Attributes* table.
4. Click **Save**. A confirmation message is displayed.

Deleting an Entity

To delete a table, follow these steps.

1. Navigate to the Business Entities page.
2. Select the table from the **Choose Entity** drop-down list.
3. Click **Delete.**

Note: System does not allow the user to delete the selected entity if it is used in other IPE metadata.

Adding Business Entities

We can add multiple business entities to get differential behavior for the same entitiy. For example, 'account' can have business entities like beneficiary account and originator account.

User can add different datasets and traversal paths like transaction to originator account and transaction to beneficiary account.

To add Business Entities, follow these steps:

1. Navigate to the Business Entities page.

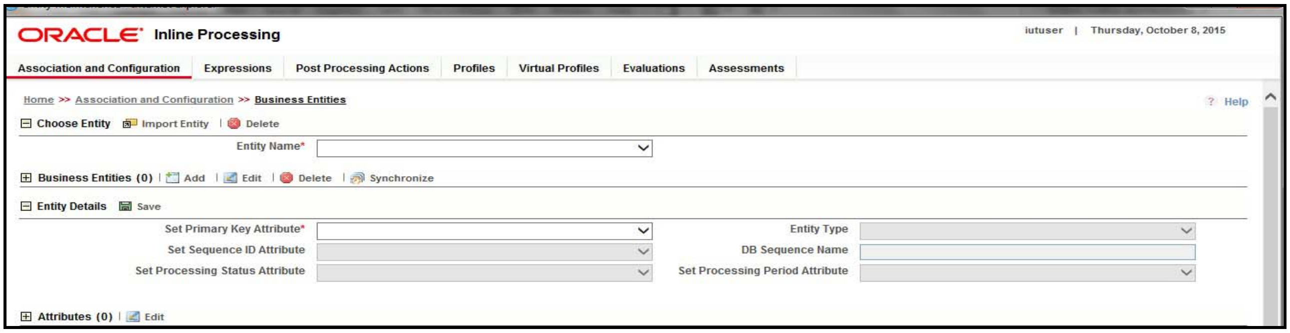


Figure 15. Adding Business Entities

2. Select the entity you wish to add as a business entity to from the **Choose Entity** drop-down list.
3. Click **Add** in the Business Entities section. The Business Entity Details dialog box is displayed.

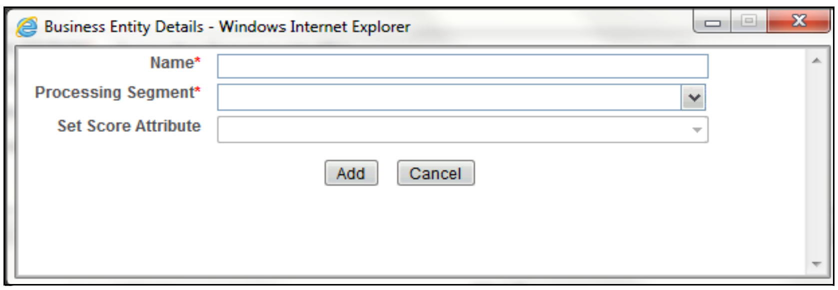


Figure 16. Adding Business Entity Details

4. Enter the following details in the Business Entity Details dialog box:

Table 6. Business Entity Details

Filed	Description
Name	This is a mandatory Field. Enter a name to the selected entity in this field.
Processing Segment	This is a mandatory Field. Select the Processing Segment(s) to which you want to add the selected entity, from the multi-select drop-down list.
Set Score Attribute	Select the attribute which you want to set as score from the drop-down list.

5. Click **Add**. A confirmation message is displayed.

Editing Business Entity

To edit the Business Entity, follow these steps:

1. Navigate to the Business Entities page.
2. Select the Business Entity to modify. The Business Entity edit dialog box is displayed.
3. Modify the necessary information. For more information on Business Entity fields refer to the *Click Save. A confirmation message is displayed.* table.
4. Click **Save**. A confirmation message is displayed.

Deleting Business Entity

This option allows you to delete a Business Entity which is not required.

To delete Business Entity, follow these steps.

1. Navigate to the Business Entities page.
2. Select the Business Entity to delete.
3. Click **Delete**.

Note: System does not allow the user to delete the selected Business Entity if it is used in other IPE metadata.

Synchronizing Business Entities

To add new columns that were added in the Data model or to update Business Names of the entities, Synchronizing Business Entites option has been provided. Follow these steps:

1. Navigate to the Business Entities page.
2. Select the Entity from the **Choose Entity** drop-down list.
3. Click **Synchronize** in the Business Entities section. The Synchronize Business Entities dialog box is displayed.

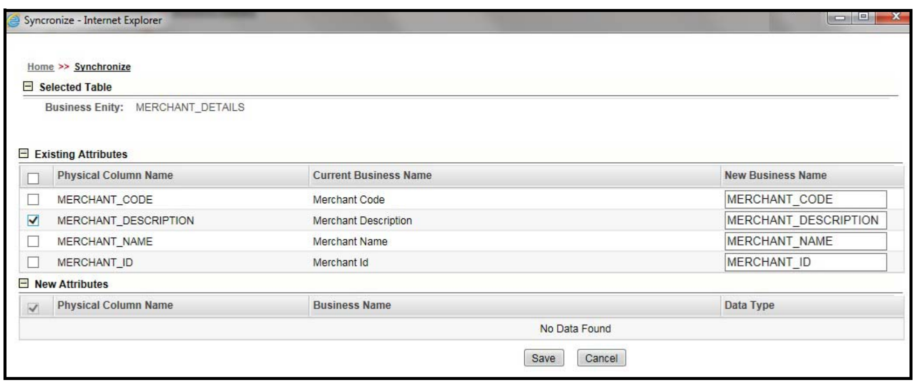


Figure 17. Synchronizing Business Entities

4. Select the business attributes from the Existing Attributes section to update new Business Names for the columns of the Entity.
5. Click **Save.** A confirmation message is displayed.

Updating Business Entity Attributes

To update the Business Entity Attributes, follow these steps.

1. Navigate to the Business Entities page.
2. Select the Entity and click **Edit**.

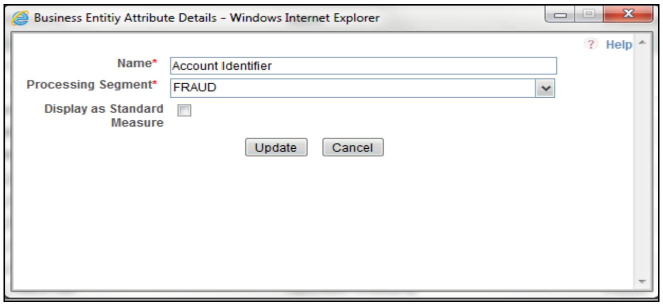


Figure 18. Updating Business Entity Attributes

3. Modify the necessary information. For more information on Business Entity fields refer *Click Save. A confirmation message is displayed.* table. Select Display as Standard Measure to update this table information onto the profile. Only the table columns that have been selected as **Display as Standard Measure** are displayed in the Standard Measure Details section of Profiles.
4. Click **Update**. A confirmation message is displayed.

Managing Inline Datasets

This section describes the Inline Datasets functionality and gives step-by-step instructions to use this module.

This section covers the following topics:

- Overview
- Accessing Inline Datasets
- Adding Inline Datasets
- Searching Inline Dataset
- Editing Inline Dataset
- Deleting Inline Dataset

Overview

Inline Datasets are joins between two Business Entities. The Inline Datasets need at least one condition to be defined.

For example, the following conditions are used for an Inline Dataset between Wire Transaction and Beneficiary Account:

Wire Transaction. Beneficiary Account ID=Beneficiary Account. Account ID

The sequence of the joins has to be correct for the required output.

Using this menu, you can add a new Inline Dataset and search for existing Inline Datasets for modification or removal.

Accessing Inline Datasets

To access Inline Datasets, follow these steps:

1. Navigate to the Inline Processing Home Page.
2. On the Association and Configuration menu, click **Inline Datasets**. The Inline Datasets page is displayed.

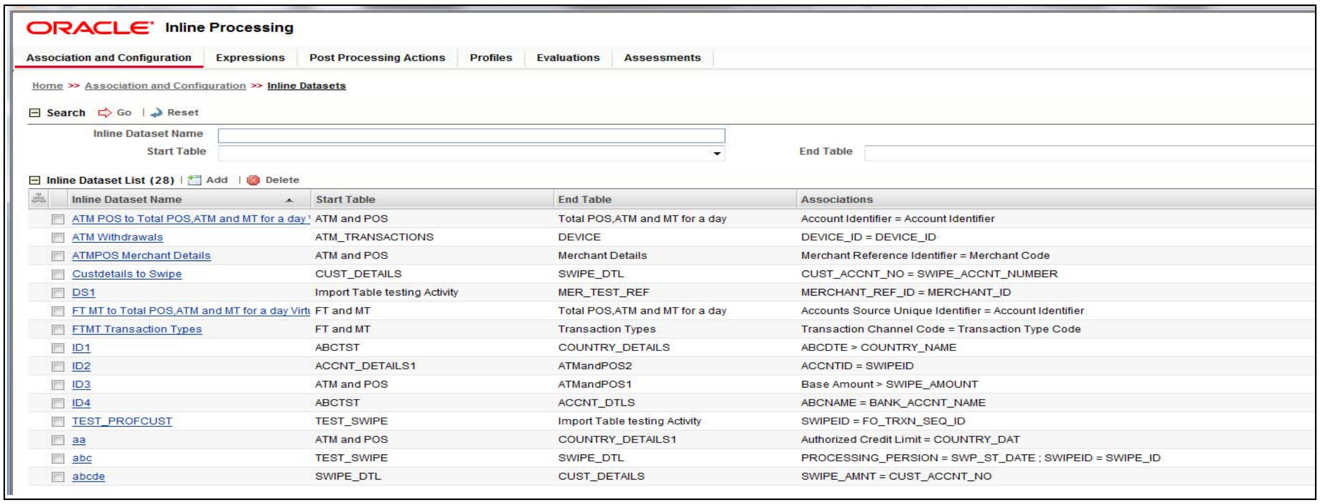


Figure 19. Inline Datasets Details page

Adding Inline Datasets

The add Inline Dataset option allows you to define an Inline Dataset by adding a name and selecting the Start and End tables.

To add new Inline Dataset paths, follow these steps:

1. Navigate to the Inline Datasets details page.
2. Click **Add** from the Inline Dataset List tool bar. The Inline Dataset dialog box is displayed.

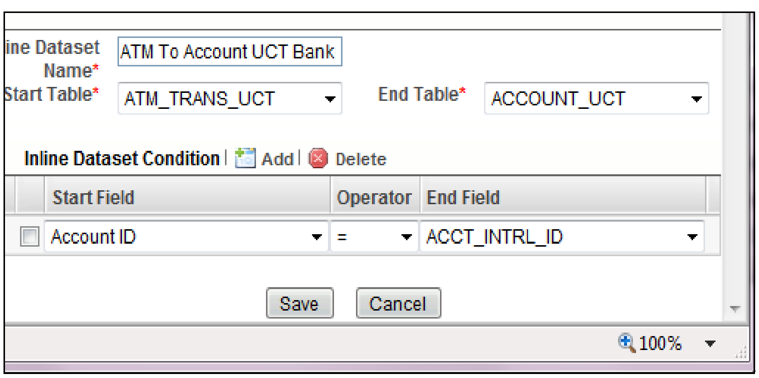


Figure 20. Adding Inline Dataset

3. Enter the following details.

Table 7. Adding Inline Dataset

Field	Description
Inline Dataset Name	Enter the Inline Dataset Name.
Start Table	Select the start table from drop-down list. All the Business entities of type Activity, lookup, reference and also Virtual Profiles are displayed.
End Table	Select the end table from drop-down list. All the Business entities of type Activity, lookup, reference and also Virtual Profiles are displayed, except the selected Start Table.

Adding Inline DataSet Condition

To add new Inline Dataset condition follow these steps:

1. Click **Add** from the Inline Dataset Condition tool bar. The Inline Dataset Condition dialog box is displayed.
2. Enter following details.

Table 8. Adding Inline DataSet Condition

Field	Description
Start Field	Select the start field of the condition from the drop-down list. This shows all Fields (Columns) of the Start Table.
Operator	Select the operator from the drop-down list. The available operators are =, >, <, >=, <=, and <>.
End Field	Select the end field of the condition from the drop-down list. This shows all the Fields (Columns) of the End Table.

3. Click **Save**. A confirmation message is displayed.

Searching Inline Dataset

To search Inline Dataset, follow these steps.

1. Navigate to the Inline Datasets details page.
2. Enter the following details:

Table 9. Inline Dataset Table Details

Fields	Description
Inline Dataset Name	Enter the Inline Dataset name.
Start Table	Select the start table from drop-down list.
End Table	Select the end table from drop-down list.

3. Click **Go**. The Search Details are displayed.

Editing Inline Dataset

To edit Inline Dataset, follow these steps:

1. Navigate to the Inline Dataset Details page.

2. Select the Inline Dataset to modify. The Inline Dataset Edit dialog box is displayed.
3. Modify the necessary information. For more information on Business Entity fields refer to the *Adding Inline Datasets* table.

   Note: Start and end tables cannot be edited. Only inline dataset condition can be edited.
4. Click **Save**. A confirmation message is displayed.

Deleting Inline Dataset

This option allows the user to delete an Inline Dataset if it is not used by other components of IPE. To delete the Inline Dataset, follow these steps:

1. Navigate to the Inline Datasets details page.
2. Select the Inline Dataset to delete.
3. Click **Delete**.

Note: System does not allow the user to delete the selected Inline Dataset if it is used in other IPE metadata.

Managing Traversal Paths

This section describes the Traversal Path functionality and provides step-by-step instructions to use this module.

This section discusses the following topics:

- Overview
- Accessing Traversal Paths
- Adding Traversal Path
- Searching Traversal Path
- Deleting Traversal Path

Overview

Traversal Paths are the paths between two or more entities. The traversal paths defined can be used for creation of expressions, evaluations, and profiles. The start entity for the path should be the Activity Entity. There are intermediate Entities in the path.

For example, if we must have a path between Wire Transaction and Beneficiary Customer E-mail entities, then we must have path like Wire Transaction' Beneficiary Account' Beneficiary Customer' Beneficiary Customer E-mail.

Inline Dataset (Joins) between are compulsory.

- Wire Transaction-Beneficiary Account
- Beneficiary Account- Beneficiary Customer
- Beneficiary Customer- Beneficiary Customer E-mail

Accessing Traversal Paths

To access the Traversal Paths, follow these steps:

1. Navigate to the Inline Processing Home Page.
2. On the Association and Configuration menu, click **Traversal Paths**. The Traversal Paths page is displayed.

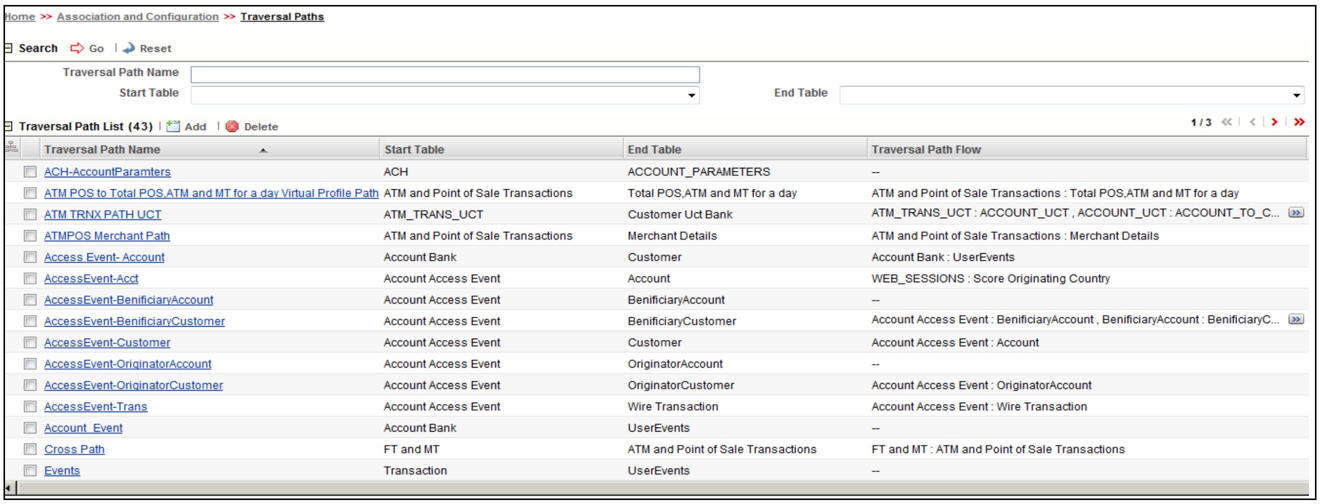


Figure 21. Traversal Paths Details page

Adding Traversal Path

This option allows you to define a traversal path by adding a name and selecting the Start and End tables.

To add a new Traversal Path, follow these steps:

1. Navigate to the Traversal Paths page.
2. Click **Add** from the Traversal Path List tool bar. The Traversal Path Maintenance dialog is displayed.

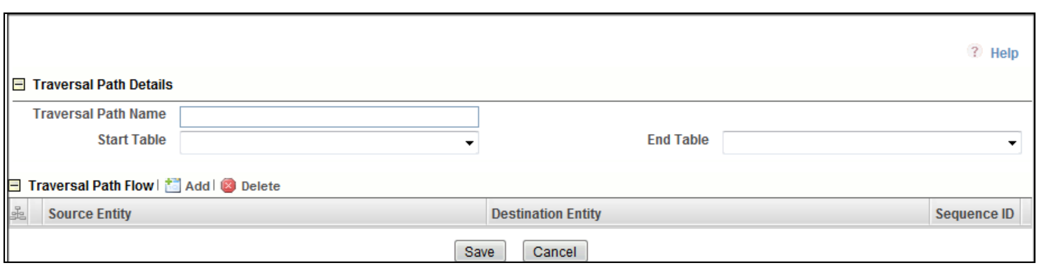


Figure 22. Adding Traversal Path

3. Enter the following details.

Table 10. Adding Traversal Path

Field	Description
Traversal Path Name	Enter the Traversal Path Name name.
Start Table	Select the start table from drop-down list. All the Activiy Tables are displayed.
End Table	Select the end table from drop-down list. All the Business entities of type Activity, lookup, reference and also Virtual Profiles are displayed.

Adding Traversal Path Flow

1. Click **Add** in the Traversal Path Flow section. The new Traversal Path fields are expanded.
2. Enter following details.

Table 11. Traversal Path Flow

Field	Description
Source Entity	This is pre-selected for the first row. For the further rows, it lists all Entities which have Inline Dataset joins with the previously selected entities (both source and destination).
Destination Entity	Select the Destination Entity from the drop-down list. This option shows the business entities and Virtual Profile who has Inline Datasets defined to Source Entity.
Sequence ID	The sequence ID is auto-generated. When the source and destination entity are added for the first time, the sequence ID generated is 1. On subsequent addition of source and destination entities, the sequence ID will be 2, 3, and so on. This reflects the sequence in which the path has to be traversed.

3. Click **Save.** A confirmation message is displayed.

Searching Traversal Path

To search Traversal Paths, follow these steps.

1. Navigate to the Traversal Paths page.
2. Enter the following details:

Table 12. Searching Traversal Path

Fields	Description
Traversal Path Name	Enter the traversal path name.
Start Table	Select the start table from drop-down list.
End Table	Select the end table from drop-down list.

3. Click **Go**. The Search Details are displayed.

Deleting Traversal Path

To delete a Traversal Path, follow these steps.

1. Navigate to the Traversal Paths page.
2. Select the Traversal Path ID or name to delete.
3. Click **Delete**. The Traversal Path Details page is updated.

Note: System does not allow the user to delete the selected Traversal Path if it is used in other IPE metadata.

CHAPTER 4 Managing Expressions

This chapter provides detailed information about Expressions functionality and provides step-by-step instructions to use this module.

This chapter discusses the following topics:

- Overview
- Accessing Expressions Menu
- Adding an Expression
- Searching an Expression
- Deleting an Expression
- Displaying Dependant Metadata Expression List

Overview

Expression for a Profile is used as a filter in the evaluations. Expressions are to be created on the activity table on whom an evaluation or profile will be created.

An Expression Builder is used to build expressions using Entities, Attributes, Functions, Mathematical Operators, and Constant Values. For example,

FT and MT Amount for a day: Accounts Source Unique `Identifier_cnt`.

The examples of expressions are as follows:

- A
- A+B
- (A + B)/C
- (ATM and POS: Base Amount)

(Get Last Characters ((ATM and POS: Merchant Address) 2)

The Expression Builder allows you to add and remove expressions.

Accessing Expressions Menu

To access the Expressions menu, follow these steps:

1. Navigate to the Inline Processing Home Page.
2. Click **Expressions**. The Expressions page is displayed.

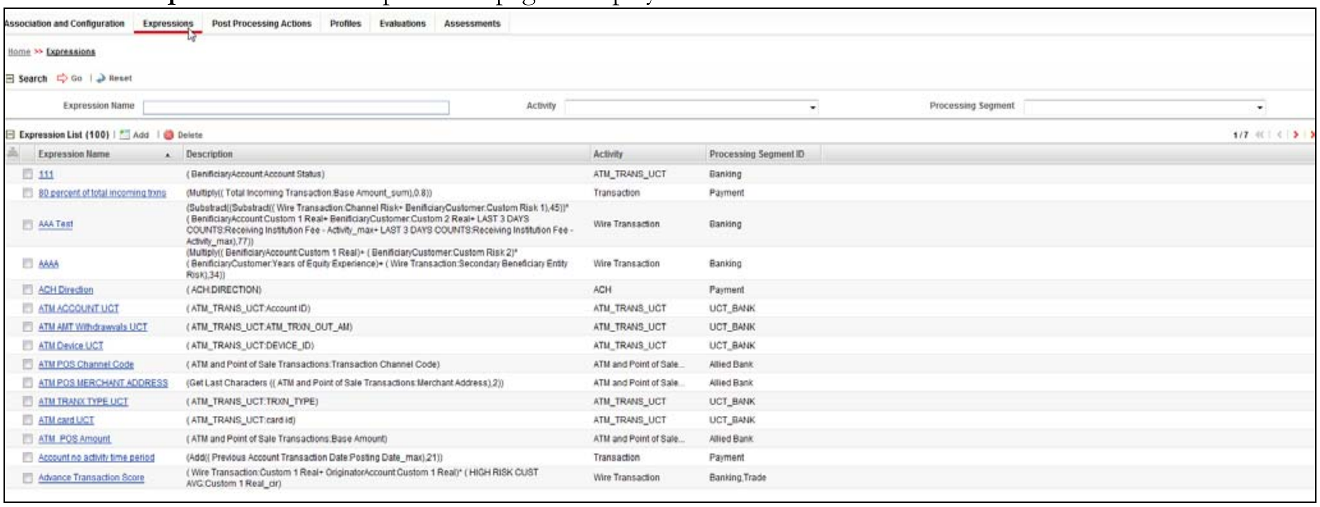


Figure 23. Expressions Details page

Adding an Expression

This option allows you to define an expression by adding a name and selecting the Activity and Processing Segment from the drop-down list. An expression can also be added from Profiles menu and Evaluations menu.

To add an Expression, follow these steps:

1. Navigate to the Expressions details page.
2. Click **Add** on the Expressions tool bar. The Add Expressions dialog box is displayed.

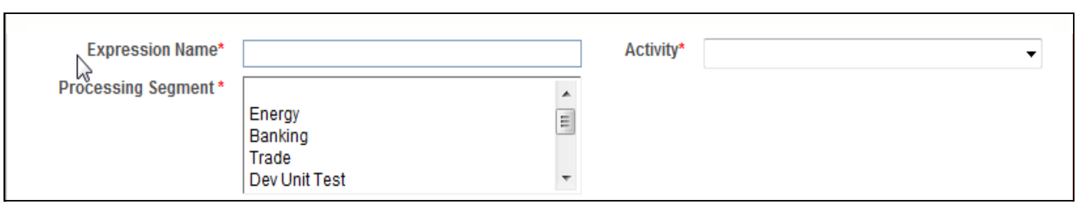


Figure 24. Adding an Expression

3. Enter the following details:

Table 13. Adding an Expression

Field	Description
Expression Name	Enter a name for the expression.
Activity	Select the activity from the drop-down list.
Processing segment	Select the processing segment from the drop-down list (Energy, Banking, and so on).

Adding Variables

This is used to define variables for expressions.

4. Click **Add** on the Variables tool bar. The Add Variables dialog box is displayed.

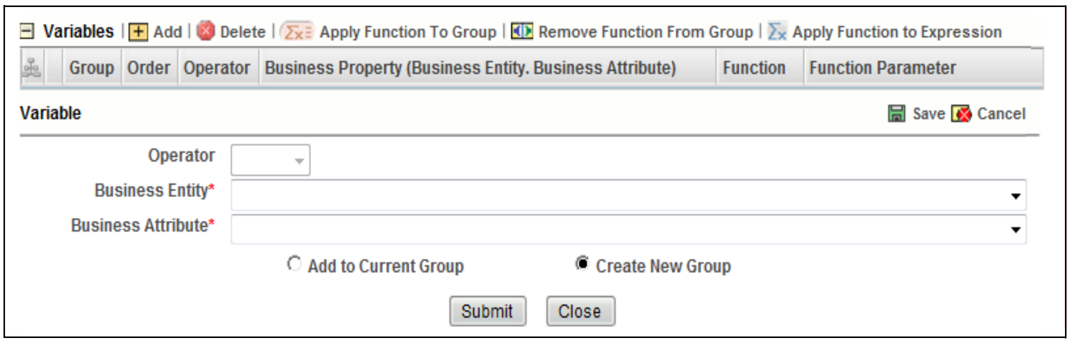


Figure 25. Variable page

5. Enter the following details:

Table 14. Adding Variables

Fields	Description
Operator	Select the operator from the drop-down list. This is disabled for the first variable.
Business Entity	Select the business entity from the drop-down list. The list is based on selected Activity and processing segment.
Business Attribute	Select the business attribute from the drop-down list. The list is based on the selected business entity.
Create New Group	If this option is selected, new Group ID is created.
Add to Current Group	If this option is selected, new variable is added to existing selected Group ID.
Apply Function to Group	Select the function from the drop-down list. The list of function is based on variable data type and function argument data type. If the selected function has additional argument mapped, then Literal Value should be entered in the Text box.
Remove Function from Group	Select a group and then click **Remove** the Function from Group to remove the function from the selected group.
Apply Function to Expression	Select the function from the drop-down list. The list of function will be based on variable data type of expression and variable. If the selected function has additional argument mapped, then Literal Value should be entered in the Text box.

6. Click **Save** to refresh the Variables Grid.

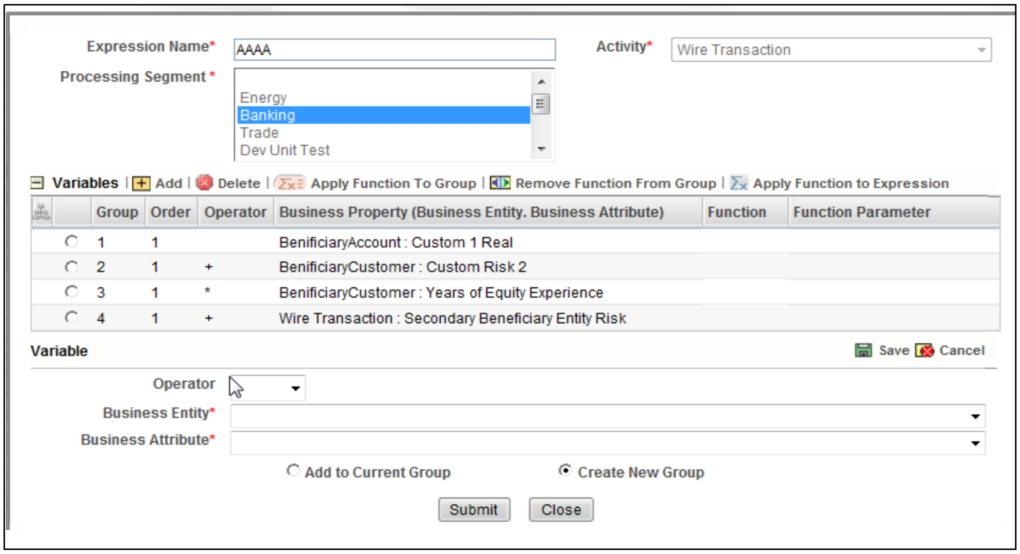


Figure 26. Adding Variables

7. Click **Submit.** A confirmation message is displayed.

Searching an Expression

To search Expressions, follow these steps:

1. Navigate to the Expressions details page.
2. Enter the following details:

Table 15. Searching Expression

Fields	Description
Expression Name	Enter the Expression Name.
Activity	Select the activity from the drop-down.
Processing Segment	Select the Processing Segment from the drop-down.

3. Click Go. The Search Details are displayed.

Deleting an Expression

To delete an Expression, follow these steps:

1. Navigate to the Expressions details page.
2. Select the required Expression.
3. Click **Delete**.

Note: System does not allow the user to delete the selected Expression if it is used in other IPE metadata.

Displaying Dependant Metadata Expression List

The Expression list screen should show the Associated/Dependent metadata. This will be useful to trace the use of Expression and to decide if it has to be deleted. Associated metadata will include:

- Profiles that contain the expression in its filters
- Virtual Profiles that are built using the aforementioned profiles
- Evaluations that contain the expressions in its filters
- Assessments that contain the aforementioned evaluations

To display the dependant metadata expression list, follow these steps:

1. Navigate to the Expressions details page.
2. Enter the Expression name whose associated metadata is to be checked and edited.
3. If the expression entered has profiles, virtual profiles, evaluations and assessments associated to it, then they are displayed in the Expressions window.

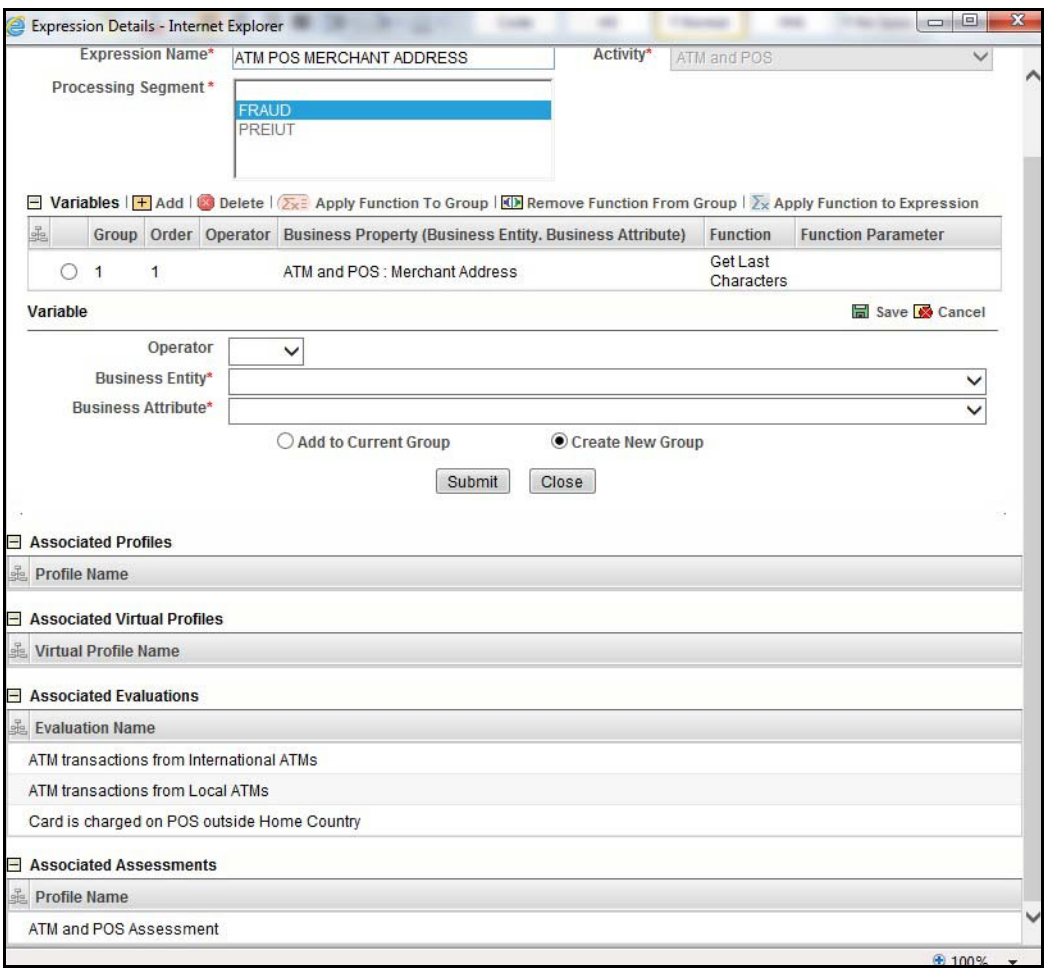


Figure 27. Associated metadata of Expression Details page

CHAPTER 5 Managing Post Processing Actions

This chapter describes Post Processing Actions functionality and provides step-by-step instructions to use this module.

Note: Managing Post Processing actions is applicable only for Real Time Processing.

This chapter discusses the following topics:

- Overview
- Accessing Post Processing Actions Menu
- Adding Post Processing Actions
- Searching Post Processing Action
- Editing Post Processing Action
- Deleting Post Processing Action

Overview

Post Processing Actions are the actions which can be triggered by the outcome of Assessment.

In Post Processing Actions, you can add a new post processing action and also search for existing post processing actions for modification or removing a post processing action.

Accessing Post Processing Actions Menu

To access the Post Processing Actions page, follow these steps:

1. Navigate to the Inline Processing Home Page.
2. Click **Post Processing Actions**. The Post Processing Actions page is displayed.

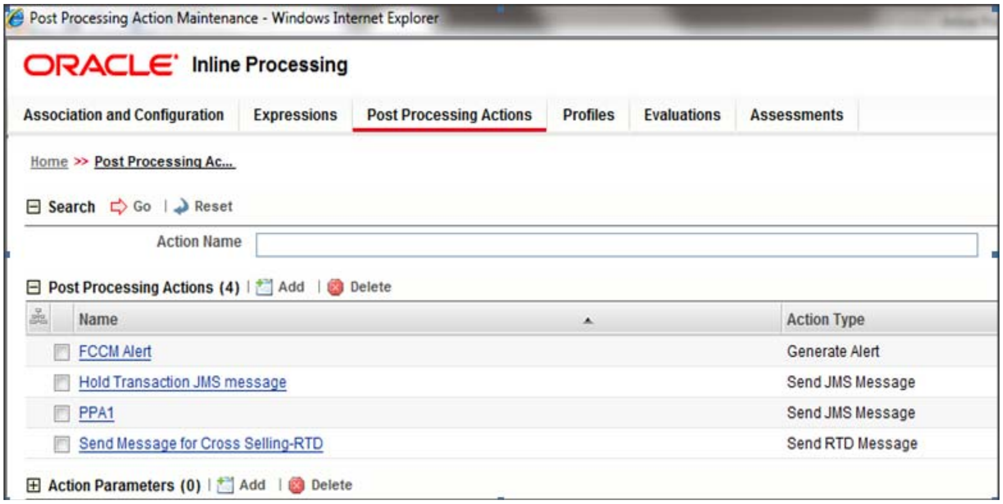


Figure 28. Post Processing Actions Details page

Adding Post Processing Actions

This option allows you to define a post processing action.

This section covers following topics:

- Adding a Post Processing Action
- Adding an Action Parameter

Adding a Post Processing Action

To add a Post Processing Action, follow these steps:

1. Navigate to the Post Processing Actions details page.
2. Click **Add** on the Post Processing Actions tool bar. The Add Post Processing Actions dialog box is displayed.

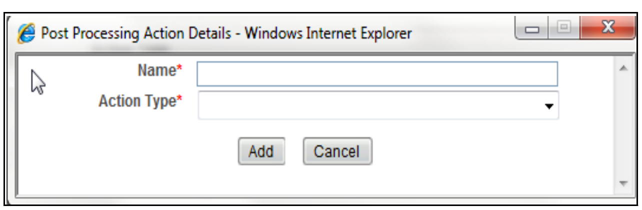


Figure 29. Adding a Post Processing Action

3. Enter the following details:

Table 16. Post Processing Actions

Field	Description
Name	Enter the name of Post Processing Actions.
Action Type	Select the Post Processing Actions from the drop-down list. (For example, Generate Alert, sent JMS Message, and Send RTD Message) **Note:** Additionally, the user can also add a new Action Type.

4. Click **Add**. A confirmation message is displayed.

Adding an Action Parameter

To add Action Parameters, follow these steps:

1. Navigate to the Post Processing Actions details page.
2. Click **Add** on the Action Parameters tool bar. The Add Action Parameters dialog box is displayed.

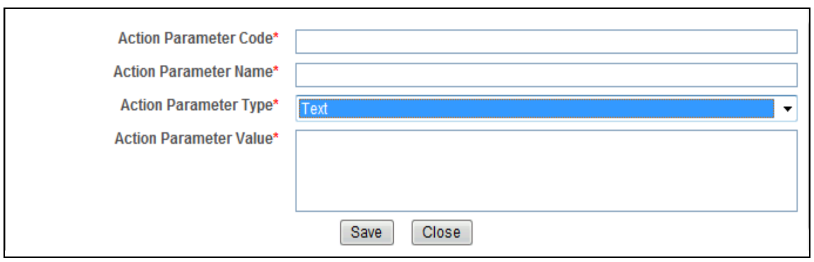


Figure 30. Adding an Action Parameter

3. Enter the following details:

Table 17. Action Parameter

Field	Description
Action Parameter Code	Enter the code of action parameter.
Action Parameter Name	Enter the name of action parameter.
Action Parameter Type	Select the action parameter type from the drop-down list (Text or Password)
Action Parameter Value	Enter the value for action parameter. • If the action parameter type is text, enter text box. • If the action parameter type is password, enter password field.

4. Click **Save**. A confirmation message is displayed.

Searching Post Processing Action

To search Post Processing Action, follow these steps:

1. Click **Post Processing Actions** on the Inline Processing Engine Home page. The Post Processing Actions Details page is displayed. .
2. Enter the Post Processing Action name.

3. Click **Go**. The Search Details are displayed.

Editing Post Processing Action

To modify Post Processing Action details, follow these steps:

1. Click **Post Processing Actions** on the Inline Processing Engine Home page. The Post Processing Actions Details page is displayed. .
2. Select the required Post Processing Action.
3. Modify the necessary information. For more information on Processing Segment fields, refer to the *Adding Post Processing Actions* table.
4. Click **Save**. A confirmation message is displayed.

Deleting Post Processing Action

To delete a Post Processing Action, follow these steps:

1. Click **Post Processing Actions** on the Inline Processing Engine Home page. The Post Processing Actions Details page is displayed.
2. Select the required Post Processing Action.
3. Click **Delete**.

Note: System does not allow the user to delete the selected Post Processing Action if it is used in other IPE metadata.

CHAPTER 6 Managing Profiles

This chapter describes Profiles functionality and provides step-by-step instructions to use this module.

This chapter discusses the following topics:

- Overview
- Accessing Profiles Menu
- Adding a Profile
- Adding an Expression from Profiles Menu
- Searching a Profile
- Editing a Profile
- Deleting a Profile

Overview

Profiles are an aggregation of information. Profiles can be based on different grouping entities (For example, account and customer) and can be filtered to only look at particular kinds of transactions. Profiles can also be based on time (last three months) or activity counts (last 100 transactions).

Accessing Profiles Menu

To access the Profile, follow these steps:

1. Navigate to the Inline Processing Home Page.
2. Click **Profiles**. The Profiles page is displayed.

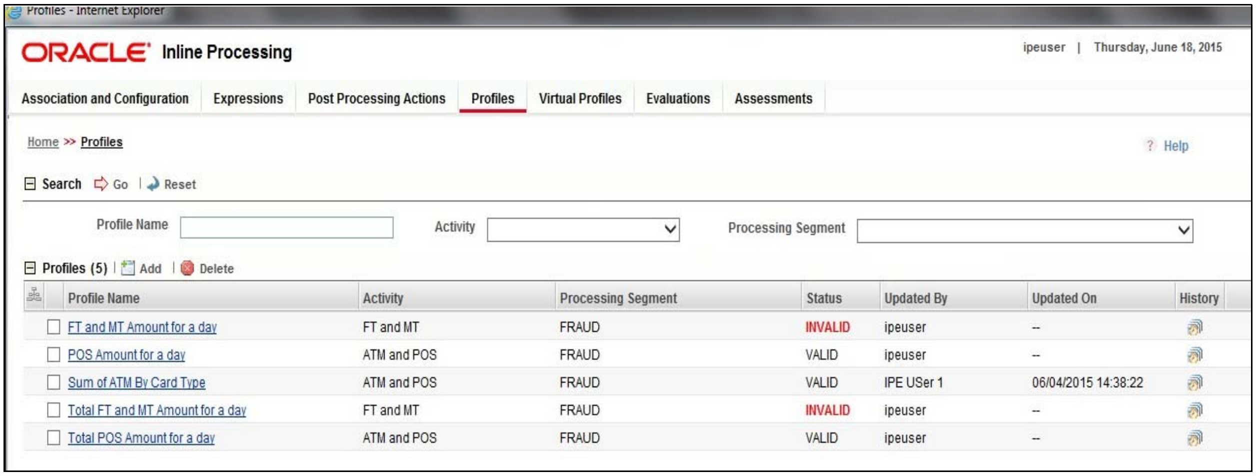


Figure 31. Profiles Details page

Adding a Profile

This section covers following topics:

- Adding Standard Measures
- Adding Custom Measures
- Adding Filters
- Adding Measure Aggregation Groups

To add a Profile, follow these steps:

1. Navigate to the Profiles details page.
2. Click **Add** on the Profile tool bar. The Add Profile fields are expanded.

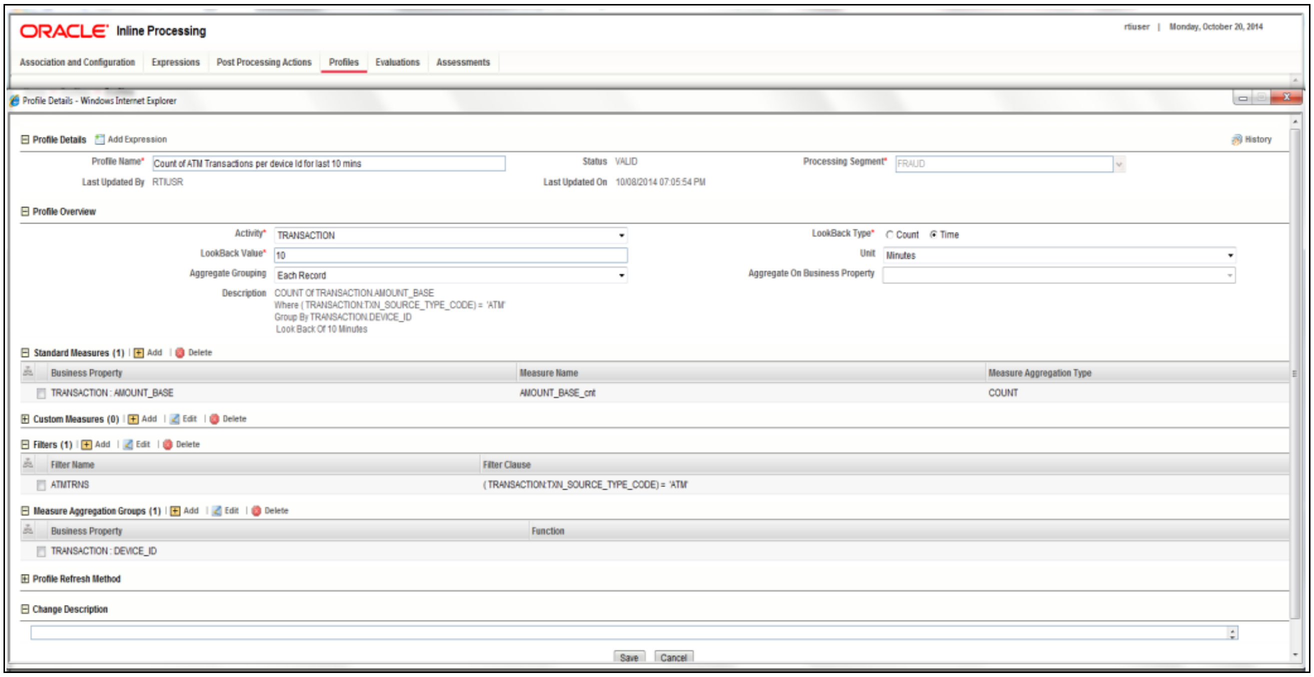


Figure 32. Adding a Profile

3. Enter the following details:

Table 18. Profile

Field	Description
Profile Name	Enter the name of the virtual profile.
Processing Segment	Select the processing segment from the drop-down list.
Activity	Select the activity from the drop-down list.
LookBack Type	Select the LookBack type.
LookBack Value	Enter the LookBack value.
Unit	This option is enabled only when Time is selected as lookback. Select the unit from the drop-down list.
Aggregate Grouping	Select the type from the drop-down list. The list shows all Time columns of the activity: ● **Each Record**- shows the activity for each record ● **Daily**- shows the daily record ● **Monthly**- shows the monthly record
Aggregate Grouping on Business Property	This option is enabled if Aggregate Grouping is Daily or Monthly. It lists all Time columns of the activity.

Adding Standard Measures

This is used to define a measure on the defined columns as Standard Measures during import of the table in the Business Entities module.

Measures are to be defined on the table columns which need aggregations.

1. Click **Add** on the Standard Measures tool bar. The Add Standard Measures fields are expanded.
2. Enter the following details:

Table 19. Standard Measures

Fields	Description
Business Attribute	Select the business attribute from the drop-down list. The list shows all Standard Measurable columns of the activity.
Measure Aggregation Type	Select the measure aggregation type from the drop-down list. The list shows the Standard Measurable functions.

Adding Custom Measures

This is used to define a measure on a column which was not defined while importing the table in the Business Entities module.

1. Click **Add** on the Custom Measures tool bar. The Add Custom Measures fields are expanded.
2. Enter the following details:

Table 20. Custom Measures

Fields	Description
Business Entity	Select the business entity from the drop-down list. The list is based on selected activity and processing segment.
Business Attribute	Select the business attribute from the drop-down list. The list is based on the selected business entity.
Measure Aggregation Type	Select the measure aggregation type from the drop-down list.

Adding Filters

This is used to add filters for the selected Profile. To add a filter, follow these steps:

1. Click **Add** on the Filters tool bar. The Filter Details fields are expanded.
2. Enter the following details:

Table 21. Filter Details

Fields	Description
Filter Name	Enter the name of the filter.
Source Expression	Select the Source Expression from the drop-down list. The list will be based on the selected Activity.

Table 21. Filter Details

Operator	Select the operator from the drop-down list for the expression and also the expression that it is to be operated on.
Comparator Type	Select the Comparator type: • If Expression type is selected, then a drop-down list is displayed. • If Literal Value is selected, then a text field is displayed to enter the details.

3. Click **Save**. A confirmation message is displayed.

Adding Measure Aggregation Groups

This is used to define an Aggregation Group on the defined columns as Measure Aggregation Groups during import of the table in the Business Entities module.

1. Click **Add** on the Measure Aggregation Groups tool bar. The Measures Aggregation Group fields are expanded.
2. Enter the following details:

Table 22. Measure Aggregation Groups

Fields	Description
Business Entity	Select the business entity from the drop-down list. The list is based on selected Activity and processing segment
Business Attribute	Select the business attribute from the drop-down list. The list is based on the selected business entity.
Function	Select the function from the drop-down list. The list will be based on the selected Business Attribute type.

Adding an Expression from Profiles Menu

An expression can be added from the Profiles menu apart from the Expression menu itself. To add an expression from Profile menu, follow these steps:

1. Navigate to the Profiles details page.
2. Click **Add** on the Profile tool bar. The Add Profile fields are expanded.
3. Click the Activity from the drop down list.
4. Click **Add Expressions** on the Profile Details tool bar. The Expression Details page is displayed.
5. Add an expression. For more information, refer to the *Adding an Expression* table.

Searching a Profile

To search a Profile, follow these steps:

1. Navigate to the Profiles details page.

2. Enter the following details:

Table 23. Search Profile

Fields	Description
Profile Name	Enter the Profile Name.
Activity	Select the activity from the drop-down.
Processing Segment	Select the Processing Segment from the drop-down.

3. Click **Go**. The Search Details are displayed.

Editing a Profile

To modify the Profile details, follow these steps.

1. Navigate to the Profiles details page.
2. Select the required Profile.
3. Modify the necessary information. For more information on Processing Segment fields, refer to the *Adding a Profile* table.
4. Click **Save**. A confirmation message is displayed.

   Note: When you edit the filters, standard measures, custom measures and measure aggregation groups of a profile and cancel the same, the modifications are still saved, even if the Profile itself is not saved.

   Note: When you edit a profile, the associated Expression has to be re-saved.

When a Standard Measure, Custom Measure, and so on are added in profile, the same would get saved to the profile definition irrespective of saving or cancelling the Profile changes, as these measure creations have the **Save** button in the popup during which it is saved to the database. This holds good for similar operations everywhere in the Framework.

Once a Profile is re-saved, irrespective of the changes to the profile, the profile `tables p_<profile_id>` will be recreated. Hence all the existing records get deleted.

Deleting a Profile

To delete a Profile, follow these steps:

1. Navigate to the Profiles details page.
2. Select the required Profile.
3. Click **Delete**.

Note: System does not allow the user to delete the selected Profile if it is used in other IPE metadata.

CHAPTER 7

Managing Virtual Profiles

This chapter provides detailed information about Virtual Profiles functionality and step-by-step instructions to use this module.

This chapter discusses the following topics:

- Overview
- Accessing Virtual Profile Menu
- Adding Virtual Profile
- Searching Virtual Profile
- Editing Virtual Profile
- Deleting Virtual Profile

Overview

Virtual Profiles are the wrapper around one or more profiles. Virtual Profiles can be used when a user wants to:

- Merge profiles on two different activities or same activity
- Reduced look back on the same profile.

Through Virtual Profiles menu, you can add a new virtual profile and also search for existing virtual profiles to modify or remove a virtual profile.

Accessing Virtual Profile Menu

To access the Virtual Profile, follow these steps:

1. Navigate to the Inline Processing Home Page.
2. Click **Virtual Profiles**. The Virtual Profiles page is displayed.

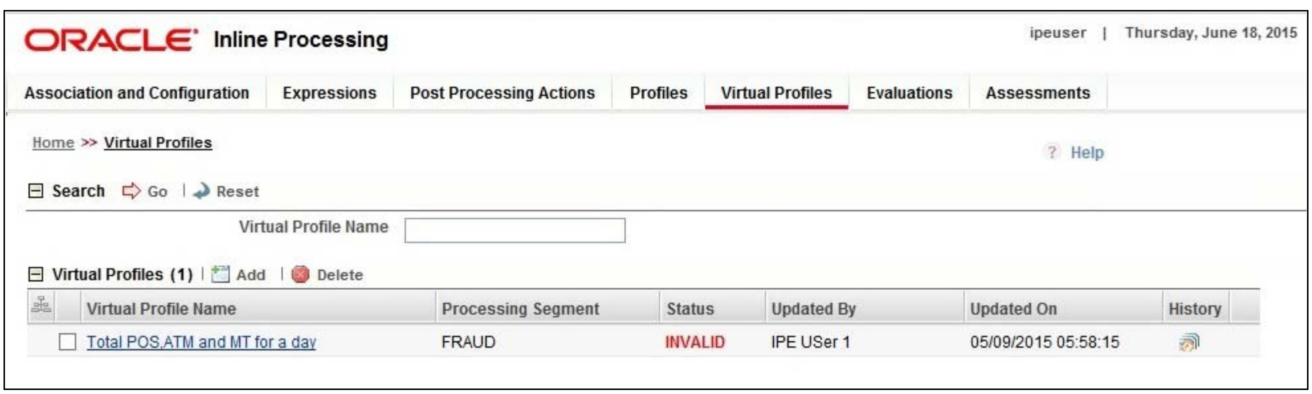


Figure 33. Virtual Profile Details page

Adding Virtual Profile

Adding a Virtual Profile allows you to define a virtual profile by adding the profile details.

This section covers following topics:

- Adding Linked Profile
- Adding Measures
- Adding Associated Inline Datasets
- Adding Associated Paths

To add a Virtual Profile, follow these steps:

1. Navigate to the Virtual Profiles details page.
2. Click **Add** on the Virtual Profile tool bar.

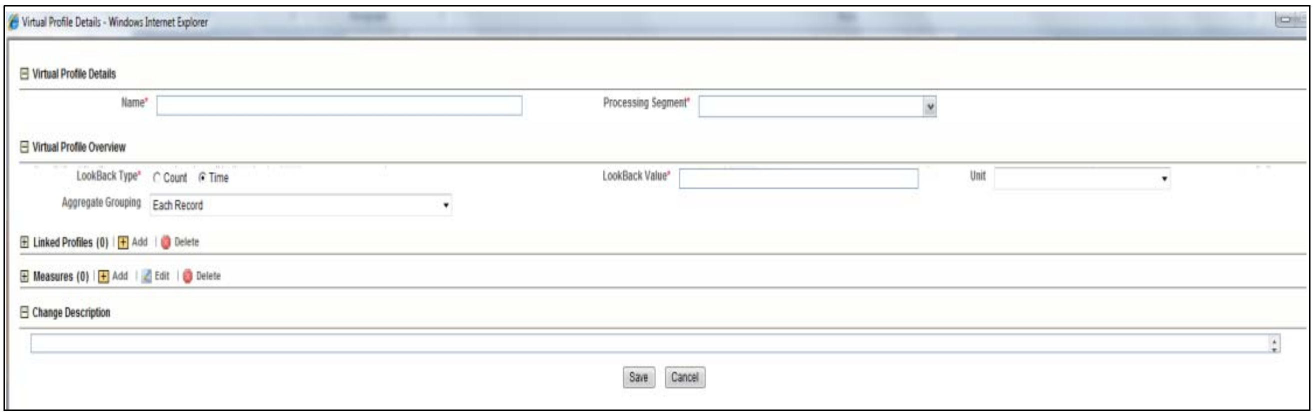


Figure 34. Adding a Virtual Profile

3. Enter the following details:

Table 24. Virtual Profile

Field	Description
Profile Name	Enter the name of the virtual profile.
Processing Segment	Select the processing segment from the drop-down list.
Activity	Select the activity from the drop-down list.
LookBack Type	Select the LookBack Type value. The options are: Count or Time
LookBack Value	Enter the LookBack Value.
Unit	This option is enabled only when Time is selected as lookback. Select the unit from the drop-down list.
Aggregate Grouping	Select the type from the drop-down list. The list will show all the Time columns of the Activity: ● **Each Record**- Shows the activity for each record. ● **Daily**- Shows the daily record ● **Monthly**- Shows the monthly record

4. Click **Save**. A confirmation message is displayed.

Adding Linked Profile

Linked Profiles are the profiles which are used to create the Virtual profile. It can be one or more profiles.

1. Click **Add** on the linked profile tool bar and enter the following details:

Table 25. Linked Profile

Fields	Description
Profile Name	Select the virtual profile from the drop-down list. The first profile which is added will be considered as a primary profile. From the second profile onwards, the drop-down list will only show the Profiles with same number of Measure Aggregate Groups and Measures used in primary profile.

Adding Measures

1. Click **Add** on the Measures tool bar. The Add Measure fields are expanded.
2. Enter the following details:

Table 26. Measures

Fields	Description
Business Property	Select the business property type from the drop-down list.
Measure Aggregation Type	Select the measure aggregation type from the drop-down list.

Adding Associated Inline Datasets

Associated Inline Datasets are shown once user has saved the Virtual Profile.

1. Click **Add** on the Associated Inline Datasets tool bar. The Add Associated Inline Data set fields are expanded.
2. Enter the following details:

Table 27. Associated Inline Datasets

Fields	Description
Inline Dataset Name	Enter the Inline dataset name.
Start Table	Select the start table from the drop-down list.
Start Field	Select the start field of the condition from the drop-down list.
Operator	Select the operator from the drop-down list. The available operators are =, >, <, >=, <=, and <>.

Adding Associated Paths

Associated Paths are shown once the user has saved the Virtual Profile.

1. Click **Add** on the Associated Paths tool bar. The Add Associated Paths fields are expanded
2. Enter the following details:

Table 28. Associated Paths

Fields	Description
Traversal Path Name	Enter the traversal path name.
Start Table	Select the start table from the drop-down list.
End Table	Select the end table from the drop-down list.
Source Entity	Select the source entity from the drop-down list.
Destination Entity	Select the destination entity from the drop-down list.
Change Description	Enter the details in the field. This is a mandatory field.

Note: It is to be noted that while adding the Traversal Path and Inline Dataset from Virtual Profiles, the current Virtual Profile should either be the Start table or the End table. If it is not so, then the added Inline Dataset or the Traversal Path will not be displayed under the corresponding tool bar. The same Traversal Path or Virtual Profile should be added in the Inline dataset list and traversal path list under Associations and configurations. Additionally, once the associated traversal path or associated the Inline Dataset is deleted from Virtual profiles window, the same should be deleted from the Inline dataset list and the Traversal Path list under Associations and Configurations.

3. Click **Save**. A confirmation message is displayed.

Searching Virtual Profile

To search Virtual Profile, follow these steps.

1. Navigate to the Virtual Profiles details page.
2. Enter the following details:

Table 29. Searching Virtual Profile

Fields	Description
Profile Name	Enter the Profile Name.
Activity	Select the activity from the drop-down list.
Processing Segment	Select the Processing Segment from the drop-down list.

3. Click **Go**. The Search Details are displayed.

Editing Virtual Profile

To modify Virtual Profile Details, follow these steps.

1. Navigate to the Virtual Profiles details page.

2. Select the required Virtual Profile.
3. Modify the necessary information. For more information on Processing Segment fields, refer to the *Adding Virtual Profile* table.
4. Click **Save**. A confirmation message is displayed.

Deleting Virtual Profile

To delete the Virtual Profile details, follow these steps.

1. Navigate to the Virtual Profiles details page.
2. Select the required Virtual Profile.
3. Click **Delete**.

Note: System does not allow the user to delete the selected Virtual Profile if it is used in other IPE metadata.

CHAPTER 8 Managing Evaluations

This chapter describes Evaluations functionality and provides step-by-step instructions to use this module.

This chapter discusses the following topics:

- Overview
- Accessing Evaluation Menu
- Adding an Evaluation
- Adding an Expression from Evaluations Menu
- Searching an Evaluation
- Editing an Evaluation
- Deleting an Evaluation

Overview

Evaluations are logical comparisons against conditions that result in a score.

The essential evaluation types are listed below:

- Condition Evaluations: These can be checks against literals or against other attributes.

  For examples,

  - If the Transaction Origination Country is “Nigeria”, then 10 points.
  - If the Transaction Origination Country is in High Risk Countries List, then 10 points.

  These can involve other logical expressions for evaluating multiple conditions.

- Profile Comparison: These are not materially different than the condition evaluations. One of the things that can be on the right side of the equation is the profile check.

  For example:

  If the Transaction Amount is > High Risk Country Transactions 75th Percentile Amount then 10 points.

- Value Lookups: These evaluations use a dimensional table where the attribute values lead to a score that we lookup. This may not necessarily be a separate evaluation type, but rather a mechanism for getting the associated points. For example, the Conditional Checks evaluation could be an evaluation that awards points from a table, but only for transactions originated in Nigeria.

  For example,

  - If the Transaction Origination Country is 'Nigeria', then points based on High Risk Countries List using Transaction Origination Country.

  For example, the evaluation only applies to Nigeria. If that was left out, the evaluation could simply be the following:

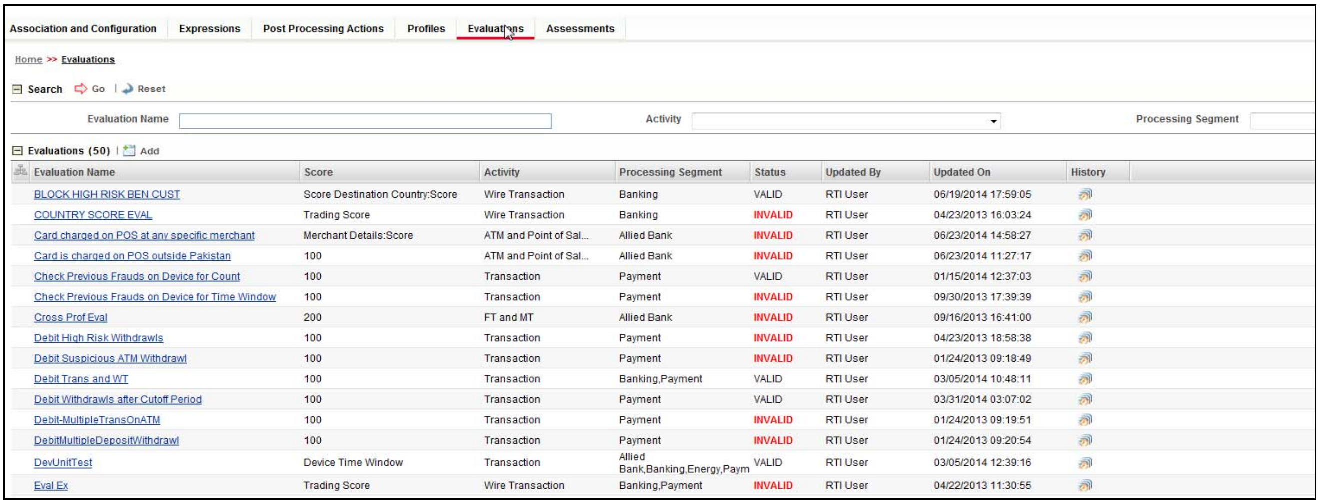
  - Get points based on High Risk Countries List using Transaction Origination Country.

  Through Evaluations, you can add a new evaluation and also search for existing evaluations for modification or removing an evaluation.

Accessing Evaluation Menu

To access the Evaluation page, follow these steps:

1. Navigate to the Inline Processing Home Page.
2. Click **Evaluations**. The Evaluations page is displayed.



Association and Configuration | Expressions | Post Processing Actions | Profiles | Evaluations | Assessments

Home >> Evaluations

Search | Go | Reset

Evaluation Name | Activity | Processing Segment

Evaluations (50) | Add

Evaluation Name	Score	Activity	Processing Segment	Status	Updated By	Updated On	History
BLOCK HIGH RISK BEN CUST	Score Destination Country:Score	Wire Transaction	Banking	VALID	RTI User	06/19/2014 17:59:05	
COUNTRY SCORE EVAL	Trading Score	Wire Transaction	Banking	INVALID	RTI User	04/23/2013 16:03:24	
Card charged on POS at any specific merchant	Merchant Details:Score	ATM and Point of Sal...	Allied Bank	INVALID	RTI User	06/23/2014 14:58:27	
Card is charged on POS outside Pakistan	100	ATM and Point of Sal...	Allied Bank	INVALID	RTI User	06/23/2014 11:27:17	
Check Previous Frauds on Device for Count	100	Transaction	Payment	VALID	RTI User	01/15/2014 12:37:03	
Check Previous Frauds on Device for Time Window	100	Transaction	Payment	INVALID	RTI User	09/30/2013 17:39:39	
Cross Prof Eval	200	FT and MT	Allied Bank	INVALID	RTI User	09/16/2013 16:41:00	
Debit High Risk Withdrawls	100	Transaction	Payment	INVALID	RTI User	04/23/2013 18:58:38	
Debit Suspicious ATM Withdrawl	100	Transaction	Payment	INVALID	RTI User	01/24/2013 09:18:49	
Debit Trans and WT	100	Transaction	Banking,Payment	VALID	RTI User	03/05/2014 10:48:11	
Debit Withdrawls after Cutoff Period	100	Transaction	Payment	VALID	RTI User	03/31/2014 03:07:02	
Debit-MultipleTransOnATM	100	Transaction	Payment	INVALID	RTI User	01/24/2013 09:19:51	
DebitMultipleDepositWithdrawl	100	Transaction	Payment	INVALID	RTI User	01/24/2013 09:20:54	
DevUnitTest	Device Time Window	Transaction	Allied Bank,Banking,Energy,Paym	VALID	RTI User	03/05/2014 12:39:16	
Eval Ex	Trading Score	Wire Transaction	Banking,Payment	INVALID	RTI User	04/22/2013 11:30:55	

Figure 35. Evaluation Details page

Adding an Evaluation

This section covers following topics:

- Adding Filters
- Adding Evaluation Scoring

To add an Evaluation, follow these steps:

1. Navigate to the Evaluation details page.
2. Click **Add** on the Evaluations tool bar. The Add Evaluation page is displayed.

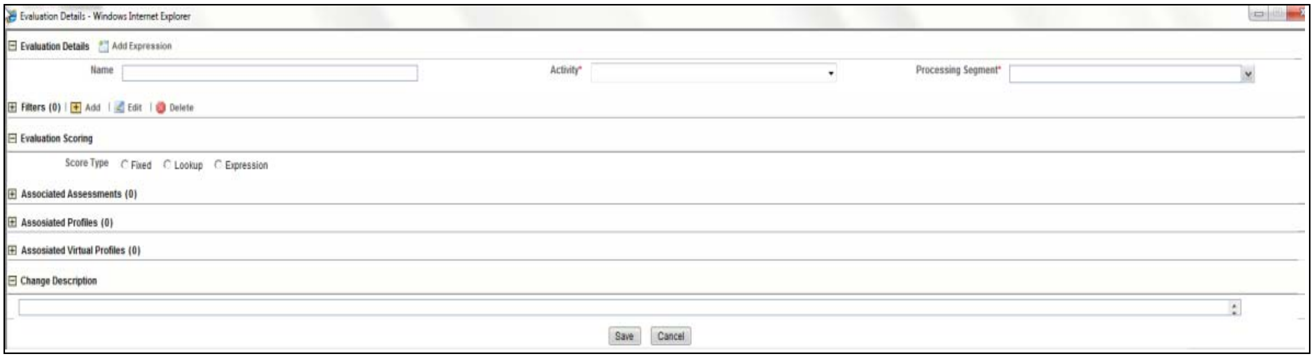


Figure 36. Adding an Evaluation

3. Enter the following details:

Table 30. Expression

Field	Description
Expression Name	Enter the name of the evaluation.
Processing Segment	Select the processing segment from the drop-down list.
Activity	Select the activity from the drop-down list.

4. Click **Save.** A confirmation message is displayed.

Adding Filters

1. Click **Add** on the Filters tool bar. The Add Filter Dialog box is displayed.
2. Enter the following details:

Table 31. Adding Filters

Fields	Description
Filter Name	Enter the name of the filter.
Source Expression	Select the source expression from the drop-down list. The list will be based on the selected Activity.
Operator	Select the operator from the drop-down list for the expression and also the expression that it is to be operated on.
Comparator Type	Select the Comparator type: ● If Expression type is selected, then a drop-down list is displayed. ● If Literal Value is selected, then a text field is displayed to enter the details **Note:** If literal value is a character, then the value should be wrapped in single quotes.

3. Click **Save**. A confirmation message is displayed.

Adding Evaluation Scoring

1. Expand **Evaluation Scoring**. Enter the following details:

Table 32. Evaluation Scoring

Fields	Description
Evaluation Scoring	Select the score type. The options are: ● Fixed: If this option is selected, then the score should be entered in the text box displayed. ● Lookup: This option shows the lookup tables. ● Expression: This option shows the list based on the selected Activity.
Change Description	Enter the change description details. This is a mandatory field.

2. Click **Save**. A confirmation message is displayed.

Adding an Expression from Evaluations Menu

An expression can be added from the Evaluations menu apart from the Expression menu itself. To add an expression from Evaluations menu, follow these steps:

1. Navigate to the Evaluation details page.
2. Click **Add** on the Evaluations tool bar. The Add Evaluation fields are expanded.
3. Click the Activity from the drop down list.
4. Click **Add Expressions** on the Evaluations Details tool bar. The Expression Details page is displayed.
5. Add an expression. For more information, refer to the *Adding an Expression* table.

Searching an Evaluation

To search an Evaluation, follow these steps.

1. Navigate to the Evaluation details page.
2. Enter the following details:

Table 33. Searching Evaluation

Fields	Description
Evaluation Name	Enter the Profile Name.
Activity	Select the activity from the drop-down.
Processing Segment	Select the Processing Segment from the drop-down.

3. Click **Go**. The Search Details are displayed.

Editing an Evaluation

To modify Evaluation details, follow these steps.

1. Navigate to the Evaluation details page.
2. Select the required Evaluation.
3. Modify the necessary information. For more information on Evaluation fields, refer to the *Adding an Evaluation* table.
4. Click **Save**. A confirmation message is displayed.

Deleting an Evaluation

To delete an Evaluation, follow these steps.

1. Navigate to the Evaluation details page.
2. Select the required Evaluation.
3. Click **Delete**.

Note: System does not allow the user to delete the selected Evaluation if it is used in other IPE metadata.

CHAPTER 9 Managing Assessments

This chapter explains about Assessments functionality and provides step-by-step instructions to use this module.

This chapter discusses the following topics:

- Overview
- Accessing Assessments Menu
- Adding an Assessment
- Exporting an Assessment
- Searching an Assessment
- Editing an Assessment
- Deleting an Assessment

Overview

Analysis of incoming data is handled in by a combination of Evaluations or a single Evaluation, which are created in Assessments.

The final decision on an activity is made by an Assessment, which can be made up of one or more Evaluations. A set of evaluations are assembled into an Assessment. Assessment performs the complete validation and returns a score.

Assessment will check multiple evaluation logic and consider the Sum of all Evaluation Score for the output score.

There are two assessment scoring types:

- **Normalized Base**: It is the adjustments of score or distributions in statistics.
- **Sum of Evaluation Score**: It is the total sum score of all selected evaluations.

Through assessments, you can add a new assessment and also search for existing assessments for modification or removing an assessment.

Accessing Assessments Menu

To access the Assessments menu, follow these steps:

1. Navigate to the Inline Processing Home Page.
2. Click **Assessments**. The Assessments page is displayed.

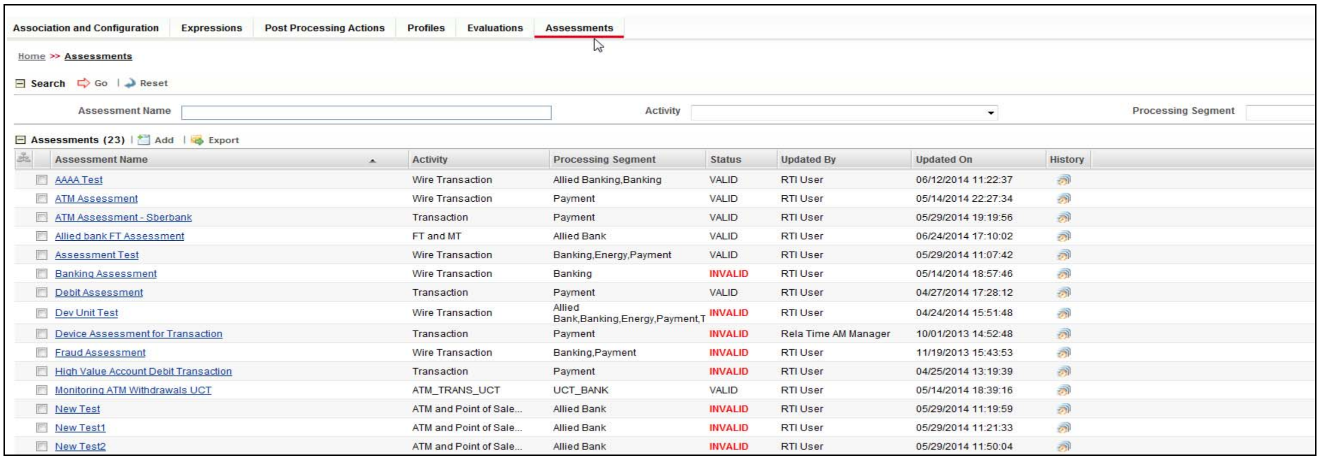


Figure 37. Assessment Details page

Adding an Assessment

This option allows you to define an assessment by adding the assessment details.

This section covers the following topics:

- Mapping Associated Evaluations
- Adding Assessment Score and Outcome
- Adding Action Parameters and Schedule
- Adding Assessment Database Parameters

To add an Assessment, follow these steps:

1. Navigate to the Assessments details home page.
2. Click **Add** on the Assessment tool bar. The Add Assessment page is displayed.

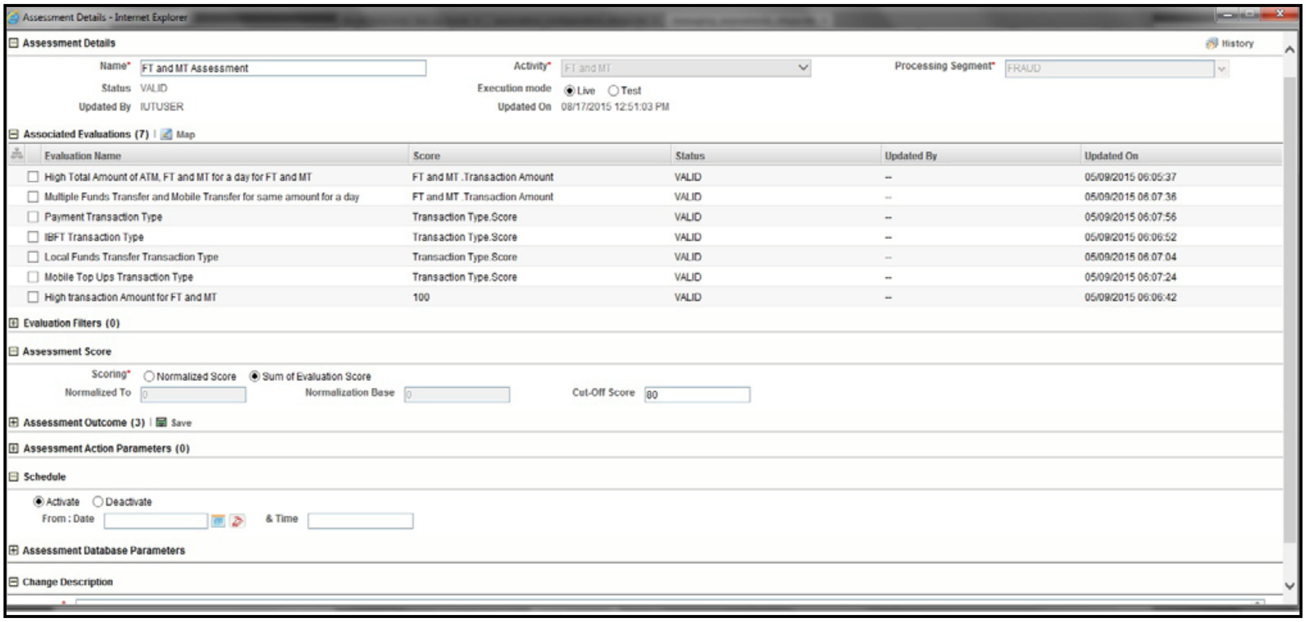


Figure 38. Adding an Assessment

3. Enter the following details:

Table 34. Adding Assessment

Field	Description
Assessment Name	Enter the name of the assessment.
Processing Segment	Select the processing segment from the drop-down list.
Activity	Select the activity from the drop-down list.
Execution Mode	Select the execution mode. The options are: ● Live- Assessments are used for scoring. ● Test- Assessments are used for offline analysis.

Mapping Associated Evaluations

To map associated evaluations to an assessment, follow these steps:

1. Navigate to Associated Evaluations section. Click **Map.** The Associated Evaluations Mapping Dialog box is displayed.

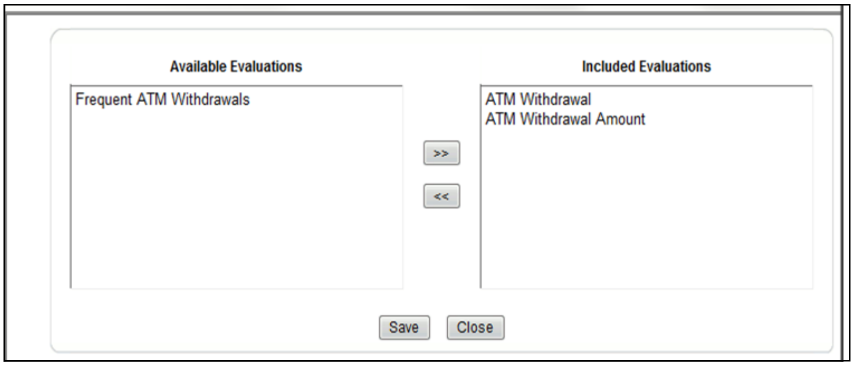


Figure 39. Assessment Evaluation Window

2. Select Evaluations from Available Evaluations pane. Click  :to move to Included Evaluation pane.

   Note: Evaluation filter -This option gets populated for the selected evaluation in Associated Evaluations.

Adding Assessment Score and Outcome

To add and Assessment Score and Outcome, follow these steps:

1. Navigate to Assessment Scoring section.
2. Expand **Assessment Scoring**. The Assessment Score add fields are displayed.
3. Enter the following details:

Table 35. Adding Assessment Score

Fields	Description
Scoring	Select the score type. The options are: ● Normalized Base ● Sum of Evaluation Score
Normalized to	Enter the normalized to score.
Normalization Base	Enter the normalization base score.
Cut-off score	Enter the cut-off score or the minimum score required to attain normalization.
Assessment Outcome	Select the type of action. Enter the upper limit and lower limit score.

Adding Action Parameters and Schedule

To add an action parameter and schedule to an assessment, follow these steps:

1. Navigate to Action Parameters and Schedule section.
2. Expand **Action Parameters**. The Action Parameters add fields are displayed.
3. Enter the following details:

Table 36. Adding Action Parameters

Fields	Description
Parameter Name	Enter the parameter name.
Parameter value	Enter the parameter value.
Schedule	Select the schedule type. The options are: ● Activate- To activate a Schedule ● Deactivate- To deactivate a Schedule
Change Description	Enter the Change Description. This is a mandatory field.

4. Click **Save**. A confirmation message is displayed.

   Note: Managing Post Processing Actions is applicable for Real Time Processing only.

   Note: In the assessment details, for the Hold Transaction Message, user has to configure the Assessment Action Parameters manually in the Action Parameter Details page. It is to be noted that the message format can be changed as per the requirement of the user.

Adding Assessment Database Parameters

This option allows you to add run time parameters for HIVE. For example,

```
SET mapred.reduce.tasks = 1000;SET mapred.child.java.opts = -Xmx2048m;
```

Note: No space is allowed between **;** and **SET**

Exporting an Assessment

This option allows the user to migrate an assessment and associated metadata from one environment to another. To export an assessment, follow these steps:

1. Navigate to the Assessments details home page.
2. Select the Assessment Name in the list.
3. Click **Export**. The exported assessment details are stored as XML files. Once the assessment is exported, an XML file gets generated in the path `<APP_LAYER_FTPSHARE>/<INFODOM>/RTI>`. Once the file is exported, the following message is displayed:

Assessment Export Window

Searching an Assessment

To search an Assessment, follow these steps.

1. Click **Assessments** on the Inline Processing Home Page. The Assessment Details page is displayed.
2. Enter the following details:

Table 37. Searching Assessment

Fields	Description
Assessment Name	Enter the Assessment Name.
Activity	Select the activity from the drop-down.
Processing Segment	Select the Processing Segment from the drop-down.

3. Click **Go**. The search details are displayed.

Editing an Assessment

To modify Assessment details, follow these steps:

1. Navigate to the Assessments details home page.
2. Select the required Assessment.
3. Modify the necessary information. For more information on Processing Segment fields, refer to the *Adding an Assessment* table.
4. Click **Save**. A confirmation message is displayed.

Deleting an Assessment

To delete an Assessment, follow these steps:

1. Navigate to the Assessments details home page.
2. Select the required Assessment.
3. Click **Delete**.

Note: System does not allow the user to delete the selected Assessment if it is used in other IPE metadata.

CHAPTER 10 Executing an Assessment Batch

This chapter provides detailed information about executing a batch of assessments and step-by-step instructions to use this module.

Batch mode execution is now on HIVE, along with RDBMS.

Note: Impersonalization is not supported in IPE.

This chapter discusses the following topics:

- Overview
- Executing an Assessment Batch through Rules Run Framework
- Executing an Assessment Batch through Operations

Overview

This chapter explains the procedure of executing an assessment batch in two ways, i.e. Rules Run Framework and Operations.

Executing an Assessment Batch through Rules Run Framework

To execute an Assessment Batch, it involves the following procedures:

- Creating a Process
- Creating a Hierarchy filter
- Creating a Run and Executing it

Creating a Process

To create a Process, follow these steps:

1. Navigate to the OFSAA Home Page and select **IPE Execution** from Select Application drop-down list.
2. Select **Process Management** under it and then **Orchestration**.
3. Select **Process Definition**. The Process Definition page is displayed.

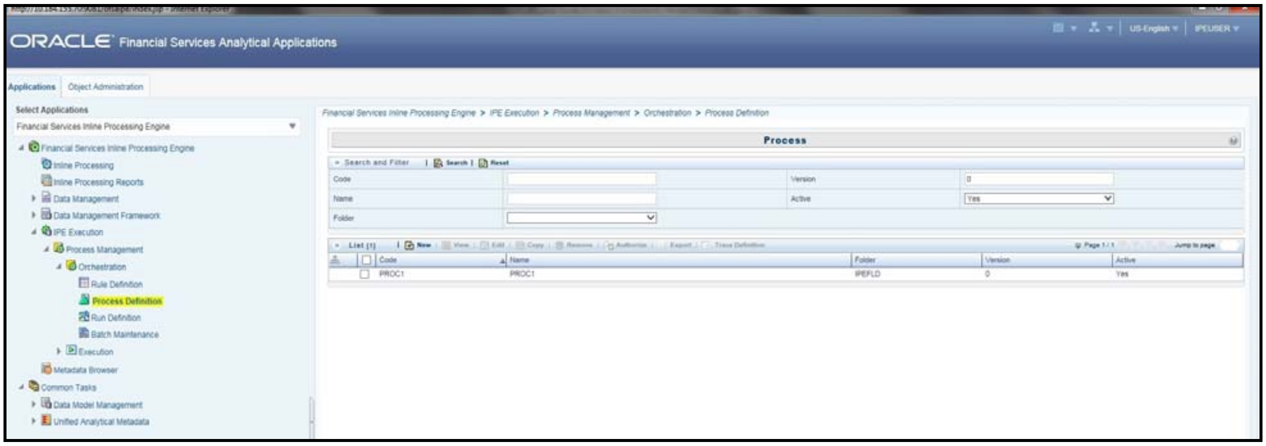


Figure 40. Process Definition page

4. Click **New** on the List tool bar. The Run Rule Framework window is displayed.

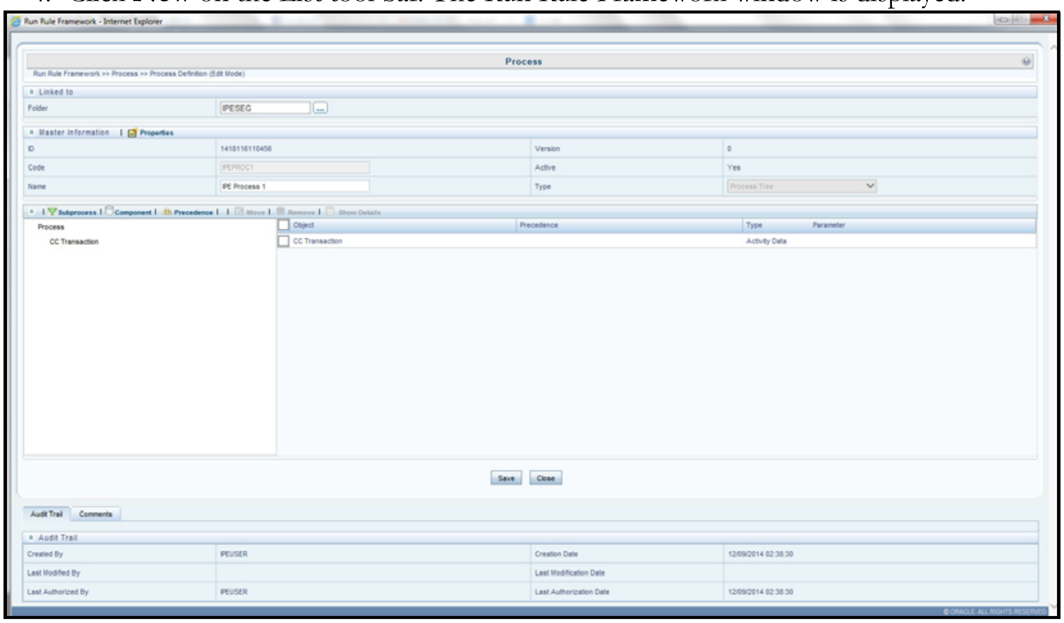


Figure 41. Process Details Run Rule Framework page

5. Under the **Linked To** tool bar, click on the button next to **Folder**. The Folder Selector dialog box is displayed.

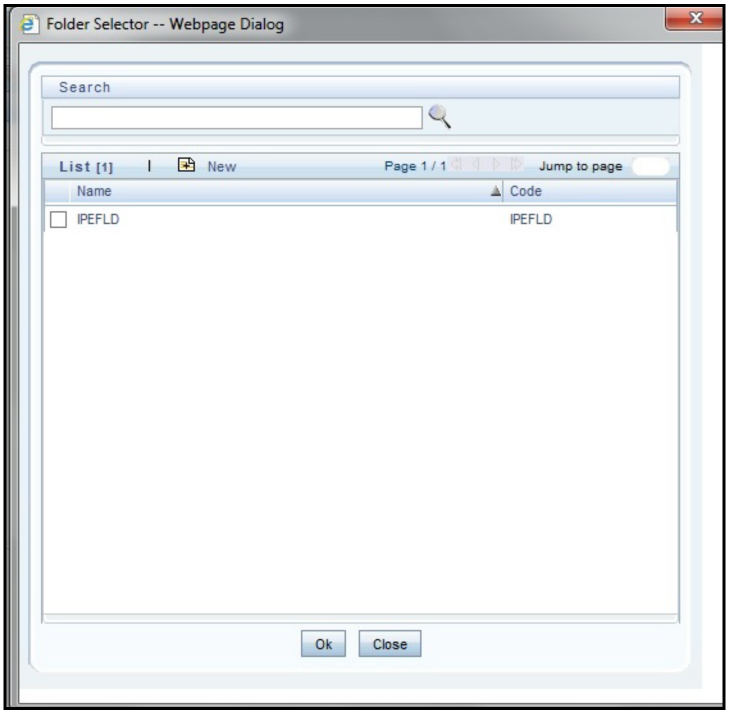


Figure 42. Folder Selector window

6. Select the folder that is to be linked to the process.
7. In the Master information tool bar, enter the code and name of the process.
8. Click **Component** on the tool bar. The Run Rule Framework Dialog box is displayed.

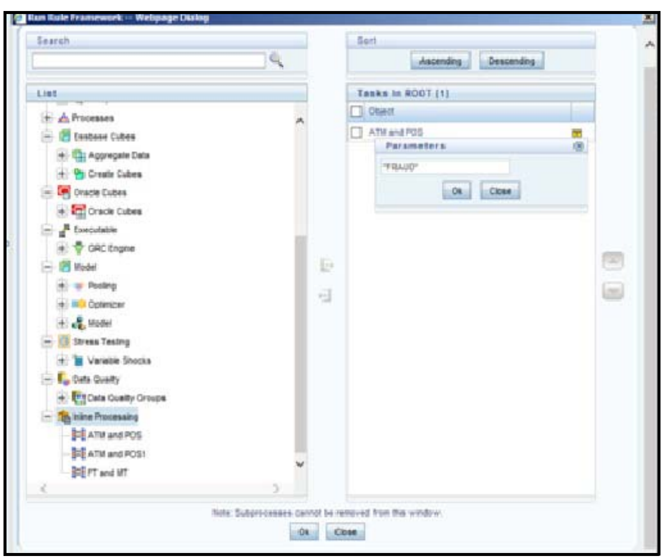


Figure 43. Process RRF

9. Click **Inline Processing** from the List on the left and select the activity that is to be executed. The activity is displayed on the right under Tasks in ROOT.
10. Click on the button next to the activity. The parameter dialog box is displayed. Enter the segment under this Activity that is to be executed. If no segment is entered, then all the segments under that activity are executed.
11. Click **OK**. The activity is displayed under Process.
12. Click **Save**. A confirmation message is displayed.

Creating a Hierarchy filter

To create a Hierarchy Filter, follow these steps:

1. Navigate to the OFSAA Home Page and select **Common Tasks** from Select Application drop-down list.
2. Select **Unified Analytical Metadata** under it and then **Dimension Management**.
3. Select **Build Hierarchy**. The Business Hierarchy page is displayed.

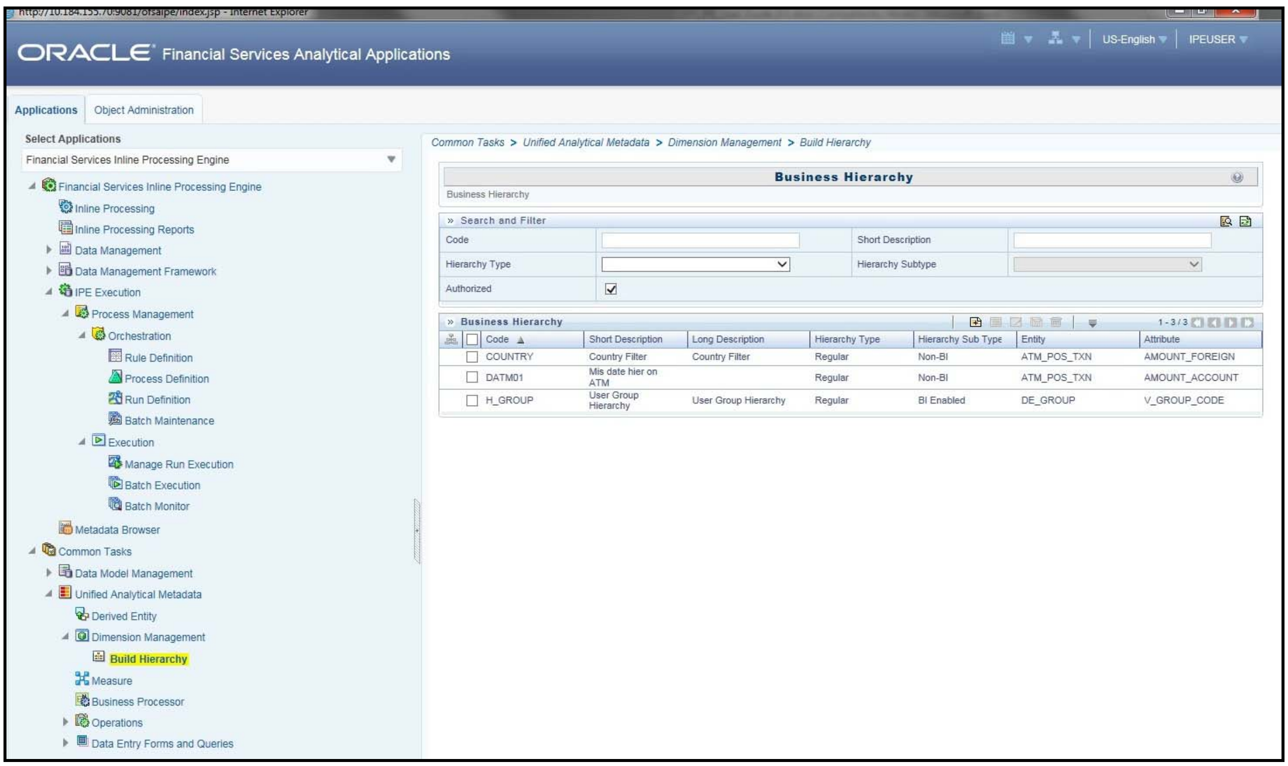


Figure 44. Build Hierarchy page

4. Click **Add** (**+**) on the Business Hierarchy tool bar. The Add Business Hierarchy window is displayed.

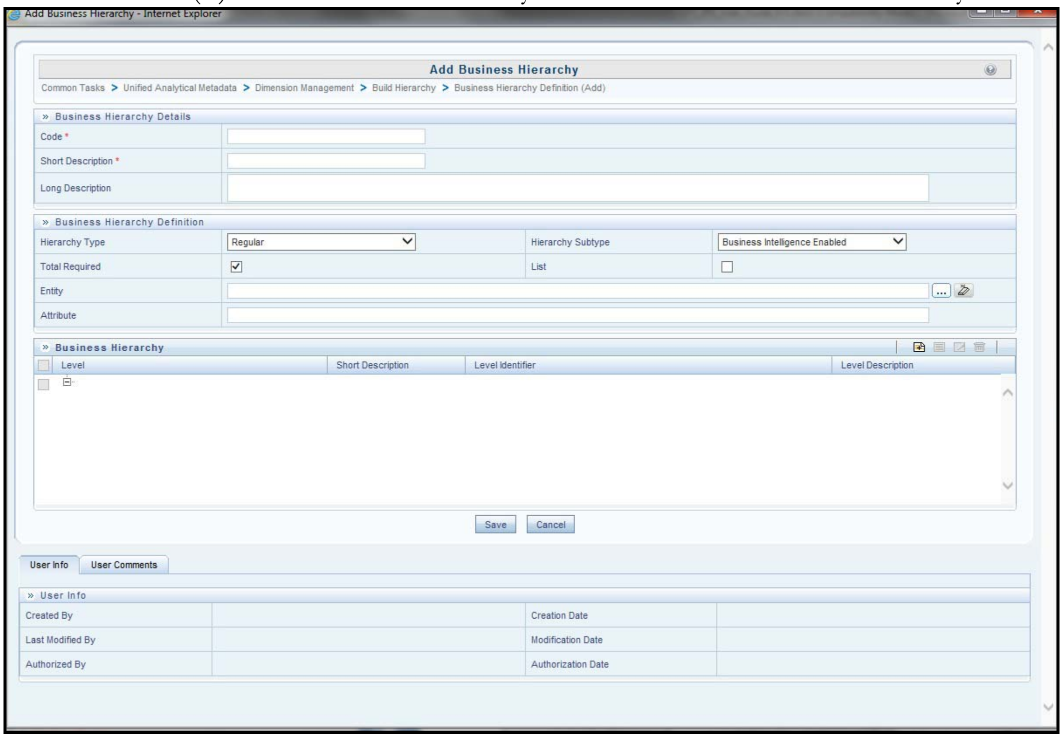


Figure 45. Adding Business Hierarchy Details

5. Enter the following details:

Table 38. Adding Business Hierarchy

Fields	Description
Code	Enter the Code.
Short Description	Enter the short description.
Long Description	Enter the long description.
Hierarchy Type	Select Hierarchy Type. It has the following options: ● Regular ● Measure ● Time From these options, select Regular
Hierarchy Subtype	Select Hierarchy Subtype. It has the following options: ● Business Intelligence Enabled ● Non Business Intelligence Enabled ● Parent Child From these options, select Non Business Intelligence Enabled

6. Click on the button next to **Entity**. The Entity and Attribute dialog box is displayed.

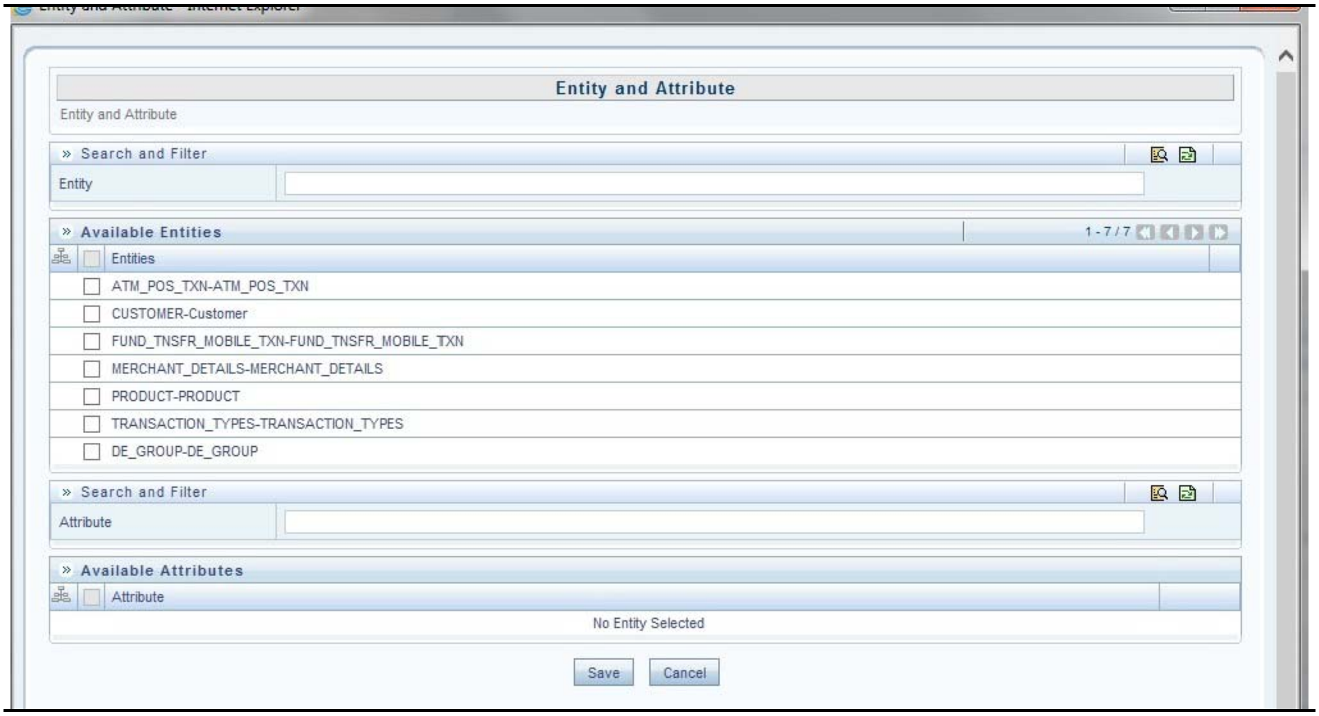


Figure 46. Entity and Attribute details page

7. Select the Activity table from **Entity**. The Attributes of the Activity table are displayed.
8. Select the Attribute whose result is to be displayed.
9. Click **Save**. The details are displayed on the Add Business Hierarchy window.
10. Click **Add** (**+**) on the Business Hierarchy tool bar. The Add Hierarchy Levels dialog box is displayed.

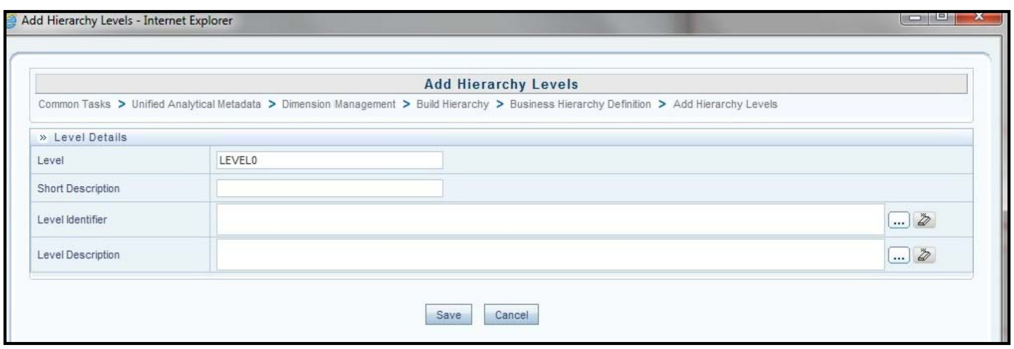


Figure 47. Adding Hierarchy Levels

11. Enter the following details:

Table 39. Adding Hierarchy Levels

Fields	Description
Short Description	Enter the short description.

Table 39. Adding Hierarchy Levels

Level Identifier	Enter the Level Identifier from the Expressions dialog box.
Level Description	Enter the Level Identifier from the Expressions dialog box.

12. Click **Save**. A confirmation message is displayed.

Creating a Run and Executing it

To create a run and execute it, follow these steps:

1. Navigate to the OFSAA Home Page and select **IPE Execution** from Select Application drop-down list.
2. Select **Process Management** under it and then **Orchestration**.
3. Select **Run Definition**. The Run Definition page is displayed.

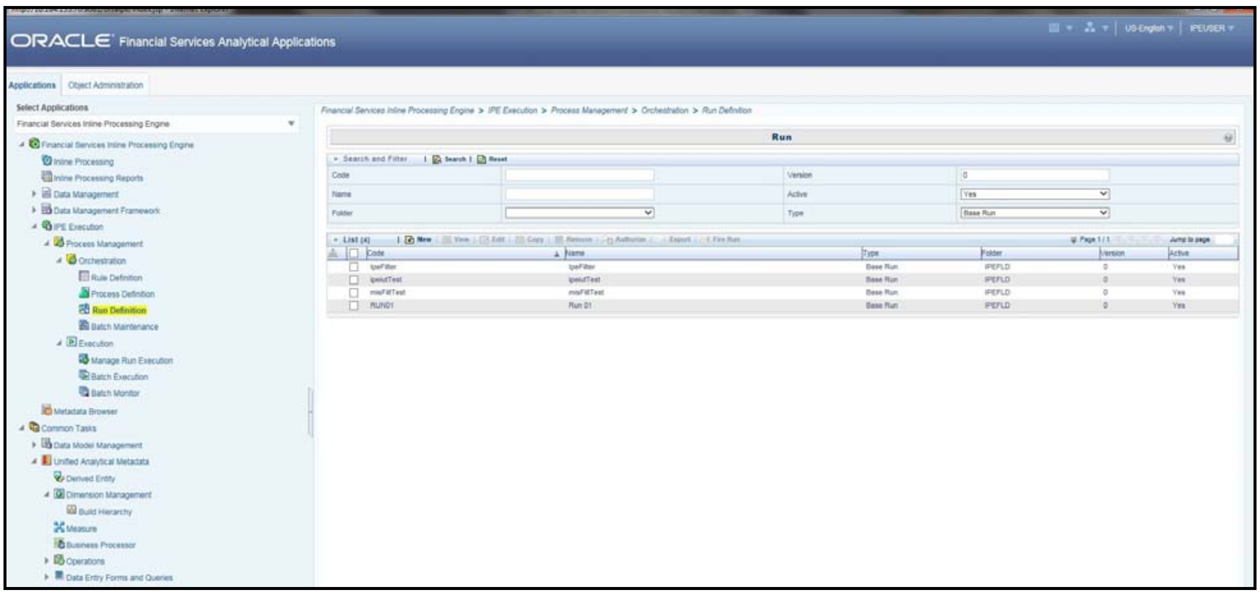


Figure 48. Run definition page

4. Click **New** (**+**) on the List tool bar. The Run Rule framework window is displayed.

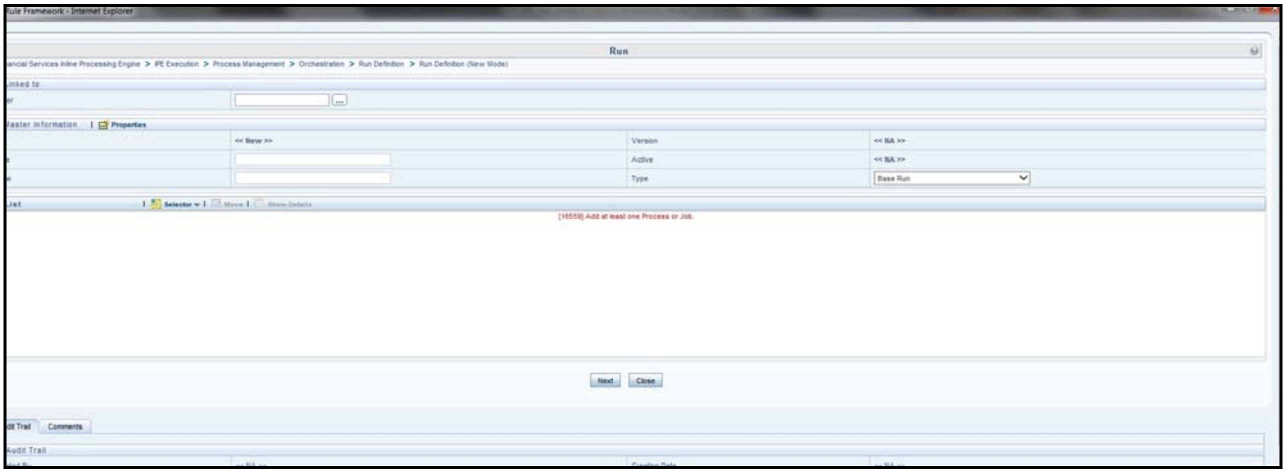


Figure 49. New Run Definition details page

5. Select the folder that is to be linked to the process run.
6. In the Master Information tool bar, enter the following details:

Table 40. Adding Run Definition

Fields	Description
Code	Enter the Code of the process.
Name	Enter the Name of the process.
Type	Select Type. It has the following options: ● Simulation Run ● Base Run From these options, select Base Run

7. Click **Selector** on the List tool bar. From the options displayed, select **Job**. The Job Details page is displayed.

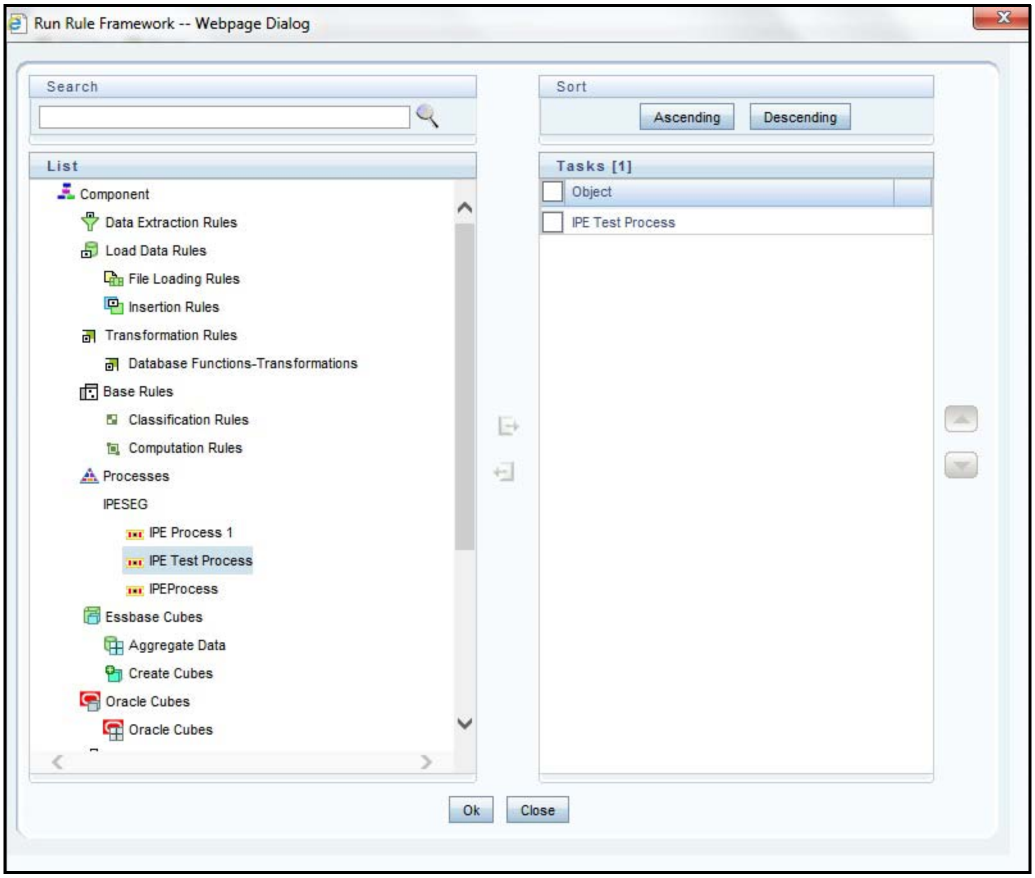


Figure 50. Job RRF window

8. Select the Process from the list. The process gets displayed on the right.
9. Click **OK**. The job is displayed on the Run Rule Framework window.

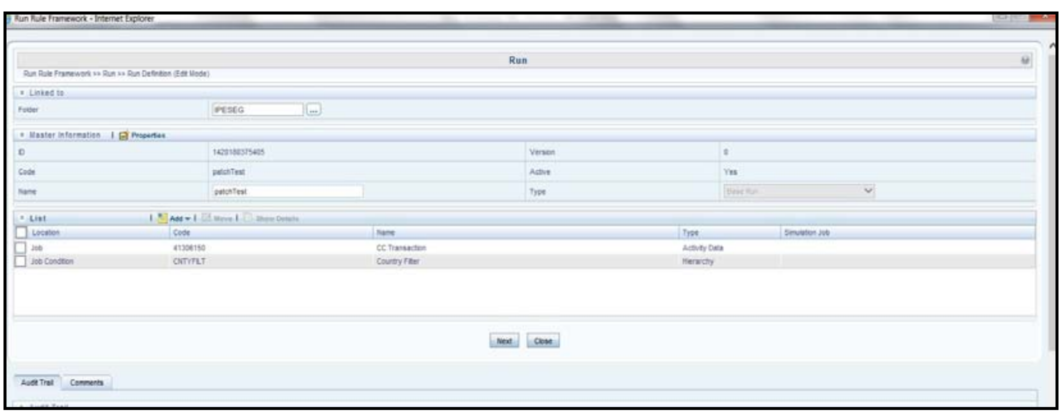


Figure 51. Jobs for Run RRF page

10. Click **Next**. Add the required hierarchy to the jobs.
11. Select the filter to be added to the job.

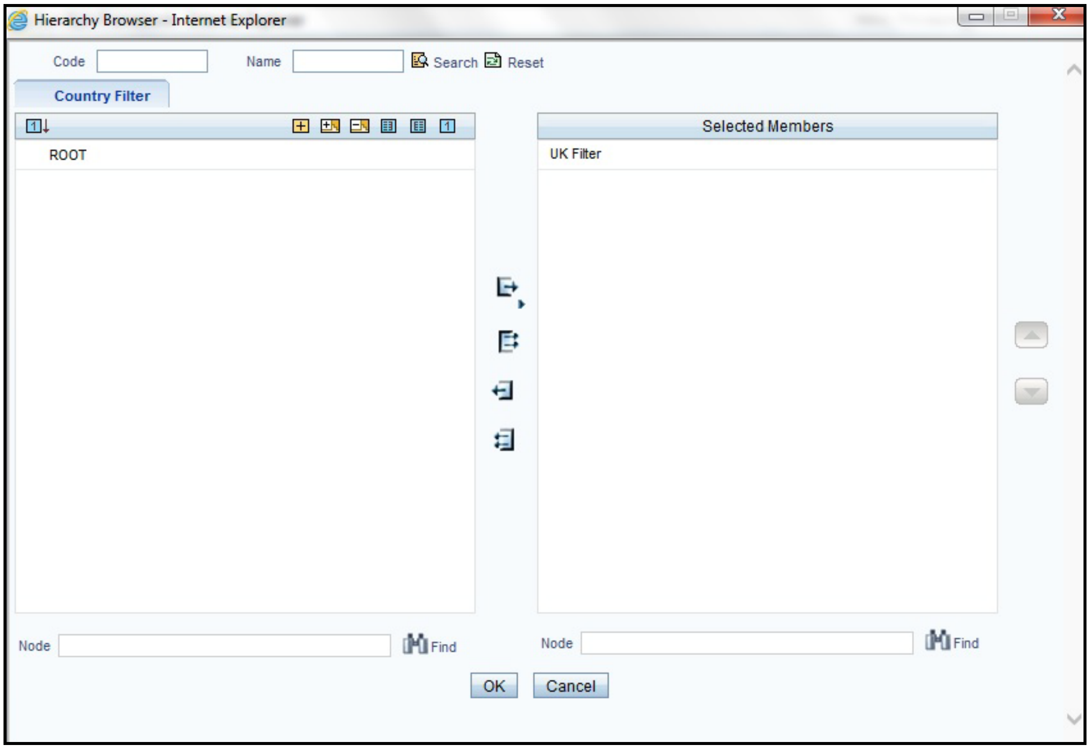


Figure 52. Hierarchy Browser window

12. Click **OK**. The required hierarchy for the job is selected and is displayed on the Run Rule Framework window.

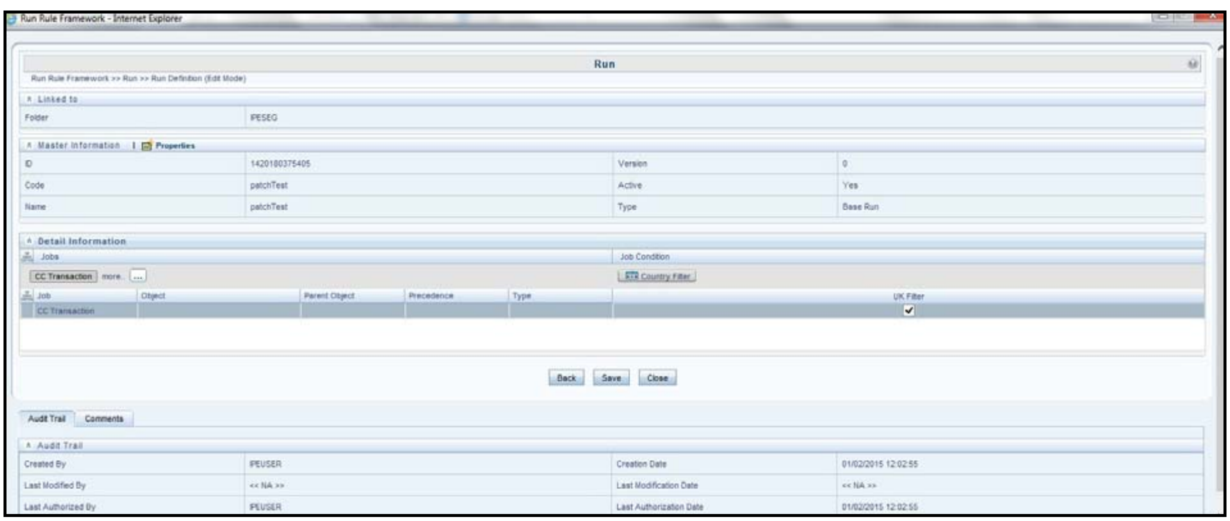


Figure 53. Job Hierarchy RRF page

13. Click **Save**. A confirmation message is displayed. The run is created and displayed on the Run Definition page.

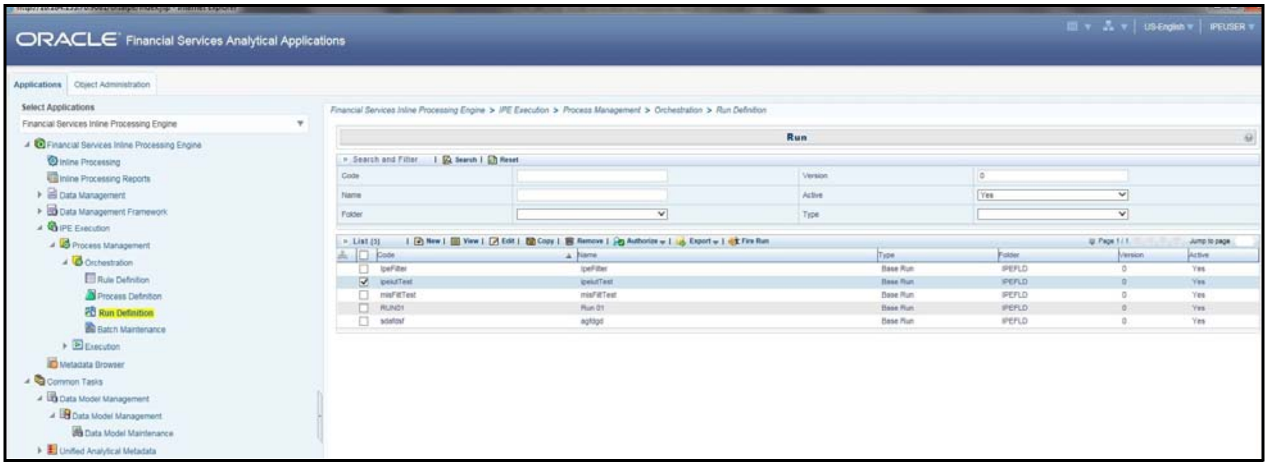


Figure 54. Fire Run Page

14. Select the run from the Run definition page that is to be executed and click **Fire Run**. The Fire Run Rule Framework dialog box is displayed.

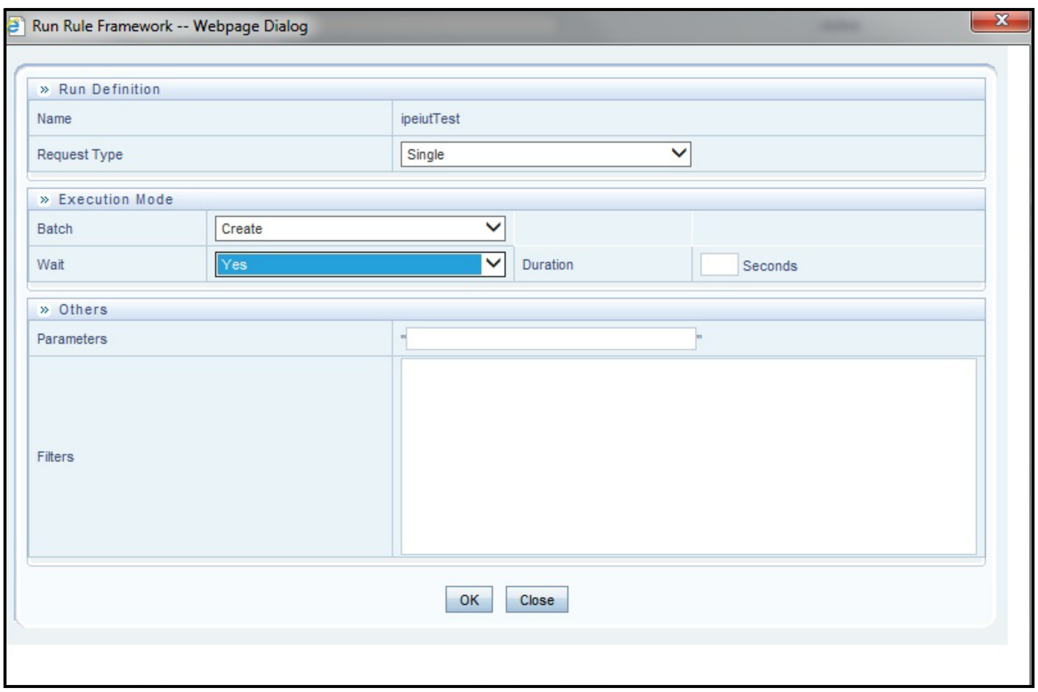


Figure 55. Fire Run Details Page

15. Enter the following details:

Table 41. Adding Fire Run Details

Fields	Description
Request Type	Select Request Type based on the following options: • Single: If the batch has to be executed once. • Multiple: If the batch has to be executed multiple times at different intervals.
Batch	Select Batch. It has the following options: • Create • Create & Execute From these options, select Create & Execute
Wait	Select Wait. It has the following options: • Yes: This will execute the batch after a certain duration. Enter the duration as required. • No: This will execute the batch immediately.
Filters	Enter the filter details. **Note:** $MISDATE option can be used to execute the run for that particular day. The format for it to enter in the filter details is: `to_date(<ACTIVITY_TABLE_NAME>.<ACTIVITY_DT_COL>)=$MISDATE` **Note:** For $MISDATE option: • For either Date or Timestamp datatypes, to_date is mandatory for the filter. • Activity Table Name and Activity Column Name should be in capital.

16. Click **OK** to run the batch.

Executing an Assessment Batch through Operations

To execute an Assessment Batch through Operations, refer to the Operation module in *Oracle Financial Services Analytical Applications Infrastructure User Guide*.

Note: Execution of an IPE Assessment through Batch Processing in the Operations Batch Maintenance screen is not supported.

While executing the batch, provide the following parameters when you add Task Details:

- $RUNID=<RUN_ID>
- $PHID=1
- $EXEID=<EXECUTION_ID>
- $RUNSK=0

CHAPTER 11 Displaying Assessment Results

This chapter provides detailed information about displaying assessment results and step-by-step instructions to use this module.

This chapter covers the following topics:

- Overview
- Accessing Assessments Results
- Displaying Assessments Results

Overview

You can display Assessment Results for batch mode processing only.

Accessing Assessments Results

To access the Assessments menu, follow these steps:

1. Navigate to the Inline Processing Home Page.
2. Click **Assessments**. The Assessments page is displayed.

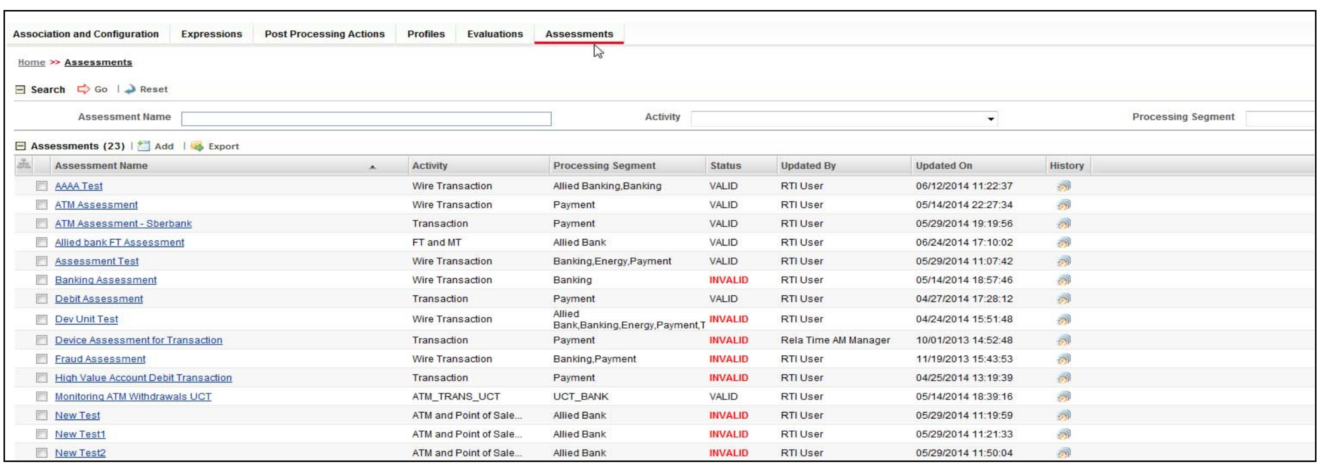


Figure 56. Assessments Details Page

Displaying Assessments Results

To display Assessment Results, follow these steps:

1. Navigate to the Assessments details page.
2. Enter the following details:

Table 42. Assessment Results Details

Fields	Description
Activity	Select the Activity.
Assessment	Select the Assessment whose result is to be displayed.
Result	Select the Result Type. The options are: ● Pass ● Fail
Score	Select the Score.
Activity Property To Display	Select the properties to be displayed.
Additional Filter	Click Add and select the Activity Property and operator.

3. The Assessment Results is displayed.

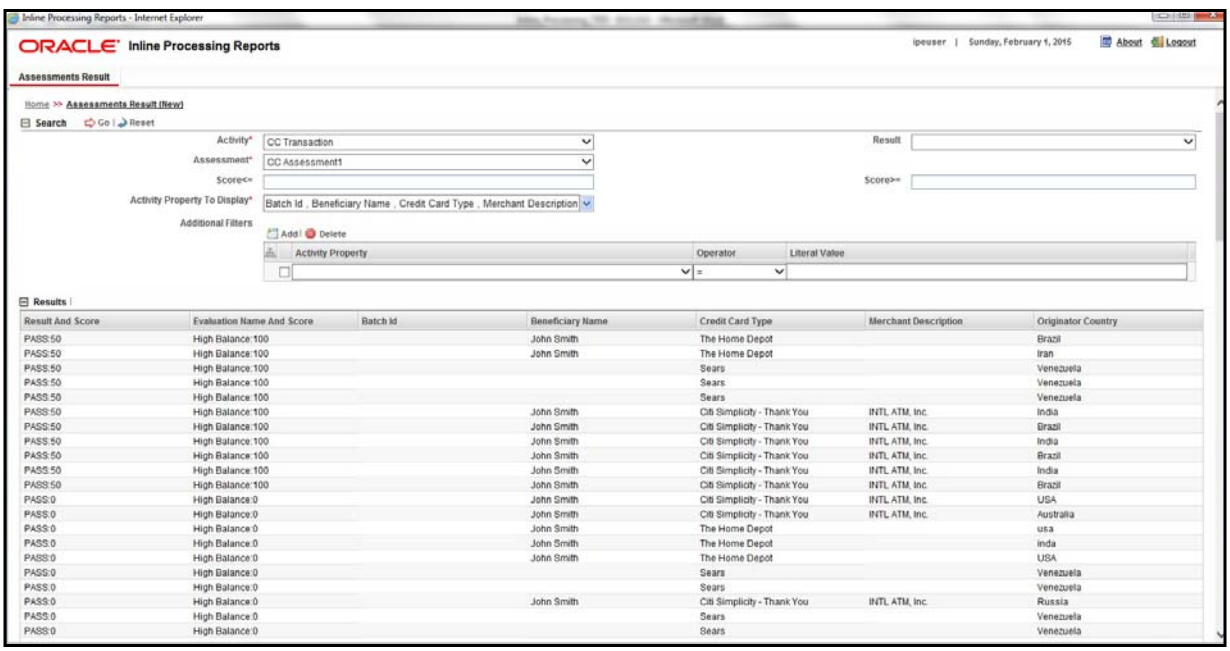


Figure 57. Assessment Results page

Displaying Assessment Results for HIVE:

To display the Assessment Results on HIVE for batch mode processing, a few additional steps have to be performed as follows:

1. Navigate to Database Details on the home screen.
2. Select the Database Name for the Infodom.
3. Edit JDBC Connection String by adding `UseNativeQuery=1` at the end of the string.

For example,
`jdbc:hive2://ofss1234:10001/tres;AuthMech=1;KrbServiceName=hive;KrbHostFQDN=ofss1234;KrbRealm=AA.COM;UseNativeQuery=1`

4. Restart the servers.

CHAPTER 12 Managing Import and Export Utilities

This chapter provides detail information about Import and Export functionality and step-by-step instructions to use this module.

This chapter discusses the following topics:

- Overview
- Import Functionality
- Export Functionality

Overview

Import and Export utilities are provided, when performed through command line `RTIImport.sh` and `RTIExport.sh`. These are available in `<FIC_HOME>/ficapp/common/FICServer/bin`

Import Functionality

Follow these steps:

1. Login to the Server where application layer is installed.
2. Navigate to the path.

   ```
   <FIC_HOME>/ficapp/common/FICServer/bin
   ```

   Execute the below command

   ```
   ./RTIImport.sh $1 $2 $3 $4
   ```

   Where $1 is the File name which has to be imported along with the absolute path where file exists.

   $2 is infodom and $3 is APP ID and $4 should always be false.

   For example,

   ```
   RTIImport.sh <APP LAYER FTPSHARE>/<INFO-
   DOM>/RTI/RTIExport_RTIINFO_2014.06.10.19.39.38.xml RTIINFO OFS_IPE false
   ```

Note: The Import file name should always start with `RTIExport_`

Export Functionality

Follow these steps:

1. Login to the Server where application layer is installed.
2. Navigate to the path.

   ```
   <FIC_HOME>/ficapp/common/FICServer/bin
   ```

   Execute the below command.

   ```
   ./RTIExport.sh $1 $2 $3 $4 $5
   ```

   Where $1 is the folder in which the exported XML is created.

   $2 is the Infodom name and $3 is APP ID, $4 is Assessment IDs Separated by Comma and $5 is flag 'true' to export all association and configuration metadata.

   For $5, system will export all Traversal Paths and all base metadata involved in those Traversal Paths. $5 is optional and default is 'false'.

   For example,

   ```
   ./RTIExport.sh /scratch/ofsaaapp/Ftpshare/OFSAA802IUT/RTI/RTIINFO OFS_IPE 1790,1802
   true|false
   ```

This creates a file within the target folder in the following format:

```
RTIExport_<INFODOM_NAME>_<DATE_TIME_STAMP>.xml
```

For example:

```
RTIExport_RTIINFO_2015.09.23.14.35.34.xml
```

Note: $5 will be false for UI export.

Note: Export functionality through UI exports only the associated metadata.

APPENDIX A Configuring a User Defined Function in IPE

This Appendix explains about configuring a user defined function in IPE, This Appendix covers following topics:

- Configuring a User Defined Function in RTI
- Configuring any User defined function

Configuring a User Defined Function in RTI

To configure a User Defined Function in RTI, follow these steps:

1.

```
GETLASTCHARS (FUNCTION NAME) (PARAMETER NAME1 DATA TYPE1, PARAMETER NAME2
      DATA TYPE 2)
return 'return data type'
Begin
Function Body
End
```

2. For Example, to create a Function GETLASTCHARS in the Atomic Schema, follow the steps below.

```
create or replace function GETLASTCHARS(inputString varchar2, noOfChars
number)
return varchar2
is
 v_chars varchar2(32767):='';

begin
  select SUBSTR(inputString,0-noOfChars,noOfChars) into v_chars from dual;

  return v_chars;
end GETLASTCHARS;
```

Note: At any point of time, the user created functions for use in Expression should have only two parameters. In the Example Function, the inputString and noOfChars are the two parameters.

Configuring any User defined function

To Configure any User defined function, follow these steps.

1. The information to be inserted into the tables `rti_function, rti_func_arg_map and rti_func_data_type`.
2. To configure the above Created Function to appear in the Select Function drop-down, execute the below Scripts in the Config Schema.

   The values should be added to the tables according to the format shown below:

   insert into `RTI_FUNC_ARG_MAP (N_MAP_ID, N_FUNC_ID, V_ARG_DESC, V_ARG_DATA_TYPE, N_ARG_NUM)`

   values(value1,value2,value3….)

   Example,

   insert into `RTI_FUNCTION (N_FUNC_ID, V_RETURN_TYPE, V_FUNC_CODE, V_FUNC_NAME, V_DESC, V_NOTES, V_FUNC_TYPE, V_FUNC_STR, V_MAX_PARAM)`

   ```
   values (30, 'VARCHAR2(200)', 'GETLASTCHARS', 'Get Last Characters ', 'Gets
   the Last Characters.', null, 'F', 'GETLASTCHARS(@1@,@2@ )', 2);
   ```

   insert into `RTI_FUNC_ARG_MAP (N_MAP_ID, N_FUNC_ID, V_ARG_DESC, V_ARG_DATA_TYPE, N_ARG_NUM)`

   ```
   values(value1,value2,value3…..)
   ```

   Example,

   insert into `RTI_FUNC_ARG_MAP (N_MAP_ID, N_FUNC_ID, V_ARG_DESC,`

   ```
   V_ARG_DATA_TYPE, N_ARG_NUM)
   values (40, 30, 'Char Value to be evaluated', 'char', 1);
   insert into RTI_FUNC_ARG_MAP (N_MAP_ID, N_FUNC_ID, V_ARG_DESC,
   V_ARG_DATA_TYPE, N_ARG_NUM)
   values (41, 30, 'Number of places', 'char', 2);

   insert into RTI_FUNC_DATA_TYPE (N_MAP_ID, N_FUNC_ID, V_DATA_TYPE)
   values (70, 30, 'CHAR');
   values(value1,value2,value3….)
   ```

   Example,

   ```
   insert into RTI_FUNC_DATA_TYPE (N_MAP_ID, N_FUNC_ID, V_DATA_TYPE)
   values (70, 30, 'CHAR');
   insert into RTI_FUNC_DATA_TYPE (N_MAP_ID, N_FUNC_ID, V_DATA_TYPE)
   values (71, 30, 'VARCHAR');
   ```

APPENDIX B

Configuring a User Defined Assessment

This Appendix explains about configuring a user defined function in IPE:

Use Case:

Large Trade vs Market Volume

IPE Assessments are converted into Scenarios for alert generation process. Creating an Assessment for this Use case is explained in the following section.

Creating an IPE Assessment

To create an IPE Assessment, we have the following procedures:

- Creating Processing Segments
- Importing Business Entities
- Creating Inline Datasets
- Adding Traversal Path

Creating Processing Segments

Processing segments allows the user to logically group the metadata required for Assessments and its sub-components. For this use case, create the following Processsing Segments:

Importing Business Entities

Business Entity is a business metadata layer on Database Tables. Tables can be imported from the uploaded datamodel. Through this functionality, the tables are imported to IPE Business layer for referring the entity for further processing. For more information, refer **Managing Business Entities.** Import the following tables for this use case:

Business Table	Physical Table	Entity Type
Account	ACCT	Activity
Customer	CUST	Activity
Security	SCRTY	Activity
Execution	EXECUTION	Activity
Investment Advisor		

Creating Inline Datasets

Inline Datasets are joins between two Business Entities. The Inline Datasets need at least one condition to be defined. For more information, refer **Managing Inline Datasets.** Create the Inline Datasets for this use case using the following information:

Start Table	End Table	Activity Column
Execution	Security	SCRTY_INTRL_ID
Execution	Account	LAST_SELLR_ACCT_INTRL_ID
Execution	Customer	CUST_INTRL_ID

Inline Dataset Condition:

Adding Traversal Path

Traversal Paths are the paths between two or more entities. The traversal paths defined can be used for creation of expressions, evaluations, and profiles. The start entity for the path should be the Activity Entity. There are intermediate Entities in the path. For more information, refer **Managing Traversal Paths.** Add a traversal path between the following Start and End Tables:

Start Table	End Table
Execution	Security
Execution	Account
Execution	Customer

APPENDIX C Configuring a User Defined Assessment

This Appendix explains about configuring a user defined function in IPE:

Example Scenario:

Monitoring ATM Withdrawals

Focus

- Account (AC)
- Customer (CU)

Scenario Class

Fraud (FR)

Scenario Objective

An account which is transacting through ATM in different permutations and combinations requires monitoring to avoid fraudulent activities.

Alert Generation

An alert would be generated when the filters of an evaluation are met. Profiles shall provide an output for some of the filters of an evaluation.

Table 43: Alert Generation

Evaluations	Filters for an Evaluation	Profiles for an Evaluation
Frequent ATM Withdrawals	ATM withdrawals > =2 Amount withdrawal > 200 Time Period after deposit within 4 hours ATM Deposit > 500	Frequent Count of ATM Withdraw-als Time Period after deposit
Frequent ATM withdrawals on a device	ATM withdrawals > = 10 Within = 10 minutes	Frequent count of withdrawals on a device
Frequent ATM withdrawals on a card – Velocity 1	ATM withdrawals >=3 Within = 10 minutes	Frequent count of withdrawals on a card
Frequent ATM withdrawals on a card – Velocity 2	ATM withdrawals >=5 Within = 15 minutes Amount Withdrawn > = 10000	Frequent count of withdrawals on a card

Table 43: Alert Generation

Suspicious ATM Withdrawals	ATM withdrawals > =3 Amount withdrawal >800 Time Period = 30 minutes Device = Different Card = Different	Suspicious Count of ATM withdrawals for different Device & Card Withdrawal Time Period
Suspicious ATM Withdrawals on a card	ATM withdrawals > =3 Amount withdrawal >800 Time Period = 30 minutes Device = Different Card = Same	Suspicious Count of ATM withdrawals for different Device & same Card Withdrawal Time Period
Suspicious ATM Withdrawals on a ATM machine	ATM withdrawals > =3 Amount withdrawal >800 Time Period = 30 minutes Device = Same Card = Different	Suspicious Count of ATM withdrawals for same Device & different Card Withdrawal Time Period
Suspicious ATM Withdrawals on a card and ATM device	ATM withdrawals > =3 Amount withdrawal >800 Time Period = 30 minutes Device = Same Card = Same	Suspicious Count of ATM withdrawals for same Device & Card Withdrawal Time Period
ATM Withdrawals in Unusual Time	Current Amount withdrawal > 300 Current Transaction Time between 5 to 7 pm Previous Transaction Time between 4 to 5pm Previous Amount withdrawn > 300	Amount withdrawn on a previous transaction in an unusual time
ATM withdrawals in High Risk period	Transaction Time : 12am to 5am	High Risk Period
Frequent ATM Transactions on a ATM Device	# of cards used > 10 Device = Same Within = 10 minutes	Count of Cards used at a ATM device Transaction Time
Maximum Amount ATM Withdrawals	# of Maximum Amount Withdrawn > 3 Within = 10 minutes Device = Same Maximum Amount > =	Count of maximum amount withdrawn Transaction Time Period for maximum amount withdrawn
Frequent Balance Enquires	# of balance enquires > = 5 Balance Enquiry within = 10 minutes Device = same	Count of Balance Enquires at a device Balance Enquiry time

Table 43: Alert Generation

Suspicious ATM withdrawal – device specific	More than X maximum amount ATM withdrawals in Y minutes at same ATM device	
Unusual ATM Location	The location of this ATM transaction is not one of the typical ATM locations for this card.	

Filters

- For Account Focus
  - Include ATM Transactions only
  - Include Customer Retail Accounts only
- For Customer Focus
  - Include ATM Transactions only
  - Include Customer Retail Accounts only

Data Streams of Interest

- Account
- Customer
- Watch List
- Watch List Entry
- Transaction

Building Blocks

Table 44: Building Blocks

Parameters for

Parameter Name	Description	Sample Value (Min, Max)	
Amount Deposited			
Amount Withdrawn			
Look back for withdrawal			
# of withdrawals			

Building Blocks for

Building Block	Description	Possible Number of Records Retrieved to Describe Alert		
		AC	CU	
Cash Transaction				
Account				
Customer				
Account Balance				
Account Summary				

Highlights

Highlights for

Display Name **Description**

Frequency Period – Real Time

Look back Period – Tunable