Oracle® Financial Services Asset Liability Management (OFSALM)

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Oracle Financial Services Asset Liability Management (OFSALM) User Guide, Release 5

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Contents

3 OFSAA Administrative Reporting

4 OFSAA Data Entry Forms and Queries

8 OFSAA Filters

9 OFSAA Expressions

10 OFSAA Rate Management

11 Simplified Batches

12 The Oracle Asset Liability Management Process

13 Common Rule Management Tasks

19 Time Buckets

20 Default Product Profiles

21 Product Characteristics

22 Forecast Rate Scenarios

23 Prepayment Rules

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Preface

Intended Audience

Welcome to Release 5 of the *Oracle Financial Services Asset Liability Management (OFSALM) User Guide.*

Forward

This user guide documents OFSAA Asset Liability Management for all versions of release 5. Some functional improvements have been introduced in various service packs and point releases within release 5.

This section documents the levels at which various functional enhancements to the Asset Liability Management application were first introduced.

Asset Liability Management release 5.2

- Support for Fine Grained Security
- FTP Forecasting – integration with Funds Transfer Pricing
- Support for Hybrid Interest Rate Curves (Merged, Spread, and Moving Average)
- Rate Management Staging Tables and Data Loaders supporting direct load of rates
- Currency Rate Validation, population of exchange rate direct access table

Asset Liability Management release 5.5

- Support for Simplified Batches
- Support for Forward Rate Agreements
- Re-structured Derivative Instrument Tables

- Calculation of Effective Interest Rate

Asset Liability Management release 5.6

- Assumption Rule dependency registration and dependency checking
- Support for up to 99 Deterministic Rate Scenarios in a single ALM Process
- Option to provide a minimum rate floor for Forecast Rates
- Option to output "all instruments" in detail cash flow results
- Message alerting users when time bucket changes for dependent UIs
- Yield to maturity calculation enhancement to read discount rate (from current rate previously).

See Related Information Sources on page xix for more Oracle product information.

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Structure

12 The Oracle Asset Liability Management Process

This module describes the steps that you need to follow to define and execute the end to end Asset Liability Management Process.

Oracle Asset Liability Management is based on the Oracle Financial Services Analytical Applications Infrastructure (OFSAAI). OFSAAI is the central, integrated data source and Administration layer on which Oracle Financial Services Analytical Applications (OFSAA) are built. This description of the Oracle Asset Liability Management Process assumes that your system administrator has setup the OFSAAI data repository and has populated it with your enterprise wide business data.

13 Common Rule Management Tasks

This module focuses on the rule management tasks that are common across all rules in this application.

14 Application Preferences

This module discusses the Procedure for defining and maintaining your ALM Application Preference settings.

15 Cash Flow Edits

This module discusses the procedure for validating and cleansing your Instrument table data before you process it to generate cash flow based results.

16 User Defined Behavior Patterns

This module describes the procedure for defining principal flows through Behavior Patterns, for instruments that do not have contractual amortization schedules.

17 User Defined Payment Patterns

This module describes the procedure for capturing instrument payment patterns that are too complex to be accommodated in the standard fields of Instrument tables.

18 User Defined Repricing Patterns

This module discusses the procedure for working with and managing user defined repricing patterns.

19 Time Buckets

This module describes the procedure for working with and managing Time Bucket rules.

20 Default Product Profiles

21 Product Characteristics

This module describes the procedure for working with and managing Product Characteristic rules.

22 Forecast Rate Scenarios

Forecast Rate scenario assumptions allow you to define future interest rates, future economic indicators, and future currency exchange rates. Use interest rate forecasts to project cash flows, including pricing new business, re-pricing existing business, calculating prepayments, and determining discount methods. Use Economic Indicator forecasts to include in behavioral modeling and scenario/stress analysis. Use currency exchange rate forecasts to account for the effects of currency fluctuations on income.

The Forecast Rate assumptions use interest rate, economic indicator, and currency codes

defined in Rate Management, including all the active and reporting currencies and the primary, or functional, currency at your institution. See OFSAA Rate Management, page 10-1 for information on how to define interest rates, economic indicator, and currency exchange rates.

This module describes how to create a Forecast Rates assumption rule to forecast cash flows and, if you work with multiple currencies, to model relationships between interest rates and exchange rates.

23 Prepayment Rules

This module describes the procedure for working with and managing Prepayment rules.

24 Prepayment Models

This module describes the procedure to build prepayment models using Prepayment Model Rules.

25 Discount Methods

This module describes the procedure for working with and managing Discount Method rules.

26 Rate Dependency Patterns

This module describes the procedure for working with and managing Rate Dependency Patterns.

27 Forecast Balance Rules

This module discusses modeling of new business activity through the Forecast Balance rules. Included are assumption setup and processing.

Within a Forecast Balance rule, you specify the amount of new activity generated per modeling bucket on each product within each active currency. To create a new business assumption, you select from eight available forecasting methods. You can further tailor the new business assumptions to meet your expectations of future originations, including the timing of new business and the effect of interest rates on new business amounts.

28 Forecast – Maturity Mix

This module describes the procedure for working with and managing Maturity Mix rules.

29 Forecast - Pricing Margins

This module describes the procedure for working with and managing Pricing Margin rules.

30 Transfer Pricing Rules

This module describes the procedure for working with and managing Transfer Pricing rules.

31 Adjustment Rules

32 Transaction Strategies

With the Transaction Strategy rules you can test the impact of various hedging strategies that are integrated with basic scenario modeling assumptions. This functionality supports you in testing alternative strategies and their incremental impact

on results. The testing is facilitated by the separation of transaction strategies from basic scenario assumptions allowing you to easily view results with and without the incremental transaction(s). You can also use this rule to add specific instrument records to a processing run without changing the actual instrument data.

A transaction is either positive or negative and can be defined for any product leaf member. A Transaction Strategy rule is made up of any number of individual transactions.

33 Formula Results

34 Stochastic Rate Indexing

This module describes the steps you need to take to work with and manage Stochastic Rate Indexing Rules.

35 ALM Processing

When all the required assumptions are defined, ALM Processing performs calculation processes and generates a result set. There are four types of ALM processing rules, each to be described in detail later in this module.

- Static Deterministic
- Static Stochastic
- Dynamic Deterministic
- Dynamic Stochastic

Depending on what type of process you choose, the corresponding Process Rule guides you through the required inputs on the process flow screen.

A Standard Navigation Paths

This appendix gives you information to navigate through the pages referred to in this guide.

B Oracle ALM Error Messages

C Process Tuning

This module provides information on configuring the Oracle Financial Services Analytical Application (OFSAA) server-centric software for multiprocessing through the Process Tuning UI.

> **Caution:** The Process Tuning UI is available for definition ONLY for a User who has a role mapping that of 'Administrator' or 'Auditor'. The 'Auditor' role mapped user has 'READ-ONLY' access to Process Tuning UI.

Glossary

Related Information Sources

- Oracle Financial Services Cash Flow Engine Reference Guide

- Oracle Financial Services Analytical Applications Data Model Utilities User Guide
- Oracle Financial Services Analytical Applications Data Model Data Dictionary
- Oracle Financial Services Analytical Applications Infrastructure (OFSAAI) Installation and Configuration Guide
- Oracle Financial Services Analytical Applications Infrastructure User Guide
- Oracle Financial Services Funds Transfer Pricing User Guide
- Oracle Financial Services Profitability Management (OFSPM) User Guide

1

Introduction to Oracle Asset Liability Management

This module provides an introduction to Oracle Asset | Liability Management and discusses its place in the Oracle Financial Services Analytical (OFSAA) group of applications.

This chapter covers the following topics:

- Overview of Oracle Financial Services Asset Liability Management
- Oracle Asset Liability Management and Other Oracle Financial Services Applications

Overview of Oracle Financial Services Asset Liability Management

Oracle Financial Services Asset Liability Management (ALM), helps financial services institutions measure and monitor Interest Rate Risk, Liquidity Risk, and Foreign Currency Risk. This solution measures and models every loan, deposit, investment, and portfolio individually, using both deterministic and stochastic methods. Oracle Financial Services ALM is a next-generation solution fully integrated with Oracle's Financial Services Analytical Applications and shares a common account level relational data model.

With this versatile forecasting tool, powerful analytical functions can be modeled for every instrument, including derivatives and embedded options. Modeling at the account level of detail (loan-by-loan and deposit-by-deposit) provides highly accurate modeling results. Flexible assumption rules and reporting structures support a wide range of analytical power.

Release 5.2 of Oracle ALM includes rate dependent business rules and improvements to derivative forecasting capabilities. You can define forecast assumption rules that leverage rate dependency patterns allowing you to dynamically model a range of portfolio characteristics that are dependent on the specific scenario being executed. Derivative instrument forecasting is directly supported through Transaction Strategy rules. Within Transaction Strategies, you can now select the derivative type and define

the characteristics that apply to the specific derivative instrument being modeled.

Oracle Asset Liability Management Key Benefits

Oracle Financial Services ALM is designed to model balance sheets under a variety of rate environments. Oracle Financial Services ALM functionality uses several key concepts and has evolved from the continual iterations of building simulated management processes. The basis of Oracle Financial Services ALM functionality includes:

- Wealth of output information. Oracle ALM calculates and stores a variety of financial risk indicators including: Var, Ear and related probability distributions; static and dynamic market value, duration and convexity; static and dynamic Gaps based on both repricing and liquidity bucket definitions; income simulation capabilities.

- Rigorous Calculations. Oracle ALM is designed to operate on transaction-level data, using Oracle's highly accessible and flexible financial services data model. Each account, as well as all forecasted new-business activity, is modeled independently on a daily cash flow basis.

- A flexible time horizon and free-form timing bucket increments for reporting are critical to meeting the wide range of forecasting requirements of financial institutions.

- Unconstrained chart of accounts definition is a basic requirement of effective modeling.

- A structured process for defining and controlling assumptions is critical to any successful modeling process.

- Unconstrained batching of scenarios, with flexible assumptions sets, is required to achieve an effective and efficient analytical process.

Related Topics

Oracle Asset Liability Management and Other Oracle Financial Services Applications, page 1-2

Overview of the Process, page 12-2

Oracle Asset Liability Management and Other Oracle Financial Services Applications

Oracle Financial Services Asset Liability Management (ALM) operates on top of a common infrastructure, Oracle Financial Services Analytical Applications Infrastructure

(OFSAAI). OFSAA applications form a comprehensive decision support solution that significantly enhances enterprise risk and performance management functions across a financial institution.

Oracle Financial Services Enterprise Performance Management

More than ever, financial institutions, their regulators as well as their shareholders are focused on the need to measure and meet risk-adjusted performance objectives, price products to reflect their true risk, and better understand how their institution is impacted by threats to liquidity, capital adequacy, and exposure to market rate volatility.

OFSAA Data Model

OFSAA Data Model (OFSAADM) is shipped with optimized data structures and pre-packaged data elements developed specifically for the financial services industry. OFSAADM is the foundation for the OFS applications. It provides the database structures necessary to support the individual business applications.

OFSAA Infrastructure

OFSAA Infrastructure is the foundation for OFSAA. It provides support for User Administration, Metadata Management, a Processing Framework, a Forms Framework and additional capabilities necessary to support the individual business applications.

OFSAA Funds Transfer Pricing

Oracle Financial Services Funds Transfer Pricing is the industry's first and leading matched maturity funds transfer pricing application, enabling financial institutions to determine the spread earned on assets, from funding sources, and the spread earned as a result of interest rate exposure for each and every customer relationship. This enables accurate assessment of profitability along product, channel, and business lines, as well as the centralization of interest rate risk so it can be effectively managed. Oracle Financial Services Funds Transfer Pricing is fully integrated with Oracle's Financial Services Analytical Applications and shares a common customer account level data model.

The transfer pricing process isolates the four major sources of a bank's margin:

- The spread earned on assets
- The spread earned on liabilities
- The spread earned or lost as a result of interest rate exposure
- The spread earned or lost as a result of embedded options such as prepayments

Measuring and managing interest margin offers tremendous profit opportunities. By separating the components of net interest income, Oracle Funds Transfer Pricing isolates rate risk into your funding center where it can be centrally managed. In turn, business units are held accountable for what they can control: pricing and profitability. Armed with this highly accurate information, companies make solid, supportable decisions that lead to increased success in the marketplace.

OFSAA Profitability Management

Oracle Financial Services Profitability Management enables financial services institutions to calculate profitability by products, channels, segments, and even individual customers. These profitability calculations are adjusted for risk, and they drive Risk-Adjusted Performance Management (RAPM), an imperative for financial services institutions operating in this rapidly evolving and complex industry.

Isolating and analyzing business unit profitability is only the first step in building effective profitability management. To hold operational managers truly accountable for profitability, senior management must give them the power to identify the products that are profitable in each market segment, for each customer.

Together with OFSAA Transfer Pricing, OFSAA Profitability Management is the tool that delivers this power. Profitability Management links general ledger, account-level, and statistical data together to produce detailed financial statements for individual business units, products, and customers. Combining powerful modeling and disciplined accounting, OFSAA Profitability Management delivers complete, accurate, and inclusive profiles of profitability.

OFSAA Pricing Management, Transfer Pricing Component

Oracle Financial Services Pricing Management, Transfer Pricing Component is an interactive application that provides real-time transfer rates to support pricing loan transactions that reflect immediate market conditions. Risk-based pricing queries are directly integrated with the Oracle Financial Services Funds Transfer Pricing solution and leverage the same business rule logic. Query results incorporate all details of the underlying transfer price and include all elements of a product's profit and loss, including the allocated expense, expected loss, and capital charge.

OFSAA Asset Liability Management

Volatile market conditions and increasing regulatory pressures are placing greater demands on the risk management function. These stresses are driving financial institutions to review their current risk modeling and measurement capabilities. Yet, these circumstances also provide institutions with the opportunity to update technology solutions to systems fully integrated across the risk and performance spectrum. Departmental, one-off solutions are no longer viable alternatives in an environment where all systems need to work together.

Oracle Financial Services Asset Liability Management (ALM) helps financial services

institutions measure and manage interest rate risk and liquidity risk, perform balance sheet valuations, and forecast both net interest income and net income. The Oracle Financial Services ALM solution has the ability to measure and model every loan, deposit, investment, and off-balance sheet instrument individually, using both deterministic and stochastic methods. This helps institutions gain a better understanding of the risks they have assumed and their sensitivity to changes in economic conditions.

OFSAA Balance Sheet Planning

Oracle Financial Services Balance Sheet Planning is designed to help financial services institutions budget for a full balance sheet and the associated profit and loss statement. Banks have a number of very unique needs when looking ahead. They must be sensitive to economic conditions, and create plans that not only forecast future performance, but also the forward risks they are assuming. Most importantly, they require tools that accurately forecast net interest margin. By accurately modeling the detailed and complex events on a bank's balance sheet, for both the current book of business and forecasted new volumes, Oracle Financial Services Balance Sheet Planning enables the delivery of accurate margin forecast and comprehensive, meaningful budgets.

OFSAA Business Intelligence Applications

OFSAA Business Intelligence (BI) Applications are complete, prebuilt BI solutions that deliver intuitive, role-based intelligence for everyone in an organization—from front line employees to senior management—that enable better decisions, actions, and business processes.

Related Topics

Overview of Oracle Financial Services Asset Liability Management, page 1-1

Oracle Asset Liability Management Integrations, page 1-5

Oracle Asset Liability Management Integrations

Oracle Asset Liability Management integrates with the following modules:

- Oracle Financial Services Asset Liability Management Analytics
- Oracle Financial Services Balance Sheet Planning
- Oracle Financial Services Funds Transfer Pricing

A robust and flexible Asset Liability Management process is merely the beginning. Oracle ALM Analytics (ALM BI) is a fully integrated business intelligence application leveraging Oracle's industry leading BI technology. Oracle ALM BI contains ALM specific dashboards and reports providing an out of the box reporting solution that

allows you to rapidly deploy your ALM solution and quickly realize significant return on your investment.

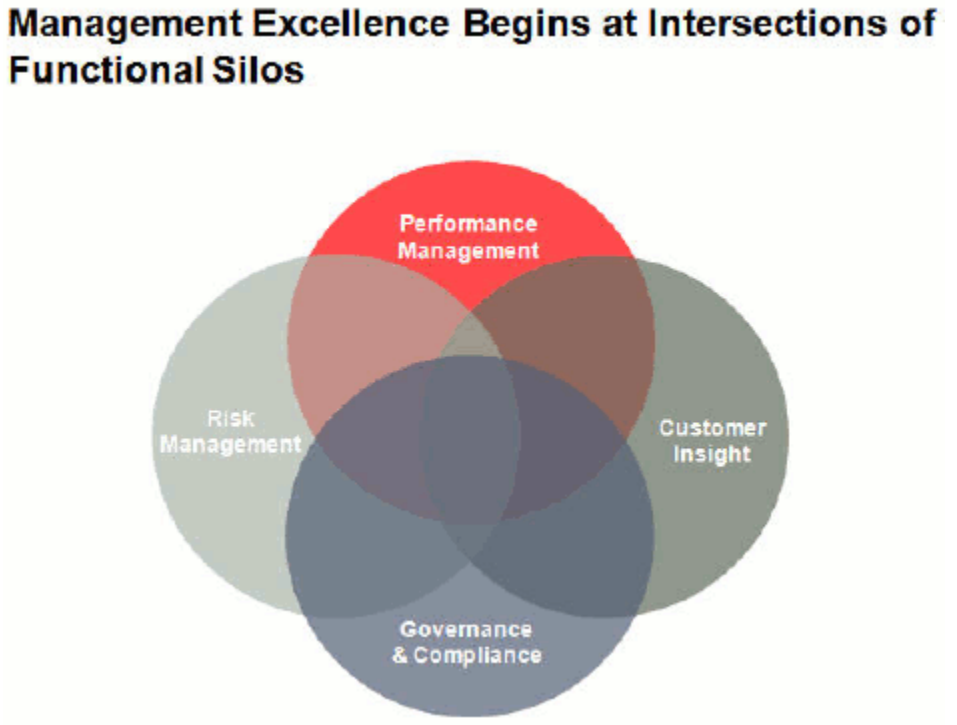
You can combine Oracle Asset Liability Management cash flow results with Oracle Balance Sheet Planning to seed the budgeting process with contractual cash flows and related interest income and ftp charge information allowing you start your planning process with a full understanding of your embedded profit and loss profile.

You can also integrate FTP business rules into Oracle Financial Services Asset Liability Management to project transfer pricing results into your forecasting process.

Oracle Financial Services Analytical Overview

For over 15 years, Oracle has set the standard for analytical applications in financial services. With our applications financial services organizations can achieve management excellence with a lower total cost of ownership, due to our integrated architecture, combining performance and risk applications into a single, seamlessly integrated framework.

In today's turbulent markets, financial institutions require a better understanding of the relationship between risk and return, while strengthening competitive advantage and enhancing long-term customer value. Oracle Financial Services Analytical Applications enable financial institutions to measure profitability and meet risk adjusted performance objectives, cultivate a risk management culture through transparency, lower the costs of compliance and regulation, and improve insight into customer behavior.



Related Topics

Oracle Asset Liability Management and Other Oracle Financial Services Applications, page 1-2

Overview of Oracle Financial Services Asset Liability Management, page 1-1

2

Overview of OFSAA Infrastructure

OFSAA Infrastructure

OFSAA Infrastructure includes facilities for creating and maintaining

- Dimensional reference data
- Interest rate & currency exchange rate data
- Process tuning data

OFSAA Infrastructure also includes functionality for building and maintaining rules that may be used by any Oracle Financial Services Analytical Application. These common rule objects include:

- Expressions
- Hierarchies
- Filters

The analytical applications that you see on the Left Hand Side (LHS) of the Financial Services Applications home page will depend on your logon privileges and on the OFSAA modules that have been installed for your environment, but you will always see the OFSAA Infrastructure components under Financial Services Applications > Master Maintenance.

The remainder of this module documents:

- Overview of Dimensionality in OFSAA
- Overview of OFSAA Rules

  - Hierarchies

  - Filters

  - Expressions

Overview of Dimensionality in OFSAA

Dimensions are used to stratify your business data for processing or reporting purposes. For example, at a minimum General Ledger systems are typically stratified by a General Ledger dimension, an organization or cost center dimension, and a time dimension. Customer account level data will normally have these same dimensions but are often additionally segmented by dimensions such as Product or Customer. You may wish to construct models using a specialized product dimension or other customized dimensions such as geography, cost pool, transaction, activity or channel.

Dimensions are comprised of lists of members. For example, the Organizational Unit dimension might be comprised of Branch #1, Branch #2, Branch #3, etc. Some dimensions may contain tens or even hundreds of thousands of members (e.g., a large organizational or customer dimension) while others may contain as few as two members (e.g., a simple product-type dimension with values of Fixed and Variable).

The member values or "Chart of Accounts" for each dimension may be maintained either internally within the OFSAA Infrastructure or externally.

Internally

OFSAA Infrastructure includes functionality for Adding, Viewing, Editing, or Deleting dimension member values. Which of these functions you can access depends on your logon privilege and on the dimension with which you wish to work. For details, on the creation and maintenance of Dimension Members, see Module 6: OFSAA Dimension Members.

Externally

You may choose to source and maintain some Charts of Accounts from external systems such as your General Ledger, a Data Warehouse, or from some other external master data management system. See *Oracle Financial Services Analytical Applications Data Model Utilities User Guide* for details on loading dimensional data from external systems.

Combination

You may also choose to maintain some Chart of Account values from an external source while maintaining other Chart of Account values internally.

Referential Integrity

You may have dimension member values defined in your Chart of Accounts that do not exist in your business data, particularly if the dimension member values are used as attribute values (see discussion of attributes below). But you would never want to have an occurrence of a dimension member value in your business data that did not exist in the dimension's Chart of Accounts. When you load business data into OFSAA, you need assurance that there are no dimension member values present in the business data that are not defined in your Chart of Accounts. For details on ensuring referential integrity between your business data and your Chart of Accounts data, see *Oracle Financial Services Analytical Applications Infrastructure (OFSAAI) Installation and Configuration Guide*.

Dimension Attributes

Some OFSAA dimensions support attributes. Dimension attribute values are used to qualify dimension members. For example, a cost center, say Branch #1, might have a Headcount attribute with a value of 32 and a Volume attribute with a value of High. A product dimension member, say 30-year fixed rate jumbo LIBOR mortgage, might have a Rate attribute with a value of LIBOR, a Size attribute with a value of Jumbo, and a Loan Type attribute of Fixed. A General Ledger account, say Benefit Expense, might have an Account Type attribute with a value of Non-Interest Expense.

Like dimensions, attributes are used to stratify your business data for processing or reporting purposes. Some dimension attributes are seeded within the OFSAA data

model and are used extensively in processing. You may define as many user-defined attributes as you need.

OFSAA Infrastructure includes functionality for Adding, Viewing, Editing, or Deleting dimension attributes. Which of these functions you can access depends on your logon privilege and on the dimension with which you wish to work. For details on the creation and maintenance of dimension attributes, see Module 5: OFSAA Dimension Attributes.

Once an attribute has been defined for a dimension, attribute values may be assigned to individual dimension member values. These attribute values may be open-ended (dates, numbers, or strings) or may be restricted to a defined set of members (see further discussion below; also see Module 5: OFSAA Dimension Attributes).

Hierarchies

Some OFSAA dimensions support hierarchies. Hierarchies may be used to provide sophisticated stratification for either processing or reporting purposes. For example, an organizational hierarchy might start with a Division level containing Western Region, Eastern Region, and Southern Region; the next level down within the hierarchy might be state or county. A product hierarchy might begin with branches for Asset vs. Liability vs. Service products; under the Asset branch, you might define additional branches for Mortgage Lending, Commercial Lending, Consumer Lending, etc. Hierarchies are used extensively in OFSAA models to assign methods to products and to support allocation methodologies.

Like dimension members, dimension hierarchies may be maintained either internally within the OFSAA Infrastructure or externally.

Internally

OFSAA Infrastructure includes functionality for Adding, Viewing, Editing, or Deleting hierarchies. Which of these functions you can access depends on your logon privilege and on the hierarchy with which you wish to work. For details, on the creation and maintenance of hierarchies, see Module 7: OFSAA Hierarchies.

Externally

You may choose to source and maintain some or all of your hierarchies from external systems such as your General Ledger, a Data Warehouse, or from some other external master data management system, such as Oracle Data Relationship Management (DRM). See *Oracle Financial Services Analytical Applications Data Model Utilities User Guide* for details on loading hierarchy data from external systems.

Combination

You may also choose to maintain some hierarchies from an external source while

maintaining other hierarchies internally.

Rollup Members for Dimensions Supporting Hierarchies

For dimensions that support hierarchies, every dimension member value has the property of being either a "leaf" value (child-only or last descendent child value) or a " rollup node" value. For example, if Branch #1, Branch #2, and Branch #3 all belonged to the West rollup point of an organizational hierarchy, then West would also be a dimension member value of the Organizational Unit dimension. Your business data is typically expressed at the "leaf" level.

Dimension Types

OFSAA supports 3 fundamentally different kinds of dimensions

- Key Processing Dimensions
- Standard Dimensions
- Simple Dimensions

Key Processing Dimensions

- Are accessible as modeling dimensions for all of the OFSAA analytical engines
- Are expressed as columns in nearly all of your business fact tables
- Support both attributes and hierarchies

Metadata for Key Processing Dimensions is stored in four tables:

- A base table (e.g., DIM_PRODUCTS_B)
- A translation table (e.g., DIM_PRODUCTS_TL)
- An attribute table (e.g., DIM_PRODUCTS_ATTR)
- A hierarchy table (e.g., DIM_PRODUCTS_HIER)

Base tables store basic information about each dimension member and translation tables store names and descriptions for each dimension member in multiple languages (see *Oracle Financial Services Analytical Applications Infrastructure (OFSAAI) Installation and Configuration Guide* for details on multi-language support). Attribute tables store one or many attribute values for each dimension member. Hierarchy tables store one or more hierarchies for each dimension (you may define as many hierarchies as you wish for any dimension that supports hierarchies).

Seeded Key Processing Dimensions

OFSAA is seeded with 5 Key Processing dimensions:

- Financial Element
- Organizational Unit
- General Ledger Account
- Common Chart of Accounts
- Product

Among the 5 seeded Key Processing dimensions, only the Financial Element dimension is pre-populated with a Chart of Accounts, but it is only populated in the range between 0 and 10,000 (For more details on the seeded Chart of Accounts for the Financial Element dimension see *Oracle Financial Services Profitability Management (OFSPM) User Guide*). This is a reserved range in which you may not add new members, or edit or delete existing members. You may add user-defined Financial Elements anywhere outside the reserved range.

User Defined Key Processing Dimensions

See *Oracle Financial Services Analytical Applications Infrastructure (OFSAAI) Installation and Configuration Guide* for details on adding your own user-defined Key Processing dimensions.

Standard Dimensions

Standard dimensions may support attributes and/or hierarchies depending on how they are configured, but are not used as processing dimensions within any of the analytical application engines.

Like Key Processing Dimensions, metadata for Standard Dimensions is stored in a base table and in a translation table. A Standard Dimension may or may not have an attribute table or a hierarchy table depending on how it is configured. Within the OFSAA modules, Standard dimensions that are defined as having a hierarchy table will support hierarchies and Standard dimensions that are defined as having an attribute table will support attributes. See the *Oracle Financial Services Analytical Applications Infrastructure (OFSAAI) Installation and Configuration Guide* and *Oracle Financial Services Analytical Applications Data Model Data Dictionary* for additional information.

Seeded Standard Dimensions

OFSAA is seeded with 2 Standard Dimensions

- Country

- Customer

Both dimensions support attributes and hierarchies. Default member values are provided for the Country dimension, but no values are provided for the Customer dimension.

User Defined Standard Dimensions

See the *Oracle Financial Services Analytical Applications Infrastructure (OFSAAI) Installation and Configuration Guide* for details on adding user-defined Standard dimensions.

Simple Dimensions

Sometimes referred to as Code dimensions, Simple dimensions are "lists of values" that support neither attributes nor hierarchies. Their 3 key uses are:

- Reserved for use within the analytical application engines
- Stratifying your data for process or report filtering purposes
- Serving as "lists of values" when used as attributes

The OFSAA Data Model comes with more than 150 seeded Simple dimensions. Many of these seeded Simple dimensions are also seeded with dimension members. Unlike Key Processing dimensions and Standard dimensions, Simple dimensions are stored in two tables:

- A code table (e.g., AMRT_TYPE_CD)
- An Multi-Language Support or MLS table (e.g., AMRT_TYPE_MLS)

Again, see *Oracle Financial Services Analytical Applications Infrastructure (OFSAAI) Installation and Configuration Guide* for details on multi-language support.

Reserved Simple Dimensions

Accrual Basis Code is an example of a seeded Simple dimension that is used extensively by the application modules. It is seeded with a small list of values (such as 30/360, Actual/360, Actual/Actual, etc.) and its value set may not be modified.

Amortization Type Code is another example of a reserved Simple Dimension. Amortization Type Code is populated with reserved values that the Cash Flow engine interprets, and its value set may not be modified. Many other Simple Dimensions are reserved and may not be modified.

Simple Dimensions Used for Processing or Reporting Purposes

This kind of Simple Dimension cannot be used directly by the application engines, but

they are accessible to OFSAA Filter rules (for more information on Filter rules, see Module 8: OFSAA Filters).

Credit Rating is an example of a seeded Simple Dimension that may be used for processing or reporting purposes. You may, for example, wish to allocate risk equity to individual instruments as a function of Credit Rating. The seeded values for Credit Rating are Moody's credit ratings, but you are free to completely redefine the membership of this dimension. Geographic Location is another example. Geographic Location is pre-populated with US States and Canadian provinces, but you are free to completely redefine the list of geographic locations.

Simple Dimensions Used as Attribute Domains

Both seeded and user-defined attributes often utilize a Simple Dimension to provide a list of values. For example, you might create an Adjustable Type attribute on your Product dimension and you might want this attribute to be limited to the values of Fixed, Variable, or Administered. In this case, you might first build a Simple Dimension called Type whose dimension members were limited to three values: Fixed, Variable, or Administered. Next you could assign the Type dimension to be the domain of your new Adjustable Type attribute.

See *Oracle Financial Services Analytical Applications Infrastructure (OFSAAI) Installation and Configuration Guide* and *Oracle Financial Services Analytical Applications Data Model Data Dictionary* for additional information on which Simple Dimensions you may extend or modify and on how to add your own Simple Dimensions to the data model.

Overview of Attributes

OFSAA Infrastructure includes functionality for Adding, Viewing, Editing, or Deleting dimension attributes. Which of these functions you can access depends on your logon privilege and on the dimension with which you wish to work. For details, on the creation and maintenance of Dimension Attributes, see Module 5: OFSAA Attributes.

Attributes

The seeded OFSAA Key Processing Dimensions have a number of seeded or seeded & required attributes. For example, the Common Chart of Accounts dimension includes an Account Type attribute and an Accrual Basis attribute; the Financial Element dimension includes an Aggregation Method attribute. Some of these attributes have important implications in processing within OFSAA.

You may add Attributes to any Key Processing Dimension or to any Standard Dimension that supports Attributes (see sections above describing Key Processing Dimensions and Standard Dimensions).

One of the important properties of an Attribute is its Data Type. OFSAA Infrastructure supports Dimension Attribute Data Types of:

- Date, String, or Number
- Dimension

Unbounded & Bounded Attribute Data Types

Dimension attribute data types may be either bounded or unbounded. The Date, String, and Number type are unbounded, i.e., there is no predetermined set of attribute values. A Date attribute value may be any valid date, a String attribute value may be any string up to 30 characters in length, and a Number attribute value may be any number. Examples of these kinds of attribute data types might include:

- Cost Center Open Date (a Date attribute on the Organizational Unit dimension)
- Product Memo (a String attribute on the Product dimension)
- Cost Center Headcount (a Number attribute on the Organizational Unit dimension)

Unlike attributes having the Date, String, or Number data type, attributes whose data type is Dimension have defined sets of values. For example, the Product dimension has a seeded attribute called Accrual Basis the data type of which is Dimension. The Accrual Basis dimension is seeded with 8 values. Accrual Basis is a restricted dimension (you may View Accrual Basis dimension members but you may delete them or add new accrual bases), but whenever you assign an Accrual Basis attribute value to one of your Product dimension member values, you must select from the list of 8 available Accrual Bases.

Overview of OFSAA Rules

OFS Analytical Application models are constructed using combinations of OFSAA rules. For example:

- An Allocation rule might utilize a Hierarchy Filter rule, an Expression rule, and a Static Table Driver rule
- A Transfer Pricing rule might utilize a Hierarchy rule, a Data Element Filter rule, and a Prepayment rule
- A Data Element Filter rule might utilize an Expression rule
- A Group Filter rule always incorporates one or more underlying Data Element Filter rules
- A Hierarchy Filter rules always utilize an underlying Hierarchy rule

The advantage of constructing models from discrete rule components is that individual rules may be re-used dozens or even hundreds of times. For example, if you wish to

build a large series of allocation rules which operate on non-interest expense data in the Western region, you may build filters for (1) non-interest expense and (2) the Western region and then utilize these filters in every allocation rule. As another example, if you wanted to assign the same transfer pricing method and assumptions to all mortgage products, you could build a Hierarchy on the product dimension containing a Mortgage Products rollup point and assign your method and assumptions at the rollup level. You could subsequently utilize the same Hierarchy rule for allocation processing or reporting purposes.

Many rule types are specific to individual analytical applications (e.g., Transfer Pricing rules, Asset/Liability Management rules, Allocation rules, etc.) while OFSAA Infrastructure rules are shared across all OFS applications. Rule types that are shared across all applications include:

- Hierarchies
- Hierarchy Filters
- Data Element Filters
- Group Filters
- Expressions

Dimensions, dimension members, attributes, and currency exchange rates are also shared across all applications.

Dependencies

OFSAA rules often depend on other rules for some or all of their data or usefulness. For example, an Allocation rule may depend on a Data Element Filter rule to select and focus data in a meaningful way. If that Data Element Filter is deleted, then the Allocation rule becomes unusable. OFSAA applications track such dependencies and ensure that users may not delete rules that are consumed by other rules. Additionally, rule summary screens that present lists of rules that you have defined, offer functionality for you to generate reports on rule interdependency.

OFSAA Filters

OFSAA Infrastructure supports three kinds of filtering:

- Data Element Filters
- Group Filters
- Hierarchy Filters

Data Element Filters

Data Element Filters are used to select and focus data. For example, you may transfer price some financial instruments at their source and may therefore wish to ensure that you do not overwrite the transfer rates for any instruments that already have a non-zero transfer rate. In such a case, you could construct a Data Element Filter to isolate only those instruments having a non-zero transfer rate. As another example, you may wish to allocate a charge to demand deposit accounts having small balances. In this case, you could construct a Data Element Filter to focus on just those instrument records having balances less than your chosen threshold.

Group Filters

Group Filters are used to join together one or more Data Element Filters. For example, if you built one Data Element Filter that focused on balances less than 10,000 and a second Data Element Filter that focused on accounts whose origination date was prior to 2009, a Group Filter built on the two Data Element Filters would focus on accounts with balances less than 10,000 AND whose origination dates were prior to 2009.

Hierarchy Filters

Hierarchy Filters allow you to focus on data that rolls up to one or more points within a chosen hierarchy. You may also focus on "leaf" level data or a combination of "leaf" level and rollup levels. For example, if your organization had a Western, Northern, Southern, and Eastern division, you could construct a Hierarchy Filter that focused on data belonging to branch 1, 2, or 7 within the Eastern division plus any data belonging to the Northern division.

OFSAA Expressions

Expressions represent formulas for combining data from your data model (e.g., Column A divided by Column B times Column C). The results of Expressions may be invoked within a number of OFSAA rule types (e.g., Data Element Filters, Allocation rules, etc). For details on building and maintaining Expressions, see Module 9: Expressions.

Folders

One of the fundamental properties of any OFSAA rule is the Folder in which it is stored. Your System Administrator will configure your user ID to have access to one or more folders in which you can store your rules. Your access rights will likely be similar to co-workers who have a similar business role. For details on security management and defining Segment Maintenance in OFSAA, see *Oracle Financial Services Analytical Applications Infrastructure User Guide*.

Storing rules in folders gives you the means to segregate your rules for functional or security considerations. For example, you may wish to:

- Set up folders to store Transfer Pricing rules that are separate from folders you have built for Profitability Management rules and that are also separate from folders you have built for Asset/Liability Management rules
- Establish some folders for rules you are in the process of developing and testing and other folders for fully tested, production ready rules
- Segregate some rules that are fundamental to the definition of other rules (e.g., some Data Element Filters may be used in dozens or hundreds of other rules) in order to ensure that access to those fundamental rules is highly controlled
- Segregate your hierarchies, which are also frequently fundamental to OFSAA models, into a restricted-access folder

Visibility of Rules

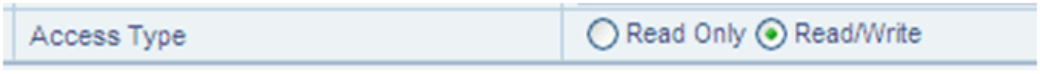
Every navigation path to view a rule in OFSAA begins with a Summary screen. Within the Summary screen for each rule type, a user may browse through all of the rules that are stored within Folders to which the user has access. From each Summary screen, users may be granted the ability to Add, Edit, View, or Delete rules.

When building rules in an OFS Analytical Application, you frequently call upon other OFSAA rules (e.g., a Data Element Filter nested within an Allocation rule or a Hierarchy utilized within a Transfer Pricing rule). When nesting a child rule within a parent rule you must specify the child rule by its Name and Folder (where both Name and Folder are presented in drop-down list boxes). In this context, the Folder drop-down list box for every user will include every Folder in the Information Domain regardless of his Folder access rights. This means that a user may invoke a child rule from any Folder even if he cannot access that child rule directly through its Summary screen.

Additionally, whenever a user nests a parent rule within a child rule, the OFSAA user interface provides the user the ability to view a read-only version of the underlying child rule.

Access Type

Another fundamental property of every OFSAA rule is its Access Type.



Access Type may be set to either Read/Write or Read Only. Only the "creator" or "owner " of a rule may modify the rule if it is set to Read Only. The user ID under which a rule is initially built is the owner of a rule. You may modify a rule that you do not own provided that:

- The rule has been stored with the Read/Write access type

- You have been granted Edit privilege for the rule's type
- You have been granted access to the Folder in which the rule is stored

Again, for details on security management in OFSAA, see *Oracle Financial Services Analytical Applications Infrastructure (OFSAAI) Installation and Configuration Guide*.

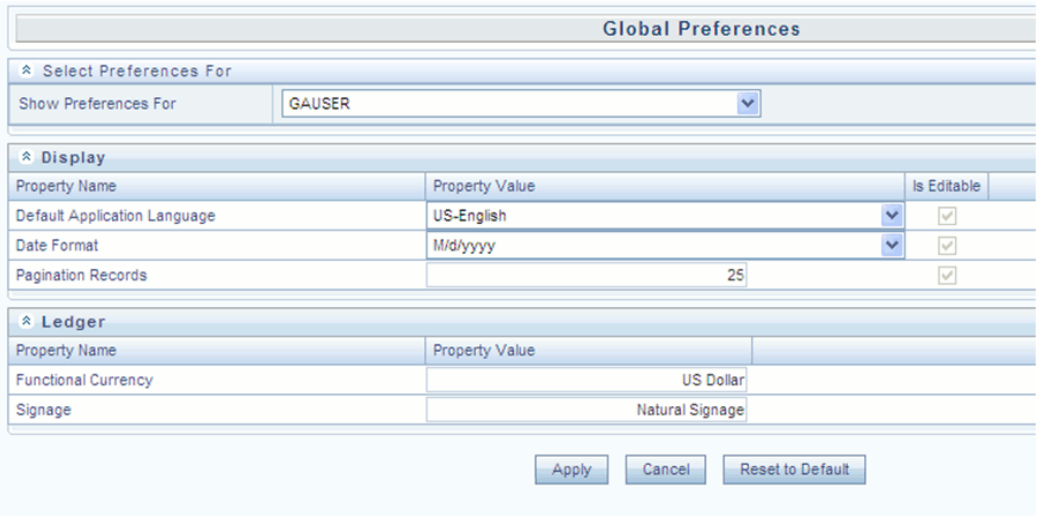
Global Preferences

Clicking Global Preferences invokes the Global Preferences screen. Global Preferences items are used to configure your user interface. Here, you set your default application language and date format, and your desired Pagination Records. Pagination Records determine how many rows will be displayed on summary screens. If you select Pagination Records to be 25 records, then any screen displaying results in a tabular format will display a maximum of 25 records. To see the next set of 25 records, you would use the Next VCR button

Functional Currency and Signage are installation-time parameters that may not be reset in Global Preferences.

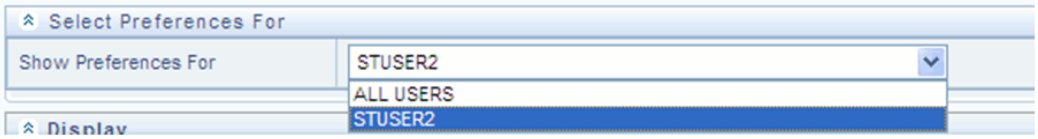
Functional Currency is defined as "the currency of the primary economic environment in which an entity conducts its business". For details on signage, see the *Oracle Financial Services Analytical Applications Profitability Management (OFSPM) User Guide.*

Normally, you will set preferences for yourself, but if you are logged in as an Administrator, you may set Global Preferences for All Users. When setting preferences for All Users, you may restrict the ability of non-Administrators to change a Global Preference item by deselecting the "Is Editable" checkbox. If a preference item is defined as "not editable", a user who is not an Administrator will inherit the value of the preference item that his Administrator has set for him and he will not have the ability to change it for himself.

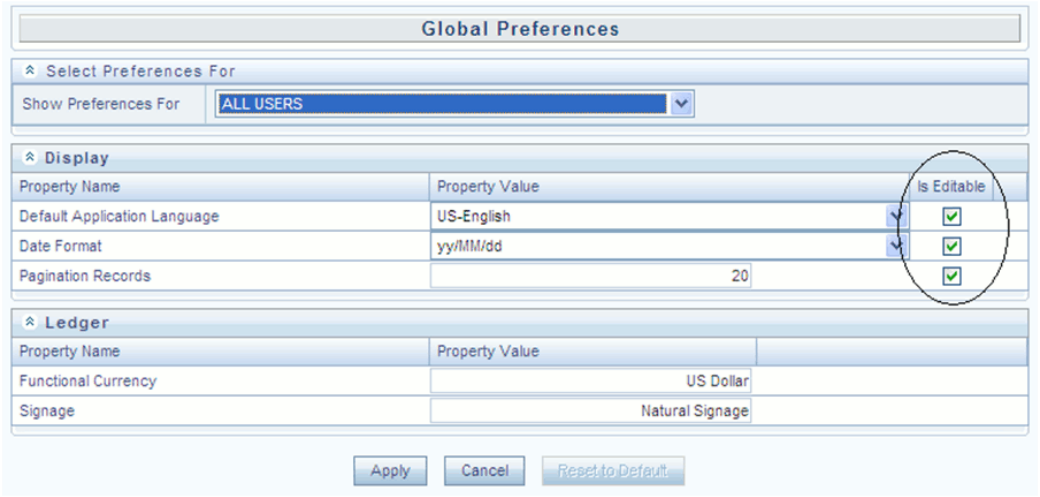


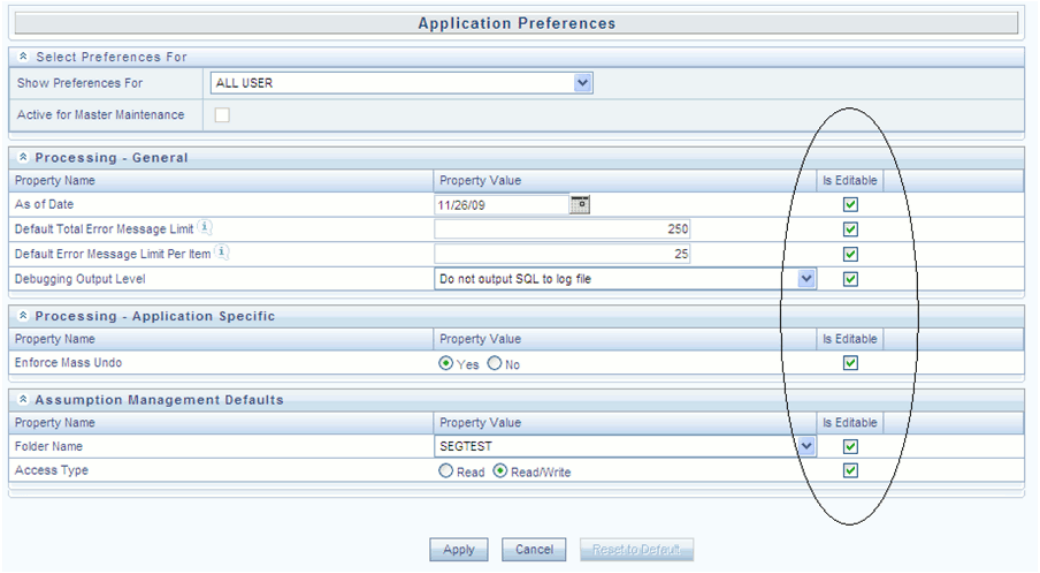
Application Preferences

In addition to Global Preferences, page 2-13, each of the OFS Analytical Applications has its own local application preferences. In the same way as in Global Preferences, Application Preferences (for each application) employs a "delegation" model that allows Administrators to set some preference items for all users while allowing non-administrative users to personalize other preference items.

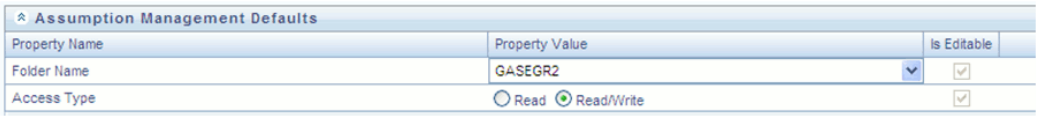


Normally, you will set Application Preferences for yourself, but if you are logged in as an Administrator, you may set Application Preferences for all users of an application. When setting preferences for all users, you may restrict the ability of non-Administrators to change an Application Preference item by deselecting the "Is Editable" checkbox. If a preference item for a non-administrative user is defined as "not editable", a user who is not an Administrator will inherit the value of the preference item that his Administrator has set for him and he will not have the ability to change it for himself.

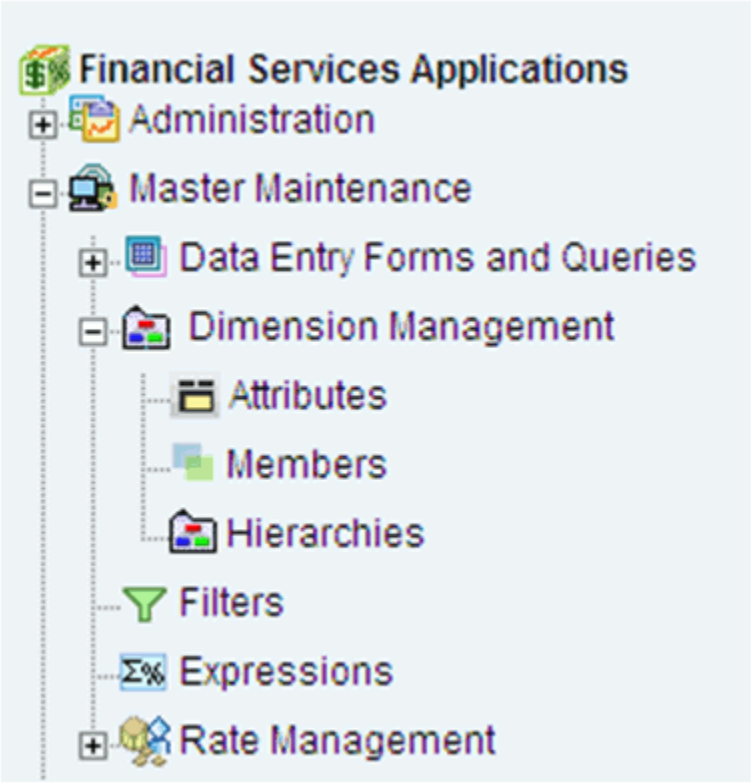




While most Application Preferences items are unique to the application to which they belong, two properties are common to Application Preferences for each of the OFS Analytical Applications: Folder Name and Access Type.



Having the Folder Name and Access Type properties set at the application level allows you to have a different default Folder and Access Type for each OFS Analytical Application. Within the Left Hand Side or LHS menu, all OFSAA Infrastructure rules (Hierarchies, Filters, & Expressions) are maintained under Master Maintenance.



Since Folder and Access Type are not Global Preference items, a user must select one application's set of Application Preferences to be "Active" to govern the default values of Folder and Access Type for Oracle Financial Services Analytical Applications Infrastructure rules. This is done by selecting one of your Application Preference sets to be the one that is "Active for Master Maintenance".

3

OFSAA Administrative Reporting

Introduction

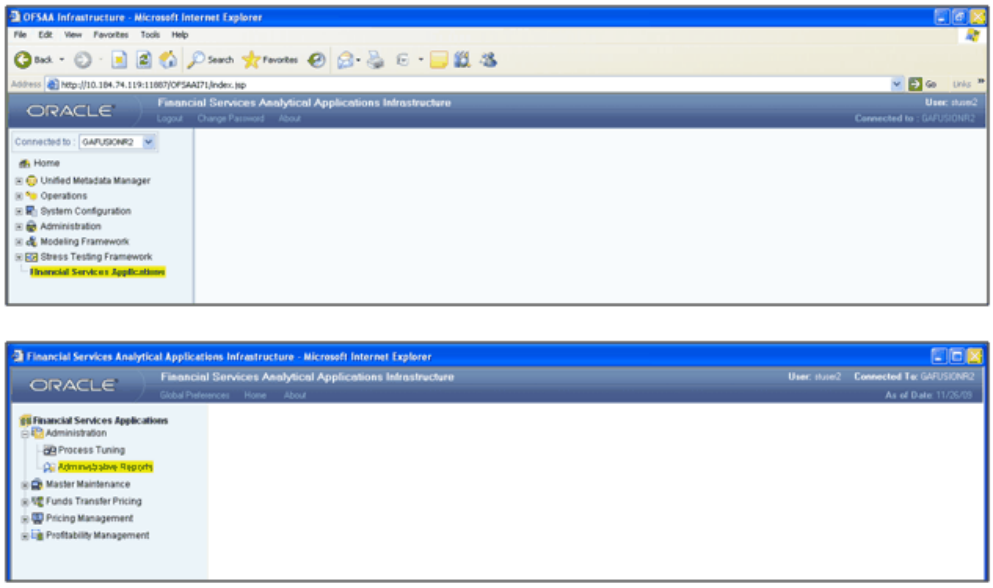
Administrative Reports provide reporting functionality for the Administrators of Oracle Financial Services Analytical Applications (OFSAA) to monitor, analyze, and correct data.

The System Administrator or users with Administrative privileges can view the Administrative Reports.

Logging in to the Administrative Reports

Procedure

1. Click, Financial Services Applications >Administration >Administrative Reports. Refer to the following screenshots.



2. The Administrative Reports - Admin Home section is displayed.

Interactive Dashboards in Administrative Reports

In the Administrative Reports window, there are four dashboard links:

- Admin Home
- Data Quality
- Object Registration

- Security

Admin Home

The Admin Home section is displayed by default when you login. If you are in any other section, click the Admin Home link in the top of the Administrative Reports header, to go to the Admin Home section. Admin Home displays the summary of reports from the other three links.

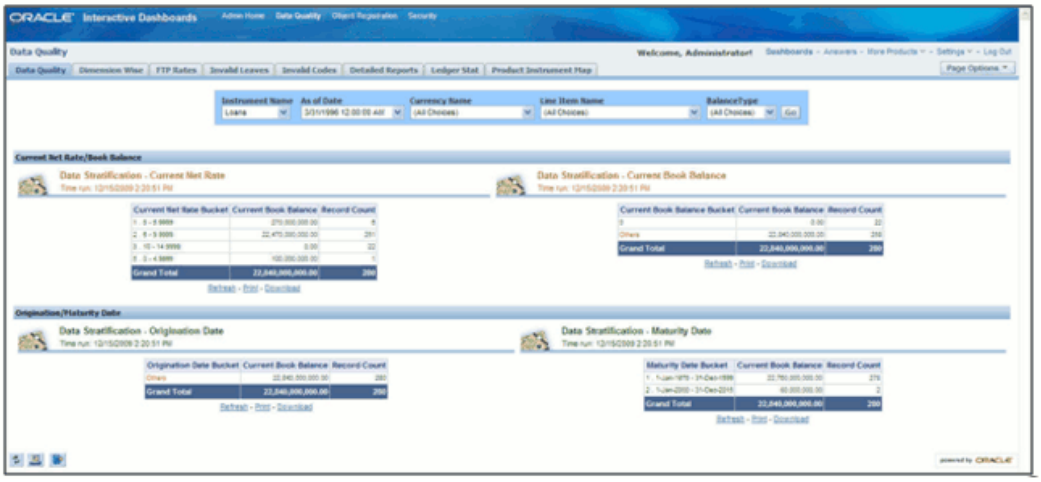
Access Permissions

Following are the steps to access permissions to include Defi Forms for the Admin BI Buckets entries.

1. Login to the Oracle Financial Services Analytical Applications Infrastructure
2. Click the Operations > Financial Services Applications
3. Go to > Master Maintenance > Data Entry Forms and Queries > Forms Designer
4. Click the Assign Rights Radio button
5. Select Admin BI in the Available Applications drop down box
6. Select the 4 UI forms (one at a time) in the Available Forms drop down box (For example, Bucket definition of Book Balance)
7. Click Next
8. Select the users from the Available User List
9. Select the relevant check boxes from View, Add, Edit, Delete, and All above.
10. Click Save Access Rights. You will get the message that user is mapped successfully.
11. Click Back to Forms Designer.
12. Repeat the steps 4 to 11 for other 3 forms (Bucket Definition Maturity Date, Bucket Definition net Rate, Bucket Definition Origination Date)

Data Quality

To go to the Data Quality reports, click Data Quality link at the top of the Administrative Reports. The following window is displayed.



The Data Quality reports help you to validate the quality of the underlying fact data. By going through the reports, you can identify data discrepancies, missing data, incorrect data, and so on and then undertake the necessary steps to rectify any issues. These data reports can be customized to fit your needs by defining suitable bucket range values as described above.

The four data buckets available are:

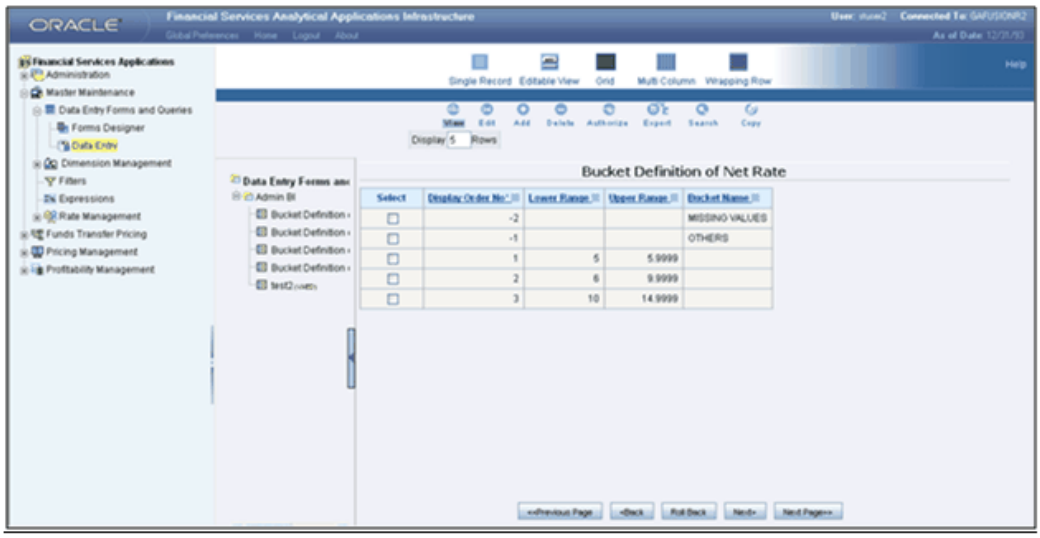
- Book Balance Bucket Definition
- Maturity Date Bucket Definition
- Net Rate Bucket Definition
- Origination Date Bucket Definition

These values can be defined in the following section:

Financial Services Applications > Master Maintenance > Data Entry Forms and Queries > Data Entry.

Refer the following screenshot.

- The seeded values are Display Order No => -1 and - 2. You should not delete or edit these seeded values.
- Make sure there is no row with 'Display order No.' column with value 0 (zero). In case of AIX environment, display order No. might be generated with '0' (zero value). Delete this row using 'Delete option'.



Data Quality Dashboard

Data Quality Dashboard page contains eight tabs.

Data Quality Tab

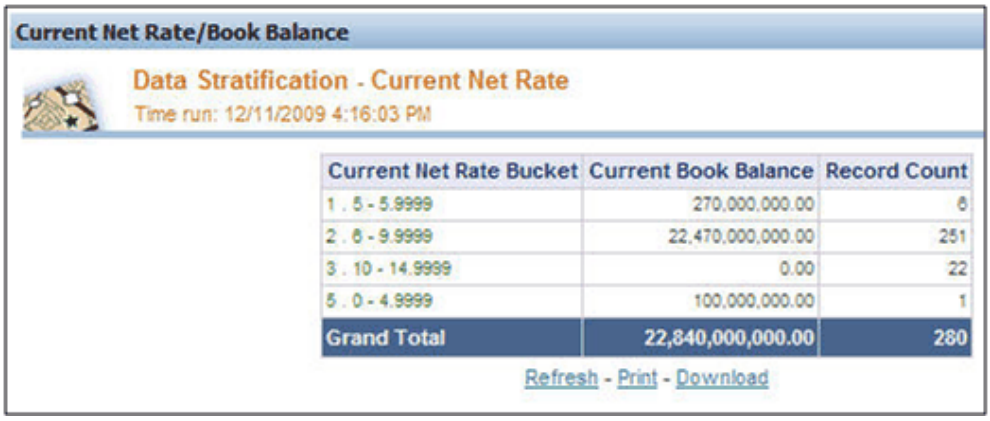
This section contains a prompt to filter the data based on the value selected from the dropdown box.

You can select a value from the drop down list. Based on the selected values, the data is filtered.

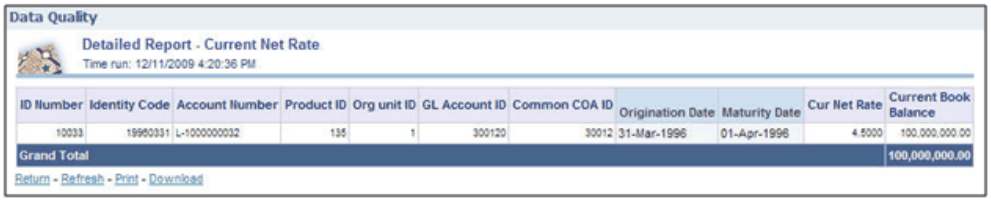
There are four reports in this window.

1. **Data Stratification - Current Net Rate**

   The current net rate details for each bucket range value of the Instruments are displayed here.

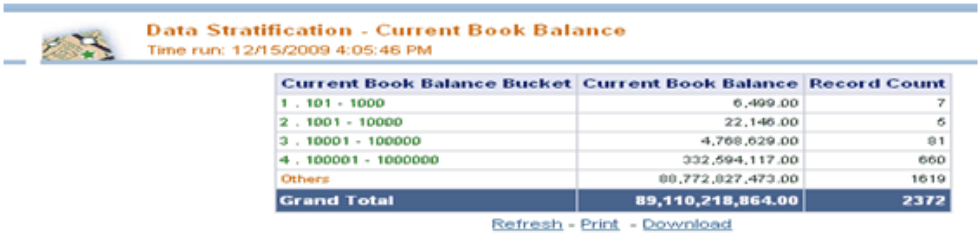


To view a detailed report, click the bucket range for which you need the detailed report. The detailed report for the selected bucket range is displayed.

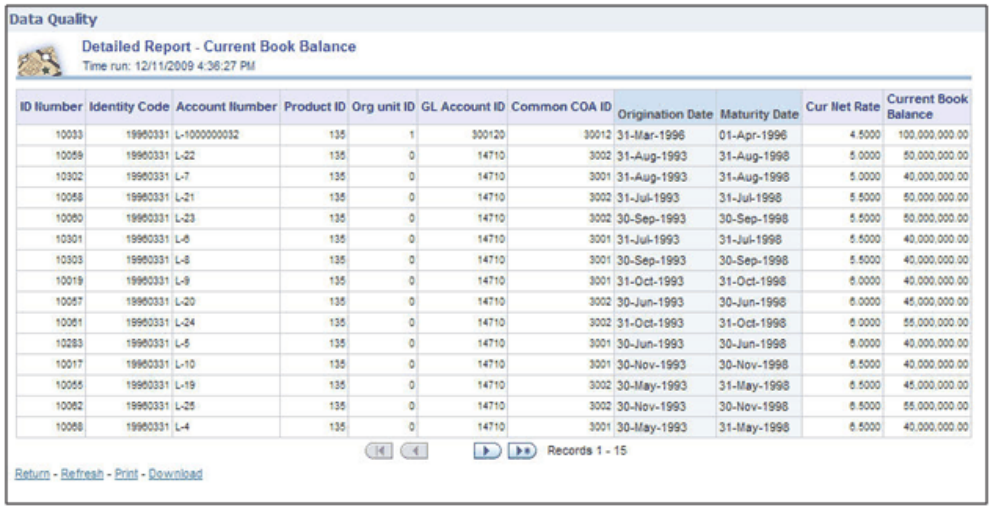


2. **Data Stratification - Current Book Balance**

The current book balance details for each bucket range value for the Instruments are displayed here.



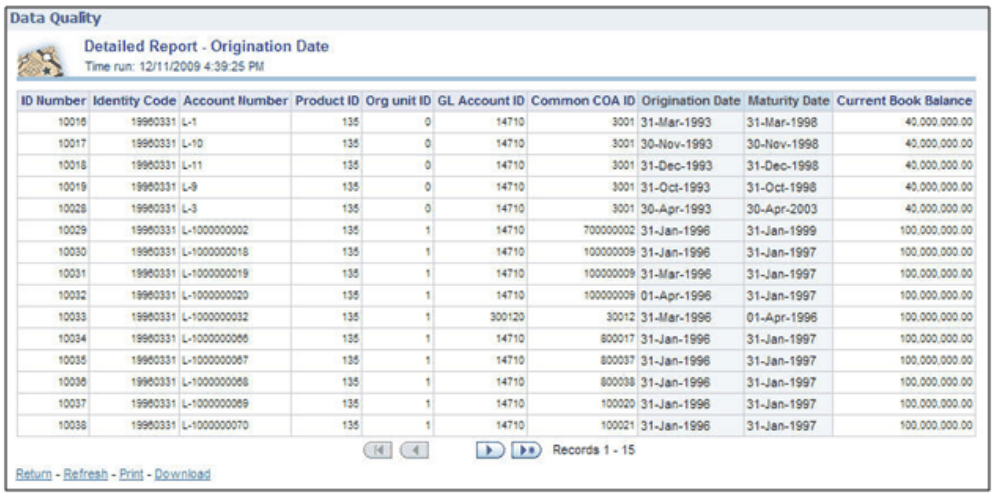
To view a detailed report, click the bucket range for which you need the detailed report. The detailed report for the selected bucket range is displayed.



3. **Data Stratification - Origination Date**

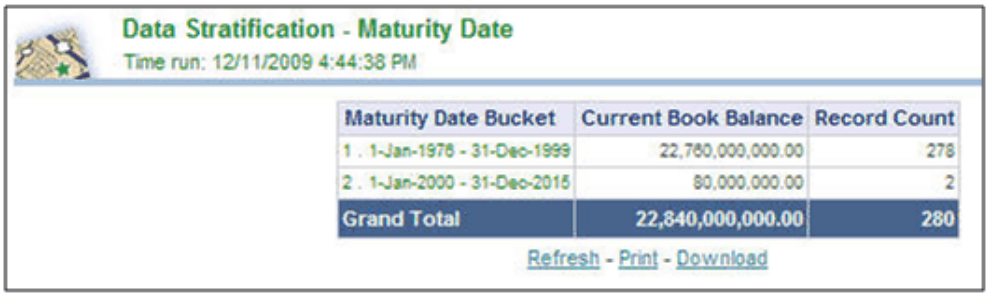
The origination date details for each bucket range value for the Instruments are displayed here.

To view a detailed report, click the bucket range for which you need the detailed report. The detailed report for the selected bucket range is displayed.

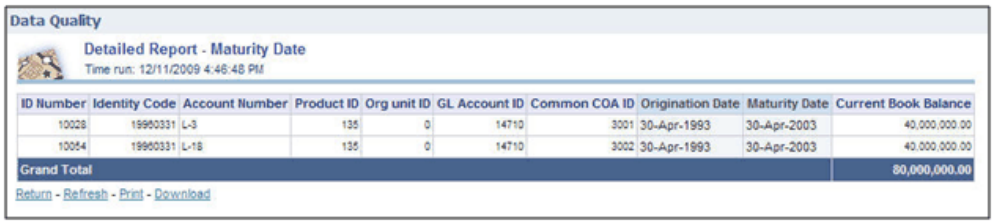


4. **Data Stratification - Maturity Date**

The Maturity Date details for each bucket range value for the Instruments are displayed here.



To view a detailed report, click the bucket range for which you need the detailed report. The detailed report for the selected bucket range is displayed.

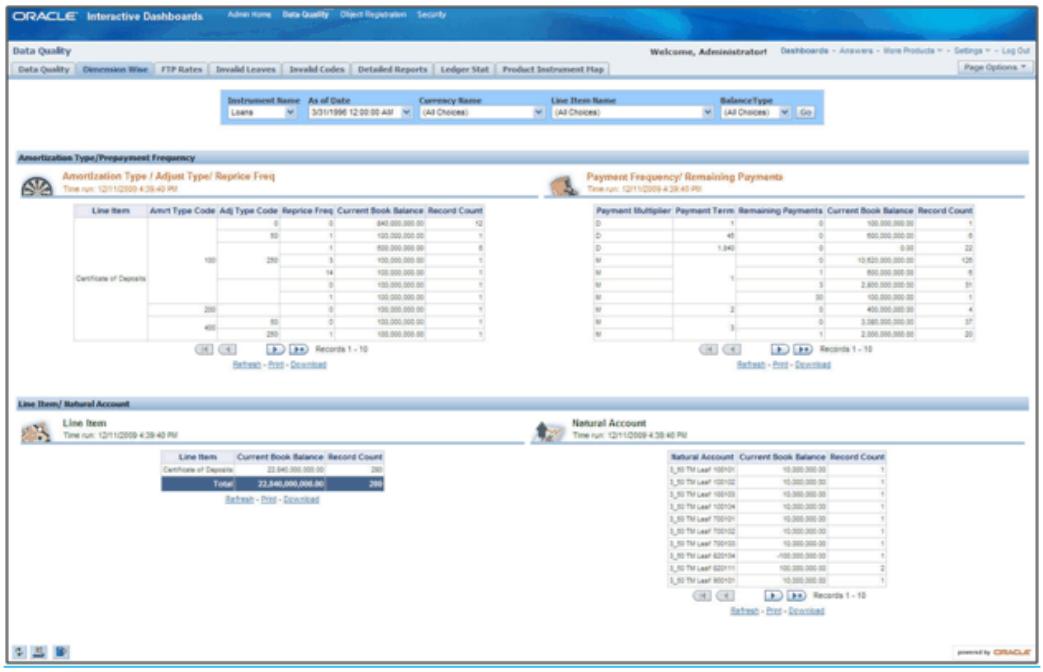


Dimension Wise

You can select the values to filter the data by selecting the values from the top drop down list. The following four reports are displayed here:

- Amortization Type / Adjust Type/ Reprice Freq

- Payment Frequency/ Remaining Payments
- Product
- General Ledger Account



FTP Rates

You can filter the data by selecting the values from the drop down list. The Transfer Pricing Stratification Reports show a summary of the FTP results for all instrument tables.

FTP Rate Detail

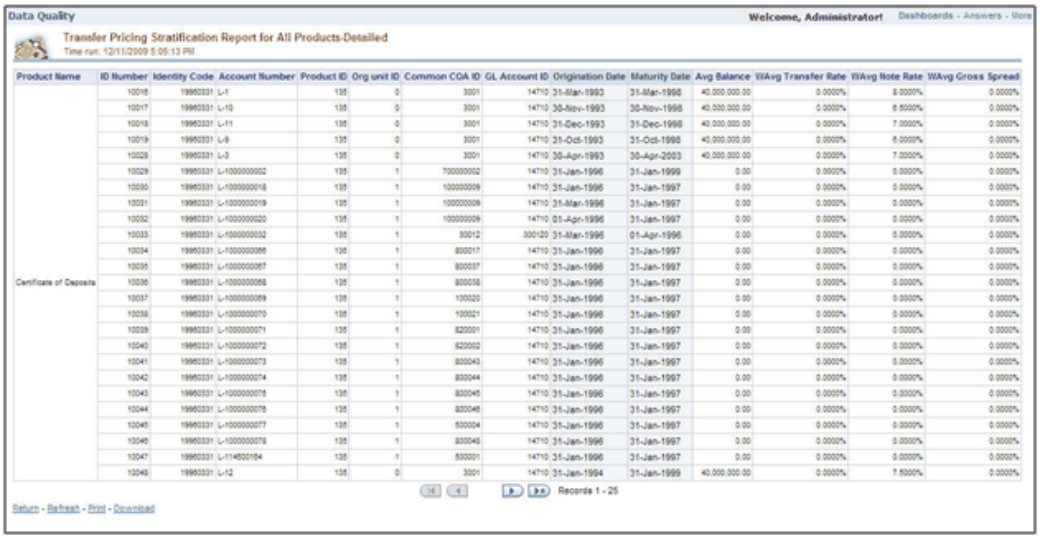
Transfer Pricing Stratification Report for All Products

Time run: 12/11/2009 4:15:47 PM

Product Name	Record Count	Avg Balance	WAvg Transfer Rate	WAvg Note Rate	WAvg Gross Spread
Certificate of Deposits	280	1,200,000,000.00	0.0000%	6.9000%	0.0000%

Refresh - Print - Download

You can click the product name to go to the account level - detail report as shown in the following screenshot.



Invalid Leaves

Contains reports for invalid leaves based on the list of Dimension Members compared with the Instrument data. You can filter the data selecting the drop down list provided at the top. The following four reports are displayed here:

- Invalid Products
- Invalid Org Unit
- Invalid Common COA
- Invalid GL Account

Invalid Codes

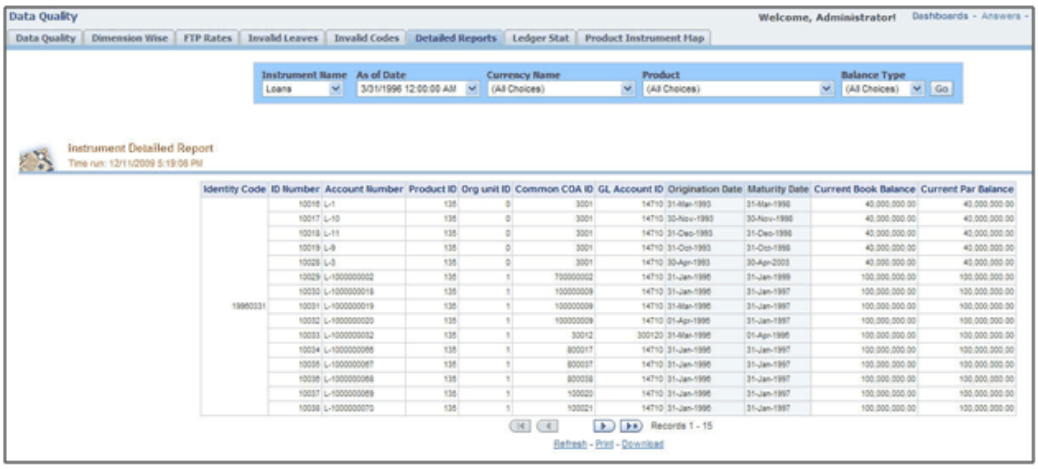
Contains the reports for invalid Codes based on the dimensions compared with Instruments.You can filter the data selecting the drop down list provided at the top.The following seven reports are displayed here:

- Accrual Basis Code
- Amortization Code
- Adjustable Type Code
- Compound Basis Code
- Behaviour Type Code
- Behaviour Sub Type Code

- Net Margin Code

Detailed Reports

Contains the detailed report for a particular Instrument based on the selection in the drop down.



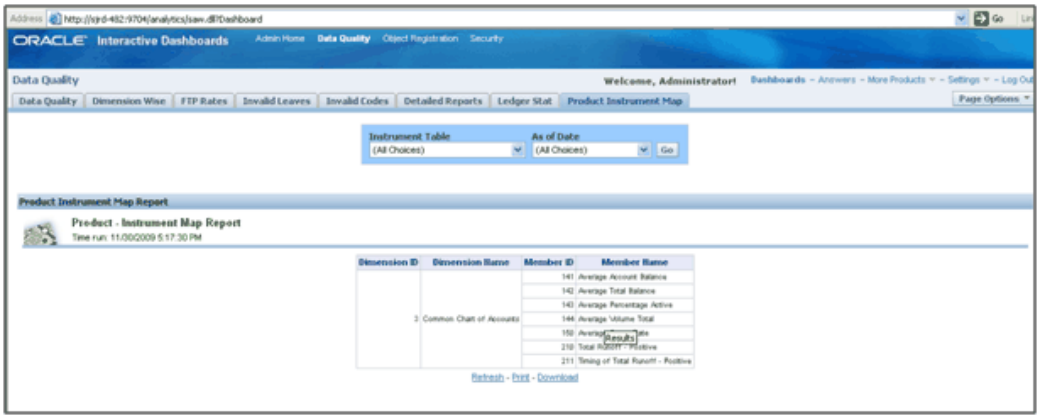
Ledger Stat

Contains the reports for missing dimension members compared with Ledger Stat data values. You can filter the data by selecting from the drop down list provided at the top. The following five reports are displayed here:

- Missing Products
- Missing Org Units
- Missing Common COA
- Missing GL Account
- Missing Financial Elements

Product Instrument Map

Contains the Product Instrument Map report. You can filter the data based the drop down selection. The Product Instrument Map data is used within both ALM and FTP Process rules. These processes allow users to select data to be included in the process based on a Product Hierarchy. The engines need to reference this data to determine which instrument tables to include in the process.

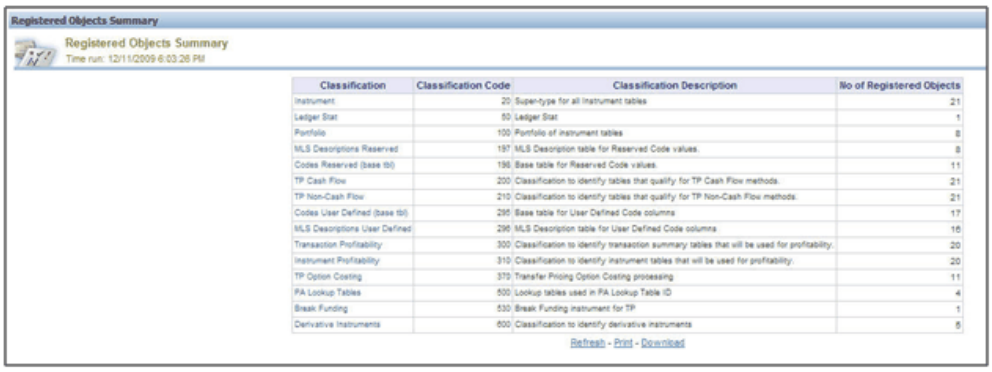


Object Registration

To go to the Object Registration reports, click Object Registration at the top of the Administrative Reports page. The details of the registered objects are present in the reports. You can obtain the data type of each object from this report. There are two tabs in this section.

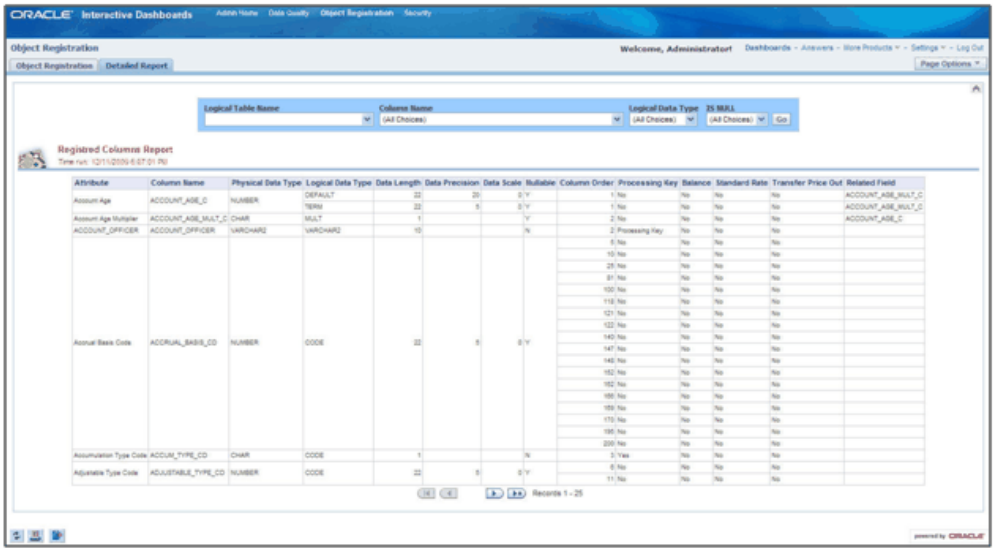
1. **Object Registration Tab**

   The details of the classification and number of registered objects are obtained here.



2. **Detailed Report**

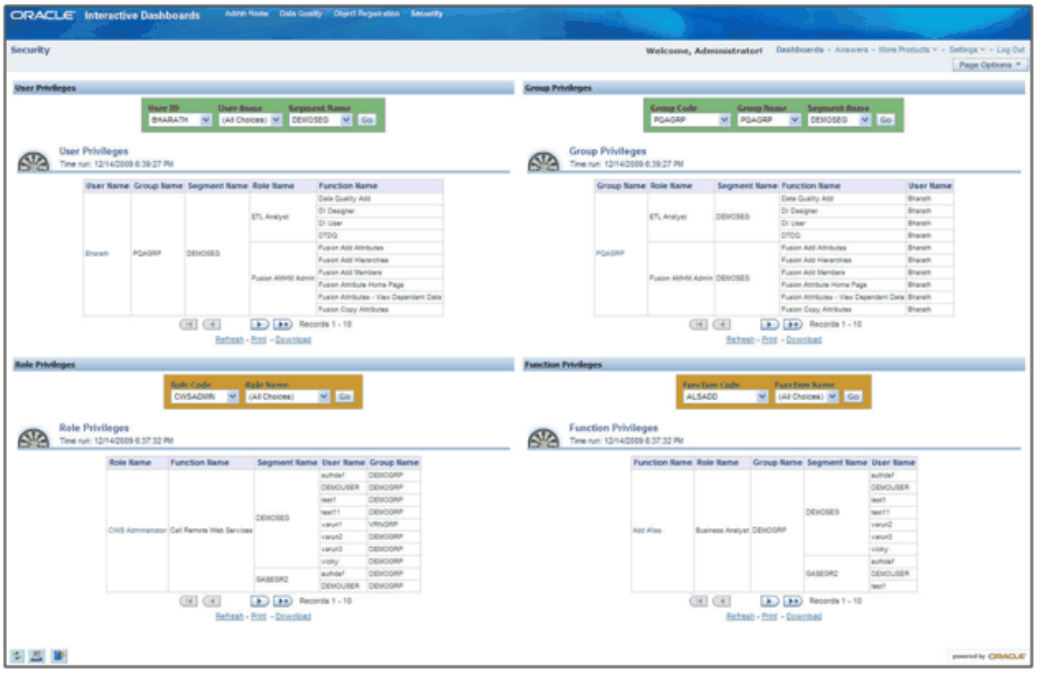
   You can click any classification to navigate to the detailed registered objects report.



Lookup tables are used within OFSAA Profitability Management application. Lookup tables have to be created and registered within OFSAAI, in order to display them in Lookup Table Driver definition of OFSAA Profitability Management application. For more information on Lookup Table creation, see *Oracle Financial Services Analytical Applications Data Model Utilities User Guide*.

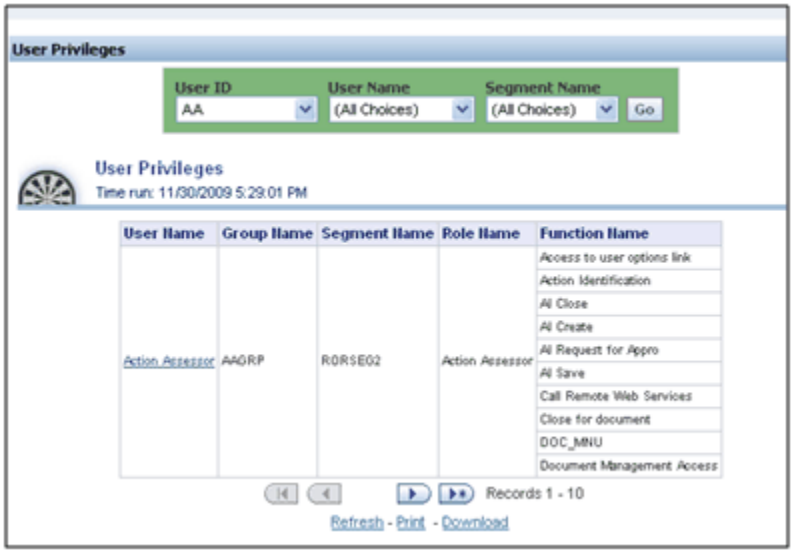
Security

The details about user privileges, group privileges, functions, and so on for the viewing of the objects are provided here.

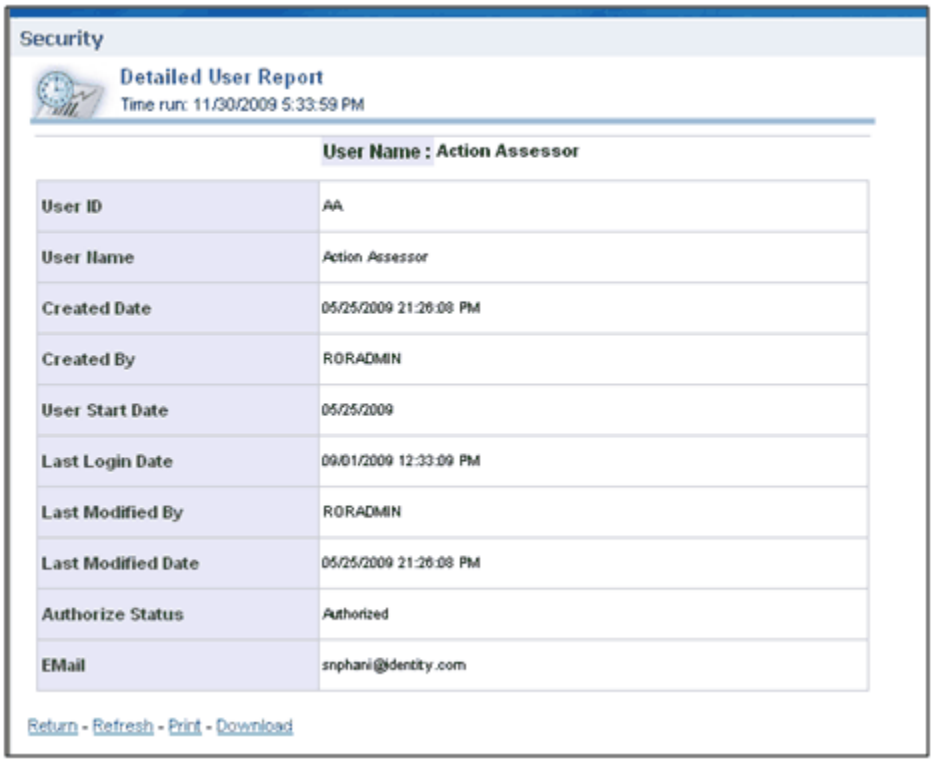


User Privileges

The details of a user and various associated privileges can be viewed in this report.



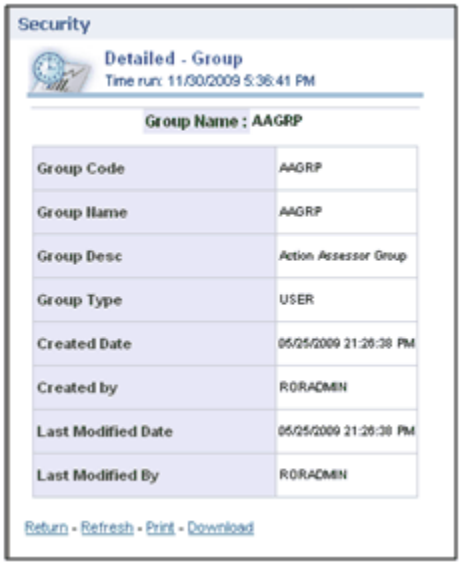
You can click the user name to obtain the detailed user report.



Group Privileges

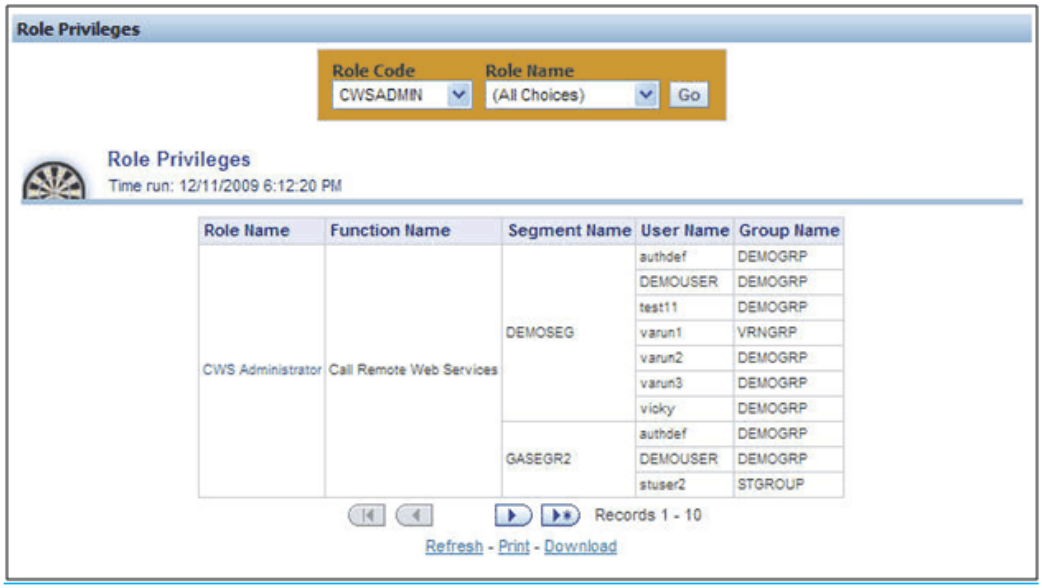
The details of a user group and various associated privileges can be viewed in this report.

You can click the group name to get the detailed group report.



Role Privileges

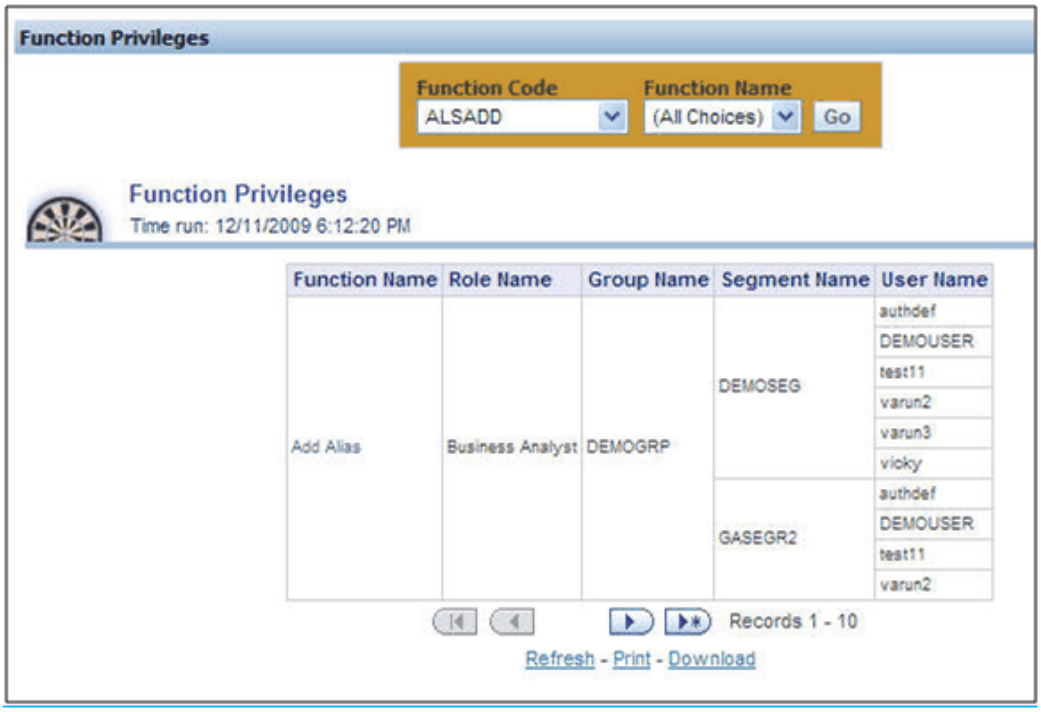
The details related to role privileges can be viewed in this report.



You can click the role name to get the detailed role report.

Function Privileges

The details related to function privileges can be viewed in this report.



You can click the function name to get the detailed function report.

Adhoc Reporting – Special Instructions

The following instructions need to be followed whenever you want to carry out the Adhoc Reporting or Adhoc Querying using the OBI Answers tool or any other querying or reporting tools.

In the OBI Answers tool, when you click the Answers link, you will find single subject area, Fusion. Here you can select the tables (folders) and columns related to the Object Registration, Data Quality and Security dashboards. These tables (folders) and columns can also be used for Adhoc Reporting or Adhoc Querying.

Since these tables belong to different functional areas, namely Object Registration, Data Quality and Security, relationships or table joins across functional areas are not supported for Adhoc Reporting. Therefore, during Adhoc Report or request creation you have to make sure that tables and columns selected are within the functional groups mentioned in the following section to get correct results.

Data Quality

You can use following folders (tables) and columns for Adhoc Querying on Data Quality related objects.

- Dim Stratification
- Dim Leaves
- Dim Invalid Codes
- Dim Ledger Stat
- Dim Product
- Dim Org Unit
- Dim Currency
- Dim General Ledger
- Dim Common COA
- Fact Stratification
- Fact Leaves
- Fact Invalid Codes

Object Registration

You can use following folder for Adhoc Querying on Object Registration related queries.

- Dim Classification

Security

You can use following folder for Adhoc Querying on Security related queries.

- Dim Security

4

OFSAA Data Entry Forms and Queries

Introduction to Data Entry Forms and Queries

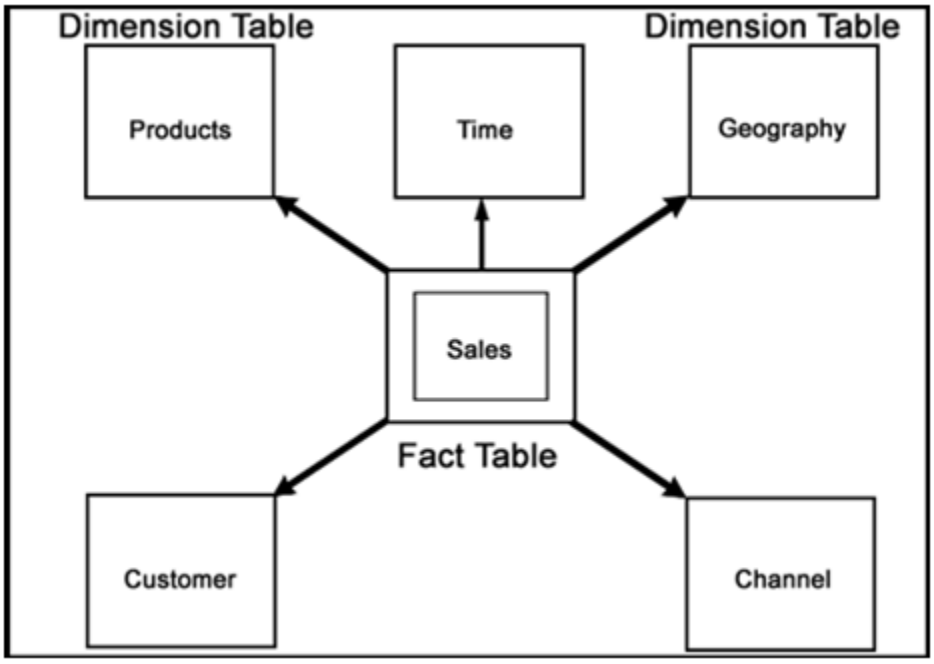
Data Entry Forms and Queries functionality is provided to allow you to create user-friendly Data Entry Screens with a choice of layouts, which aids easy data view and data manipulation. You can select tables based on which you can create forms that can be used in any Application.

Acronyms

Defi Data Entry Forms and Queries.

Data Model A logical map that represents the inherent properties of the data independent of software, hardware or machine performance considerations. The model shows data elements grouped into records, as well as the association around those records.

Star Schemas It is the simplest of data warehouse schemas. This schema resembles a star diagram. While the center contains one or more fact tables the points (rays) contain the dimension tables



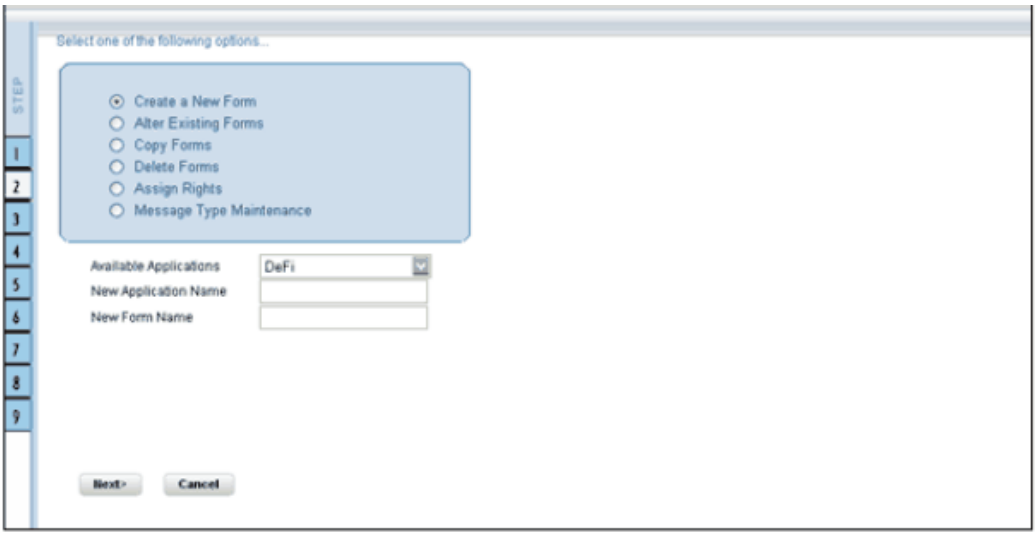
In a star schema, only one join is needed to establish the relationship between the fact table and any one of the dimension tables which optimizes queries as all the information about each level is stored in a row.

Designing Data Entry Forms

The Data Entry Forms and Queries menu has three options, namely, Form designer, Data Entry and Excel Upload options.

To Design forms, click **Form Designer** to open the **Forms Designer Wizard** . In this screen, you can create, alter, copy or delete forms. **Create a new Form** is the default option that is chosen when you open the wizard. The various steps involved in the creation of the form are displayed in the left pane of the screen. You can also assign User Rights to already defined Forms.

The first screen of the Forms Designer wizard is displayed as Step 2, Step 1 being the login screen.



Creating a New Form

To design a new form you will have to first choose the Create a New Form option. On entering the screen this option will be selected by default.

An Application refers to a group with a list of forms within it. The Available application field will contain the new application by default.

To create a new form, select New Application from the Available Applications drop-down list, click the field provided for New Application Name and enter an application name.

Enter a form name in the **New Form Name** field.

> **Note:** To modify an existing form, select Alter Existing Forms option. Make your modifications and move to step 3.

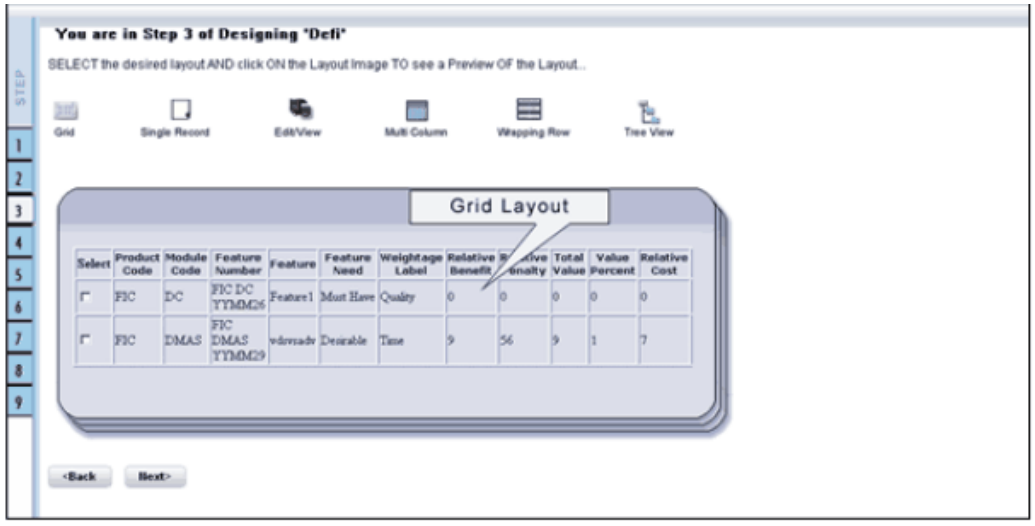
Click **Next** to go to step 3. Click **Cancel** to reset the fields.

The Layout screen displays a range of pre-defined layouts for your form. The various layouts available are Grid, Single Record, Edit/View, Multi Column, Wrapping Row and Tree View.

To view the display of a layout, click any of the icons on the top of the screen. Click Back to go to the previous screen. Click Next to go to step 4. Click Cancel to refresh the choice of the selected layout.

The Grid Layout

The Grid Layout is the default layout that is displayed. It will display the records in the form of a table/grid with multiple rows of data.



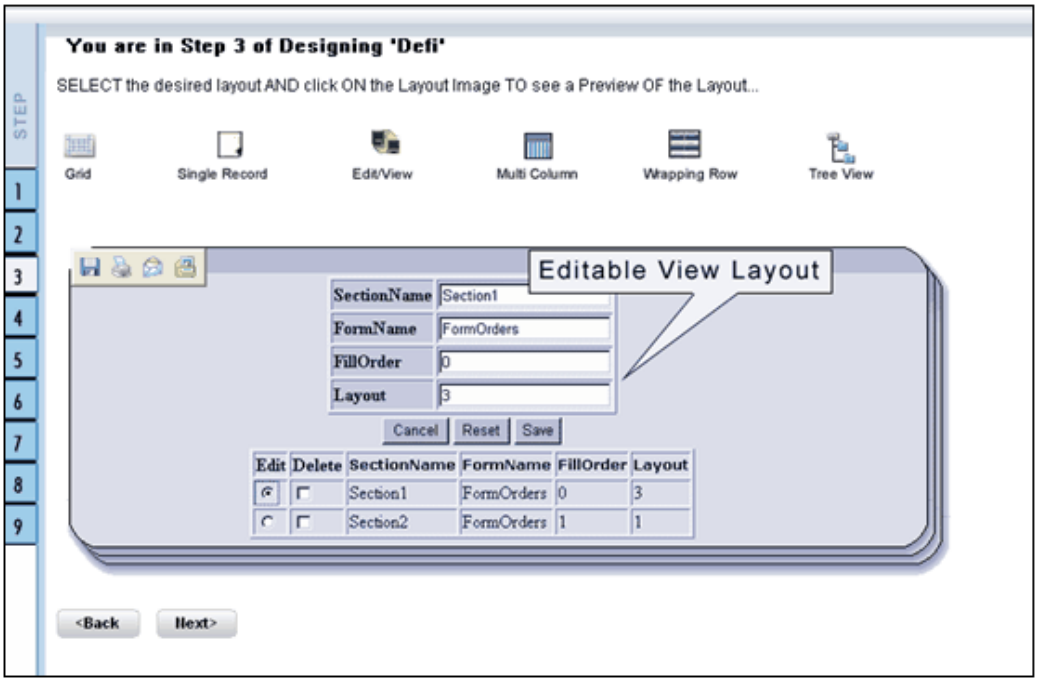
This layout can be used when you wish to view multiple records from a table at a time.

The Single Record Layout

The Single Record Layout displays a single record at a time.

The Edit/View Layout

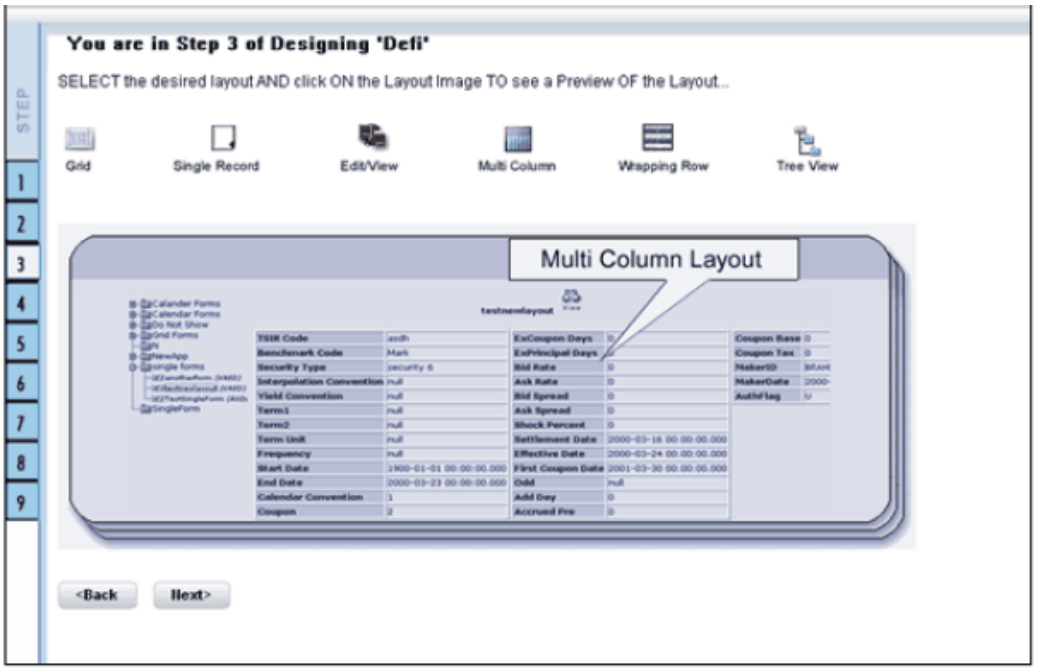
The Edit/View Layout is a combination of the single record and grid layout.



If you choose a record in the grid, that particular record will be displayed in the form, in a single record format, which is editable. By default the first record will be displayed in the editable grid.

The Multi Column Layout

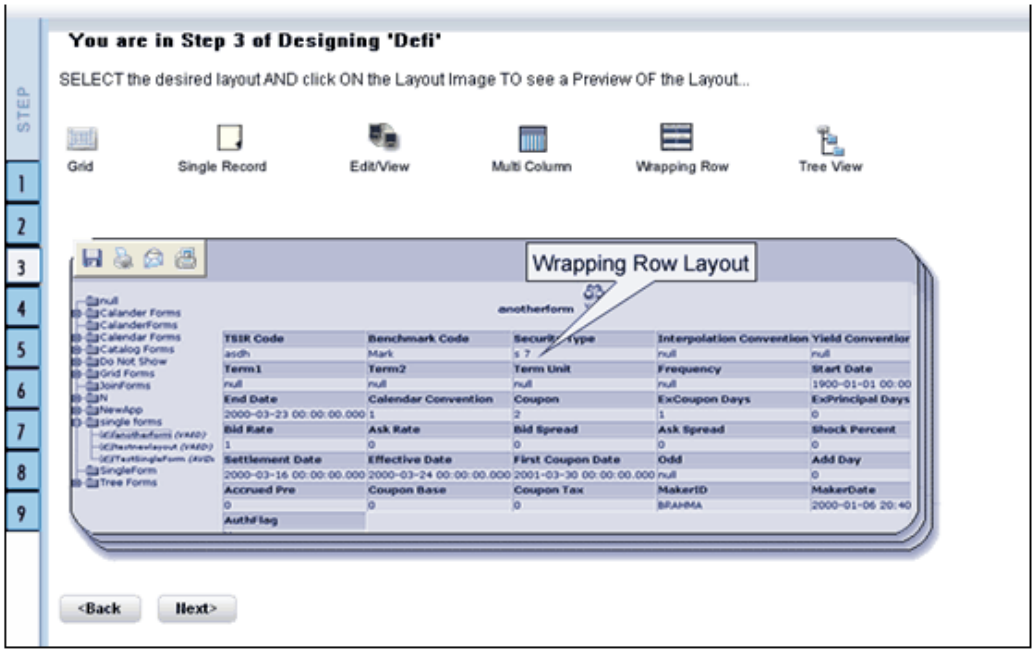
The Multi Column Layout displays a single record with its column in a grid format.



You can view a multi column layout form without having to scroll or with minimum scrolling to view all the columns.

The Wrapping Row Layout

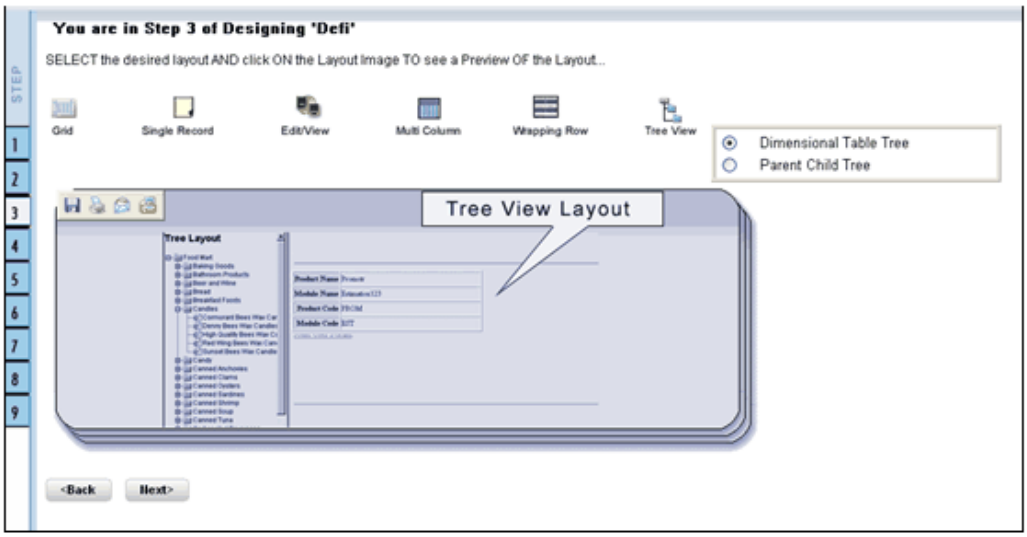
The Wrapping Row displays rows of a single record in a wrapped manner in a grid format.



You can view a wrapping row layout form easily without having to scroll horizontally to view all the data.

The Tree View Layout

The Tree view layout represents the dimensional table. It presents the entire dimension tree with selected dimension details.

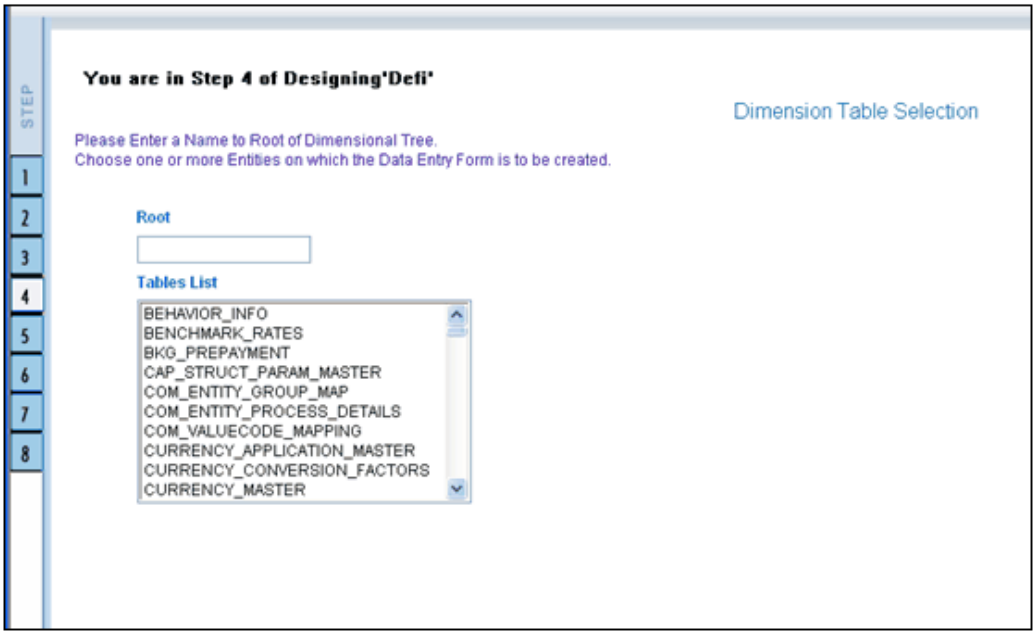


Click Back to go to the previous screen. Click Next to go to step 4. Click Cancel to reset the selected layout option.

For Grid, Single Record, Edit/View, Wrapping Row, Multicolumn and Tree View Layouts

The table screen displays the Tables List box with available tables. You can choose more than one table by pressing the CTRL key for nonadjacent selection or the SHIFT key for multiple adjacent selections.

However, it is necessary that the tables that you select have same data type for the two mapped fields.



Example

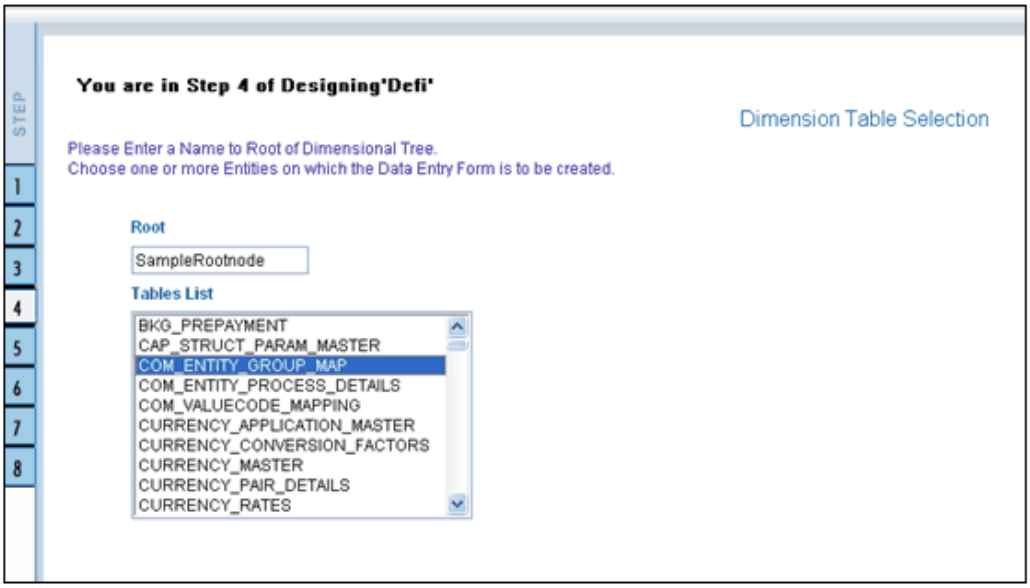
DIM_ACTION_GROUP

DIM_ACTION_PRIORITY

DIM_ACTION_TYPE

Click **Back** to go to the previous screen. Click Next to go to step 5. Click Cancel to refresh the table list.

If you have selected **Tree View layout** in the previous screen, the Table list screen will be as shown .



Enter a root node name in the Root text box.

Example
Sample Rootnode

Choose a table that you want to be included in the form.

Example
DIM_ACTION_GROUP

Click Back to go to the previous screen. Click Next to go to the join tables screen.

Joining Tables

In the join table screen, you can select the fields to be joined.

Choose a table name that you wish to add or edit.

Example
DIM_PRODUCTS

Select the field of the chosen table that you want to add from the Available Fields list box and choose the field that you want to join it with of the latter table. The chosen fields will be displayed in the Join Condition pane.

Example
DIM_PRODUCTS.V_D_PRODUCT
LEVEL_1_CODE=DIM_PRODUCTS.V_D_PRODUCT_LEVEL _2_DESC

Click **Clear** to clear the join condition.

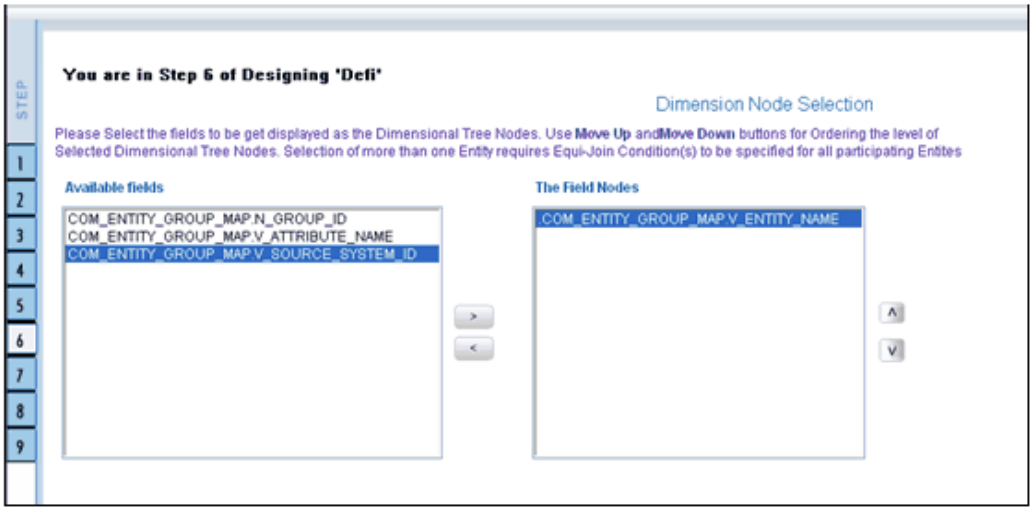
Click **Back** to go to the previous screen. Click **Next**, to join the fields and go to step 5.

Click **Cancel** to refresh the table list.

For Grid, Single Record, Edit/View, Wrapping Row, Multicolumn and Tree View Layouts.

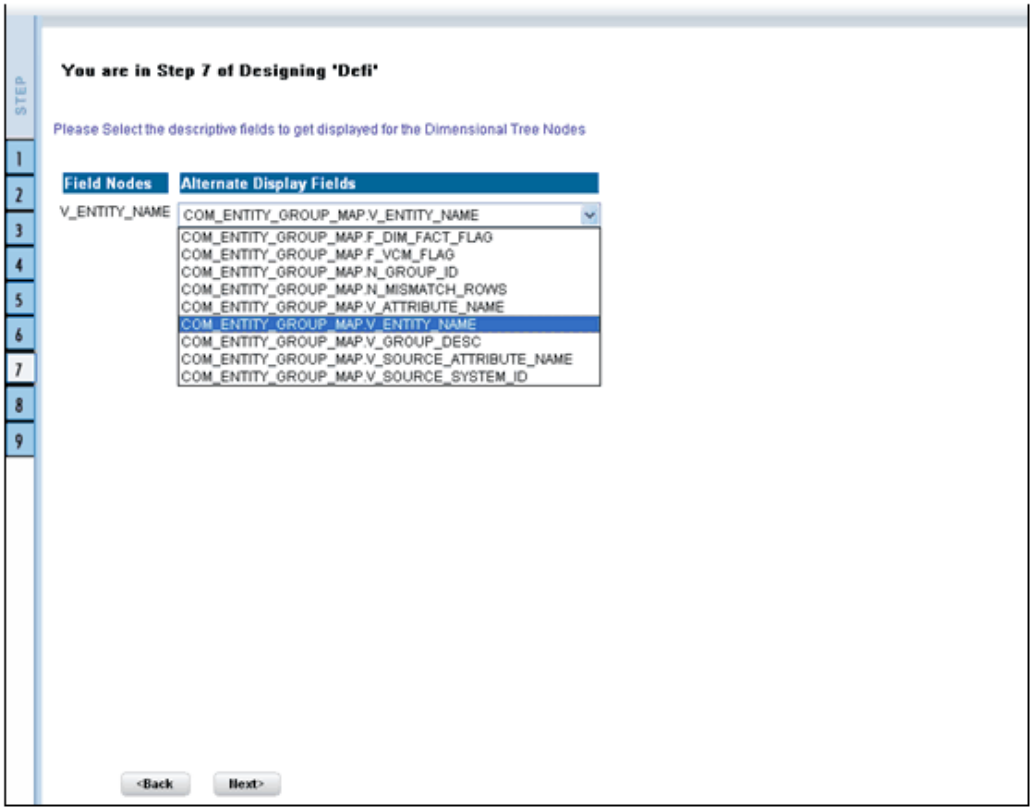
The Fields screen displays the Available Fields pane and Fields for sorting pane. The mandatory fields are highlighted with the '*' symbol and are automatically displayed in the Selected Fields pane as pre-selected for you and are shown in the Chosen Fields Pane. These mandatory fields are fields (primary key fields and not null fields) that require data to be entered by the user while performing Data Entry on the underlying table.

Example
If you want the fields to be sorted based on the Branch Code, select the field CUSTOMER V_CUST_BRANCH_CODE.



Select the fields from the Available Fields pane that you want to be included in the form and click **(>)** to move to the Fields to Display pane. To remove a field(s) from the Fields to Display pane to the Available Fields pane, click **(<)** . To move all the fields to the Fields to Display pane from the Available Fields pane, click **(>>)** . To move all the non mandatory fields to the Available Fields pane, click **(<<)** .

To arrange the fields that are displayed in the Fields to Display pane, click up arrow symbol to move a field up and down arrow symbol to move down. This order determines how the Fields are displayed in the Data Entry Form. This order can be different from the order in which the fields are in the underlying table.



Select the fields from the Available Fields pane that you want to be included in the form and click **(>)** to move to Step 8. To remove a field(s) from the Choose Fields pane to the Available Fields pane, click **(<)** . To move all the fields to the Choose Fields pane from the Available Fields pane, click **(>>)** . To move all the non mandatory fields to the Available Fields pane, click **(<<)** .

To arrange the fields that are displayed in the Choose Fields pane, click up arrow symbol to move a field up and down arrow symbol to move down. This order determines how the Fields are displayed in the Data Entry Form. This order can be different from the order in which the fields are in the underlying table.

The selected fields will be sorted in ascending order by default. To set the order of the fields in the descending order, check the check-box provided for **Sort By Descending.**

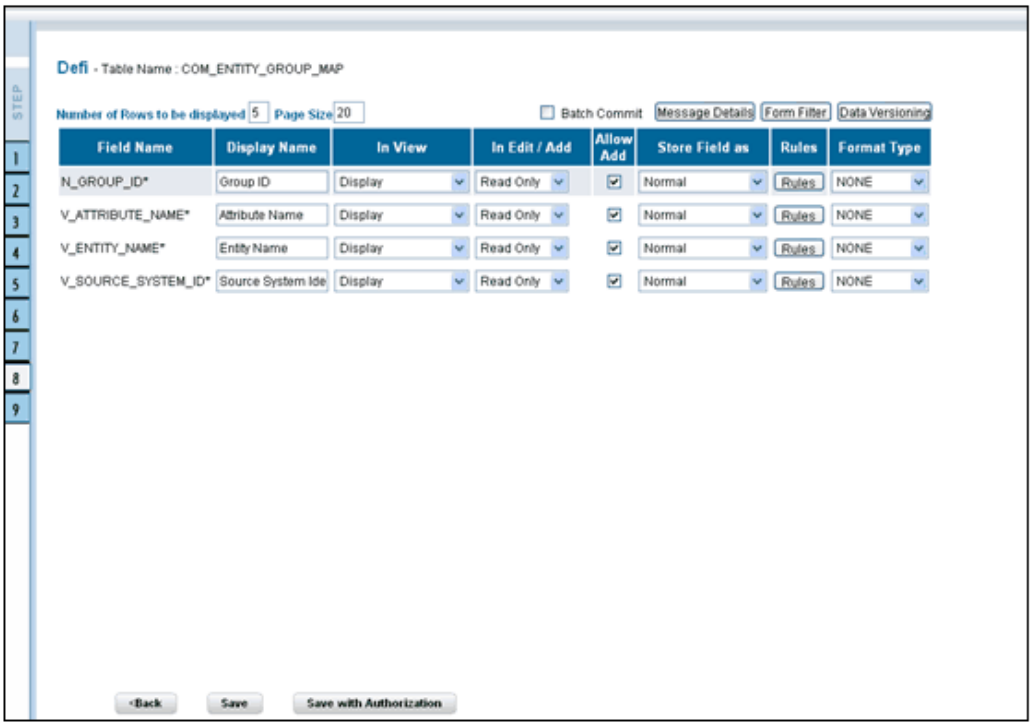
> **Note:** The fields displayed in the Sort Fields screen are the list of fields chosen from the Fields Selection screen.

Click **Back** to go to the previous screen. Click **Next** to go one step further.

For Grid, Single Record, Edit/View, Wrapping Row & Multicolumn Layouts

The index screen displays the form with Field Name, Display Name, In View, In Edit/Add, Allow Add, Store Field as and Rules detail columns. You can specify the

details for each of the field names.



You can change the display name of the field name by entering a name in the Display Name field.

Example

User Expiry Date

You can choose a field to be displayed by selecting the In View option as Display or Do not Display. If the field you choose is a foreign key field or if more than one table is selected, the In View displays Same Field, Alternate Display Field and Do not Display options.

You can specify the edit options for a user by specifying the edit parameters. Click the In **Edit/Add** field to open the drop-down list box. Select the edit parameter that you want to apply to a field. For normal fields you can choose the edit parameters like Text Field, Text Area, Select List, Protected Field, Read Only and Do Not Show. If it is a foreign key field the In Edit/Add parameters displayed will be Read Only, Select List and Do Not Show. For primary key fields the In Edit/Add parameter displayed will be Read Only and Do Not Show. In case of calendar fields, the In Edit/Add parameters displayed are Calendar and Do Not Show.

To give the user permission to add a new record, select the Allow Add option against the field name. If form is saved with add option as true for some fields and false for some fields then it will give an alert saying "Choose Allow Add for the mandatory fields."

To specify the field storage format, click the **Store Field as** field to open the drop-down

list. You can choose the store format as Normal, Sequence Generator, Maker Date, Checker Date, Created Date, Modified Date Auth Flag, Maker id, Maker Date, Checker id, Checker Date, Checker Remarks and Maker Remarks.

You can also apply rules to a field. Click Rules to open the screen.

Applying Rules

You can apply rules only if the In Edit/Add fields are Text Field, Text Area or Protected Field. The rule option is essential for data validation

To specify rules for Text Field, Text Area and Protected Field, click the **Rule** option to open the Specifying Rules and Expressions for Data Validations window.

If a field has a character data type, you can specify here the rule for the field to be displayed without spaces, only characters or alphanumeric. If a field has a numeric data type, you can check the check-box provided for Numeric Only. You can choose whether/not you require Negative values to be displayed by checking/un-checking the field provided for Non Negative, not null will be displayed for the non primary key and/or nullable fields.

Specify the maximum width of the field in the Maximum Width box. You can set the column alignment by selecting the appropriate alignment from the Alignment drop-down list. On specifying the options, click Ok to save.

Click **clear** to Clear the information entered in the screen. Click **Close** to close the screen.

Click **Back** to go to the previous screen. Click **Save** to save the field details setting.

- Only forms with primary key tables can have the authorization option while saving.
- By default, the alignment for character and date data type is taken as Left. And for numbers it is displayed as Right. But the alignment can be changed to Right, Left or Center.

You can specify the edit options for a user by specifying the edit parameters. The In Edit option varies for different fields based on whether the field is foreign, primary or calendar fields.

Click the **In Edit/Add** field to open the drop-down list box. You can choose the edit parameters like Text Field, Text Area, Select List, Read Only, Do Not Show and Expression Generator. Select the edit parameter that you want to apply to a field.

When you select the Select List option in the In Edit/Add column, a pop-up window is displayed.

Note: The Select List option will not be displayed for foreign key fields.

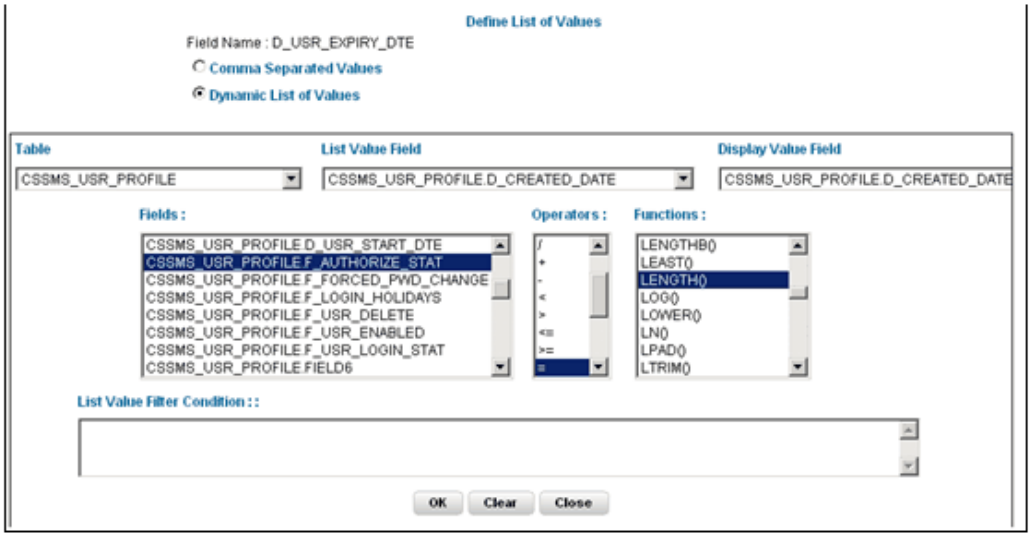
Enter the list of values to be displayed, in the List of Values field. You may choose the field to be Comma Separated Values or Dynamic list of values options.

Comma Separated Values can have only the user specified values while creating a form.

Dynamic Field accepts the fieldname from a table, which it stores in the database, which is used during Data Entry. Specify **Alternate DisplayValues** in the appropriate field.

Click **OK** to save the specified list of values. Click **Cancel** to clear the List of Values field. Click **Close** to close the pop-up window.

If you select Dynamic List of Values, you will be able to select the table values and then define a filter condition for the selected values, as shown in the following screen-shot.



To give the user permission to add to the field, select the Allow Add option against the field name. The Allow Add option is mandatory for primary key and not null fields.

To specify the field storage format, click the Store Field as field to open the drop-down list box. You can choose the store format as Normal, Sequence Generator, maker ID, Checker ID, Maker Date, Checker Date, Created Date, Modified Date, Maker Remarks, Checker Remarks and AuthFlag.

Click Back to go to the previous screen. Click Save to save the field details setting.

To save the form containing primary key tables, click **Save with Authorization.**

- Only forms with primary key tables can have the authorization option while saving.
- If the user want the value to be displayed with the thousands

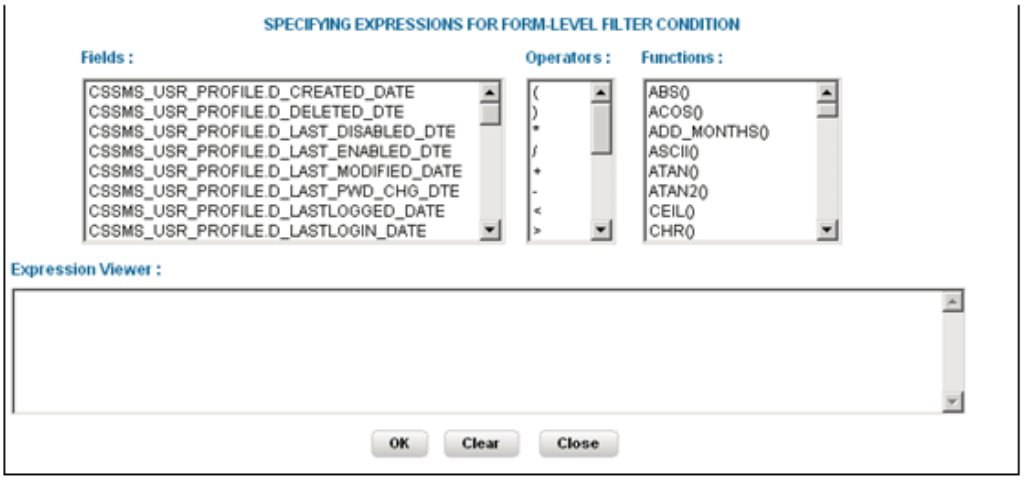
separator, such a numeric field should be defined under the Display Value Field.

Committing the Batch

Selecting the check-box provided for Batch Commit virtually groups/baskets the entire set of table forms. With this grouping, the system ensures that if a particular form in the table fails to be executed, the entire set of forms will be returned. Hence, all activities for the selected table is carried out in batches.

Defining the Form Filter

With the Form Filter screen you can specify expressions for the form filter condition.



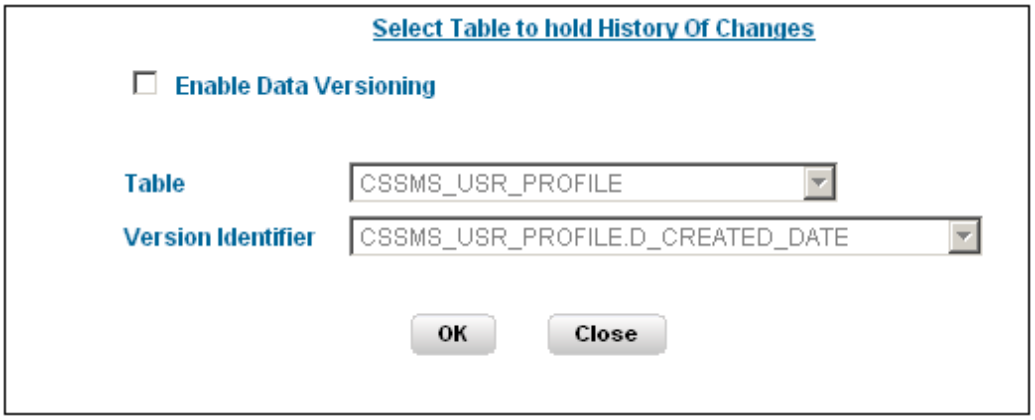
Click to select the **Field**, the **Operator** and the **Function** from the appropriate panes.

The expression you define will be displayed in the Expression Viewer pane.

Click OK to save the expression. Click Clear to refresh the screen. Click Close to close the screen without saving.

Data Versioning

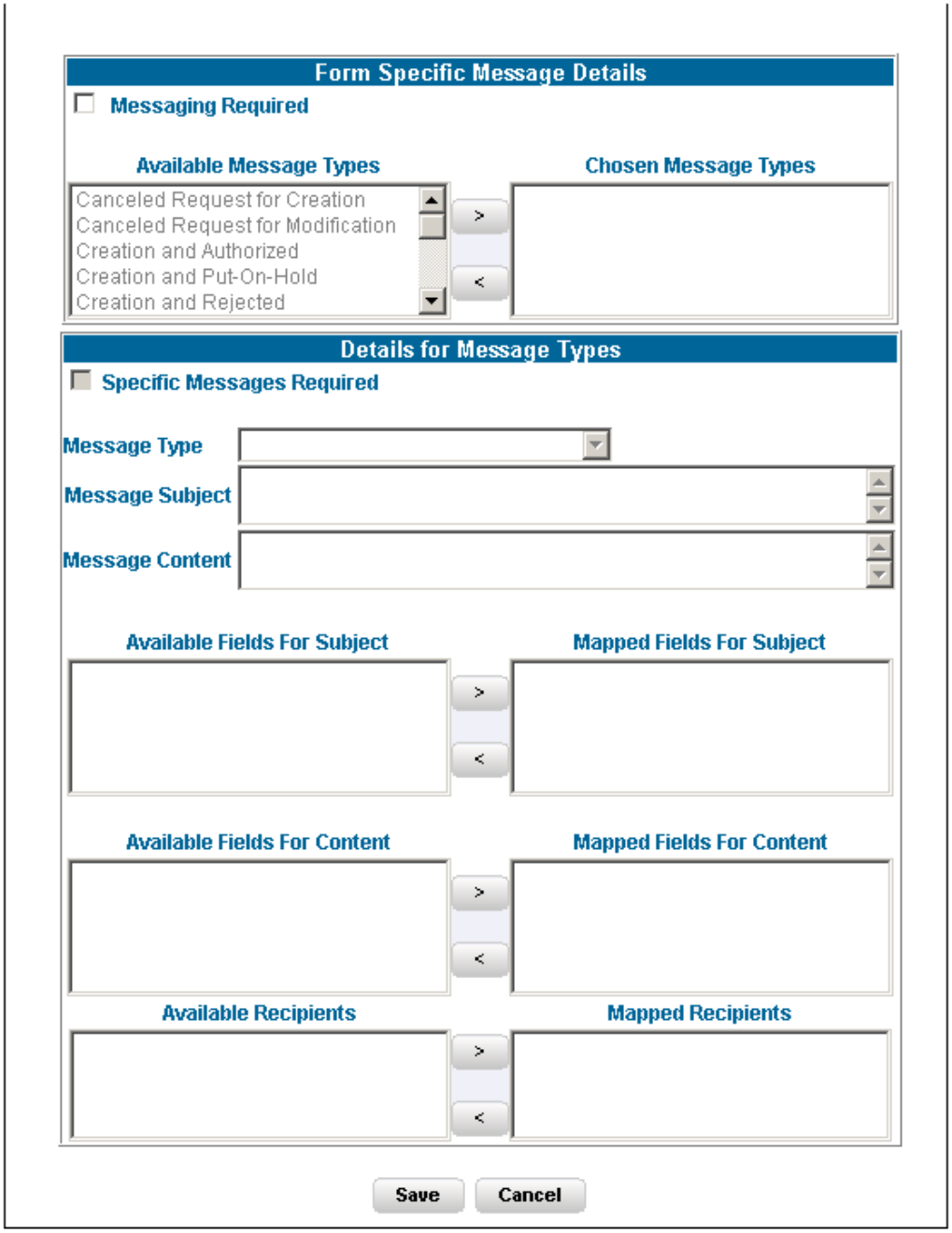
Using this screen you can perform data versioning on an authorized form. The table version is tracked based on the date of modification. Check the check-box provided for Enable Data Versioning to ensure that the version is tracked.



If you select this option, the modifications made to the particular form are displayed as per date versioning.

Specifying Message Details

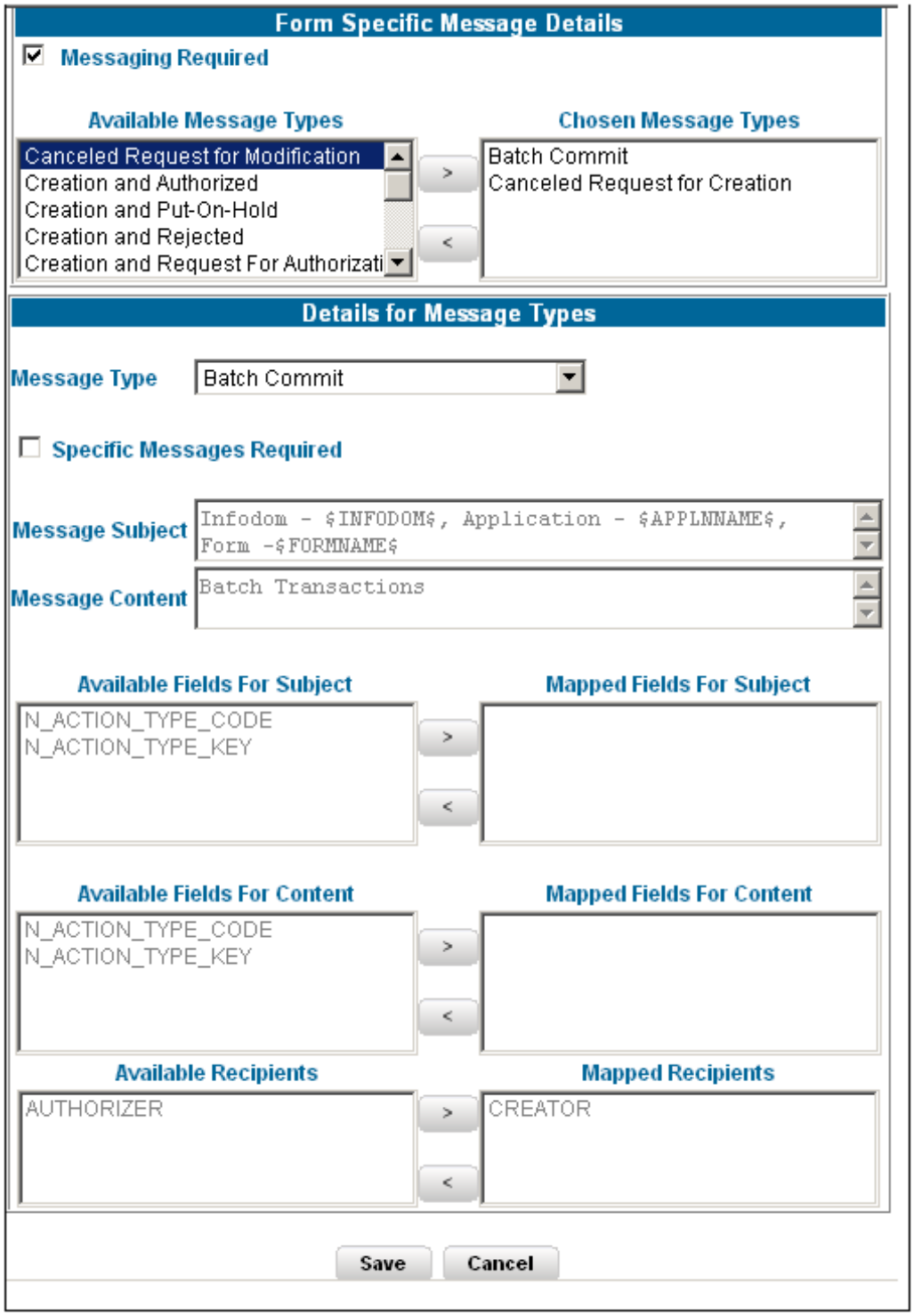
With the messaging screen, you can specify an alert message that can be sent either to the Creator of the form or to an Authorizer. Click the Message Details tab in the index screen. The Message Details screen will be populated on your screen.



To activate the Messenger feature, you need to check the check-box provided for Messaging Required.

If you do not require this option, leave the Messaging required check box unchecked. Mails will be sent appropriately, only one mail will be sent for the entire batch.

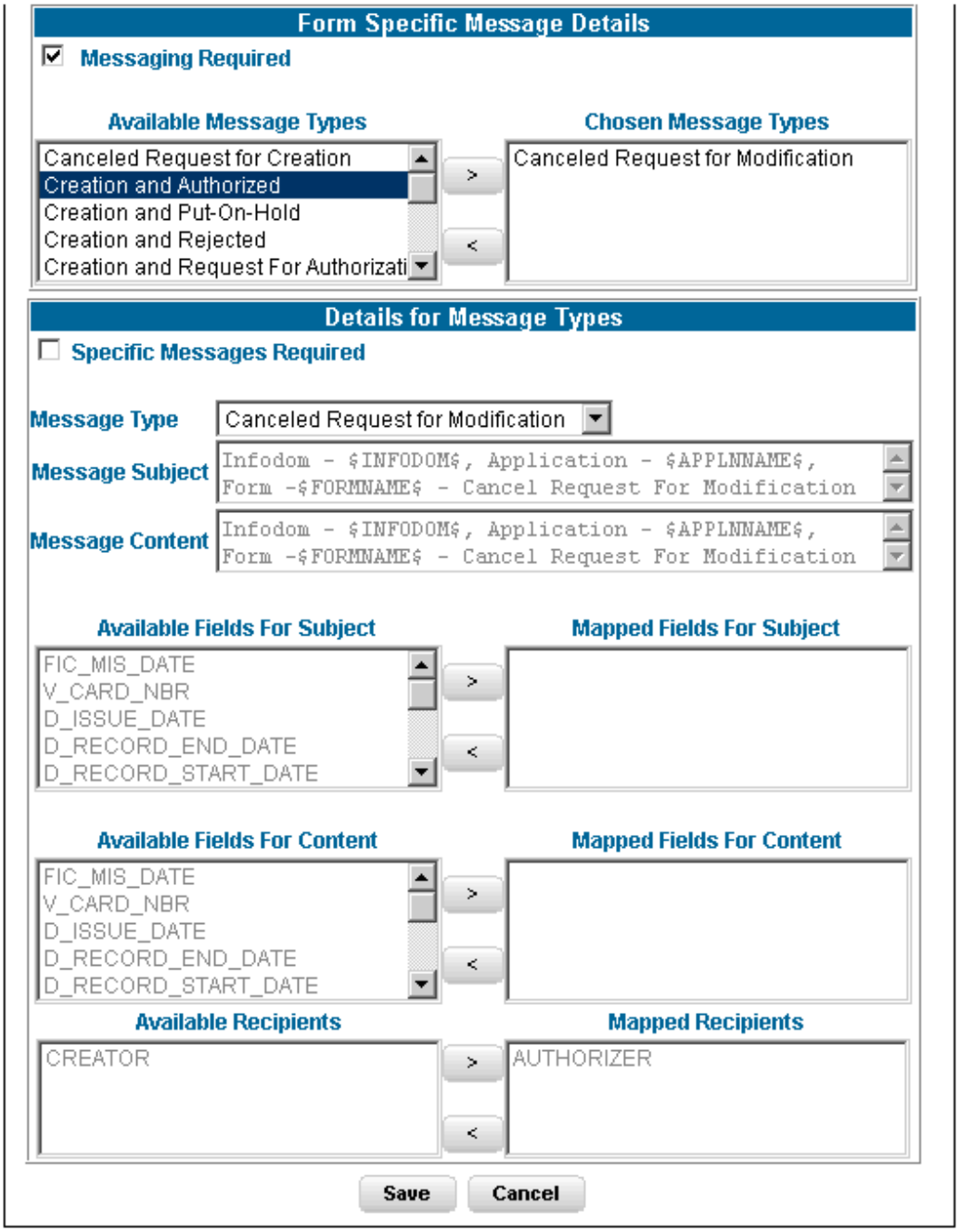
The Message types, Recipients, Subject and Content fields are comes from the metadata.



Select the Message Type from the Available list and click (>) to move the message type to the Chosen Message Types pane.

Example

Canceled Request for Modification

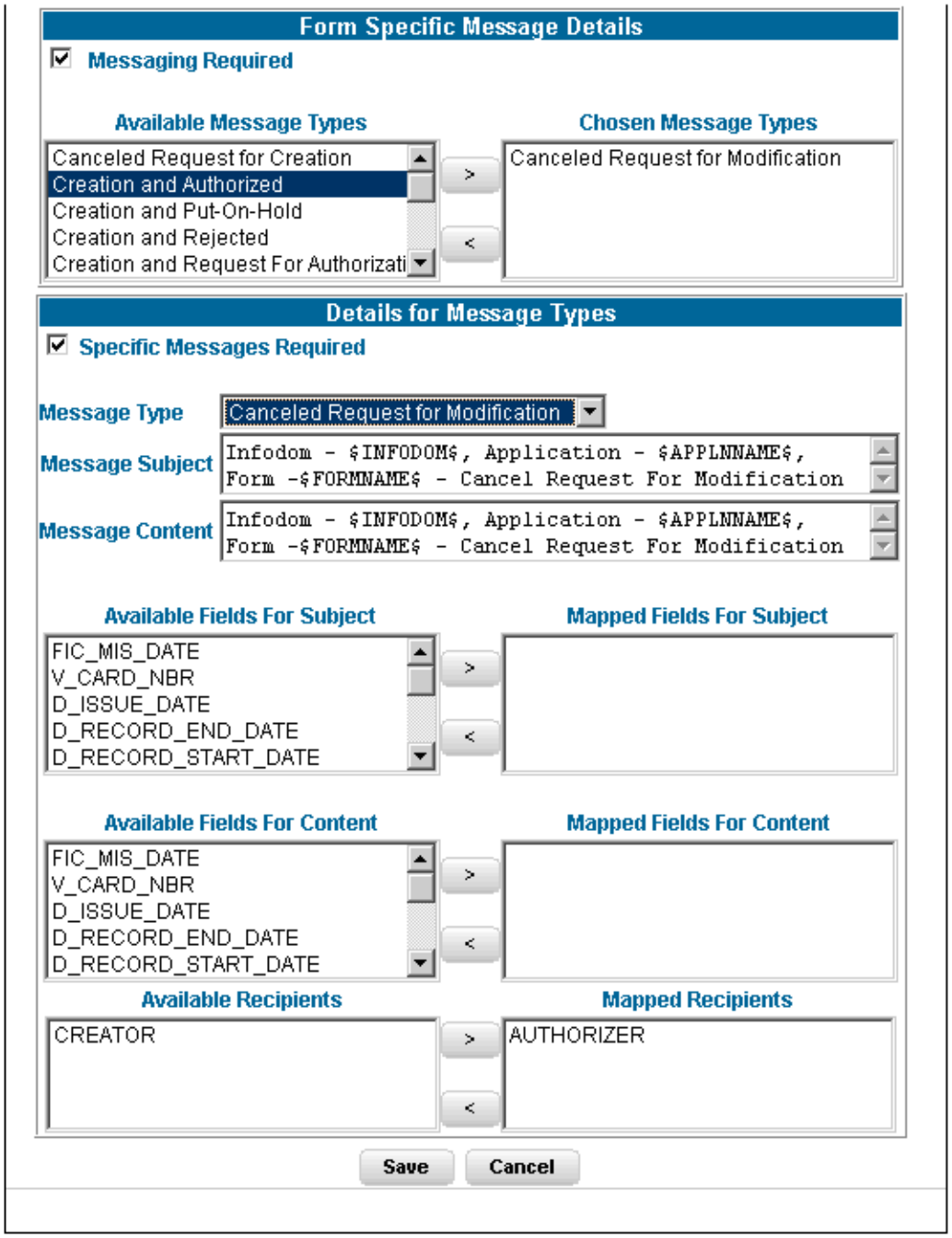


Select the check-box provided for Specific Messages Required to add a Specific Message.

Select the Message Type from the drop-down list box of the Message Type field. Message line appears automatically based on the selection of the event type.

Example

Canceled Request for Modification



Subject line will appear automatically based on the selection of the event type.

Example

Infodom - $INFODOM$, Application - $APPLNNAME$, Form - $FORMNAME$ - Cancel Request for Modification

Message content will appear automatically based on the selection of the event type.

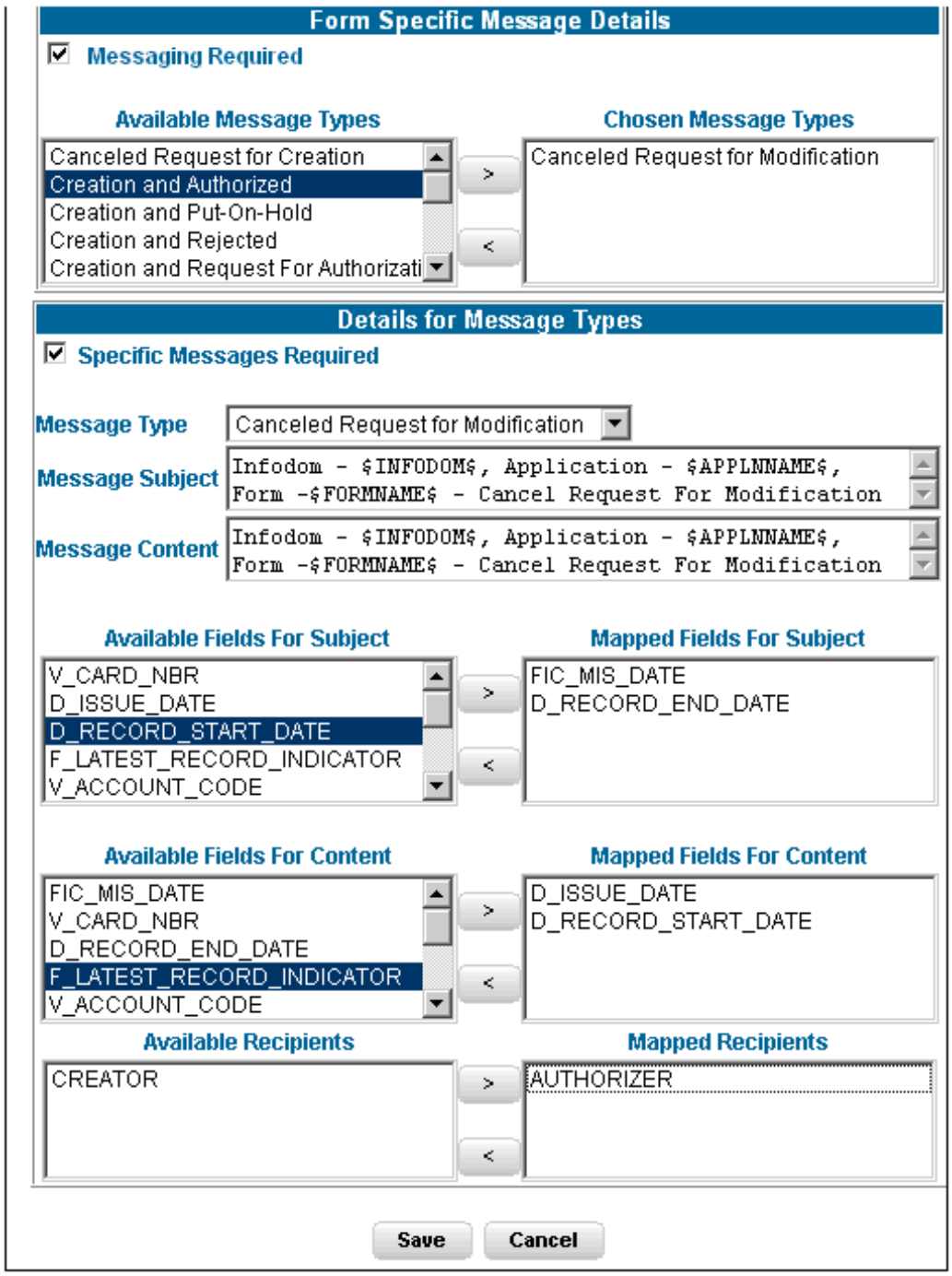
Example

Infodom - $INFODOM$, Application - $APPLNNAME$, Form - $FORMNAME$ - Cancel Request for Modification

Double-click the Recipient name in the Available Recipients pane. The selected recipient/s are displayed in the Mapped Recipients pane.

Example

Authorizer



- If you select Authorizer, the message will be sent to all the selected authorizer's for authorization.
- You need to click the Save with Authorization tab in the Index

screen so that the messages are functional. When you Save with Authorization, the next screen to be populated is the Authorization screen, where you can assign rights.

Similarly, select the Field/s for Subject and Fields for Content. . Available fields for the subject and content can be selected by the user.

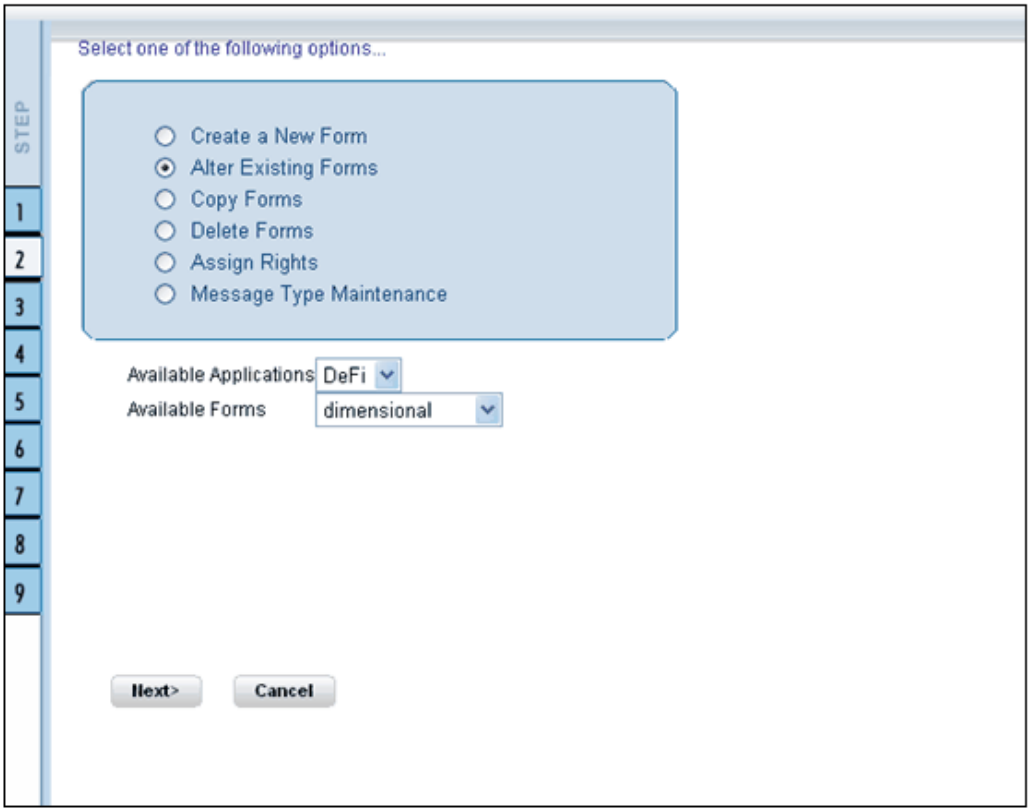
Click Save to save the changes. Clicking Cancel pop's-up a message requesting you to confirm the cancellation without saving. Click Ok in the Pop-up.

Click Save with Authorization in the Index screen to save the changes with authorization. Clicking Save opens up the Assigning Rights screen.

Altering an Existing Form

To alter an existing form, select Alter Existing Forms option. Click the Application name field to open the drop-down list box. Select the name of the application whose form you wish to alter. On choosing the application name, the forms belonging to the selected application will be displayed in the Form Name field. Click the Form Name field to open the drop-down list box and select the form that you want to alter.

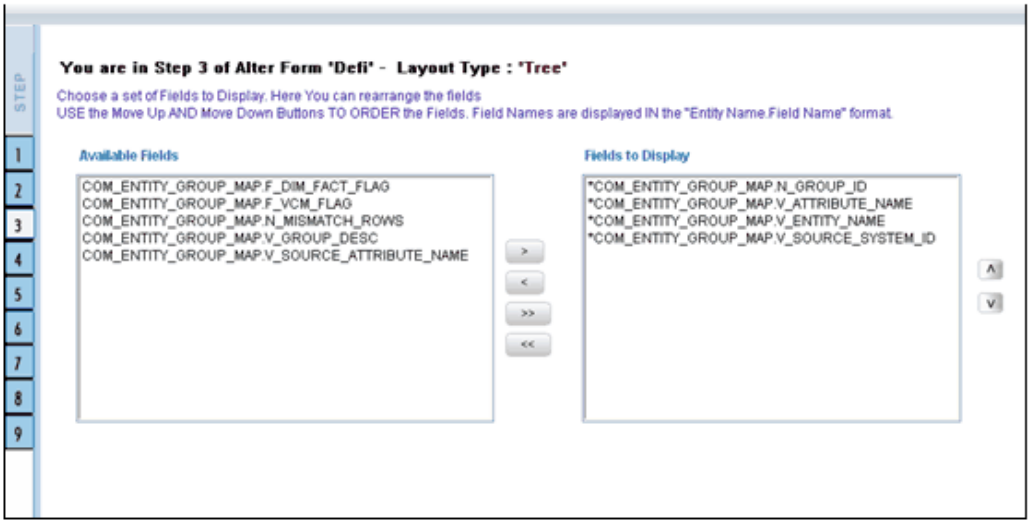
Alter forms apply only to fields and not to tables.



Click Next to go to step 3. Click Cancel to discard the form selection that you have made.

> **Note:** The forms that are displayed in the Form name list box are dependent on the DSN (Data Source Name) that you have specified.

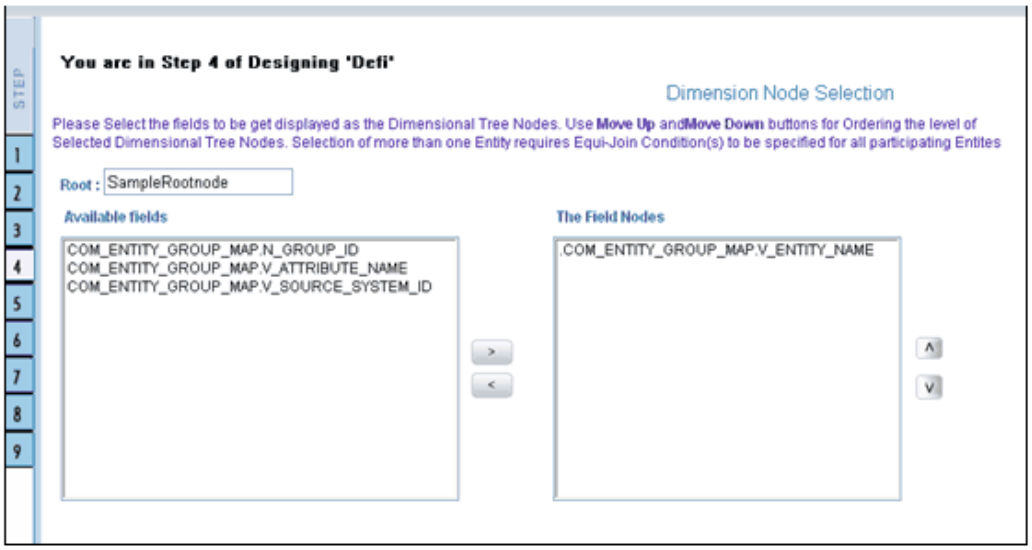
The alter fields screen displays the list of fields of the selected form in the Chosen Fields pane. In this screen the fields, which are selected while creating the form are displayed in the Chosen Fields list and the fields that are not selected but available are shown under the Available Fields list.



Select the fields from the Available Fields pane, which you want to alter and click **(>)** to move to the Chosen Fields pane. To remove a field/s from the Chosen Fields pane to the Available Fields pane, click **(<)** . To move all the fields to the Chosen Fields pane from the Available Fields pane, click **(>>)** . To remove all the fields to the Available Fields pane, click**(<<)** .

To arrange the fields that are displayed in the Choose Fields pane, click up arrow symbol to move a field up and down arrow symbol to move down. This order determines how the Fields are displayed in the Data Entry Form. This order can be different from the order in which the fields are in the underlying table.

Click **Back** to go to the previous screen. Click **Next** to go further. The alter sort fields screen displays the sort fields to be altered in the Chosen Fields pane with which you want to sort the table.

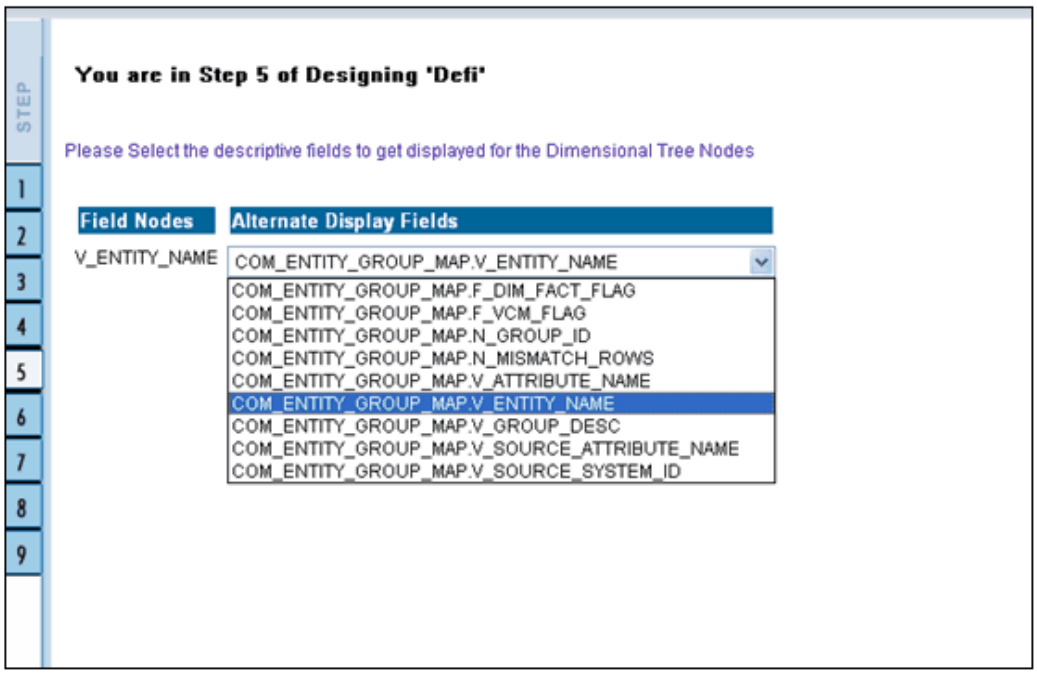


Select the fields from the Available Fields pane, which you want to alter and click **(>)** to move to the Chosen Fields pane. To remove a field/s from the Chosen Fields pane to the Available Fields pane, click **(<)** . To move all the fields to the Chosen Fields pane from the Available Fields pane, click **(>>)** . To remove all the fields to the Available Fields pane, click **(<<)** .

> **Note:** The user can change the root node name specified while designing the form.

Click Back to go to the previous screen. Click Next to go to next step.

The form screen displays the forms to be altered containing Field Name, Display Name, In View, In Edit/Add, Allow Add, Store Field as and Rules detail columns contain the data which are already selected while creating the form. You can alter the details for each of the field names.



You can change the display name of the field name by entering a name in the Display Name field.

You can choose a field to be displayed by selecting the In View option as Display or Do not Display.

You can specify the edit options for a user by specifying the edit parameters. Click the **In Edit/Add** field to open the drop-down list box. You can choose the edit parameters like Text Field, Text Area, Select List, Protected Field, Read Only, Do Not Show, Check Box and URL. Select the edit parameter that you want to apply to a field.

> **Note:** The AlternateDisplayField is displayed only if the selected table contains a foreign key or if the joined tables are selected.

To give the user permission to add to the field, select the Allow Add option against the field name.

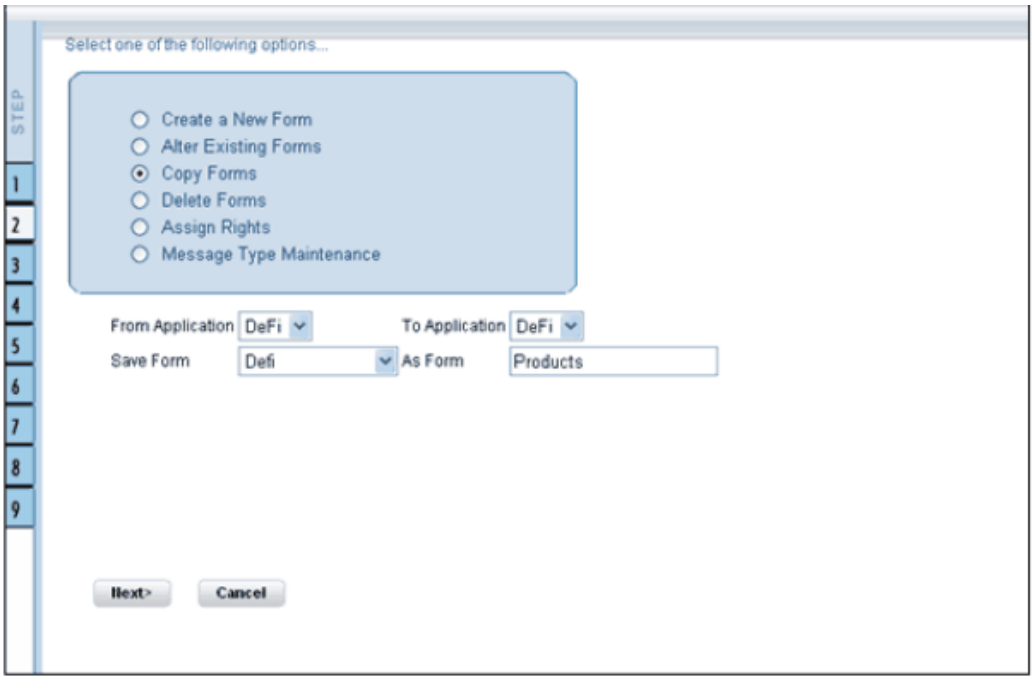
To specify the field storage format click the Store Field as field to open the drop-down list box. You can choose the store format as Normal, Encrypted, Auto Generated or Formula.

You can also apply rules to a field. Click Rules to open the screen.

Click Back to go to the previous screen. Click Save to save the field detail settings

Copying an Existing Form

To copy an existing form, select Copy from Existing Forms option.



Select the application from which you want to copy a form. Click the Application name field to open the drop-down list box. Select the name of the application. On choosing the application name, the forms belonging to the selected application will be displayed in the Form Name field. Click the Form Name field to open the drop-down list box and select the form that you want to copy.

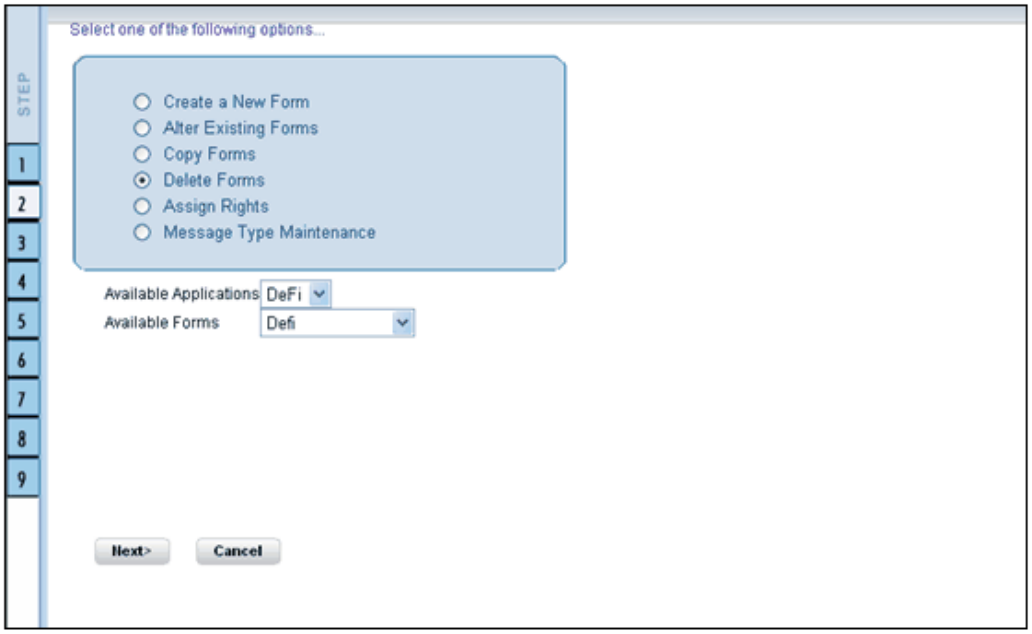
Select the application to which you wish to copy the new form. Click the Application name field to open the drop-down list box and select the application. Enter the name of the new form you are creating in the Save Form as field. This option allows creation of variants for a given form where you might want to change some user rights or some display options and other subtle variations on the form for a given layout and the underlying table.

Click Next to save the details of the newly created form. Click Cancel to discard the form selection that you have made and clear the name entered in the Save Form As field.

Deleting a Form

To delete an existing form, select **Delete Forms** option.

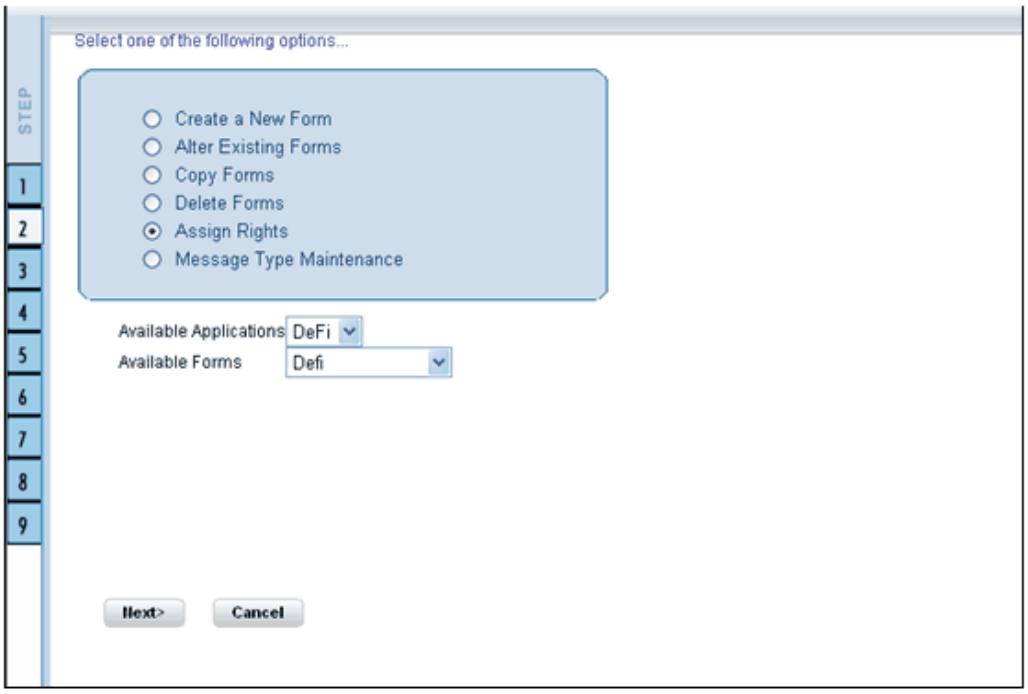
Select the application from which you want to delete a form. Click the Application name field to open the drop-down list box and select the name of the application. On choosing the application name, the forms belonging to the selected application will be displayed in the Form Name field. Click the Form Name field to open the drop-down list box and select the form that you want to delete.



Click **Next** to delete the form. A confirmation message is displayed which reads Do you want to delete the form Loss? Click Ok to confirm deletion. Click **Cancel** to cancel the delete request.

Assigning Rights to a Form

To assign rights to a form, select Assign Rights option.



Click the Application name field to open the drop-down list box. Select the application from which you wish to choose the form to which you want to assign rights. The chosen application will be displayed in the Application Name field. Click the Form Name field to open the drop-down list box. Select the form you want to assign rights to.

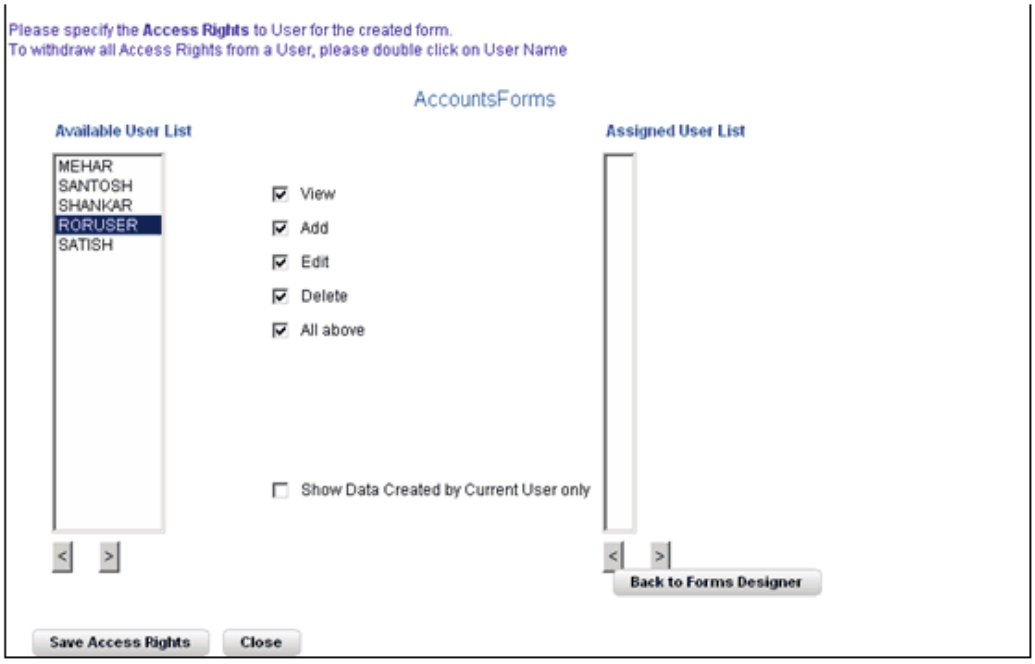
Example

Application name: ST

Form name: TreeForm

Click Next to go to step 3 or Click Cancel to discard the form selection that you have made.

The user list screen displays the list of available and assigned users. Click the < or > buttons to navigate through the list of users in case the number of users are more than what could be accommodated in one page.



Select the user to whom you want assign the rights to from the Available User List pane and select the rights you want to assign to the user. You can assign View, Add, Edit, Delete or All above options. The user name will move to the Assigned User List once it is saved.

The Authorize and Auto-Authorize options are applicable for all the forms that have been saved with the Authorize option.

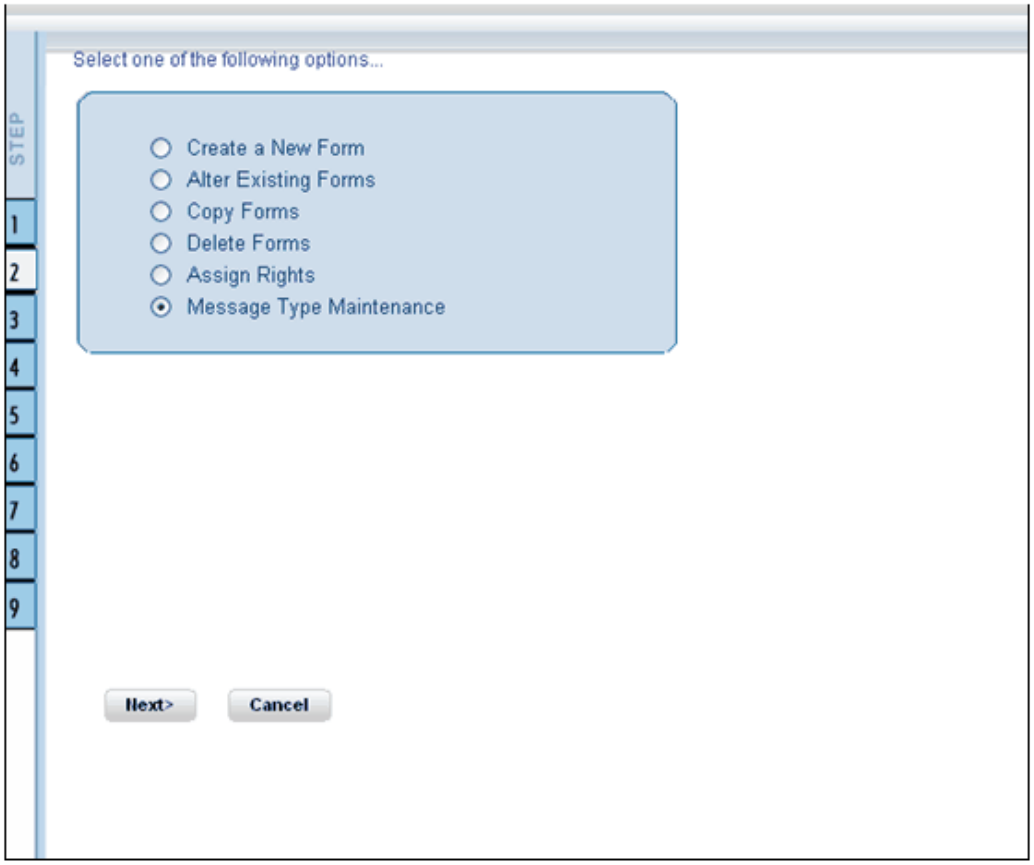
Click Save Access Rights to save the rights you have defined for the selected Users. Click Close to close the Assign Rights screen.

To go back to the forms designer, click the Back to Forms Designer button. When you have finished assigning users, click Finish to return to the splash screen.

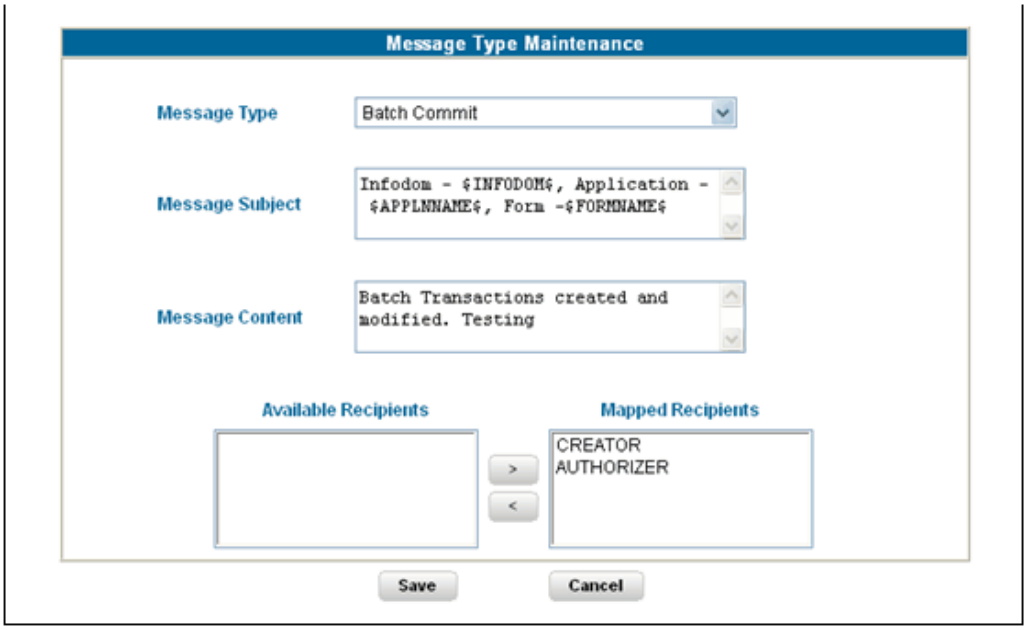
To open help for the Forms Designer screen click Help. To return to the DI splash screen, click Home.

Message Type Maintenance

For the maintenance of the Message Types, select the Message Type Maintenance option in the first screen of the Forms Designer Wizard.



Click Next to continue. The Message Type Maintenance screen is displayed.



Select the message category from the Message Type drop-down list. The message types are the same as those available in the Message Details screen as explained earlier.

Example
Canceled Request for Creation

The Message Subject field displays the subject line that will be displayed for the particular Message Type selected. You can make the required modifications in this field.

Example
Infodom - $INFODOM$, Application - $APPLNNAME$, Form -$FORMNAME$ - Cancel Request For Creation

The Message Content field displays the content of the message for the particular Message Type selected. You can make the required modifications in this field.

Example
Infodom - $INFODOM$, Application - $APPLNNAME$, Form -$FORMNAME$ - Cancel Request For Creation

Double-click the Recipient name in the Available Recipients pane. The selected recipient/s moves to the Mapped Recipients pane.

Example
Authorizer

> **Note:** If you select Authorizer, the message will be sent to all the selected authorizers for authorization.

Click Save to save the changes. On clicking Cancel, a message requesting you to confirm the cancellation without saving is displayed. Click OK to discard the changes.

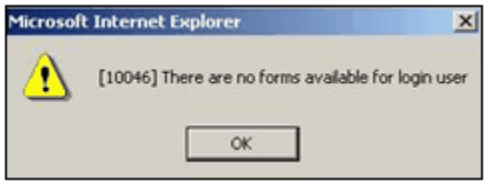
Entering Data

Click Data Entry to open the screen. In this screen you can view, edit, add, delete or authorize data. You can view, edit, add, delete or authorize based on the rights that are assigned to you during form creation.

You can query the record to get specific data using search option. You are also provided with the option to export the result set.

> **Note:** To open multiple Data Entry windows, specify the URL of the Data Entry window as the value in the URL box in the Design Oracle Menu screen. It enables the user to perform the search operation in more than one screen.

For more details on designing the Oracle Menu section, see *Oracle Financial Services Analytical Applications Infrastructure User Guide*.



If the logged-in-user is not mapped with the forms and applications it will display an alert saying "There are no forms available for the login user".

The Forms frame displays the list of existing forms. The forms that are displayed are dependent on the rights assigned to user.

> **Note:** The roll back option can be used only for authorized record to undo the modifications made to it.

Viewing Form Details

Forms are displayed in View format by default. The forms are displayed based on the application names in the left pane. Based on the rights that are assigned to the user, he can access View, Edit, Add, Delete options. Click a form to view the details. The form details will be displayed in the layout that it was defined.

Example

Application Name: CAT Test

Form Name: Auth

In case of grid layout, the number of rows displayed is based on the number of rows that you specify in the Display ---Rows field.

Example
Display 5 Rows

To view all the records in the table click Next to go to the next set of records. To return to the previous set of records, click Back.

It is recommended that you assign an easily viewable number of rows to be displayed. The user can view records as a Single Record, Editable View, Grid layouts, multi column or wrapped rows layout.

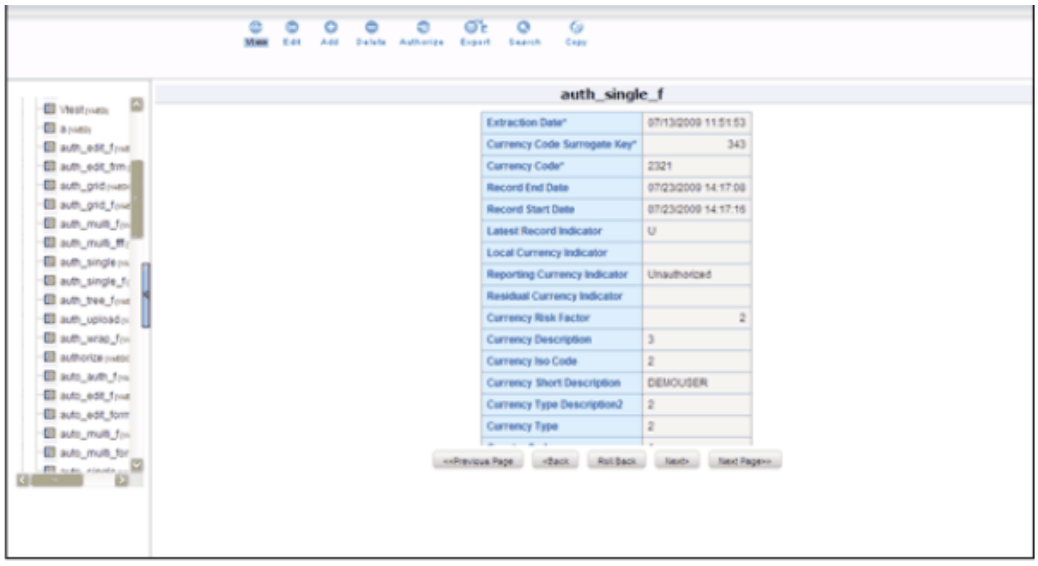
> **Note:** The roll back option can be used only for authorized record to undo the modifications made to it.

Single Record layout

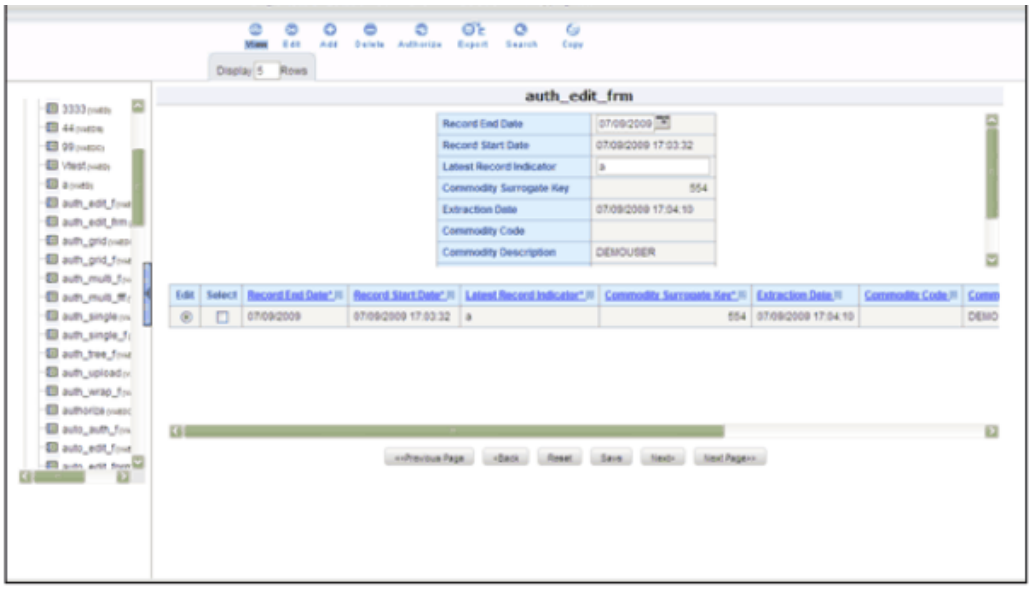
To view a single record at a time, click Single Record.

To view all the records in the table click Next to go to the next record. To return to the previous record, click Back.

> **Note:** The roll back option can be used only for authorized record to undo the modifications made to it.



To view a record in the editable view, click Editable View. In the editable view you can view and edit records, which can be selected from the grid of records.



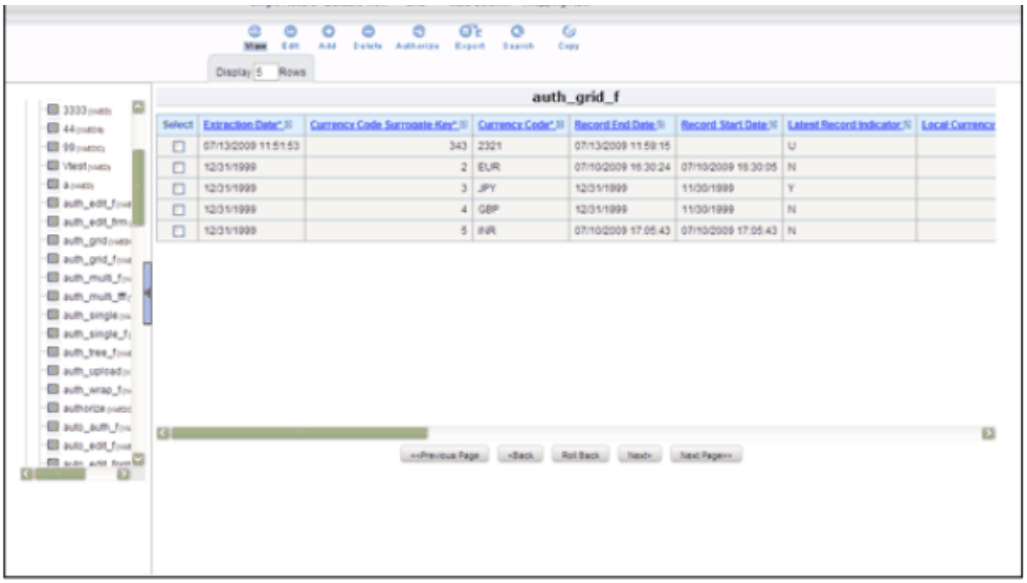
The editable view format displays a single record in the top frame, which can be edited. The grid layout is displayed in the frame below. To edit a record, select the Edit option against the record in the grid layout. The selected record will be displayed as a single record with editable fields. The main advantage is you can easily compare the changes you have made in the data with the data shown in grid format

The number of records to be displayed in the form can be specified in the Display Rows text box.

To save the changes that you have made to the field/s, click Save. Click Reset to return the record settings to its original field settings.

Grid Layout

To view a record in a grid layout, click Grid. This is the default layout that is displayed while viewing a form.



To sort a record based on a field, click the column title hyperlink.

Example

Click FIC_MIS_DATE column title hyperlink to sort fields alphabetically based on the MIS Date.

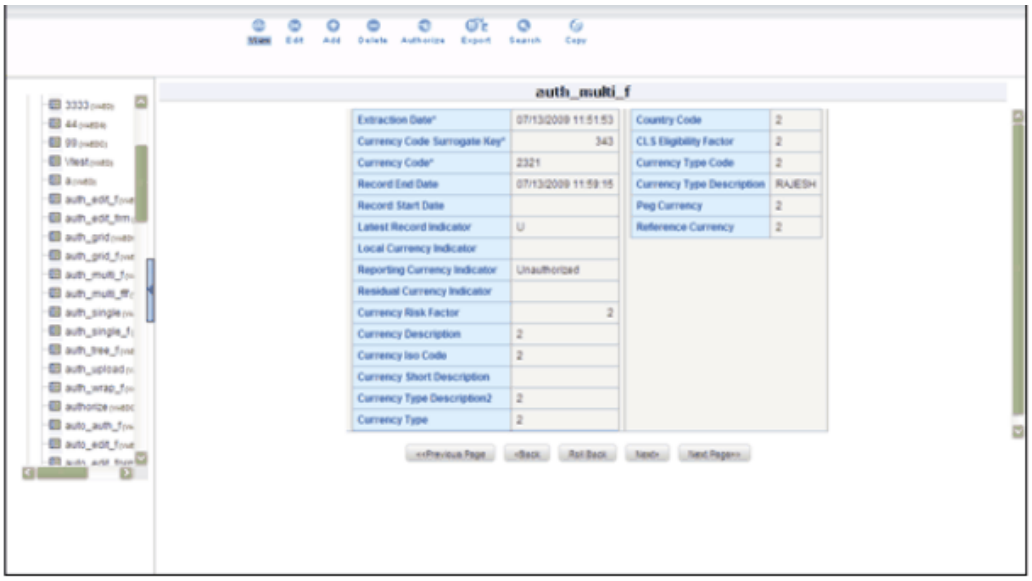
The number of records to be displayed in the form can be specified in the Display Rows text box.

To view all the records in the table click Next. To return to the previous set of records, click Back.

> **Note:** The roll back option can be used only for authorized record to undo the modifications made to it.

Multi Column Layout

To view all the columns of a selected record, click Multi Column. This layout enables you to view a record without having to scroll or with minimum scrolling to view all the columns.



To view all the records in the table, click Next. To return to the previous record, click Back.

Note: The roll back option can be used only for authorized record to undo the modifications made to it.

Wrapping Row Layout

To view all the rows of a selected record, click Wrapping Row. This layout enables you to view a wrapping row easily without having to scroll horizontally to view all the data.

Bucket Number	Start Date	End Date	Rate Value
Base Rate			4050.000000
1	08/01/2010	08/31/2010	4050.000000
2	09/01/2010	09/30/2010	4050.000000
3	10/01/2010	10/31/2010	4050.000000
4	11/01/2010	11/30/2010	4050.000000
5	12/01/2010	12/31/2010	4075.000000
6	01/01/2011	01/31/2011	4100.000000
7	02/01/2011	02/28/2011	4125.000000
8	03/01/2011	03/31/2011	4150.000000
9	04/01/2011	04/30/2011	4175.000000
10	05/01/2011	05/31/2011	4200.000000
11	06/01/2011	06/30/2011	4200.000000

To view all the records in the table click Next to go to the next record. To return to the previous record, click Back.

Note: The roll back option can be used only for authorized record to undo the modifications made to it.

Editing a Form

To edit a form, check the select option in the Select column and click **(edit)** button**.** The form fields are displayed with editable fields, which you can modify if required.

To save the changes that you have made to the field/s, click Save. Click Reset to return the record/table settings to its original field settings.

The records also can be edited in the layouts mentioned earlier (in View mode). All the fields will be displayed in the editable grid, but the primary key fields cannot be edited so will be displayed in un-editable format.

Click Next to edit the next set of records. To return to the previous records, click Back.

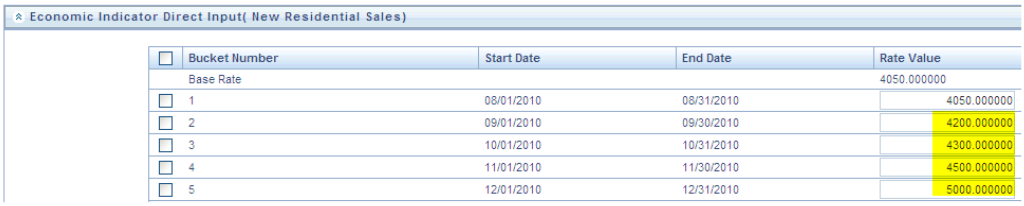
Roll Back

The Roll Back option can be used only for authorized records. After the records are edited and saved, the roll back operation can be performed in view mode by selecting the particular record to undo the modifications made to it.

- Once the record is edited using Edit option, its modified flag is set and the record with its modified flag set alone can be rolled back.
- If the record is not an authorized record it will display a alert saying roll back functionality is available only for records which has its authorization flag set to "Modified".

Adding Rows to a Form

To add data to the selected table in a form, specify the number of rows to be added in Rows field in the options frame and click **(add)** button.



Enter data in these new fields and save them by clicking Save. Click Reset to return the table settings to its original field settings.

Note: If the user want to see the display with the thousands separator for any numeric columns, the input should be given in the same manner.

Deleting a Record in a Form

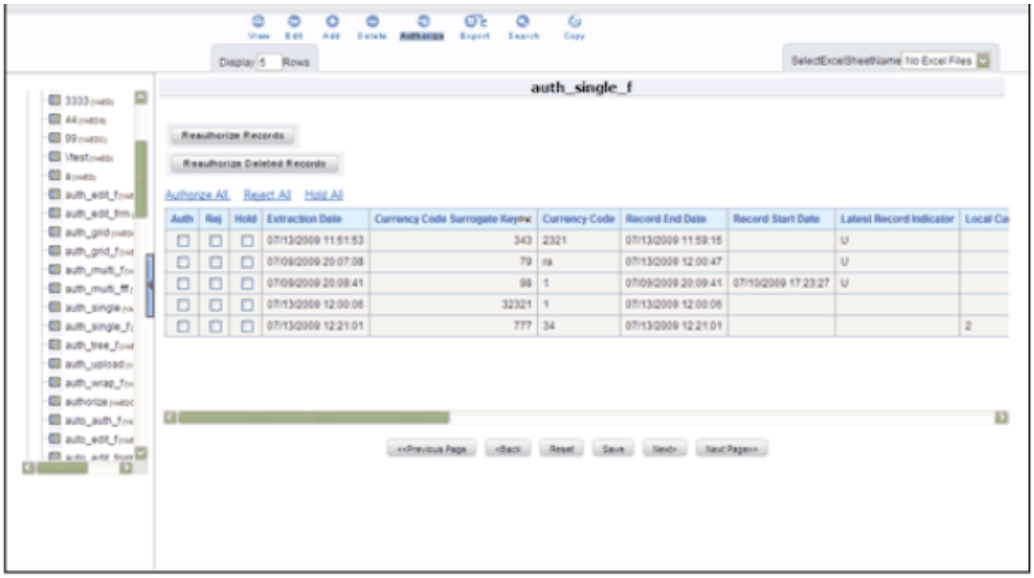
To delete a record, check the select option in the Select column against the record you wish to delete and click delete.

A warning message will be displayed prompting you to confirm deletion. Click Ok to delete the record or Cancel to discard deletion.

Authorizing Data

The Data Entry module allows you to authorize data entered during form creation provided the table contains a primary key field.

To authorize data, select the form and click Authorize. The records that are required to be authorized will be displayed with Auth, Rej, au_fname, au_idPK (Primary Key identifier), au_lname, AuthFlag (representing the status of the record), contract, MakerDate, MakerID and phone details. If there are no records to authorize, the screen will display the message No records to be authorized.



Note: The primary key fields in the record are displayed in red as PK.

You can authorize only those records that are created by another user if you have authorization rights. If you do have authorization rights, the record created by another user, the AuthFlag will display U, which suggests that it is an unauthorized record requiring authorization.

If the record is already authorized, the AuthFlag will display A. If any record is rejected, if the form is authorized, then the AuthFlag will be displayed as R. If the Authorized user put the records on Hold, then the AuthFlag will be displayed as UH. After

Authorizing, the Auth Flag will be set to A.

Any changes (modification / deletion) made to the records after authorization will be marked for authorization and can only be authorized by the users who have the privilege.The new records created before authorization can be edited or deleted by any user who has the privilege to do the same.

To authorize a record, select the Auth option against the record you wish to authorize and click Save. To reject/delete a record, select the check box in the Reject column against the record and click Save. A warning message is displayed. The records selected for deletion will be deleted from the table. Proceed? Click OK to confirm deletion or click Cancel to delete the request.

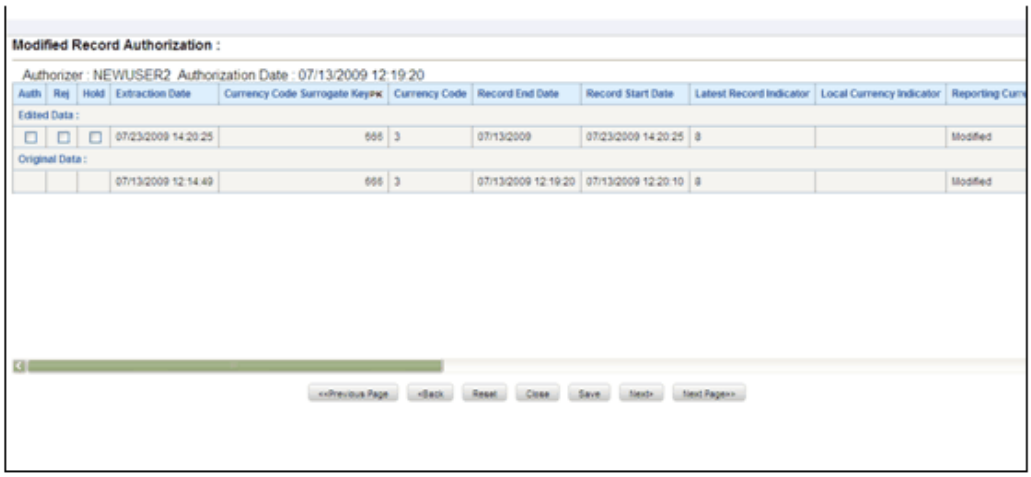
> **Note:** You can authorize forms only if the authorize rights have been assigned to you.

To authorize the next set of records, click Next. To authorize all the records in the form, select the Authorize all option and click Save.

To reject all records, select the Reject all and click Save. If the authorizer is not sure whether to authorize the records the Hold all option can be used, which can be authorized or rejected at the later point.

Re-authorizing Records

The Records to be reauthorized link will be displayed only if some other user has modified the authorized records. An authorized record that has been modified will display the AuthFlag M, which suggests that the record have been modified. To reauthorize modified records, click the Records to be re-authorized link to open a new screen.



The record that needs re-authorization is displayed with new details. The original authorized record is also displayed. To re-authorize/reject/put-on-Hold the records select the Auth, Rej or On-Hold option against it and click Save.

Click Next to authorize the next set of records,. To close the screen, click Close. Reset Button will reset the check-boxes to null.

A mail will be sent to the creator that records are authorized/rejected/put-on-hold.

5

OFSAA Attributes

Overview

This module describes the creation and maintenance of OFSAA Attributes.

- Attribute Summary & Detail Screens
- Navigation within the Attribute Summary Screen
- Navigation within the Attribute Detail Screen

See *Overview of OFSAA Infrastructure* for details on how Attributes are used in OFS Analytical Applications. See *Oracle Financial Services Analytical Applications Infrastructure (OFSAAI) Installation and Configuration Guide* for details on bulk loading dimension attributes

Summary & Detail Screens

Upon initially navigating to Master Maintenance > Dimension Management > Attributes, a summary screen is displayed showing all of the defined Attributes for one dimension (your first dimension alphabetically that supports attributes). By selecting a dimension and by using search criteria, you can control the set of Attributes that are displayed. When you Add, Edit, Copy, or View an Attribute, a detail screen is displayed.

Navigation within the Summary Screen

When you first navigate to the Attributes summary screen, the Attributes associated with your first dimension are presented in a summary grid. The Attributes summary screen has three containers:

- Dimension

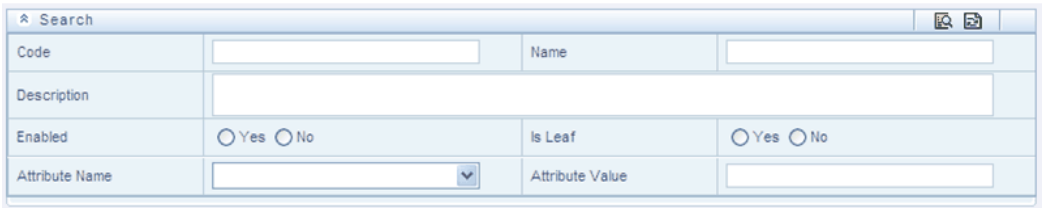
- Search
- Dimension Attributes

Dimension Container

Attributes are properties of dimensions. To add or maintain an attribute, you must first select the dimension to which an attribute belongs. The Dimension drop down list box in the Dimension container displays all of your Key Processing dimensions (both seeded and user-defined) and any Standard Dimensions that are configured to support attributes.

Search Container

Among other properties, each attribute possesses a Code value, a Name, and a Data Type. You may search on any of these properties in the Search container.



Search Control

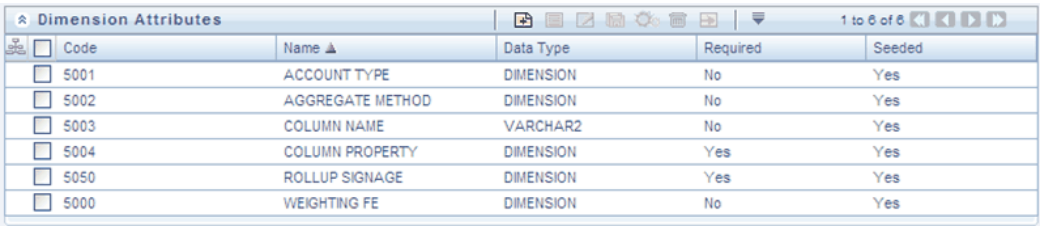
Enter your desired search criteria and click the Search control.

Reset Control

Clicking the Reset control clears any search criteria you may be using and refreshes the screen.

Dimension Attributes Container

The Dimension Attributes container presents a grid containing all of the Attributes that meet your search criteria. The Dimension Attributes summary grid offers several controls that allow you to perform different functions when an Attribute is selected.



To select an Attribute, click a check box in the first column of the grid. More than one Attribute can be selected at a time but this will cause some of the controls to become disabled. Clicking a check box a second time de-selects an Attribute.

You may select or deselect all of the Attributes in the summary grid by clicking the check box in the upper left hand corner of the summary grid directly to the left of the Code column header.

Add

Clicking the Add control begins the process of building a new Attribute. The Add control is disabled if any rows in the grid have been selected.

View

Selecting a single row out of the grid enables the View control. Clicking the View control allows you to view the detailed definition of an Attribute on a read-only basis. The View control is only enabled when a single Attribute has been selected.

Edit

Selecting a single row out of the grid enables the Edit control. Clicking the Edit control allows you to modify an existing Attribute. The Edit control is only enabled when a single Attribute has been selected.

Copy

Selecting a single row out of the grid enables the Copy control. Clicking the Copy control allows you to create a copy of an existing Attribute. The Copy control is only enabled when a single Attribute has been selected.

Check Dependencies

Select an attribute and then click the Check Dependencies control to generate a report on all dimension members that utilize your selected attribute. For example, if you have created an attribute named Color and have assigned values of Red, White, and Blue to dimension members #1, #2, and #3, Checking Dependencies for the Color attribute will result in a report indicating that dimension members #1, #2, and #3 utilize the Color attribute.

The Check Dependencies control is only enabled when a single attribute has been

selected.

Delete

Selecting one or more rows out of the grid enables the Delete control. Clicking the Delete control deletes the Attribute(s) you have selected. OFSAAI will not allow you to delete Attributes which have any dependencies (see Check Dependencies above).

Dimension Attributes Summary Grid

The following columns categorize each Attribute in the summary grid:

- Code
- Name
- Data Type
- Required
- Seeded

Code

Displays the Attribute's Code value.

Name

Displays the Attribute's short name. Performing a "mouse-over" on an Attribute Name displays the Attribute's description

Data Type

Displays the Attribute's data type (String, Number, Date, or Dimension).

Required

Attributes are either "Required" (Yes) or optional (No).

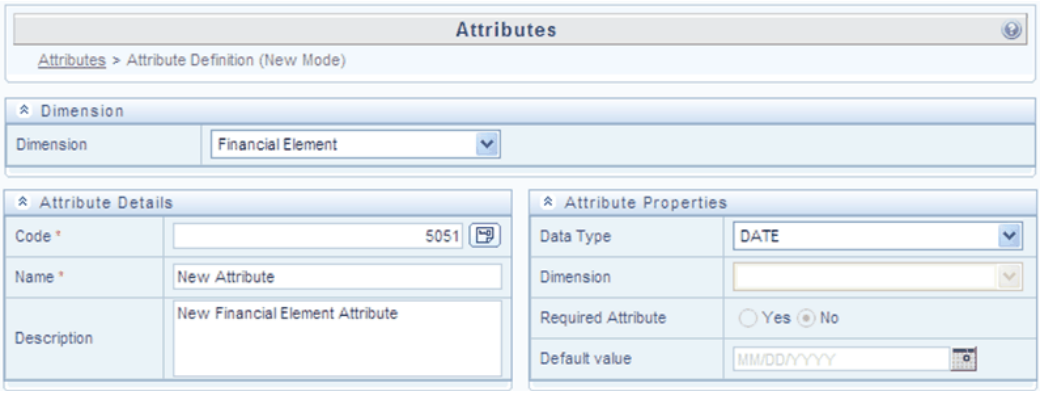
When creating a new dimension member, you must provide an attribute value for any attribute that is "Required". Only certain seeded attributes are "Required". You may not create "Required" user-defined attributes.

Seeded

Displays whether or not an Attribute is seeded. You may not edit or delete seeded attributes.

Navigation within the Detail Screen

When you Add, Edit, Copy, or View an Attribute, the Attributes Detail screen is displayed.

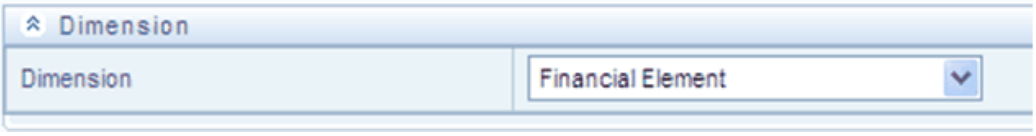


Attribute Functionality

See Overview of OFSAA Infrastructure for details on how Attributes are used in OFS Analytical Applications.

Dimension Container

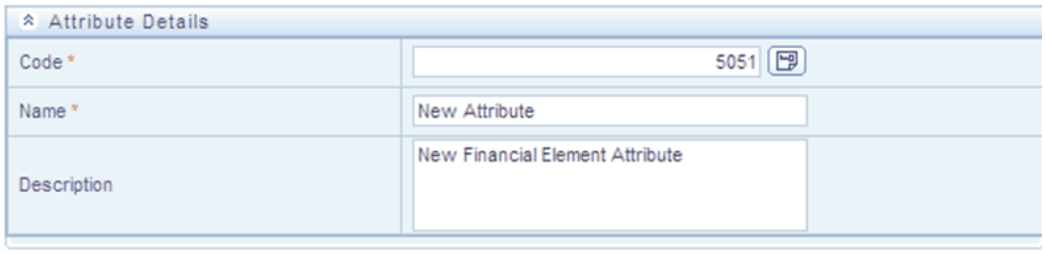
Displays the name of the dimension to which an Attribute belongs. When Editing or Copying an existing Attribute, this is a read-only value. When Adding a new Attribute, you must select the dimension to which you want your new attribute to be assigned.



Attribute Details Container

Code

When Adding a new Attribute, you must select a Code value to which you want your new attribute to be assigned. Code values for each attribute belonging to a dimension must be unique, but you are otherwise free to pick any numeric value you wish. You may also click the Generate Code shortcut key to automatically generate a new Code value.



You must supply a Code value before you can save a new Attribute definition and you may not change a Code value once an Attribute definition has been saved.

> **Note:** When Editing an existing Attribute, Code is a read-only value; and when Copying an existing Attribute, you must supply a new Code value

Name

Used to name or re-name your Attribute. You must supply a Name (or a new name if you wish to re-name your Attribute) before you can save an Attribute definition.

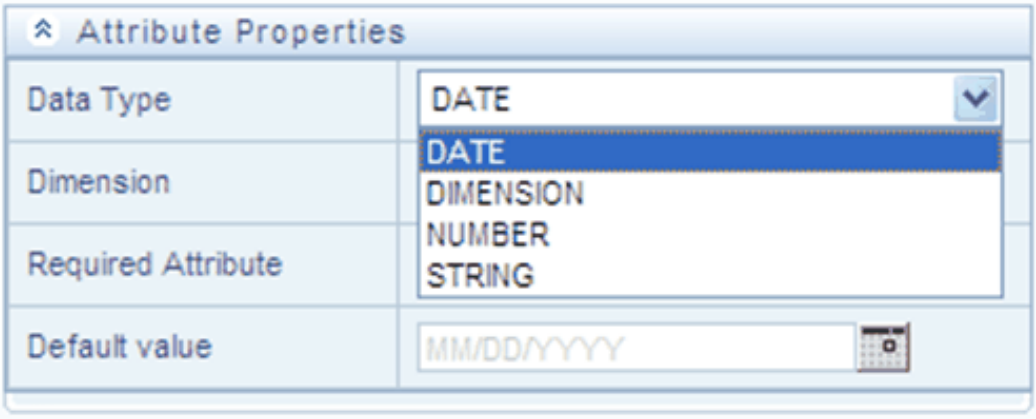
Description

Used to store a longer description of your Attribute.

Attribute Properties Container

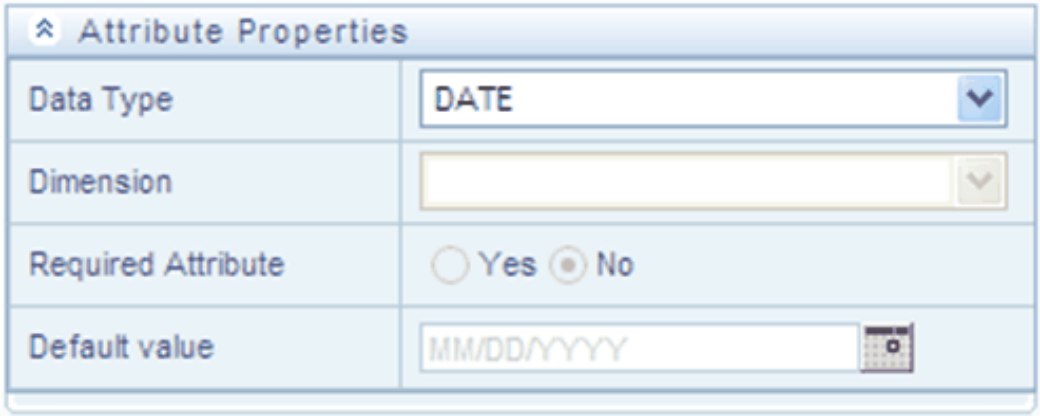
Data Type

Select a Data Type for your Attribute. For Attributes that have already been saved, you may not modify Data Type.



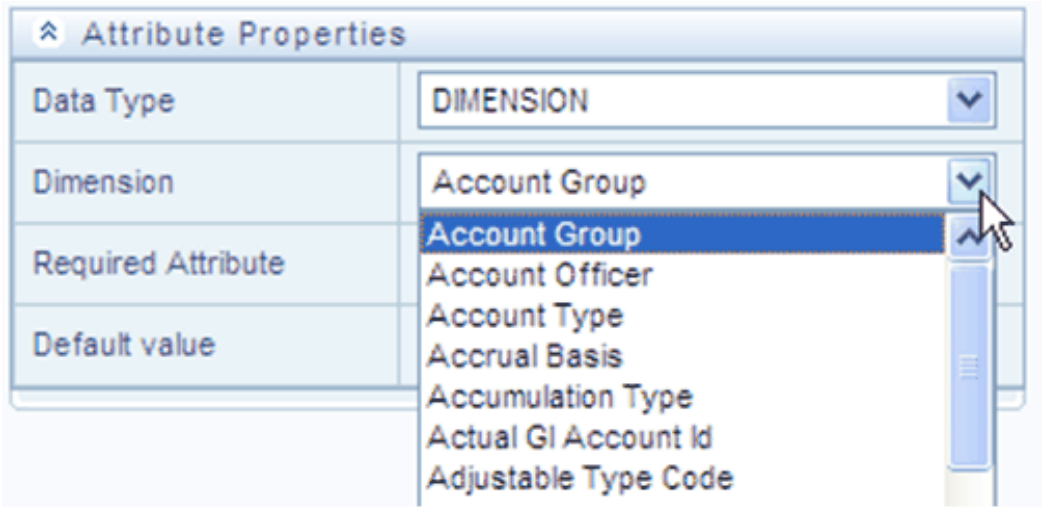
Date, Number, & String Data Types

If you have selected the Date, Number, or String Data Type, the Dimension drop down list box is disabled.



Dimension Data Type

If you have selected the Dimension Data Type, the Dimension drop down list box is enabled. You may select any dimension to serve as a Dimension Attribute.



Required Attribute

Various OFSAA engines utilize attributes within their processing. For example, both OFSAA Transfer Pricing and OFSAA Profitability Management utilize the Account Type attribute in order to understand whether a balance is a debit balance or a credit balance, on balance sheet or off balance sheet.

You may not create user-defined Required attributes.

Default Value

Use to set a default value for your attribute. When you create a new dimension member, each attribute that has a Default Value is set to its default value for your convenience.

6

OFSAA Dimension Members

Summary & Detail Screens

Upon initially navigating to Master Maintenance > Dimension Management > Members, a summary screen is displayed showing all of the defined Dimension Members for one dimension (your first dimension alphabetically). By selecting a dimension and by using search criteria, you can control the set of Dimension Members that are displayed. When you Add, Edit, Copy, or View a Dimension Member, a detail screen is displayed.

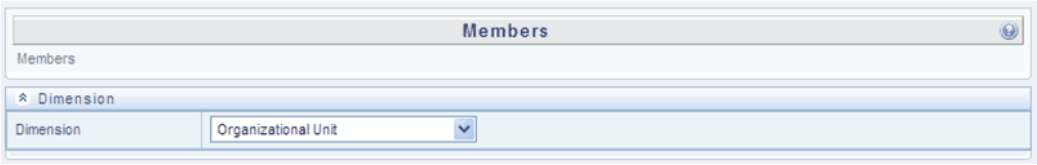
Navigation within the Summary Screen

When you first navigate to the Dimension Members summary screen, the Dimension Members associated with your first dimension are presented in a summary grid. The Dimension Members summary screen has three containers:

- Dimension
- Search
- Dimension Members

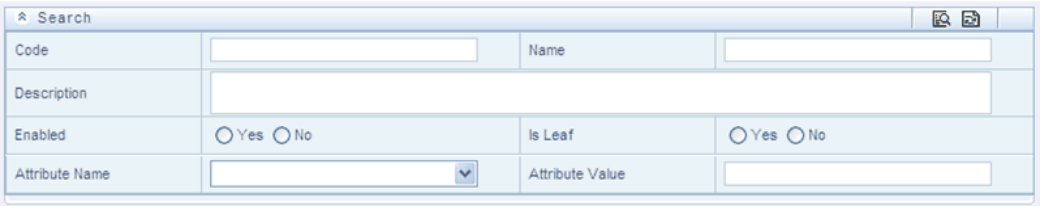
Dimension Container

To add or maintain a Dimension Member, you must first select the dimension to which a Dimension Member belongs. The Dimension drop down list box in the Dimension container displays all of your dimensions that are configured to be viewable (not every dimension is viewable through the application user interface; for details on which dimensions are viewable, see the *Oracle Financial Services Analytical Applications Infrastructure (OFSAAI) Installation and Configuration Guide*.



Search Container

Each Dimension Member possesses a Code value, a Name, and a Description. Dimension Members also have the properties of being enabled or disabled and of being a leaf member (last-descendent-child value) or a rollup member (representing a rollup point in a hierarchy). Finally, each Dimension Member value is assigned an attribute value for each its attributes. You may search on any of these properties in the Search container.



Search Control

Enter your desired search criteria and click the Search control.

Reset Control

Clicking the Reset control clears any search criteria you may be using and refreshes the screen.

Dimension Members Container

Dimensions are comprised of finite lists of Dimension Members. The Dimension Members container presents a grid containing all of the Dimension Members that meet your search criteria. The Dimension Members summary grid offers several controls that allow you to perform different functions when a Dimension Member is selected.

To select a Dimension Member, click a check box in the first column of the grid. More than one Dimension Member can be selected at a time but this will cause some of the controls to become disabled. Clicking a check box a second time deselects a Dimension Member.

You may select or deselect all of the Dimension Members in the summary grid by clicking the check box in the upper left hand corner of the summary grid directly to the left of the Code column header.

Add

Clicking the Add control begins the process of building a new Dimension Member. The Add control is disabled if any rows in the grid have been selected.

View

Selecting a single row out of the grid enables the View control. Clicking the View control allows you to view the detailed definition of a Dimension Member on a read-only basis. The View control is only enabled when a single Dimension Member has been selected.

Edit

Selecting a single row out of the grid enables the Edit control. Clicking the Edit control allows you to modify an existing Dimension Member. The Edit control is only enabled when a single Dimension Member has been selected.

Copy

Selecting a single row out of the grid enables the Copy control. Clicking the Copy control allows you to create a copy of an existing Dimension Member. The Copy control is only enabled when a single Dimension Member has been selected.

Check Dependencies

To generate a report on the hierarchies that utilize a selected Dimension Member, select a single Dimension Member and click the Check Dependencies control. The Check Dependencies control is only enabled when a single Dimension Member has been selected.

Delete

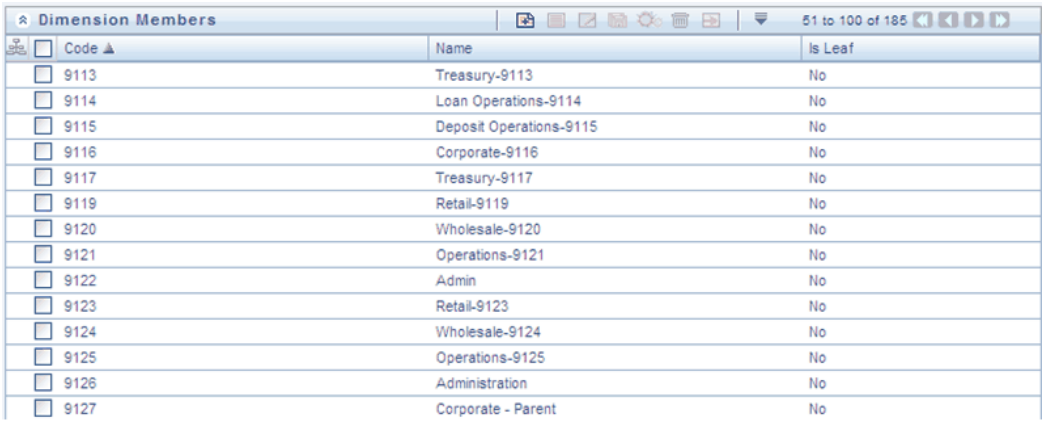
Selecting one or more rows out of the grid enables the Delete control. Clicking the Delete control deletes the Dimension Member(s) you have selected.

> **Note:** OFSAA Infrastructure will not allow you to delete any Dimension Member that is utilized within a hierarchy (see Check Dependencies above).

Dimension Members Summary Grid

The following columns categorize each Dimension Member in the summary grid:

- Code
- Name
- Is Leaf



Code

Displays the Dimension Member's Code value.

Name

Displays the Dimension Member's short name. Performing a "mouse-over" on a Dimension Member Name displays the Dimension Member's description.

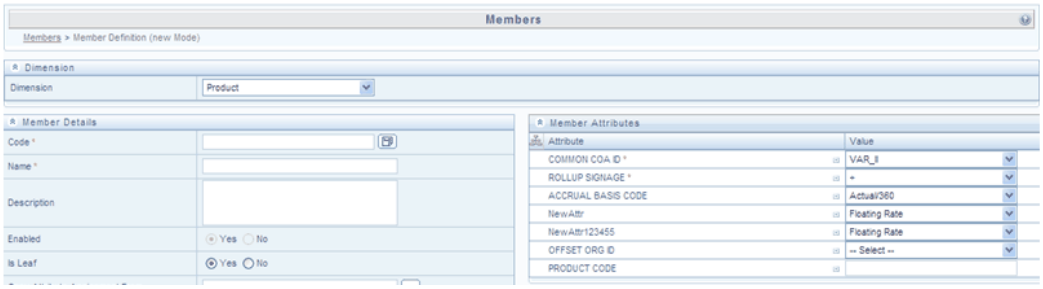
Is Leaf

Displays the Dimension Member's "Is Leaf?" property. Members may be declared to be either "leaf members" or "rollup members". When building a hierarchy in OFSAAI, "leaf members" are those dimension members that have no descendent dimension members. In building a dimension member set, you must have at least some rollup members (Is Leaf = No) before you can construct a multilevel hierarchy.

Your business data is normally expressed at the leaf level. An individual mortgage instrument record, for example, would belong to a (leaf level) cost center for a (leaf level) principal balance General Ledger Account and would carry a (leaf level) designation of Product.

Navigation within the Detail Screen

When you Add, Edit, Copy, or View a Dimension Member, the Dimension Members Detail screen is displayed.

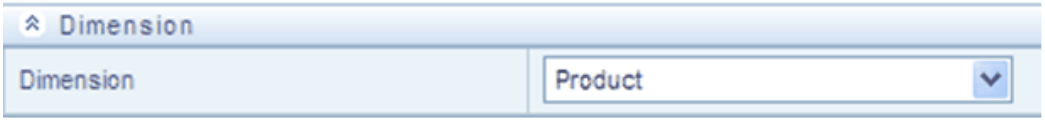


Dimension Member Functionality

See Overview of OFSAA Infrastructure for details on how Dimension Members are used in OFS Analytical Applications.

Dimension Container

Displays the name of the dimension to which a Dimension Member belongs. When Editing or Copying an existing Dimension Member, this is a read-only value. When Adding a new Dimension Member, you must select the dimension to which you want your new Dimension Member to be assigned.



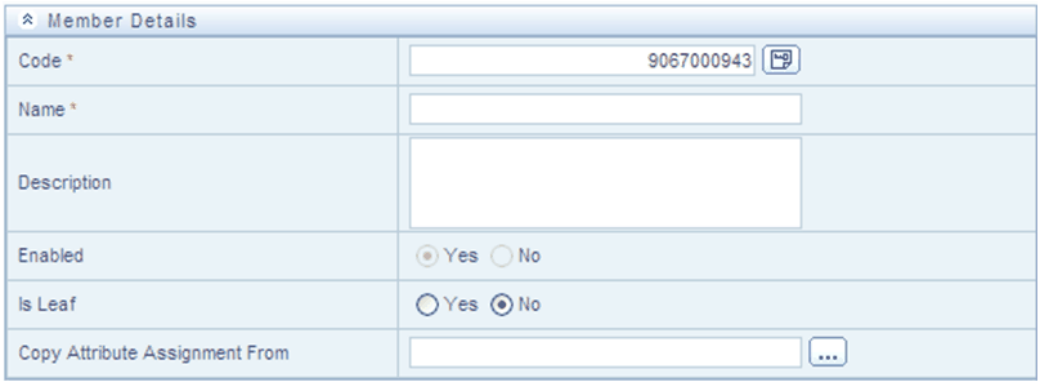
Dimension Member Details Container

Code

When Adding a new Dimension Member, you must select a Code value to which you want your new Dimension Member to be assigned. Code values for each Dimension Member belonging to a dimension must be unique, but you are otherwise free to pick any numeric value you wish. You may also click the Generate Code shortcut key to automatically generate a new Code value.

You must supply a Code value before you can save a new Dimension Member definition and you may not change a Code value once a Dimension Member definition has been saved.

- When Editing an existing Dimension Member, Code is a read-only value
- When Copying an existing Dimension Member, you must supply a new Code value



Name

Used to name or re-name your Dimension Member. You must supply a Name (or a new name if you wish to re-name your Dimension Member) before you can save a Dimension Member definition.

Description

Used to store a description of your Dimension Member.

Enabled

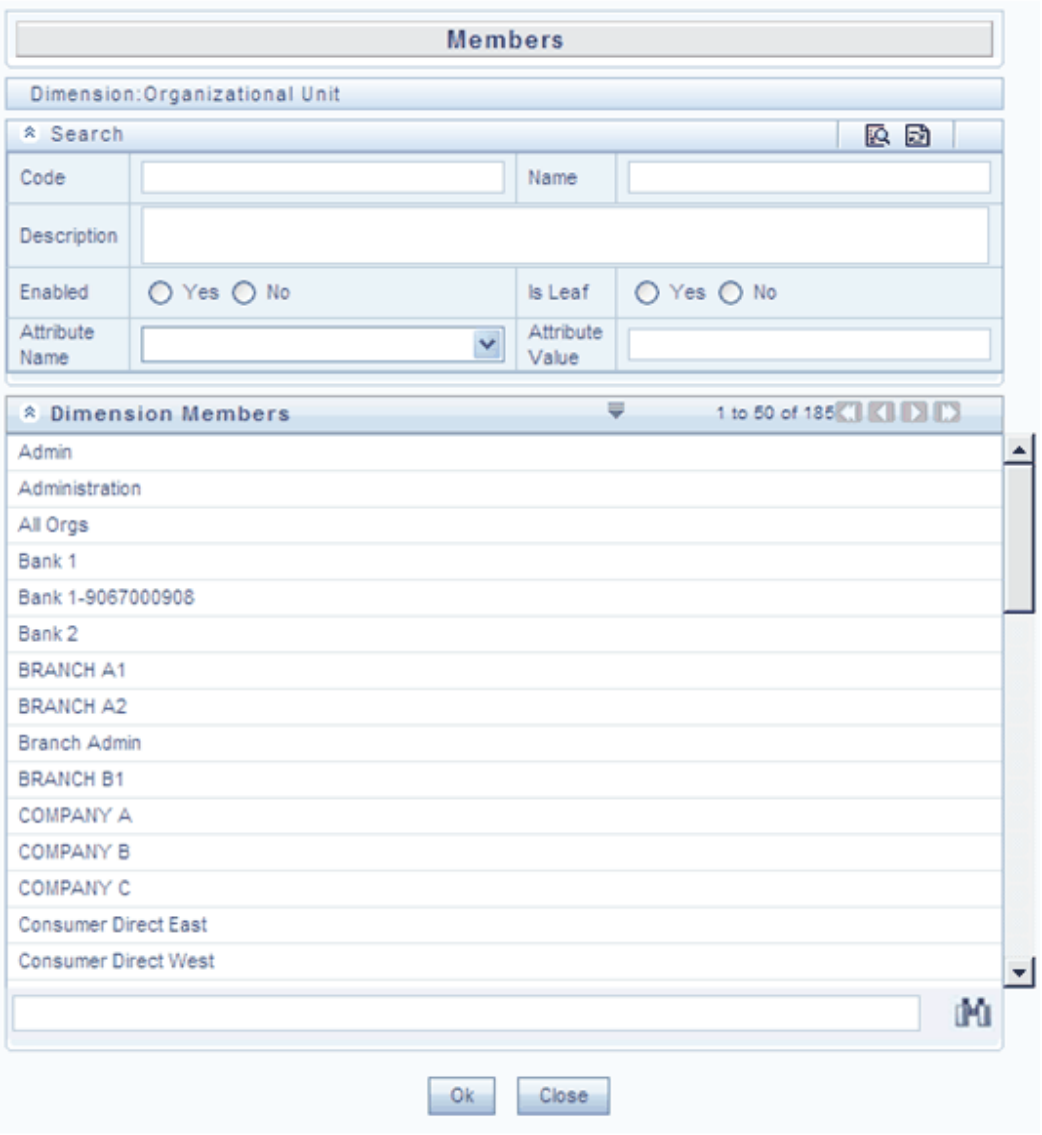
Not used in the current release.

Is Leaf

Member may be declared to be either "leaf members" or "rollup members". When building a hierarchy in OFSAAI, "leaf members" are those dimension members that have no descendent dimension members. In building a dimension member set, you must have at least some rollup members (Is Leaf = No) before you can construct a multilevel hierarchy.

Copy Attribute Assignment From

Instead of manually completing all the attribute value assignments for a new Dimension Member, you may copy attribute assignments from a pre-existing Dimension Member. To do so, click the ellipses adjacent to Copy Attribute Assignment From field to open the Member Browser window. You may select a member directly or you may search for the member whose attributes you wish to copy. Once you have selected a member and clicked OK, the attribute values of the member you selected are copied into the definition of your new Dimension Member.



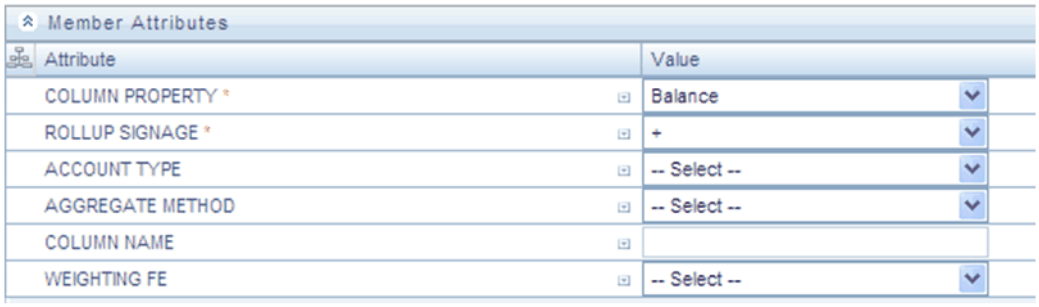
Dimension Member Attributes Container

If you have not copied attribute values from a pre-existing dimension member using the Copy Attribute Assignment From feature described above, assign them in the Member Attributes container.

- Dimension Member Attributes have defined data types including String, Number, Date, and Dimension. If an attribute is a Date data type, use the calendar control to select a date. If an attribute is a Number or String data type, enter your free-form value directly. If an attribute is a Dimension data type, select your value from the

drop down list box.

- Attributes marked with an asterisk indicate required attributes.



Default Values

If a Member Attribute is defined as having a default value, the default value will be displayed when you create a new Dimension Member.

7

OFSAA Hierarchies

Overview of OFSAA Hierarchies

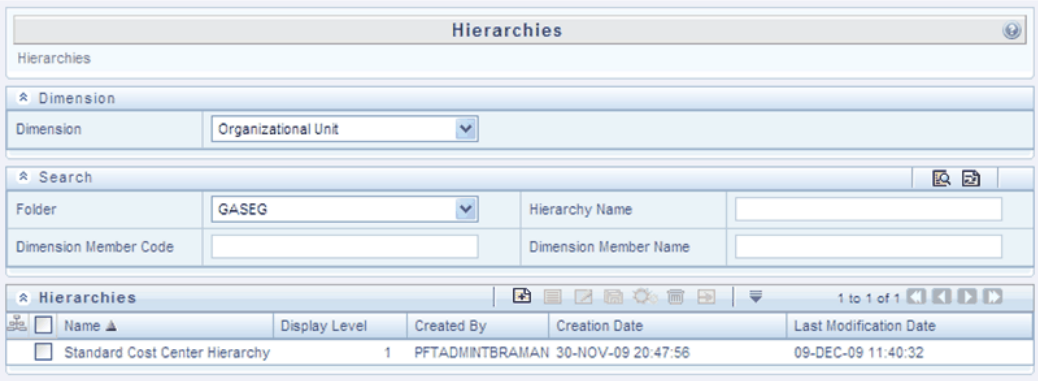
This module describes the creation and maintenance of OFSAA Hierarchies.

- Hierarchy Summary & Detail Screens
- Navigation within the Hierarchy Summary Screen
- Navigation within the Hierarchy Detail Screen

See *Overview of OFSAA Infrastructure* for details on how Hierarchies are used in OFS Analytical Applications. See the *Oracle Financial Services Analytical Applications Infrastructure (OFSAAI) Installation and Configuration Guide* for details on bulk loading hierarchies.

Summary & Detail Screens

Upon initially navigating to Master Maintenance > Dimension Management > Hierarchies, a summary screen is displayed showing all of the defined Hierarchies for one dimension (your first dimension alphabetically that supports hierarchies). By selecting a dimension and by using search criteria, you can control the set of Hierarchies that are displayed. When you Add, Edit, Copy, or View a Hierarchy, a detail screen is displayed.



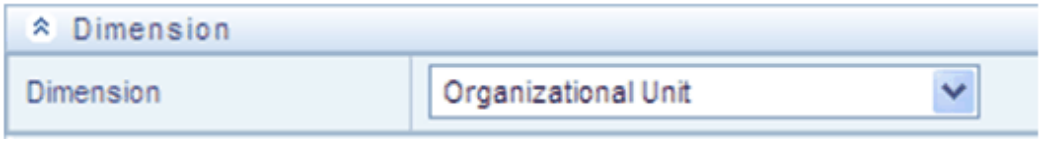
Navigation within the Summary Screen

When you first navigate to the Hierarchies summary screen, the Hierarchies that are stored within your current default folder and that are associated with your first dimension are presented in a summary grid. The Hierarchies Summary screen has three containers:

- Dimension
- Search
- Hierarchies

Dimension Container

Select the Dimension of the hierarchies you wish to View. When you change your dimension selection in the summary screen, the screen refreshes and displays the Hierarchies that are stored within your current default folder.

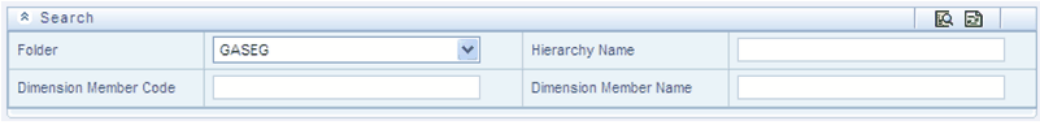


Note: The dimensions drop down list will only display dimensions that are configured to support hierarchies.

Search Container

Your default Folder functions as a search constraint. The value of your default Folder is set in Application Preferences. You may select a different Folder or you may remove the Folder constraint entirely by selecting the "blank" Folder, i.e., no Folder. You may also

search by Hierarchy Name, Dimension Member Code, and/or Dimension Member Name.



Search Control

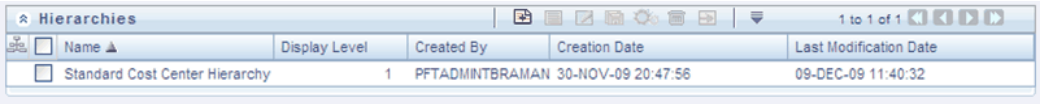
Searches for Hierarchy Name, Dimension Member Code, and Dimension Member Name are wildcard searches, i.e., searching for Hierarchy Names like "standard" will find any hierarchies that include "standard" within their names. When searching by Dimension Member Code or by Dimension Member Name, the application will find any or all hierarchies that utilize that dimension member but only if the member is not found in the hierarchy's "orphan" branch (see discussion of Orphan branches below). Enter your desired search criteria and click the Search control.

Reset Control

Clicking the Reset control clears any search criteria you may be using, resets Folder to your default Folder, and refreshes the screen.

Hierarchies Container

The Hierarchies container presents a grid containing all of the Hierarchies that meet your search criteria. The Hierarchies summary grid offers several controls that allow you to perform different functions when a Hierarchy is selected.



To select a Hierarchy, click a check box in the first column of the grid. More than one Hierarchy can be selected at a time but this will cause some of the controls to become disabled. Clicking a check box a second time deselects a Hierarchy.

You may select or deselect all of the Hierarchies in the summary grid by clicking the check box in the upper left hand corner of the summary grid directly to the left of the Name column header.

Add

Clicking the Add control begins the process of building a new Hierarchy. The Add control is disabled if any rows in the grid have been selected.

View

Selecting a single row out of the grid enables the View control. Clicking the View control allows you to view the detailed definition of a Hierarchy on a read-only basis. The View control is only enabled when a single Hierarchy has been selected.

Edit

Selecting a single row out of the grid enables the Edit control. Clicking the Edit control allows you to modify an existing Hierarchy. The Edit control is only enabled when a single Hierarchy has been selected.

Copy

Selecting a single row out of the grid enables the Copy control. Clicking the Copy control allows you to create a copy of an existing Hierarchy. The Copy control is only enabled when a single Hierarchy has been selected.

Check Dependencies

To generate a report on the OFSAA rules that utilize a selected Hierarchy, select a single Hierarchy and click the Check Dependencies control. The Check Dependencies control is only enabled when a single Hierarchy has been selected.

Delete

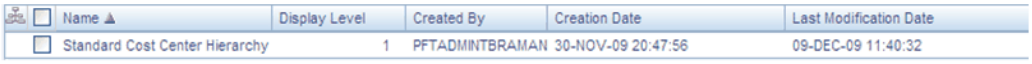
Selecting one or more rows out of the grid enables the Delete control. Clicking the Delete control deletes the Hierarchy or Hierarchies you have selected.

> **Note:** OFSAA Infrastructure will not allow you to delete any Hierarchy that is utilized by another OFSAA rule (e.g., a Transfer Pricing Processing rule, an Allocation rule, etc). See Check Dependencies above.

Hierarchies Summary Grid

The following columns categorize each Dimension Member in the summary grid:

- Name
- Display Level
- Created By
- Creation Date
- Last Modification Date



Name	Display Level	Created By	Creation Date	Last Modification Date
Standard Cost Center Hierarchy	1	PFTADMINTBRAMAN	30-NOV-09 20:47:56	09-DEC-09 11:40:32

Name

Displays the Hierarchy's Name. Performing a "mouse-over" on a Hierarchy's Name displays the Hierarchy's Description.

Display Level

Display Level is the default level at which a hierarchy is displayed by the application when you open it.

Created By

Created By displays the name of the user who created a Hierarchy. If a Hierarchy is saved as Read Only, only the user who created the rule, i.e., the owner, may modify the rule.

Creation Date

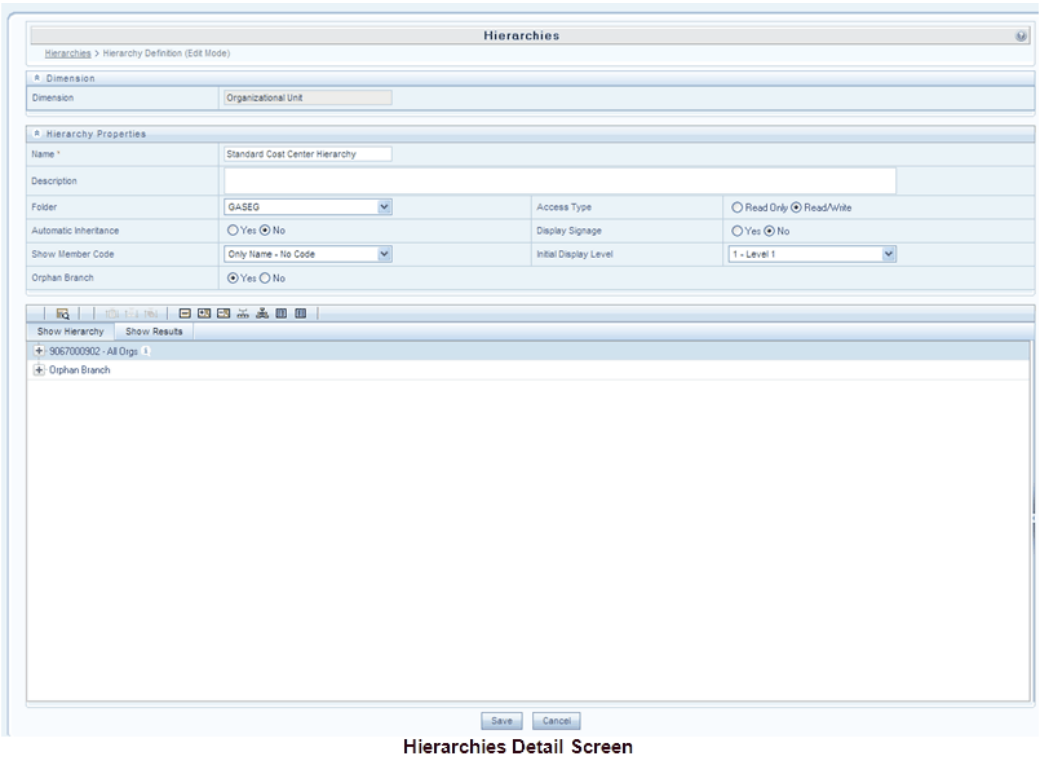
Displays the date and time at which a Hierarchy was created.

Last Modification Date

Displays the date and time at which a Hierarchy was last modified.

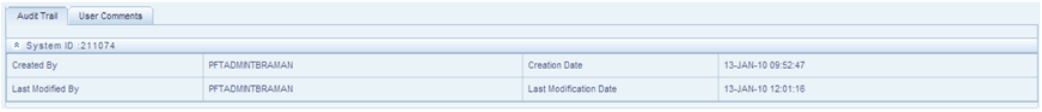
Navigation within the Detail Screen

When you Add, Edit, Copy, or View a Hierarchy, the Hierarchies Detail screen is displayed.



Hierarchies Detail Screen

The Audit Trail container is a standard footer container for every OFSAA rule type. It displays Created By, Creation Date, Last Modified By, and Modification Date on the Audit Trail tab. The User Comments tab may be used to add comments to any rule.

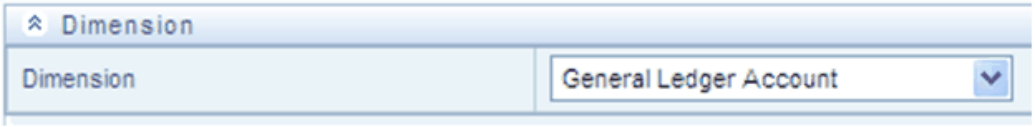


Hierarchy Functionality

See Overview of OFSAA Infrastructure for details on how Hierarchies are used in OFS Analytical Applications.

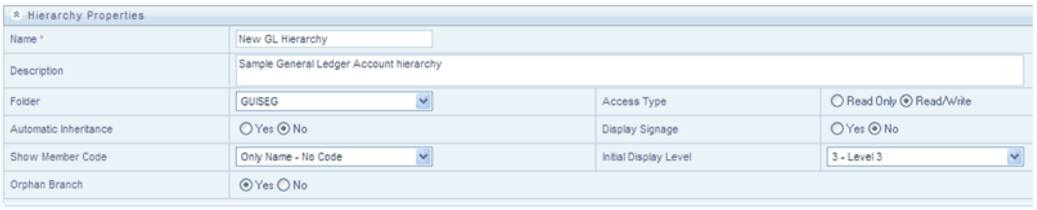
Dimension Container

For a new Hierarchy, select the dimension upon which you want to build a hierarchy. For an existing Hierarchy, you may not change the dimension.



Hierarchy Properties Container

Specify a Hierarchy Name and Description, select a Folder in which the Hierarchy is to be stored, and specify whether you want the Hierarchy to be "Read/Write" or "Read Only" (Access Type). Naming your Hierarchy is required before it can be saved. Default values for Folder and Access Type are stored in Application Preferences. The Hierarchy Properties container also stores values for Automatic Inheritance, Display Signage, Show Member Code, Initial Display Level, and Orphan Branch.



Name and Description

Displays the hierarchy's name and description. Name is a required property; you cannot save a hierarchy until you supply a name.

Folder

Select the folder in which you want the hierarchy to be stored.

Automatic Inheritance

Not used in the current release.

Show Member Code

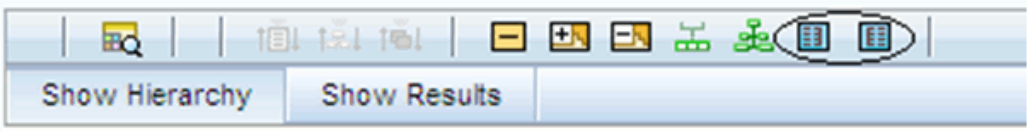
"Show Member Code" governs the default display behavior of a hierarchy. This code may be set to one of three different values:

- Code to Left of Name
- Code to Right of Name
- Only Name – No Code

While viewing or editing a hierarchy, you may override whatever default behavior has been set by clicking the "Show Code Values (Right)"

or on the "Show Code Values (Left)"

controls that are located on the title bar of the hierarchy display grid.



Orphan Branch

When you initially enter the Hierarchies Detail screen in Add mode (i.e., for a brand new hierarchy), Orphan Branch is set to Yes. When set to Yes, unassigned leaf members and node members are displayed within a special "Orphan" branch. This can be convenient because the user interface includes functionality that allows you to "cut and paste" members of the orphan branch into desired locations within your hierarchy. The Orphan Branch can also be convenient when you are maintaining an existing hierarchy because when it contains members, it provides a visual cue that dimension members have been defined that have yet to be assigned locations within a hierarchy. You may suppress the display of the Orphan Branch by setting Orphan Branch to No.

Access Type

You may set Access Type to Read-Only or Read/Write. When set to Read-Only, only the owner – the creator of a rule is its owner – may modify or delete the hierarchy.

Display Signage

Display signage is not used within any of the OFSAA engines, but is used within the Oracle Financial Services Profitability Analytics OBI application. Its purpose is to inform reporting applications on how to subtotal information on financial reports, most typically for income statement reporting. The default value for all new dimension members is "+".

Initial Display Level

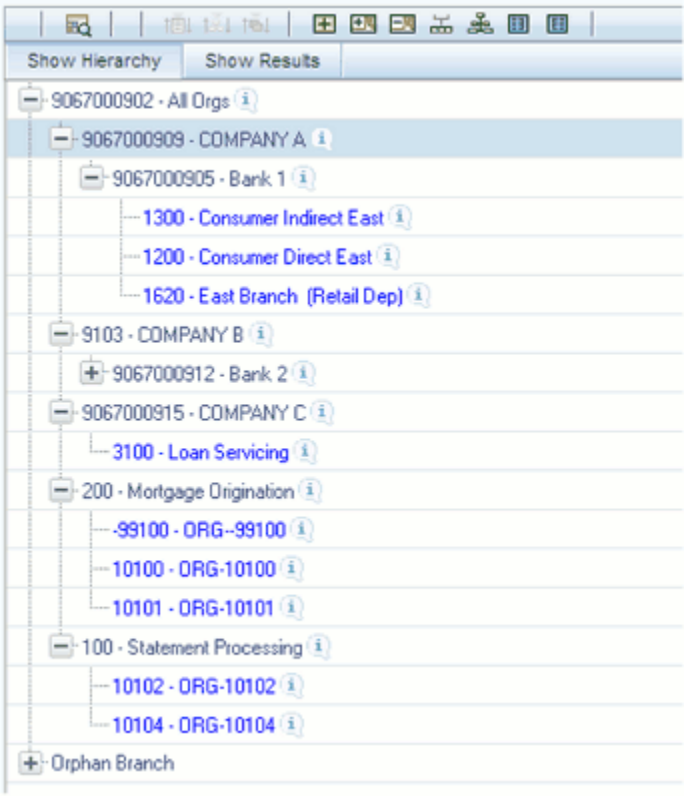
This setting controls the level at which a hierarchy is displayed when you initially enter the Hierarchies Detail screen. This setting is particularly useful when you are working with a hierarchy that has many levels. In a deep, many-leveled hierarchy, only one or two high level rollup points would be displayed if the hierarchy were displayed in its entirety.

Hierarchy Display Grid

The main body of the Hierarchies Detail screen displays a visual representation of your hierarchy. When building a hierarchy within a given dimension, you have access to

every dimension member defined for that dimension. For dimensions that support hierarchies, every dimension member has the property of either being a "leaf" member or a "rollup node" member. You construct your hierarchy by attaching leaf members to rollup node members and by attaching rollup node members to other rollup node members depending on how "deep" or multi-leveled you want your hierarchy to be.

Hierarchies may be either "balanced" or "unbalanced". In a balanced hierarchy, all leaf members reside at the same "level" or depth. The following example shows an unbalanced hierarchy in which you see leaf members (shown in blue) three levels beneath to "root" or top of the hierarchy within the Bank 1 branch, but in which you also see leaf members two levels beneath the root level in the Company C, Mortgage Origination, and Statement Processing branches.



Generally, there is no limit to the number of levels of depth you may build into a hierarchy for Standard Dimensions that support hierarchies. For Key Processing Dimensions, which always support hierarchies, you may construct hierarchies with up to 14 levels of depth. For details on depth limitations and configuring maximum depth levels for hierarchies, see *Oracle Financial Services Analytical Applications Infrastructure (OFSAAI) Installation and Configuration Guide.*

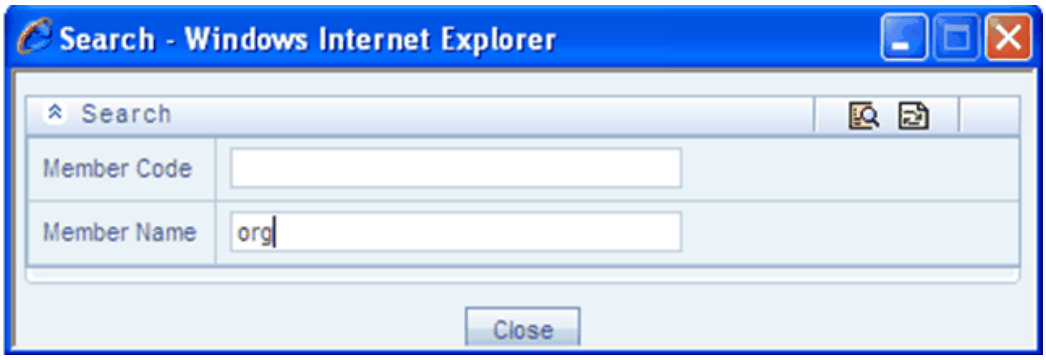
Controlling the Hierarchy Display

There are a number of controls on the title bar of the hierarchy that allow you to modify

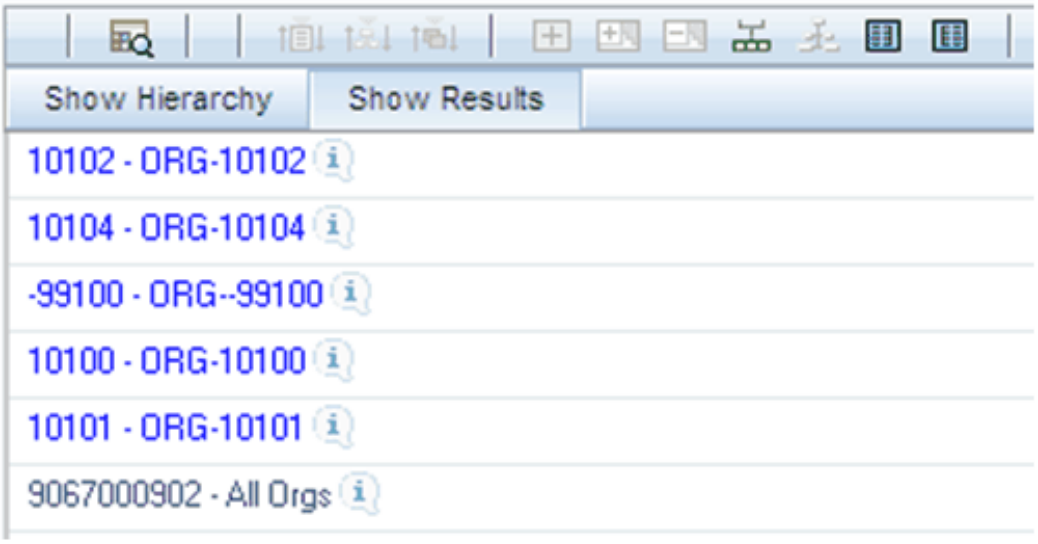
how the hierarchy is displayed.

Search

Clicking the Search control invokes a pop-up dialog in which you can perform wildcard searches for dimension members by Member Code or by Member Name.



When you click the Search button within the pop-up dialog, the dialog closes, your search is executed, and results are returned within the Hierarchy Display Grid under the heading of Show Results.



When viewing search results under the Show Results heading, you may locate a dimension member within the hierarchy by selecting it and clicking the Focus control. After selecting a dimension member and clicking Focus, the application responds by focusing on your selected member under the Show Hierarchy heading (that is, under the normal hierarchy display).

This method of searching for dimension members will only find assigned members, that is, members that are not found in the Orphans Branch.

Expand All / Collapse All

When you initially enter the Hierarchies Detail screen, clicking this control expands every branch of your hierarchy to display its entire depth. Click this control a second time to shrink the hierarchy display down to (1) the root node of the hierarchy plus (2) the "Orphans" branch.

- The Orphan branch is only displayed when a hierarchy's Orphan Branch property is set to Yes.
- For very large hierarchies, the Expand All / Collapse All control is disabled. You may define what constitutes a very large hierarchy. For more information, see *Oracle Financial Services Analytical Applications Infrastructure (OFSAAI) Installation and Configuration Guide*.

Expand Branch

When you click a node member and then click Expand Branch, your selected rollup node is expanded to its maximum depth.

Collapse Branch

Select a dimension member and then click the Collapse Branch control to shrink the display of any members beneath the dimension member you have chosen.

Focus and Unfocus

When you click a node member and then click the Focus control, only your selected node and its descendents are displayed. Clicking Unfocus removes the focus that you established using the Focus control described earlier.

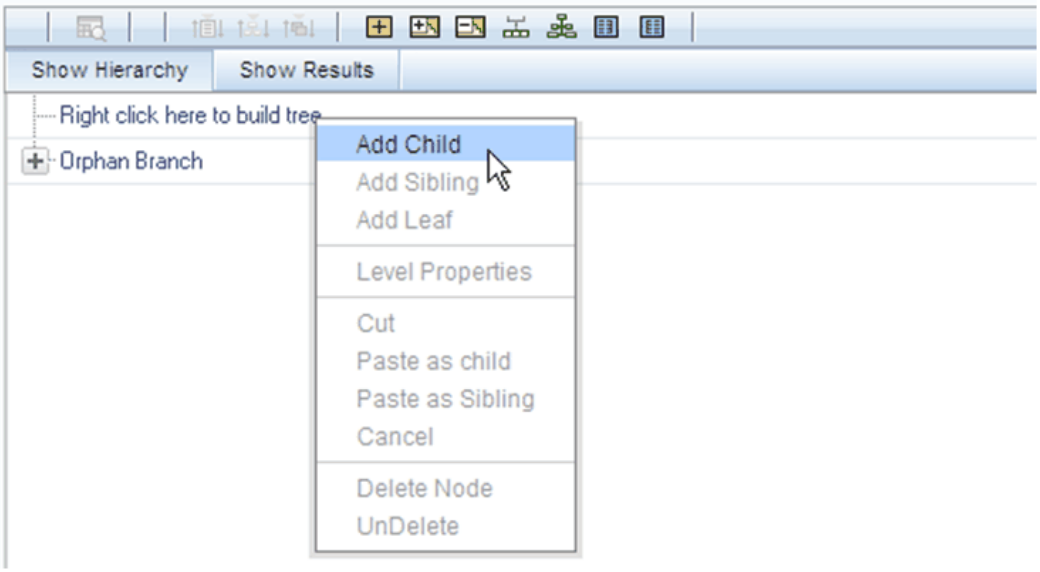
Show Code Values (Left) and (Right)

Click Show Code Values (Left) to show code values to the left of each dimension member name. Click Show Code Values (Right) to show code values to the right of each dimension member name. The default behavior for your hierarchy is controlled by the " Show Member Code" property discussed above.

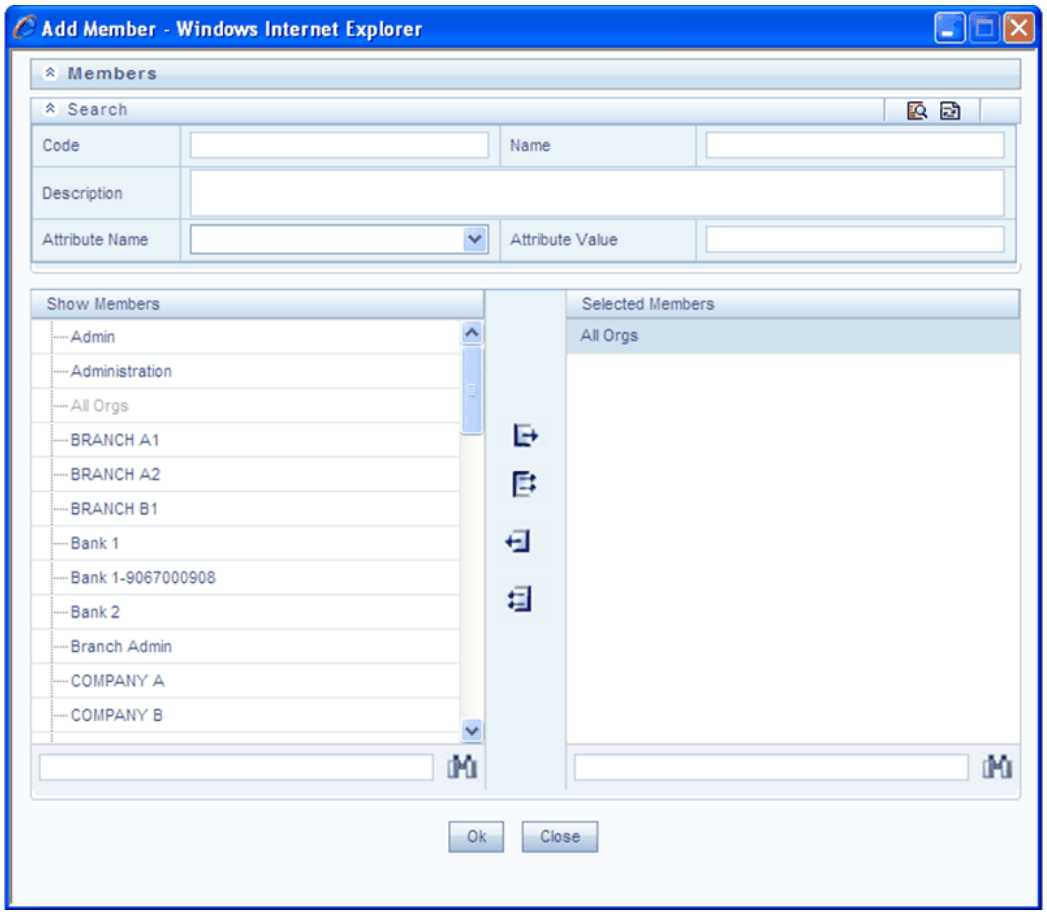
Adding Hierarchies

When creating a new hierarchy, you must initially provide a name and, optionally, a description. You must also select the Folder in which you want the hierarchy to be

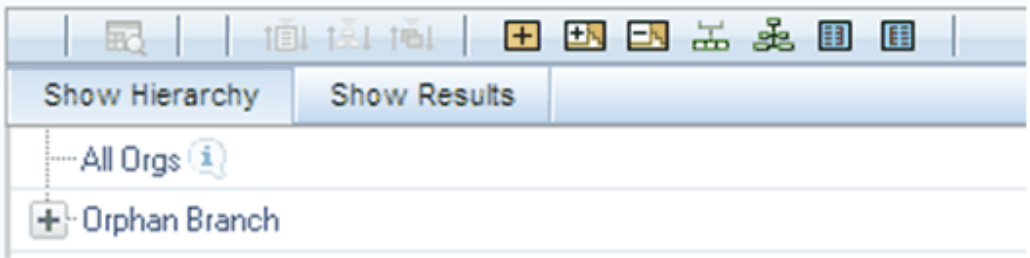
stored, the hierarchy's Read Only vs. Read/Write (Access Type) property and the other Hierarchy Properties described above. Default values for Folder and Access Type are stored in Application Preferences.



To begin the process of building a new hierarchy, right mouse click at the top of the hierarchy (see example above) to invoke a pop-up dialog in which you may select dimension members. Every hierarchy must begin with a top level rollup node. Since you cannot have a leaf member as a top level rollup node, your only choice at this point is Add Child. Clicking on Add Child invokes pop-up dialog in which you may select a rollup node.



Within the Add Member pop-up dialog, use the shuttle box controls to select the member from the left hand side that you want to serve as the root member for your hierarchy. In the example above, the All Orgs dimension member has been selected to serve as the root node for the hierarchy. Note that in this context, the Show Members column only lists rollup members (i.e., a leaf member may not serve as the root of a hierarchy). When you click OK, the Add Member dialog closes and the original hierarchy display is modified to show your selected root member.

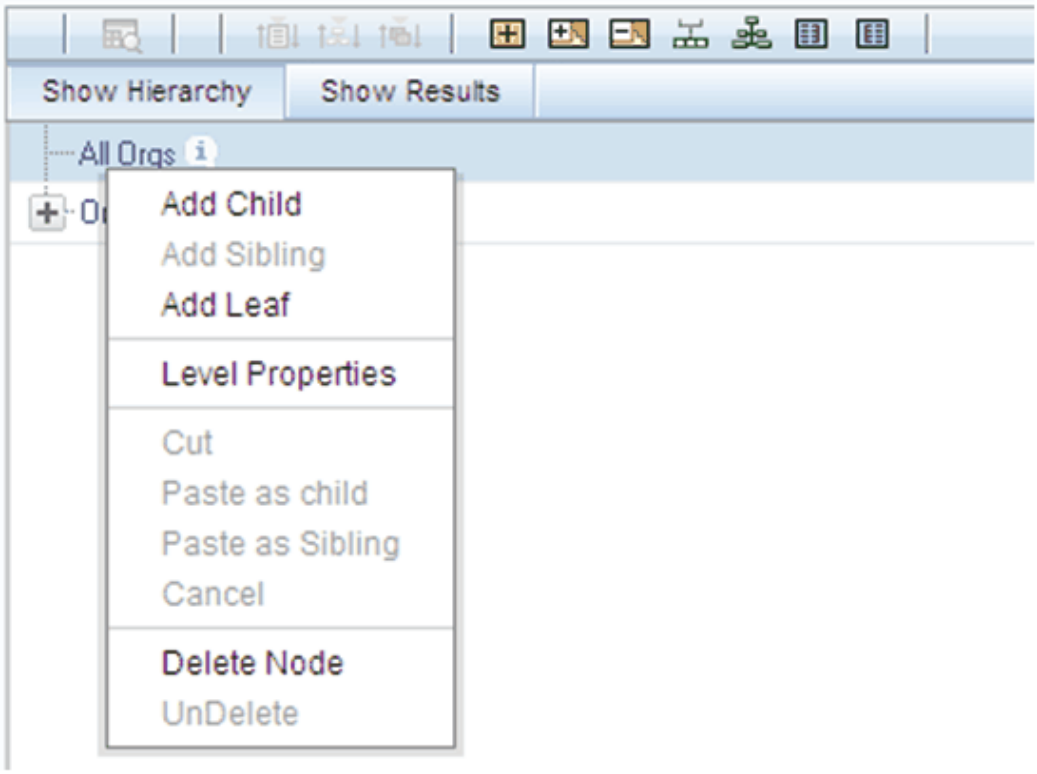


At this point, the process of adding additional dimension members (leaves and rollup nodes) is the same for existing hierarchies as it is for new hierarchies.

Editing Hierarchies

Inserting New Members into a Rollup Node

Select a rollup node member and then right mouse click. This action will display a number of choices including Add Child, Add Sibling, and Add leaf. The following example continues from the above description of creating a new organizational unit hierarchy.



In this current example, we have selected a rollup node member which serves as the root member of the hierarchy. Because OFSAA Infrastructure does not support hierarchies with multiple "tops", you may not add a sibling member (i.e., a member to be stored at the root level of the hierarchy) so the Add Sibling option is disabled.

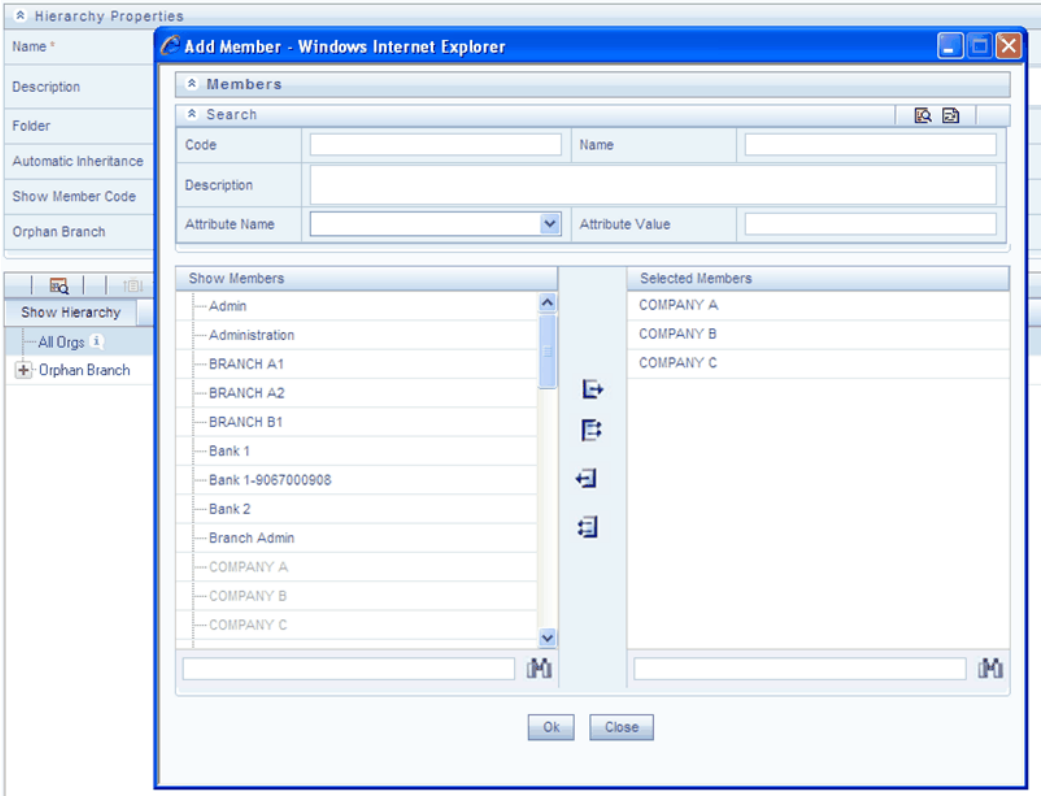
Whenever you select the "Add Child" or "Add Sibling" or "Add Leaf" option, the Add Member dialog is displayed.

Add Child

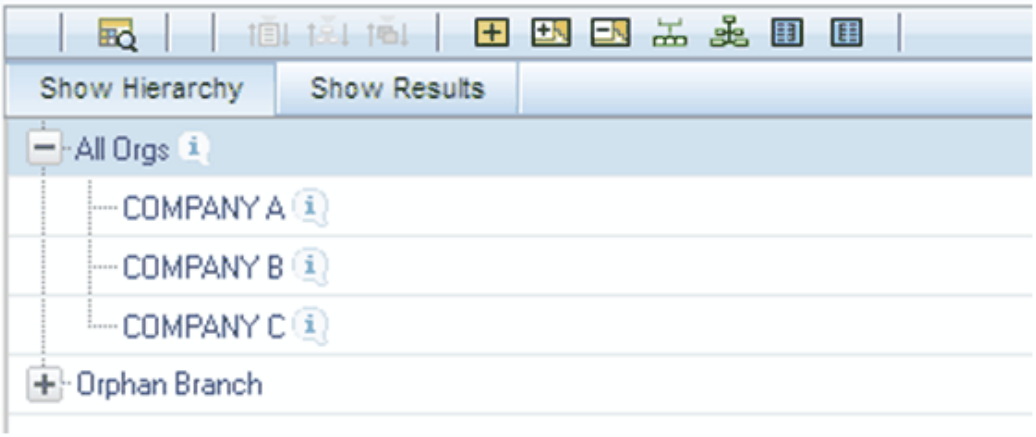
For the "Add Child" option, the Add Member dialog presents all dimension members that have not already been assigned elsewhere (i.e., all members that are not found in the orphan branch). The value or values you select will be placed in the hierarchy one

level beneath the node you originally selected.

In the following example, Company A, Company B, and Company C have been selected to act as the children of the All Orgs root node.

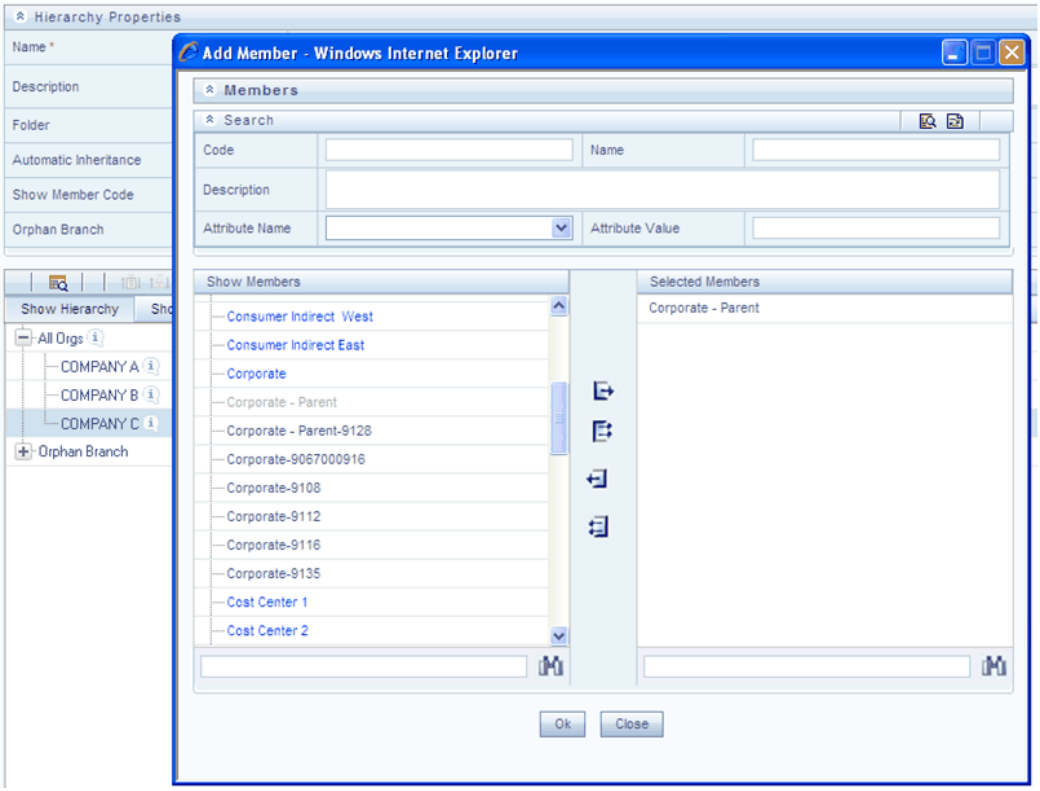


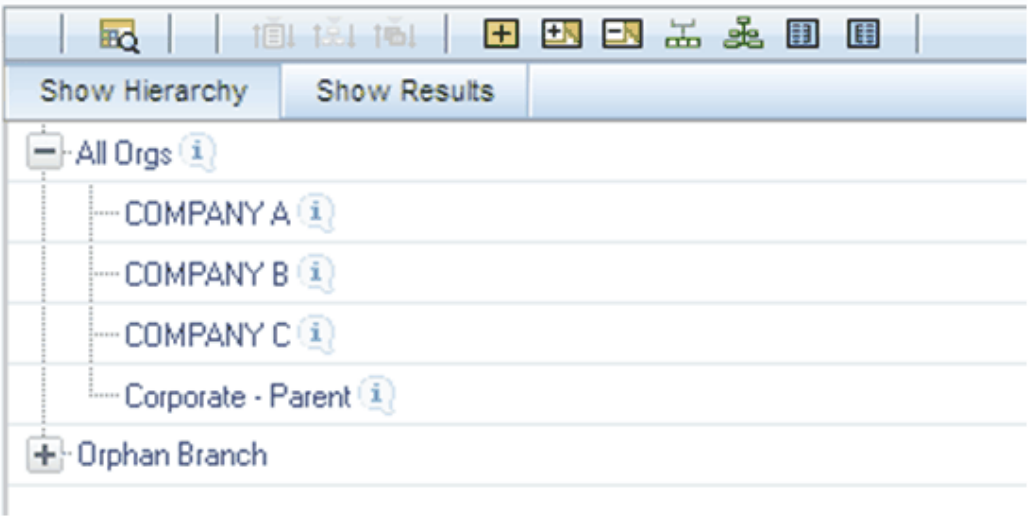
When you click OK on the Add Member dialog, the dialog box closes and the underlying the Hierarchy Display is updated to reflect your choices.



Add Sibling

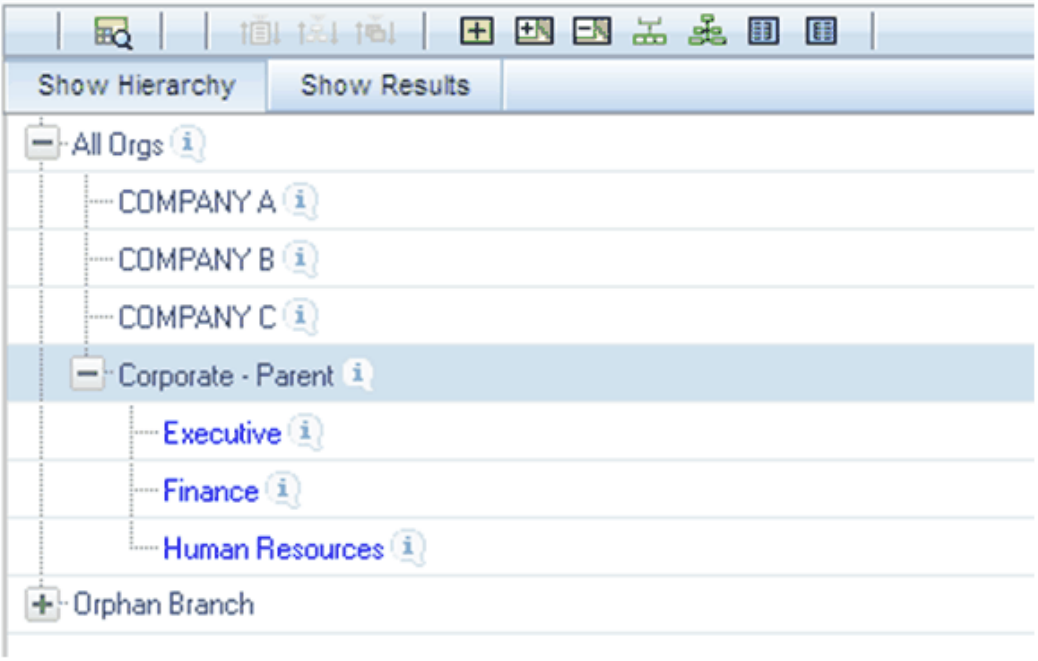
For the "Add Sibling" option, the Add Member dialog presents all dimension members that have not already been assigned elsewhere (i.e., all members that are not found in the orphan branch). The value or values you select will be placed in the hierarchy at the same level as the node you originally selected. In the following example, "Corporate – Parent" has been selected to be a sibling to Company C, i.e., to be inserted at the same level within the hierarchy as Company C.



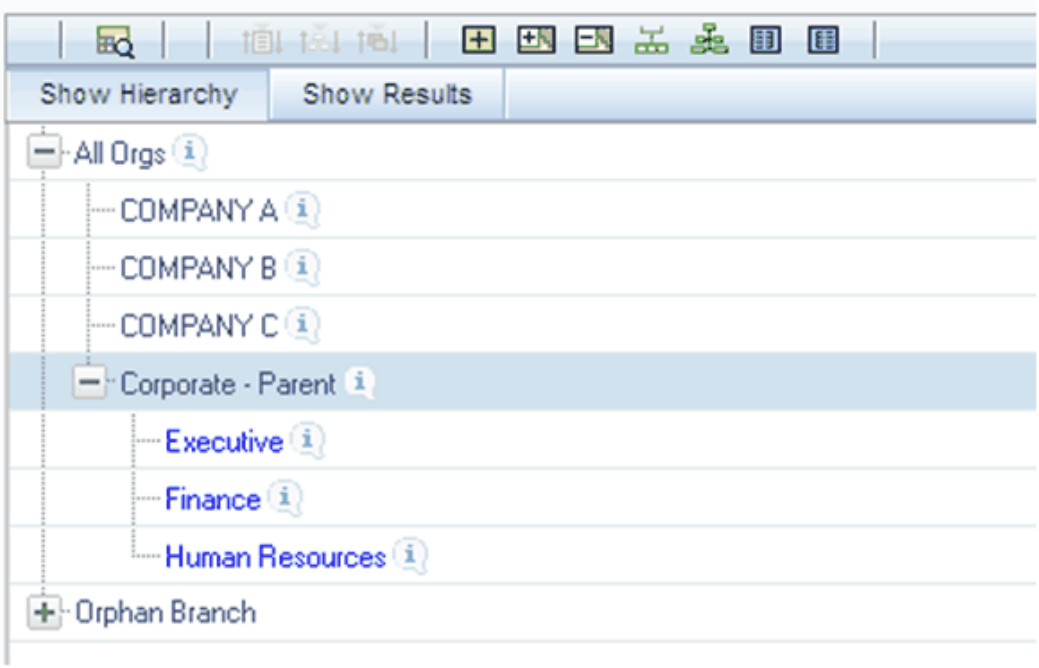


Add Leaf

For the "Add Leaf" option, the Add Member dialog presents all leaf members that have not already been assigned elsewhere. The leaf value or values you select will be placed in the hierarchy one level beneath the node you originally selected.

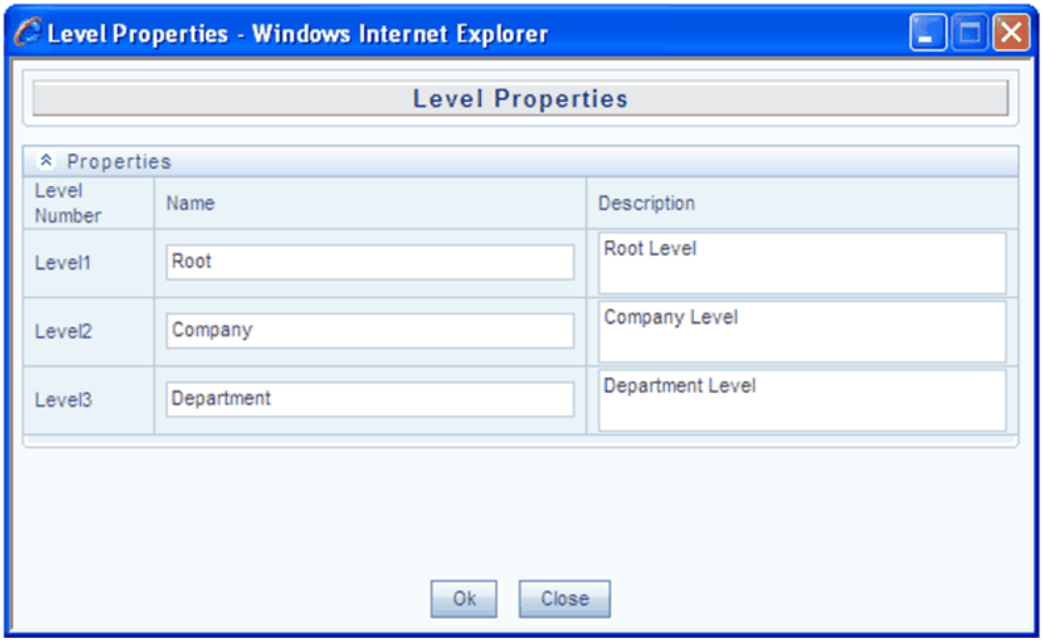


In the example above, Executive, Finance, and Human Resources have been selected to be children of the Corporate – Parent rollup node.



Level Properties

Selecting the Level Properties option invokes the Level Properties dialog. Within this dialog, you may provide names and descriptions for each of the levels within your hierarchy.



The Level Properties dialog will display as many levels as you have currently built out. In the above example, names and descriptions are being added at a time when only 3 levels have been built within the underlying hierarchy. If a fourth level is built into the hierarchy, you could return to Level Properties to add a name and description to level 4.

Assigning names or descriptions to levels is completely optional. Within the Hierarchy Properties Container, the drop down list for "Initial Display Level" will reflect your level name choices. Your choices may also be utilized within downstream reporting applications, but level names and descriptions are otherwise not utilized within OFSAA.

Cut

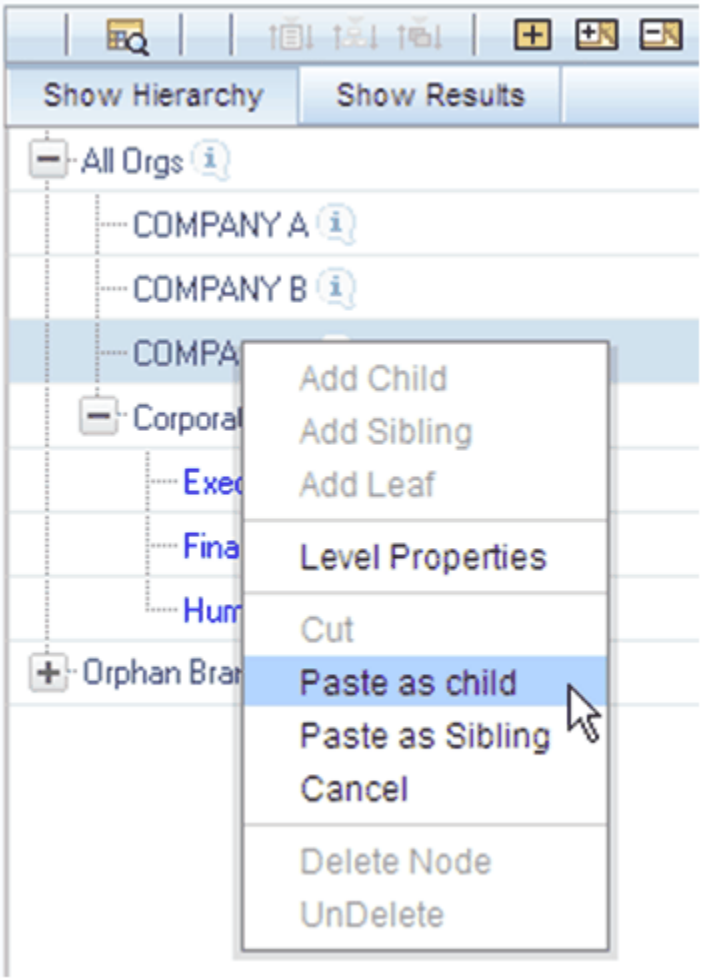
If you wish to move a dimension member, click a leaf member or a rollup member and select Cut. You may wish to move a dimension member because it is in the wrong location within the hierarchy. You may also wish to Cut a dimension member from the Orphan Branch in order to subsequently paste it within the body of your hierarchy. Any Cut operation must be followed by a Paste as Child, Paste as Sibling, or Cancel operation. Until you have executed a Cut operation, Paste as Child, Paste as Sibling, and Cancel are disabled; conversely, once you have executed a Cut operation, Paste as

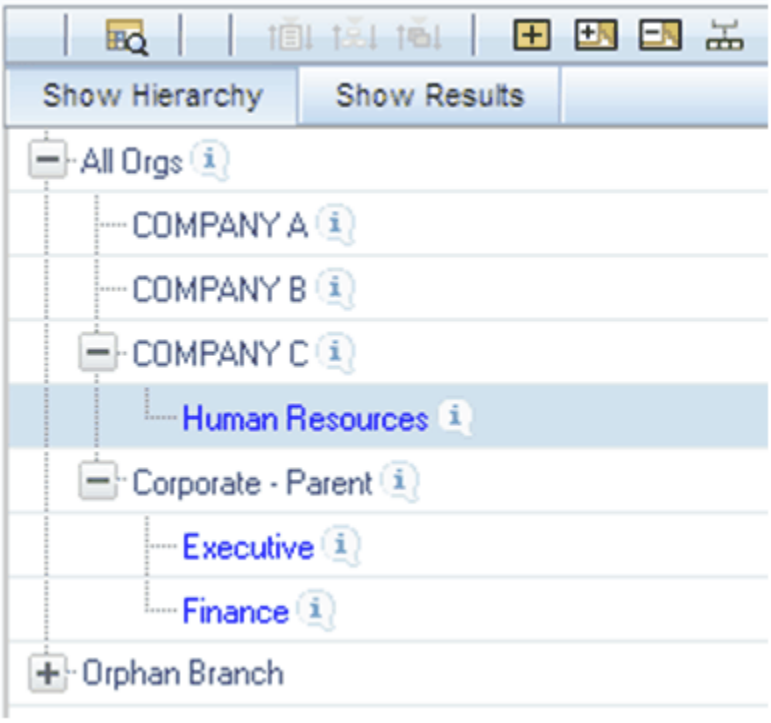
Child, Paste as Sibling, and Cancel are enabled.

Paste as Child or Paste as Sibling

After performing a Cut operation, you may perform a Paste as Child or Paste as Sibling operation. If you have Cut a dimension member and then subsequently selected leaf member, the Paste as Child option is disabled, i.e., no dimension member may be a child of a leaf member. Leaf members, by definition, can have no children. Since OFSAA supports unbalanced hierarchies, any dimension member, regardless of whether it is a leaf member or a rollup member, may be pasted as a sibling to any other dimension member.

In the following example, Human Resources has been Cut from the "Corporate – Parent " rollup node so that it may be pasted as a child into Company C.



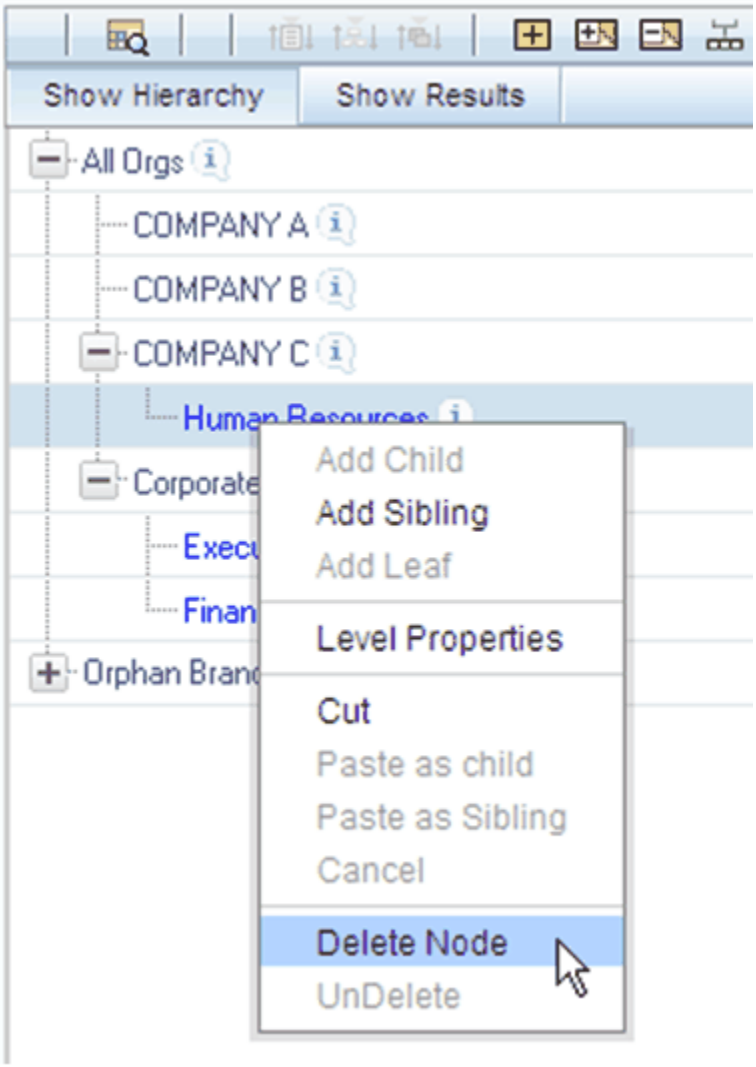


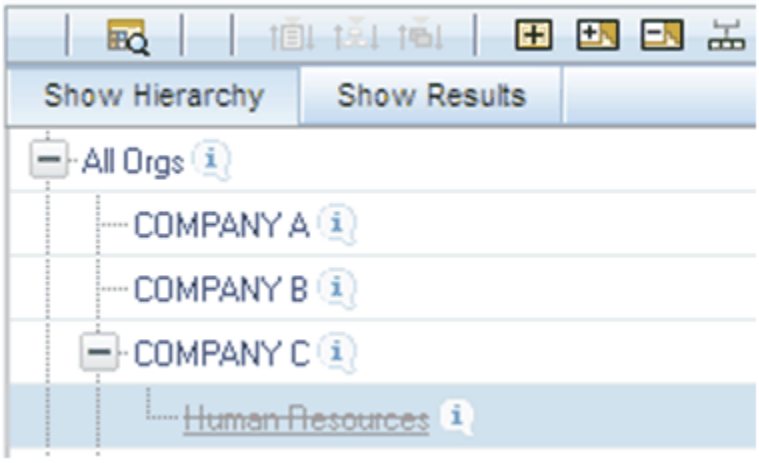
Cancel

The Cancel option is only enabled after you have executed a Cut operation. Once you have Cut a dimension member, you may not perform any other operation except for Paste as Child, Paste as Sibling, or Cancel (you may, however, still invoke Level Properties; see discussion above on Level Properties). Utilizing the Cancel option allows you to select and subsequently Cut another dimension member (i.e., after you have performed a Cancel operation, Paste as Child, Paste as Sibling, and Cancel are disabled).

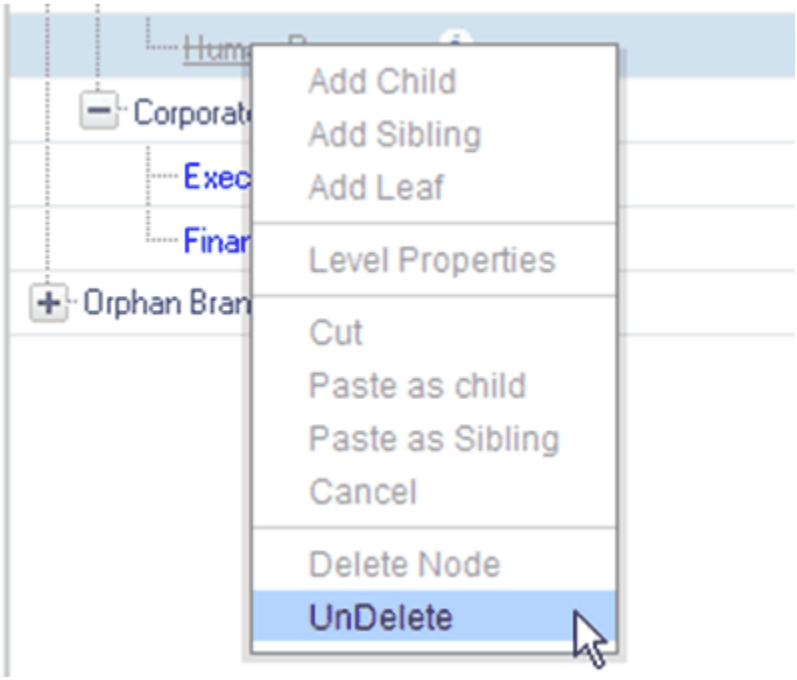
Delete Node & UnDelete

To move a dimension member back into the Orphans Branch, click a member and then select the Delete option. Once you have performed a Delete operation, the member selected for deletion appears with a strikethrough font. The following example shows the deletion of the Human Resources dimension member.


Show Hierarchy
Show Results
All Orgs
COMPANY A
COMPANY B
COMPANY C
Human Resources
Corporate
Execu
Finan
Orphan Branc
Add Child
Add Sibling
Add Leaf
Level Properties
Cut
Paste as child
Paste as Sibling
Cancel
Delete Node
UnDelete

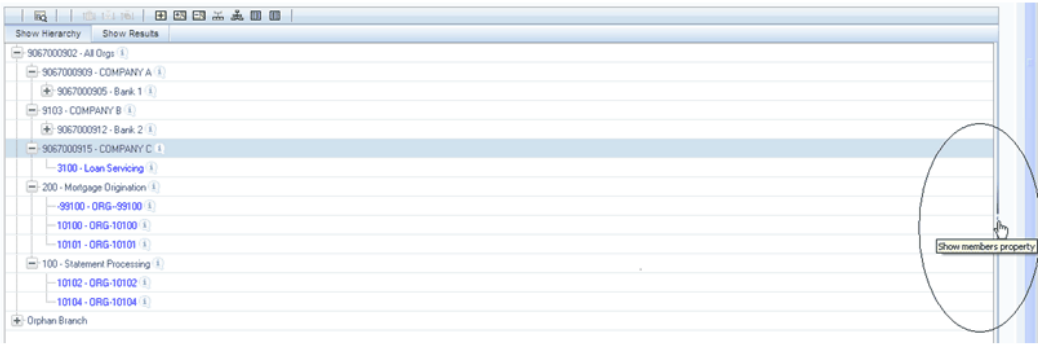

Show Hierarchy
Show Results
All Orgs
COMPANY A
COMPANY B
COMPANY C
Human Resources

Note that after having deleted the Human Resources member, it may be "restored" to its original condition by executing an UnDelete operation.

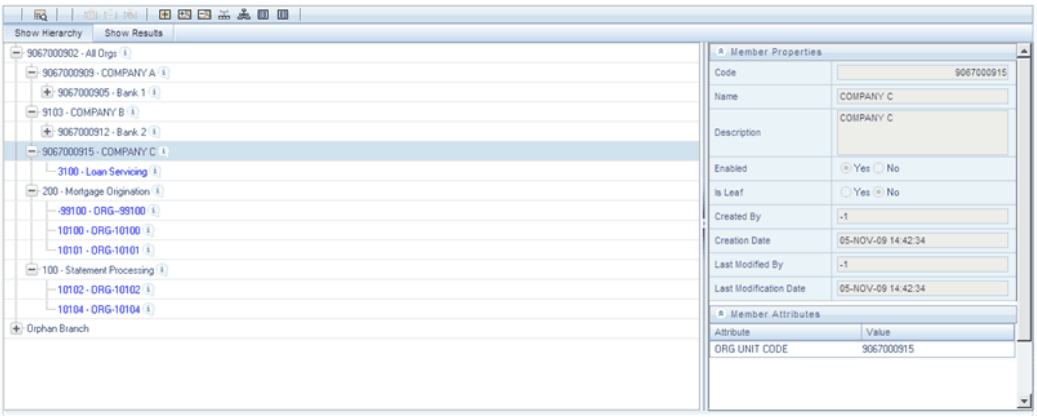


Member Properties Display

Click the separator bar at the extreme right hand side of the Hierarchy Display Grid to invoke the Member Property display.



The Member Property display shows all of the properties of the currently selected dimension member (the member selected within the hierarchy). While the Member Property display is open, you may use your Up arrow, Down arrow, Left arrow, or Right arrow keys to move from dimension member to dimension member.


Show Hierarchy
Show Results
9067000902 - All Orgs
9067000909 - COMPANY A
9067000905 - Bank 1
9103 - COMPANY B
9067000912 - Bank 2
9067000915 - COMPANY C
3100 - Loan Servicing
200 - Mortgage Origination
-99100 - ORG-99100
10100 - ORG-10100
10101 - ORG-10101
100 - Statement Processing
10102 - ORG-10102
10104 - ORG-10104
Orphan Branch
Member Properties
Code 9067000915
Name COMPANY C
Description COMPANY C
Enabled Yes No
Is Leaf Yes No
Created By -1
Creation Date 05-NOV-09 14:42:34
Last Modified By -1
Last Modification Date 05-NOV-09 14:42:34
Member Attributes
Attribute Value
ORG UNIT CODE 9067000915

8

OFSAA Filters

Overview of OFSAA Filters

This module describes the creation and maintenance of OFSAA Filters.

- Filters Summary & Detail Screens
- Navigation within the Filters Summary Screen
- Navigation within the Filters Detail Screen

See Module 2: Overview of OFSAA Infrastructure for details on how Filters are used in OFS Analytical Applications.

Summary & Detail Screens

Upon initially navigating to Master Maintenance > Filters, a summary screen is displayed showing a set of Filters. Using search criteria, you can control the set of Filter rules that are displayed. When you Add, Edit, or View a rule, a detail screen is displayed.

Navigation within the Summary Screen

When you first navigate to the Filters summary screen, the filters stored within your current default Folder are presented in a summary grid. The Filters summary screen has two containers: Search and Filters.

Search Container

Your default Folder functions as a search constraint. The value of your default Folder is set in Application Preferences. You may select a different Folder or you may remove the Folder constraint entirely by selecting the "blank" Folder, i.e., no Folder. You may also

search by Filter Name or by Filter Type. Filter Types, shown in a drop down list box, include:

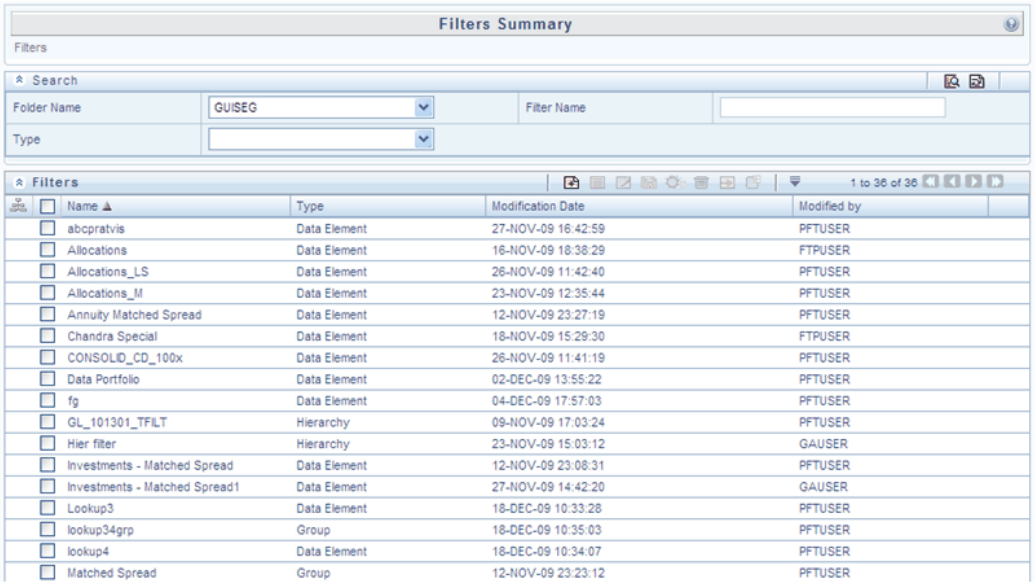
- Data Element Filter
- Hierarchy Filter
- Group Filter

Search Control

Enter your desired search criteria and click the Search control.

Reset Control

Restores the default Folder, removes any Filter Name or Filter Type constraint you may have specified, and refreshes the screen.



Filters Container

The Filter container presents a grid containing all of the Filter rules that meet your search criteria. The Filter summary grid offers several controls that allow you to perform different functions when a Filter rule is selected.

To select a Filter rule, click a check box in the first column of the grid. More than one Filter can be selected at a time but this will cause some of the controls to become disabled. Clicking a checkbox a second time de-selects the Filter.

You may select or deselect all of the Filters in the summary grid by clicking the check

box in the upper left hand corner of the summary grid directly to the left of the Name column header.

Add

Clicking the Add control begins the process of building a new Filter. The Add control is disabled if any rows in the grid have been selected.

View

Selecting a single row out of the grid enables the View control. Clicking the View control allows you to view the contents of a Filter on a read-only basis. The View control is only enabled when a single Filter has been selected.

Edit

Selecting a single row out of the grid enables the Edit control. Clicking the Edit control allows you to modify a previously saved Filter. The Edit control is only enabled when a single Filter has been selected.

Copy

Selecting a single row out of the grid enables the Copy control. Clicking the Copy control allows you to create a copy of an existing Filter. The Copy control is only enabled when a single Filter has been selected.

Check Dependencies

To generate a report on the OFSAA rules that utilize a selected Filter, select a single Filter and click the Check Dependencies control. The Check Dependencies control is only enabled when a single Filter has been selected.

Delete

Selecting one or more rows out of the grid enables the Delete control. Clicking the Delete control deletes the Filter(s) you have selected. OFSAAI will not allow you to delete Filters which have any dependencies (see Check Dependencies above).

Filters Summary Grid

The following columns categorize each Filter in the summary grid:

- Name
- Type

- Modification Date
- Modified By

Name

Displays the Filter's short name. Performing a "mouse-over" on a Filter Name displays the Filter's description.

Type

Displays the Filter's type: Data Element, Hierarchy, or Group.

Modification Date

Displays the date and time at which a Filter was last modified.

Modified By

Displays the name of the user who last modified a Filter.

Navigation within the Detail Screen

When you Add, Edit, Copy, or View a Filter, the Filter Detail Screen is displayed.

In addition to Name, Description, Folder, and Access Type, the definition of a new Filter begins with declaring a "Filter Type". Supported Filter Types include Data Element, Hierarchy, and Group.

The Audit Trail container is a standard footer container for every OFSAA rule type. It displays Created By, Creation Date, Last Modified By, and Modification Date on the Audit Trail tab. The User Comments tab may be used to add comments to any rule.

> **Note:** See Overview of OFSAA Infrastructure for details on how Filters are used in OFS Analytical Applications.

Filter Type Selection Container

Select a filter type from the Filter Type drop down list box.

Data Element

A Data Element Filter is a stored rule that expresses a set of constraints. For example:

- Balances between 10,000 and 20,000

- Accounts opened in the current month
- Loans with amortization terms greater than 20 years

Data Element Filters can access most instrument columns and most columns in the Management Ledger. Data Element Filters are used within other OFSAA rule types (e.g., Allocation rules, Transfer Pricing rules, Asset | Liability Management rules, etc).

Hierarchy

Hierarchy Filters allow you to utilize rollup nodes within a Hierarchy to help you exclude (filter out) or include data within an OFSAA rule. For example, you might want to process data for a specific set of divisions or lines of business where you have a Hierarchy rule that expresses those divisions or lines of business as rollup nodes. A Hierarchy Filter could be constructed to "enable" the Commercial and Retail lines of business while NOT enabling the Wealth Management line of business. Each of these lines of business might include a handful or even thousands of cost centers. When incorporated into an OFSAA processing rule, this Hierarchy Filter would include every cost center in the Commercial and Retail lines of business.

Group Filters

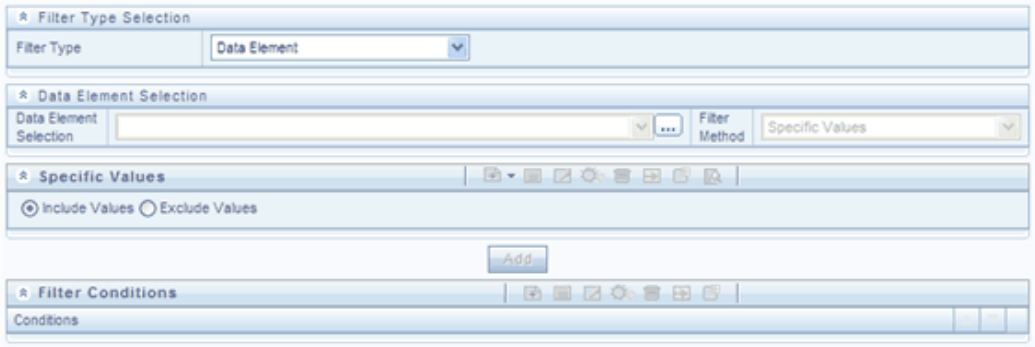
Group Filters may be used to combine multiple Data Element Filters with a logical " AND" . For example, if Data Element Filter #1 filtered on mortgage balances greater than 100,000 and Data Element Filter #2 filtered on current mortgage interest rates greater than 6%, you could construct a Group Filter to utilize both Data Filters. In this case, the resulting Group Filter would constrain your data selection to mortgage balances greater than 100,000 AND current mortgage interest rates greater than 6%.

The remainder of this module discusses creation and maintenance of each type of filter.

Data Element Filters

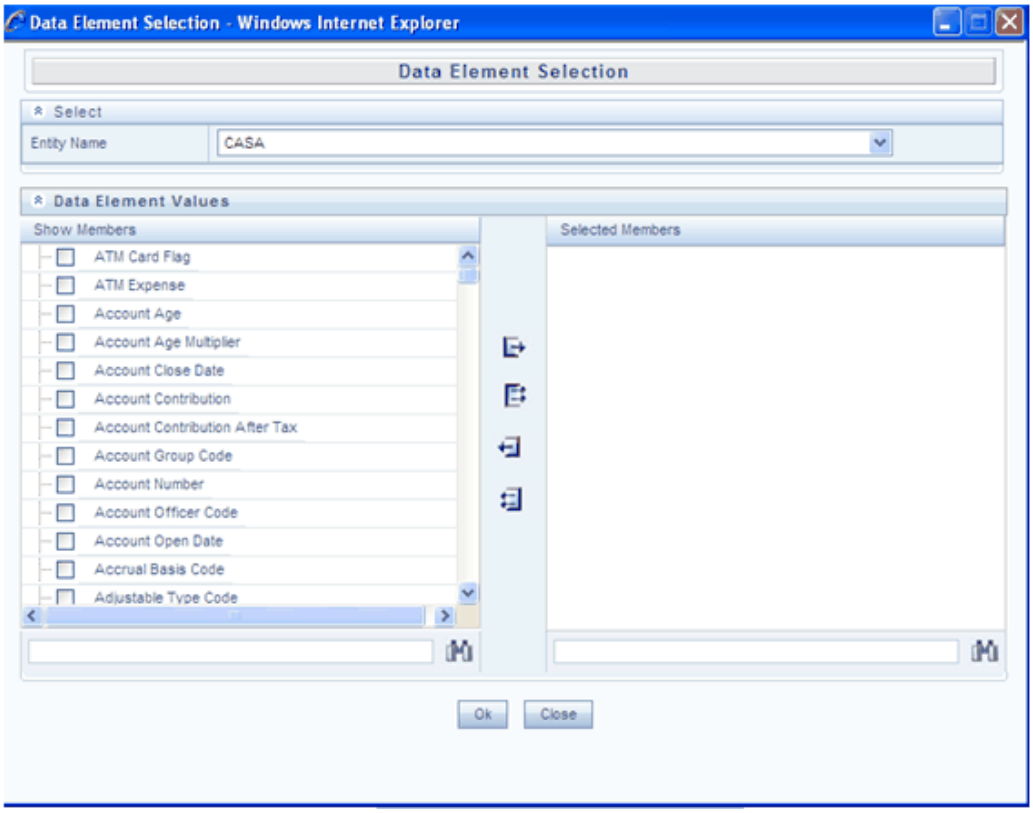
Data Element Selection Container

In this container, specify the columns that you want to include in your Data Filter and, for each column you choose, a Filter Method.



Data Element Selection

To select the columns you want to include in your Data Filter, click the ellipses to invoke a Data Element Selection pop up window.



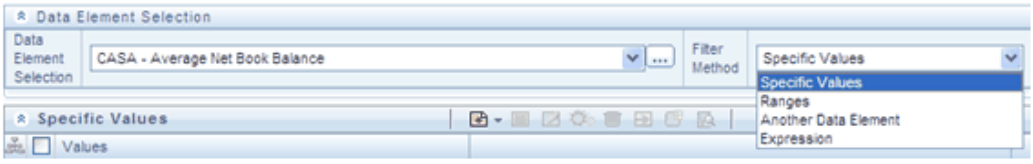
Select an entity (a database table) and then select the columns you wish to include in your Data Filter.

Filter Method

For each column you wish to include in your Data Filter definition, you must specify a

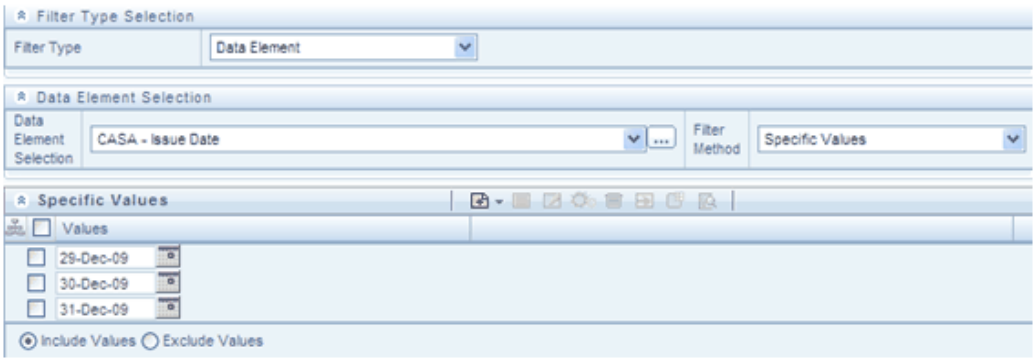
Filter Method:

- Specific Values
- Ranges
- Another Data Element
- Expression



Specific Values

Specific Values are used to match a selected database column to a specific value or values that you provide. In this example, qualifying records include any CASA [Checking and Savings Accounts] account issued in the last 3 days of 2009.



You may add additional values by clicking the Add control, and you may reduce the number of Specific Values by clicking the check box to the left of a value and then clicking the Delete control.

- When comparing Specific Values for a character type column, you must provide Specific Values that are character strings.
- When comparing Specific Values for a date type column, you must provide Specific Values that are dates (the application displays a Calendar control).
- When comparing Specific Values for a numeric column, you must provide Specific Values that are numbers.

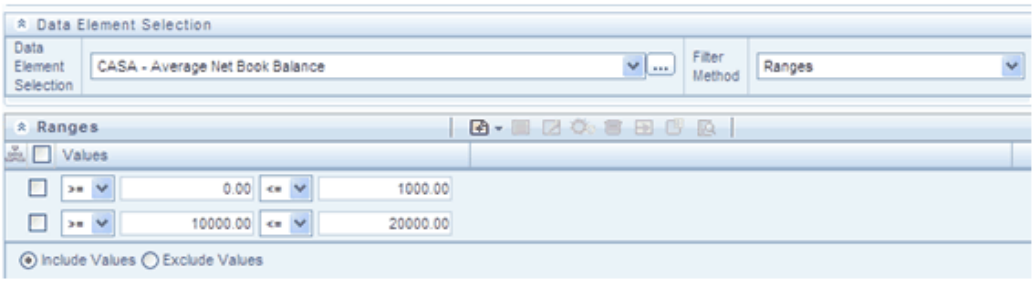
Note: You may either include or exclude Specific Values.

Ranges

Ranges are used to match a selected database column to a range of values or to ranges of values that you provide. In the following example, qualifying records include any CASA account having an Average Net Book Balance between 0 and 1,000 or between 10,000 and 20,000.

You may add additional values by clicking the Add control, and you may reduce the number of Ranges by clicking the check box to the left of a value and then clicking the Delete control.

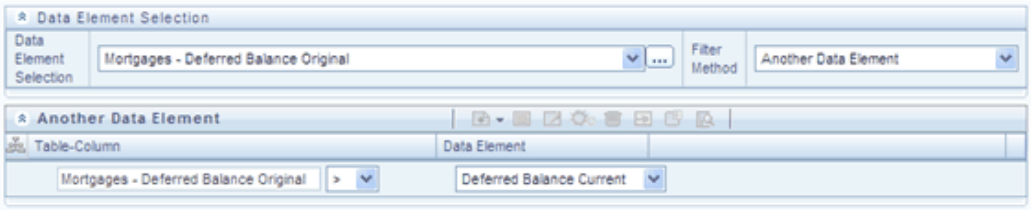
- When comparing Ranges for a character type column, you must provide Specific Values that are character strings.
- When comparing Ranges for a date type column, you must provide Specific Values that are dates (the application displays a Calendar control).
- When comparing Ranges for a numeric column, you must provide Specific Values that are numbers.
    - You may use any of the following operators when choosing the Another Data Element Filter Method : = , <> (meaning " not equal to ") , < , > , <= , or >=
    - You may either include or exclude Range values.



Another Data Element

Another Data Element is used to match a selected database column to another database column. In the example that follows, qualifying records include any Mortgage account having an Original Deferred Balance greater than the Current Deferred Balance.

> **Note:** You may use any of the following operators when choosing the Another Data Element Filter Method: =, <> (meaning "not equal to"), <, >, <=, or >=

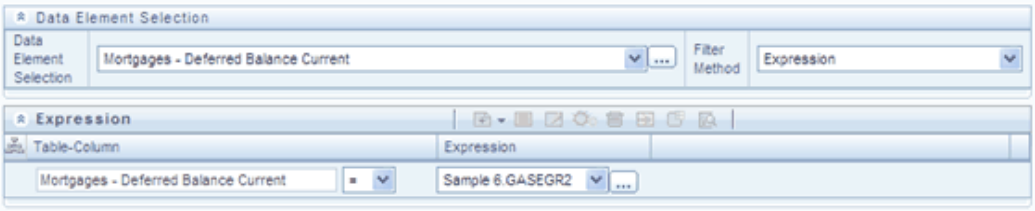


When constructing an Another Data Element Filter Method, you may only compare a column to other columns that you have already selected (the Data Element drop down list box will only contain columns that you have already selected). In the example above, you must have picked both Deferred Original Balances and Deferred Current Balances.

> **Note:** Only columns that match the data type of your Data Element selection are offered in the Data Element drop down list box.

Expression

Expression is used to match a selected database column to the results of an OFSAA Expression rule (see Module 9: OFSAA Expressions).



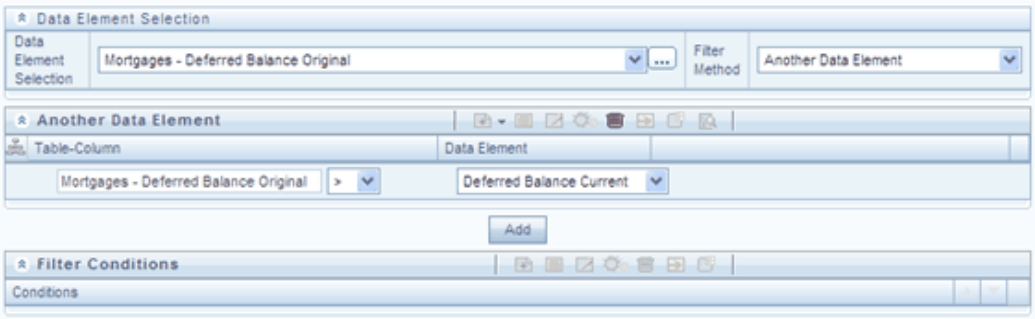
The above example compares Mortgages.Deferred Current Balances to the results of the Expression rule named Sample 6 (where the Expression is stored in the GASEGR2 Folder). Clicking the ellipses invokes a read-only view of the underlying Expression. The Sample 6 Expression is a function that calculates Mortgages.Current Par Balance minus Mortgages.Current Book Balance.

> **Note:** You may use any of the following operators when choosing the Expression Filter Method: =, <> (meaning "not equal to"), <, >, <=, or >=

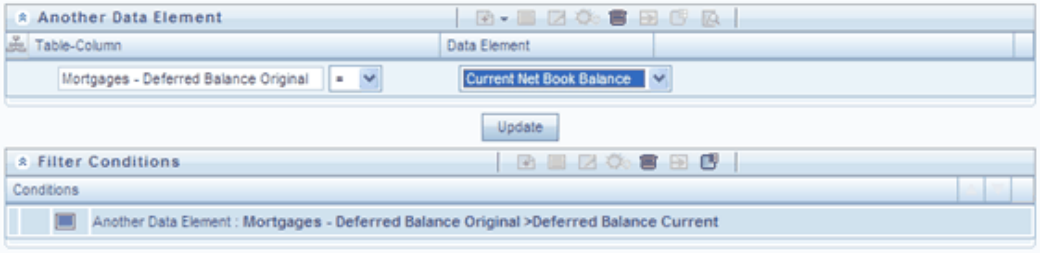
Building Filter Conditions

Each time you complete a Filter Method specification, you must Add it to the Filter Conditions container. The reason you must do so is because you may compare the same columns multiple times. For example, you may compare Deferred Current Balances to a Specific Value and to Another Data Element and to a Range of Data Elements and to an Expression all in the same Data Element Filter rule.

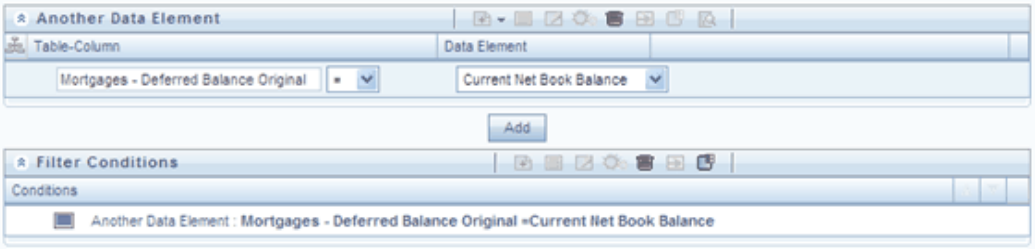
Filter Conditions Container



Once you have created one or more Filter Condition records, you may click a record in the Filter Conditions container in order to select it. Once you have selected a Filter Conditions record, you may modify your original definition of that Filter Condition and then Update it.



After you click Update, your Filter Condition is updated.



Delete

You may delete individual Filter Conditions records by clicking the Delete control .

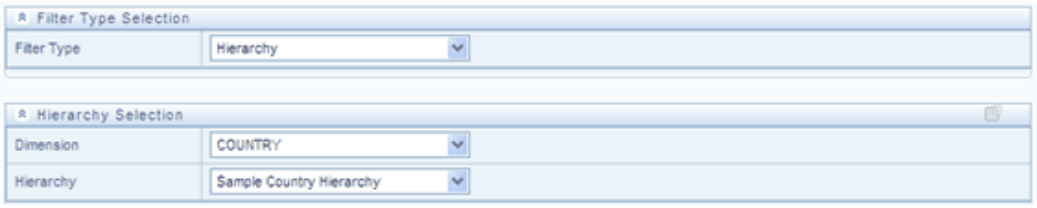
View SQL

Click the View the SQL control to generate a window displaying the SQL equivalent of your Data Element Filter. You may generally copy and paste this SQL into queries that you write. View SQL, however, will not accurately reflect Expression Filter Methods.

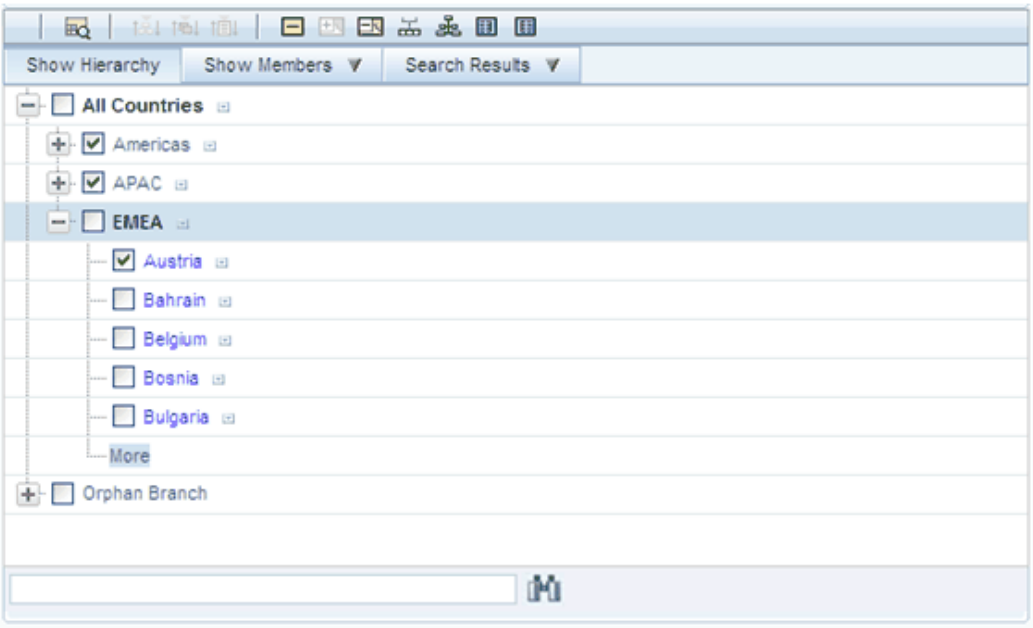
Hierarchy Filters

Hierarchy Selection Container

After selecting the Hierarchy Filter Type, select a dimension and a hierarchy from the Hierarchy Selection container that will serve as the basis for your Hierarchy Filter rule.



Once you have selected a dimension and a hierarchy in the Hierarchy Selection container, a representation of the hierarchy you selected is displayed.



Select any combination of rollup points and leaf (last descendent child) values. In the example above, the Americas and APAC rollup points have been selected; and the leaf value for Austria has been selected. This Hierarchy Filter includes any country that rolls up to either the Americas or to APAC; it also includes Austria. This Hierarchy Filter excludes all countries that roll up to EMEA except for Austria.

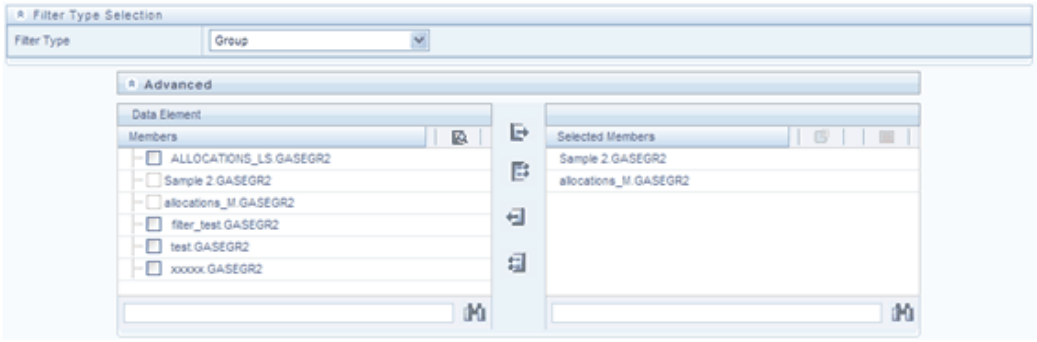
View SQL

Once you have selected one or more leaves and/or rollup nodes, click the View the SQL control to generate a window that displays the SQL equivalent of your Hierarchy Filter.

Group Filters

Advanced Container

After selecting the Group Filter Type, you may use the Select, De-Select, Select All, and De-Select All controls to choose one or more Data Element Filters ("Selected Members") that will be combined to define your Group Filter.



9

OFSAA Expressions

Expressions

This module describes the creation and maintenance of OFSAA Expressions.

- Expressions Summary & Detail Screens
- Navigation within the Expressions Summary Screen
- Navigation within the Expressions Detail Screen

See Module 2: Overview of OFSAA Infrastructure for details on how Expressions are used in OFS Analytical Applications.

Summary & Detail Screens

Upon initially navigating to Master Maintenance > Expressions, a summary screen is displayed showing a set of Expressions. Using search criteria, you can control the set of Expression rules that are displayed. When you Add, Edit, or View a rule, a detail screen is displayed.

Navigation within the Summary Screen

When you first navigate to the Expressions summary screen, the expressions stored within your current default Folder are presented in a summary grid. The Expressions summary screen has two containers: Search and Expressions.

Search Container

Your default Folder functions as a search constraint. The value of your default Folder is set in Application Preferences. You may select a different Folder or you may remove the Folder constraint entirely by selecting the "blank" Folder, i.e., no Folder. You may also

search by Expression Name or by Return Type. Return Types, shown in a drop down list box, include:

- Date
- String
- Numeric

Search Control

Enter your desired search criteria and click the Search control.

Reset Control

Restores the default Folder, removes any Expression Name or by Return Type constraint you may have specified, and refreshes the screen.

Expressions Container

The Expressions container presents a grid containing all of the Expression rules that meet your search criteria. The Expressions summary grid offers several controls that allow you to perform different functions when an Expression rule is selected.

To select an Expression, click a check box in the first column of the grid. More than one Expression can be selected at a time but this will cause some of the controls to become disabled. Clicking a checkbox a second time de-selects the Expression.

You may select or deselect all of the Expressions in the summary grid by clicking the check box in the upper left hand corner of the summary grid directly to the left of the Expression Name column header.

Add

Clicking the Add control begins the process of building a new Expression. The Add control is disabled if any rows in the grid have been selected.

View

Selecting a single row out of the grid enables the View control. Clicking the View control allows you to view the contents of an Expression on a read-only basis. The View

control is only enabled when a single Expression has been selected.

Edit

Selecting a single row out of the grid enables the Edit control. Clicking the Edit control allows you to modify a previously saved Expression. The Edit control is only enabled when a single Expression has been selected.

Copy

Selecting a single row out of the grid enables the Copy control. Clicking the Copy control allows you to create a copy of an existing Expression. The Copy control is only enabled when a single Expression has been selected.

Delete

Selecting one or more rows out of the grid enables the Delete control. Clicking the Delete control deletes the Expression(s) you have selected. OFSAAI will not allow you to delete Expressions which are utilized within other OFSAA rules, e.g., within a Data Element Filter, an Allocation rule, etc.

Expressions Summary Grid

The following columns categorize each Expression in the summary grid:

- Expression Name
- Folder Name
- Return Type
- Created By
- Creation Date

Expression Name

Displays the Expression's short name. Performing a "mouse-over" on an Expression Name displays the Expression's description.

Folder Name

Displays the name of the Folder in which a rule is stored.

Return Type

Expression rules operate like SQL function calls in the sense that they return a single data value. Return Type indicates the type of data that is returned by an Express rule: String, Date, or Numeric. See additional discussion below under Expression Functionality.

Created By

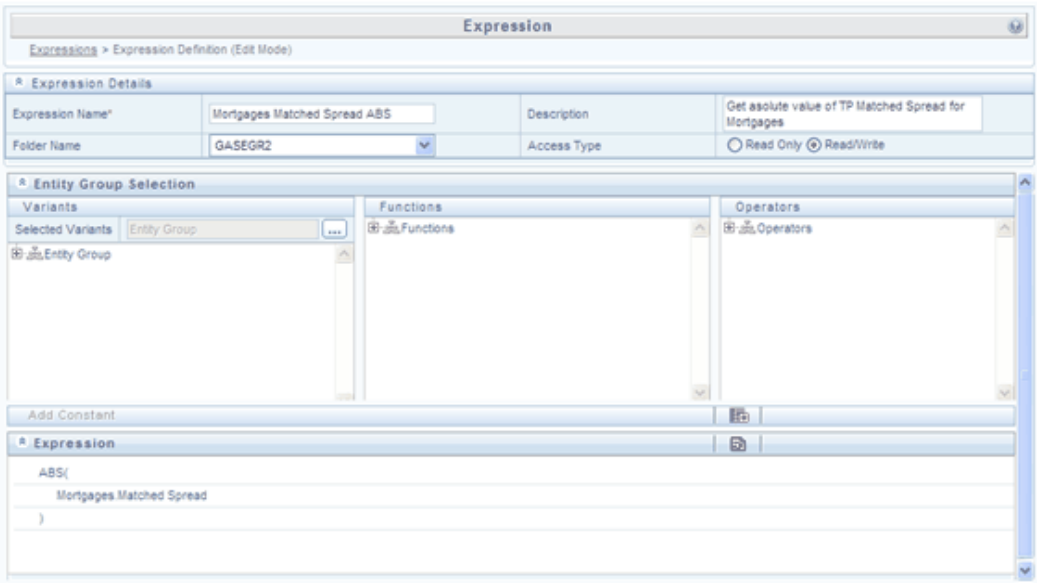
Created By displays the name of the user who created the Expression rule. If an Expression is saved as Read Only, only the user who created the rule, i.e., the owner, may modify the rule.

Creation Date

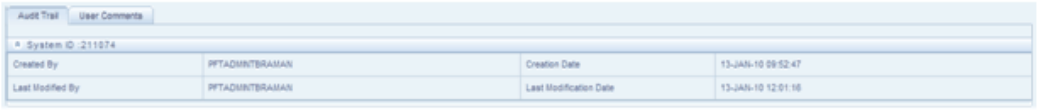
Displays date and time at which the rule was initially created.

Navigation within the Detail Screen

When you Add, Edit, Copy, or View an Expression, the Expressions Detail Screen is displayed.



The Audit Trail container is a standard footer container for every OFSAA rule type. It displays Created By, Creation Date, Last Modified By, and Modification Date on the Audit Trail tab. The User Comments tab may be used to add comments to any rule.



Expression Functionality

OFSAA Expressions operate similarly to SQL function calls in that they apply a formula to one or more database columns in order to return a single value. For example, you might apply a YEAR formula to a date column to yield a numeric return value of a year. For a single instrument row in your data having an origination date of 01/01/2010, this Expression would return the number 2010. As another example, you might construct an Expression that evaluates a balance times a rate times an accrual basis factor to return a current month revenue or expense number.

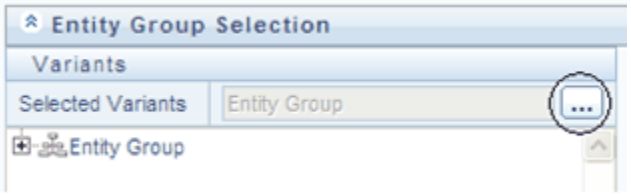
Expression Details Container

As with any OFSAA rule type, you must supply a Name, Folder, and Access Type; you may optionally supply a Description.

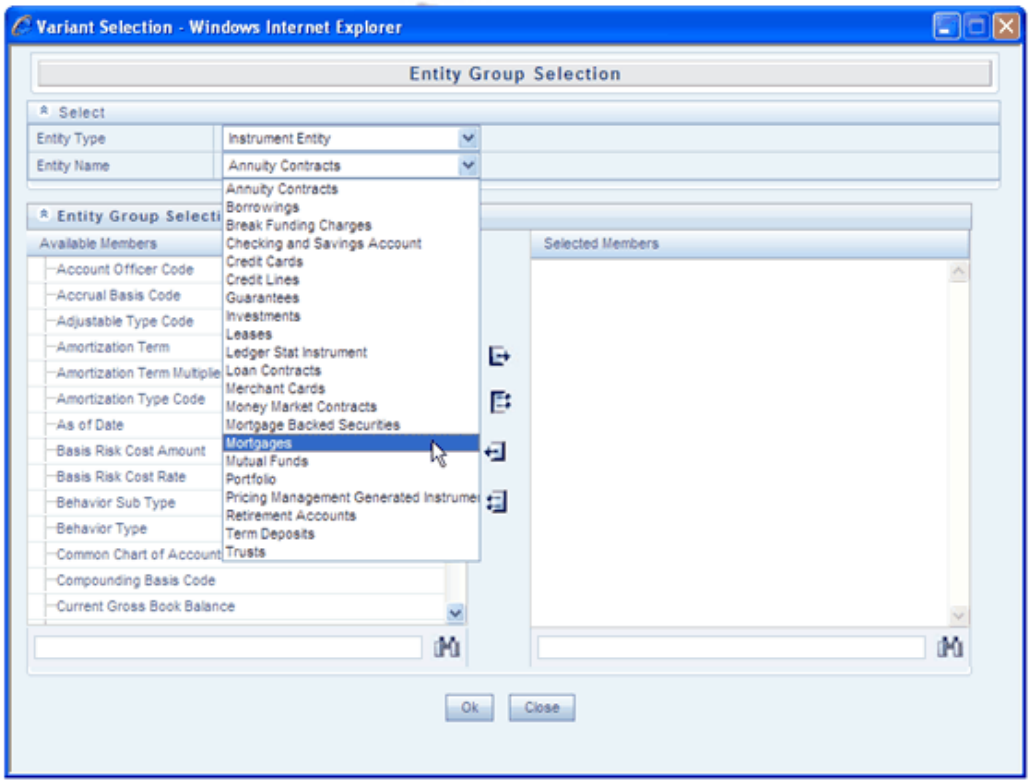
Entity Group Selection Container

Variants Sub-Container

To begin the process of creating a new Expression rule, you must specify the tables and columns (or even other expressions) that you want to use in the definition of your new Expression. Click the ellipses (…) to the right of "Selected Variants" in the Variants sub-container of the Entity Group Selection container.



Clicking the Selected Variants ellipses invokes an Entity Group Selection pop-up dialog. Here you may select an Entity Type and an Entity Name.



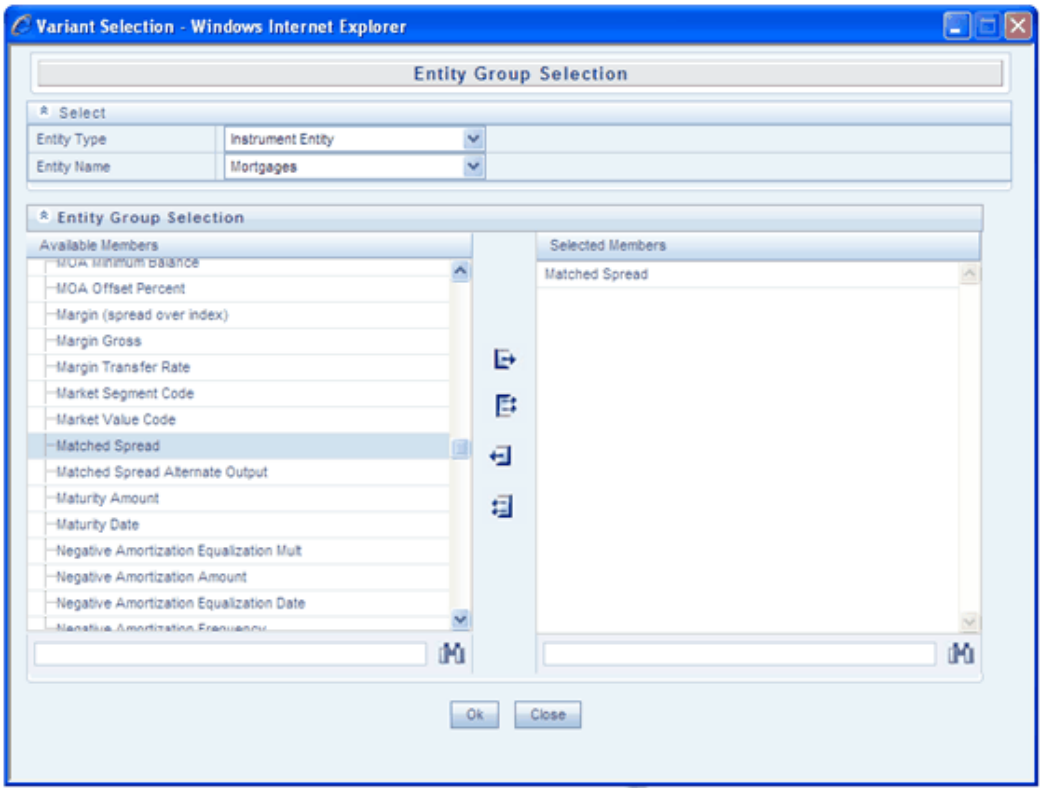
Entity Type & Entity Name Drop Down List Boxes

Entity Types include Instrument Entity, Non- Instrument Entity, and Expression.

Instrument Entity Type

When you select the Instrument Entity type (the most commonly chosen type), the Entity Name drop down list box is populated with all registered Instrument and Transaction Summary type tables; the management ledger table (Ledger/Stat) is also available.

Select a table from the Entity Name drop down list box and then use the shuttle box controls (> , >> , < , <<) to select the column name or names you want to use within your Expression rule.



When you click OK, the Variant Selection dialog closes and Variants sub-container of the underlying Expression rule is updated. Click the "+" control to expand the Entity Group hierarchy in order to see the tables and columns you have selected (see example below).

Non-Instrument Entity Type

Selecting the Non-Instrument Entity Type also populates the Entity Name drop down list box with Instrument and Transaction Summary type tables, but it additionally populates the Entity Name drop down list box with a number of metadata tables (tables that store non-business data).

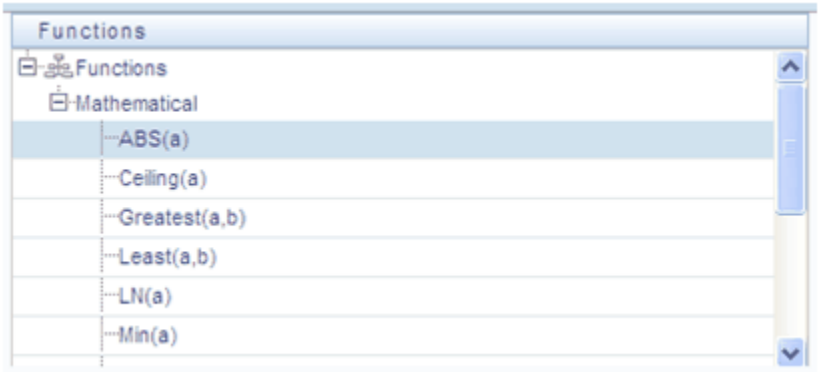
Expression Entity Type

Selecting the Expression Entity Type populates the Entity Name drop down list box with all of the currently defined Expression rules. The steps required to select an Expression rule are identical to those described above for selecting tables and columns.

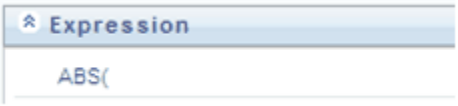
Functions and Operators Sub-Containers

Once you have specified the tables and columns and/or Expressions that you want to utilize within your new Expression rule, you work with Functions and Operators to construct your desired formula.

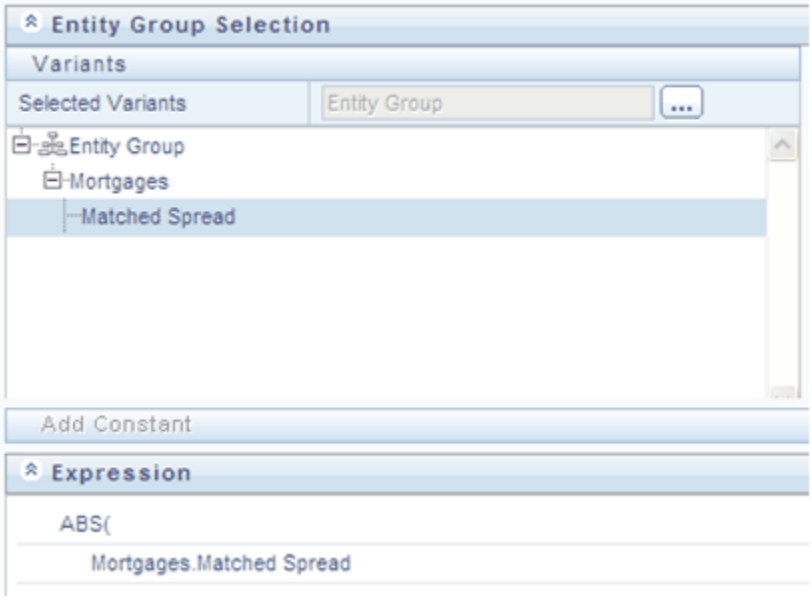
Double click Variants (tables and columns and/or Expressions), Functions, and Operators to add them into the Expressions container.



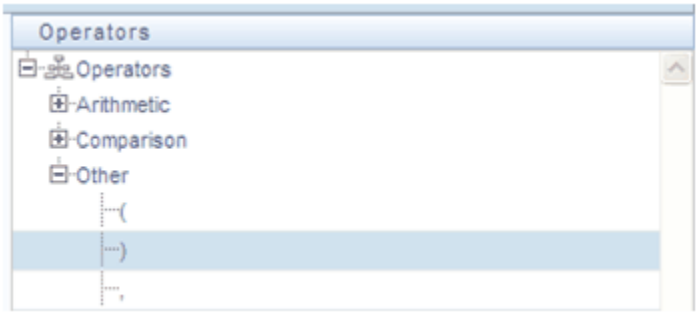
For example, to construct an Expression that returns the absolute value of the Matched Spread column from the Mortgages table, begin by double clicking the absolute value operator (ABS) in order to add it into the Expression container.



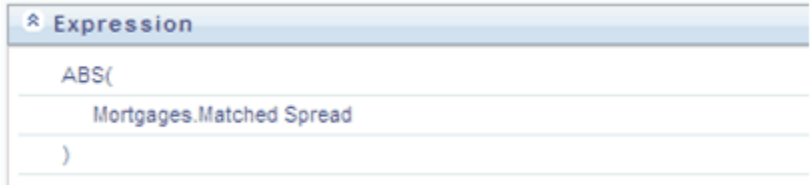
Next, double click the Matched Spread column from the Mortgages table in order to add the column to the Expression container.



Finally, double click the Right Parenthesis operator in order to close the expression.



Again, the result of your double clicking operation is to update the formula within the Expression container.

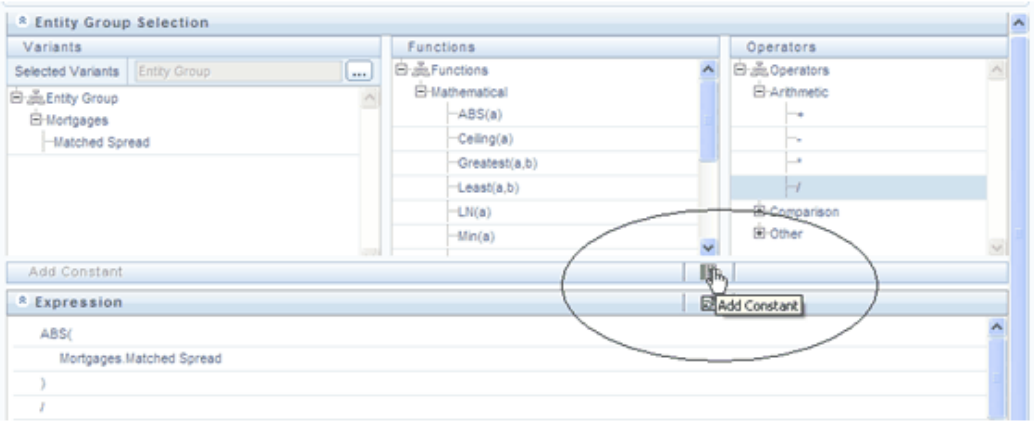


Constants

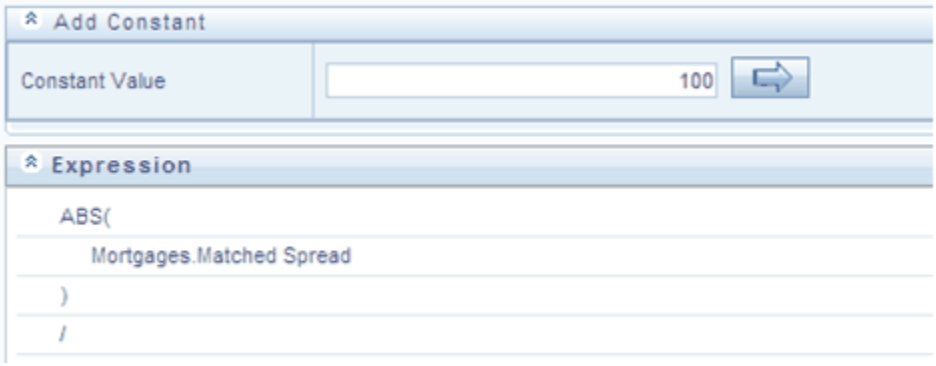
You may also add constant coefficient values to your formulas. For example, rates are generally stored in the form of percentages where 5.12 in the database means 5.12%.

You may wish to modify your absolute value formula to divide by 100. To do so you would continue by double clicking the division operator (/). After the formula is

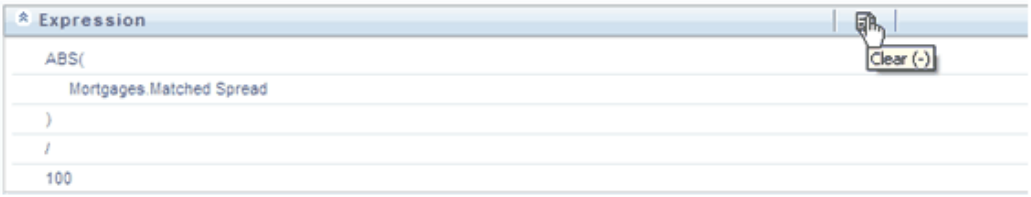
updated to include the division operator, click the Add Constant control located in the first row beneath the Entity Group Selection container.



Enter a constant value of 100 and click the right arrow control.



Clicking the right arrow control completes the Expression.



Operator types

The operators available are of 3 types:

1. Arithmetic
2. Comparison

3. Other

Operator type	Notation	Example depicting Usage
Arithmetic	+	CUR_BOOK_BAL = CUR_PAR_BAL + DEFERRED_CUR_BAL
	-	AS_OF_DATE = MATURITY_DATE – REMAIN_TERM_C
	*	Remaining Balance after Offset = Opening balance – (Expected balance on every payment date * Mortgage offset %)
	/	CUR_PAYMENT = ORG_BOOK_BAL/ (ORG_TERM/ PMT_FREQ [in months])
Comparison	=	CUR_PAYMENT = principal + interest
	<>	If ADJUSTABLE_TYPE_CD <> 0, INTEREST_RATE_CD = 001 to 99999.
	>	If ORIGINATION_DATE > AS_OF_DATE, LAST_PAYMENT_DATE = ORIGINATION_DATE.
	>=	AS_OF_DATE >= ORIGINATION_DATE
	<	AS_OF_DATE < NEXT_REPRICE_DATE
	<=	If ORIGINATION_DATE <= AS_OF_DATE, LAST_PAYMENT_DATE >= ORIGINATION_DATE

Operator type	Notation	Example depicting Usage
Other	(	Parentheses group segments of an expression to make logical sense.
	)	MATURITY_DATE <= NEXT_PAYMENT_DATE + (REMAIN_NO_PMTS_C * PMT_FREQ)
	,	The comma separates statements of a function.

Function Types and Functions

You select the type of function for your expression from the Type list. The choices are:

- Mathematical Functions
- Date Functions
- String Functions
- Other Functions

The type of function you select determines the choices available in the Function box. These unique functions in the Functions Sub-container enable you to perform various operations on the data. The following table lists each available function and Detail on the operations of each function in which it appears.

Function type	Function Name	Notation	Description	Syntax	Example depicting Usage
Mathematical	Absolute	ABS(a)	Returns the positive value of the database column	{ABS(} followed by {EXPR1 without any embedded or outermost left-right parentheses pair} followed by {)}	ABS (-3.5) = 3.5. ABS(F), ABS(F + C), ABS(F + C * R + F) are possible. However, ABS((F + C + R)), ABS((F + (MAX * CEILING))) are not possible.
	Ceiling	Ceiling (a)	Rounds a value to the next highest integer	Ceiling(column or expression)	3.1 becomes 4.0, 3.0 stays the same
	Greatest	Greatest(a,b) GREATEST(column or expression, column or expression)	Returns the greater of 2 numbers, formulas, or columns	Greatest(column or expression, column, or expression	Greatest(1.9,2.1) = 2.1
	Least	LEAST(column or expression, column or expression) Least (a,b)	Returns the lesser of 2 numbers, formulas, or columns	Least(column or expression, column or expression	Least(1.9,2.1) = 1.9

Function type	Function Name	Notation	Description	Syntax	Example depicting Usage
	Natural Log	LN(number) LN(a)	Returns the natural logarithm of a number Natural logarithms are based on the constant e (2.718281828 45904).	LN(number) where number is the positive real number for which you want the natural logarithm	LN(86) equals 4.454347 LN(2.7182818) equals 1
	Minimum	Min(a)	Returns the minimum value of a database column	Min(Column)	
	Maximum	Max(a)	Returns the maximum value of a database column	Max(Column)	
	Power	POWER(coeff icient, exponent) Power(a,b)	Raises one value to the power of a second	{POWER(} followed by {EXPR1 without any embedded or outermost left-right parentheses pair followed by {,} followed by {EXPR1 without any embedded or outermost left-right parentheses pair} followed by {)}	**Valid examples:** POWER(F, R) POWER(F + C * R, F / R) **Invalid examples:** POWER(F + POWER, R) POWER(MAX, C)

Function type	Function Name	Notation	Description	Syntax	Example depicting Usage
	Round	ROUND (number, precision) Round(a,b)	Rounds a value to a number of decimal places	Round(x, n) returns x rounded to n decimal places	Round(10.52354,2)=10.52
	Sum	Sum(a)	Sums the total value of a database column. Sum is a multi-row function, in contrast to +, which adds 2 or more values in a given row (not column)	Sum(Column)	

Function type	Function Name	Notation	Description	Syntax	Example depicting Usage
	Weighted Average	WAvg (column being averaged, weight column) WAvg(a,b)	Takes a weighted average of one database column by a second Column. WAvg cannot appear in any expression. If you have two formulas called F1 and F2, both of which are WAvg functions, then you can form a third formula F3 as F1 + F2. If F3 is chosen as a calculated column, then an error message appears and the SQL code is not generated for that column. This is similar for nested WAvg functions if F3 is WAvg and it has F1 or F2 or both as its parameters.	WAvg(Column A, Column B)	WAvg(DEPOSITS.CUR_NET_RATE,DEPOSITS.CUR_BOOK_BAL)

Function type	Function Name	Notation	Description	Syntax	Example depicting Usage
Note: You cannot use the Maximum and Minimum functions as calculated columns or in Data Correction Rules. The Maximum, Minimum, Sum, and Weighted Average functions are multi-row formulas. They use multiple rows in calculating the results.					
Date	Build Date	BuildDate(year,month,days)	Requires three parameters, (CCYY,MM, DD) (century and year, month, day). It returns a valid data and enables you to build a date from components. **Caution:** If the parameters are entered incorrectly, the date is invalid.	BUILDDATE(CCYY,MM,DD)	BuildDate(95, 11,30) is invalid (invalid century). BuildDate(1995,11,30) is valid.

Function type	Function Name	Notation	Description	Syntax	Example depicting Usage
	Go Month		Advances a date by x number of months. Go Month does not know the calendar. For example, it cannot predict the last day of a month. Typical functionality is illustrated in the following table:	GOMONTH(Date column, Number of months to advance)	GOMONTH(DEPOSITS.ORIGINATION_DATE,DEPOSITS.ORG_TERM) **Valid examples:** GOMONTH(F, F + R + C) GOMONTH(F, R) **Invalid examples:** GOMONTH(F + (R + C), MAX) GOMONTH((F * C), F)
	Example:	**Date Column**	**# of Months**	**GOMONTH**	**Comment**
		1/31/94	1	2/28/94	Because 2/31/94 does not exist
		1/15/94	2	3/15/94	Exactly 2 months:15th to 15th
		2/28/94	3	5/28/94	Goes 28th to 28th: does not know that 31st is the end of May

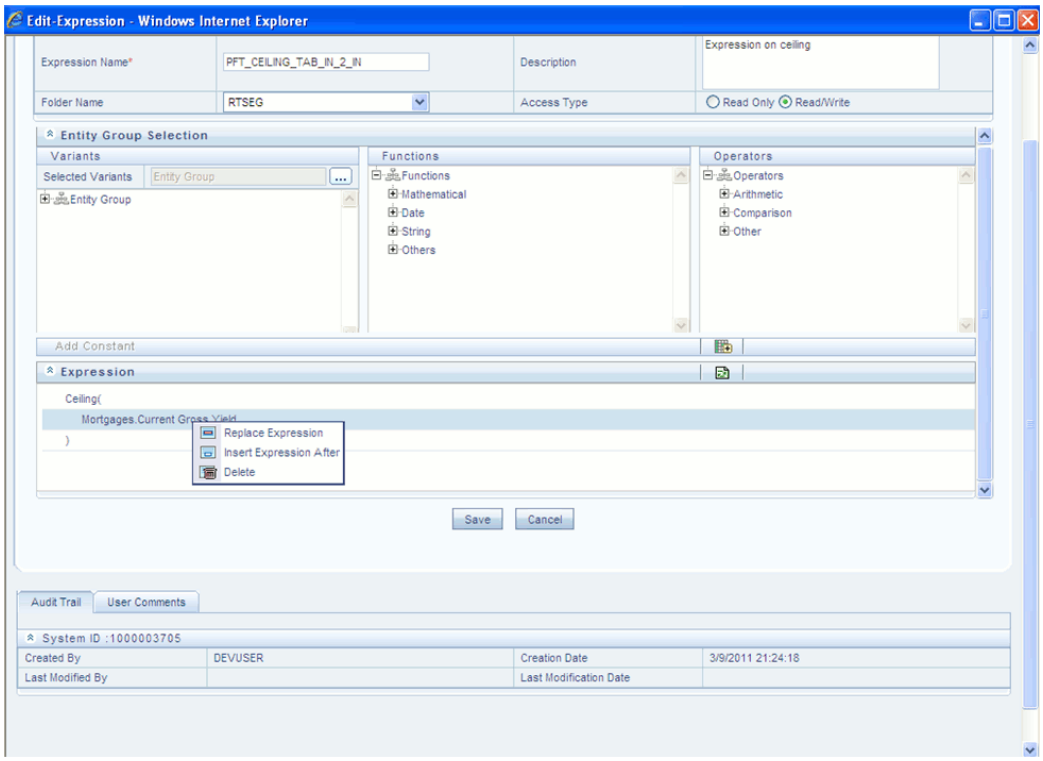
Function type	Function Name	Notation	Description	Syntax	Example depicting Usage
		6/30/94	-1	5/30/94	Goes back 30th to 30th: does not know that 31st is end of May
	Year	Year(date)	Year(x) returns the data for year x.	Year(*Column*) returns the year in the column, where the column is a date column.	Year(Origination Date) returns the year of the origination date.
	Month	Month(date)	Month(x) returns the month in x, where x is a numbered month.	Month(*Column*) returns the month in the column, where the column is a date column.	Month(9) returns September. Month(Origination Date) returns the month of the origination date.
String	Trim All	AllTrim(a)		Trims leading and following spaces, enabling the software to recognize numbers (entered in All Trim) as a numeric value, which can then be used in calculating.	

Function type	Function Name	Notation	Description	Syntax	Example depicting Usage
Other	If statement	If(a=b,c,d)	The IF function should always have odd number of parameters separated by commas. The first parameter is an expression followed by a relational operator, which is in turn followed by an expression. **Note:** Avoid embedding multiple individual formulas in subsequent formulas. This can create an invalid formula.	If(Condition, Value if True, Value if False). {IF(} followed by EXPR2 followed by {> | < | <> | = | >= | <=} followed by EXPR2 followed by {{,} followed by EXPR followed by),} followed by EXPR}n followed by {)} where n = 1, 2, 3, ...	If(LEDGER_STAT.Financial= 110, LEDGER_STAT.Month 1 Entry,0) IF(((MAX + SUM) >= 30), F, POWER) are valid.

Function type	Function Name	Notation	Description	Syntax	Example depicting Usage
	Lookup	Lookup(OrigCol,LookupCol,… ,ReturnedCol)	Enables you to assign values equal to values in another table for data correction. LOOKUP function should always have an odd number of parameters separated by commas and with a minimum of 3 parameters. **Note:** Lookup is used exclusively for data correction.	Lookup(O1,L1,O2,L2,...On, Ln,R) where O=Column from Original table L=Column from Lookup table R=Column to be Returned. So the previous statement would read: where O1=L1 and O2=L2... Returned value R	**Valid examples:** LOOKUP(F, R, R) LOOKUP(F, R, F, F, F) **Invalid examples:** LOOKUP(F) LOOKUP(F, R) LOOKUP(F + R, (F + R), MAX)

Expression Container

The Expression container displays your formula step-by-step as you build it. When your formula is complete you may save the Expression rule. Saving an Expression rule invokes validation logic to ensure that you have constructed a legitimate formula, i.e., one that may be legally applied to your database.



In the Expression grid, you can right-click the expression and do the following:

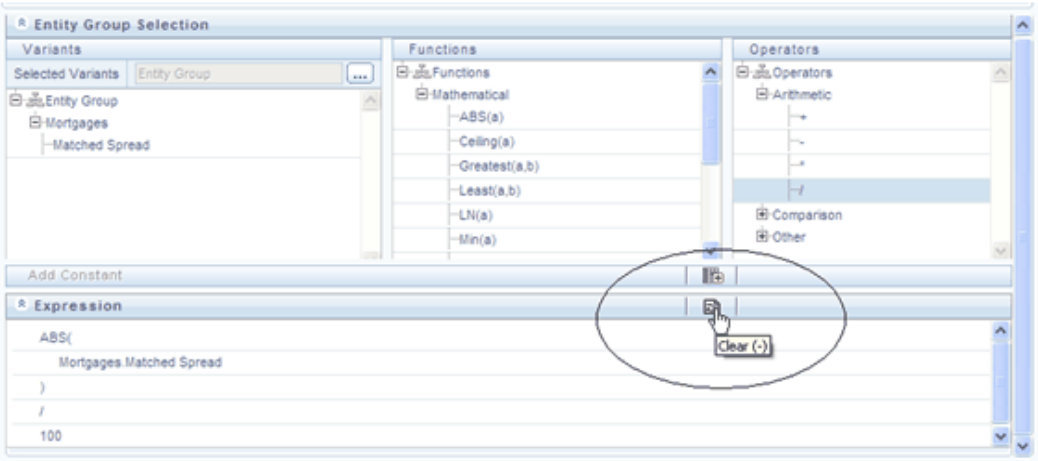
Click **Replace Expression** to replace the expression with a new one.

Click **Insert Expression After** to insert a new expression after the selected expression.

Click **Delete** to delete a selected expression.

You can also click **clear(-)** button in the Expression grid to clear the Expression.

If you encounter errors or if for any reason you want to reconstruct a formula, click the Clear control at the top of the Expression container.



After clicking the Clear control, you will be prompted to ensure you wish to clear the formula. If you answer OK, the formula is erased and you may start over in specifying your formula.

10

OFSAA Rate Management

Overview

OFSAA Rate Management is a comprehensive utility enabling you to manage currencies, yield curves, and interest rate & currency exchange rate data with a high degree of security and control. OFSAA Rate Management also allows you to maintain economic forecasts such as GDP growth, inflation rates, or unemployment projections that may be linked to your models for interest rates, exchange rates, or new business growth.

Historical rate data obtained from OFSAA Rate Management is utilized within all of the applications (OFSAA Funds Transfer Pricing, OFSAA Profitability Management, OFSAA Asset Liability Management, and OFSAA Balance Sheet Planning).

Rate Management Subject Areas

There are four primary subject areas or modules within Master Maintenance > Rate Management:

- Interest Rates
- Currency
- Currency Rates
- Economic Indicators

Interest Rates

The quality and availability of interest rate information varies throughout the world. In many markets, gathering comprehensive rate information is a challenge because of insufficient security types, inconsistent quoting conventions, and lack of liquidity. The Interest Rates module within OFSAA Rate Management allows you to define and manage complex yield curve definitions using multiple rate formats and other rate

attributes to give you data storage capabilities appropriate to your market. The Interest Rates module also supports the entry and maintenance of historical rate data for each yield curve you define.

Historical interest rate data from OFSAA Rate Management is utilized within OFSAA Transfer Pricing to generate transfer rates and option costs. Historical interest rate data is also utilized within OFSAA Asset Liability Management and within OFSAA Balance Sheet Planning in the generation of forecasted interest rate scenarios.

Currency

Financial institutions commonly transact business in more than one currency. Transacting business in multiple currencies demands functional capabilities for multi-currency accounting and currency rate management.

OFSAA Rate Management's Currency module supports the definitions and maintenance of currencies. Currency definitions are fundamental to the definition of both interest rate yield curves and currency exchange rates. A key attribute of every yield curve is the currency with which it is associated; and currency exchange rates can only be established between defined currencies. OFSAA Rate Management provides a comprehensive list of ISO-defined currencies; you may also define and add your own user-defined currencies.

Currency Rates

OFSAA Rate Management's Currency Rates module draws upon the currencies you have defined and activated in the Currency module to support the entry and maintenance of historical exchange rates. Currency exchange rates are utilized within:

- OFSAA Funds Transfer Pricing "Ledger Migration" processes (see the *Oracle Financial Services Analytical Applications Funds Transfer Pricing User Guide*)
- OFSAA Asset Liability Management currency consolidation process (see the *Oracle Financial Services Analytical Applications Asset Liability Management (OFSALM) User Guide*)
- OFSAA Profitability Management multi-currency allocations (see the *Oracle Financial Services Analytical Applications Profitability Management (OFSPM) User Guide*)

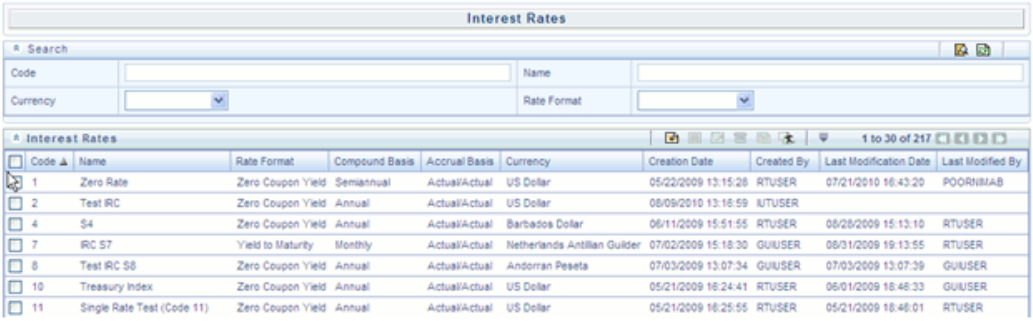
Economic Indicators

An economic indicator is any economic statistic such as the Consumer Price Index (CPI), the growth rate of the Gross Domestic Product (GDP), the unemployment rate, the Purchasing Managers Index, indices of consumer confidence, etc. Such macroeconomic statistics tell us how well the economy has behaved in the past. Some economic indicators are referred to as "lagging" indicators while others are classified as "leading" indicators. Leading indicators may provide insights into the future direction of the economy.

OFSAA Rate Management's Economic Indicators module allows you to define and store such historical indicators. Economic Indicators provide baselines from which OFSAA Asset Liability Management can generate forecasts of future values of economic statistics that can affect new business or other modeling assumptions.

Interest Rates Summary Screen

When you first navigate to Master Maintenance > Rate Management > Interest Rates, an empty screen will be displayed. After you have constructed one or more interest rate curves, navigating to Master Maintenance > Rate Management > Interest Rates will display a summary screen showing each of the interest rate curves that you have previously built.



Search Container

A Search container is provided in which you may search for interest rate curves by Name or by Currency (by ISO currency code).

Search Control

Enter your desired search criteria and click the Search control.

Reset Control

Clicking the Reset control removes any Name or Currency constraint you may have specified and refreshes the screen.

Interest Rates Container

The Interest Rates container presents a grid containing all of the interest rate curves that meet your search criteria. The Interest Rates summary grid offers several controls that allow you to perform different functions when an interest rate curve is selected.

To select an interest rate curve, click a check box in the first column of the grid. More than one interest rate curve can be selected at a time but this will cause some of the controls to become disabled. Clicking a checkbox a second time de-selects the interest

rate curve.

You may select or deselect all of the interest rate curves in the summary grid by clicking the check box in the upper left hand corner of the summary grid directly to the left of the Name column header.

Add

Clicking the Add control begins the process of building a new interest rate curve. The Add control is disabled if any rows in the grid have been selected.

View

Selecting a single row out of the grid enables the View control. Clicking the View control allows you to view the contents of an interest rate curve on a read-only basis. The View control is only enabled when a single interest rate curve has been selected.

Edit

Selecting a single row out of the grid enables the Edit control. Clicking the Edit control allows you to modify a previously saved interest rate curve. The Edit control is only enabled when a single interest rate curve has been selected.

Delete

Selecting one or more rows out of the grid enables the Delete control. Clicking the Delete control deletes the interest rate curves you have selected.

Data Loader

The Data Loader Icon executes a function to import historical rates and parameters for all defined Interest rate Curves. For more information on setting up the automated process, see *Oracle Financial Services Analytical Applications Data Model Utilities User Guide*.

To execute a data load, click the Data Loader icon. A warning message will appear " Upload all available Interest Rates and Parameters?" Click ok, and all historical rates and parameters will be loaded.

Interest Rates Summary Grid

The following columns categorize each interest rate curve in the summary grid:

- Name
- Rate Format
- Compound Basis

- Accrual Basis
- Currency
- Creation Date
- Created By
- Last Modification Date
- Last Modified By

Name

Displays the interest rate curve's short name. Performing a "mouse-over" on a row within the grid displays the interest rate curve's detailed description.

Rate Format

Displays the interest rate curve's rate format (zero coupon or yield-to-maturity).

Compound Basis

Displays the interest rate curve's compounding basis (Annual, Semiannual, or Simple).

Accrual Basis

Displays the interest rate curve's Accrual Basis (e.g., 30/360, Actual/Actual, etc).

Currency

Displays the currency (the Reference Currency) to which an interest rate curve is applicable.

Creation Date

Displays the date and time at which an interest rate curve was created.

Created By

Displays the name of the user who created an interest rate curve.

Last Modified Date

Displays the date and time at which an interest rate curve was last modified.

Modified By

Displays the name of the user who last modified an interest rate curve.

Interest Rates Detail Screen

When you Add, Edit, or View an interest rate curve, the Interest Rate Code Detail Screen is displayed. The Interest Rate Code detail screen is comprised of an Interest Rate Code Details container, 5 Interest Rate Code tabs, and an Audit Trail container.

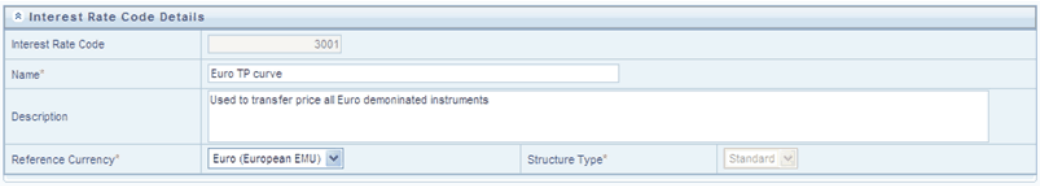
The Audit Trail container is a standard footer container for every OFSAA rule type. It displays Created By, Creation Date, Last Modified By, and Modification Date on the Audit Trail tab. The User Comments tab may be used to add comments to any rule.

Interest Rate Code Details Container

Is explained in detail in the following sections.

Interest Rate Code

When constructing a new yield curve, you must specify an Interest Rate Code between 0 and 99,999. Interest Rate Codes are used internally to uniquely identify yield curves. When working with Rate Manager or other OFS Analytical Applications, you generally reference yield curves by Name, not by Interest Rate Codes. Interest Rate Codes, however, are embedded within your instrument data (for example, the INTEREST_RATE_CODE and T_RATE_INT_RATE_CD columns within your instrument data are populated with Interest Rate Codes). Once you have saved a yield curve, you may not renumber its Interest Rate Code.



Name & Reference Currency

You must also provide a Name and Reference Currency for your yield curve. Unlike Interest Rate Codes, you may rename or change the reference currency for previously saved yield curves. While you may choose to rename a yield curve, however, it is very unlikely that you will chose to modify a yield curve's Reference Currency. A yield curve's Reference Currency is the currency for which your market rates are valid. For example, the Reference currency for a Prime Rate yield curve would be US Dollars. LIBOR or other internationally quoted rates are always quoted with respect to an underlying reference currency (e.g., US Dollar LIBOR, Euro LIBOR, etc). The drop-down list box for Reference Currencies displays only "Active" currencies. See the section below entitled Currency for a discussion of Active and Inactive currencies.

Description

You may optionally provide a description of your yield curve; you may modify a yield curve's description at any time.

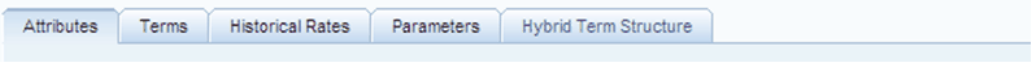
Structure Type

Another required attribute for each yield curve is its Structure Type. Structure Type supports both Standard and Hybrid yield curve definitions. Hybrid yield curves are re-expressions of one or more pre-existing Standard yield curves. For additional information, see Hybrid Term Structure Tab under Interest Rate Code Tabs below.

Interest Rate Code Tabs

Interest Rate Code tabs are used to define your yield curve and to add, edit, or delete historical interest rate data. The Interest Rate Code tabs are:

- Attributes
- Terms
- Historical Rates
- Parameters
- Hybrid Term Structure



Navigating Between Interest Rate Code Tabs

For new yield curves, you must begin with the Attributes tab. Once you have selected attributes for a yield curve, you will typically not change them. When you have finished assigning attributes, navigate to the Terms tab in order to establish a term structure for your yield curve, i.e., an overnight rate, a one month rate, a three month rate, etc. To navigate to the Terms tab, you may either select the Apply button on the Attribute tab or you may simply click the Terms tab.

> **Note:** You must have specified an Interest Rate Code, a Name, and a Reference Currency in the Interest Rate Code Details container before you can navigate to the Terms tab.

As with your yield curve attributes, once you have established a term structure for your yield curve you will only rarely come back to change it. The first time you navigate to the Terms tab, an initial 1 month term point is provided, but even if this is the one and

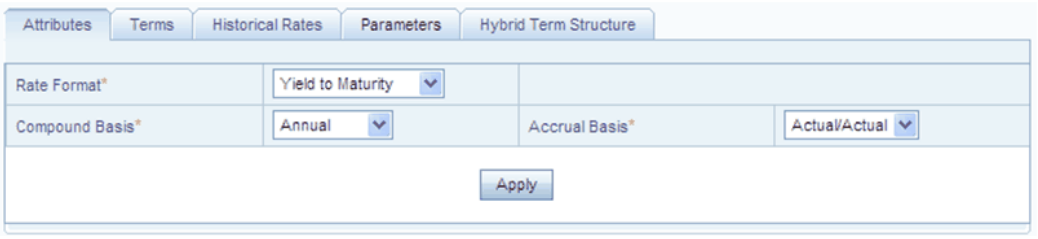
only term point you want for your yield curve, you must select the Apply button to tell the system that you have finished your term structure specification. In future revisions to your yield curve's definition, you may navigate directly to the Historical Rates tab simply by clicking it, but if you modify your term structure in any way, you must always select the Apply button on the Term tab before you can navigate to the Historical Rates tab.

The Historical Rates tab is used to input interest rate data. This is the tab you will most often return to for maintaining your interest rate database over time. To navigate to the Historical Rates tab, you may either select the Apply button on the Terms tab or you may simply click the Historical Rates tab if you have already established your term structure.

> **Note:** You must have specified (1) an Interest Rate Code, a Name, and a Reference Currency in the Interest Rate Code Details container and (2) a term structure in the Terms tab before you can navigate to the Historical Rates tab.

Attributes Tab

Yield curve attributes include Rate Format, Compound Basis, and Accrual Basis. Once you have initially saved a yield curve, you typically will not change these attributes, but Rate Management will allow you to do so.



Rate Format

As part of your yield curve definition, you must select either the Zero Coupon or Yield-to-Maturity rate format. Regardless of which format you select, rates entered into Rate Management (in the Historical Rates tab) are always entered in nominal form, e.g., 5.125% or 6.875%, not as discount factors. For details on how the two rate formats affect internal cash flow engine calculations, see the *Oracle Financial Services Cash Flow Engine Reference Guide*.

Compound Basis

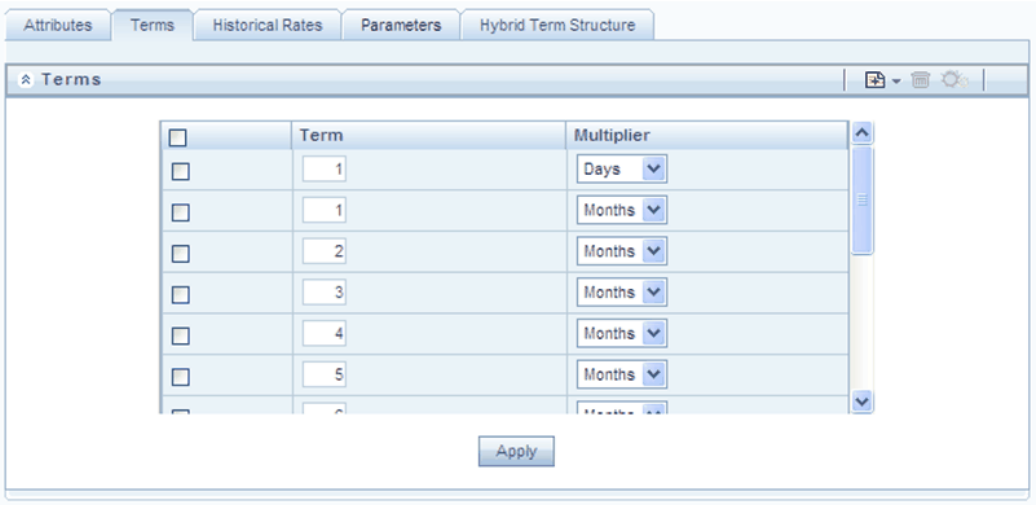
You must also select a compounding basis for your yield curve: Annual, Semiannual, or Simple. Annual is the most common method. For details on Compound Basis and how different compounding bases affect cash flow calculations in OFSAA, see the *Oracle Financial Services Cash Flow Engine Reference Guide*.

Accrual Basis

You must also select an accrual basis for your yield curve. For details on Accrual Basis and how different accrual bases affect cash flow calculations in OFSAA, see the *Oracle Financial Services Cash Flow Engine Reference Guide*.

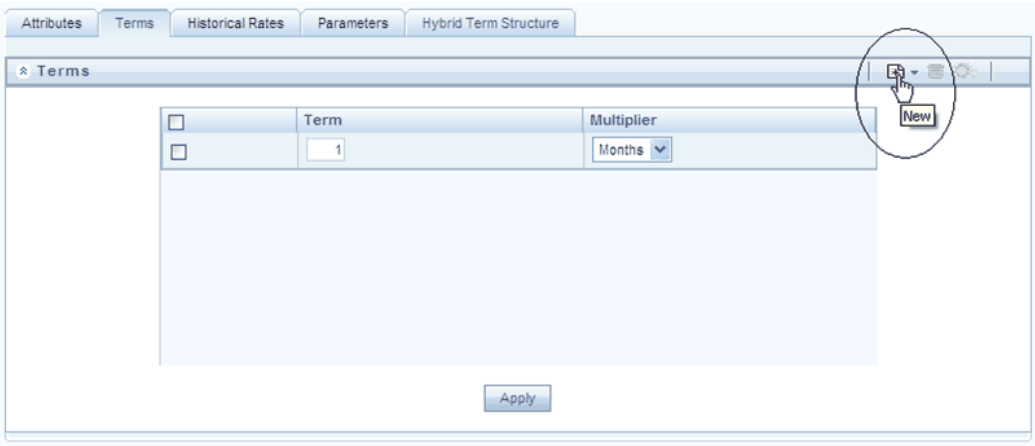
Terms Tab

Use the Terms tab to construct your yield curve's term structure. You may specify as many yield curve terms as you wish ranging from 1 day to 100 years.



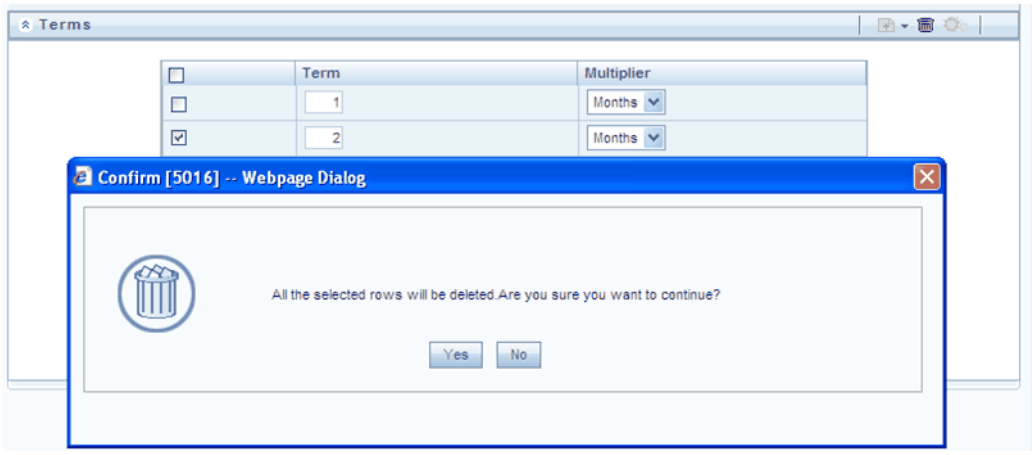
Adding New Term Points

Click the Add control to add new term points. After clicking the Add control, select a Term value and a Multiplier (e.g., 7 days, 2 months, 5 years, etc).



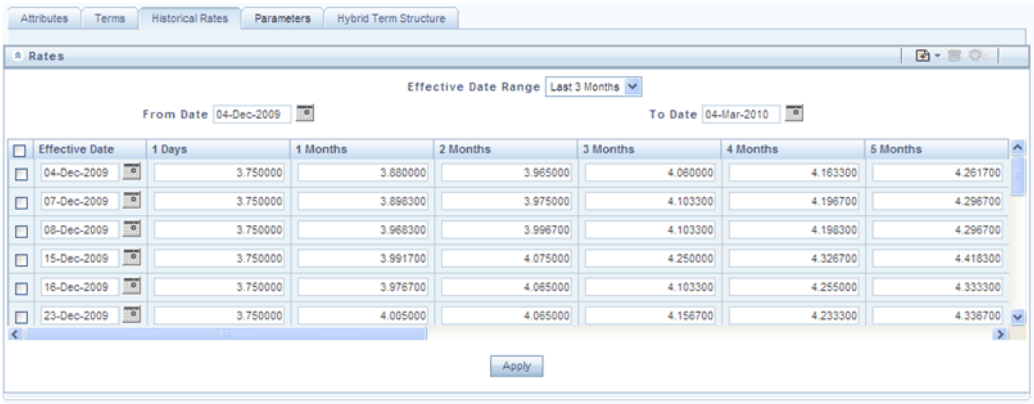
Deleting Existing Term Points

If you wish to delete an existing term, select the term point (or terms) you wish to delete and click the Delete control, and confirm that you want to delete the term (or terms) you have selected.

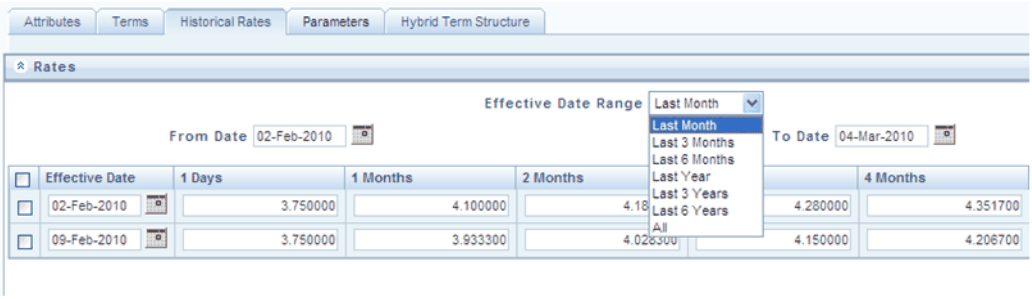


Historical Rates Tab

Use the Historical Rates tab to enter, modify, or view interest rate data. Data should be entered as simple percentages (e.g., 5.125, 4.875, etc).



By default, the Historical Rates tab will display interest rate data for the past month (i.e., for the 30 days leading up to the current date). Click the Effective Date Range drop-down list box to expand your view to the last 3 months, 6 months, one year, 3 years, 6 years or all rate data.



Rate Lookup Behavior Between Term Points

The OFSAA cash flow engine is common to OFSAA Funds Transfer Pricing, OFSAA Pricing Management (Transfer Pricing Component), OFSAA Asset Liability Management, and OFSAA Balance Sheet Planning. In looking up rates from OFSAA Rate Management, the cash flow engine will, where necessary, perform an interpolation between yield curve term points. For example, in determining a straight term transfer rate (common for products such as time deposits), the engine may need to determine a three month rate from a yield curve that contains only a one month rate and a six month rate. In such a case, the cash flow engine will perform an interpolation to determine the implied three month rate. While each of the above applications supports simple linear interpolation, OFSAA Transfer Pricing and OFSAA Asset Liability Management also support cubic and quartic spline interpolation methods. These more advanced methods will be supported for all OFS Analytical Applications in a future release.

Rate Lookup Behavior Beyond Term Points

In cases where the cash flow engine needs to determine a rate from a yield curve for a term point smaller than the first term point of the yield curve, the engine will utilize the

first term point of the yield curve. For example, if the engine needs to determine an overnight rate from a yield curve whose first term point is one month, the engine will utilize the one month rate. Similarly, in cases where the cash flow engine needs to determine a rate from a yield curve for a term point greater than the longest term point on the yield curve, the engine will utilize the last term point of the yield curve. For example, if the engine needs to determine a 30 year rate from a yield curve whose last term point is 10 years, the engine will utilize the 10 year rate.

Rate Lookup Behavior Between Effective Dates

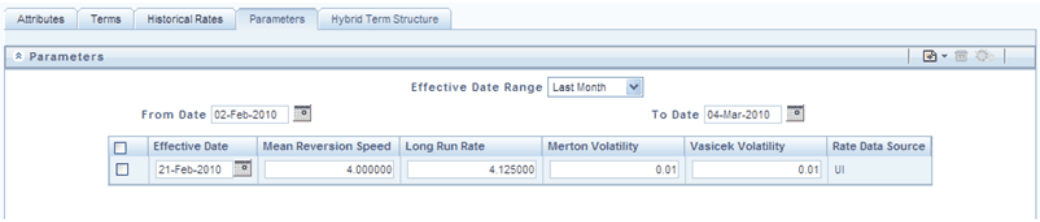
In looking up rates from OFSAA Rate Management for a business date, the cash flow engine may find that there is no rate data for that specific business date. For example, in generating an original term transfer rate for an instrument with an origination date of June 14, 2010, the cash flow engine may find rate data for May 31, 2010 and for June 30, 2010 but no rate data for any dates between May 31, 2010 and for June 30, 2010. In such cases, the cash flow engine always falls back to the latest available rate data prior to the business date of interest (May 31, 2010 in this case).

Parameters Tab

The following parameters are utilized in stochastic modeling of interest rates in OFSAA Transfer Pricing and OFSAA Asset Liability Management:

- Mean reversion speed
- Long run rate
- Merton volatility
- Vasicek volatility

Merton volatility is utilized in the Merton and Ho & Lee term structure models and Vasicek volatility is utilized in the Vasicek and Extended Vasicek models.



Values for long run rate and volatility are assumed to be percentages. For example, a long run rate of 5% is displayed as 5.000.

To maintain the integrity of your data, Rate Management restricts the input values it accepts. Note the valid range and default setting for each parameter.

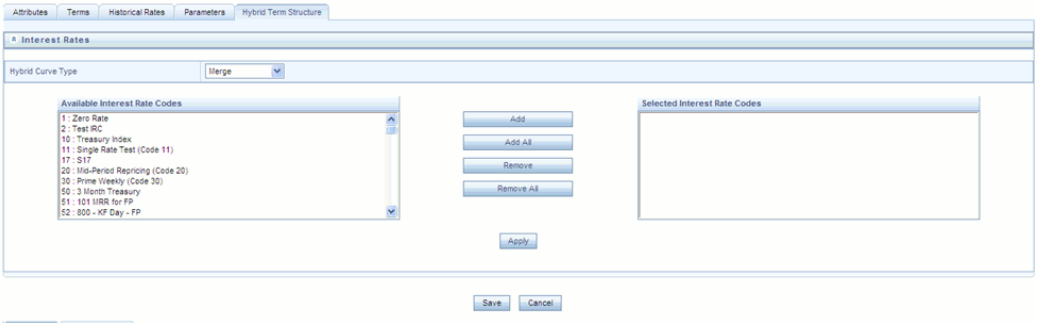
Parameter	Valid Range	Valid Range
Mean reversion speed	0 to 10.0	0
Long run rate	0 to 999.9999%	0
Volatility	0.01% to 10.0%	0.01%

For details on term structure models and stochastic processing, see *the Oracle Financial Services Funds Transfer Pricing User Guide, the Oracle Financial Services Asset Liability Management (OFSALM) User Guide, and the Oracle Financial Services Cash Flow Engine Reference Guide.*

Hybrid Term Structure Tab

Hybrid term structures will allow you to specify three types of hybrid yield curves:

- Spread
- Moving Average
- Merged



Hybrid yield curves are built up from either one or more standard yield curves. When you add, modify, or delete any historical rate data from a standard yield curve, the data associated with any related hybrid yield curve should also be updated (see Generate Historical Rates below). Once defined, Hybrid Yield Curves are used like any other interest rate curve in the system. You can reference these curves within OFSAA application business rules that allow selection of an Interest Rate Code.

Spread

A Spread hybrid yield curve is defined as the difference between two standard yield curves. The "spread" type of hybrid yield curve may be useful in establishing liquidity risk or basis risk yield curves.

Moving Average

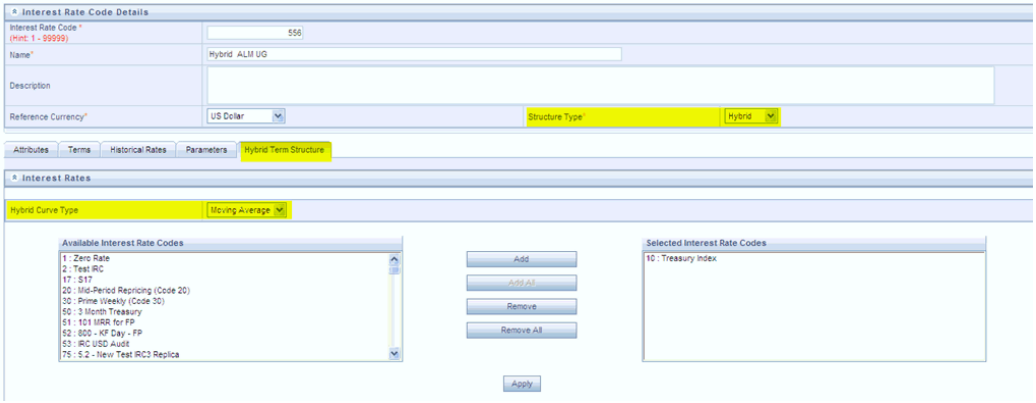
Moving average hybrid yield curves represent moving average data of a single underlying standard yield curve. These curves are typically used in Funds Transfer Pricing.

Merged

Merged hybrid yield curves represent a blending of two or more underlying yield curves. In constructing a "merged" type of hybrid yield curve, you specify the percentage weighting applicable to each of the underlying standard hybrid yield curves.

Defining a Hybrid Curve

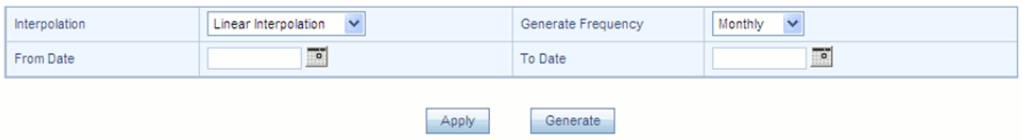
To define a hybrid curve select the Source Type: Hybrid, in the Hybrid Term Structure tab, select the Hybrid Curve Type (Spread, Moving Avg., or Merged), and select the Interest Rate Code(s) for the hybrid type. Click "Apply."



Generate Historical Rates

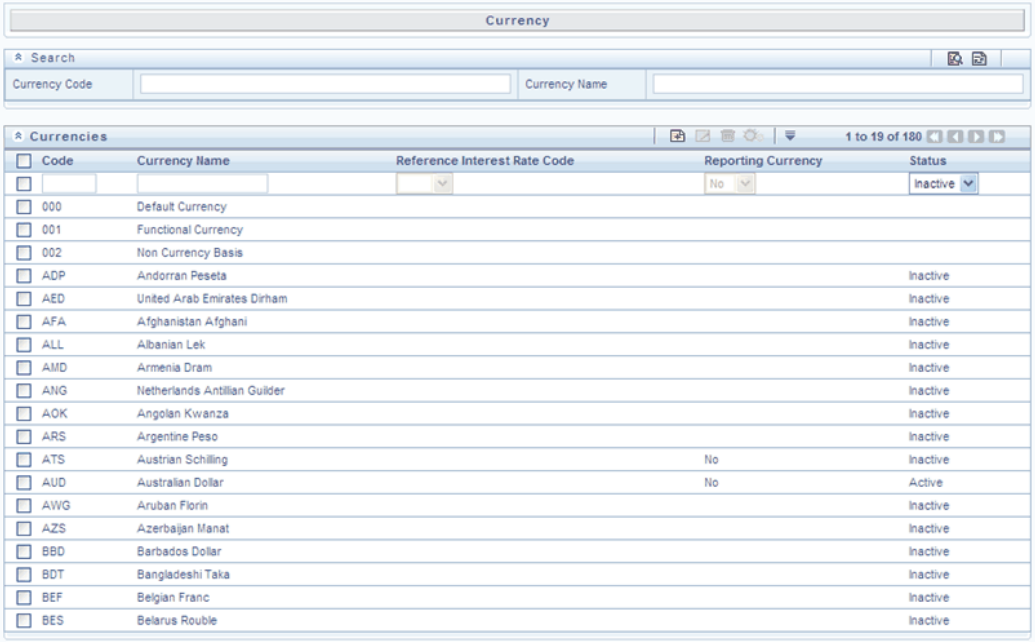
Once a hybrid curve is defined, you can generate historical rates as far back as the rate source curves allow. The Generate Frequency determines the frequency of the historical rates populated with the Generate function. If you choose the generate frequency of monthly, it will generate month end values only. If you choose daily, it will generate the maximum number of historical values.

To generate the rates, select the interpolation method (Linear, Cubic or Quartic), select the Generate Frequency (Daily, Weekly, Bi-Weekly, or Monthly) and enter the specific date range (From Date / To Date), Click the "Generate" button. The rates will be populated and you will be directed to the Historical Rates tab to view the results.



Currency

Upon initially navigating to Master Maintenance > Rate Management > Currency, a summary screen displays a comprehensive list of more than 170 seeded ISO currency codes.



Search Container

A Search container is provided in which you may search for currencies by Name or by Currency (by ISO currency code).

Search Control

Enter your desired search criteria and click the Search control.

Reset Control

Clicking the Reset control removes search constraint you may have specified and refreshes the screen.

Currencies Container

The Currencies container presents a grid containing all of the currencies that meet your search criteria. The Currencies summary grid offers several controls that allow you to perform different functions when a currency is selected.

To select a currency, click a check box in the first column of the grid. More than one currency can be selected at a time but this will cause some of the controls to become disabled. Clicking a checkbox a second time de-selects the currency.

You may select or deselect all of the currencies in the summary grid by clicking the check box in the upper left hand corner of the summary grid directly to the left of the Code column header.

Add

Clicking the Add control begins the process of adding a new currency. The Add control is disabled if any rows in the grid have been selected.

Edit

Selecting a single row out of the grid enables the Edit control. Clicking the Edit control allows you to modify an existing currency. The Edit control is only enabled when a single currency has been selected.

Delete

Selecting one or more rows out of the grid enables the Delete control. Clicking the Delete control deletes the currency or currencies you have selected.

Currencies Summary Grid

The following columns categorize each currency shown in the summary grid:

- Code
- Currency Name
- Reference Interest Rate Code
- Reporting Currency
- Status

Code

For seeded currencies, these are ISO Currency Codes. For user-defined currencies, these may be any pure character string (no numbers) up to a length of 3 characters.

Currency Name

For seeded currencies, these are ISO Currency Codes. For user-defined currencies, these may be any string up to a length of 40 characters.

Reference Interest Rate Code

Reference Interest Rate Code is the Interest Rate Code with which a currency is associated for forecasting purposes. You may define multiple yield curves each of which has the same Reference Currency, but a currency may only have one Reference Interest Rate Code.

Reporting Currency

A reporting currency is an active currency to which balances in other currencies may be consolidated in order to facilitate reporting. Balances in reporting currencies may be, in turn, consolidated to the functional currency. For example, an American multinational bank might consolidate its holdings in Asian currencies to the Japanese yen (reporting currency) and its balances in European currencies to the Euro (reporting currency) after which it might consolidate these reporting currencies to the U.S. dollar (functional currency).

Status

The status of any currency may be either Active or Inactive. You must "activate" a currency before you can:

- Define that currency as a Reference Currency for a yield curve (see Reference Currency above under the section entitled Interest Rates Detail Screen)
- Enter exchange rate data for a currency (see the section below entitled Currency Rates)
- Define Forecast Rates for that currency within OFSAA Asset Liability Management (see Forecast Rates in the *Oracle Financial Services Asset Liability Management (OFSALM) User Guide*)

Special Purpose Currencies

The Currencies container also displays three special-purpose internal currency codes for Default Currency (code 000), Functional Currency (code 001), and Non-Currency Basis (code 002).

The Functional Currency

At the time of installation, Rate Management requires the installer to designate a functional currency for the organization. For example, a Swiss multinational bank

would designate the Swiss franc as its functional currency. Only one functional currency is allowed per organization, and once assigned it cannot be changed. The functional currency is both an active currency and a reporting currency. The 001 functional currency code is utilized within certain OFSAA application interfaces as a synonym for the declared fuctional currency's ISO Currency Code.

Non-Currency Basis

Every business fact in the OFSAA data model carries with it an ISO Currency Code that describes the currency in which a balance is held. Every instrument row, for example, carries an ISO Currency Code as does every row in the Management Ledger. Particularly in the Management Ledger, you may store statistics such as headcounts, activity counts, square footage, etc. for which there is no meaningful currency basis. Such records utilize the special 002 non-currency basis code.

Editing Currencies

To edit a currency, select a currency and then click the Edit control. You may not make any modifications the special purpose currencies (000, 001, and 002), and you may not modify any currency Code value. You may, however, modify Currency Name, the Reference Interest Rate Code, the Reporting Currency value (limited to Yes or No), or the currency's Status (limited to Active or Inactive).

You may not inactivate any currency that is:

- Defined as the Reference Currency for any yield curve
- Associated with any exchange rate data
- Utilized within any Forecast Rates rule within OFSAA Asset/Liability Management

Once you have completed your edits, Click the Save control to save your work.

Adding Currencies

The first row in the Currencies container is an empty row that is ready for you to edit as a new currency. You may select this empty row, click the Edit control, and generate a new currency. You may also generate a new currency by clicking the Add control. This will generate another empty row at the top of the Currencies container that is ready for you to edit.

Deleting Currencies

Click one or more currencies and then select the Delete control. You may not delete any currencies that are utilized elsewhere in the system (see exclusions above under Editing Currencies).

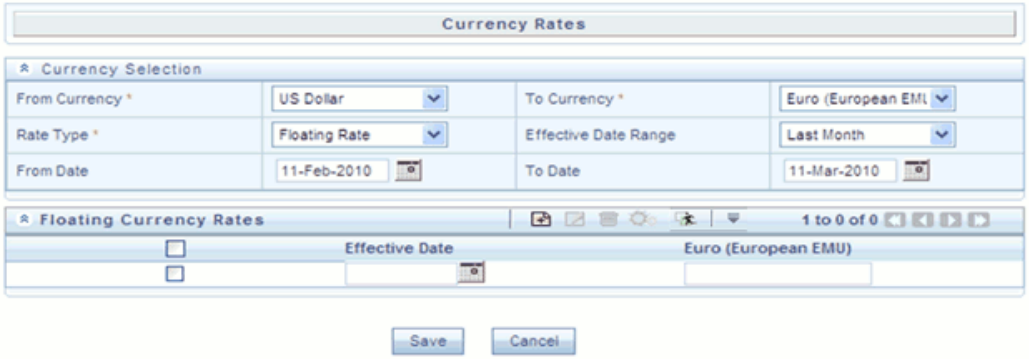
Currency Rates

Upon navigating to Master Maintenance > Rate Management > Currency Rates, the Currency Rates screen is displayed. Within this screen, you may manage historical exchange rates between currencies.

Initially, this screen will only display a Currency Selection container in which the "From Currency" is defaulted to your first Active currency. You may select another From Currency, but the From Currency drop-down list box displays only currencies that are Active.

Preparing to Work with Exchange Rate Data

In order to begin the process of viewing, entering, modifying, or deleting exchange rate data, you must supply a "To Currency" value. As with the From Currency, the To Currency drop-down list box displays only Active currencies.



After having selected a To Currency value, select a value for Rate Type: Floating Rate or Fixed Rate (the default selection is Floating Rate). Once you have selected a To Currency value, a second container is displayed: Floating Currency Rates (if you have chosen a Rate type of Floating Rate) or Fixed Currency Rates (if you chosen a Rate type of Fixed Rate).

Floating Rates

Floating exchange rates, such as those between the US Dollar (USD), the British Pound

(GPB), the Japanese Yen (JPY), and the Euro (EUR), are market driven and may change from days-to-day, hour-to-hour, or minute-to-minute.

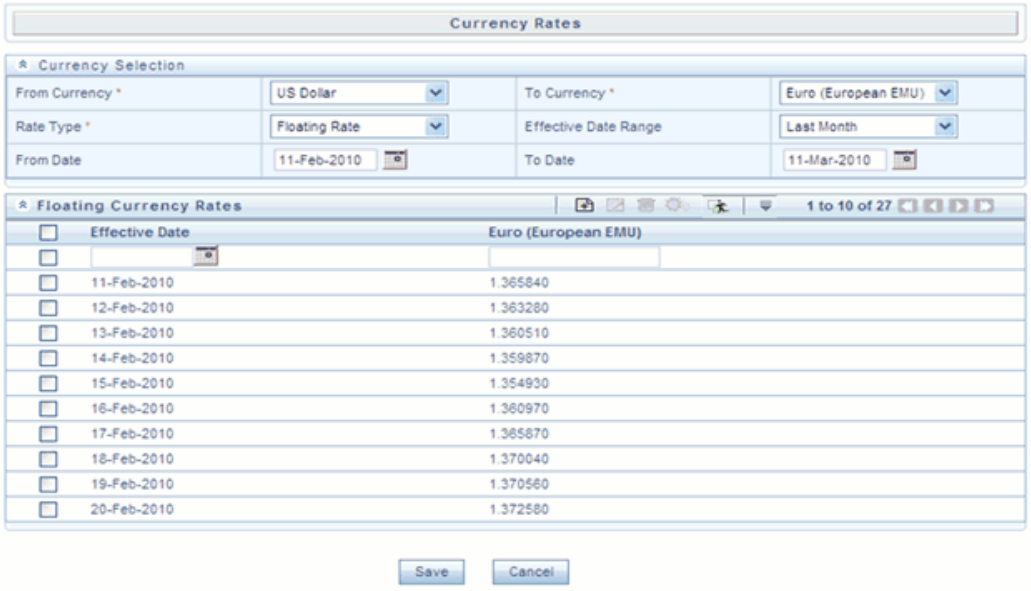
Fixed Rates

Some countries, especially smaller countries or countries that have experienced significant inflation in the recent past, may wish to "peg" their currency to a larger, more stable currency such as the US Dollar, Japanese Yen, or Euro.

Adding Exchange Rate Data

Once you have specified a value for To Currency, the Floating Currency Rates container appears. If you wish to define a Fixed Rate relationship, select the "Fixed Rate" Rate Type and the Floating Currency Rates container will be replaced by the Fixed Currency Rates container.

Both Currency Rates containers initially display a single blank row followed by the most recent month's exchange rate data (if any such exchange rate data already exists). To enter a single new exchange rate data point, enter your data into the blank row and click the Save control.



Effective Date

Select the calendar control to choose an effective date for your new exchange rate data point.

Rate Management stores historical exchange rate data. You may not enter exchange rate data for dates greater than the current date. For more information regarding rate forecasts and the relationship between historical exchange rates for forecasted exchange

rates, see *Oracle Financial Services Asset Liability Management (OFSALM) User Guide*. If you have gaps in your historical exchange rate data, any OFS Analytical Application that needs to perform a rate translation function will fall back to the most recent date for which exchange rate data exists. For example, if an OFS Analytical Application needs to translate a rate from USD to EUR for February 22, 2010 and the latest available USD to EUR rate data in the Rate Management database is February 11, 2010, the application will utilize the exchange rate for February 11, 2010.

Currency Exchange Rate

For both Floating Rates and Fixed Rates, units of the From Currency are converted to one unit of the To Currency. For example:

From Currency	To Currency	Approximate Rate
USD – US Dollar	GPB—British Pounds	1.50
USD – US Dollar	EUR – Euro	1.36
USD – US Dollar	JPY – Japanese Yen	0.01105

Adding Multiple Exchange Rates

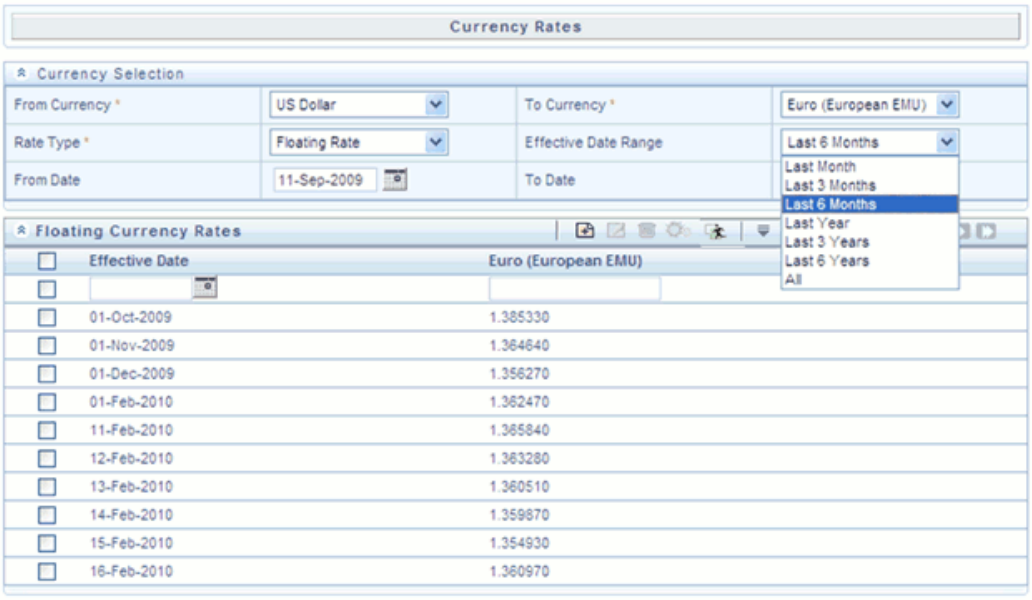
Click the Add control to add additional blank rows into which you may enter additional Effective Dates and Exchange Rates. When you have finished adding multiple new exchange rates, click the Save control.

Editing Exchange Rate Data

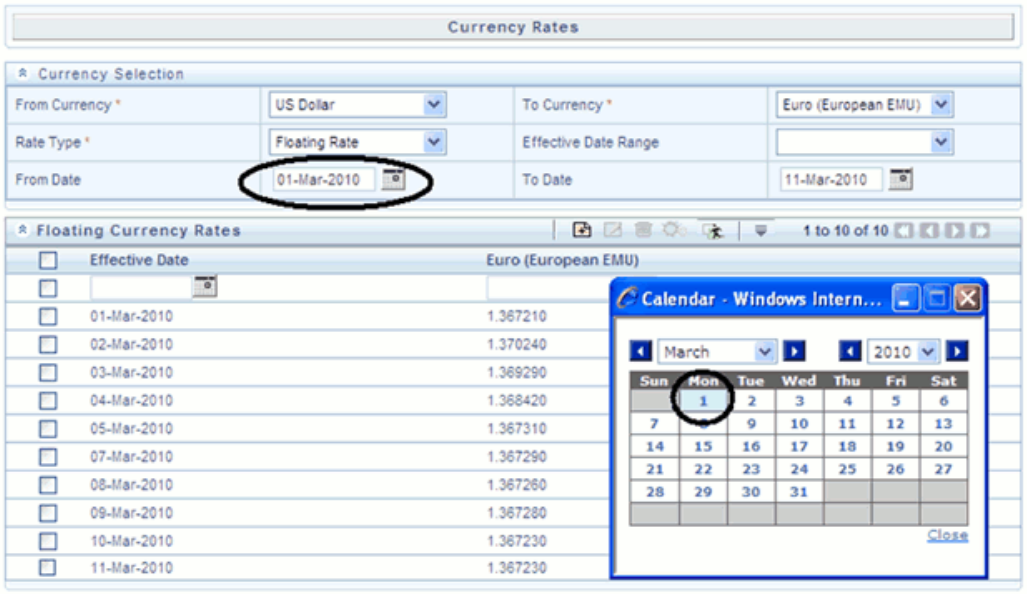
Clicking the check box on the left hand side of any row of data enables the Edit control. After clicking the Edit control, the row becomes active and you may edit Effective Date and/or the Exchange Rate after which you may Save your changes.

Viewing Exchange Rate Data

By default, both the Floating Currency Rates container and the Fixed Currency Rates container display the most recent month of historical exchange rate data. You can control the amount of data displayed by selecting a different value from the Effective Date Range drop-down list box in the Currency Selection container.

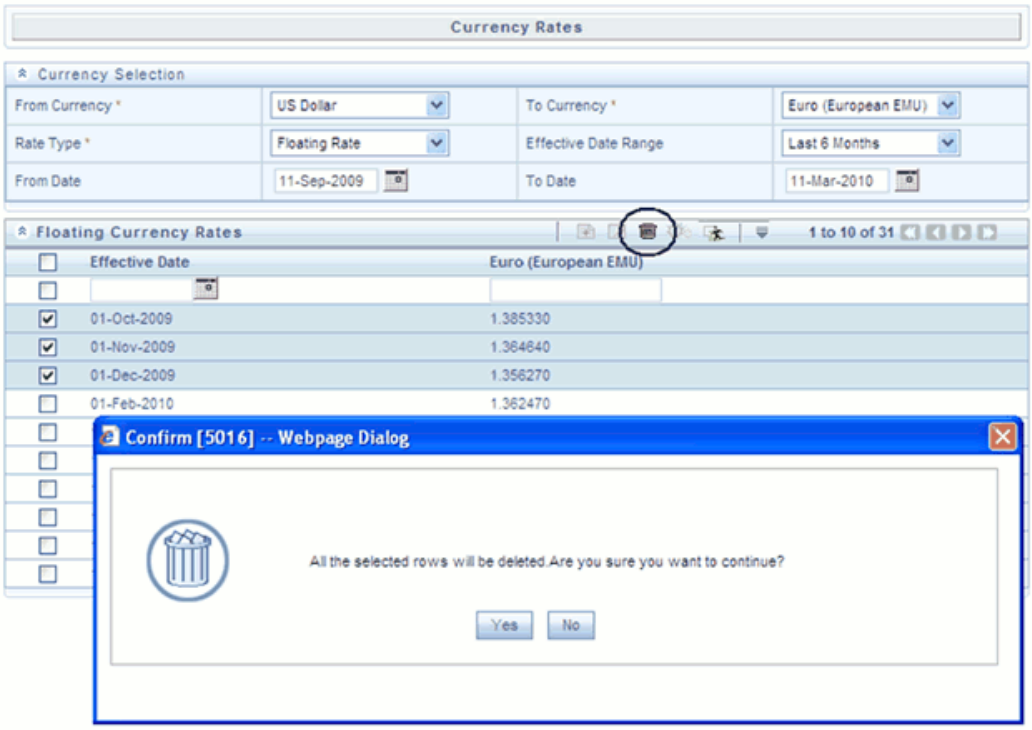


You may also choose to view a specific range of effective dates by modifying the From Date, the To Date, or both dates within the Currency Rates container.



Deleting Exchange Rate Data

Clicking one or more check boxes on the left hand side of any row of data enables the Delete control. After clicking the Delete control, you will be asked to confirm that you wish to delete the rows you have selected.

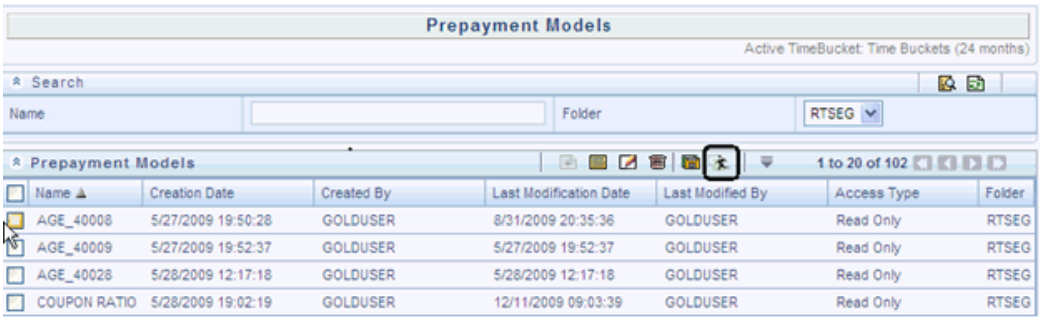


Data Loader

The Data Loader Icon executes a function to import historical Currency rates for all defined Currencies. For more information on setting up the automated process, see *Oracle Financial Services Analytical Applications Data Model Utilities User Guide*.

To execute a data load, click the Data Loader icon. A warning message will appear " Upload all available Currency Rates?"

> **Note:** Upon clicking the data loader icon, the loader will execute all currency rates.



Currency Exchange Rate Validation

Currency Rate Validation – Overview

Features:

Exchange Rate Validation contains the following features:

- Movement of historical fx rates to the Currency Direct Access table.
- Calculation of inverse fx rates for reporting currencies.
- Calculation of triangulated fx rates where possible.

> **Note:** This feature is equivalent to the Rate Validation capability in OFSA 4.5 Rate Manager.

Exchange Rate Validation – Feature Description

The goal of exchange rate validation is to ensure that exchange rates from all active currencies to all reporting currencies are available for processing in OFSAA applications. Some of these rates may come from the validated direct input, others are calculated based on relationships with other rates. To support triangulation, all fixed exchange rates are available for all currencies that make up a conversion that needs to be triangulated. In addition, a direct exchange rate between each Child currency and each reporting currency is calculated and supplied to support quick access to exchange rates. If a Child currency is a reporting currency, then exchange rates are calculated for all currencies having an exchange relationship with the Parent currency.

Currency Rate Validation – Procedure

1. Load currency rates through the Rate Management UI or by using the Historical Rate Data Loader. Notice the initial status is "Not Yet Validated".
2. Create and Execute the Currency Rate Validation engine as a batch process.

   Example

   Navigate to: *Operations* > *Batch Maintenance* > *Create Batch*

   - Component = "Transform Data"

   - Rule Name = "Rate_Validation"

   - Parameter List (Required) = FROM_DATE and TO_DATE, for example, '2011-01-01', '2011-01-31'

Note: After completion of the batch process, notice the status in the UI changes to "Valid" or in case there is an issue, "Invalid".

3. View both input and calculated results in the FSI_EXCHNG_RATE_DIRECT_ACCESS table.

4. All of the OFSAA processing engines read from this table for sourcing historical exchange rates.

Note: Executing Rate Validation is a **required** step when multi-currency setup is enabled. All of the OFSAA processing engines require exchange rates to be validated through this process in order to convert results from base currency to a selected reporting currency. If exchange rate validation is not run or required exchange rates are not available, the engines will use default exchange rates = 1.

Validating Exchange Rate Relationships

Users should run the exchange rate validation process after adding or modifying exchange rate data. You can run the process immediately or schedule one or more to be run in the future.

Each exchange rate is placed in one of the following statuses:

Status	Description
Not Yet Validated	The exchange rate has been input or loaded but not yet validated
Valid	The exchange rate has been validated.
Invalid	The exchange rate has violated one or more acceptance rules.

Only exchange rates in Valid status are available for processing and they are not subject to future validation unless you edit them.

The rate validation status is displayed in the Rate Management > Currency Rates UI.

Exchange Rate Validation Criteria

In the rate validation process all exchange rate relationships in the database are

examined for compliance with the following criteria. Error messages and warnings are displayed if one or more criteria are not met. (See *Viewing the Messages* section.)

1. If a currency is defined as a Child in a fixed exchange relationship then it must not be in any floating (standard) exchange rate relationship at the same time. Consequently all floating exchange rates to or from the Child currency must be defined through the Parent currency. If this criterion is not met then the following message is displayed : *Invalid fixed relationship—Child currency exists in a standard exchange rate within the same time period.*

2. A Child currency within a fixed relationship must not be a Child currency in any other fixed relationship during the same time period. If this criterion is not met then the following message is displayed : *Invalid fixed relationship—Child currency already exists in a fixed relationship for same time period.*

3. A circular relationship must not exist. In other words, a Child currency cannot link back to its Parent in any other fixed rate relationship within the same time period. If it does, then the following message is displayed : *Invalid fixed relationship creates circular relationship with other fixed exchange rates.*

4. Regarding new floating (standard) exchange rates, From and To currencies must not exist as Child currencies within any fixed exchange rate relationships. If this criterion is not met then the following message is displayed : *From/To/Both currency(ies) in new exchange rate already exist in a fixed relationship for the same time period.*

5. If any exchange rate is equal to 0, then a warning message is displayed. Generally speaking, 0 is a valid value. You can use it, for example, to designate an exchange rate with a currency of a country that no longer exists.

If two exchange rate relationships fail to meet these criteria then both of them will be labeled Invalid. (Exception: if one of the relationships is already in Valid status, then the other one will be labeled Invalid.) For example, if a currency is defined as a Child in a fixed rate relationship and is also defined as being in a floating relationship at the same time, then both fixed and floating rates for that currency will be labeled Invalid.

If there are both direct and inverse floating exchange rates defined for any two currencies (in other words, one currency is both a To and a From currency in relation to the other), then both relationships will be marked Valid.

Running an Exchange Rate Validation

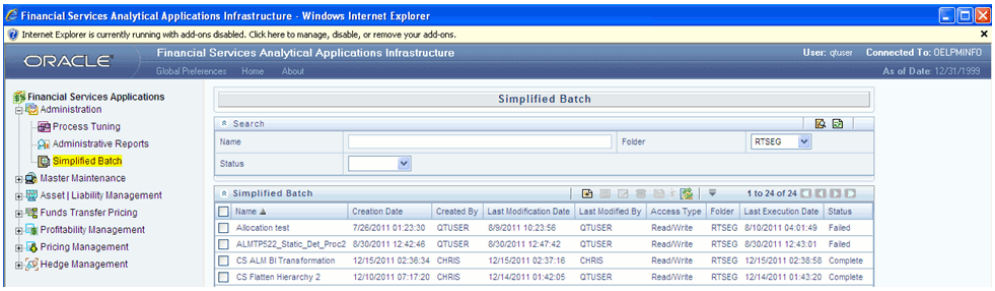
You can run a validation immediately or schedule one or more for later. The validation status shown is as per the user input in the Rate Management > Currency Rates UI.

Running a Validation Immediately

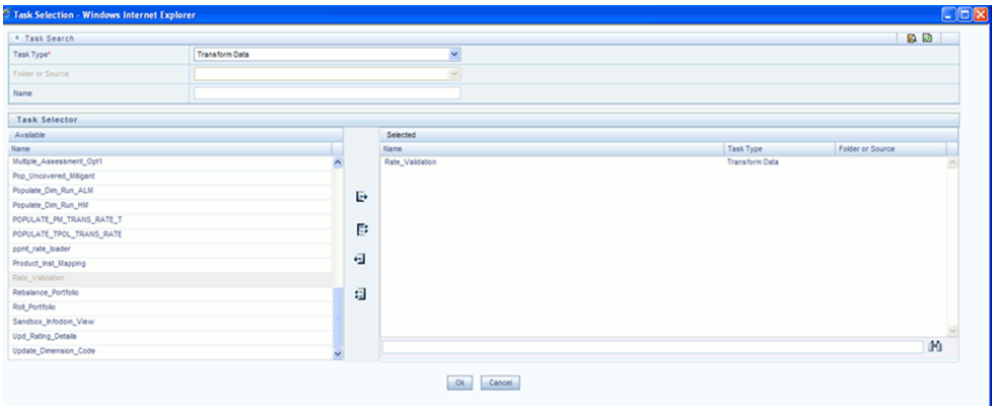
You can execute rate validation using a Simplified Batch process or from the ICC Batch Screen, within the OFSAAI framework.

To run the validation using Simplified Batch, perform the following steps:

1. Click Administration -> Simplified Batch -> Add.

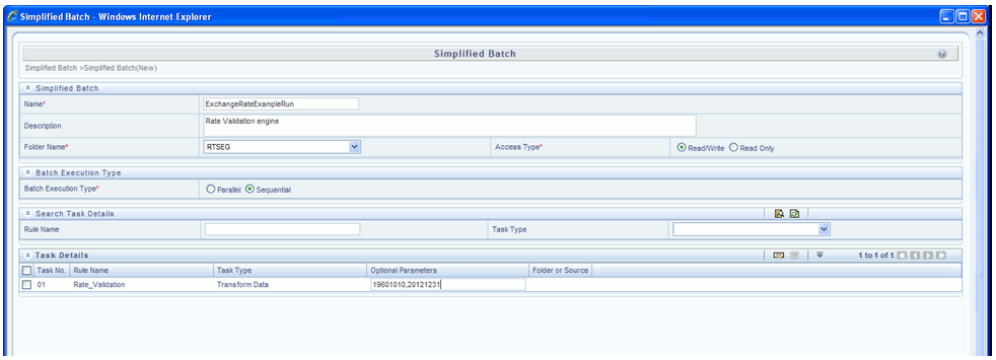


2. From the Task Details block, click Select Task. In the Task Selection window, choose Task Type as Transform Data. Then, click Search. In the Task Selector, Scroll down the left shuttle box (Available tasks) and select Rate_Validation (move to right shuttle box), then click **Ok**.



3. Back in the Simplified Batch definition window, enter the optional parameters to specify the From and To dates, using the format 'YYYYMMDD','YYYYMMDD'.

   Then click **Save**.



4. In the Simplified Batch summary page, search for and select your batch, then click Run.

5. Click Yes to confirm you want to continue, enter a date and click **Ok** to continue.

6. You will receive a message that it has been successfully launched.

7. Click **Ok**. When the batch is complete, optionally navigate to Operations -> View Log to view the processing log.

   Any error messages or warnings are displayed in View Log. (See "Viewing the Messages", page 10-31)

   > **Note:** Simplified Batch does not yet provide access to logs for Transform Data tasks.

To run the validation using the ICC Batch Framework, perform the following steps:

1. Navigate to Operations -> Batch Maintenance -> Add, and create a new batch.

2. Search for the above batch, and select it.

3. In the Task Details block (toolbar), click Add. In the Task Selection window, choose Task Type as Transform Data. Then, click Search. In the Task Selector, Scroll down the left shuttle box (Available tasks) and select Rate_Validation (move to right shuttle box), then click **Ok**.

4. Back in the Task definition window, select the Rule Name Rate_Validation and enter the optional parameters to specify the From and To dates, using the format 'YYYYMMDD','YYYYMMDD'.

   Then click **Save**.

5. Navigate to Operations -> Batch Execution search for and select your batch, enter Information Date, then click **Execute Batch**.

6. Click **Ok** to confirm you want to continue.

7. A message is displayed stating Batch triggered successfully, also displaying the Batch Run ID.

8. Click **Ok**.

9. To view rates, query the database table FSI_EXCHNG_RATE_DIRECT_ACCESS after the run is complete.

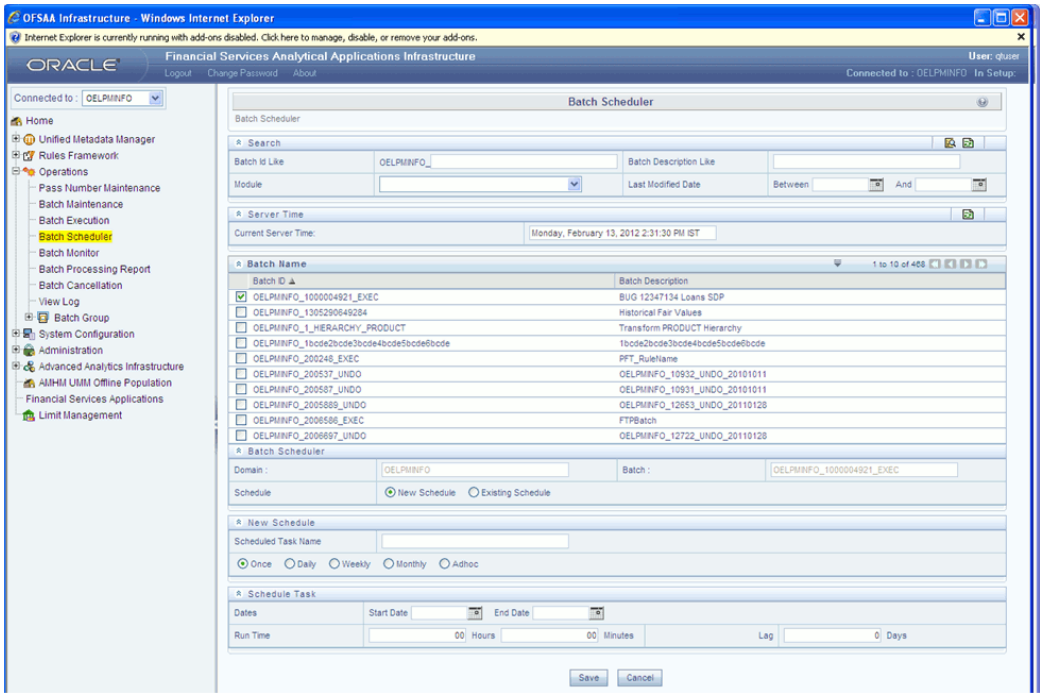
   FSI_EXCHNG_RATE_DIRECT_ACCESS: This output table holds the valid currency codes and their exchange rate with respect to the reporting currency for a period of time say "from date" value to optional "to date" value. When Exchange Rate Validation runs, if data already exists for the selected date range, the Rate Validation package will overwrite the existing values. If no dates are given, ('null','null'), the Rate Validation package truncates this table and re-loads data for the entire historical date range. The following describes the structure of the FSI_EXCHNG_RATE_DIRECT_ACCESS table:

Column Name	Nullable	Data Type
FROM_CURRENCY_CD	Not Null	varchar2(15)
TO_CURRENCY_CD	Not Null	varchar2(15)
EFFECTIVE_FROM_DATE	Not Null	Date
EFFECTIVE_TO_DATE	Not Null	Date
EXCHANGE_RATE	Not Null	Number(15,9)
EXCHANGE_RATE_CONVERT_TYPE_CD	Not Null	Number(5)
EXCHANGE_RATE_CONV_FORMULA	Not Null	Number(15)

10. When the batch is complete, optionally navigate to Operations -> View Log to view the processing log.

    Any error messages or warnings are displayed in View Log. (See "Viewing the Messages", page 10-31)

Scheduling One or More Validations



To schedule a future validation, or to schedule validations on a recurring basis, do the following:

1. Navigate to Operations -> Batch Scheduler.

   The Batch Scheduler window appears.

2. In the Batch Name block, Select the Scheduled Batch ID.

   An unchecked box means that no validation is scheduled to run.

3. Select New Schedule or Existing Schedule:

   Existing Schedule can be selected only if there are existing schedule batches to view.

   If New Schedule is selected, the New Schedule grid appears. Enter the Scheduled task name.

   _ To run the validation once, select once. Go to Step 5, page 10-30.

   _ To schedule the validation on a recurring basis, select Daily, Weekly, Monthly or Adhoc.

4. In the Schedule Task grid, in the Date field, enter the start date and end date.

5. In the Run Time field, input the time for the next validation to be run.

6. Click **Save** to set the schedule as specified or Cancel to drop your changes.

Any error messages or warnings generated during the validation process are displayed in the View Log. (See "Viewing the Messages", page 10-31)

7. To exit the Scheduler, click its exit icon (X).

Viewing the Messages

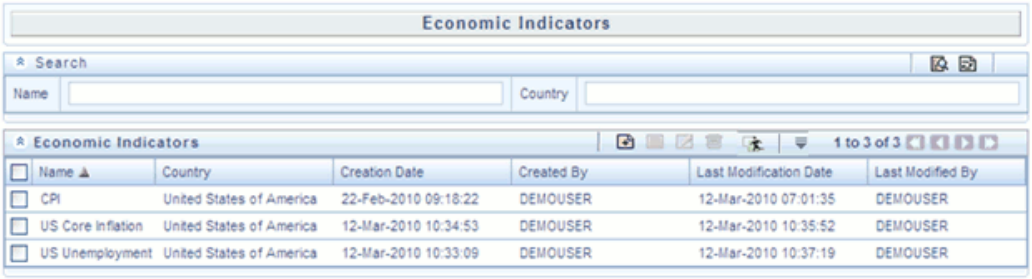
Any error messages or warnings generated during the exchange rate validation process are displayed in the Log Information window. To access this window: Click Operations -> View Log.

To exit the window, click its Exit icon (X).

These exception messages could also be seen in FSI_MESSAGES_LOG table with the help of the batch_id which was used during execution.

Economic Indicators Summary Screen

When you first navigate to Master Maintenance > Rate Management > Economic Indicators, an empty screen will be displayed. After you have constructed one or more Economic Indicators, navigating to Master Maintenance > Rate Management > Economic Indicators will display a summary screen showing each of the Economic Indicators that you have previously built.



Search Container

A Search container is provided in which you may search for Economic Indicators by Name or by Country. Each Economic Indicators rule is specific to one country.

Search Control

Enter your desired search criteria and click the Search control.

Reset Control

Clicking the Reset control removes any Name or Country constraint you may have specified and refreshes the screen.

Economic Indicators Container

The Economic Indicators container presents a grid containing all of the Economic Indicators that meet your search criteria. The Economic Indicators summary grid offers several controls that allow you to perform different functions when an Economic Indicators is selected.

To select an Economic Indicators, click a check box in the first column of the grid. More than one Economic Indicators can be selected at a time but this will cause some of the controls to become disabled. Clicking a checkbox a second time de-selects the row.

You may select or deselect all of the Economic Indicators in the summary grid by clicking the check box in the upper left hand corner of the summary grid directly to the left of the Name column header.

Add

Clicking the Add control begins the process of building a new Economic Indicator. The Add control is disabled if any rows in the grid have been selected.

View

Selecting a single row out of the grid enables the View control. Clicking the View control allows you to view the contents of an Economic Indicator on a read-only basis. The View control is only enabled when a row has been selected.

Edit

Selecting a single row out of the grid enables the Edit control. Clicking the Edit control allows you to modify a previously saved Economic Indicator. The Edit control is only enabled when a single row has been selected.

Delete

Selecting one or more rows out of the grid enables the Delete control. Clicking the Delete control deletes the Economic Indicators you have selected.

Data Loader

The Data Loader Icon executes a function to import historical economic indices for all defined Economic Indicators. For more information on setting up the automated process, see *Oracle Financial Services Analytical Applications Data Model Utilities User Guide*.

To execute a data load, click the Data Loader icon. A warning message will appear " Upload all available Economic Indicators?" Click ok, and all historical indices will be loaded.

Economic Indicators Summary Grid

The following columns categorize each Economic Indicator in the summary grid:

- Name
- Country
- Creation Date
- Created By
- Last Modification Date
- Last Modified By

Name

Displays the Economic Indicator's short name. Performing a "mouse-over" on a row within the grid displays the Economic Indicator's detailed description.

Country

Displays the Country to which an Economic Indicator applies.

Creation Date

Displays the date and time at which an Economic Indicator was created.

Created By

Displays the name of the user who created an Economic Indicator.

Last Modification Date

Displays the date and time at which an Economic Indicator was last modified.

Modified By

Displays the name of the user who last modified an Economic Indicator.

Economic Indicators Detail Screen

When you Add, Edit, or View an Economic Indicator, the Economic Indicator Detail Screen is displayed. The Economic Indicator detail screen is comprised of an Economic Indicator Details container, an Economic Indicators – Historical Data Container, and an Audit Trail container.

The Audit Trail container is a standard footer container for every OFSAA rule type. It displays Created By, Creation Date, Last Modified By, and Modification Date on the Audit Trail tab. The User Comments tab may be used to add comments to any rule.

Economic Indicator Details Container

When creating a new Economic Indicator, you must supply a Name, a Frequency, a Value Type, and a Country. You may optionally provide a Description.

Name

The name you give to your Economic Indicator is the means by which you will subsequently refer to your rule within other OFS Analytical Applications. You may not rename existing Economic Indicators.

Frequency

The frequency of your Economic Indicator should match the frequency which with the indicator's data is made public. Unemployment statistics, for example, are generally released on a monthly frequency. Select a frequency from the Frequency list box. Available frequencies are Weekly, Monthly, Quarterly, Semi-Annually, and Annually.

Value Type

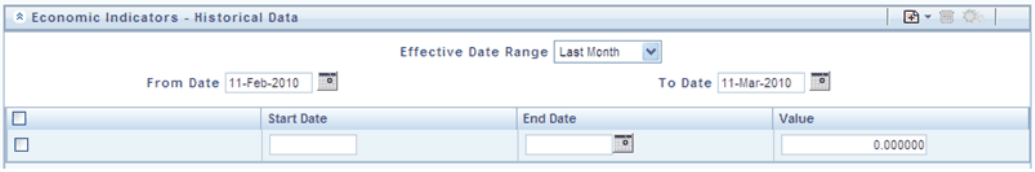
Select a Value Type from the Value Type drop-down list box. Available Value Types are Numeric, Percentage, and Amount.

Country

Select a country to which your Economic Indicator applies from the Country drop-down list box. The value set of Countries is drawn from the seeded Country dimension. OFSAA is seeded with over 70 country values, and you may also add your own user-defined countries (see Module 6: OFSAA Dimension Members).

Economic Indicators – Historical Data Container

Once you have made your selections in the Economic Indicator Details container, you may save your new rule. To build out your historical data, you must enter data within the Economic Indicators – Historical Data container.



The Economic Indicators – Historical Data container initially displays a single blank row followed by the most recent period's data (if data has previously been stored in the database).

Start Date & End Date

Select the calendar control immediately adjacent to the End Date to choose an ending date for your Economic Indicator data point. The application will automatically populate the Start Date based on your Economic Indicator's frequency. For example, if your Economic Indicator is an unemployment statistic that has a monthly frequency, select an end date that is the last day of the month that the unemployment rate describes. In this example, the application will automatically populate the Start Date with the first day of the month you have chosen.

Value

Enter the value for your Economic Indicator (e.g., the unemployment rate).

Adding Multiple Data Points

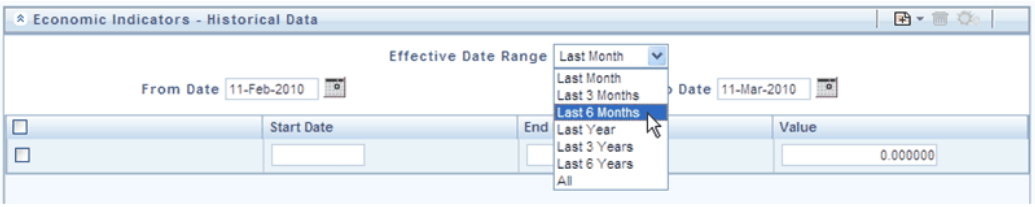
Click the Add control to add additional blank rows into which you may enter additional Economic Indicator data. When you have finished adding data, click the Save control.

Editing Economic Indicators – Historical Data

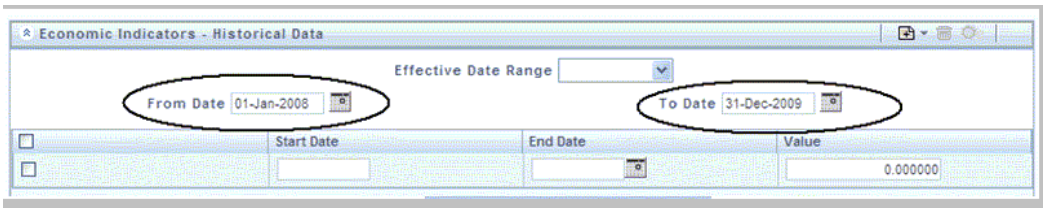
Clicking a single check box on the left hand side of any row of data enables the Edit control. After clicking the Edit control, the row you have selected becomes active. You may edit this row and subsequently save your changes.

Viewing Economic Indicators – Historical Data

By default, the Economic Indicators – Historical Data container displays the most recent month of historical data. You can control the amount of data displayed by selecting a different value from the Effective Date Range drop-down list box.



You may also choose to view a specific date range by modifying the From Date, the To Date, or both dates within the Economic Indicators – Historical Data container.



Deleting Economic Indicators – Historical Data

Clicking one or more check boxes on the left hand side of any row of data enables the Delete control. After clicking the Delete control, you will be asked to confirm that you wish to delete the rows you have selected.

11

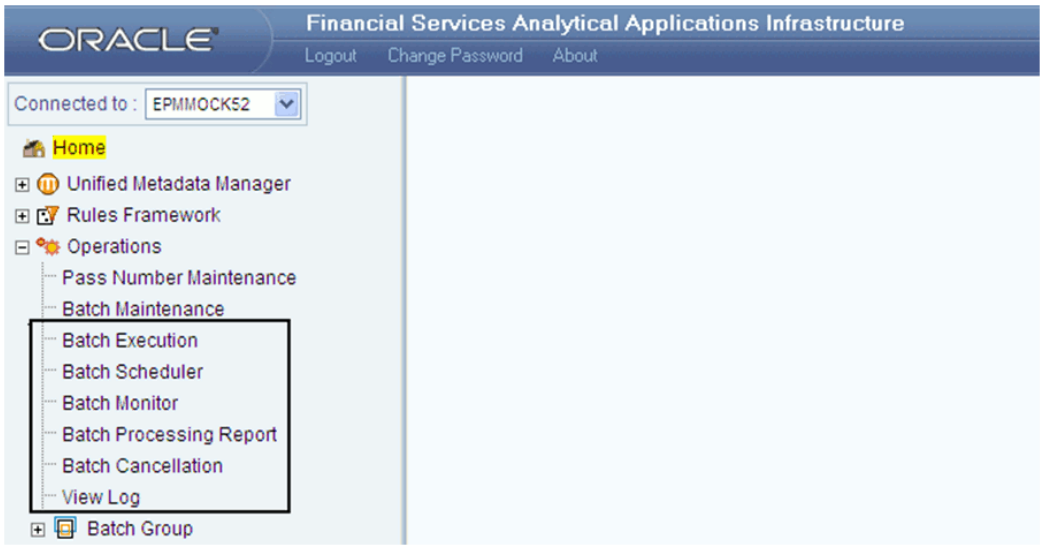
Simplified Batches

Overview of Simplified Batches

New in release 5.5, Simplified Batches provide a streamlined version of the functionality available in the broader standard Oracle Financial Services Analytical Applications (OFSAA) Infrastructure batch module (Financial Services Analytical Applications Infrastructure > Operations). The Simplified Batch feature is designed to facilitate creation, maintenance, and execution of batches for the application engines and various other OFSAA components. Users will find its drag-and-drop approach to task selection especially helpful in the management of large batches.

Standard OFSAA Infrastructure Batching Functionality

You may view, execute, schedule, and monitor Simplified Batches within the broader OFSAA Infrastructure Operations batching framework. However, Simplified Batches may be built and maintained only through summary and detail screens with Financial Services Applications > Administration > Simplified Batch user interfaces.



Batch Maintenance

You may view Simplified Batches here, but they will be noneditable. You can create and modify them within the Simplified Batch screens.

Batch Execution

Simplified Batches may be executed either from the Simplified Batch summary screen (see details as follows) or from OFSAA Infrastructure > Operations > Batch Execution.

Other Operations Batch Functionality

Other Operations batch functionality including Batch Scheduler, Batch Monitor, Batch Processing Report, Batch Cancellation, and View Log apply equally to Simplified Batches and to batches that have been built under OFSAA Infrastructure > Operations > Batch Maintenance.

The remainder of this module describes the creation, maintenance and execution of Simplified Batches.

- Simplified Batch Summary and Detail Screens
- Navigation within the Simplified Batch Summary Screen
- Navigation within the Simplified Batch Detail Screen
- Task Selection
- Running a Simplified Batch
- Viewing the Task Logs of a Simplified Batch

- Additional Batch Options

Summary and Detail Screens

When you initially navigate to Financial Services Applications > Administration > Simplified Batch, it displays a summary screen listing any existing Simplified Batch rules. Using search criteria, you can control the set of batches that are displayed.

When you Add, Edit, or View a rule, a detail screen is displayed.

Navigation within the Summary Screen

The Simplified Batch summary screen presents two containers: a Search container and Simplified Batch container (the summary grid). When you first navigate to the Simplified Batch summary screen, the batches stored within your preferred Folder are presented in a summary grid. Your **preferred** Folder is determined by the set of Application Preferences that were last saved in which you selected the **Active for Master Maintenance** checkbox.

Search Container

The Search container allows you to restrict the batches visible within the summary grid by any combination of Name, Folder, or Status. Searches by Name are wildcard searches, that is, searching for Name like *pricing* will find all batches that include *pricing* within their names.

Search Control

Enter your desired search criteria and click the **Search** control.

Reset Control

Click the **Reset** control to clear any search criteria you may be using and refresh the Simplified Batch summary grid.

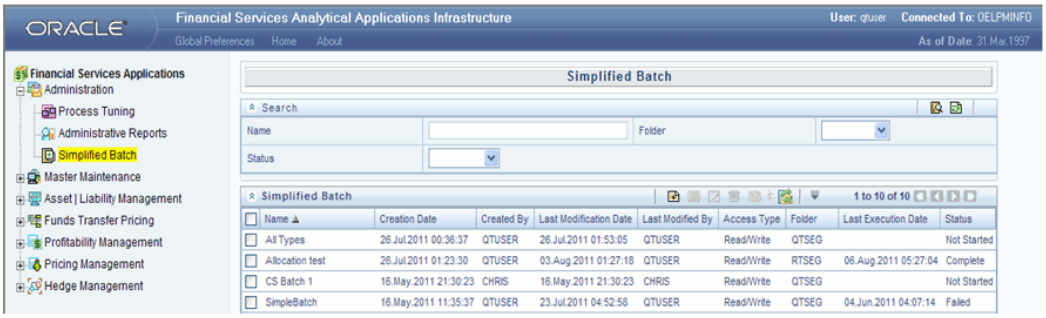
Simplified Batch Container

The Simplified Batch container presents a grid containing all of the batches that meet your search criteria. The Simplified Batch summary grid offers several controls that allow you to create a new batch or perform different functions when a batch is selected.

To select a batch rule, click a checkbox in the first column of the grid. More than one batch can be selected at a time but this will cause some of the controls to become disabled. Clicking on a checkbox a second time deselects the batch. You may select or deselect all of the batches in the summary grid by clicking on the checkbox in the upper left hand corner of the summary grid directly to the left of the Name column header.

You can sort on any column in the summary grid by clicking on the column header (the

column name).



Add

Clicking on the **Add** control begins the process of building a new Simplified Batch. The Add control is disabled if any rows in the grid have been selected.

View

Selecting a single row in the grid enables the **View** control. Clicking on the View control allows you to view the detailed definition of a Simplified Batch on a read-only basis. The View control is only enabled when a single batch has been selected.

Edit

Selecting a single row in the grid enables the Edit control. Clicking on the **Edit** control allows you to modify an existing Simplified Batch. The Edit control is only enabled when a single batch has been selected.

Delete

Selecting one or more rows in the grid enables the Delete control. Clicking on the **Delete** control deletes the batch or batches you have selected.

Copy

Selecting a single row in the grid enables the Copy control. Clicking on the **Copy** control allows you to create a copy of an existing Simplified Batch. The Copy control is only enabled when a single Simplified Batch has been selected. You can also duplicate a batch using the Save As option from the detail page.

Run

Selecting a single row in the grid enables the Run control. Clicking on the **Run** control executes the selected Simplified Batch rule. The Run control is only enabled when a single Simplified Batch rule has been selected. The As-of-Date and other parameters applicable to each task within a Simplified Batch will vary by task type (for details, see Specifying Task Parameters module in *Oracle Financial Services Analytical Applications Infrastructure User Guide*).

Refresh

Click the **Refresh** control to refresh the Simplified Batch summary grid, including updates to the Last Execution Date and Status.

Simplified Batch Summary Grid

The following columns categorize each Simplified Batch in the summary grid:

- Name
- Creation Date
- Created By
- Last Modification Date
- Last Modified By
- Access Type
- Folder
- Last Execution Date
- Status

Name

Displays the Simplified Batch rule's short name. Performing a **mouse-over** on a batch name displays the rule's system identifier, long name, and description. Note that the rule's long name consists of a concatenation of the Information Domain (InfoDom) and the rule's short name. This long name is the name under which the batch is submitted internally through Oracle Financial Services Analytical Applications (OFSAA) Infrastructure.

Creation Date

Displays the date and time at which a Simplified Batch rule was created.

Created By

Displays the name of the user who created a Simplified Batch rule.

Last Modification Date

Displays the date and time at which a Simplified Batch rule was last modified.

Last Modified By

Displays the name of the user who last modified a Simplified Batch rule.

Access Type

Displays the **Read/Write** or **Read Only** property of a Simplified Batch rule. If a rule is set to Read Only, then only the creator of that rule may modify or delete the rule.

Folder

Displays the name of the Folder in which a Simplified Batch rule is stored.

Last Execution Date

Displays the date and time at which a Simplified Batch was last executed.

Status

Displays the latest status for a batch rule and includes the following possible values:

- Complete
- Failed
- New
- Ongoing

Navigation within the Detail Screen

When you Add, Edit, or View a batch, the Simplified Batch Detail Screen is displayed. The detail screen presents five containers for defining and maintaining your batch:

- Simplified Batch - header level information such as Rule Name, and so on
- Batch Execution Type - Sequential vs. Parallel
- Search Task Details - Search container
- Task Details - Task Details grid
- Audit Trail

The Audit Trail container is a standard footer container for every OFSAA rule type. It displays Created By, Creation Date, Last Modified By, and Modification Date on the Audit Trail tab. The User Comments tab may be used to add comments to any rule.

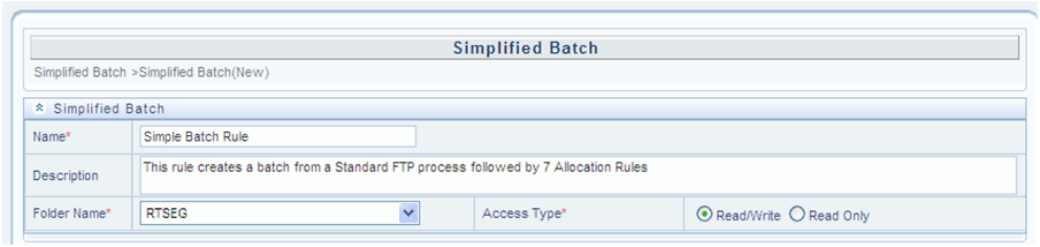
The detail page also provides action buttons specific to the mode you are using (Add, Edit, or View). In View mode, you can duplicate the rule using the Save As button. This will allow you to specify the basic identifiers for the new rule, for example, Name, Description, Folder, and the Access Type selection.

Simplified Batch Container

Specify the Simplified Batch Name and Description, select a Folder in which the batch is to be stored, and specify whether you want the batch rule to be **Read/Write** or **Read Only** (Access Type). Naming your batch is required before it can be saved.

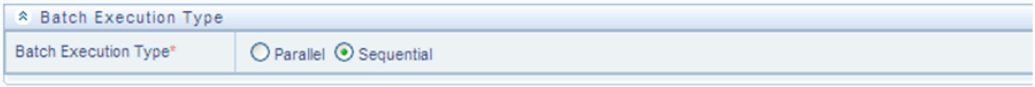
Note:

- Unlike other OFSAA rules, you cannot edit the Name after you have created the rule.
- The maximum length for the Name is based on len (name+infodom), subject to the total length not exceeding 42 characters.
- The maximum length for the Description is 300 characters.



Batch Execution Type Container

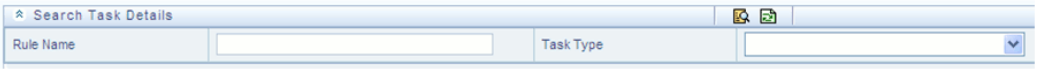
Select whether you want the tasks in your batch to run in Parallel or to run Sequentially. Should you wish to run some tasks sequentially and some in parallel, you must utilize the OFSAA Infrastructure Operations batching framework to construct your batch. The Simplified batching framework provides a simpler and faster pathway to specify many of the batches that you will require, but the Infrastructure Operations framework offers you more flexibility.



Search Container

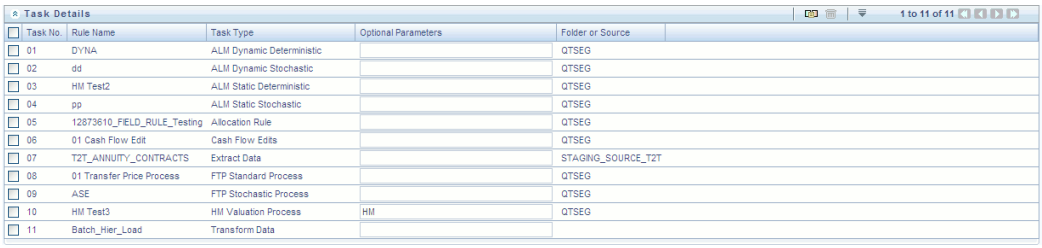
You may sometimes construct batches containing dozens or even hundreds of tasks. In such cases it may become difficult to isolate a specific task. The Search container allows you to **focus** the Task Details display to a specific task name or task type. The Rule Name search is a wildcard search. Click the **Search** control to execute a search. Click the

Refresh control to remove your search criteria and refresh the Task Details Container to display all tasks within the batch.



Task Details Container

For a new batch rule, the Task Details container will initially be empty. Through the use of the Task Selector described below, you will populate the Task Details container with the processes that you wish to run in your batch. Following is a sample batch that begins with an ALM (Asset Liability Management) Dynamic Deterministic Process that is followed by Profitability Management, FTP, HM, and Data Transformation tasks. For a Sequential batch, the Task Details container presents the tasks in the order in which they will be run. For a Parallel batch, all tasks will be initiated in parallel.



Task Number

Each task is itemized serially by task number.

Rule Name

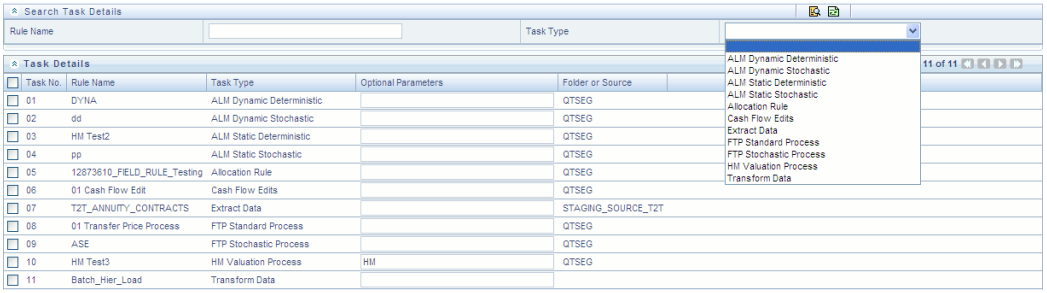
Displays the task's short name, such as an Allocation rule name. The complete or **long name** under which the task is submitted for execution (becoming the task's Batch Run ID) is a concatenation of several identifiers, as noted below in the View Log section.

Task Type

Using Simplified Batches you may submit different tasks for each of the application engines and various other components. The task types you may submit within a Simplified Batch include:

- ALM Dynamic Deterministic
- ALM Dynamic Stochastic
- ALM Static Deterministic
- ALM Static Stochastic

- Allocation Rule
- Cash Flow Edits
- Extract Data
- FTP Standard Process
- FTP Stochastic Process
- HM Valuation Process
- Transform Data



As of Dates and Additional Parameters

The As-of-Date applicable to each task within a Simplified Batch will vary by task type. Some task types also accept runtime parameters. For additional information on task parameters, see Specifying Task Parameters module in *Oracle Financial Services Analytical Applications Infrastructure User Guide*.

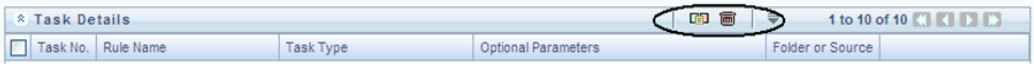
Folder or Source

For Extract Data tasks, values in this column represent Sources. For Transform Data tasks, this column is not applicable and is left blank. For all other task types, values in this column represent the Folder in which a rule is stored.

Task Selection

Controls on the Task Details Container

The Task Details container provides a Task Selector control that invokes a pop-up screen to support the maintenance of tasks in your batch. The Task Details container also provides a Delete control for removing tasks from your batch.



Delete

Selecting one or more rows out of the Task Details grid enables the Delete control. Clicking the **Delete** control deletes the task or tasks that you have selected. You can also remove tasks through the Task Selection pop-up screen.

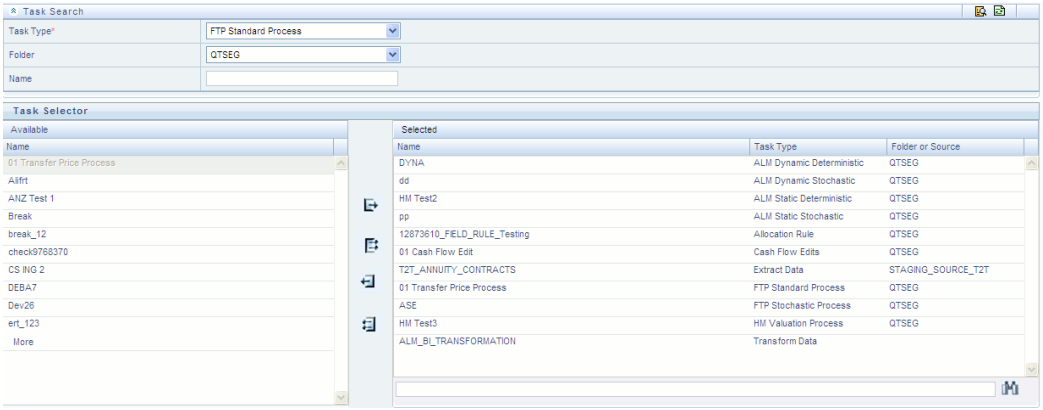
Task Selector

The Task Selector control is always enabled. Clicking the **Task Selector** invokes the Task Selection pop-up screen.

Navigation within the Task Selection screen

Use the Task Selection screen to:

- Choose tasks to include in your batch
- Remove tasks from your batch
- Re-order tasks within your batch



Task Search Container

When you initially invoke the Task Selection screen, the list of **Available** tasks on the left-hand side of the Task Selector container is blank. To populate the list of available tasks, you must execute a search using the Search control. Prior to clicking the Search control, you must select a specific type of task from the Task Type list box, and optionally specify search criteria for Folder (or Source) and Name, where applicable to the task type.

Selecting Task Types

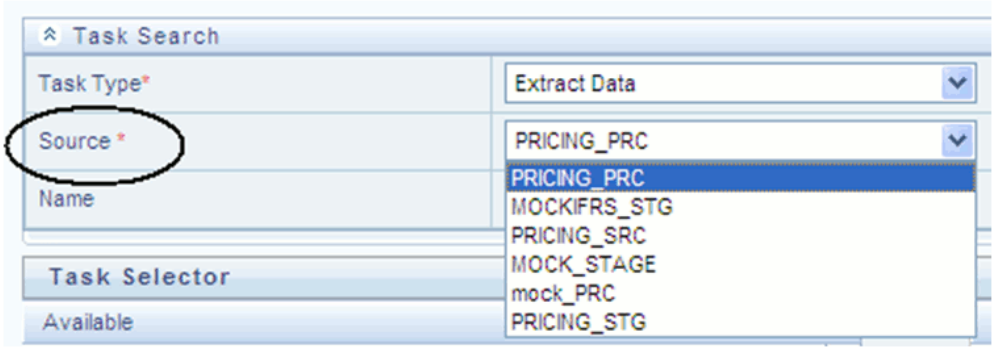
The available task types include:

- ALM Dynamic Deterministic
- ALM Dynamic Stochastic
- ALM Static Deterministic
- ALM Static Stochastic
- Allocation Rule
- Cash Flow Edits
- Extract Data
- FTP Standard Process
- FTP Stochastic Process
- HM Valuation Process
- Transform Data

Source or Folder

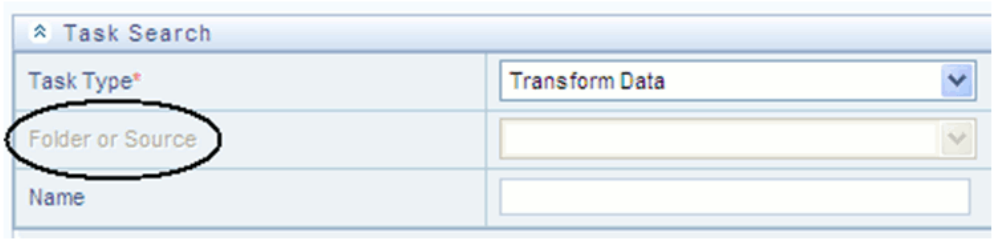
- Extract Data Task

  When you choose the Extract Data task, you must select a data source prior to executing your search.



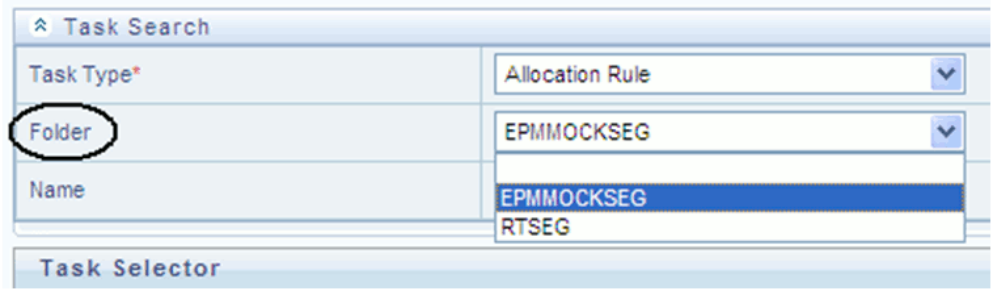
- Transform Data Task

  When you choose the Transform Data task, it is not necessary for you to select either a Folder or a Source prior to executing your search.



- All Other Task Types

  When you select any other Task Type, you may constrain your search to a particular folder. Alternatively, you may search for your tasks in all Folders by selecting **blank** (all folders).



Executing a search for tasks always refreshes the Available list of tasks, but never has any impact on tasks that you have already selected (tasks on the right-hand side of the screen entitled **Selected**).

Name

You may further refine your search by entering a task Name. Searches by Name are wildcard searches, that is , searching for Name like *rate* will find all tasks that include *rate* within their Name.

Task Selector Container

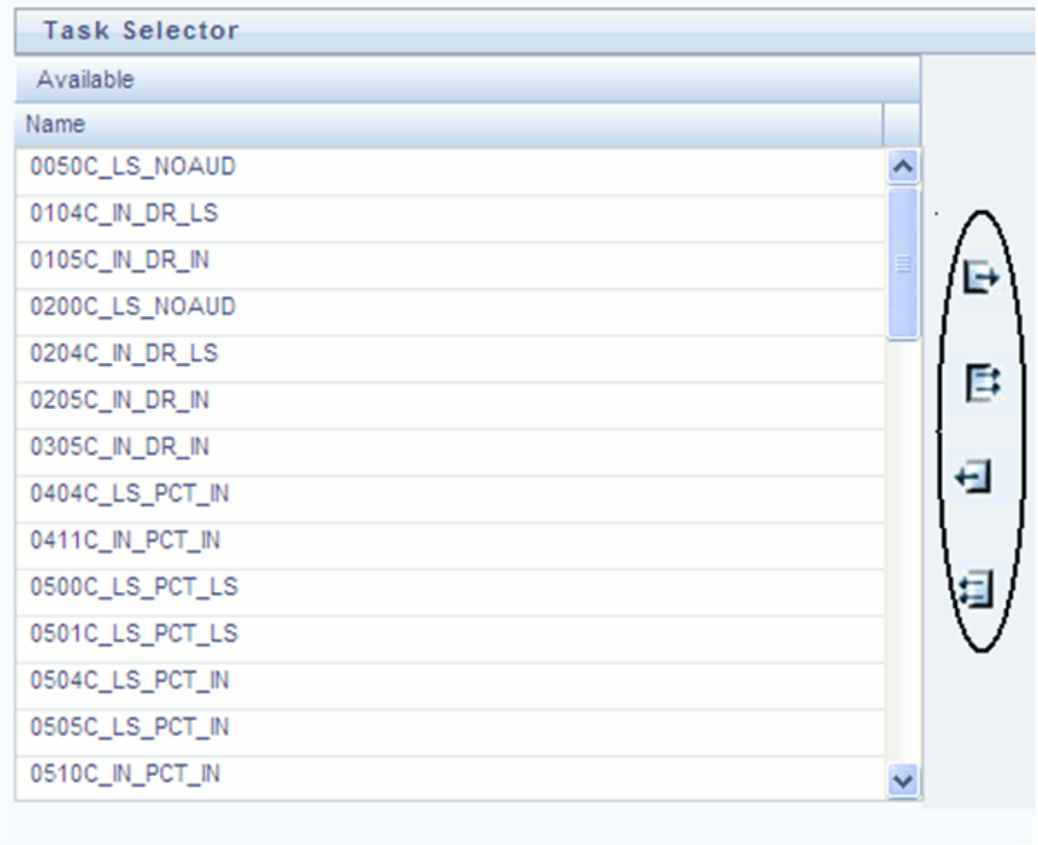
Navigating the list of Available tasks

For task types with potentially large volumes of tasks, the Available list is divided into pages. Use the vertical scrollbar to navigate to the bottom of each page, then click **more** to display the names in the next page. To navigate back a page, scroll to the top of the page and click the hyperlink to return to the Previous page. You can control the number of tasks listed per page by changing the setting in SIMPLE_BATCH_PAGE_SIZE parameter in FusionApps.properties file in WEB-INF/props under context root. The recommended default value is 50 records/page. As you increase the value over a certain amount, you will start to see a slower response in the UI.

Moving tasks between the Available and Selected lists

You may use the Select or Select All shuttle controls to move rules from the displayed page of the Available list to the Selected list or vice versa. The Select control moves rules from the left to the right, adding rules from the Available list to the bottom of the Selected list. Moving rules from the right to the left removes rules from the Selected list. You can also use the drag-and-drop feature (described as follows) to place the rules in a specific position in the Selected list to specify execution order for a Sequential type batch.

On both the Available side and the Selected side, you may highlight multiple tasks. To select a range of tasks, click the first task, hold down the Shift key, and then click the last task. To select a non-sequential list of tasks, you may select them individually while holding down the Control key.



Tasks within the Available list of tasks are disabled (greyed-out) once they have been selected (that is, included within the Selected list of tasks).

Drag and Drop Operations

The Task Selector also supports drag and drop operations for choosing Available tasks, removing Selected tasks, or rearranging the sequence of your Selected tasks.

- You may click an Available task and then drag and drop it anywhere within the Selected list, where the targeted placement is displayed in red line.
- Dragging a task from the Selected list and dropping it into the Available list removes that task from the Selected list.
- To select or deselect a range of tasks, click first task in the range to be selected, hold the Shift key down, click last task in the range to be selected, and then drag and drop your set of tasks.
- To select or deselect a set of tasks which are not in sequence, click each task individually while holding down the Control key; after clicking the last task you may drag and drop the set of tasks.

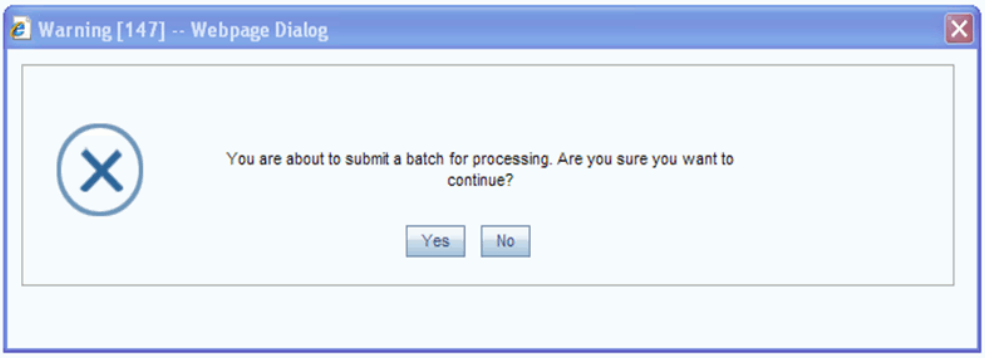
Finding a Selected Task

To search for any of your selected tasks, enter the task name or partial name in the field under the Selected list, then click the **adjacent** button to find each successive match.

Running a Simplified Batch

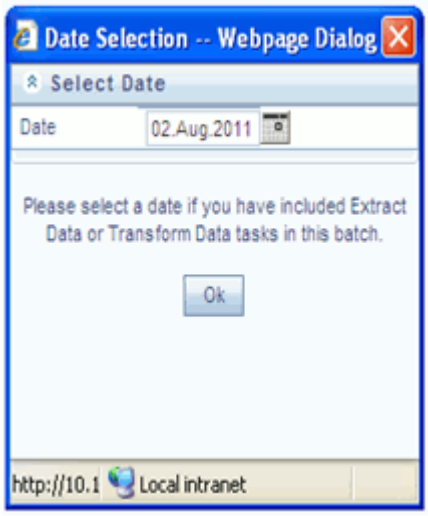
To run a Simplified Batch from the Simplified Batch summary page, complete the following steps:

1. Select a Simplified Batch from the summary grid.
2. Click **Run** to execute the batch.
3. A popup window will appear asking for confirmation before proceeding. Click **Yes** to proceed, or **No** to return to the summary page.



4. If you clicked **Yes** to proceed, you will see a Date Selection popup. If you have included any Extract Data or Transformation Data tasks in your batch, select the appropriate date for use in processing (it will ignore this date for all other task types). The date defaults to the system date. If you wish to change the date, you can

either directly enter a date in the format displayed, or you can use the Calendar tool to select a date.



5. Click **Ok** to proceed.

6. You will now see a message indicating the batch has been launched. Click **Ok** to proceed.

7. You can monitor the status from the summary grid or detail page.

    1. To monitor from the summary grid, click **Refresh**. The summary grid will update the Last Execution Date with the current date and the Status at completion (for example, **Complete**, or **Failed** if there was a critical problem).

    2. To monitor from the detail page, please refer to the section on Viewing the Task Logs.

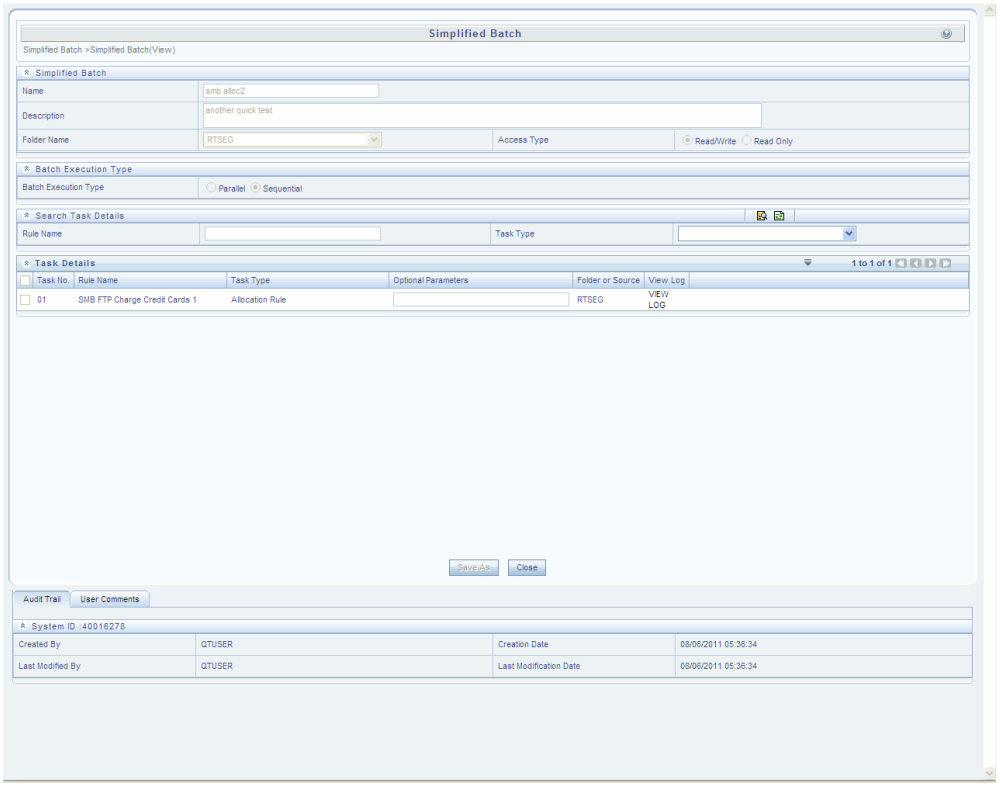
Note: This currently applies to all task types except Extract Data and Transform Data.

Viewing the Task Logs

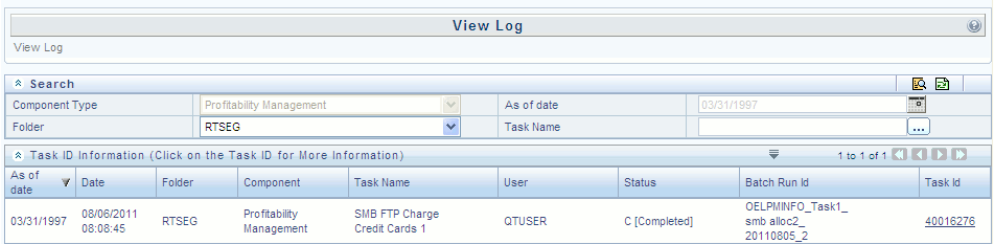
Note: This currently applies to all task types except Extract Data and Transform Data.

To view the processing log for each task in your batch, you can navigate to the log from the Simplified Batch detail page:

1. Select your batch from the summary grid.
2. Click **View** to navigate to the detail page.
3. For a specific task in the Task Details container, navigate to the processing log through View Log.



4. In the View Log page, you can drill down to the log details through the Task ID hyperlink.



The Task ID represents the System ID of the task (for example, in Profitability Management, an Allocation Rule's System ID).

The task's Batch Run ID is a concatenation of several identifiers. For example, Batch Run ID 'OELPMINFO_Task1_smb alloc2_20110805_2' represents the following:

- Information Domain name (for example, OELPMINFO)
- Task sequence within the Simplified Batch (for example, Task1)
- Simplified Batch rule name (for example, smb alloc2)

- The run date in YYYYMMDD format and the sequential run number for that date (for example, 20110805_2, for the second execution on August 5, 2011).

Additional Batch Options

As noted in the Overview for this module, you may also view, execute, schedule, monitor, cancel, and view task logs for Simplified Batches within the broader OFSAA Infrastructure Operations batching framework.

12

The Oracle Asset Liability Management Process

This module describes the steps that you need to follow to define and execute the end to end Asset Liability Management Process.

Oracle Asset Liability Management is based on the Oracle Financial Services Analytical Applications Infrastructure (OFSAAI). OFSAAI is the central, integrated data source and Administration layer on which Oracle Financial Services Analytical Applications (OFSAA) are built. This description of the Oracle Asset Liability Management Process assumes that your system administrator has setup the OFSAAI data repository and has populated it with your enterprise wide business data.

This chapter covers the following topics:

- Overview of the Process
- Reconciling the Data
- Cleansing the Data by performing Cash Flow Edits
- Setting Application Preferences
- Activating Currencies and Loading Exchange Rates
- (Mandatory) Deciding on historical rate information and managing by creating Interest Rate Codes
- Defining Economic Indicators
- Capturing Instrument Behavior for non-standard instruments
- (Mandatory) Defining Time Buckets
- (Mandatory) Defining Product Characteristics
- (Mandatory - Deterministic) Defining Forecast Rate Scenarios
- Defining Prepayments
- Defining Discounting Methods

- Defining Forecast Assumptions
- Defining Transfer Pricing Rules
- Transfer Pricing Methodologies and Rules
- Defining Transfer Pricing Methodologies Using Node Level Assumptions
- Defining Transaction Strategies
- Defining Formula Results
- (Mandatory – Stochastic) Defining Stochastic Rate Indexing Rules
- (Mandatory) Defining and Running the Asset Liability Management Process
- Reviewing Processing Errors
- Accessing Asset Liability Management, Detail Cash Flow Results for Audit Purposes
- Accessing Asset Liability Management, Interest Rate Audit Results
- Analyzing Results
- Re - processing Erroneous Accounts

Overview of the Process

Oracle Financial Services Asset Liability Management (OFS ALM) is designed to model balance sheets under a variety of rate environments. OFS ALM functionality uses several key concepts and has evolved from the continual iterations of building simulated management processes. The basis of OFS ALM functionality includes:

- The ability to model account-level detail in order to precisely capture the complex product characteristics within a financial institution's portfolios.
- A flexible time horizon and free-form timing bucket increments for reporting are critical to meeting the wide range of forecasting requirements of financial institutions.
- Unconstrained chart of accounts definition is a basic requirement of effective modeling.
- A structured process for defining and controlling assumptions is critical to any successful modeling process.
- Unconstrained batching of scenarios, with flexible assumptions sets, is required to achieve an effective and efficient analytical process.

Key Operational Concepts

OFS ALM includes seven key modeling attributes:

- Modeling Using Account-Level Data
- Separation of Data from Assumptions
- Separation of Assumptions Types
- Flexible Reporting Buckets
- A Structured Approach to Defining Rate Scenarios
- Flexible Chart of Accounts
- Powerful Assumption IDs

Modeling Using Account-Level Data

OFS ALM models data at an account level (loan-by-loan and deposit-by deposit). In this way cash flows are precisely modeled based on unique characteristics of each loan and deposit.

Separation of Different Types of Assumptions

By separating data from modeling assumptions, you can modify assumptions and then run a reprocessing procedure without affecting data. In addition to the instrument data being separate from assumptions, each type of assumption is defined independently from other assumption types. Although they act dynamically during a processing run, assumptions about new business characteristics, new business volume, new business pricing, new business maturity mixes, prepayments and discounting methodology are defined independently. This facilitates the isolation of the impact of a change on one assumption. You simply modify the selected assumption, and reprocess in a separate processing run.

Flexible Reporting Buckets

Because the assumptions are separate from the data, and because the model is operating on an account level of detail, you can specify assumptions and reporting time buckets in any increment desired. Since each transaction's cash flows are being solved independently, you can mix and match any combination of time buckets (up to 240). Changing the bucket structure will not impact the calculations. Thus you might model and report results on a daily and weekly basis for liquidity analysis, while employing a monthly five-year forecast for A/L Management. In either case, the results produced are consistent.

Structured Approach to Defining Rate Scenarios

Structured testing of alternative rate environments is a key to a strong "what-if" analysis process. The model provides numerous utilities for defining and quality controlling rate scenarios. Because rate scenario modeling assumptions can be saved as patterns in

Forecast Rate Scenario rules, the typical burden of quality controlling rate scenarios is dramatically reduced. Once a pattern of rate shocks, spread changes or yield curve rotations (or combination of the above) is defined, it can be saved as a Forecast Rate assumption rule to be used again and again. When data are updated in the model, all you need to do is update the base position of key market rates. The change pattern in an assumption rule can be applied and the forecast rate assumptions are automatically updated. It can also easily be cloned and modified to be saved as another Forecast Rate assumption rule. This approach for defining rate scenarios is ideally suited for testing numerous rate environments in a controlled fashion.

Flexible Chart of Accounts

You can define an unlimited chart of accounts (Dimension Member Values), incorporating all of the key elements which drive cash flow generation.

The Power of Assumption Rules

You can mix and match any set of combinations of assumptions: forecast rate scenarios, forecast balances, pricing margins, maturity mix strategies, discounting methods, prepayments, transaction strategies, formula based results, and product characteristics. The separation of each element of the scenario assumptions means that you can incrementally modify one piece of the modeling equation and easily test its effect. By defining assumptions as distinct rule sets, unlimited batching of scenarios is possible.

How the Model Works

While the specific operation of each section of the model is addressed separately in this guide, a general description of the modeling logic includes the following premises:

- The current position data defines the existing base of transactions
- New business volumes are generated by assumptions
- The maturity mix of new volumes is defined by assumptions
- Pricing of new volumes and repricing of existing volumes are defined by rate scenario assumptions and the contractual pricing characteristics of individual transactions
- Dynamic prepayment assumptions can be applied to any account
- Incremental transaction strategies can be used
- Cash flows are determined through the integration of data and assumptions
- Assumptions can be flexibly batched

Current Position Data

OFS ALM forecasts on the basis of modeling the behavior of existing transactions, as well as those that originate in future periods. The complete cash flow characteristics of each existing transaction are defined in the data structure that is imported into the OFSAA data model on a loan-by-loan and deposit-by-deposit basis. Accounts are also defined to simulate non-interest income and expense.

New Business Volumes

New Add volumes in each period are defined on the basis of a forecast of new incremental volume for each account, or calculated on the basis of achieving a "target balance" in the account. The cash flow characteristics of newly originated volumes are determined by the Product Characteristics definitions. New volume assumptions apply to non-interest income and expense accounts as well.

The Maturity Mix of New Volumes

The maturity mix of forecasted volumes originated for an account is determined by assumptions which are applied to each element of the account.

Pricing of New Volumes and Repricing

Pricing of newly originated volumes, or repricing of adjustable and variable rate volumes, is determined by the integration of several factors. Each existing or newly originated transaction is linked to a *single rate* (a market rate) or a *yield curve*. The actual rate determined at origination or repricing takes into account the prevailing single rate or yield curve. The term of the transaction (if pricing is tied to a yield curve) is also taken into account, as well as other pricing characteristics (margin, life cap, period cap, etc.). Incremental pricing margins can be applied to new originations on a period-by-period basis for each account.

Dynamic Prepayment Assumptions

You can apply dynamic prepayment assumptions to any account. Prepayments are applied on a loan-by-loan basis. Prepayment assumptions use individual instruments characteristics to drive prepayment behavior.

Incremental Transaction Strategies

Incremental transaction strategies can be defined which create actual originations or sales of assets and liabilities, or off balance sheet transactions.

Cash Flows

Cash flows for every instrument are calculated in every modeling period according to the contractual terms defined in the incoming data and/or product characteristics definitions, combined with interest rate scenario and prepayment assumptions.

Principal and interest cash flows are recalculated as contractually defined.

Batching Assumptions

Financial forecasts are built through the integration of current position data with each of the modeling scenario assumption elements:

- Current Position Data (account-level data)
- Forecast Rate Scenario Assumptions
- Forecast Balance Assumptions
- Maturity Mix Strategies
- Pricing Margin Assumptions
- Prepayment Assumptions
- Transaction Strategies
- Discount Method Assumptions (for market value calculations)
- Product Characteristics Assumptions
- Formula Result Assumptions

Flow of the Modeling Process

The organization of the OFS ALM menu structure is better understood in the context of the general flow of the modeling process, as follows:

1. Set up Application Preferences, including:
   - Certain elements of Application Preferences (as of date for data, modeling leaves, etc.)
   - Default values and limit details
2. Load transaction-level data.
   - Load data into the system for modeling.
3. Perform cash flow edits.

   Each of the individual instrument records must be quality controlled. For each instrument record, the cash flow edits check all of the columns used in cash flow calculations for internal consistency. For example, the maturity date must be greater than the origination date, and the payment frequency must be greater than zero.

This process is available within ALM Processing, and is a critical step in ensuring that OFS ALM produces expected results.

4. Define modeling assumptions.

   Define assumption sets. These include any number of the assumptions described in this module and will minimally include Time Buckets, Product Characteristics and Forecast Rate Scenarios.

5. Specify the model run.

   Select a combination of assumption sets which will be applied to the data you wish to model. You may define a single processing run, or a batch of several runs, including multiple sets of assumptions. The run or batch is launched and results are produced into results tables.

Reconciling the Data

Reconciliation is the process of comparing the information carried in the Instrument tables to the general ledger balances (contained in Ledger Stat).

The goal of the Asset Liability Management Process is to measure and manage interest rate and liquidity risk for the entire balance sheet, as represented on the general ledger. Many ledger accounts have corresponding data in the Instrument tables. In such instances, the balances from the instrument data must be compared with the corresponding ledger balances.

The reconciliation process involves defining a level at which some piece of information in the Instrument tables is to be compared to the General Ledger data carried in the Management Ledger (also known as LEDGER_STAT). That level can be one dimension (to reconcile for each general ledger account number, for example, General Ledger Account ID) or multiple dimensions (to reconcile for each general ledger account number within each business unit, for example, General Ledger Account and Organization Unit).

The most common type of reconciliation is to compare the current balance of Instrument table data to the general ledger ending balance. The data carried in the database is a snapshot of the portfolio as of a given date. Consequently, comparing the current balances from the Instrument table to the general ledger ending balance measures the degree to which the extracted data is in balance with, or reconciles to, the general ledger.

Variances between the Instrument table and the Management Ledger table should be corrected. If the magnitude of the variances is within an accepted tolerance, plug entries should be created to force the reconciliation to zero. An Instrument table (FSI_D_LEDGER_STAT_INSTRUMENT) has been seeded in the database to hold these plug balances and any Ledger Specific balances that you wish to include as instrument balances for ALM processing.

Cleansing the Data by performing Cash Flow Edits

It is extremely important that the data in the Instrument tables is clean, accurate, and complete before it is used to generate cash flows and for further processing. Oracle ALM provides seeded Cash Flow Edit rules to edit (clean and prepare) Instrument table data. You can create multiple Cash Flow Edit Processes depending on the data to be cleansed. In addition, you can view actual results of Cash Flow Edits by accessing the audit data written into the FSI_PROCESS_ERRORS table.

You can also select the preview mode option so that you can preview the changes that will be made to the Instrument table data as a result of cash flow edits before those changes are applied in the Instrument tables.

It is highly recommended that you create and run Cash Flow Edits before processing data to generate any type of cash flow-related results. See: Cash Flow Edits Rules, page 15-1

Related Topics

Cash Flow Edits Rules, page 15-1

Setting Application Preferences

Application Preferences allow users to set the current as of date and configure default values used throughout the application.

Related Topics

Application Preferences

Activating Currencies and Loading Exchange Rates

Rate Management under "Master Maintenance" handles all currency definitions for OFSAA applications. Currencies are conveniently referred to by code and written description. A comprehensive list of ISO-defined currencies is included, and you can define and add your own. Upon installation, one currency is active and ready for processing: the one identified by your organization as the functional currency. You can activate other currencies and define and activate newly-created currencies when needed. In addition, you can designate key currencies to be used for reporting. These alone will be available for cross-currency consolidation.

The Rate Management > Currencies screen enables you to select currencies for reporting and for establishing interest rates and exchange rates. It allows you to activate relevant currencies and classify as:

- Functional Currency

- Reporting Currencies
- Other Active Currencies

Before defining the classifications, let's begin by discussing two types of currencies: ISO-defined and user-defined.

Currency Definitions and Classifications

OFSAA Rate Management provides a list of ISO-defined currencies for you to activate as needed. (The functional currency is activated upon installation). You can also define and add your own. Any currency except the functional currency can be deactivated or deleted.

Currencies are displayed in alphabetical order by currency code.

The Functional Currency

At the time of installation, Rate Management requires the installer to designate a functional, or primary currency for the organization (stored in the FSI_DB_INFO table). A German multinational bank would therefore designate the Euro as its functional currency. Only one functional currency is allowed per organization, and once assigned it cannot be changed. The functional currency is both an active and a reporting currency.

Reporting Currencies

A reporting currency is an active currency that balances in other currencies are consolidated to, to facilitate reporting. Balances in reporting currencies are, in turn, consolidated to the functional currency. For example, an American multinational bank might consolidate its holdings in Asian currencies to the Japanese Yen and its balances in European currencies to the Euro. Then it would consolidate the sums to the U.S. dollar.

Other Active Currencies

An active currency is any currency the organization works with. When OFSAA is installed only the functional currency is active and available for processing. If your institution has holdings in more than one currency then you need to activate those currencies. A Mexican bank doing business in the United States and Canada, for instance, would activate the U.S. dollar and the Canadian dollar.

For more information on loading exchange rate data using the staging area and the related data loader utility, see *Oracle Financial Services Analytical Applications Data Model Utilities User Guide, Stage History Rates Loader module.*

For more information on loading exchange rate data using the Currency Rates user interface, see Currency Rates, page 10-19

Related Topics

OFSAA Rate Management, Currency , page 10-15

(Mandatory) Deciding on historical rate information and managing by creating Interest Rate Codes

The quality and availability of interest rate information varies throughout the world. In many markets, gathering comprehensive rate information is a challenge because of insufficient security types, inconsistent quoting conventions, and lack of liquidity.

OFSAA Rate Management facilitates the process of inputting and viewing interest rates and yields by supporting multiple rate formats and other rate attributes to give you data storage capabilities appropriate to your market. For example, you can store the following data attributes for each interest curve:

- Rate format (zero-coupon or yield-to-maturity)
- Accrual basis
- Compound basis

Term structure parameters provide insight into the stability and direction of future rates. Rate Management enables you to define and store—up to daily—term structure parameters for any and all currently supported term structure models.

When you add an Interest Rate Code, the Add/Edit page appears with four tabbed pages. The pages display interest rate code characteristics and enable you to define, input, modify, and view data. The tabs are Attributes, Terms, Rates, and Parameters. You can only define interest rates where you have an active currency. See: Interest Rates, page 10-3

For more information on loading interest rate data using the staging area and the related data loader utility, see *Oracle Financial Services Analytical Applications Data Model Utilities User Guide, Stage History Rates Loader module.*

For more information on loading interest rate data using the Interest Rates user interface, see Historical Rates, page 10-10

Related Topics

OFSAA Rate Management, Interest Rates, page 10-3

Defining Economic Indicators

You can define, input, and maintain economic indicator data within Rate Management. Economic Indicator data is used in ALM within Rate Dependency Patterns allowing

users to associate their forecast assumptions with changes in specific Economic Indicators. Economic Indicator data is also available within the ALM Business Intelligence application for viewing related trends and spreads.

For more information on loading Economic Indicator data using the staging area and the related data loader utility, see *Oracle Financial Services Analytical Applications Data Model Utilities User Guide, Stage History Rates Loader module.*

For more information on loading interest rate data using the Economic Indicator user interface, see Economic Indicators., page 10-33

Related Topics

OFSAA Rate Management, Economic Indicators , page 10-2

Capturing Instrument Behavior for non-standard instruments

Payment and repricing characteristics for most instruments can be accommodated through the data attribute values in the Instrument tables. However, certain instruments may not have contractual cash flows or may have cash flows that are based on unique payment and repricing patterns that are too complex to be accommodated in the standard fields of the Instrument tables. Oracle Asset Liability Management allows you to define custom behavior, payment and repricing patterns to accurately model the unique characteristics for such instruments.

Defining Behavior Patterns

In user defined Behavior patterns, you can assign a unique amortization type code to a set of payment tenors, and define principal cash flow amounts (via percentages) for the following instrument types:

- Non-maturity Instruments
- Non Performing Instruments
- Devolvement and Recovery of Guarantees

Once you create a behavior pattern, you can use it by mapping the unique behavior pattern code as the amortization type code for your instruments. Behavior pattern codes are defined within a pre-set range (70000 – 99999). When the cash flow engine encounters an instrument with an amortization type code within this pre-determined range, it understands that a Behavior Pattern should be referenced for determining the principal cash flow amounts.

Behavior Pattern Structure

Oracle Asset Liability Management allows you to build three types of behavior patterns:

- Non Maturity
- Non Performing
- Devolvement and Recovery

These behavior patterns differ in terms of how they allow you to categorize cash flows based on the specific behavior type being modeled. The following table summarizes the various payment types available for each type of behavior pattern

Pattern Type	Payment Type
Non Maturity	Volatile
	Core
Non Performing	Sub Standard
	Doubtful
	Loss
Devolvement and Recovery	Sight Devolvement
	Sight Recovery
	Usance Devolvement
	Usance Recovery

Payment Events

You must define one or more payment events to complete a behavior pattern. A payment event is a set of payment characteristics, which define the time line and amount of a specific payment in the behavior pattern. While the payment types can change based on the pattern type selected, there are three inputs that are required for all behavior patterns:

- Term
- Amount
- Type

Principal Runoff Term

The Term of the principal runoff is determined by the input of a Tenor and Multiplier. For example, if you are defining the "Volatile" component of a non-maturity instrument, you would likely define the runoff term for the first amount as "1 Day". In this case,

Tenor = "1" and Multiplier = "Day"

Amount

The cash flow amount is defined as a percentage of the end of period balance. For example, in the case of Non Maturity behavior pattern type, if the assumption for the Volatile runoff amount is that 25% of the portfolio is to be categorized as "volatile", the input should be "25". The sum of the percentages for Non Maturity behavior pattern type must equal 100%. The "Total Percentage" is shown at the bottom of the Pattern detail area indicating the cumulative percentage.

Payment Type

The payment type selection categorizes all payment runoff into meaningful groupings. The principal runoff type is carried forward by the cash flow engine and can be identified in the cash flow results by the following financial element codes.

- 186 Writeoff Positive
- 187 Timing of Writeoff Positive
- 188 Writeoff Negative
- 189 Timing of Writeoff Negative
- 200 Non Maturity - Core Runoff
- 201 Timing of Non Maturity - Core Runoff
- 202 Non Maturity - Volatile Runoff
- 203 Timing of Non Maturity - Volatile Runoff
- 204 Devolvement Runoff
- 205 Timing of Devolvement Runoff
- 206 Recovery Runoff
- 207 Timing of Recovery Runoff
- 208 Non Performing Asset Runoff
- 209 Timing of Non Performing Asset Runoff

Related Topics

User Defined Behavior Patterns, page 16-1

Defining Payment Patterns

In a user defined payment pattern, you can assign a unique amortization type code to a set of payment events, which may include some of the following customized features:

- Changes in payment frequency
- Seasonal payment dates
- Nonstandard or variable payment amounts

Once you create a payment pattern, you can use it by entering the payment pattern code as the amortization type code for the instrument.

Payment Pattern Structure

Oracle Asset Liability Management allows you to build three types of payment patterns:

- Absolute, page 12-16
- Relative, page 12-17
- Split, page 12-17

These payment patterns differ in terms of how they address payment schedules, which determine whether the payment events constituting the pattern are determined by calendar dates or periods. Absolute patterns are defined with sets of payment characteristics scheduled on specific calendar dates. Relative patterns are defined with sets of payment characteristics scheduled for certain periods of time.

You can also define a payment pattern with both absolute and relative payment events. This type of pattern is called a split pattern.

In addition, for each payment pattern, you need to specify a payment type, either conventional, level principal, or non-amortizing. Your choice of the pattern type and the payment types will determine the fields that are used for calculation.

> **Note:** Oracle Asset Liability Management's Payment Pattern interface supports simultaneous multiple-user access.

Related Topics

User Defined Payment Patterns , page 17-1

Payment Events

You must define one or more payment event to complete a payment pattern. A payment event is a set of payment characteristics, which define the time line and

amount of a specific payment in the payment pattern.

Though the characteristics of the payment phase change based on whether you are defining an absolute, relative, or split pattern, there are two characteristics that are required for all amortizing patterns:

- Payment method
- Value

Payment Method

The payment methods determine the payment amount for the payment event. There are six different methods.

The following table describes the different payment methods.

Payment Methods

Method	Description
% of Original Balance	This method calculates the payment as a percentage of the original balance; the percentage being defined by the input percent. This method is useful for apportioning the starting balance on a level principal instrument over several payments. This method is only available for payment patterns defined with a level principal payment type.
% of Current Balance	This method calculates the payment as a percentage of the current balance prior to payment; the percentage being defined by the input percent. This method is only available for payment patterns defined with a level principal payment type.
% of Original Payment	This method calculates the payment as a percentage of the original payment column from the detail instrument data. This percentage is defined by the input percent.

Method	Description
% of Current Payment	This method calculates the payment as a percentage of the previous payment; the percentage being defined by the input percent. This payment is calculated on the payment date based on the characteristics of the instrument at the time of the payment, including the current rate, current balance, and current payment frequency.
Absolute Payment	This is an input payment amount. This amount represents both principal and interest for a conventional payment type, and represents only principal for a level principal payment type. For both types of patterns, absolute value payment amounts are entered as gross of participations.
Interest Only	This is a calculated payment amount. An interest-only payment is calculated during processing as balance times rate times accrual factor.

Value

The value reflects the percentage or payment amount based on the method chosen for the payment event. Value is disabled for phases using the Interest Only payment method.

Payment amounts for conventional pattern phases must reflect both principal and interest payments. Payment amounts for level principal pattern phases only reflect the principal portion of the payment. For level principal pattern phases, the total cash flow on a payment date is the principal amount stored as the payment plus the calculated interest.

> **Note:** The payment method and value columns are not displayed for payment patterns defined with a non-amortizing payment type. All payments are assumed to be interest only for this type of payment pattern.

Absolute Payment Patterns

Absolute payment patterns are commonly used for instruments that pay on a seasonal schedule, such as agricultural or construction loans that require special payment handling based on months or seasons.

Take the example of a loan that follows a seasonal payment pattern, in which the payment patterns for January, February and March are scheduled for interest-only payments. As revenues for the customer increase, the payment amount also increases. Therefore, the payments for April and May are 80% of the original payment, and June through September is 100% of the original payment. The payment decreases as the production season slows. The payment for October is decreased to 80% of the original payment, and the payments for November and December are decreased again to 50% of the original payment.

> **Note:** You can define absolute payment patterns only up to a year. This is because all entries are automatically ordered by date and are scheduled in a single year rotation.

Related Topics

User Defined Payment Patterns, page 17-1

Relative Payment Patterns

Relative payment patterns are commonly used for modeling instruments with irregular payment frequencies or for instruments where the payment type changes over time. Take the case of a four-year loan for example. The payment for the first 12 months could only be interest. The first 35 payments are scheduled for 50% of the currently scheduled payment, and the last payment is a balloon payment for the balance of the loan. See: Defining Relative Payment Patterns, page 17-6

Related Topics

User Defined Payment Patterns, page 17-1

Split Payment Patterns

A split pattern contains multiple sets of payment patterns under a single amortization code. You use a split pattern for financial instruments that make principal payments along two concurrent amortization schedules. Each separate amortization schedule is termed a time line and assigned a percentage of the balance. A Split Pattern can constitute both absolute and/or relative payment patterns within itself. See: Defining a Split Payment Pattern, page 17-9

Related Topics

User Defined Payment Patterns , page 17-1

Defining Repricing Patterns

User defined repricing patterns provide a mechanism to capture the repricing structure of instruments whose rates change according to complex schedules which cannot be captured in the standard fields of instrument tables. See: User Defined Repricing

Patterns, page 18-1

The user defined repricing pattern allows you to define multiple changes to various elements affecting repricing including:

- Rates
- Margins
- Frequency

A repricing pattern has two major components:

- User Defined Repricing Pattern, page 12-18
- User Defined Repricing Event, page 12-18

> **Note:** Oracle Asset Liability Management Repricing Pattern interface supports simultaneous multiple-user access.

User Defined Repricing Pattern

The user defined repricing pattern provides you with the ability to define a series of repricing patterns and events that describe the interest rate adjustment characteristics over the life of a cash flow instrument. One repricing pattern can be assigned to many cash flow instruments. There are two types of repricing patterns that you can define:

- Absolute Repricing Pattern, page 12-20
- Relative Repricing Pattern, page 12-21

User Defined Repricing Event

The events of a repricing pattern define changes to the interest rates of an instrument during its life. Every pattern begins with an initial event, which describes the behavior for the initial period.

> **Note:** This initial event is required for the setup of all repricing patterns but is not used in Oracle Funds Transfer Pricing. This feature is used only by Oracle ALM, when assigning a rate at origination of new business and transaction strategy records.

The second event describes the change in behavior after the initial period is over. A third event describes the next change in behavior and so on. In relative repricing patterns, you can also define the number of times an event will be repeated before the next event is triggered.

At least one event must be defined for a repricing pattern. All events are listed in the

Repricing Events table. The repricing pattern type, absolute or relative, determines the data required to be populated in the events table.

> **Caution:** You have the option to change the repricing pattern type at any time during the create process. However, changing the repricing pattern type causes the system to automatically refresh the Repricing Events table, and the loss of all the data that you previously entered.

Event Detail

You define each event with a repricing type of either flat rate or indexed rate. The repricing types determine the event detail characteristic that are available.

Flat Rate

Selecting the flat rate repricing type allows you to set the rate of the instrument to a fixed value. For example, 6%. The following table describes the event detail characteristics that are available when the flat rate repricing type is selected.

Event Detail Characteristics: Flat Rate

Characteristic	Description
Net Rate	The new net rate value
Gross Rate	The new gross rate value
Transfer Rate	The new transfer rate value

> **Note:** Flat rate always overrides the caps and floors defined on the instrument record.

Indexed Rate

Selecting the indexed rate repricing type allows you to set the rate of the instrument to an adjustable value, defined as the index rate plus a margin. The following table describes the event detail characteristics that are available when the indexed rate repricing type is selected:

Event Detail Characteristics: Indexed Rate

Characteristic	Description
Interest Rate Code	Reference interest rate used as the index rate to set gross and net rates. This list of values is pulled from the current Historical Rates database.
Transfer Rate Interest Rate Code	Interest rate used to calculate the transfer rate.
Yield Curve Term	Term used in interest rate code lookups; if left blank, defaults to the term until the next repricing; set with a value and multiplier.
Net Margin	Added to index rate to get net rate.
Gross Margin	Added to index rate to get gross rate.
Transfer Margin	Added to index rate to get transfer rate.
Rate Cap Life	The upper limit for gross rate.
Rate Floor Life	The lower limit for gross rate.
Rate Set Lag	Period by which the date of the interest rate used for calculation precedes the event date; set with a value and a multiplier.

Related Topics

User Defined Repricing Patterns, page 18-1

Absolute Repricing Pattern

The absolute repricing pattern is used for instruments that are date dependent. Each specific date is a separate event.

You may have up to one year of defined events that repeat for the life of the instrument. For example, you could define one event for each day of the year; the maximum number of events that you can define is 365. However, you can only define one event for any given date. See: Defining Absolute Repricing Pattern, page 18-3

Relative Repricing Pattern

The relative repricing pattern is a series of repricing events that are driven by user defined time lines. It is used for instruments where the repricing is determined by elapsed time since origination. You specify the duration of each repricing period (frequency) and the number of times the event should occur (repeat) before calculating the next event in the pattern.

For example, an event can be defined with a frequency of 1, a multiplier of Months, and a repeat value of 3. This translates into an event that reprices every month for a duration of 3 consecutive months.

You may have a graduated rate mortgage that requires three rate changes over the life of the instrument. You will have three events following the initial event. If you wish the instrument to retain the behavior defined for the last event, the repeat value should be set to 999. This prevents *wrapping*, or the recycling of all the defined events until the life of the instrument runs out. See: Defining Relative Repricing Pattern, page 18-7

Pricing with Balance Tiers

Repricing Patterns include the option to set rates based on the balance of the instrument being priced. This selection is optional and users can select "None", meaning there are no balance tiers needed, or they can select "Current Balance". If Current Balance is selected, then users can define balance tier ranges and include different pricing details for each balance tier. This option is useful for applying pricing to products such as Savings Accounts or Money Market Accounts that pay different levels of interest based on the account balance.

Balance tiered pricing can be applied to detailed instrument records or to aggregate balances. When applying to aggregate balances, it is important to define the mix percentage of the portfolio for which the pricing will be applied. This is necessary because the original mix of accounts containing the related balance information is lost when the data is aggregated. The mix percentage input solves this problem. When balance tiered pricing is applied to detailed accounts, the mix percentage input is not required.

Example:

Suppose the repricing pattern is defined with the following balance tiers:

Balance > 0 and < 25,000 then current rate = 0.00%, mix % = 50%

Balance >=25,000 then current rate = 2.5%, mix % = 50%

Scenario 1, the instrument table contains detailed account records

Account #1 = $10,000

Account #2 = $10,000

Account #3 = $10,000

Account #4 = $10,000

Account #5 = $10,000

Account #6 = $50,000

The resulting rate will be [($50,000 x 0.00%) + ($50,000 x 2.50%)] / $100,000 = 1.25%

Scenario 2, the instrument table contains 1 aggregated instrument record

Account #1 = $100,000

> **Note:** In scenario 2, the mix percentage is needed.
>
> The resulting rate will be (0.00 x .50) + (2.50 x .50) = 1.25%

Loading Payment Schedule details

Supporting instrument records that have completely unique payment characteristics is the Payment Schedule option. User can directly load cash flows for individual instrument contracts into the FSI_D_PAYMENT_SCHEDULE table.

Instrument records are associated with Payment Schedules through the Amortization Type Code (AMRT_TYPE_CD) column. If the cash flow engine encounters an AMRT_TYPE_CD = 800, 801 or 802 it understands that the instrument record is associated with a Payment Schedule and will perform a lookup in the Payment Schedule table based on the ID_NUMBER and INSTRUMENT_TYPE_CD of the record being processed.

Related Topics

Cash Flow Engine Reference Guide > Cash Flow Calculations > Initializing Schedule Records

Cash Flow Engine Reference Guide > Cash Flow Dictionary > Amortization Type Code

(Mandatory) Defining Time Buckets

Time buckets allow you to specify the time periods used for storing and reporting results. Within the Time Bucket rule, income simulation buckets (also known as Modeling Buckets) set the modeling horizon for date-related business rules. When you change the number or frequency of the modeling buckets, existing rules are affected, so use caution before changing your active time bucket rule.

> **Note:** Forecast Rules that have time bucket dependencies do not adjust dynamically if you change the modeling buckets in your Time Bucket Rule.

Within a Time Bucket rule, you can specify any combination of days, months, and years when setting up the buckets. Although all Oracle ALM cash flows are generated on a daily basis, they are aggregated into defined modeling buckets when results are stored.

ALM BI Reports access information from the modeling buckets and let you aggregate buckets. For example, you can define monthly modeling buckets but generate a quarterly income statement. On the other hand, you cannot generate a weekly balance sheet if all modeling buckets are monthly.

If you want to use different configurations of modeling buckets, such as all monthly or all quarterly, you should create a separate Time Bucket rule for each, and use a naming convention to identify the distinctions. All date-related assumption rules should be defined and used in the context of a single set of modeling buckets or a single Time Bucket rule.

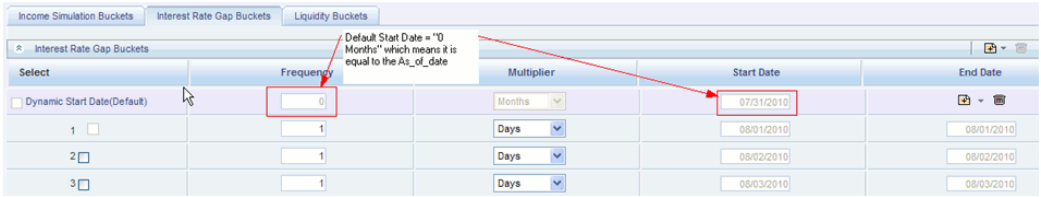
> **Note:** Defining Time Buckets is a mandatory step in setting up and configuring the Oracle ALM application.

Example
Defining Dynamic Start Dates

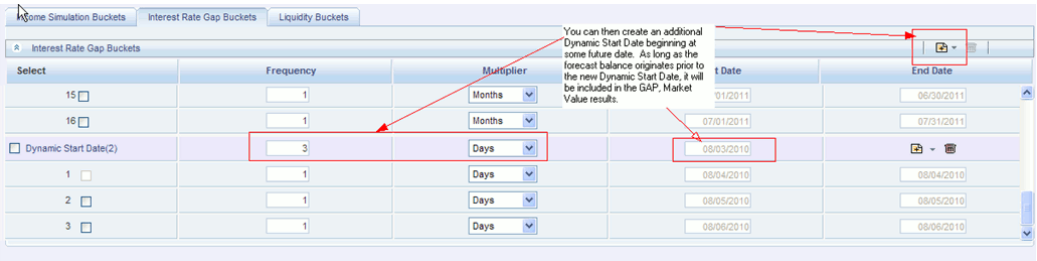
In addition to defining Income Simulation Buckets, Time Bucket rules also allow you to define separately bucket assumptions for Interest Rate GAP and Liquidity GAP results in a single rule. This capability allows you to minimize the number of Time Bucket rules needed to support all of your calculations. You also have the ability to define future start dates (also known as Dynamic Start Dates) within either of the Interest Rate or Liquidity GAP bucket screens.

The following example illustrates how to define additional Dynamic Interest Rate GAP and/or Liquidity GAP buckets within Time Bucket Rules.

The following screen shows the default setup:



This screen shows the setup of an additional "Dynamic Start Date" set to begin at As_of_date + 3 days. If the forecast contains new business assumptions that occur between the As of Date and Dynamic Start Date 2, then they will be included in the output.



Related Topics

Time Buckets, page 19-1

(Mandatory) Defining Product Characteristics

Product Characteristic rules allow you to define payment, pricing and repricing characteristics for new business. They are also used to specify general calculation attributes for both existing accounts and new business.

Defining a Product Characteristics rule is a mandatory step in setting up and configuring the Oracle ALM Application.

Related Topics

Product Characteristics, page 21-1

(Mandatory - Deterministic) Defining Forecast Rate Scenarios

Forecast Rate scenarios allow you to define your deterministic modeling scenarios including projections for future interest rates, future currency exchange rates and future economic indicators. The cash flow engine uses interest rate forecasts to project cash flows, including pricing new business, re-pricing existing business, calculating prepayments, determining discount methods and in determining rate dependent forecast assumptions. The ALM process uses currency exchange rate forecasts to account for the effects of currency fluctuations on income.

The Forecast Rates scenario rules use interest rate codes, currency codes and economic indicator codes defined / stored in Rate Management, including all the active and reporting currencies and the primary, or functional, currency at your institution.

Defining a Forecast Rate Scenario is a mandatory step in setting up and configuring the Oracle ALM Application.

Related Topics

Forecast Rate Scenarios, page 22-1

Defining Prepayments

One of the major business risks faced by financial institutions engaged in the business of lending is prepayment risk. Prepayment risk is the possibility that borrowers might choose to repay part or all of their loan obligations before the scheduled due dates. Prepayments can be made by either accelerating principal payments or refinancing.

Prepayments cause the actual cash flows from a loan to a financial institution to be different from the cash flow schedule drawn at the time of loan origination.

A Prepayment Rule contains methodologies to model the prepayment behavior of various amortizing instruments and quantify the associated prepayment risk. See: Prepayment Methodologies and Rules, page 12-25

Prepayment methodologies are associated with the product-currency combinations within the Prepayment rule. See: Prepayment Rules, page 23-1

Related Topics

Overview of the Process, page 12-2

Defining Prepayment Methodologies, page 23-3

Prepayment Methodologies and Rules

You can use any of the following four methods in a Prepayment rule to model the prepayment behavior of instruments:

- Constant Prepayment method, page 12-25
- Prepayment Model method, page 12-26
- PSA method, page 12-28
- Arctangent method, page 12-29

Related Topics

Defining Prepayment Methodologies, page 23-3

Defining Prepayments, page 12-25

Constant Prepayment Method

The Constant Prepayment method calculates the prepayment amount as a flat percentage of the current balance.

You can create your own origination date ranges and assign a particular prepayment rate to all the instruments with origination dates within a particular origination date

range.

Related Topics

Prepayment Methodologies and Rules, page 12-25

Defining Prepayment Methodologies, page 23-3

Prepayment Model Method

The Prepayment Model method allows you to define more complex prepayment assumptions compared to the other prepayment methods. Under this method, prepayment assumptions are assigned using a custom Prepayment model.

You can build a Prepayment model using a combination of up to three prepayment drivers and define prepayment rates for various values of these drivers. Each driver maps to an attribute of the underlying transaction (age/term or rate) so that the cash flow engine can apply a different prepayment rate based on the specific characteristics of the record.

Note: All prepayment rates should be input as annual amounts.

Prepayment Model Structure

A typical Prepayment model structure includes the following:

- **Prepayment Drivers:** You can build a Prepayment model using one to three prepayment drivers. A driver influences the prepayment behavior of an instrument and is either an instrument characteristic or a measure of interest rates.
- **The Prepayment Driver Nodes:** You can specify one or more node values for each of the prepayment drivers that you select.
- **Interpolation or Range method:** Interpolation or Range methods are used to calculate prepayment rates for the prepayment driver values that do not fall on the defined prepayment driver nodes.

Types of Prepayment Drivers

The prepayment drivers are designed to allow the calculation of prepayment rates at run time depending on the specific characteristics of the instruments for which cash flows are being generated. Although nine prepayment drivers are available, a particular prepayment model can contain only up to three prepayment drivers.

The prepayment drivers can be divided into the following two categories:

- **Age/Term Drivers:** The Age/Term drivers define term and repricing parameters in a Prepayment model. All such prepayment drivers are input in units of months. These Drivers include:

- **Original Term:** You can vary your prepayment assumptions based on the contractual term of the instrument. For example, you could model faster prepayment speeds for longer term loans, such as a 10-year loan, than for short term loans, such as a 5-year loan. You would then select the Original Term prepayment driver and specify two node values: 60 months and 120 months.

- **Repricing Frequency:** You can vary your prepayment assumptions based on the repricing nature of the instrument being analyzed. Again, you could specify different prepayment speeds for different repricing frequencies and the system would decide which one to apply at run time on a record by record basis.

- **Remaining Term:** You can specify prepayment speeds based on the remaining term to maturity. For example, loans with few months to go until maturity tend to experience faster prepayments than loans with longer remaining terms.

- **Expired Term:** This is similar to the previous driver but instead of looking at the term to maturity, you base your assumptions on the elapsed time. Prepayments show some aging effect such as the loans originated recently experiencing more prepayments than older ones.

- **Term to Repricing:** You can also define prepayment speeds based on the number of months until the next repricing of the instrument.

- **Interest Rate Drivers:** The Interest Rate drivers allow the forecasted interest rates to drive prepayment behavior to establish the rate-sensitive prepayment runoff. Interest Rate Drivers include:

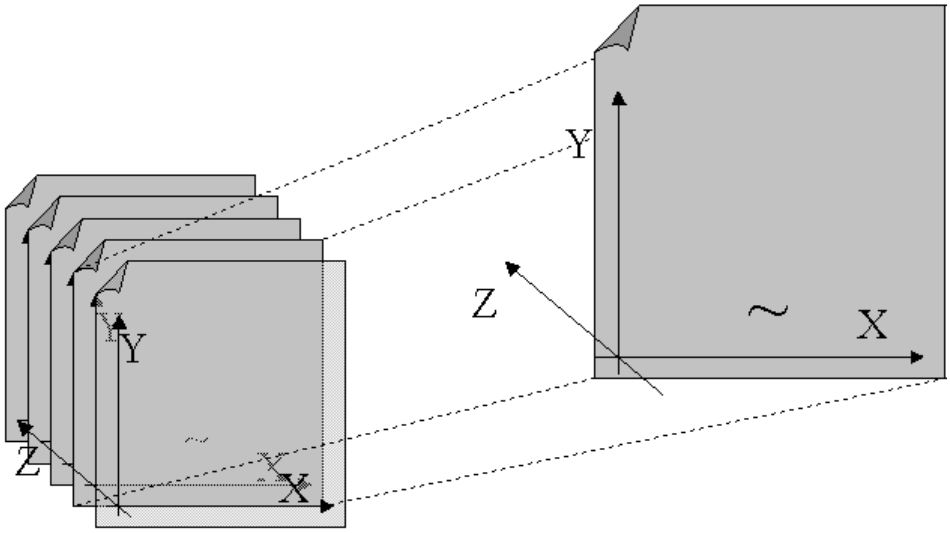
  - **Coupon Rate:** You can base your prepayment assumptions on the current gross rate on the instrument.

  - **Market Rate:** This driver allows you to specify prepayment speeds based on the market rate prevalent at the time the cash flows occur. This way, you can incorporate your future expectations on the levels of interest rates in the prepayment rate estimation. For example, you can increase prepayment speeds during periods of decreasing rates and decrease prepayments when the rates go up.

  - **Rate Difference:** You can base your prepayments on the spread between the current gross rate and the market rate.

  - **Rate Ratio:** You can also base your prepayments on the ratio of current gross rate to market rate.

    The following diagram illustrates a three-driver prepayment model:



The ~ signifies a point on the X-Y-Z plane. In this example it is on the second node of the Z-plane. The Z -plane behaves like layers.

Oracle Asset Liability Management allows you to build prepayment models using the Prepayment Model rule. The Prepayment Model rule can then be referenced by a Prepayment Rule. See: Prepayment Model Rules., page 24-1

Related Topics

Prepayment Methodologies and Rules, page 12-25

Defining Prepayment Methodologies, page 23-3

Defining the Prepayment Model Rule Method, page 23-9

PSA Method

The PSA Prepayment method (Public Securities Association Standard Prepayment Model) is a standardized prepayment model that is built on a single dimension, remaining term. The PSA curve is a schedule of prepayments which assumes that prepayments will occur at a rate of 0.2 percent CPR in the first month and will increase an additional 0.2 percent CPR each month until the 30th month and will prepay at a rate of 6 percent CPR thereafter ("100 percent PSA"). PSA prepayment speeds are expressed as a multiple of this base scenario. For example, 200 percent PSA assumes annual prepayment rates will be twice as fast in each of these periods -- 0.4 percent in the first month, 0.8 percent in the second month, reaching 12 percent in month 30 and remaining at 12 percent after that. A zero percent PSA assumes no prepayments.

You can create your own origination date ranges and assign a particular PSA speed to all the instruments with origination dates within a particular origination date range.

Note: PSA speed inputs can be between 0 and 1667

Arctangent Calculation Method

The Arctangent Calculation method uses the Arctangent mathematical function to describe the relationship between prepayment rates and spreads (coupon rate less market rate).

Note: All prepayment rates should be input as annual amounts.

User defined coefficients adjust this function to generate differently shaped curves. Specifically:

$CPR_t = k_1 - (k_2 * ATAN(k_3 * (-C_t/M_t + k_4)))$

where CPR_t = annual prepayment rate in period t

C_t = coupon in period t

M_t = market rate in period t

$k_1 - k_4$ = user defined coefficients

A graphical example of the Arctangent prepayment function is shown below, using the following coefficients:

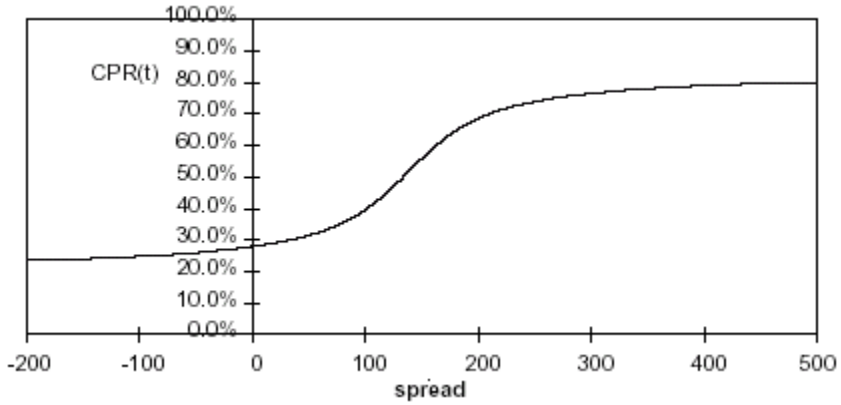
$k_1 = 0.3$

$k_2 = 0.2$

$k_3 = 10.0$

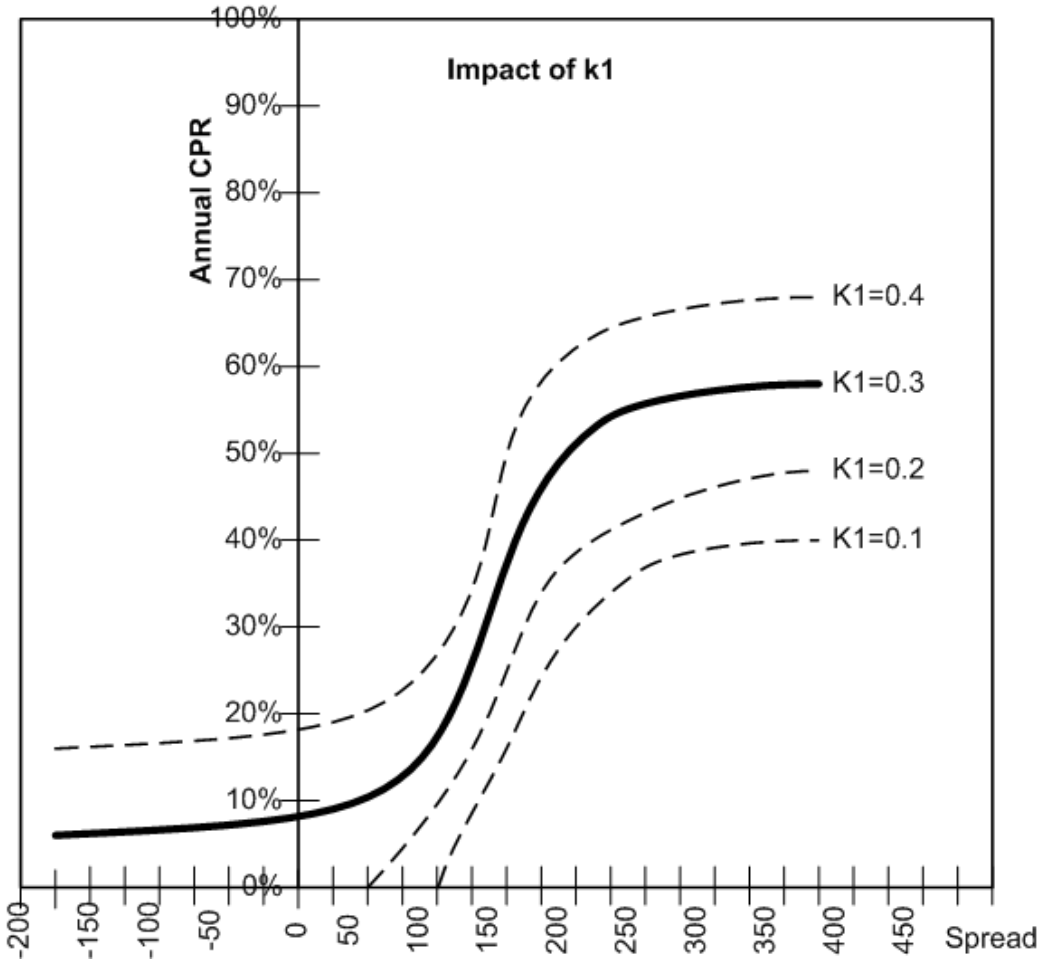
$k_4 = 1.2$

Each coefficient affects the prepayment curve in a different manner.

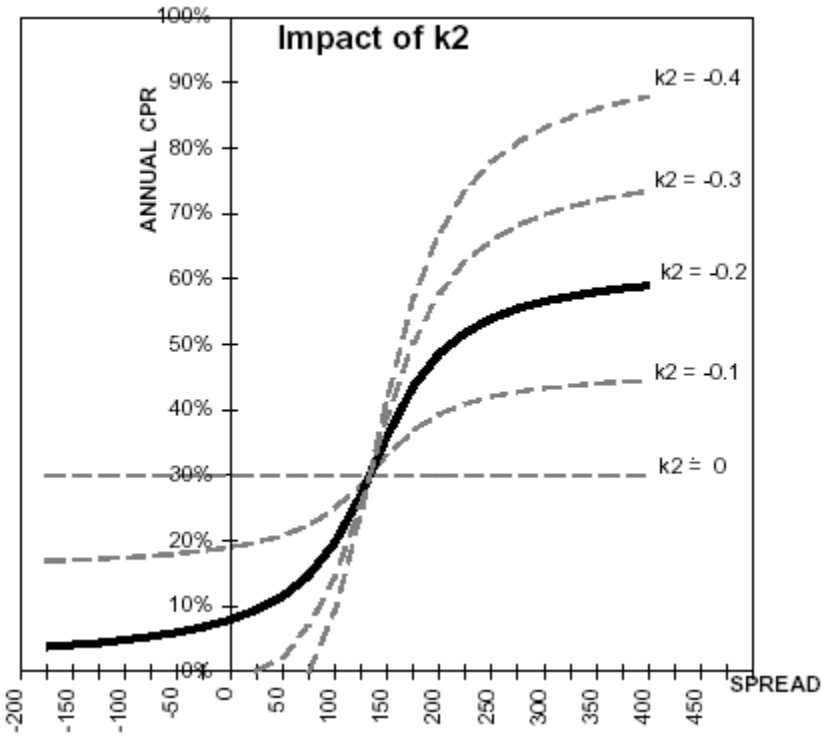


The following diagram shows the impact of K1 on the prepayment curve. K1 defines the midpoint of the prepayment curve, affecting the absolute level of prepayments.

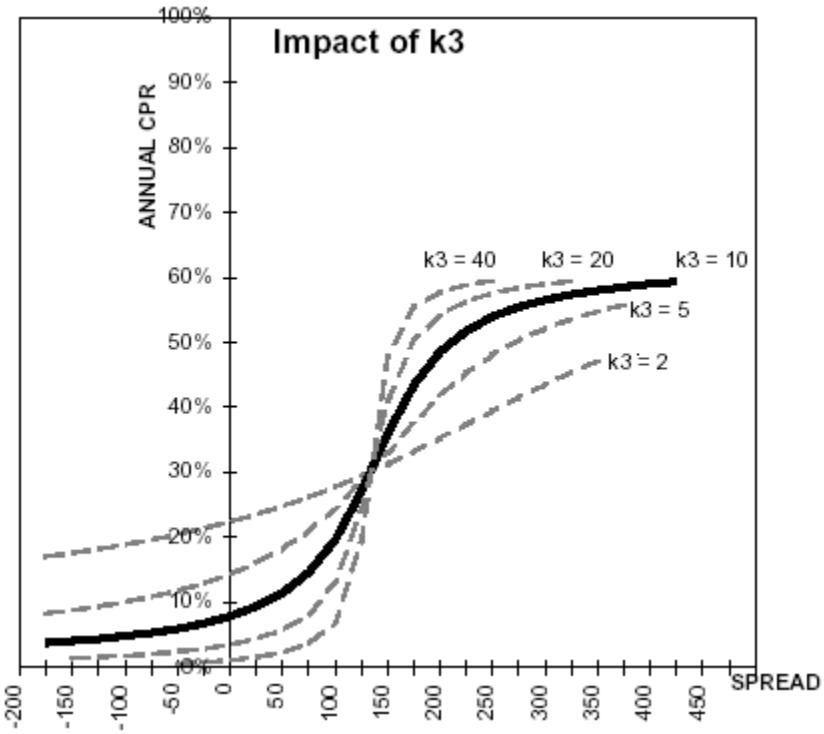
Adjusting the value creates a parallel shift of the curve up or down.



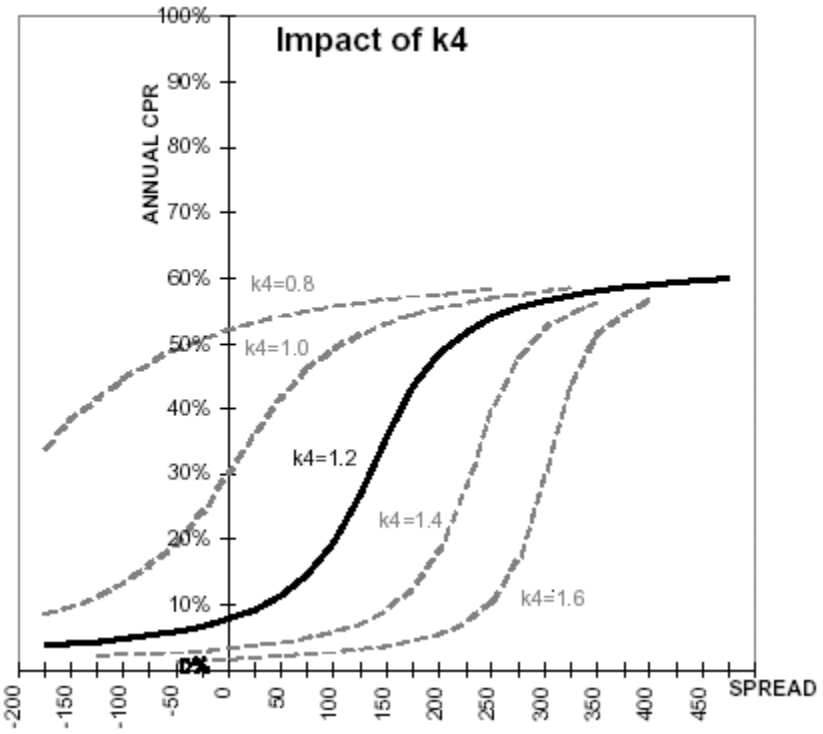
The following diagram shows the impact of K2 on the prepayment curve. K2 impacts the slope of the curve, defining the change in prepayments given a change in market rates. A larger value implies greater overall customer reaction to changes in market rates.



The following diagram shows the impact of K3 on the prepayment curve. K3 impacts the amount of torque in the prepayment curve. A larger K3 increases the amount of acceleration, implying that customers react more sharply when spreads reach the hurdle rate.



The following diagram shows the impact of K4 on the prepayment curve. K4 defines the hurdle spread: the spread at which prepayments start to accelerate. When the spread ratio = k4, prepayments = k1.



Defining Discounting Methods

Discount Method rules allow you to define, based on your product hierarchy, the method for discounting projected cash flows for market value purposes. For each product and currency, you can choose one of the following discount methods and the corresponding reference rates (IRC) for discounting:

- Spot Input
- Spot Interest Rate Code
- Forecast (Original Term)
- Forecast (Remaining Term)

Related Topics

Discount Methods, page 25-1

Defining Forecast Assumptions

You can define new business assumptions in Oracle ALM through three different assumption rules, which work together to define the volume, term and pricing level:

- Forecast Balances
- Forecast Maturity Mix
- Forecast Pricing Margins

Forecast Balance rules allow you to input the new volumes that you expect to originate over the forecast horizon. The horizon over which you input Forecast Balance assumptions is determined by the Income Simulation buckets defined in your "Active" Time Bucket rule.

In addition to the volumes of new business defined in your Forecast Balance assumption rule, you must also define the corresponding Maturity Mix and Pricing Margins associated with the new volumes. These assumptions are managed through the Forecast Maturity Mix and Forecast Pricing Margin assumption rules.

Related Topics

Forecast Balances, page 27-1

Forecast Maturity Mix , page 28-2

Forecast Pricing Margins, page 29-1

Rate Dependency Patterns, page 26-1

Defining Transfer Pricing Rules

Defining Transfer Pricing rules is one of the optional steps in the Oracle Asset Liability Management process. You must define Transfer Pricing rules, in order to transfer price your forecasted balances. A Transfer Pricing rule is used to manage the association of transfer pricing methodologies to various product-currency combinations. It can also be used to manage certain parameters used in option costing.

See: Transfer Pricing Methodologies and Rules, page 12-35

To reduce the amount of effort required to define the transfer pricing methodologies for various products and currencies, Oracle Funds Transfer Pricing allows you to define transfer pricing methodologies using node level and conditional assumptions.

Node Level Assumptions

Oracle Asset Liability Management uses the Product Dimension that has been selected within Application Preferences, to represent a financial institution's product portfolio. Using this dimension, you can organize your product portfolio into a hierarchical structure and define parent-child relationships for different nodes of your product hierarchy. This significantly reduces the amount of work required to define transfer pricing, prepayment, adjustment rule methodologies and other ALM assumption rules.

You can define transfer pricing, prepayment, adjustment rule methodologies and other

ALM assumption rules at any level of your product hierarchy. Children of parent nodes on a hierarchy automatically inherit the methodologies defined for the parent nodes. However, methodologies directly defined for a child take precedence over those at the parent level. See: Defining Transfer Pricing Methodologies Using Node Level Assumptions, page 12-45

Conditional Assumptions

The conditional assumption feature allows you to segregate your product portfolio based on common characteristics, such as term to maturity, origination date, and repricing frequency, and assign specific transfer pricing methodologies to each of the groupings.

For example, you can slice a portfolio of commercial loans based on repricing characteristics and assign one global set of Transfer Pricing, Prepayment, Adjustment Rule Methodologies or other ALM assumption rules to the fixed-rate loans and another to the floating-rate loans. See: Associating Conditional Assumptions with Prepayment Rules, page 23-15

Related Topics

Overview of the Oracle Asset Liability Management Process, page 12-2

Defining Transfer Pricing Methodologies, page 30-3

Transfer Pricing Methodologies and Rules

The transfer pricing methodologies supported by Oracle Asset Liability Managment can be grouped into the following two categories:

- **Cash Flow Transfer Pricing Methods:** Cash flow transfer pricing methods are used to transfer price instruments that amortize over time. They generate transfer rates based on the cash flow characteristics of the instruments.

  In order to generate cash flows, the system requires a detailed set of transaction-level data attributes, such as, origination date, outstanding balance, contracted rate, and maturity date, which resides only in the Instrument tables. Consequently, cash flow methods apply only if the data source is Account tables. Data stored in the Management Ledger Table reflects only accounting entry positions at a particular point in time and does not have the required financial details to generate cash flows, thus preventing you from applying cash flows methodologies to this data.

  The cash flow methods are also unique in that Prepayment rules are used only with these methods. You can select the required Prepayment rule when defining an ALM Process.

  Oracle Asset Liability Management supports the following cash flow transfer

pricing methods:

- Cash Flow: Average Life, page 12-36
- Cash Flow: Duration, page 12-37
- Cash Flow: Weighted Term, page 12-38
- Cash Flow: Zero Discount Factors, page 12-39

- **Non cash Flow Transfer Pricing Methods:** These methods do not require the calculation of cash flows.

  Oracle Asset Liability Management supports the following non cash flow transfer pricing methods:

  - Moving Averages, page 12-41
  - Straight Term, page 12-42
  - Spread from Interest Rate Code, page 12-43
  - Spread from Note Rate, page 12-44
  - Redemption Curve, page 12-44

Cash Flow : Average Life

The Average Life method determines the average life of the instrument by calculating the effective term required to repay back half of the principal or nominal amount of the instrument. The TP rate is equivalent to the rate on the associated interest rate curve corresponding to the calculated term.

$$\text{Average Life} = \sum_{i=1}^{n} \frac{P_i}{P} t_i$$

Where:

P is the principal

Pi is the principal repayment in coupon *i*, hence

$\frac{P_i}{P}$ is the fraction of the principal repaid in coupon *i*, and

t_i is the time from the start of coupon i

Oracle Asset Liability Management derives the Average Life based on the cash flows of an instrument as determined by the characteristics specified in the Instrument Table and using your specified prepayment rate, if applicable. The average life formula calculates a single term, that is, a point on the yield curve used to transfer price the instrument being analyzed.

> **Note:** The Average Life TP Method provides the option to Output the result of the calculation to the instrument record (TP_AVERAGE_LIFE). This can be a useful option if you would like to refer to the average life as a reference term within an Adjustment Rule

Cash Flow: Duration

The Duration method uses the Macaulay duration formula:

$$\text{Duration} = \frac{\sum_{n=1}^{N}\left[\frac{CF_n}{(1+r)^m} \times t_n\right]}{\sum_{n=1}^{N}\left[\frac{CF_n}{(1+r)^m}\right]}$$

In this formula:

N = Total number of payments from Start Date until the earlier of repricing or maturity

CF_n= Cash flow (such as regular principal, prepayments, and interest) in period n

r = Periodic rate (current rate/payments per year)

m = Remaining term to cash flow/active payment frequency

tn = Remaining term to cash flow n, expressed in years

Oracle Asset Liability Management derives the Macaulay duration based on the cash flows of an instrument as determined by the characteristics specified in the Instrument Table and using your specified prepayment rate, if applicable. The duration formula calculates a single term, that is, a point on the yield curve used to transfer price the instrument.

- Within the Duration calculation, the discount rate or current rate, r, is defined in one of three ways, based on how the methodology is setup by the user:

  1. Current rate is defined as current net rate if the processing option, "Model with Gross Rates" is not selected and current

gross rate if the option is selected. The current rate is used as a constant discount rate for each cash flow.

2. The user may directly input, while defining the TP rule, a constant rate to use for discounting. If specified, this rate is used as a constant discount rate for each flow.

3. The user can select to discount the cash flows using spot rates from a selected interest rate curve. With this approach, a discount rate is read from the selected interest rate curve corresponding to the term of each cash flow.

- Remaining term to cash flow is the difference between the date of each cash flow and the modeling start date for that instrument.

Note: The Duration TP Method provides the option to Output the result of the calculation to the instrument record (TP_DURATION). This can be a useful option if you would like to refer to the duration as a reference term within an Adjustment Rule

Related Topics

Transfer Pricing Methodologies and Rules, page 12-35

Defining Transfer Pricing Methodologies, page 30-3

Cash Flow: Weighted Term

The Weighted Term method builds on the theoretical concepts of duration. As shown earlier, duration calculates a weighted-average term by weighting each time period, n, with the present value of the cash flow (discounted by the rate on the instrument) in that period.

Since the goal of the Weighted Term method is to calculate a weighted average transfer rate, it weights the transfer rate in each period, y_n, by the present value for the cash flow of that period. Furthermore, the transfer rates are weighted by an additional component, *time*, to account for the length of time over which a transfer rate is applicable. The time component accounts for the relative significance of each strip cash flow to the total transfer pricing interest income/expense. The total transfer pricing interest income/expense on any cash flow is a product of that cash flow, the transfer rate, and the term. Hence, longer term cash flows will have relatively larger impact on the average transfer rate. The Weighted Term method, with "Discounted Cash Flow" option selected, can be summarized by the following formula:

$$\text{Weighted-Average} = \bar{y} = \frac{\sum_{n=1}^{N}\left[y_n \times \frac{CF_n}{(1+r)^m} \times t_n\right]}{\sum_{n=1}^{N}\left[\frac{CF_n}{(1+r)^m} \times t_n\right]}$$

In this formula:

N = Total number of payments from Start Date until the earlier of repricing or maturity

CF_n= Cash flow (such as regular principal, prepayments, and interest) in period n

r = Periodic coupon rate on instrument (current rate/payments per year)

m = Remaining term to cash flow n/active payment frequency

t_n= Remaining term to cash flow n, expressed in years

y_n= Transfer rate in period n

Within the Weighted Average Cash Flow method definition screen, users can choose whether or not to discount the cash flows as described earlier. If the "Cash Flow" option is selected, rather than the "Discounted Cash Flow", the following simplified formula is applied:

$$\text{Weighted Average} = \bar{y} = \left(\frac{\Sigma_{n=1}^{N}\left[y_n \times CF \times t_n\right]}{\Sigma_{n=1}^{N}\left[CF \times t_n\right]}\right)$$

Related Topics

Transfer Pricing Methodologies and Rules, page 12-35

Defining Transfer Pricing Methodologies, page 30-3

Cash Flow: Zero Discount Factors

The Zero Discount Factors (ZDF) method takes into account common market practices in valuing fixed rate amortizing instruments. For example, all Treasury strips are quoted as discount factors. A discount factor represents the amount paid today to receive $1 at maturity date with no intervening cash flows (that is, zero coupon).

The Treasury discount factor for any maturity (as well as all other rates quoted in the market) is always a function of the discount factors with shorter maturities. This ensures that no risk-free arbitrage exists in the market. Based on this concept, one can conclude that the rate quoted for fixed rate amortizing instruments is also a combination of some set of market discount factors. Discounting the monthly cash flows

for that instrument (calculated based on the constant instrument rate) by the market discount factors generates the par value of that instrument (otherwise there is arbitrage).

ZDF starts with the assertion that an institution tries to find a funding source that has the same principal repayment factor as the instrument being funded. In essence, the institution strip funds each principal flow using its funding curve (that is, the transfer pricing yield curve). The difference between the interest flows from the instrument and its funding source is the net income from that instrument.

Next, ZDF tries to ensure consistency between the original balance of the instrument and the amount of funding required at origination. Based on the transfer pricing yield used to fund the instrument, the ZDF solves for a single transfer rate that would amortize the funding in two ways:

- Its principal flows match those of the instrument.
- The Present Value (PV) of the funding cash flows (that is, the original balance) matches the original balance of the instrument.

ZDF uses zero coupon factors (derived from the original transfer rates, see the following example) because they are the appropriate vehicles in strip funding (that is, there are no intermediate cash flows between origination date and the date the particular cash flow is received). The zero coupon yield curve can be universally applied to all kinds of instruments.

This approach yields the following formula to solve for a weighted average transfer rate based on the payment dates derived from the instrument's payment data.

Zero Discount Factors = y =

$$100 \times \left[\frac{B_0 - \sum_{n=1}^{N}(B_{n-1} \times DTP_n) + \sum_{n=1}^{N}(B_n \times DTP_n)}{\sum_{n=1}^{N}(B_{n-1} \times DTP_n)} \right] \times \mathrm{p}$$

In this formula:

B_0= Beginning balance at time, 0

B_{n-1}= Ending balance in previous period

B_n= Ending balance in current period

DTP_n= Discount factor in period n based on the TP yield curve

N = Total number of payments from Start Date until the earlier of repricing or maturity

p = Payments per year based on the payment frequency; (for example, monthly payments gives p=12)

Deriving Zero Coupon Discount Factors: An Example

This table illustrates how to derive zero coupon discount factors from monthly pay

transfer pricing rates:

Term in Months	(a) Monthly Pay Transfer Rates	(b) Monthly Transfer Rate: (a)/12	(c) Numerator (Monthly Factor): 1+ (b)	(d) PV of Interest Payments: (b)*Sum((f)/100 to current row	(e) Denominator (1 - PV of Int Pmt): 1 - (d)	(f) Zero Coupon Factor: [(e)/(c) * 100
1	3.400%	0.283%	1.002833	0.000000	1.000000	99.7175
2	3.500%	0.292%	1.002917	0.002908	0.997092	99.4192
3	3.600%	0.300%	1.003000	0.005974	0.994026	99.1053

Related Topics

Transfer Pricing Methodologies and Rules, page 12-35

Defining Transfer Pricing Methodologies, page 30-3

Moving Averages

Under this method, a user definable moving average of any point on the transfer pricing yield curve can be applied to a transaction record to generate transfer prices. For example, you can use a 12-month moving average of the 12-month rate to transfer price a particular product.

The following options become available on the user interface (UI) with this method:

- **Interest Rate Code:** Select the Interest Rate Code to be used as the yield curve to generate transfer rates.
- **Yield Curve Term:** The Yield Curve Term defines the point on the Interest Rate Code that is used.
- **Historical Range:** The Historical Range defines the period over which the average is calculated.

The following table illustrates the difference between the yield curve and historical terms.

Yield and Historical Terms: An Example

Moving Average	Yield Curve Term	Historical Range
Six-month moving average of 1 year rate	1 year (or 12 months)	6 months
Three-month moving average of the 6 month rate	6 months	3 months

The range of dates is based on the As of date minus the historical Range plus one, because the historical Range includes the As of date. Oracle Asset Liability Management takes the values of the yield curve points that fall within that range and does a straight average on them.

For example, if As of Date is Nov 21, the Yield Curve Term selected is Daily, and the Historical Range selected is 3 Days, then, the system will calculate the three-day moving average based on the rates for Nov 19, 20, and 21. The same logic applies to monthly or annual yield terms.

Related Topics

Transfer Pricing Methodologies and Rules, page 12-35

Defining Transfer Pricing Methodologies, page 30-3

Straight Term

When you select the Straight Term method, the system derives the transfer rate using the last repricing date and the next repricing date for adjustable rate instruments, and the origination date and the maturity date for fixed rate instruments.

1. Standard Calculation Mode:
    1. For Fixed Rate Products (Repricing Frequency = 0), use Yield Curve Date = Origination Date, Yield Curve Term = Maturity Date-Origination Date.
    2. For Adjustable Rate Products (Repricing Frequency > 0)
        - For loans still in tease period (tease end date > As of Date, and tease end date > origination date), use Origination Date and Tease End Date - Origination Date.
        - For loans not in tease period, use Last Repricing Date and Repricing Frequency.

2. Remaining Term Calculation Mode:

    1. For Fixed Rate Products, use As of Date and Maturity - As of Date.

    2. For Adjustable Rate Products, use As of Date and Next Repricing Date - As of Date.

The following options become available on the application with this method:

- **Interest Rate Code:** Select the Interest Rate Code to be used for transfer pricing the account.

Related Topics

Transfer Pricing Methodologies and Rules, page 12-35

Defining Transfer Pricing Methodologies, page 30-3

Spread from Interest Rate Code

Under this method, the transfer rate is determined as a fixed spread from any point on an Interest Rate Code. The following options become available on the application with this method:

- **Interest Rate Code:** Select the Interest Rate Code for transfer pricing the account.

- **Yield Curve Term:** The Yield Curve Term defines the point on the Interest Rate Code that will be used to transfer price. If the Interest Rate Code is a single rate, the Yield Curve Term is irrelevant. Select Days, Months, or Years from the drop-down list, and enter the number.

- **Lag Term:** While using a yield curve from an earlier date than the Assignment Date, you need to assign the Lag Term to specify a length of time prior to the Assignment Date.

- **Rate Spread:** The transfer rate is a fixed spread from the rate on the transfer rate yield curve. The Rate Spread field allows you to specify this spread.

- **Assignment Date:** The Assignment Date allows you to choose the date for which the yield curve values are to be picked up. Choices available are the As of Date, Last Repricing Date, Origination Date, or TP Effective Date.

Related Topics

Transfer Pricing Methodologies and Rules, page 12-35

Defining Transfer Pricing Methodologies, page 30-3

Spread from Note Rate

To generate transfer prices using this method, you need to provide just one parameter: a rate spread. This spread is added or subtracted from the coupon rate of the underlying transaction to generate the final transfer rate for that record.

While entering the rate spread, make sure to input it with the appropriate positive or negative sign, as illustrated in the following table. The first row describes a situation where you are transfer pricing an asset and want to have a positive matched spread for it (the difference between the contractual rate of the transaction and the transfer rate is positive). Here, you need to enter a negative rate spread.

Example of Rate Spread

Account Type	Matched Spread	Sign of Rate Spread
Asset	Positive (Profitable)	Negative
Asset	Negative (Unprofitable)	Positive
Liability or Equity	Positive (Profitable)	Positive
Liability or Equity	Negative (Unprofitable)	Negative

Related Topics

Transfer Pricing Methodologies and Rules, page 12-35

Defining Transfer Pricing Methodologies, page 30-3

Redemption Curve

This method allows you to select multiple term points from your transfer pricing yield curve and calculate an average transfer rate based on the weights you assign to each term point. The following options become available in the application with this method:

- **Interest Rate Code:** Select the Interest Rate Code which you want to use as the transfer pricing yield curve.
- **Assignment Date:** The Assignment Date allows you to choose the date for which the yield curve values will be picked up. Choices available are the As of Date, Last Repricing Date, Origination Date, or TP Effective Date.
- **Percentages/Term Points:** Defining the Redemption Curve Methodology, page 30-8

Related Topics

Defining Transfer Pricing Methodologies, page 30-3

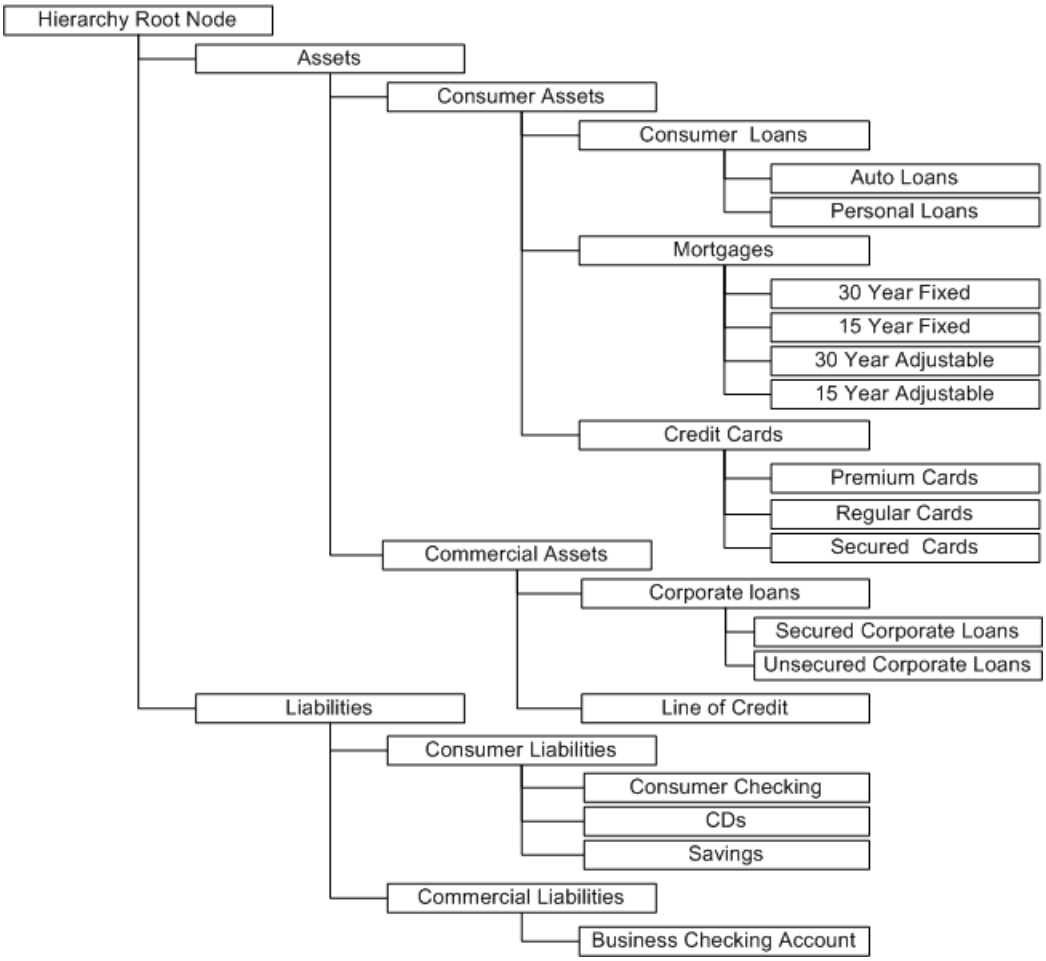
Defining Transfer Pricing Methodologies Using Node Level Assumptions

In Oracle Asset Liability Management, your product portfolio is represented using the Product Dimension specified in your ALM Application Preferences. Node Level Assumptions allow you to define transfer pricing, prepayment, adjustment and other ALM Rule assumptions at any level of the Product dimension Hierarchy. The Product dimension supports a hierarchical representation of your chart of accounts, so you can take advantage of the parent-child relationships defined for the various nodes of your product hierarchies while defining transfer pricing, prepayment, adjustment and other ALM Rule assumptions. Child nodes for which no assumptions have been specified automatically inherit the methodology of their closest parent node. Conversely, explicit definitions made at a child level will take precedence over any higher level parent node assumption.

Node level assumptions simplify the process of applying rules in the user interface and significantly reduce the effort required to maintain business rules over time as new products are added to the product mix. It is also not required for all rules to assign assumptions to the same nodes. Users may assign assumptions at different levels throughout the hierarchy.

Behavior of Node Level Assumptions

The following graphic displays a sample product hierarchy:



Suppose you want to transfer price this product hierarchy using the Spread from Interest Rate Code transfer pricing method except for the following products:

- Mortgages: You want to transfer price these using the Zero Discount Factors cash flow based method.
- Credit Cards: You want to transfer price all but secured credit cards using the Spread from Note Rate method.

To transfer price in this manner, you need to attach transfer pricing methods to the nodes of the product hierarchy as follows:

- Hierarchy Root Node: Spread from Interest Rate Code
- Mortgages: Zero Discount Factors Cash Flow
- Credit Cards: Spread from Note Rate
- Secured Credit Cards: Spread from Interest Rate Code

The transfer pricing method for a particular product is determined by searching up the nodes in the hierarchy. Consider the Secured Credit Cards in the above example. Since Spread from IRC is specified at the leaf level, the system does not need to search any further to calculate the transfer rates for the Secured Credit Cards. However, for a Premium Credit Card the system searches up the hierarchical nodes for the first node that specifies a method. The first node that specifies a method for the Premium Credit Card is the Credit Card node and it is associated with the Spread from Note Rate method.

> **Note:** Child nodes for which no assumptions have been specified automatically inherit the methodology of their closest parent node. So if neither a child node nor its immediate parent has a method assigned, the application searches up the nodes in the hierarchy until it finds a parent node with a method assigned, and uses that method for the child node. If there are no parent nodes with a method assigned then the application triggers a processing error stating that no assumptions are assigned for the particular product/currency combination.

All parameters that are attached to a particular methodology (such as Interest Rate Code) are specified at the same level as the method. If multiple Interest Rate Codes are to be used, depending on the type of the product, the method would need to be specified at a lower level. For instance, if you want to use IRC 211178 for Consumer Products and IRC 3114 for Commercial Products, then the transfer pricing methodologies for these two products need to be specified at the Commercial Products and Consumer Products nodes.

You need not specify prepayment assumptions at the same nodes as transfer pricing methods. For example, each mortgage category can have a different prepayment method while the entire Mortgage node uses the Zero Discount Factors cash flow method for transfer pricing.

Related Topics

Defining Transfer Pricing Rules, page 12-34

Defining Transfer Pricing Methodologies, page 30-3

Associating Conditional Assumptions with Prepayment Rules, page 23-15

Defining Transaction Strategies

With Transaction Strategies, you can test the impact of various hedging strategies that are integrated with basic scenario modeling assumptions. This supports you in testing alternative strategies and their incremental impact on results. The testing is facilitated by the separation of transaction strategies from basic scenario assumptions. You can also use this business rule to add specific instrument records to a processing run without changing the actual instrument data.

A transaction can be either positive or negative and can be defined for any product leaf member. A Transaction Strategy assumption rule can contain any number of individual transactions.

Related Topics

Transaction Strategies, page 32-1

Rate Dependency Patterns, page 26-1

Defining Formula Results

With Formula Results, you can model deterministic results for a specific product leaf using the results of the cash flow, gap, and market value processes to recalculate and change system-generated data. You can also use this capability to model results for a product leaf outside of the cash flow engine, using formulas to create outputs.

For example, you may want to model the ending balance of a particular account as 110% of the ending balance of a second account. You can also calculate non-interest income and expense amounts as percentages of new volumes. These relationships are defined in Formula Results.

There are three formula types:

- Cash flow
- Dynamic gap
- Market value

Related Topics

Formula Results, page 33-1

Rate Dependency Patterns, page 26-1

(Mandatory – Stochastic) Defining Stochastic Rate Indexing Rules

The Stochastic Rate Indexing rule is a required assumption rule, that you select within a Stochastic ALM Process to calculate Value at Risk and Earnings at Risk.

The purpose of the Stochastic Rate Indexing Rule is to establish relationships between a risk-free Interest Rate Code (IRCs) and other interest rate codes or Indexes used for re-pricing existing business and pricing new business. The Stochastic Rate Indexing rule allows you to select the valuation curve that the system uses during stochastic processing. The Rate Index rule provides full support for multi-currency processing by allowing you to select one valuation curve per currency supported in your system.

During stochastic ALM processing, the system generates future interest rates for the

valuation curve you selected, which are then used to derive the future interest rates for any Index associated to that valuation curve based on the relationship you define. The rates thus forecasted for the IRCs or Indexes depend on the risk-free curve used for valuation of instruments associated with the derived IRCs or Indexes. As the risk-free rates change, the non risk-free interest rates change accordingly.

Related Topics

Stochastic Rate Indexing, page 34-1

(Mandatory) Defining and Running the Asset Liability Management Process

When all of the assumptions for a forecast are defined, users can define and execute ALM Processes where they combine the relevant assumptions into an ALM simulation run. ALM Processes initialize all selected assumption data and call the cash flow engine to execute the selected calculation processes and generate a results set. An ALM Process requires specific inputs based on the ALM Process type, including:

- Product Hierarchy / Data Source selection
- Calculation Elements
- Process Assumption Rules
- Output Preferences
- Audit Preferences
- Processing Parameters

Defining options within each of these pages and saving the process, creates a unique Process Identifier for individual forecasting objectives. Results from each process run are optionally stored in the ALM BI schema and become available for ALM reporting.

Related Topics

ALM Processing, page 35-1

Reviewing Processing Errors

There is always the possibility that errors may occur during the execution of an ALM Process. A log of such errors is generated during processing and can be accessed by selecting the "View Log" link from both the Standard and Stochastic ALM Process summary pages.

Within this log, the report lists the specific transaction for which an error was generated and provides the internally generated identifier of the ALM Process that generated it.

As part of the rectification process, it is advisable to determine what caused the error and what should be done to correct it for the next run.

Accessing Asset Liability Management, Detail Cash Flow Results for Audit Purposes

Detailed cash flow results for individual account records can be written to an audit table for validation purposes. If you select the Detailed Cash Flows audit option on the ALM Process - Audit Block, the detailed cash flow results are written to the FSI_O_PROCESS_CASH_FLOWS table.

Related Topics

ALM Processing > Audit Preferences, page 35-7

Application Preferences > Maximum Number of Instrument Records to Include in Detail Cash Flow Output, page 14-4

Accessing Asset Liability Management, Interest Rate Audit Results

Forecast Rates, Implied Forward Rates and Stochastic - 1 Month Rates can be written to an audit table to facilitate validation of results and for reporting and analysis in ALM BI.

Within the ALM Process - Audit Block, selecting the Forecast Rates option allows you to output the interest rates, currency rates and economic indicator values for each scenario used in your ALM simulation run.

> **Note:** When running a stochastic ALM process, because 360 one-month rates are written out for each rate path, selecting the rate output option will result in a large amount of rate data being written to the Interest Rates Audit table.

Both the Deterministic – Forecast Rates and the Stochastic One Month Rates audit results are written to the FSI_INTEREST_RATES_AUDIT table.

Related Topics

ALM Processing > Audit Preferences, page 35-7

Analyzing Results

You should always analyze results obtained from the ALM Engine. For example, you should review the forecast rate – audit information to ensure that the new business rates and resulting interest accruals have been generated correctly for each scenario.

In addition, you should review both your beginning balances and resulting balances in each forecast period as well as your scenario specific behavioral assumptions to verify that assumptions have been defined and applied correctly.

This type of review is typically performed by analyzing the seeded reports delivered as part of the ALM Business Intelligence application. Many times however, administrators and power users will need to analyze data and confirm processing results by running queries directly against the relational data prior to releasing reports for analysis through Oracle Business Intelligence.

The following relational database tables are populated with ALM Static Deterministic and Dynamic Deterministic process results and can be queried directly by a SQL query tool such as Oracle SQL Developer:

Table Name	Description	sample sql query
Result Master	Static and point in time information such as current balance, current rate, current transfer rate, yield to maturity, market value, duration and convexity are stored in this table for each Product COA member included in the process, for all scenarios associated with the process. Result Master data is stored in original / base currency.	select * from fsi_o_result_master where result_sys_id=xxxxxx order by start_date_index, scenario_num, product_id;

Table Name	Description	sample sql query
Result Detail	Cash flow results are stored in result detail and are spread across columns based on the "active" time bucket rule used when the process was run. Each row of data represents a distinct Financial Element such as Beginning Balance, Average Balance, Ending Balance, Interest Cash Flow, Principal Cash Flow, etc. Result Detail data is stored in original / base currency.	select * from res_dtl_xxxxxx order by start_date_index, scenario_num, product_id, financial_elem_id, result_type_cd;
Consolidated Master	The Consolidated Master table is populated only when processing data containing multiple currencies and the "Consolidate to Reporting Currency" option is selected. The data in this table will be expressed in a single designated currency (reporting currency), but will otherwise have the same structure as described above for Result Master.	select * from fsi_o_consolidated_master where result_sys_id=xxxxxx order by start_date_index, scenario_num, product_id;
Consolidated Detail	The Consolidated Detail table is populated only when processing data containing multiple currencies and the "Consolidate to Reporting Currency" option is selected. The data in this table will be expressed in a single designated currency (reporting currency), but will otherwise have the same structure as described above for Result Detail.	select * from cons_dtl_xxxxxx order by start_date_index, scenario_num, product_id, financial_elem_id, result_type_cd;

The following relational database tables are populated with ALM Static Stochastic and Dynamic Stochastic process results:

Table Name	Description	sample sql query
Stochastic VaR	VaR results are output and stored in this table for each Product COA member included in the process.	select * from fsi_o_stoch_var where tm_process_sys_id = xxxxxx order by leaf_node, probability;
Stochastic Total VaR	VaR results are output and stored at the portfolio level in this table.	select * from fsi_o_stoch_tot_var where tm_process_sys_id = xxxxxx order by probability;
EAR Leaf Average	Earnings at Risk results are output and stored at the Product COA level as an average amount across all of the selected rate paths.	select * from ear_leaf_avg_xxxxxx order by end_date, leaf_node;
EAR Leaf Detail	Earnings at Risk results are output and stored at the Product COA level for each rate path selected in the process.	select * from ear_leaf_dtl_xxxxxx order by rate_path_num, end_date, leaf_node;
EAR Total Average	Earnings at Risk results in this table are aggregated to include only net interest income and net income and are shown as an average amount across all the selected rate paths.	select * from ear_total_avg_xxxxx order by end_date;
EAR Total Detail	Earnings at Risk results in this table are aggregated to include only net interest income and net income and shown for each rate path.	select * from ear_total_dtl_xxxxxx order by rate_path_num,end_date;

Note: During Stochastic processing, if source data is expressed in multiple currencies, it is converted to reporting currency at the start of processing.

Re - processing Erroneous Accounts

While reviewing your results, you might discover accounts with invalid results that need to be reprocessed. Oracle ALM Processes allow you to rerun a subset of information to make corrections to appropriate products when needed.

If you need to reprocess a portion of your instrument data, make sure that you reprocess all the Product dimensions members, across all instrument tables where relevant data exists.

Related Topics

ALM Processing > Processing Parameters, page 35-8

13

Common Rule Management Tasks

This module focuses on the rule management tasks that are common across all rules in this application.

This chapter covers the following topics:

- Overview of Common Rule Management Tasks
- The Rule Summary Page
- Searching for Rules
- Creating Rules
- Viewing and Editing Rules
- Copying Rules
- Deleting Rules
- Dependency Checking

Overview of Common Rule Management Tasks

The rule management tasks that are common to business rules in this and other OFSAA applications are as follows.

Note: You can perform these tasks from the Summary page for the type of rule with which you are working. Depending on the rule type, some tasks might not be available.

The procedures for carrying out these tasks are the same for each rule type, except for rule-specific steps explicitly stated in the rule-specific documentation.

The Rule Summary Page

The Rule summary page is the gateway to all rules and related functionality of the application. From there, you can navigate to other related pages.

On the header of the Rule summary page, you can perform simple queries on Folder, Rule Name and in many cases, the dimension upon which the rule is based.

The following table shows the page components.

Name	Type	Default Value	Required/ Optional	Updatable	LOV, additional information
Folder	Drop Down	Set in Application Preferences	Required - for filtering the rules under the folder	No – Only able to select from presented list.	N/A
(Rule) Name	Text Box	None	Optional – for filtering the rules on Rule Name	Yes	You can specify all or part of a rule name. For example, if you want to see only those Rules which start with 'A' – Enter A in the text field.
Dimension	Drop Down	Set in Application Preferences		No - Only able to select from presented list	N/A

Name	Type	Default Value	Required/ Optional	Updatable	LOV, additional information
Search	Button	N/A	N/A	No	Initiates rule search based on specified criteria.
Reset	Button	N/A	N/A	No	Restores default search criteria.
Add	Button	N/A	N/A	No	Initiates the Data or Ledger Loader rule creation process
(Rule) Name	Display Value	N/A	N/A	No	Mouseover shows the rule description and in some cases also displays the unique system id number.
Created By	Display Value	N/A	N/A	No	Who created the Rule version.
Creation Date	Display Value	N/A	N/A	No	When was the rule created.
Last Modified By	Display Value	N/A	N/A	No	Who last modified the rule.

Name	Type	Default Value	Required/ Optional	Updatable	LOV, additional information
Last Modified Date	Display Value	N/A	N/A	No	When the rule was last modified.
View	Icon	N/A	N/A	N/A	Opens the selected rule in read only mode.
Edit	Icon	N/A	N/A	N/A	Opens the selected rule in edit mode.
Delete	Icon	N/A	N/A	N/A	Deletes the selected Rule.
Copy	Icon	N/A	N/A	N/A	Initiates process for copying rules. Explained later in this document.
Run	Button	N/A	N/A	N/A	Initiates process for running Rules. Explained later in this document.
Pagination Options	Icon	Set in Global Preferences	N/A	N/A	Indicates the number of rows to display per page in the summary table.

Searching for Rules

Search for a business rule to perform any of the following tasks:

- Update, Copy, delete or run existing rules
- Define methodologies for products or define other processing assumptions

Procedure:

1. Navigate to the rule summary page, page 13-2 for the appropriate rule type.
2. Search for the rule, as follows:
    1. Select the folder in which the rule is stored.
    2. (Optional) Enter the name of the rule.
    3. Click Search.

       Only rules that match the search criteria are displayed.

       For more information, please refer to Overview of Common Rule Management Tasks, page 13-1

Creating Rules

You create a rule to specify the way you want a particular task or business process to be carried out by the application. Creating a rule is a process, in which you specify the properties for the rule itself.

Procedure to Create a Rule:

1. Navigate to the summary page, page 13-2 of the rule you want to create.
2. Click Add to display the rule definition page.
3. Enter a name for the rule.

   Important: The name of a rule must be unique within the selected folder for each rule type.

4. Select the folder in which you want to store the rule.
5. (Optional) Enter a description for the rule.

6. Select the required access for other users.
7. Click Apply or Save, depending on the rule type.
8. Specify any other properties or options that may apply for the rule that you are creating.

Viewing and Editing Rules

You can view existing rules, and you can edit existing rules, provided you have read / write privileges.

Procedure:

1. Navigate to the summary page, page 13-2 of the rule you want to update.
2. Search for a rule. For further information, see Searching for Rules, page 13-4.
3. Select the appropriate rule and click Edit to open the rule you want to update.

Procedure to Update a Rule

1. Update the Name or Description.
2. Click Apply or Save, depending on the rule type.

Copying Rules

You can copy rules to avoid having to enter data multiple times. This saves time and effort and also reduces mistakes.

Procedure:

1. Navigate to the summary page, page 13-2 of the rule you want to copy.
2. Search for a rule. For further information, see Searching for Rules, page 13-4.
3. Select the appropriate rule and click Copy corresponding to the rule that you want to duplicate.
4. Select a folder.
5. Enter a unique name for the new rule.
6. (Optional) Enter a brief description for the rule.

7. Select the access type.

8. Click Save.

Deleting Rules

You can delete rules that are no longer needed.

Caution: Once deleted, a rule cannot be retrieved.

Restrictions on deleting rules are:

- You cannot delete rules if you have only Read privileges. Only users with read/write privilege and rule owners can delete rules.
- You cannot delete a rule that has dependency.

Procedure:

1. Navigate to the summary page, page 13-2 of the rule you want to delete.
2. Search for a rule. For further information, see Searching for Rules, page 13-4.
3. Select the appropriate rule and click the Delete icon.

   Please refer to Overview of Common Rule Management Tasks for more information, page 13-1.

Dependency Checking

You can check dependencies for rules to know where a particular rule, dimension, member, attribute, IRC has been used. Also, this prevents accidental deletion of rules having dependencies.

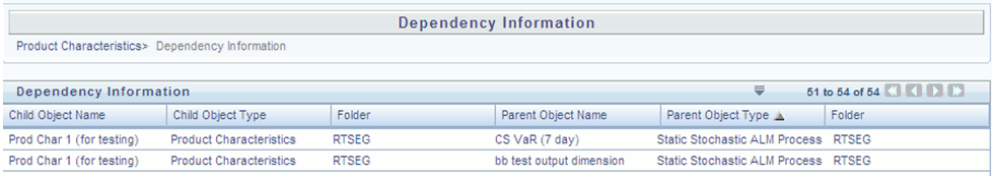
Procedure:

1. Navigate to the summary page, page 13-2 of the rule you want to check dependencies.
2. Search for a rule. For further information, see Searching for Rules, page 13-4.
3. Select the appropriate rule(s) and click check dependencies corresponding to the rule that you want to check for.

   Note: You can select more than one rule at a time to check

dependencies.

4. The Dependency Information window opens containing the following information: Child object Name, Child Object Type, Folder, Parent Object Name, Parent Object Type, Folder.



Child Object Name	Child Object Type	Folder	Parent Object Name	Parent Object Type	Folder
Prod Char 1 (for testing)	Product Characteristics	RTSEG	CS VaR (7 day)	Static Stochastic ALM Process	RTSEG
Prod Char 1 (for testing)	Product Characteristics	RTSEG	bb test output dimension	Static Stochastic ALM Process	RTSEG

Example

If a Product Characteristics rule 'A' which has been used in a static deterministic process 'P' is checked for dependencies, then the following information is displayed in the Dependency Information window.

Child object Name –A

Child Object Type – Product Characteristics

Folder – The folder name in which A resides

Parent Object Name - P

Parent Object Type – Static Deterministic Process

Folder - The folder name in which P resides

Caution: You cannot delete a child object which has dependencies. You will get a message: Dependencies found. Cannot delete.

In order to delete the child, you must first delete the outermost parent object which uses the child.

14

Application Preferences

This module discusses the Procedure for defining and maintaining your ALM Application Preference settings.

This chapter covers the following topics:

- Overview of ALM Application Preferences
- Updating ALM Application Preferences

Overview of ALM Application Preferences

Application Preferences allow both Administrators and End Users to establish default values and to manage other core application parameters that affect the way business rules are created and the way ALM Processes are run.

The procedure for working with and managing Application Preferences includes the following steps:

- Updating Application Preferences.

Related Topics

Overview of OFSAA Infrastructure > Application Preferences, page 2-14

Updating ALM Application Preferences

Updating Application Preferences is a one-step process. You navigate to the Application Preferences screen and you define your Preferences.

Procedure:

This table describes key terms used for this procedure.

Selected Terminology

Term	Description
Show Preferences For	There are two modes in which you can access Application Preferences: **Administrator**: If the user has Administrator privileges, he can define preferences for the " All User" group and for his own personal account, which may be the same or different from the "All User" settings. The Administrator can also designate the "All User " preferences as Editable or Non-editable on a row by row basis. If the individual preference is checked as " is Editable", then End Users can update or override the Administrator's default value for their own individual account. If the " is editable" box is not checked, then End Users are not able to change the default for their own account. **End User**: If the user does not have administrator privileges, then certain preference items may have been pre-set by the administrator and the user may not be allowed to change the value. All Application Preference settings are displayed, regardless of access privilege.
Active for Master Maintenance	If a user has more than one application available on their Left Hand menu, then they will need to designate Application Preferences from one of their applications as "Active for Master Maintenance". Certain preferences such as the default folder and read / write access setting will be referenced by items within Master Maintenance based on this selection.
As of Date	All Asset Liability Management processes reference this date at run time to determine the data to include in the process. Each period, when a new set of data has been loaded, this parameter should be updated to reflect the new date.

Term	Description
Default Total Error Message Limit	ALM Processes log error details into the FSI_O_PROCESS_ERRORS table. This parameter defines the limit on the total number of errors that will be logged for any ALM Process.
Default Error Message Limit Per Item	This parameter defines the total number of errors that will be logged for a given type of error.
Debugging Output Level	The debugging output level determines the amount of sql that will be written to the processing log. There are three levels available: 1. Do not output SQL: A log file will not be created. 2. Output Significant Calculation SQL: Log file is created and will contain those SQLs that are tagged as significant. 3. Output All SQL: Log file is created and will contain all the SQL that the engines execute. The log files can be accessed by the system administrator in the following location on the server: **$FIC_HOME/ficdb/log/FusionApps/ folder** The file names will be prefixed with the application initials and will also contain the unique batch run id of the execution request. for example: **ofsrm.<batch-run-id>.log**

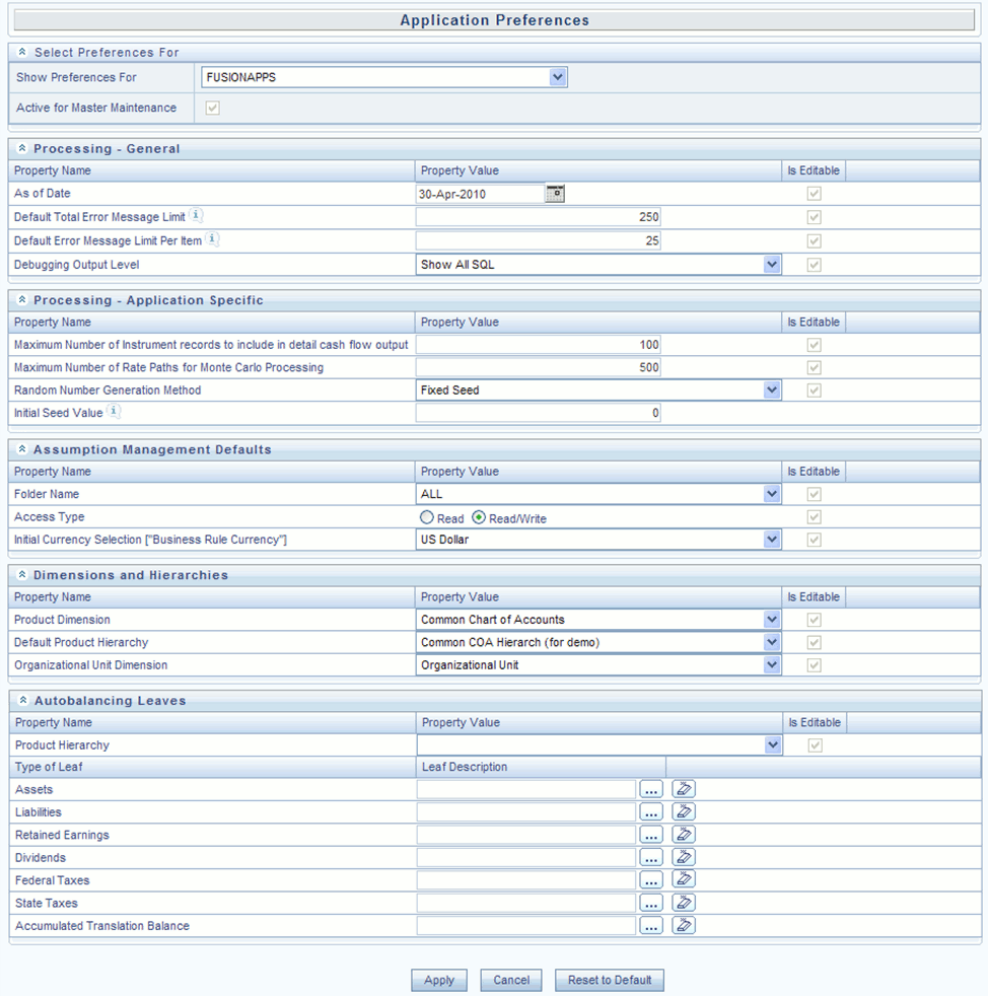
Term	Description
Maximum Number of Instrument Records to Include in Detail Cash Flow Output	This parameter allows administrators to define the maximum number of instrument records that any user can select within a process for outputting detailed cash flows. In Oracle ALM, there is no limit for this value. If you wish to remove the limit, you can leave the setting blank and upon selecting APPLY, you will notice "No Limit" text will appear. It is recommended however, that this value be set to 100 or less.
Maximum Number of Rate Paths for Monte Carlo Processing	This parameter allows administrators to limit the number of rate paths that can be selected by a user when running a monte carlo based process. The maximum value is 2,000.
Random Number Generation Seed Method	Determines the type of random number generation seed method for Monte Carlo processing. Selections include Fixed Seed (default) and Variable Seed.
Initial Seed Value	The Initial seed value input is available when the Seed Value Method is Fixed Seed. The default value is zero.
Folder Name	This parameter allows you to define the default folder selection. The folder selection for all rule types will be defaulted to this selection within the summary page search screen and when creating a new rule. This selection acts as the starting value for convenience only and users can change to any other available value at their discretion.
Access Type	This parameter allows you to set the default access type setting. Selections include Read / Write and Read Only. This selection acts as the starting value for convenience only and users can change at their discretion.

Term	Description
Initial Currency Selection ("Business Rule Currency")	This parameter allows you to select the starting currency to be displayed within all business rules. This selection is made for convenience and can be changed within all business rules at the users' discretion.
Product Dimension	Oracle ALM requires users to declare one of the "Product" dimensions as the ALM Product dimension. The model is seeded with 3 possible selections: • Product • Common COA • GL Account Users can also add user defined product dimensions, which would also appear in the above list. ALM business rules are based on the Product dimension selected here. The suggested default is the "Product" dimension.
Default Product Hierarchy	The list of values for Default Product Hierarchy is based on the Default Product Dimension selection. The hierarchy selected here will be the default hierarchy selection in all business rules that support node level assumptions. This selection acts as the starting value for convenience only and users can change at their discretion within each business rule.
Organizational Unit Dimension	Reserved for future release.

Term	Description
Autobalancing Leaves	Autobalancing leaves allow you to assign dimension members to the various elements of the Autobalancing process. Autobalancing in ALM is commonly used when running simulation scenarios that require the balance sheet to remain in balance throughout the forecast horizon. The following Leaf types require dimension member assignments in order for the autobalancing process to run: 1. Purchase of overnight funds to fill in cash shortfalls or sale of overnight funds to invest excess cash: • Assets • Liabilities 2. Roll net income into retained earnings • Retained Earnings 3. Pay Dividends • Dividends 4. Pay Federal and Local Tax • Federal Taxes • State Taxes 5. Accumulate unrealized currency gains/losses in equity • Accumulated Translation Balance **Note:** All product COA dimension members mapped for use in autobalancing must have the correct account type attribute (via Common COA mapping) and all components must be mapped in order for the process to run. Also note that each

Term	Description
	autobalancing element should have a unique dimension member assignment.

1. Navigate to the ALM Application Preferences page.



2. Input values for all line items.

   Note: If you are the application administrator, define default values for the "All User" group by making the appropriate selection from the "Show Preference For", drop list at the top of the page. Pay particular attention to the "Is Editable" status and determine which items require administrative control and which items non-administrative users will be able to set for themselves.

3. Select Apply to confirm changes

4. Select the Reset to Default option if you would like to clear all previously applied inputs and return to the original default state.

15

Cash Flow Edits

This module discusses the procedure for validating and cleansing your Instrument table data before you process it to generate cash flow based results.

This chapter covers the following topics:

- Overview of Cash Flow Edit Processes
- Creating Cash Flow Edit Processes
- Executing Cash Flow Edit Processes

Overview of Cash Flow Edit Processes

Cash Flow Edit processes allow you to verify the accuracy and check the completeness of your Instrument table data. See: Cleansing the Data by performing Cash Flow Edits, page 12-8

The procedure for working with and managing a Cash Flow Edit process is similar to that of other Oracle Funds Transfer Pricing and Oracle Asset Liability Management Processes. It includes the following steps:

- Searching for Cash Flow Edit processes. See: Searching for Rules, page 13-4.
- Viewing and Updating Cash Flow Edit processes. See: Viewing and Updating Rules, page 13-6.
- Copying Cash Flow Edit processes. See: Copying Rules, page 13-6.
- Deleting Cash Flow Edit processes. See: Deleting Rules, page 13-7.

Ideally, you should create and run Cash flow Edit Processes on your Instrument table data before you submit cash flow engine based rules for processing. See:

- Creating Cash Flow Edit Processes, page 15-2
- Executing Cash Flow Edit Processes, page 15-5

Related Topics

Cash Flow Edit Logic, *Oracle Financial Services Cash Flow Engine Reference Guide*

Standard Navigation Paths, page A-1

Creating Cash Flow Edit Processes

Creating a Cash Flow Edit process is a one-step process. You define both the attributes that uniquely describe a particular Cash Flow Edit process and the data to be validated or cleansed by that process on the Create Cash Flow Edit process page.

Procedure:

This table describes key terms used for this procedure.

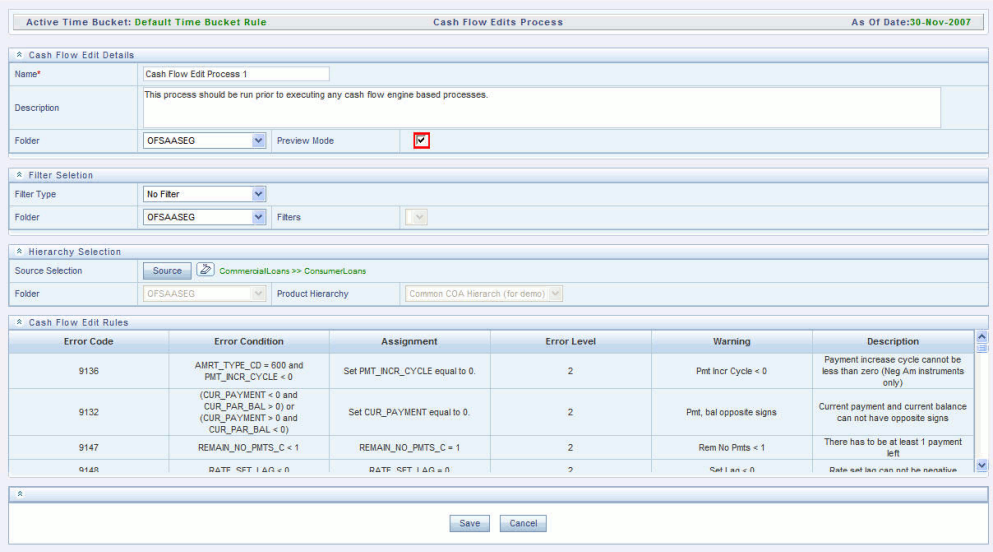
Selected Terminology

Term	Description
Filters	One of the two components that determine the data that will be cleansed by Cash Flow Edit processes. This field allows you to select a subset of data for processing by selecting a Filter that was previously created. Its default value is "No Filter".
Source Selection	One of the two components that determine the data that will be cleansed by Cash Flow Edit processes. This field allows you to select the Instrument tables that need to be included in a Cash Flow Edit process. Alternatively, you can select a hierarchy and then select the desired product members that will be included in the process. Note that the Source selection and Hierarchy selection options are mutually exclusive. You can define your dataset by selecting one or the other, but not a combination of both.
Preview Mode	Selecting this check box allows you to view the results of running a Cash Flow Edit process before the system updates the underlying records in the Instrument tables. The default value is checked.

Term	Description
Source Selection: Available Tables	When the "Source Selection" option is made, you are presented with two Shuttle Control windows which contain the names of the Instrument Tables available for inclusion during a Cash Flow Edit process.
Source Selection: Selected Tables	One of the two Shuttle Control windows, it contains the names of the tables that have already been selected for processing by the Cash Flow Edit process.
Cash Flow Edit Rules	The Cash Flow Edit Rule section provides a summary of all seeded cash flow edit rules. Users can refer to this list to understand the validations that are applied to the cash flow fields on the instrument records and also view the default values that are applied when errors are found.

1. Navigate to the Cash Flow Edits summary page.
2. Click Add.

   The Create Cash Flow Edits Process page is displayed.



3. Complete standard steps for this procedure. See: Creating Rules, page 13-5

   Note: At this point, you can input the components to ensure that the data processed by Cash Flow Edits will be clean. If you save the Rule without selecting Instrument tables or selecting product members from the hierarchy, the Process will be saved but no data would be selected for cleansing.

4. (Optional) Select a Filter.

5. Select the Instrument tables or use a hierarchy to make Product member selections.

   Note: Use the Source Selection: Shuttle Control to select the Instrument tables that you want to include in the Cash Flow Edit process. You can move Instrument tables from Available Tables into Selected Tables and vice versa by using Move, Move All, Remove, and Remove All. These tables can also be reordered to change the order of processing.

   Initially, the selected tables list is empty. However, during subsequent runs, the selected tables list retains the names of the tables that you selected previously. For example, if you select two tables and save the Cash Flow Edits Process, the system shows them the next time you open the rule.

   A table name shown in the Selected Tables list does not appear in the Available Tables.

6. Click Save.

   The Cash Flow Edits process is saved and the summary page is displayed.

Related Topics

Cleansing the Data by performing Cash Flow Edits, page 12-8

Overview of Cash Flow Edits Rules, page 15-1

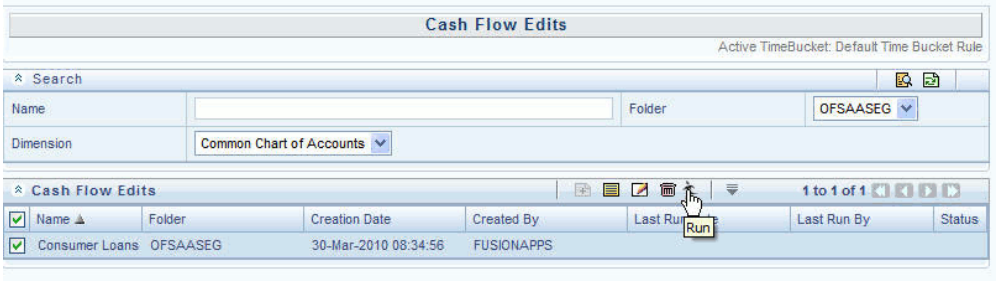
Standard Navigation Paths, page A-1

Executing Cash Flow Edit Processes

You execute a Cash Flow Edit process to check the accuracy and the completeness of your Instrument table data.

Prerequisites

❒ Predefined Rules



Procedure:

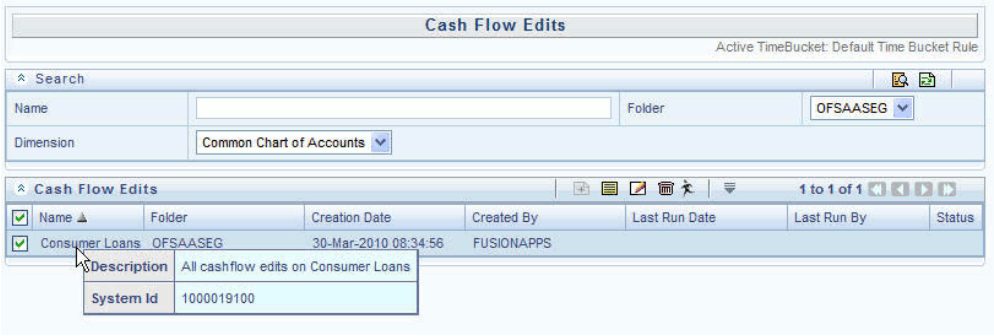
1. Navigate to the Cash Flow Edits summary page.

2. Search for a rule, page 13-4

3. Select a process and Click the Run icon to execute the selected process. The Cash Flow Edits run confirmation page is displayed. The status of the process is displayed in the status column. Upon completion of the process, you can navigate to the Log Viewer page by selecting the "View Log" hyperlink. From the Log Viewer, you can access a report that provides details of any cash flow edit errors that were identified by the process.

   Note: You can view the results of running a Cash Flow Edits rule before the system updates the underlying records in the Instrument

tables, provided you selected Preview Mode while defining it.



Important: In case you do not want to run the process immediately, make a note of the System ID displayed by doing a mouse-over on the Name. You can use the System ID to schedule the execution of the process on the Operations: Batch Scheduling screen. See: Batch Execution/Scheduling, OFSAAI User Guide

Related Topics

Cleansing the Data by performing Cash Flow Edits, page 12-8

Overview of Cash Flow Processes, page 15-1

Standard Navigation Paths , page A-1

16

User Defined Behavior Patterns

This module describes the procedure for defining principal flows through Behavior Patterns, for instruments that do not have contractual amortization schedules.

This chapter covers the following topics:

- Overview of User Defined Behavior Patterns
- Searching for Behavior Patterns
- Creating Behavior Patterns

Overview of User Defined Behavior Patterns

User defined behavior patterns allow you to define principal amortization patterns for non-maturity products in your portfolio. You can include a behavior pattern while generating cash flows by entering the behavior pattern code as the amortization type code for the instrument(s). In many cases, particularly for ALM processing, the " non-maturity" instruments will be aggregated or summarized balances. The Behavior Pattern code can range from 70000 to 99999. See: Defining Behavior Patterns, page 12-11

The procedure for working with and managing Behavior Patterns is similar to that of other Oracle Asset Liability Management assumption rules. It includes the following steps:

- Searching for Behavior Patterns, page 16-2
- Creating Behavior Patterns, page 16-3
- Viewing and Editing Behavior Patterns. See: Viewing and Editing Rules, page 13-6
- Copying Behavior Patterns. See: Copying Rules, page 13-6
- Deleting Behavior Patterns. See: Deleting Rules, page 13-7

Related Topics

Standard Navigation Paths, page A-1

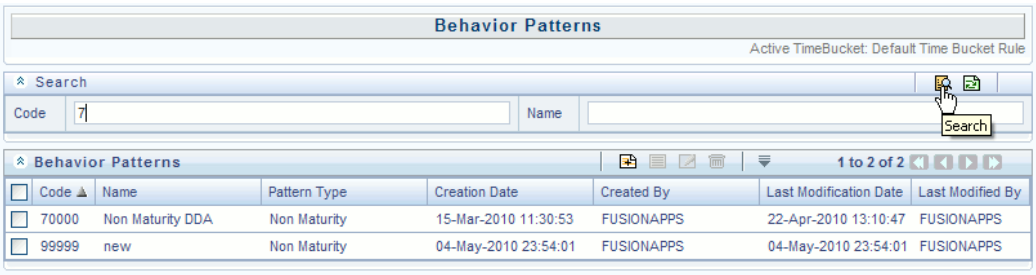
Searching for Behavior Patterns

Search for a behavior pattern to perform any of the following tasks:

- View
- Edit
- Copy
- Delete

Prerequisites

- Predefined behavior patterns



Procedure:

1. Navigate to the Behavior Pattern summary page. This page is the gateway to all behavior patterns and related functionality. You can navigate to other pages relating to behavior patterns from this page.

2. Enter the Search criteria
   - Enter the code or name of the Pattern.
   - Click the Search icon.

Only patterns that match the search criteria are displayed.

Note: You can control the number of rows to display on screen by

selecting the "Pagination Options" icon from the action bar

Related Topics

Defining Behavior Patterns, page 12-11

Overview of User Defined Behavior Patterns, page 16-1

Standard Navigation Paths, page A-1

Creating Behavior Patterns

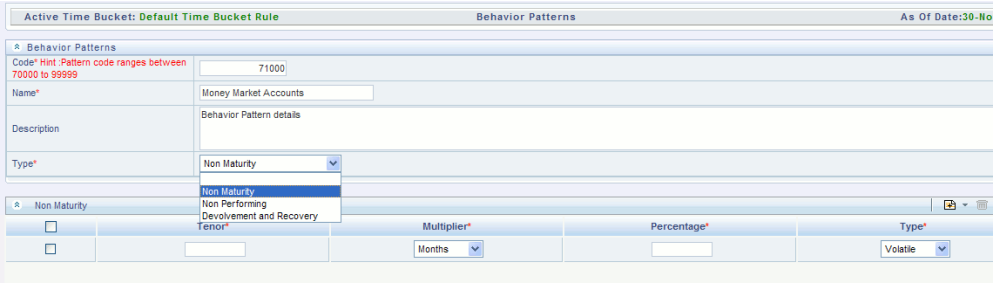
You create behavior patterns to capture the principal run-off behavior of product types that do not have contractual maturities.

Procedure:

1. Navigate to the Behavior Pattern summary page.
2. Click Add Behavior Pattern.
3. The Behavior Pattern details page is displayed.
4. Enter a code value for the new behavior pattern.

   Note: The code, also known as an amortization type code, is a numeric identifier for the behavior pattern. The code value must be a number between 70000 and 99999. The code value you assign to the new pattern must be unique. In addition, the code must be mapped to the appropriate instrument records, (AMRT_TYPE_CD field) to connect the instrument to the appropriate pattern.

5. Enter the name and a brief description for the pattern.
6. Select the Behavior Pattern Type: Non Maturity, Non Performing, Devolvement and Recovery.



7. Define the Behavior Pattern Term Specifications for maturity tranches.

8. The selection of the Behavior Pattern type made in the previous step determines the information you must provide to successfully define that pattern type. See:

   - Defining Non Maturity Behavior Patterns, page 16-4
   - Defining Non Performing Behavior Patterns, page 16-6
   - Defining Devolvement and Recovery Behavior Patterns, page 16-8

   Note: The Behavior Pattern details page above, displays the specifications associated with the Non Maturity Pattern Type. Should you change this value for one of the other two alternatives, Non Performing or Devolvement and Recovery, the system will refresh the payment specifications section corresponding to the new Pattern Type. Although you can change your selection of the Pattern Type at any point in this procedure, sometimes this might result in loss of data related to any prior selection.

Related Topics

Defining Behavior Patterns, page 12-11

Overview of User Defined Behavior Patterns, page 16-1

Standard Navigation Paths, page A-1

Defining Non Maturity Behavior Patterns

Non Maturity behavior patterns are commonly used for deposit products like checking, savings and money market accounts as well as for credit card accounts. These account types are similar in that they do not have contractual cash flows because customers have the option to deposit or withdraw any amount at any time (up to any established limits).

When working with non maturity behavior patterns, your percentage weights, assigned

to maturity terms must add up to 100%.

Prerequisites

- Select Non Maturity as the Behavior Pattern Type.

Procedure:

This table describes key terms used for this procedure.

Selected Terminology

Term	Description
Tenor	Used to specify the maturity term for the particular row. E.g. if "1 Day" is defined, then the applicable percentage of the balance will runoff (mature) on the As of Date + 1 Day.
Multiplier	The unit of time applied to the Tenor. The choices are: • Days • Months • Years
Percentage	The relative amount of the principal balance that will mature on the date specified by the Tenor + Multiplier. The percentage amounts must add to 100%.
Type	Allows you to classify the runoff based on the appropriate type.
Add	Used to add one or more rows
Delete	Used to delete one or more rows

1. Define the maturity tenor and multiplier for the first maturity strip. The first strip usually represents non-core or "volatile" funds and typically has a very short maturity, such as "1 Day".
2. Select the Percentage to apply to the outstanding balance indicating how much of

the outstanding balance will mature on the specified term.

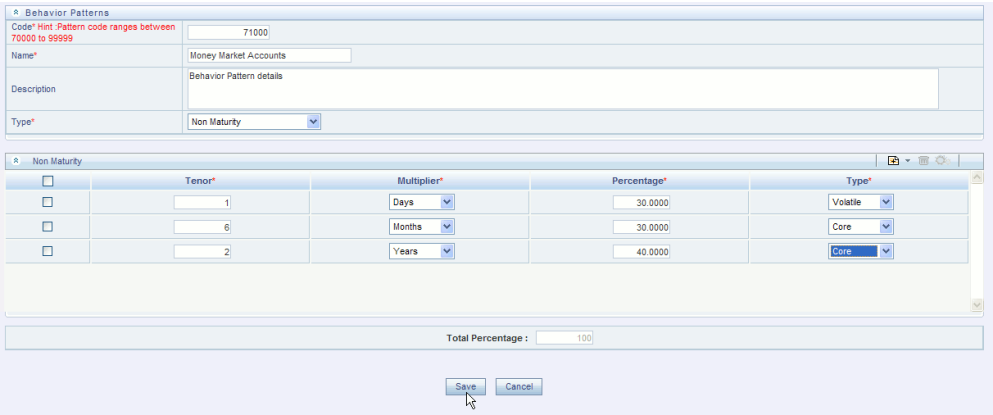
3. Select the Runoff Type as Core or Volatile

   Note: There is no difference in behavior from a cash flow perspective, but the runoff amount will be written to a principal runoff financial element corresponding to the selected Runoff Type.

4. Click the Add icon to add additional payment strips to the Pattern. After defining the initial strip as Volatile, subsequent strips are typically classified as Core with varying maturity terms assigned.

5. To delete a row, select the check box corresponding to the row you want to remove and click the Delete icon

6. Click Save.



7. The Behavior Pattern is saved and the Behavior Pattern summary page is displayed.

Related Topics

Defining Behavior Patterns, page 12-11

Creating Behavior Patterns, page 16-3

Defining Non Performing Behavior Patterns

Non Performing behavior patterns are commonly used for balances that are classified as non-earning assets. These balances are typically sourced from the management ledger as aggregate balances. Users are able to assign expected maturity profiles to these balances classifying them into appropriate categories of Sub Standard, Doubtful or Loss.

Prerequisites

- Select Non Performing as the Behavior Pattern Type.

Procedure:

This table describes key terms used for this procedure.

Selected Terminology

Term	Description
Tenor	Used to specify the maturity term for the particular row. E.g. if "1 Day" is defined, then the applicable percentage of the balance will runoff (mature) on the As of Date + 1 Day.
Multiplier	The unit of time applied to the Tenor. The choices are: • Days • Months • Years
Percentage	The relative amount of the principal balance that will mature on the date specified by the Tenor + Multiplier. The percentage amounts can exceed 100% for non performing patterns.
Runoff Type	Allows you to classify the runoff based on the appropriate type.
Add	Used to add one or more rows
Delete	Used to delete one or more rows

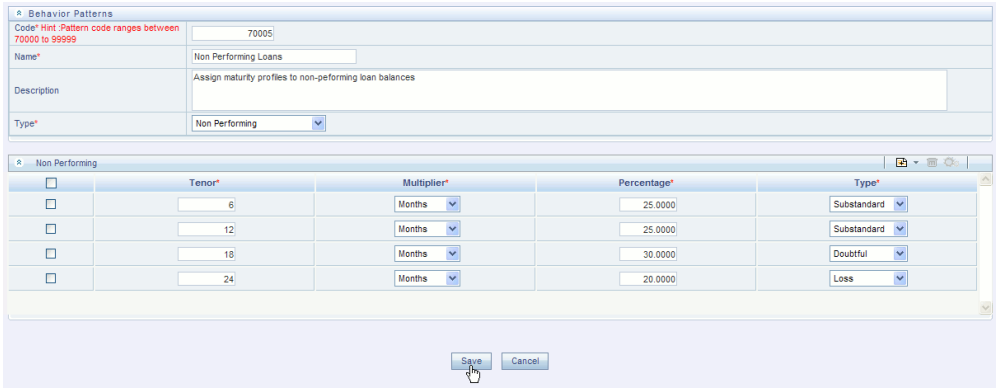
1. Define the maturity tenor and multiplier for the first maturity strip. The first strip can be any of the three categories including Substandard, Doubtful or Loss.
2. Select the Percentage to apply to the outstanding balance indicating how much of the outstanding balance will mature on the specified term.
3. Select the Runoff Type as Substandard, Doubtful or Loss.

Note: There is no difference in behavior from a cash flow perspective, but the runoff amount will be written to a principal runoff financial element corresponding to the selected Runoff Type.

4. Click the Add icon to add additional payment strips to the Pattern and define appropriate assumptions for each strip.

5. To delete a row, select the check box corresponding to the row(s) you want to remove and click the Delete icon

6. Click Save.



7. The Behavior Pattern is saved and the Behavior Pattern summary page is displayed.

Defining Devolvement and Recovery Behavior Patterns

Devolvement and Recovery behavior patterns are commonly used for estimating cash flows associated with Letters of Credit and Guarantees. These product types are typically categorized as off balance sheet accounts. Users are able to assign expected maturity profiles to the related balances classifying them into appropriate categories of Sight Devolvement and Sight Recovery or Usance Devolvement and Usance Recovery. Sight Devolvement and Recovery are the most common types.

Prerequisites

- Select Devolvement and Recovery as the Behavior Pattern Type.

Procedure:

This table describes key terms used for this procedure.

Selected Terminology

Tenor	Used to specify the maturity term for the particular row. E.g. if "1 Day" is defined, then the applicable percentage of the balance will runoff (mature) on the As of Date + 1 Day.
Multiplier	The unit of time applied to the Tenor. The choices are: • Days • Months • Years
Percentage	The relative amount of the principal balance that will mature on the date specified by the Tenor + Multiplier. The percentage amounts can exceed 100% for devolvement and recovery patterns.
Runoff Type	Allows you to classify the runoff based on the appropriate type. **Sight**: indicates the Beneficiary is paid as soon as the Paying Bank has determined that all necessary documents are in order. This is preferred approach. **Usance**: is a period of time which can be between 30 and 180 days after the bill of lading date.
Add	Used to add one or more rows
Delete	Used to delete one or more rows

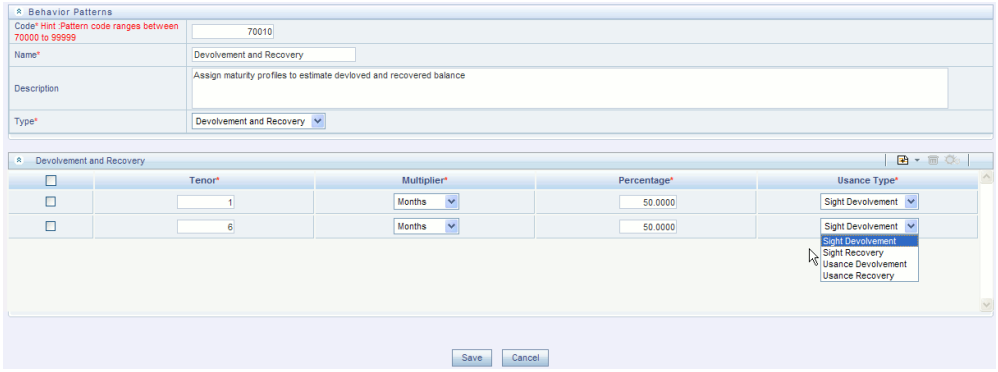
1. Define the maturity tenor and multiplier for the first maturity strip.
2. Select the Percentage to apply to the outstanding balance indicating how much of the outstanding balance will mature on the specified term.
3. Select the Runoff Type as Sight Devolvement, Sight Recovery, Usance Devolvement and Usance Recovery.

Note: There is no difference in behavior from a cash flow perspective, but the runoff amount will be written to a principal runoff financial element corresponding to the selected Runoff Type.

4. Click the Add icon to add additional payment strips to the Pattern and define appropriate assumptions for each strip.

5. To delete a row, select the check box corresponding to the row(s) you want to remove and click the Delete icon

6. Click Save.



7. The Behavior Pattern is saved and the Behavior Pattern summary page is displayed.

17

User Defined Payment Patterns

This module describes the procedure for capturing instrument payment patterns that are too complex to be accommodated in the standard fields of Instrument tables.

This chapter covers the following topics:

- Overview of User Defined Payment Patterns
- Searching for Payment Patterns
- Creating Payment Patterns

Overview of User Defined Payment Patterns

User defined payment patterns allow you to define custom repayment patterns for products in your portfolio. You can include a payment pattern while generating cash flows by entering the payment pattern code as the amortization type code for the instrument.

Searching for Payment Patterns

Search for a payment pattern to perform any of the following tasks:

- View
- Edit
- Copy
- Delete

Creating Payment Patterns

You create payment patterns to capture the repayment behavior of instruments that are too complex to be accommodated through use of the standard instrument table fields.

Procedure:

1. Navigate to the Payment Pattern summary page.
2. Click Add Payment Pattern.

   The Add Payment Pattern page is displayed.
3. Enter a code value for the new payment pattern.

   Important: The code, also known as an amortization type code, is a numeric internal identifier for the payment pattern. The code value must be a number between 1000 and 69999. The code value you assign to the new pattern must be unique. In addition, the code must be mapped to the appropriate instrument records (AMRT_TYPE_CD field) to connect the instrument to the appropriate pattern.
4. Enter a brief description for the pattern.
5. Select the Payment Pattern Type: Absolute, Relative, or Split.
6. Define the Payment Pattern Term Specifications for payment phases.

   The selection of the payment pattern type made in the previous step determines the information you must provide to successfully define that pattern type. See:

   - Defining Absolute Payment Patterns, page 17-3
   - Defining Relative Payment Patterns, page 17-6
   - Defining Split Patterns, page 17-9

   Note: The Payment Pattern Details page displays the specifications associated with the Absolute Payment Pattern Type, which is the default Payment Pattern Type value. Should you decide to change this value for any of the other two alternatives, Relative or Split, the system will refresh the payment specifications corresponding to the new Pattern Type. Although you can change your selection of the Pattern Type at any point in this procedure, sometimes this might cause loss of data related to any prior selection.

Related Topics

Defining Payment Patterns, page 12-14

Overview of User Defined Payment Patterns, page 17-1

Standard Navigation Paths, page A-1

Defining Absolute Payment Patterns

Absolute payment patterns are commonly used for instruments that are on a seasonal schedule, such as agricultural or construction loans that require special payment handling based on months or seasons.

When working with absolute payment patterns, it is sufficient to define payments for one calendar year. Once the term exceeds a year, the payment schedule will loop until the instrument matures.

Prerequisites

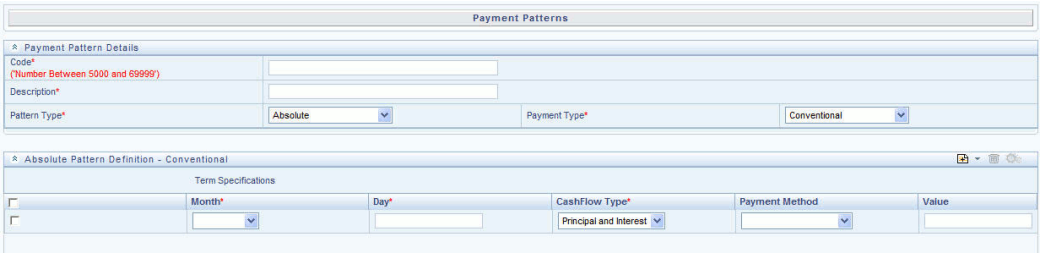
- Select Absolute as the Pattern Type.

Procedure:

This table describes key terms used for this procedure.

Selected Terminology

Term	Description
Month	This drop-down list allows you to select the month of the payment phase being defined.
Day	Used to specify the day of the month the payment is due.
Add	Used to add one or more rows
Delete	Used to delete a row.



1. Select the Payment Type from the drop-down list: Conventional, Level Principal, or

Non-Amortizing.

> **Note:** The Payment Type determines the type of information required to successfully define the Payment Phase. See *Relation between Payment Phase Attributes and Payment Types*..

2. Define the Payment Phases.

   > **Note:** A Payment Phase is a set of payment characteristics that defines the time line of the instrument's amortization.

   1. Select a Month for the pattern.
   2. Enter a Date for the pattern.
   3. Select the Payment Method.

      > **Note:** The available Payment Methods depend on the Payment Type. See *Relation between Payment Method and Payment Types* for details. Payment Methods do not apply to the Non-Amortizing Payment Type.

   4. Enter the Value for the Payment Method you selected in the previous step for applicable Payment Types.

      > **Note:** If you selected the Interest Only Payment Method in the previous step, the Value field does not apply.

   5. Click Add Another Row to add additional Payment Phases to the Pattern and click Delete corresponding to the rows you want to delete.

      > **Important:** A Payment Pattern must have at least one valid Payment Phase to be successfully defined. The system raises a warning if you try to save a Payment Pattern with an incomplete Payment Phase. You can define up to 365 Payment Phases for each Payment Pattern.

3. Click Save.

   The Payment Pattern is saved and the Payment Pattern summary page is displayed.

Guidelines

When a detail instrument using an Absolute Payment Pattern is processed for Remaining Term cash flow processing, the Next Payment Date is internally calculated to determine which Payment Phase should be used. The calculated Next Payment Date is only used for this purpose. The Next Payment Date stored on the Instrument record in the Instrument table is always the date used for processing the initial payment.

The following table describes the relationship between Payment Phase properties and Payment Types.

Relationship between Payment Phase Attributes and Payment Types

	Conventional	Level Principal	Non Amortizing
Month	Yes	Yes	Yes
Day	Yes	Yes	Yes
Payment Method	Yes	Yes	
Value	Yes	Yes	

The following table describes relationship between Payment Method and Payment Types.

Relationship between Payment Method and Payment Types

Payment Method	Conventional	Level Principal	Non-Amortizing
Percentage of Original Balance		Yes	
Percentage of Current Balance		Yes	
Percentage of Original Payment	Yes	Yes	
Percentage of Current Payment	Yes	Yes	
Absolute Payment	Yes	Yes	

Payment Method	Conventional	Level Principal	Non-Amortizing
Interest Only	Yes	Yes	

Related Topics

Defining Payment Patterns, page 12-14

Creating Payment Patterns, page 17-1

Defining Relative Payment Patterns

You create Relative Payment patterns for instruments that have irregular scheduled payments.

Prerequisites

- Select Relative as the Pattern Type.

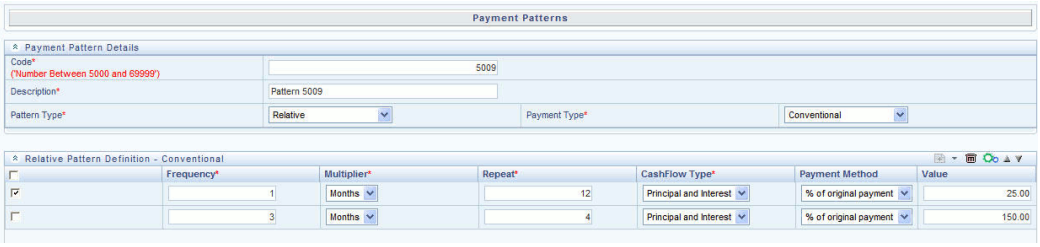
Procedure:

This table describes key terms used for this procedure.

Selected Terminology

Term	Description
Frequency	The frequency of the payment.
Multiplier	The unit of time applied to the frequency. The choices are: • Days • Months • Years
Repeat	The number of times the Payment Phase should be repeated.

Term	Description
Move Up	Allows you to move a particular Payment Phase row up by one position. **Note:** The Move Up icon for the first row of the table is always inactive.
Move Down	Allows you to move a particular row down by one position. **Note:** The Move Down icon for the last row of the table is always inactive.
Delete	Allows you to delete a row.



1. Select the Payment Type from the drop-down list: Conventional, Level Principal, or Non-Amortizing.

   The payment type determines the available characteristics for defining the payment amount.

2. Define the Payment Phase.

   Note: The payment type determines the type of information required to successfully define the payment phase. See: *Relation between Payment Phase Attributes and Payment Types*.

   1. Enter the Frequency for each payment phase.
   2. Select the appropriate Multiplier for each payment phase.
   3. Enter the number of times each Payment Phase should be repeated in the Repeat column.

4. Select the Payment Method.

   Note: The available Payment Methods depend on the Payment Type. See: *Relation between Payment Method and Payment Types* for details. Payment Methods do not apply to the Non-Amortizing Payment Type.

5. Type the Value for the Payment Method you selected in the previous step for applicable Payment Types.

6. Click Add Another Row to add additional Payment Phases to the Pattern and click Delete corresponding to the rows you want to delete.

   Important: A Payment Pattern must have at least one valid Payment Phase to be successfully defined. The system raises a warning if you try to save a Payment Pattern with an incomplete Payment Phase. You can define upto 365 Payment Phases for each Payment Pattern.

3. Click **Apply**.

   The payment pattern is saved and the Payment Pattern home page is displayed.

   Note: Any empty rows are ignored and not saved with the payment pattern.

Guidelines

It is not necessary to set up relative payment patterns for the complete term of an instrument. The payment pattern automatically repeats until maturity date. Suppose a payment pattern is created to make monthly payments for the first year and quarterly payments for the next three years. If you apply this pattern to an instrument record with an original term of five years, the payment pattern wraps around and the fifth year is scheduled for monthly payments.

An easy way to set up payment patterns for instruments with varying original terms is to use the repeat value of 999 in the last row of the payment pattern. For example, a payment pattern that pays monthly for the first year and quarterly thereafter, can be set up with two rows. The first row shows 12 payments at one month. The second row shows 999 payments at three months. When this payment pattern is processed it repeats the three-month payment frequency until the maturity date is reached.

The following table describes the relationship between payment phase attributes and payment types.

Relationship between Payment Phase Attributes and Payment Types

Payment Phase Attributes	Payment Types: Conventional	Payment Types: Level Principal	Payment Types: Non-Amortizing
Frequency	Yes	Yes	Yes
Multiplier	Yes	Yes	Yes
Repeat	Yes	Yes	Yes
Payment Method	Yes	Yes	
Value	Yes	Yes	

Related Topics

Defining Payment Patterns, page 12-14

Creating Payment Patterns, page 17-1

Defining Split Payment Patterns

You use a Split payment pattern for financial instruments that make principal payments along two concurrent amortization schedules. Split patterns may be a combination of Absolute and Relative Payment Patterns for example, and contain multiple sets of payment phases under a single amortization code. These patterns could further use a combination of Conventional, Level Principal, and Non-Amortizing Payment Types.

Prerequisites

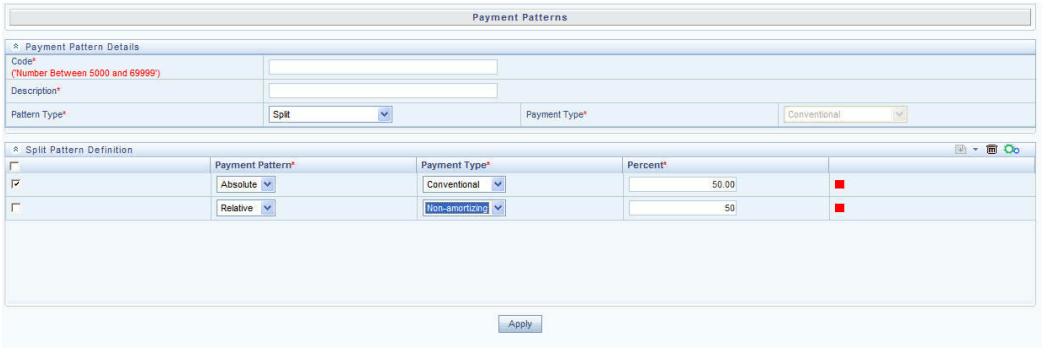
- Select Split as the pattern type.

Procedure:

This table describes key terms used for this procedure.

Selected Terminology

Term	Description
Percent	The percent value represents the percentage weight of the time line being defined for the individual payment phases (each row). The sum of the percentage weights must total 100%.



1. Select Pattern Type Split.

   The Create Term Specifications page is displayed.

2. Select the required Pattern Type for each leg.

   - Absolute
   - Relative

3. Enter the percentage value for each split.

   Important: The sum of the percent values of all splits must add up to 100.

4. Select the Payment Type for each Payment Phase or Split.

   Tip: The payment pattern term specifications for different payment phases or splits vary depending on whether you select the Absolute or Relative Pattern Type. You can define the term specifications for the splits following the steps described previously for defining payment phases for these patterns. See:

- Defining Absolute Payment Patterns, page 17-3
- Defining Relative Payment Patterns, page 17-6

5. Select one of the legs and then select Apply to define pattern details for the leg.
6. Click Save.

   The Split payment pattern is saved and the Payment Pattern summary page is displayed.

Related Topics

Defining Payment Patterns, page 12-14

Creating Payment Patterns, page 17-1

18

User Defined Repricing Patterns

This module discusses the procedure for working with and managing user defined repricing patterns.

This chapter covers the following topics:

- Overview of Repricing Patterns
- Searching for Repricing Patterns
- Creating Repricing Patterns

Overview of Repricing Patterns

User defined repricing patterns provide a mechanism to capture instrument repricing patterns that are too complex to be accommodated through the use of the standard account table fields. See: Defining Repricing Patterns, page 12-17

The procedure for working with and managing repricing patterns is, similar to that of other Oracle Asset Liability Management business rules. It includes the following steps:

- Searching for Repricing Patterns, page 18-2
- Creating Repricing Patterns, page 18-2
- Viewing and Editing Repricing Patterns. See: Viewing and Editing Rules, page 13-6
- Copying Repricing Patterns. See: Copying Rules, page 13-6
- Deleting Repricing Patterns. See: Deleting Rules, page 13-7

Related Topics

Standard Navigation Paths, page A-1

Searching for Repricing Patterns

Search for a repricing pattern to perform any of the following tasks:

- View
- Edit
- Copy
- Delete

Prerequisites

- Predefined repricing patterns

Procedure:

1. Navigate to the Repricing Pattern summary page. This page is the gateway to all repricing patterns and related functionality. You can navigate to other pages relating to repricing patterns from this point.
2. Enter the Search criteria.
    1. Enter the code or description of the pattern.
    2. Select the Search icon.

       Only patterns that match the search criteria are displayed.

Related Topics

Overview of Repricing Patterns, page 18-1

Standard Navigation Paths, page A-1

Creating Repricing Patterns

You create Repricing patterns to capture the repricing behavior of instruments whose rates change according to complex schedules.

Procedure:

1. Navigate to the Repricing Pattern summary page.

2. Click Add Repricing Pattern.

   The Add Repricing Pattern page is displayed.

3. Type a code value for the new Repricing Pattern.

   Important: The code is a numeric internal identifier for the repricing pattern. The code value must be a number between 500 and 4999 and the code value you assign to the new pattern must be unique. In addition, the code must be mapped to the appropriate instrument records (ADJUSTABLE_TYPE_CD field) to connect the instrument to the appropriate pattern.

4. Type a brief description for the pattern.

5. Select the Repricing Pattern Type: Absolute or Relative.

   The selection of the repricing pattern type determines the fields that are displayed in the Repricing Events table and the information you must provide to successfully define that pattern type. See:

   - Defining Absolute Repricing Patterns, page 18-3
   - Defining Relative Repricing Patterns, page 18-7

   Note: The Add Repricing Pattern page displays the parameters associated with the Absolute repricing pattern type, which is the default repricing pattern type value. If you change this value to Relative, the system refreshes the repricing specifications corresponding to the new pattern type, and any data entered previously is lost. However, a warning message is displayed when you change the pattern type. The data is discarded only after your confirmation.

Related Topics

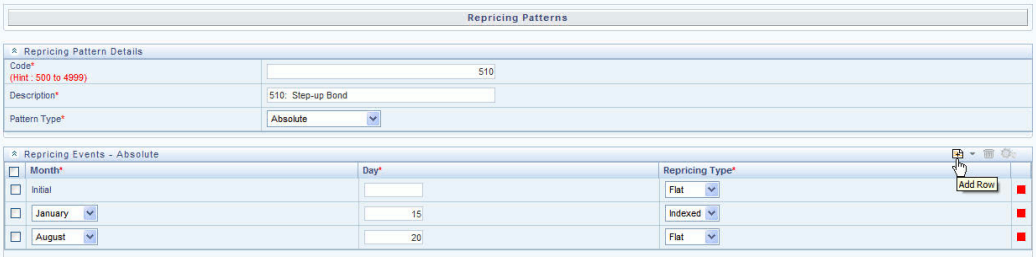
Overview of Repricing Patterns, page 18-1

Defining Repricing Patterns, page 12-17

Standard Navigation Paths, page A-1

Defining Absolute Repricing Patterns

The Absolute repricing pattern is used for instruments that are date dependent. Each specific date is a separate event. You need to enter the month and day for each event, except for the initial event.



Prerequisites

- Selecting Absolute as the pattern type.

Procedure:

This table describes key terms used for this procedure.

Selected Terminology

Term	Description
Month	In conjunction with the Day field, this drop-down menu, allows you to specify a unique month-day combination for a repricing event.
Day	In conjunction with the Month drop-down menu, this field allows you to specify a unique month-day combination for a repricing event.
Repricing Type	A drop list, it displays the repricing type, Flat rate or Indexed rate, associated with a particular event.
Add Row	Allows you to Add one or more repricing events.
Delete	Allows you to delete specific rows in the Repricing Events table.

1. Click Add Event.
2. Select the Repricing Type: Flat or Indexed.

   The default is Flat. If you select Indexed, the system automatically changes the

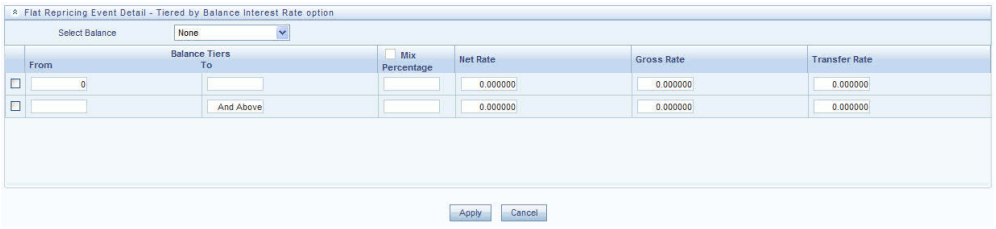
fields available for entry. See: Indexed Repricing, page 18-6

> **Note:** You can change your selection of the repricing type at any point in this process. Sometimes it may cause a loss of data.

Flat Rate

A Flat rate is a specific rate—it is directly input. See: User Defined Repricing Event., page 12-18

To define a Flat Rate Event, select check box for the event you are going to define and select the APPLY button. Notice the bottom half of the screen refreshes, displaying the required inputs. Complete the following steps on the Add Repricing Events page:



1. Select Balance Tier option:

   - None
   - Current Balance

   If None is selected, then Balance Tiered pricing is not applied.

   If Current Balance is selected, then users can define balance tiers and associate different rates with the corresponding balance tier level.

2. Specify the required month-day combination for the event.

   > **Note:** You cannot specify a month-day combination for the first event as this row is reserved for the initial period.

3. Enter the Net Rate.

4. Enter the Gross Rate.

5. Enter the Transfer Rate.

   > **Important:** You must enter a valid value for at least one of these rate fields.

6. Click Apply.

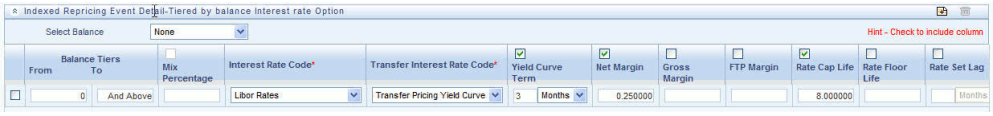
   The Event summary Page is displayed. Note the status indicator has changed from Red to Green indicating that details for the event have been defined.

At this point, you have the option of defining additional events or saving. To add an additional event, repeat Step 1: Click Add Event, page 18-4. If you want to save the repricing pattern and events, advance to the next step.

Indexed Repricing

An Indexed rate is a set of parameters used to calculate a rate. See: User Defined Repricing Event., page 12-18

To define an Indexed Repricing Event, select check box for the event you are going to define and select the APPLY button. Notice the bottom half of the screen refreshes, displaying the required inputs. Complete the following steps on the Add Repricing Events page:



> **Note:** Select the checkbox above each column that you want to include in the repricing event.

1. Select a Balance Tier option:

   - None
   - Current Balance

   If None is selected, then Balance Tiered pricing is not applied.

   If Current Balance is selected, then users can define balance tiers and associate different rates with the corresponding balance tier level.

2. Select the Interest Rate Code.
3. Select the Transfer Interest Rate Code.
4. Enter the Net Margin.
5. Enter the Yield Curve Term and select the appropriate Multiplier.
6. Enter the Gross Margin.
7. Enter the Transfer Rate Margin.

8. Enter the Rate Cap Life.

9. Enter the Rate Floor Life.

10. Enter the Rate Set Lag and select the appropriate Multiplier.

11. Click Apply.

    The Event Summary page is displayed.

At this point, you have the option of defining additional events or saving. To add an additional event, repeat Step 1 Add Create Event , page 18-4. If you want to save the repricing pattern and events, advance to the next step.

3. Click Save at the bottom of the page.

   The repricing pattern is saved and the Repricing Pattern summary page is displayed.

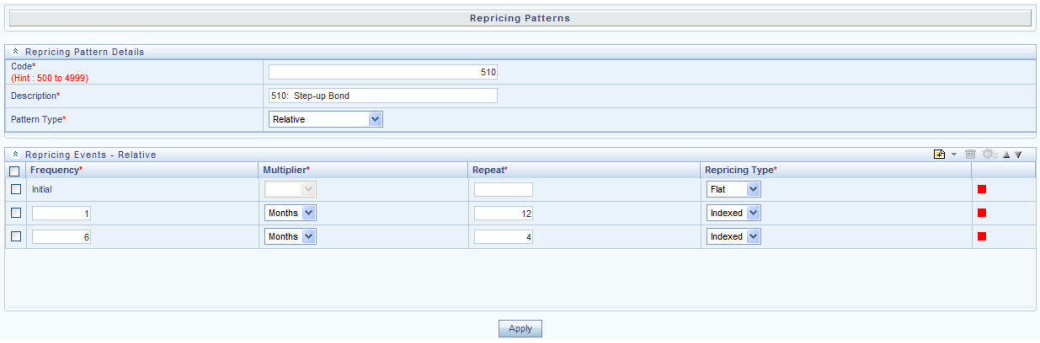
Related Topics

Defining Repricing Patterns, page 12-17

Creating Repricing Patterns, page 18-2

Defining Relative Repricing Patterns

The Relative repricing pattern is used for instruments where the repricing is determined by elapsed time since origination. Defining a Relative repricing pattern involves the definition of a series of repricing events applicable to a specific repricing pattern code. You need to specify the length of each repricing period and the number of times that event should occur before calculating the next event in the pattern.



Prerequisites

- Selecting Relative as the pattern type.

Procedure:

This table describes key terms used for this procedure.

Selected Terminology

Term	Description
Frequency	In conjunction with the Multiplier drop-down menu, this field allows you to specify how often repricing occurs.
Multiplier	The unit of time applied to the frequency. The choices are: • Days • Months • Years
Repeat	Allows you to specify the number of times a repricing event should be repeated.
Repricing Type	A drop list, it displays the repricing type, Flat rate or Indexed rate, associated with a particular event.
Add	Allows you to Add one or more repricing events.
Move Up	Allows you to move a particular row up by one position. **Note:** This action for the first and second rows is not active.
Move Down	Allows you to move a particular row down by one position. **Note:** This action for the first and last rows is not active.

Term	Description
Delete	Allows you to delete specific rows in the Repricing Events table.

The steps to create Relative repricing patterns are similar to creating Absolute repricing patterns. See: Defining Absolute Repricing Patterns., page 18-3

The only difference is that the fields in the Repricing Events table are different. You need to specify the following parameters in the Repricing Events table for a Relative repricing pattern:

- Frequency
- Multiplier
- Repeat

Related Topics

Defining Repricing Patterns, page 12-17

Creating Repricing Patterns, page 18-2

19

Time Buckets

This module describes the procedure for working with and managing Time Bucket rules.

This chapter covers the following topics:

- Overview of Time Bucket Rules
- Creating Time Bucket Rules
- Defining Time Bucket Rules

Overview of Time Bucket Rules

Time Bucket rules allow users to create the various time bucket definitions used for computing and outputting aggregated cash flows. Time Bucket rules determine the granularity of cash flow output and can be set at any frequency through a combination of daily, monthly and yearly buckets. Time Buckets can be defined individually for the following types of ALM output:

- Income Simulation
- Interest Rate GAP
- Liquidity GAP

Income Simulation Buckets allow you to specify the time periods used for storing and reporting results. These bucket definitions set the modeling horizon for date-related business rule assumptions. When you change the number or frequency of the modeling buckets, existing business rules are affected.

> **Note:** Business rules that are dependent on Income Simulation Buckets do not adjust dynamically if you change the underlying Bucket definition. Be cautious when changing Time Bucket definitions when known dependencies exist.

You can specify any combination of days, months, and years when setting up the buckets. Although, all Oracle ALM cash flows are generated on a daily basis, they are aggregated into defined income simulation buckets when results are stored. Reports access information from the income simulation buckets and let you aggregate buckets. For example, you can define monthly income simulation buckets but generate a quarterly income statement. On the other hand, you cannot generate a weekly balance sheet if all income simulation buckets are monthly.

If you want to use different configurations of income simulation buckets, such as all monthly or all quarterly, you should create a separate Time Bucket rule for each and use an appropriate naming convention to identify these characteristics. All date-related assumption rules should be defined and used in the context of a single set of Income Simulation buckets or a single Time Bucket rule.

Income Simulation Bucket definitions are referenced by all bucket based forecast business rules, including Forecast Rates, Forecast Balances, Pricing Margins and Maturity Mix rules and also by ALM Deterministic Processes during ALM engine processing.

Interest Rate GAP Buckets allow you to define Interest Rate (repricing) GAP buckets. From this screen, you can also define Dynamic Start Dates (as of date is always the initial start date), which allow you to generate both static and dynamic GAP simulations. With this Dynamic Start Date capability, users can also define forward start dates for computing dynamic market valuations. The Dynamic Start Date capability allows you to consider amortization of existing business and any new business assumptions that are applicable between the current as of date and the future dated – Dynamic Start Date. You must set up Income Simulation Buckets before defining Interest Rate GAP Buckets.

> **Note:** Only Interest Rate GAP financial elements are impacted by the Interest Rate GAP bucket definitions. The Interest Rate GAP financial elements range from FE660 to FE700.

Liquidity GAP Buckets are similar to Interest Rate GAP buckets. The only difference is that Liquidity Bucket definitions impact only the Liquidity Runoff financial elements, which range from FE 1660 to 1717.

The procedure for working with and managing Time Bucket rules is similar to that of other Asset Liability Management business rules. It includes the following steps:

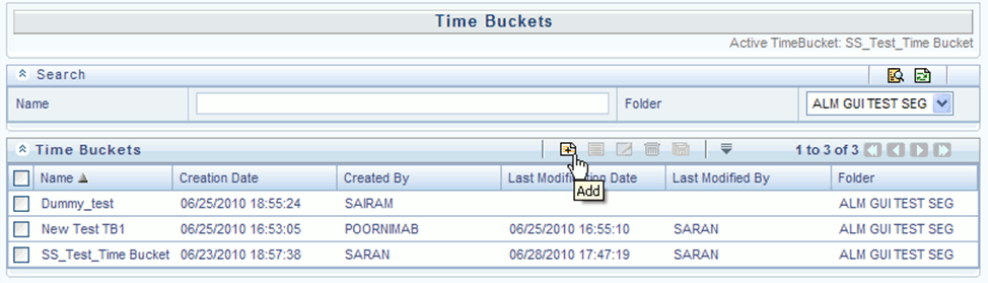
- Searching for Time Bucket rules. See: Searching for Rules, page 13-4
- Creating Time Bucket Rules, page 19-3
- Viewing and Editing Time Bucket rules. See: Viewing and Editing Rules, page 13-6
- Copying Time Bucket rules. See: Copying Rules, page 13-6
- Deleting Time Bucket rules. See: Deleting Rules, page 13-7

Creating Time Bucket Rules

You create Time Bucket rules to specify the time periods used for storing and reporting ALM results.

Procedure:

1. Navigate to the Time Buckets summary page.
2. Complete standard steps for this procedure. See: Creating Rules, page 13-5



Related Topics

Overview of Time Bucket Rules, page 19-1

Standard Navigation Paths, page A-1

Defining Time Bucket Rules

The definition of a Time Bucket rule is part of the Create or Edit Time Buckets rule process. When you click Save in the Create Time Buckets rule process, the rule is saved and the Time Buckets rule summary page is displayed. However, Time Bucket assumptions may not have been defined at this point. Typically, you would start defining your Time Bucket assumptions for each Bucket Type before clicking Save.

Prerequisites

❒ Performing basic steps for creating or editing a Time Bucket rule, page 19-3

Procedure:

From the Time Bucket details screen, you have three tabs available for creating Time Bucket definitions

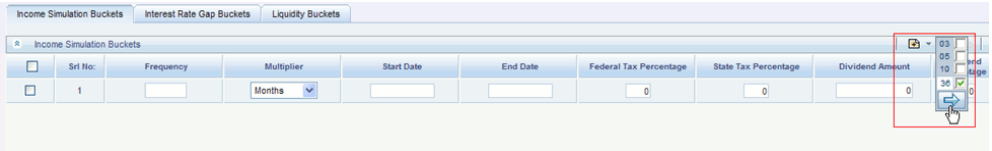
- Income Simulation Buckets (required)

- Interest Rate GAP Buckets (required only if Repricing Gap is selected during processing)
- Liquidity GAP Buckets (required only if Liquidity Gap is selected during processing)

The first step is to define your **Income Simulation** buckets.

From the Income Simulation tab, do the following:

1. Click the Add Rows button and input the desired number of rows corresponding to the number of Income Simulation Buckets you would like to create.



> **Note:** You can select a pre-defined number of rows from the list, e.g. 3, 5 or 10, or you can input the exact number of rows you would like to add. The maximum number of buckets you have under any tab is **240.**

2. Under Frequency, input a numeric value, e.g. **1**. The Frequency column displays the duration of the multiplier. The frequency in conjunction with the multiplier displays the duration of the buckets. The frequency can be any number from 1 to 999.

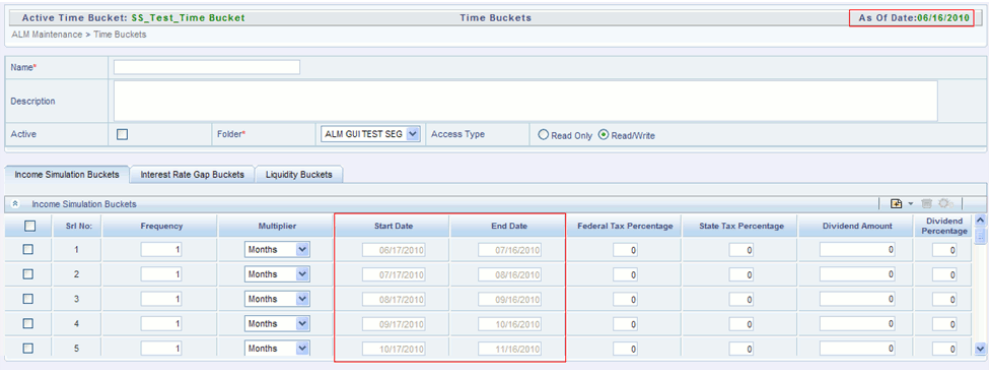
> **Note:** Limit the definition of Income Simulation buckets to the date range that is relevant to your reporting requirement. It is not necessary to create "catch-all" buckets at the end of the series. When large buckets are created, for instance, 99 Years, this can result in the following error:
>
> ```
> INSERT Oracle Error: ORA- 01426: numeric overflow
> Driver
> Function: drv_oci::Execute()
> ```

3. Under Multiplier, select an appropriate value from the list. The Multiplier column includes Daily, Monthly, or Yearly choices.
4. Continue adding frequencies and multipliers as needed,

Example

Frequency	Multiplier
1	Month
1	Month
1	Month
1	Month
1	Month …….

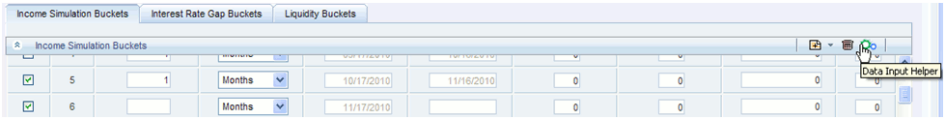
After you fill in the frequencies and multipliers, the start and end dates are calculated automatically based on the As of Date, defined in your Application Preference settings.



Note: You may want to utilize the Data Input Helper to copy from a row where you have already defined the time bucket definition or apply a fixed value down the page. The following optional steps describe how to use this feature.

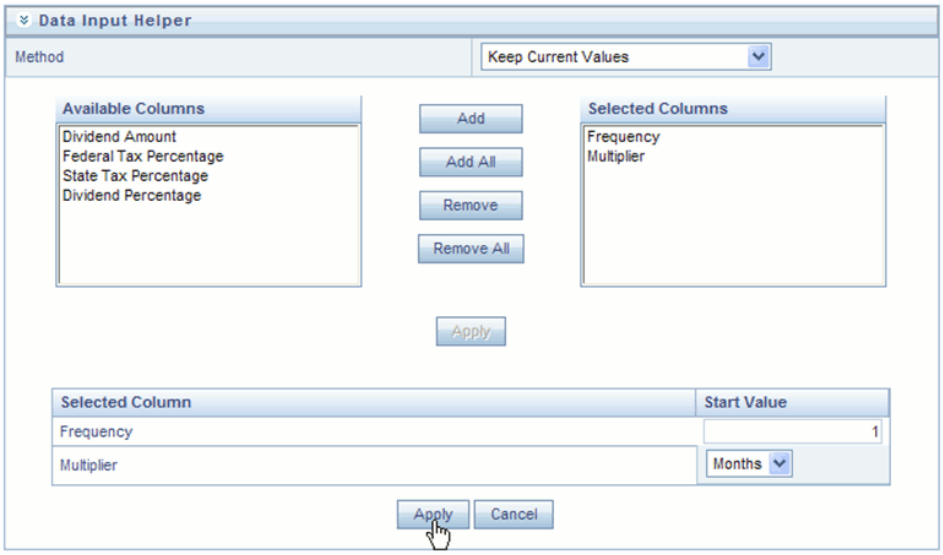
1. Select the checkbox next to the rows that you want to work with or use the " Select ALL" option by selecting the checkbox on the header row.

2. Select the Data Input Helper icon.



3. From the Data Input Helper – popup screen, select **Method** – "Keep Current Values" or some other appropriate method.

4. Select the Frequency and/or Multiplier from the left side of the shuttle box.



5. Select **APPLY** to copy assumptions to the selected rows.

5. After defining time bucket frequencies, move across each row to input the appropriate Federal Tax Percentages and State Tax Percentages.

   Tax percentages are used in ALM when processing with the auto-balancing option selected. Type **35.00** for 35%. The tax rate entered is interpreted as the tax rate for that bucket regardless of the frequency of the bucket. That is, 35% entered for a monthly bucket is applied as a 35% monthly rate to the taxable income forecast for that month.

6. Under Dividend Amount, type a value. Dividend amounts are used in ALM when processing with the auto-balancing option selected. The values you enter here will be paid out as dividends for all rate scenarios.

7. Under Dividend Percentage, type a value. Dividend percentages are used during auto-balancing calculations. The dividend percentage is defined as a percent of the net income after tax that will be paid out as dividends for the period.

   Total Dividends = Dividends Amount + (Dividends Percent x Net Income after Tax)

8. Select **SAVE** if you are finished. Otherwise, navigate to the **Interest Rate GAP Buckets tab.**

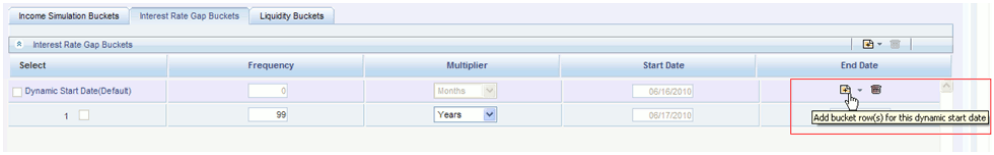
After defining Income Simulation buckets, navigate to the **Interest Rate GAP Buckets tab.** The Interest Rate GAP bucket detail page provides two important inputs. The first

is the ability to define Interest Rate GAP buckets. The second capability allows you to define one or more Dynamic Start Dates. The following steps explain how to complete each of these setup tasks.

> **Note:** By default, the last time series time bucket in all dynamic start dates will default to 99 years as a "catch all" bucket. This is used to verify the total runoff for reporting requirements.

From the Interest Rate GAP Buckets tab, do the following:

1. Click the Add Rows button corresponding to the Default Dynamic Start Date and input the desired number of rows for your Interest Rate GAP Buckets.



2. Follow steps 2 – 4 described above under Income Simulation buckets, to complete the setup of your Interest Rate GAP buckets for the default Dynamic Start Date.

3. If you would like to define additional – forward dated, Dynamic Start Dates, Click the "Add Dynamic Start Date" button to add one or more parent nodes to the bucket hierarchy.

4. For each additional Dynamic Start Date row, input a Frequency and Multiplier to determine future start date(s).

5. Click the Add Rows button corresponding to each new Dynamic Start Date and repeat the Interest Rate GAP Bucket definition steps described above to complete the setup.

   For a more detailed example on creating additional Dynamic Start Dates, see Example, page 12-23

After defining Interest Rate GAP buckets, navigate to the **Liquidity Buckets tab**. The Liquidity Buckets detail page has the same structure as the Interest Rate GAP details page. It allows you to define the Liquidity GAP Buckets for the default Dynamic Start Date and also allows you to add one or more additional Dynamic Start Dates. The use

of Dynamic Start Dates will allow you to forecast your liquidity position as of some future point in time, considering all relevant assumptions, including amortization, prepayments, early withdrawals, and rollovers.

> **Note:** By default, the last time series time bucket in all dynamic start dates will default to 99 years as a "catch all" bucket. This is used to verify the total runoff for reporting requirements.

From the Liquidity Buckets tab, do the following:

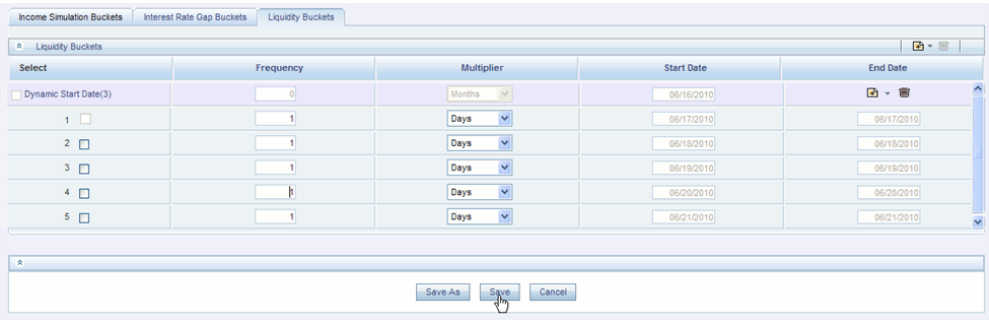
1. Click the Add Rows button corresponding to the Default Dynamic Start Date and input the desired number of rows for your Liquidity Buckets.

2. Follow steps 2 – 4 described above under Income Simulation buckets, to complete the setup of your Liquidity Buckets for the default Dynamic Start Date.

3. If you would like to define additional – forward dated, Dynamic Start Dates, Click the "Add Dynamic Start Date" button to add one or more parent nodes to the bucket hierarchy.

4. If needed, input a Frequency and Multiplier for the new Dynamic Start Date to determine the future start date.

5. Click the Add Rows button corresponding to the new Dynamic Start Date and repeat the Liquidity GAP Bucket definition steps described above.

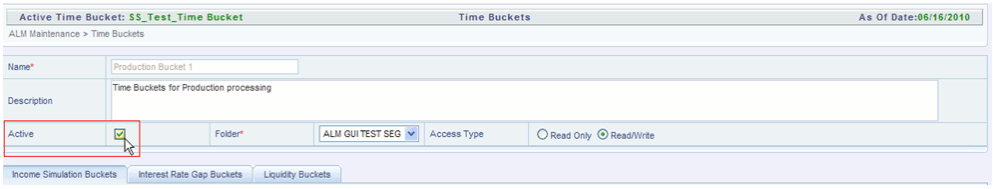


For a more detailed example on creating additional Dynamic Start Dates, see Example, page 12-23

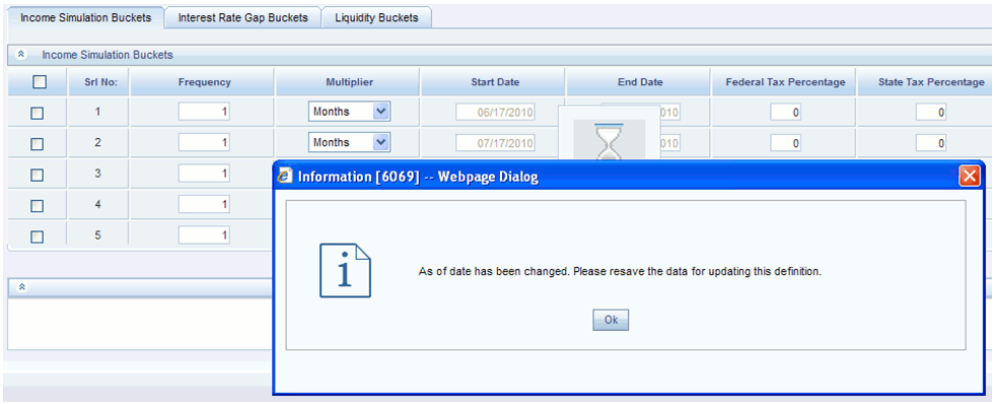
6. Once you have completed the setup for all bucket types, click the **SAVE** button.

Additional Required Steps:

1. All users must have an "Active" Time Bucket Rule at all times. There is a checkbox at the top of the page, above the Bucket tabs. If you wish to "Activate" a particular Time Bucket Rule, simply check this box and Save the Rule. You will note the Active Time Bucket rule for your user appears on the Title bar in green text.



2. Each time you change the As of Date in your Application Preferences screen, you must re-save your "Active" Time Bucket Rule to update the calculated Bucket Start Date and Bucket End Date values. You will receive an alert when you enter the Time Bucket rule indicating the As of Date has changed.



After selecting OK, to close the message popup window, select SAVE to re-save the Time Bucket Rule.

20

Default Product Profiles

Overview of Product Profiles

Product Characteristic setup can be a time consuming process as there are more than 40 attributes which can be required when defining characteristics for dimension members in the product COA hierarchy. Product Profiles allow you to pre-define and save common product definitions and reference these definitions while defining your Product Characteristic assumptions. Setup time is reduced because product profiles provide common default values for the majority of required fields. The following Product Profiles are seeded during installation:

- Bond – Adjustable Rate
- Bond – Fixed Rate
- Credit Card
- Discount Instrument
- Lease
- Loan – Adjustable Rate
- Loan – Fixed Rate
- Loan – Floating Rate
- Loan – Neg Am
- Savings
- Term Deposit

In addition to the seeded profiles, you can add custom product profiles to your setup by

creating completely new profiles or by using the Save As option with one of the existing profiles.

> **Note:** The seeded Product Profiles are not editable and cannot be deleted.

The procedure for working with and managing Product Profiles is similar to that of other Asset | Liability Management business rules. It includes the following steps:

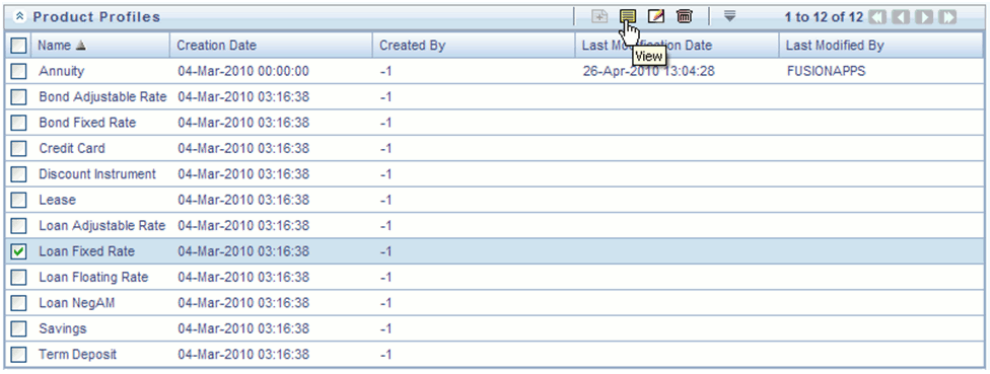
- Searching for Product Profiles. See: Searching for Rules, page 13-4.
- Creating Product Profiles, page 20-3
- Viewing and Editing Product Profiles. See: Viewing and Editing Rules, page 13-6.
- Copying Product Profiles. See: Copying Rules., page 13-6
- Deleting Product Profiles. See: Deleting Rules., page 13-7

Viewing a seeded Product Profile

You can review any of the twelve seeded Product Profile definitions.

Procedure:

1. Navigate to the Product Profile summary page.



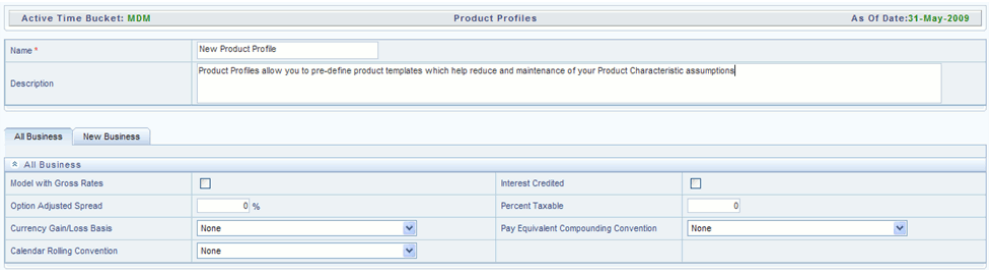
2. Select the check box next to the Product Profile you want to View and select the View Icon.
3. Navigate through the All Business and New Business tabs to review the seeded values.

Creating Product Profiles

You create Product Profiles to assign default attributes for common products and then reference these product profiles within your Product Characteristic assumption rules to reduce setup time. In addition to the seeded Product Profile templates, you can also create new Profiles.

Procedure:

1. Navigate to the Product Profile summary page.
2. Complete standard steps for this procedure. See: Creating Rules, page 13-5



3. Enter a Name and Description for the new Profile.
4. Define product attributes for the profile you are creating. For more information on individual attributes, see Defining a Product Characteristics Rule, page 21-3.
5. Click Save to complete the new profile definition.

Related Topics

Overview of Product Characteristic Rules, page 21-1

Standard Navigation Paths, page A-1

Summary of Seeded Product Profiles

The following tables summarize the attributes defined for each product profile:

Bond Adjustable Rate

Location	Attribute	Default Value
All Business >	Percent Taxable	100
All Business >	Pay Equivalent Compounding Convention	Do Not Adjust
New Business > Define Core Product Attributes >	Amortization Type	Non-Amortizing
New Business > Define Core Product Attributes >	Adjustable Type	Other Adjustable
New Business > Define Payment Attributes >	Payment Frequency	6 Months
New Business > Define Payment Attributes >	Interest Type	Interest In Arrears
New Business > Define Payment Attributes >	Accrual Basis	Actual / Actual
New Business > Define Payment Attributes >	Compounding Basis	Simple
New Business > Define Payment Attributes >	Net Margin Flag	Floating Net Rate
New Business > Define Adjustable Rate Attributes >	Repricing Frequency	6 Months
New Business > Define Neg Am Attributes >	<Not Applicable>	

Bond Fixed Rate

Location	Attribute	Default Value
All Business >	Percent Taxable	100

Location	Attribute	Default Value
All Business >	Pay Equivalent Compounding Convention	Do Not Adjust
New Business > Define Core Product Attributes >	Amortization Type	Non-Amortizing
New Business > Define Core Product Attributes >	Adjustable Type	Fixed Rate
New Business > Define Payment Attributes >	Payment Frequency	6 Months
New Business > Define Payment Attributes >	Interest Type	Interest In Arrears
New Business > Define Payment Attributes >	Accrual Basis	Actual / Actual
New Business > Define Payment Attributes >	Compounding Basis	Simple
New Business > Define Payment Attributes >	Net Margin Flag	Floating Net Rate
New Business > Define Adjustable Rate Attributes >	<Not Applicable>	
New Business > Define Neg Am Attributes >	<Not Applicable>	

Credit Card

Location	Attribute	Default Value
All Business >	Percent Taxable	100
All Business >	Pay Equivalent Compounding Convention	Do Not Adjust

Location	Attribute	Default Value
New Business > Define Core Product Attributes >	Amortization Type	Behavior Pattern
New Business > Define Core Product Attributes >	Adjustable Type	Floating Rate
New Business > Define Payment Attributes >	Payment Frequency	1 Month
New Business > Define Payment Attributes >	Interest Type	Interest In Arrears
New Business > Define Payment Attributes >	Accrual Basis	Actual / Actual
New Business > Define Payment Attributes >	Compounding Basis	Simple
New Business > Define Payment Attributes >	Net Margin Flag	Floating Net Rate
New Business > Define Adjustable Rate Attributes >	<Not Applicable>	
New Business > Define Neg Am Attributes >	<Not Applicable>	

Discount Instrument

Location	Attribute	Default Value
All Business >	Percent Taxable	100
All Business >	Pay Equivalent Compounding Convention	Do Not Adjust
New Business > Define Core Product Attributes >	Amortization Type	Non-Amortizing

Location	Attribute	Default Value
New Business > Define Core Product Attributes >	Adjustable Type	Fixed Rate
New Business > Define Core Product Attributes >	Original Deferred Amortization %	3.0%
New Business > Define Payment Attributes >	Payment Frequency	90 Days
New Business > Define Payment Attributes >	Interest Type	Interest In Arrears
New Business > Define Payment Attributes >	Accrual Basis	Actual / 360
New Business > Define Payment Attributes >	Compounding Basis	Simple
New Business > Define Payment Attributes >	Net Margin Flag	Floating Net Rate
New Business > Define Adjustable Rate Attributes >	<Not Applicable>	
New Business > Define Neg Am Attributes >	<Not Applicable>	

Lease

Location	Attribute	Default Value
All Business >	Percent Taxable	100
All Business >	Pay Equivalent Compounding Convention	Do Not Adjust
New Business > Define Core Product Attributes >	Amortization Type	Lease

Location	Attribute	Default Value
New Business > Define Core Product Attributes >	Adjustable Type	Fixed Rate
New Business > Define Payment Attributes >	Payment Frequency	1 Month
New Business > Define Payment Attributes >	Interest Type	Interest In Arrears
New Business > Define Payment Attributes >	Accrual Basis	Actual / 360
New Business > Define Payment Attributes >	Compounding Basis	Simple
New Business > Define Payment Attributes >	Net Margin Flag	Floating Net Rate
New Business > Define Adjustable Rate Attributes >	<Not Applicable>	
New Business > Define Neg Am Attributes >	<Not Applicable>	

Loan Adjustable Rate

Location	Attribute	Default Value
All Business >	Percent Taxable	100
All Business >	Pay Equivalent Compounding Convention	Do Not Adjust
New Business > Define Core Product Attributes >	Amortization Type	Conventional Adjustable
New Business > Define Core Product Attributes >	Adjustable Type	Other Adjustable

Location	Attribute	Default Value
New Business > Define Payment Attributes >	Payment Frequency	1 Month
New Business > Define Payment Attributes >	Interest Type	Interest In Arrears
New Business > Define Payment Attributes >	Accrual Basis	Actual / Actual
New Business > Define Payment Attributes >	Compounding Basis	Simple
New Business > Define Payment Attributes >	Net Margin Flag	Floating Net Rate
New Business > Define Adjustable Rate Attributes >	Repricing Frequency	1 Year
New Business > Define Neg Am Attributes >	<Not Applicable>	

Loan Fixed Rate

Location	Attribute	Default Value
All Business >	Percent Taxable	100
All Business >	Pay Equivalent Compounding Convention	Do Not Adjust
New Business > Define Core Product Attributes >	Amortization Type	Conventional Fixed
New Business > Define Core Product Attributes >	Adjustable Type	Fixed
New Business > Define Payment Attributes >	Payment Frequency	1 Month

Location	Attribute	Default Value
New Business > Define Payment Attributes >	Interest Type	Interest In Arrears
New Business > Define Payment Attributes >	Accrual Basis	Actual / Actual
New Business > Define Payment Attributes >	Compounding Basis	Simple
New Business > Define Payment Attributes >	Net Margin Flag	Floating Net Rate
New Business > Define Adjustable Rate Attributes >	< Not Applicable >	
New Business > Define Neg Am Attributes >	<Not Applicable>	

Loan Floating Rate

Location	Attribute	Default Value
All Business >	Percent Taxable	100
All Business >	Pay Equivalent Compounding Convention	Do Not Adjust
New Business > Define Core Product Attributes >	Amortization Type	Conventional Adjustable
New Business > Define Core Product Attributes >	Adjustable Type	Floating Rate
New Business > Define Payment Attributes >	Payment Frequency	1 Month
New Business > Define Payment Attributes >	Interest Type	Interest In Arrears

Location	Attribute	Default Value
New Business > Define Payment Attributes >	Accrual Basis	Actual / Actual
New Business > Define Payment Attributes >	Compounding Basis	Simple
New Business > Define Payment Attributes >	Net Margin Flag	Floating Net Rate
New Business > Define Adjustable Rate Attributes >	< Not Applicable >	
New Business > Define Neg Am Attributes >	<Not Applicable>	

Loan Negative Amortization

Location	Attribute	Default Value
All Business >	Percent Taxable	100
All Business >	Pay Equivalent Compounding Convention	Do Not Adjust
New Business > Define Core Product Attributes >	Amortization Type	Adjustable Negative Amortization
New Business > Define Core Product Attributes >	Adjustable Type	Other Adjustable
New Business > Define Payment Attributes >	Payment Frequency	1 Month
New Business > Define Payment Attributes >	Interest Type	Interest In Arrears
New Business > Define Payment Attributes >	Accrual Basis	Actual / Actual

Location	Attribute	Default Value
New Business > Define Payment Attributes >	Compounding Basis	Simple
New Business > Define Payment Attributes >	Net Margin Flag	Floating Net Rate
New Business > Define Adjustable Rate Attributes >	Repricing Frequency	1 Month
New Business > Define Neg Am Attributes >	Payment Change Frequency	6 Months
New Business > Define Neg Am Attributes >	Equalization Frequency	3 Months

Savings

Location	Attribute	Default Value
All Business >	Percent Taxable	100
All Business >	Pay Equivalent Compounding Convention	Do Not Adjust
New Business > Define Core Product Attributes >	Amortization Type	Behavior Pattern
New Business > Define Core Product Attributes >	Adjustable Type	Floating Rate
New Business > Define Payment Attributes >	Payment Frequency	1 Month
New Business > Define Payment Attributes >	Interest Type	Interest In Arrears
New Business > Define Payment Attributes >	Accrual Basis	Actual / Actual

Location	Attribute	Default Value
New Business > Define Payment Attributes >	Compounding Basis	Simple
New Business > Define Payment Attributes >	Net Margin Flag	Floating Net Rate
New Business > Define Adjustable Rate Attributes >	<Not Applicable>	
New Business > Define Neg Am Attributes >	<Not Applicable>	

Term Deposit

Location	Attribute	Default Value
All Business >	Percent Taxable	100
All Business >	Pay Equivalent Compounding Convention	Do Not Adjust
New Business > Define Core Product Attributes >	Amortization Type	Non-Amortizing
New Business > Define Core Product Attributes >	Adjustable Type	Fixed Rate
New Business > Define Payment Attributes >	Payment Frequency	1 Month
New Business > Define Payment Attributes >	Interest Type	Interest In Arrears
New Business > Define Payment Attributes >	Accrual Basis	Actual / Actual
New Business > Define Payment Attributes >	Compounding Basis	Simple

Location	Attribute	Default Value
New Business > Define Payment Attributes >	Net Margin Flag	Floating Net Rate
New Business > Define Adjustable Rate Attributes >	<Not Applicable>	
New Business > Define Neg Am Attributes >	<Not Applicable>	

21

Product Characteristics

This module describes the procedure for working with and managing Product Characteristic rules.

This chapter covers the following topics:

- Overview of Product Characteristic Rules
- Creating Product Characteristic Rules
- Defining Product Characteristic Rules
- Copying Assumptions Across Currencies and Products

Overview of Product Characteristic Rules

Product Characteristic rules are used to define payment, pricing and repricing characteristics for new business. They are also used to specify general calculation attributes for both existing accounts and new business.

The procedure for working with and managing Product Characteristics is similar to that of other Asset | Liability Management business rules. It includes the following steps:

- Searching for Product Characteristic rules. See: Searching for Rules, page 13-4.
- Creating Product Characteristic Rules, page 21-2.
- Viewing and Editing Product Characteristic rules. See: Viewing and Editing Rules, page 13-6.
- Copying Product Characteristic rules. See: Copying Rules., page 13-6
- Deleting Product Characteristic rules. See: Deleting Rules., page 13-7

As part of creating and editing Product Characteristic rules, you assign product attribute assumptions to applicable products from your product hierarchy. See: Defining Product Characteristics, page 21-3.

Note: Oracle Asset | Liability Management provides you with the option to copy, in total or selectively, the product assumptions contained within ALM business rules from one currency to another currency or a set of currencies or from one product to another product or a set of products. See: Copying Assumptions Across Currencies and Products, page 21-17

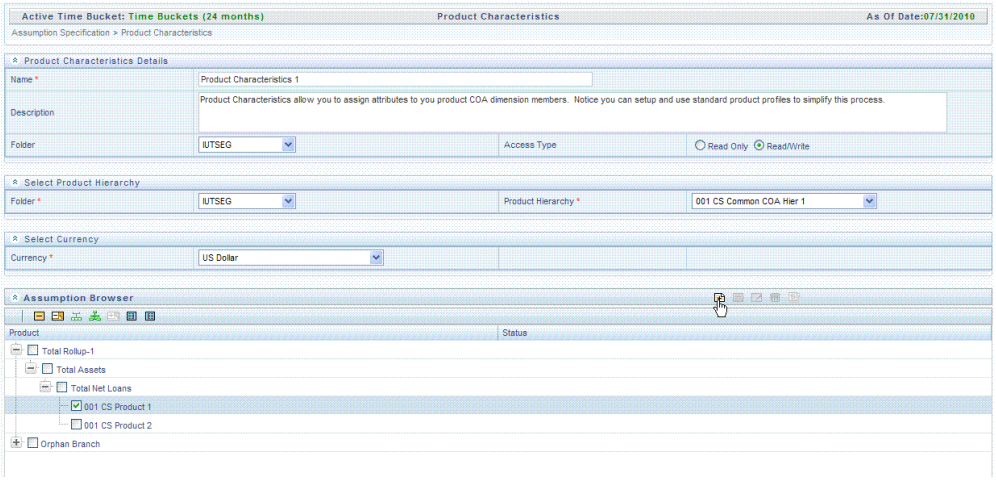
Creating Product Characteristic Rules

You create a Product Characteristics rule to assign attributes to your products.

Procedure:

1. Navigate to the Product Characteristics summary page.

2. Complete standard steps for this procedure. See: Creating Rules, page 13-5



Important: In addition to the standard steps for creating rules, the procedure for creating Product Characteristics involves one extra step. After Standard Step 6, you need to select a product hierarchy. You can define methodologies at any level of the hierarchical product dimension. The hierarchical relationship between the nodes allows inheritance of methodologies from parent nodes to child nodes.

Related Topics

Overview of Product Characteristic Rules, page 21-1

Standard Navigation Paths, page A-1

Defining Product Characteristic Rules

The definition of a Product Characteristics rule is part of the Create or Edit Product Characteristics rule process. When you click Save in the Create Product Characteristics rule process, the rule is saved and the Product Characteristics rule summary page is displayed. However, Product Characteristic assumptions have not yet been defined for any of your products at this point. Typically, you would start defining your Product Characteristic assumptions for product-currency combinations before clicking Save.

Defining Product Characteristics Using Node Level Assumptions

Node Level Assumptions allow you to define assumptions at any level of the Product dimension Hierarchy. The Product dimension supports a hierarchical representation of your chart of accounts, so you can take advantage of the parent-child relationships defined for the various nodes of your product hierarchies while defining rules. Children of parent nodes on a hierarchy automatically inherit the assumptions defined for the parent nodes. However, assumptions directly defined for a child take precedence over those at the parent level.

Prerequisites

Performing basic steps for creating or editing a Product Characteristics rule, page 21-2

Procedure:

From the Assumption Browser screen, select the product(s) and the currency for which you want to define Product Characteristics and select the "Add New" button to launch the Product Characteristic Details screen.

To define a Product Characteristics rule, complete the following steps:

1. Choose the Currency.

   Note: To define assumptions for all currencies with the selected product, choose the "Default Currency".

2. From the Assumption Browser, choose the product or products that you want to define.

3. Select the Add Assumption icon.

4. Type a value for each mandatory field. See "Relationship Triggers", page 21-7 in this module for more information. Mandatory input fields are marked with a red asterisk.

Note: You can optionally select one of the seeded Product Profile templates or a user defined Product Profile to pre-populate the appropriate Product Characteristic fields.

5. From the File menu, select Save.

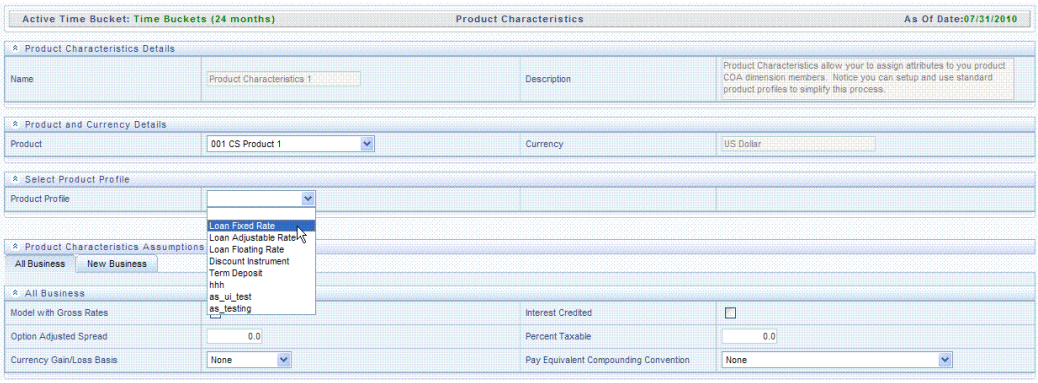
Hint: Using the default currency to setup assumptions can save data input time. At run time, the calculation engine uses assumptions explicitly defined for a product currency combination. If assumptions are not defined for a currency, the engine uses the assumptions defined for the product and the default currency. If the assumptions are the same across some or all currencies for a specific product, you can input assumptions for the default currency. Be careful using this option on screens where an Interest Rate Code is a required input. In most cases, you will want to use a currency specific interest rate curves for pricing instruments within each specific base currency. The Default Currency option, if used will apply a selected Interest Rate Code across all currencies.

The Product Characteristic Details screen

The details screen has two input tabs.

- All Business
- New Business

The All Business tab:



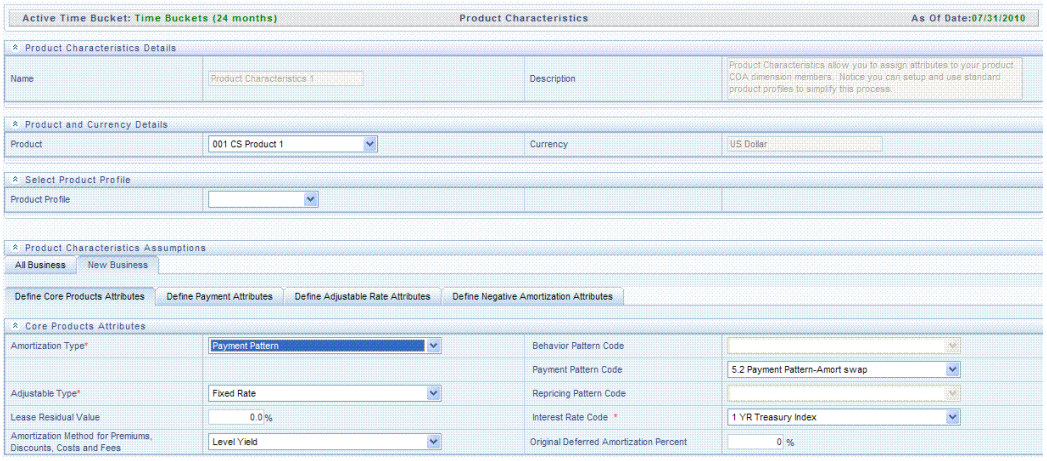
Assumptions made on the All Business tab apply to both current position data and new business balances.

The six common Product Characteristic fields listed on the ALL Business tab are as follows:

Field	Behavior
Option Adjusted Spread	The option adjusted spread is used during stochastic processing only. It is an adjustment to the stochastic discount factor used in calculating market value and value at risk. Valid values for this spread are between -5.000% and 5.000%, but a value less than 2.00% is recommended for best results. *For more information about the calculation of discount factors, see the Oracle Financial Services Cash Flow Engine Reference Guide.*
Model with Gross Rates	This option is used for participated instruments which are not fully owned by the institution. For these instruments, both a net and gross rate will be calculated within the cash flow engine and both gross and net rate financial elements will be output. The gross rate will be used for prepayment and amortization. The net rate will be used for income simulation and the calculation of retained earnings in the auto-balancing process.
Interest Credited	This option allows interest payments to be capitalized as principal on simple/non-amortizing instruments.
Percent Taxable	Percent Taxable specifies the percent of income or expense that is subject to the tax rates defined in the active Time Bucket rule. This is used with the Auto-balancing option in the ALM Process rules. Percent taxable should be setup for each product and reporting currency or product and default currency combination.

Field	Behavior
Currency Gain/Loss Basis	Currency Gain/Loss Basis determines how exchange rate fluctuations are reflected in financial element results for each product and currency combination. The choices are: • Temporal • Historical Basis • Current Rate *See the Oracle Financial Services Cash Flow Engine Reference Guide for more information on the cash flow calculations associated with currency gain/loss recognition techniques.*
Pay Equivalent Compounding Convention	In most cases, interest rates are not adjusted for the differences in pay-basis between the quote basis of the pricing index and the payment frequency of the account to which the index is assigned. Some instruments, notably Canadian Mortgages, follow a convention that the interest rates are adjusted. In this case, the Pay-Equivalent Compounding Convention should be set to Semi-Annual Quoting Convention. For other accounts, the convention should be set to Do Not Adjust.

The New Business tab:



Assumptions made on the New Business tab impact forecast business only. These assumptions are used together with the other Forecast Assumption rules including Forecast Balances, Pricing Margins and Maturity Mix to determine the behavior of your forecast instruments. There are four sub-tabs within New Business setup including:

- Define Core Product Attributes
- Define Payment Attributes
- Define Adjustable Rate Attributes
- Define Negative Amortization Attributes

Relationship Triggers

There are dependencies built into the tabular structure of this screen. Based on assumptions made in the first two tabs, the remaining two tabs may not be active.

Field	Value	Behavior
Amortization Type Code	Conv. Fixed, Conv Adjust., Adjst/Ng Amrt	Always interest in arrears, therefore disables Interest Type
Amortization Type Code	Conv. Fixed, Rule-of-78's	No repricing occurs, therefore disables Adjustable Rate Attributes and Neg Am Attributes tabs

Field	Value	Behavior
Amortization Type Code	Adjst/Ng Amrt	Enables Negative Amortization Attributes tab
Amortization Type Code	Payment Pattern	Enables the Payment Pattern drop list
Amortization Type Code	Behavior Pattern	Enables the Behavior Pattern drop list
Adjustable Type Code	Fixed, Floating, or Repricing pattern	Repricing Frequency is not applicable, or it is defined elsewhere, therefore disables Repricing Frequency and Multiplier
Adjustable Type Code	Other Adjustable, Floating, Repricing Pattern	Enables the Adjustable Rate Attributes tab
Adjustable Type Code	Repricing Pattern	Enables the Repricing Pattern drop list. In addition, several of the repricing attributes are defined elsewhere, therefore they are disabled in this rule. Only periodic increase and decrease, rate change min and rounding are enabled
Repricing Frequency	"0"	No repricing occurs, therefore disables Adjustable Rate Attributes
Model with Gross Rates	Off	Net Margin Flag options are only necessary when modeling with different gross rates and net rates, therefore disables Net Margin Flag
Rate Change Rounding Type	"No Rounding" or "Truncate"	Rounding does not apply, therefore disables Rate Change Rounding Percent

Field	Value	Behavior
Currency		Allows display of Interest Rate Codes and Transfer Rate Interest Rate Codes for which the selected currency is the reference currency. In Product Characteristics, Default Currency allows all Interest Rate Codes, regardless of currency

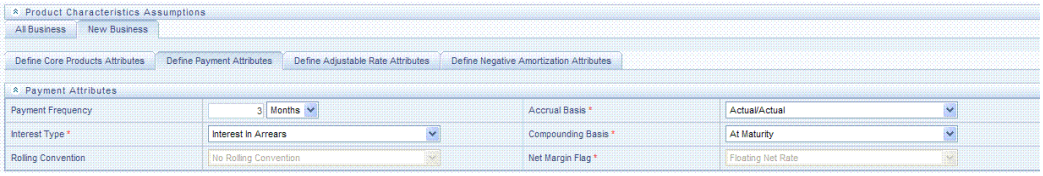
New Business Fields

Following is a listing of new business fields used in the Product Characteristics rule > **Core Product Attributes** tab. Refer image above., page 21-7

Tab	Field	Description
Core Product Attributes	Amortization Type	Method of amortizing principal and interest. The choices consist of all standard OFSAA codes and all additional user-defined codes created through the Payment Pattern and Behavior Pattern interfaces, as given below: • Conventional Fixed • Conventional Adjustable • Balloon Payment • Adjustable Negative Amortization • Non-Amortizing • Rule of 78's • Level Principal • Payment Pattern • Behavior Pattern • Lease
	Adjustable Type	Determines the repricing characteristics of the new business record. The choices consist of all standard OFSAA codes plus Repricing Pattern. The standard OFSAA codes are as follows: • Fixed Rate • Floating Rate • Other Adjustable

Tab	Field	Description
	Lease Residual Value	For Lease instruments, this value specifies the residual amount as a percent of the par balance.
	Amortization Method for Premiums, Discounts and Fees	Determines the method used for amortizing premiums, discounts or fees. The available codes are: • Level Yield • Straight Line
	Behavior Pattern Code	Lists all user-defined behavior patterns created through the user interface.
	Payment Pattern Code	Lists all user-defined payment patterns defined through the user interface.
	Repricing Pattern Code	Lists all user-defined reprice patterns created through the user interface.
	Interest Rate Code	Defines the pricing index to which the instrument interest rate is contractually tied. The interest rate codes that appear as a selection option depend on the choice of currency. The interest rate code list is restricted to codes which have the selected currency as the reference currency. If the default currency is chosen, all interest rate codes are available as a selection.
	Original Deferred Amortization Percent	The initial deferred balance expressed as a percent of original par balance.

Following is a listing of new business fields used in the Product Characteristics rule > **Payment Attributes** tab:

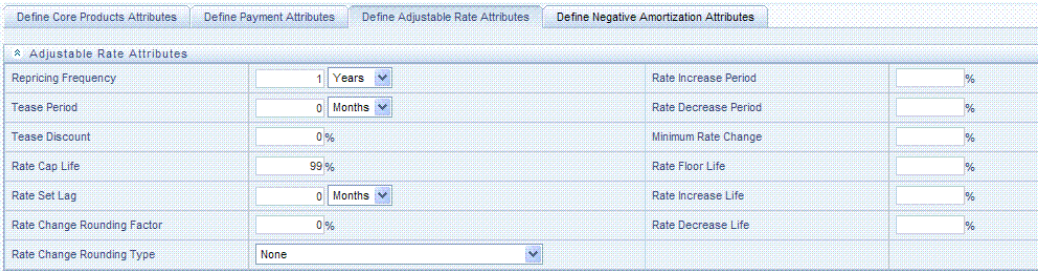


Tab	Field	Description
Payment Attributes	Payment Frequency	Frequency of payment (P & I), Interest or Principal). For bullet instruments, use zero.
	Interest Type	Determines whether interest is calculated in arrears or advance or if the rate is set in arrears. There are three interest types: • Interest in Arrears • Interest in Advance • Set in Arrears For conventional amortization products, interest in arrears is the only valid choice.
	Rolling Convention	Reserved for future use.

Tab	Field	Description
	Accrual Basis	The basis on which the interest accrual on an account is calculated. The choices are as follows: • 30/360 • Actual/360 • Actual/Actual • 30/365 • 30/Actual • Actual/365
	Compounding Basis	Determines the number of compounding periods per payment period. The choices are the following: • Daily • Monthly • Quarterly • Semi-Annual • Yearly • Continuous • Simple • At Maturity

Tab	Field	Description
	Net Margin Flag	The setting of the net margin flag affects the calculation of net rate. The two settings are: • Floating Net Rate - the net rate reprices in conjunction with the gross rate, at a value net of fees. • Fixed Net Rate - the net rate equals a fixed fee equal to the net margin.

Following is a listing of new business fields used in the Product Characteristics rule > **Adjustable Rate Attributes** tab:



Tab	Field	Description
Adjustable Rate Attributes	Repricing Frequency	Contractual frequency of rate adjustment
	Tease Period	The tease period is used to determine the length of tease period.
	Tease Discount	The tease discount is used in conjunction with the original rate to calculate the tease rate. The tease rate is the original rate less the tease discount.

Tab	Field	Description
	Rate Cap Life	Maximum rate for life of the instrument.
	Rate Set Lag	Period by which the rate lookup lags the repricing event date.
	Rate Change Rounding Factor	Percent to which the rate change on an adjustable instrument is rounded.
	Rate Change Rounding Type	Method used for rounding of interest rate codes. The choices are as follows: no rounding, truncate, round up, round down, round nearest.
	Rate Increase Period	Maximum interest rate increase allowed during the cycle on an adjustable rate instrument.
	Rate Decrease Period	Maximum amount rate can decrease during the repricing period of an adjustable rate instrument.
	Minimum Rate Change	The minimum required change in rate on a repricing date.
	Rate Floor Life	Minimum rate for life of the instrument.
	Rate Increase Life	Maximum interest rate increase allowed during the life of an adjustable rate instrument, used to calculate rate cap based on forecasted rate scenario. If both rate increase life and rate cap are defined, the process uses the more restrictive rate.

Tab	Field	Description
	Rate Decrease Life	Maximum amount rate can decrease during the life of an adjustable rate instrument, used to calculate the rate floor based on the forecasted rate scenario. If both rate decrease life and rate floor are defined, the process uses the more restrictive rate.

Following is a listing of new business fields used in the Product Characteristics rule > **Negative Amortization Attributes** tab:

Tab	Field	Description
Negative Amortization Attributes	Payment Change Frequency	The frequency at which the payment amount is recalculated for adjustable negative amortization instruments.
	Equalization Frequency	Frequency at which current payment necessary to fully amortize the instrument is re-computed.
	Payment Decrease Life	Maximum payment decrease allowed during life of a negative amortization instrument.
	Payment Decrease Period	Maximum payment decrease allowed during a payment change cycle of a negative amortization instrument.

Tab	Field	Description
	Equalization Limit	Maximum negative amortization allowed, as a percent of original balance. E.g., if principal balance should never exceed 125% of original balance, this column would equal 125.0
	Payment Increase Life	Maximum payment increase allowed during the life of a negative amortization instrument.
	Payment Increase Period	Maximum payment increase allowed during a payment change cycle on a negative amortization instrument.

Copying Assumptions Across Currencies and Products

This functionality provides you with the option to copy, in total or selectively, the product assumptions contained within the ALM assumption rules from one currency to another currency or a set of currencies, or from one product to another product or set of products.

Copy of assumptions enhances the usability of Oracle Asset Liability Management in a multi-currency environment. For example if you have 10 currencies enabled in the application, you need to input only one set of assumptions and then copy those assumptions across all enabled currencies, instead of having to input 10 full sets, thereby saving a significant amount of input time.

This functionality also reduces the risk associated with data input errors as you need to audit inputs for just a single set of assumptions before executing the copy procedure. The copy across currencies process requires users to select a replacement yield curve for each target currency. These currency specific IRC's replace the IRC selection made for each product in the source currency selection set. It is possible to edit the target assumptions after the initial copy processes has been completed.

Prerequisite

Define ALM rule related product assumptions. See:

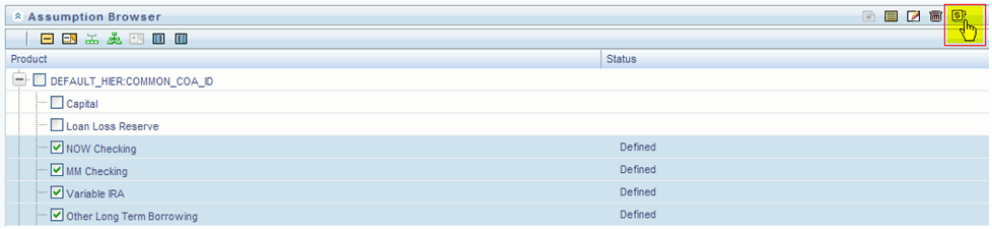
- Defining Product Characteristics, page 21-3

- Defining Discount Methods, page 25-3
- Defining Prepayment Methodologies, page 23-3
- Creating a Forecast Balances Rule, page 27-9
- Defining Maturity Mix Rules, page 28-3
- Defining Pricing Margin Rules, page 29-3
- Defining Transfer Pricing Methodologies, page 30-3
- Defining Adjustment Methods, page 31-3

Procedure

Use the following procedure to copy assumptions across currencies or products:

1. Navigate to the appropriate ALM business rule assumption browser.
2. Define assumptions for the source currency / product set.
3. Save the assumptions.
4. Select the defined product assumptions using the check boxes corresponding to each product (or Node on the hierarchy) that you want to include in the copy process.
5. Click the Copy Across icon.



6. On the Copy Across details page, select the listed currencies either individually using the corresponding check boxes or in total using Select All.

7. Specify an interest rate code for each selected currency. This is necessary because each interest rate code is specific to a single currency. When copying product assumptions across currencies, you must define the interest rate code for each target currency to replace the interest rate code used for the source currency assumptions.

8. Click **Apply** to initiate the copy process and to return to the Assumption Browser page.

   Note: You can review the results of the copy process from the Assumption Browser by selecting a different currency and following the usual navigation to view or edit assumptions. The application displays new assumptions for each product included in the original source selection. The copy process replaces pre-existing assumptions for any product-currency combination that is included in the target selection.

9. Click **Save** on the Assumption Browser page to save the assumptions to the database.

Related Topics

Overview of Product Characteristics, page 21-1

Overview of Discount Methods, page 25-1

Overview of Prepayments, page 23-1

Overview of Forecast Balance Rules, page 27-1

Overview of Maturity Mix Rules, page 28-1

Overview of Pricing Margin Rules, page 29-1

Overview of Transfer Pricing Rules, page 30-1

Standard Navigation Paths , page A-1

22

Forecast Rate Scenarios

Forecast Rate scenario assumptions allow you to define future interest rates, future economic indicators, and future currency exchange rates. Use interest rate forecasts to project cash flows, including pricing new business, re-pricing existing business, calculating prepayments, and determining discount methods. Use Economic Indicator forecasts to include in behavioral modeling and scenario/stress analysis. Use currency exchange rate forecasts to account for the effects of currency fluctuations on income.

The Forecast Rate assumptions use interest rate, economic indicator, and currency codes defined in Rate Management, including all the active and reporting currencies and the primary, or functional, currency at your institution. See OFSAA Rate Management, page 10-1 for information on how to define interest rates, economic indicator, and currency exchange rates.

This module describes how to create a Forecast Rates assumption rule to forecast cash flows and, if you work with multiple currencies, to model relationships between interest rates and exchange rates.

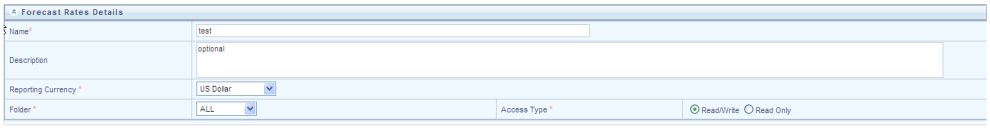
This chapter covers the following topics:

- Creating a Forecast Rates Assumption Rule
- Currency Forecast Methods
- Economic Indicator Forecast Methods
- Interest Rate Forecast Methods
- Data Loader Procedure

Creating a Forecast Rates Assumption Rule

1. From the Forecast Rates bar, select the "Add" icon.

2. Type a descriptive name for the rule.
3. Type a description for the rule. This is an optional field.
4. Select a reporting currency.
5. Select a folder.
6. Select the Access Type option.
7. Click Save.



Features of Forecast Rates

The reporting currency you selected when creating the Forecast Rates assumption rule appears in the title bar. Each forecast scenario you create, up to ninety nine, will appear under Current Scenarios. Forecast scenarios use the date buckets specified in the active Time Bucket Rule. You can also set minimum rates (or floors) on any rule created for Currency, Economic, or Interest Rate. For example, if you want to run a -200bp rate scenario, with short term rates <2%, you can set the minimum rate to floor at 0%, although negative rates are allowed if desired.

The active currencies defined under Rate Management > Currencies, are listed under the Currency Codes section. The selection under Currency Codes defaults to the reporting currency when you are not forecasting exchange rates. The list of IRCs under the Interest Rate Codes section is dependent on the selected currency. The IRCs, including a reference IRC for each currency, are loaded from Rate Management. When you select a currency other than the reporting currency, the options under Currency Forecast Method provide several ways to model relationships between exchange rates and interest rates. See "Currency Forecast Methods" , page 22-3 for more information.

The Economic Indicators for all active indices are listed in the Economic Indicator section. These indices are not dependent upon the currency selected. Use these indicators to set up scenarios around changing economic conditions that will affect the forecast outcome of another variable. For example, if you forecast a higher GDP, you may have a scenario where new business volume is tied to that GDP outcome, which could be different than a lower GDP scenario. The Economic Indicators are created and maintained from Rate Management. See "Economic Indicator Forecast Methods" , page 22-9 for more information.

The IRCs for all active currencies (and reporting currencies, a subset of the active currencies) are listed under Interest Rate Codes. The options under Interest Rate Code Forecast Method provide several ways to model the effects on portfolio cash flows due to interest rate changes. See "Interest Rate Forecast Methods" , page 22-11 for more information.

Currency Forecast Methods

The following currency forecast methods are available when you select a currency

(other than the reporting currency) from the Currency Codes list.

Select	To
Flat	Forecast no change in the exchange rate for all dates beginning with the as-of date.
Structured Change	Forecast exchange rates as an incremental change from the previous period.
Direct Input	Type exchange rates to use in forecasting.
Parity *	Forecast the exchange rate between two currencies based on interest rate forecasts for the reference IRC associated with each of the currencies.
No Arbitrage *	Forecast the exchange rate required to maintain a no arbitrage condition between two currencies.

* *The above methods are available when the selected currency has an associated reference IRC as defined in Rate Management.*

Examples of Currency Forecasting

The examples below use the following data to demonstrate currency forecast methods:

- Reporting currency = U. S. dollars (USD is shown in the title bar)
- Local currency = Australian dollars – (converting from Australian dollars (AUD) to USD)
- Exchange rate loaded from Rate Manager = 1.108 AUD to 1 USD (rate in effect on the as-of date, 06/30/09)
- Modeling period = 07/01/2009 to 06/30/2010

To Begin: For all examples, begin by doing the following:

1. Create a new Forecast Rates assumption rule with USD as the reporting currency. (See "Creating Forecast Rates Assumption Rule", page 22-1)
2. In the Forecast Rates window, add (or rename) a scenario:
    1. Click Add (or Rename).

2. Type a name for the scenario.

3. Click Apply.

Flat Method: Calculate the exchange rate of Australian dollars to $1 U. S., modeling no change in the exchange rate during the modeling period.

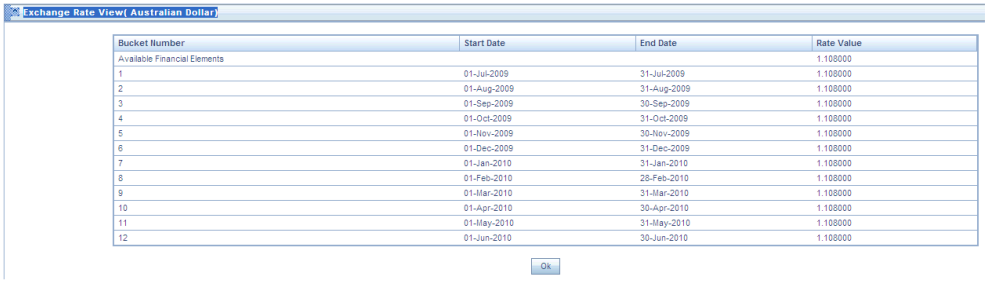
In the Forecast Rates window, do the following:

1. From Currency Codes, select AUD: Australian Dollar.

2. From Currency Forecast Method, click Flat.

3. Click View.

   Under Rate Value, you will see the exchange rate: $1.108 AUD s equal $1 USD. This rate is applied uniformly to all date buckets, based on the rate in effect at the as-of date in your Application Preferences.



4. Click OK.

5. At the bottom of the page, click Save.

Structured Change: Model a change in the exchange rate so that the rate increases by a total of 0.5% over four months, levels off for four months, and then drops a total of 0.25% over three months.

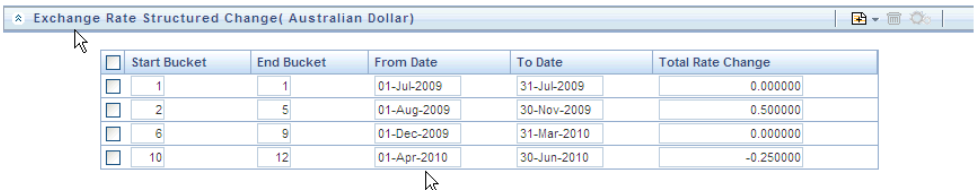
In the Forecast Rates window, do the following:

1. From Currency Codes, select AUD: Australian Dollar.

2. From Currency Forecast Method, select Structured Change.

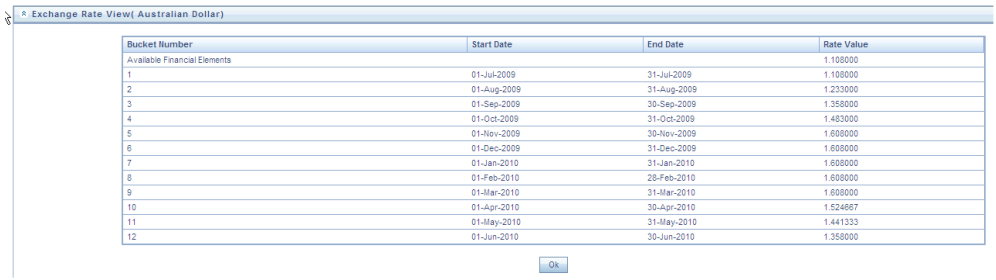
3. Click Define.

4. Add rows and type bucket numbers and rate changes as follows:



5. Click Apply.

6. Click View.



7. Click OK.

8. At the bottom of the page, click Save.

Direct Input: Model a change in the exchange rate so that rates reflect a stronger U. S. dollar during the spring of 2010.

In the Forecast Rates window, do the following:

1. From Currency Codes, select AUD: Australian Dollar.

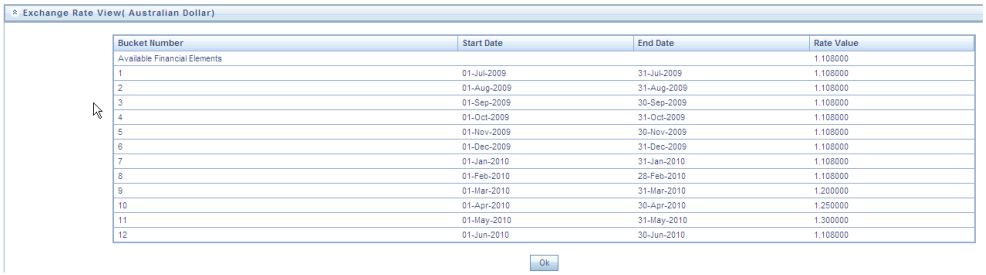
2. From Currency Forecast Method, select Direct Input.

3. Click Define.

4. Type rate values for the following dates:

5. Click Apply.

6. Click View to see the output table.



7. Click OK.

8. At the bottom of the page, click Save.

Parity: Model a period of rising interest rates for the U. S. and Australian dollars. Use the parity method to forecast the exchange rate of Australian dollars to $1 U. S. Parity is calculated based on the forecast interest rates of the reference IRCs of the Australian dollar and the U. S. dollar.

In the Forecast Rates window, forecast changes in the U. S. dollar interest rate:

1. From Currency Codes, select USD: US Dollar.

2. From Interest Rate Codes, select Treasury Index.

3. From Rate Forecast Method, click Direct Input.

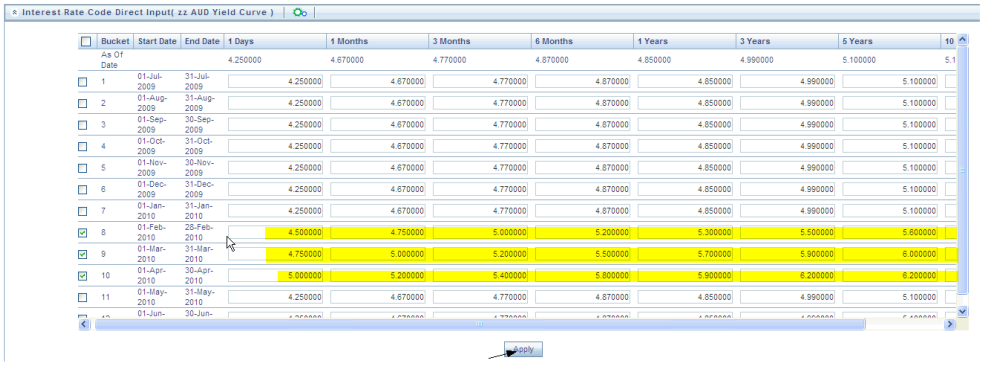
4. Click Define.

5. Type interest rate changes for 02/01/2010 through 04/30/2010 as follows:

6. Click Apply.

In the Forecast Rates window, forecast changes in the Australian dollar reference Interest rate:

1. From Currency Codes, select AUD: Australian Dollar.
2. From Interest Rate Codes, select IRC AUD.
3. From Rate Forecast Method, click Direct Input.
4. Click Define.
5. Type interest rate changes for 02/01/2010 through 04/30/2010 as follows:



6. Click Apply.
7. At the bottom of the page, click Save.

Note: The View button is not available for the parity feature. If you want to view results, enable the "forecast rate" option in the ALM process – Audit Block, for the relevant interest rate codes. Audit results

will be written to the FSI_INTEREST_RATES_AUDIT table.

No Arbitrage: Forecast the exchange rates required to maintain equilibrium between the U. S. and Australian dollars. The forecast is based on the historical interest rates from the reference IRC of each currency. This example assumes that the following reference IRCs have been assigned in Rate Management:

- U. S. dollar: Treasury Index
- Australian dollar: IRC AUD

In the Forecast Rates ID window, do the following:

1. From Currency Codes, select AUD: Australian Dollar.
2. From Currency Forecast Method, click No Arbitrage.
3. At the bottom of the page, click Save.

> **Note:** The View button is not available for the No Arbitrage feature. If you want to view results, enable the "forecast rate" option in the ALM process – Audit Block, for the relevant interest rate codes. Audit results will be written to the FSI_INTEREST_RATES_AUDIT table.

Economic Indicator Forecast Methods

The following Economic Indicator methods are available:

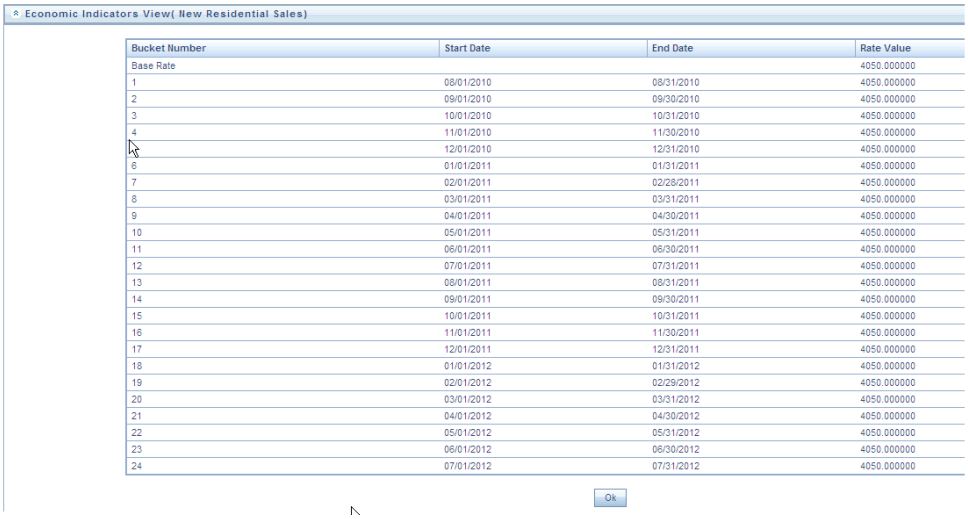
Select	To
Flat	Forecast no change in the economic index for all dates beginning with the as-of date.
Structured Change	Forecast the economic index as an incremental change from the previous period.
Direct Input	Type specific economic index rates to use in forecasting.

Examples of Economic Index Forecasting

As you follow the steps in the examples, substitute similar data at your site if this particular data is not available. See "To Begin", page 22-4 to set up the examples.

Flat: View an economic index forecasted for New Residential Sales.

1. From Currency Codes, select USD: US Dollar.
2. From Economic Indicators, select New Residential Sales.
3. From the Economic Indicator Forecast Method, click Flat.
4. Click View.



Bucket Number	Start Date	End Date	Rate Value
Base Rate			4050.000000
1	08/01/2010	08/31/2010	4050.000000
2	09/01/2010	09/30/2010	4050.000000
3	10/01/2010	10/31/2010	4050.000000
4	11/01/2010	11/30/2010	4050.000000
5	12/01/2010	12/31/2010	4050.000000
6	01/01/2011	01/31/2011	4050.000000
7	02/01/2011	02/28/2011	4050.000000
8	03/01/2011	03/31/2011	4050.000000
9	04/01/2011	04/30/2011	4050.000000
10	05/01/2011	05/31/2011	4050.000000
11	06/01/2011	06/30/2011	4050.000000
12	07/01/2011	07/31/2011	4050.000000
13	08/01/2011	08/31/2011	4050.000000
14	09/01/2011	09/30/2011	4050.000000
15	10/01/2011	10/31/2011	4050.000000
16	11/01/2011	11/30/2011	4050.000000
17	12/01/2011	12/31/2011	4050.000000
18	01/01/2012	01/31/2012	4050.000000
19	02/01/2012	02/29/2012	4050.000000
20	03/01/2012	03/31/2012	4050.000000
21	04/01/2012	04/30/2012	4050.000000
22	05/01/2012	05/31/2012	4050.000000
23	06/01/2012	06/30/2012	4050.000000
24	07/01/2012	07/31/2012	4050.000000

The Economic Indicator View window displays the rates forecasted for the New Residential Sales.

Structured Change: Model a gradual increase for six months in New Residential Sales.

1. From Currency Codes, select USD: US Dollar.
2. From Economic Indicators, select New Residential Sales.
3. From Rate Forecast Method, click Structured Change.
4. Click Define.
5. Type the following interest rate change:

Start Bucket	End Bucket	From Date	To Date	Total Rate Change
1	4	08/01/2010	11/30/2010	0.000000
5	10	12/01/2010	05/31/2011	150.000000

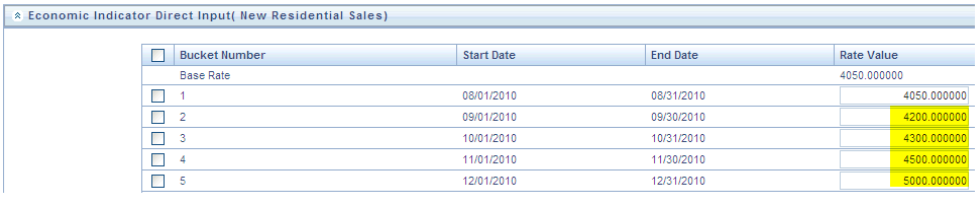
6. Click Apply.
7. Click View.

Bucket Number	Start Date	End Date	Rate Value
Base Rate			4050.000000
1	08/01/2010	08/31/2010	4050.000000
2	09/01/2010	09/30/2010	4050.000000
3	10/01/2010	10/31/2010	4050.000000
4	11/01/2010	11/30/2010	4050.000000
5	12/01/2010	12/31/2010	4075.000000
6	01/01/2011	01/31/2011	4100.000000
7	02/01/2011	02/28/2011	4125.000000
8	03/01/2011	03/31/2011	4150.000000
9	04/01/2011	04/30/2011	4175.000000
10	05/01/2011	05/31/2011	4200.000000
11	06/01/2011	06/30/2011	4200.000000

You can see the incremental increase over the six months (150 = 25 per mo * 6 months)

Direct Input: To use the Direct Input method, see Structured Change:, page 22-10 with the following modifications:

- In step 3, click Direct Input
- In step 5, type in New Residential Sales data (forecasted *values* for each bucket rather than forecasted values *changes* over a period of one or more buckets). See example below.



Bucket Number	Start Date	End Date	Rate Value
Base Rate			4050.000000
1	08/01/2010	08/31/2010	4050.000000
2	09/01/2010	09/30/2010	4200.000000
3	10/01/2010	10/31/2010	4300.000000
4	11/01/2010	11/30/2010	4500.000000
5	12/01/2010	12/31/2010	5000.000000

Interest Rate Forecast Methods

The following Interest Rate Forecast methods are available:

Select	To
Flat	Forecast no change in the interest rate for all dates beginning with the as-of date.

Select	To
Structured Change	Forecast rate changes, for any modeling period or interest rate term, such as: • +100 basis points on Day 1 • -200 basis points over the first 6 months • Yield curve rotation (short point decreasing, long point increasing)
Direct Input	Type interest rates directly, for any modeling period or interest rate term.
Implied Forward	Forecast interest rates based on the yield-curve interest rates in effect at the as-of date and consistent with the modeling bucket definitions.
Change from Base	Make incremental changes to an existing forecast scenario.
Yield Curve Twist	Flatten or steepen the yield curve around a specific point on the curve.

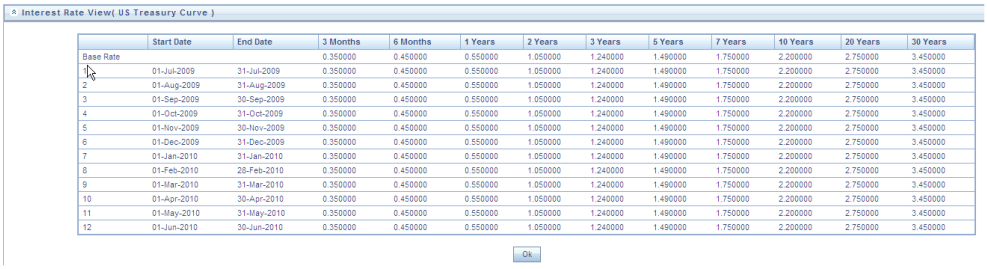
Examples of Interest Rate Forecasting

As you follow the steps in the examples, substitute similar data at your site if this particular data is not available. See "To Begin", page 22-4 to set up the examples.

Flat: View U. S. dollar interest rates forecasted for the Treasury Index.

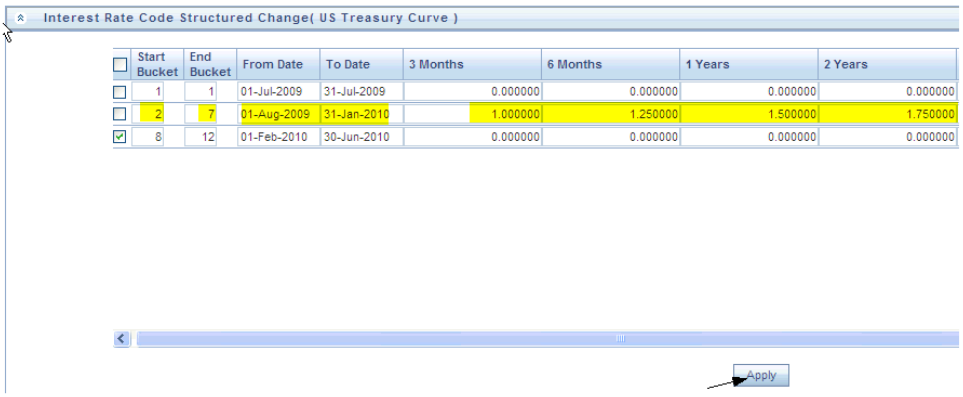
1. From Currency Codes, select USD: US Dollar.
2. From Interest Rate Codes, select US Treasury Curve.
3. From Rate Forecast Method, click Flat.
4. Click View.

   The Interest Rate View window displays the rates forecasted for the Treasury Index.



Structured Change: Model a gradual increase for six months in U. S. dollar interest rates.

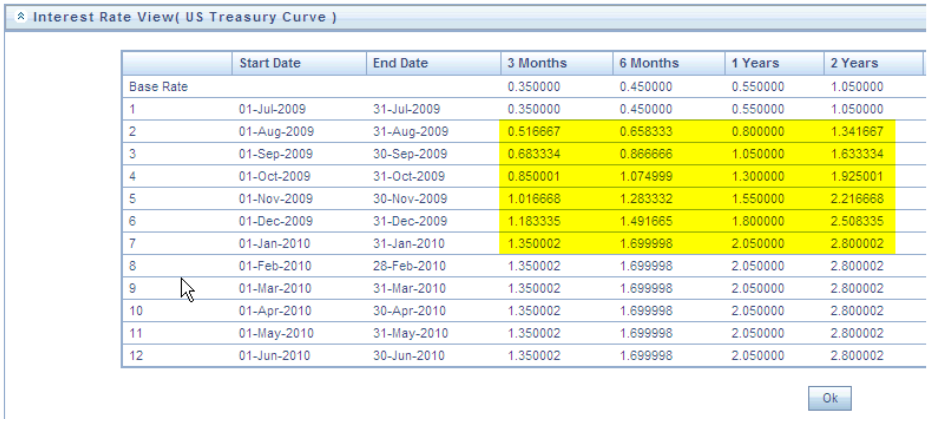
1. From Currency Codes, select USD: US Dollar.
2. From Interest Rate Codes, select US Treasury Curve.
3. From Rate Forecast Method, click Structured Change.
4. Click Define.
5. Type the following interest rate changes:



6. Click Apply.
7. Click View.
8. The rate increases you typed in step 5 are apportioned equally over six months in this case August to January. Therefore, in monthly buckets 2-7, you will expect to see the following increments added to the Treasury Index interest rates:

3 month	6 month	1 year	2 year
1/6 of 1.00 = 0.1667	1/6 of 1.25 = 0.2083	1/6 of 1.50 = 0.25	1/6 of 1.75 = 0.2917

The interest rates in buckets 2-7 reflect the increases.



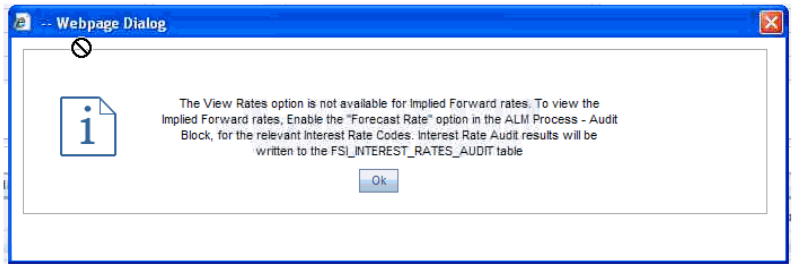
Direct Input: To use the Direct Input method, seeStructured Change:, page 22-10 with the following modifications:

- In step 3, click Direct Input
- In step 5, type interest rates (forecasted *rates* for each bucket rather than forecasted rate *changes* over a period of one or more buckets).

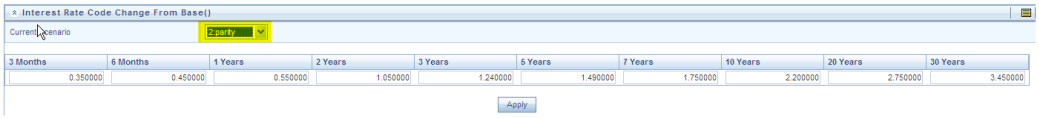
Implied Forward: View U. S. dollar interest rates forecasted from the Treasury Index rates and terms in effect at the as-of date and consistent with the modeling buckets.

1. From Currency Codes, select USD: US Dollar.
2. From Interest Rate Codes, select US Treasury Curve.
3. From Rate Forecast Method, click Implied Forward.

> **Note:** You will receive a warning message if you try to view the implied forward rates. If you would like to view the rates, follow the instructions on the message.

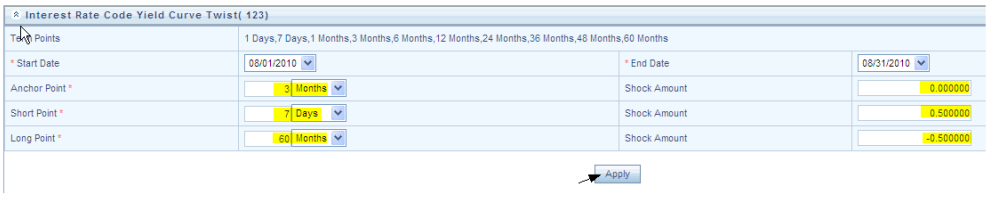


Change from Base: Select a forecast rates scenario that you have already defined and saved and change it by typing incremental changes to rates. For example, you might want to forecast for a scenario 1 based on incremental changes to the rates in scenario 2.



Yield Curve Twist: Set up a scenario to steepen or flatten a given yield curve.

1. From Currency Codes, select USD: US Dollar.
2. From Interest Rate Codes, select US Treasury Curve.
3. From Rate Forecast Method, click Yield Curve Twist.
4. Click Define.
5. Type the following interest rate changes (flattening the curve around the 3 month term point):



6. Click Apply.
7. Click View to see the results.

Data Loader Procedure

Stage Forecast Rate Loader procedure loads forecast rates definitions into OFSAA ALM

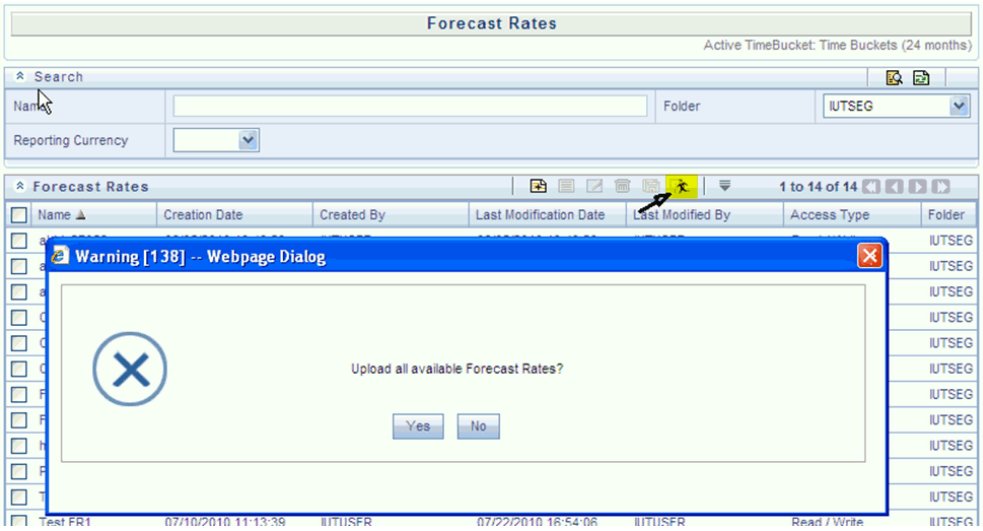
Forecast rates tables from staging tables. Forecast rate parameters for Direct Input and Structured Change methods within a scenario for exchange rates, interest rates and economic indicators are loaded from staging to the Financial Services Data Model. After loading the forecast rates, user can view the information in Forecast Rate Assumptions UI.

For information on how to set up the procedure, see *Oracle Financial Services Analytical Applications Data Model Utilities User Guide, Stage Forecast Rates Loader* .

Executing the Data Loader:

To execute the Data Loader Procedure:

1. Navigate to the Forecast Rates Main page.
2. Click the Data Loader Execution button on the action bar – This will execute all the available Forecast Rates set up in the data loader for Direct Input and Structured Change methods.
3. A warning message will appear: "Update all available Forecast Rates?"
4. Click "Yes"



23

Prepayment Rules

This module describes the procedure for working with and managing Prepayment rules.

This chapter covers the following topics:

- Overview of Prepayment Rules
- Creating Prepayment Rules
- Defining Prepayment Methodologies
- Defining Early Redemption Assumptions
- Associating Conditional Assumptions with Prepayment Rules

Overview of Prepayment Rules

Prepayment rules allow you to specify methodologies to model the loan prepayment and deposit early redemption behavior of products in your portfolio and quantify the associated prepayment risk in monetary terms. See: Defining Prepayments, page 12-25

The methodologies contained in the Prepayment rule are referenced by both Transfer Pricing and ALM Processes.

The procedure for working with and managing the Prepayment rule is similar to that of other Oracle Asset Liability Management business rules. It includes the following steps:

- Searching for Prepayment rules. See: Searching for Rules, page 13-4
- Creating Prepayment Rules, page 23-2
- Viewing and Editing Prepayment rules. See: Viewing and Updating Rules, page 13-6
- Copying Prepayment rules. See: Copying Rules, page 13-6
- Deleting Prepayment rules. See: Deleting Rules, page 13-7

As part of creating and updating Prepayment rules, you can also define prepayment methodologies for all relevant product / currency combinations. See:

- Defining Prepayment Methodologies, page 23-3
- Defining the Constant Prepayment Method, page 23-8
- Defining the Prepayment Model Method, page 23-9
- Defining the PSA Method, page 23-11
- Defining the Arctangent Calculation Method, page 23-12
- Associating Conditional Assumptions with Prepayment Rules, page 23-15

Oracle Asset Liability Management provides you with the option to copy, in total or selectively, the product assumptions contained within the Prepayment rules from one currency to another currency or a set of currencies or from one product to another product or a set of products. See: Copying Assumptions Across Currencies and Products, page 21-17

Related Topics

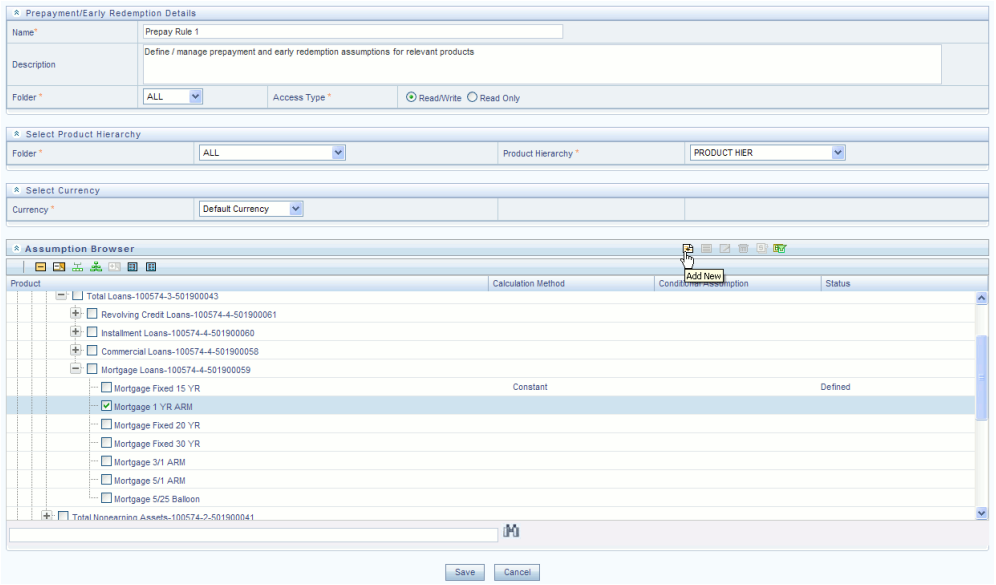
Standard Navigation Paths, page A-1

Creating Prepayment Rules

You create a Prepayment rule to define prepayment assumptions for new products.

Procedure:

1. Navigate to the Prepayment rule summary page.
2. Complete standard steps for this procedure. See: Creating Rules, page 13-5



Important: In addition to the standard steps for creating rules, the procedure for creating a Prepayment rule involves one extra step. After Standard Step 6, you can select a product hierarchy. You can define methodologies at any level of the hierarchical product dimension. The hierarchical relationship between the nodes allows inheritance of methodologies from parent nodes to child nodes.

Related Topics

Overview of Prepayment Rules, page 23-1

Standard Navigation Paths, page A-1

Defining Prepayment Methodologies

The assignment of prepayment assumptions is part of the Create or Edit Prepayment rule process where assumptions about loan prepayments or deposit early redemptions are made for product-currency combinations. When you click Save in the Create Prepayment rules process, the rule is saved and the Prepayment rule Summary page is displayed. However, prepayment assumptions have not yet been defined for any of your products at this point. Typically, you would start defining your prepayment assumptions for product-currency combinations before clicking Save.

The Prepayment rule supports definition of prepayment assumptions for combinations of two dimensions: Product and Currency.

Once you have created a Prepayment rule, you can assign prepayment methodologies to product-currency combinations in either of the following two ways:

- By creating a conditional assumption using conditional logic. See: Associating Conditional Assumptions with Prepayment Rules, page 23-15
- Directly on the Prepayment methodology page, as described here.

Defining Prepayments Using Node Level Assumptions

Node Level Assumptions allow you to define assumptions at any level of the Product dimension Hierarchy. The Product dimension supports a hierarchical representation of your chart of accounts, so you can take advantage of the parent-child relationships defined for the various nodes of your product hierarchies while defining rules. Children of parent nodes on a hierarchy automatically inherit the assumptions defined for the parent nodes. However, assumptions directly defined for a child take precedence over those at the parent level.

Prerequisites

Performing basic steps for creating or editing a Prepayment rule, page 23-2

Procedure:

This table describes key terms used for this procedure.

Selected Terminology

Term	Description
Calculation Method	The method used to model prepayment behavior of instruments. Oracle Asset Liability Management provides four prepayment calculation methods: Constant, Prepayment Model, PSA, and Arctangent.

Term	Description
Cash Flow Treatment	Allows you to specify one of the following two ways in which prepayments are made. • **Refinance**: This is the most commonly used option. Select refinance to keep payment amounts after prepayment consistent with a portfolio-based assumption. This reduces the scheduled payment amount on each loan and maintains the same maturity term. • **Curtailment**: Select curtailment to change the periodic payment amounts due. The prepayments are treated as accelerated payments, with a payoff earlier than the originally scheduled term.
Market Rate	The market rate is defined as the sum of the Index (the yield curve rate as described by the Interest Rate Code) and the Spread (the difference between the customer rate and market rate).
Associated Term	Allows you to define the term for the point on the yield curve selected in the Market Rate definition that will be used in obtaining the market rate. • **Remaining Term:** The number of months remaining until the instrument matures. • **Reprice Frequency:** The frequency with which the instrument reprices. This defaults to the original term for a fixed rate instrument. • **Original Term:** The number of months that was the originally scheduled life of the instrument.

Term	Description
Prepayment Rate Definition	This table allows you to specify constant annual prepayment rate, or the associated factors, that you want to apply to the instruments having origination dates in a particular date range.
Seasonality	This table allows you to specify seasonality adjustments. Seasonality refers to changes in prepayments that occur predictably at given times of the year. Seasonality adjustments are based on financial histories and experiences, and should be modeled when you expect the amount of prepayments made for certain types of instruments to increase or decrease in certain months. The default value for seasonality factors is 1, which indicates that no seasonality adjustment is made for a month. Changing the seasonality factors is optional. You can change the seasonality factors for none, one, or multiple months. To make seasonality adjustments, you need to enter a value between 0.00 and 99.9999 for the seasonality factors associated with each month. Seasonality factors less than 1 mean that prepayments are decreased for a particular month. Seasonality factors greater than 1 indicate that prepayments are increased for a particular month.

1. Navigate to the Prepayment assumption details page by selecting a currency and one or more products from the hierarchy.

2. Select a Calculation Method, Constant, Prepayment Model, PSA , or Arctangent.

   Note: The default value for the Calculation Method drop down list is Constant. If you select "Do not calculate" as the calculation method, no prepayment assumptions will be assigned to the particular product-currency combination. This is a particularly useful option when using node level assumptions because it allows you to exclude a particular child from inheriting a parent

assumption.

3. Select a Cash Flow Treatment type, Refinance or Curtailment.

   Note: Refinance is the most commonly used method.

4. Define the parameters and annual prepayment rates for the selected calculation method: Constant, Prepayment Model, PSA or Arctangent.

   Important: The parameters displayed on the Prepayment methodology page vary depending on the calculation method (Constant, Prepayment Model, PSA or Arctangent) that you have selected. See:

   - Defining the Constant Prepayment Method, page 23-8
   - Defining the Prepayment Model Method, page 23-9
   - Defining the PSA Method, page 23-11
   - Defining the Arctangent Calculation Method, page 23-12

5. Click Apply.

   The assumption browser definition page is displayed.

   At this point you can:

   - Continue defining additional methodologies for other product-currency combinations by repeating the above procedure.
   - Complete the process by clicking Save.

     Note: When you click Save, the prepayment assumptions are saved and the Prepayment rule summary page is displayed.

Note: Oracle Asset Liability Management provides you with the option to copy, in total or selectively, the product assumptions contained within the Prepayment rules from one currency to another currency or a set of currencies or from one product to another product or set of products. See: Copying Assumptions Across Currencies and Products, page 21-17

Related Topics

Prepayment Methodologies and Rules, page 12-25

Copying Assumptions Across Currencies and Products, page 21-17

Overview of Prepayment Rules, page 23-1

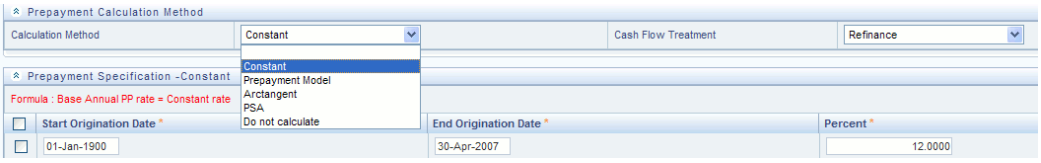
Standard Navigation Paths, page A-1

Defining the Constant Prepayment Method

Use this procedure to define prepayment assumptions using the Constant Prepayment method.

Prerequisites

Performing basic steps for creating or updating a Prepayment rule, page 23-2



Procedure:

1. Select the Start Origination Date using the date picker. Alternatively, you can enter the Start Origination Date in the space provided.

   Note: The first cell in the Start Origination Date column and all of the cells in the End Origination Date column are read only. This ensures that all possible origination dates have supporting reference values when Prepayment assumption lookups occur. Each row in the End Origination Date column is filled in by the system when you click Add Row or save the rule.

   The first Start Origination Date (in row 1) has a default value of January 1, 1900. When you enter a Start Origination Date in the

next row, the system inserts a date that is a day prior to the previous End Origination Date field.

2. Enter the annual prepayment rate percent that you want to apply to the instruments having origination dates in a particular Start Origination-End Origination Date range.

   Note: The Percent column represents the actual annualized prepayment percentage that the system uses to generate the principal runoff during the cash flow calculations.

3. Click Add Row to add additional rows and click the corresponding Delete icon to delete a row.

   You can add as many rows in this table as you require. However you need to enter relevant parameters for each new row.

4. Define Seasonality assumptions as required to model date specific adjustments to the annual prepayment rate. Inputs act as multiplier, e.g. an input of 2 will double the prepayment rate in the indicated month.

Related Topics

Constant Prepayment Method, page 12-25

Defining Prepayment Methodologies, page 23-3

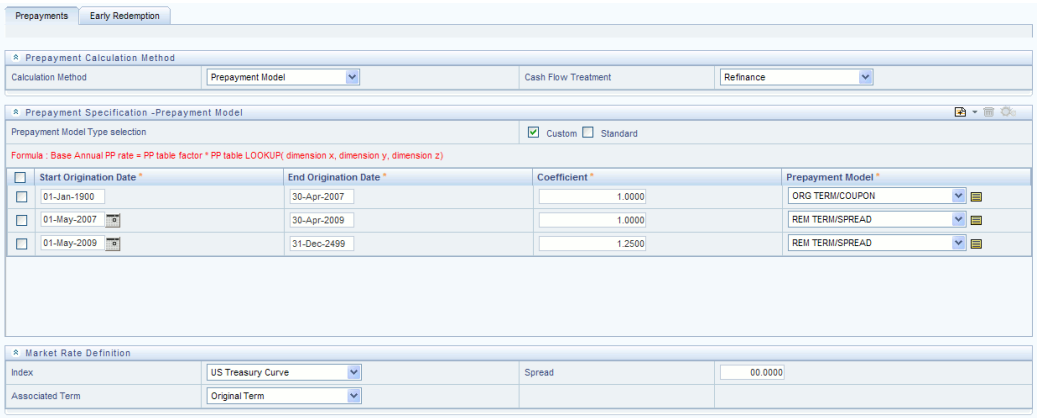
Standard Navigation Paths, page A-1

Defining the Prepayment Model Method

Use this procedure to define prepayment assumptions using the Prepayment Model Calculation method.

Prerequisites

- Performing basic steps for creating or updating a Prepayment rule, page 23-2
- Creating Prepayment Model rule, page 24-2



Procedure:

1. Define the source for the Market Rate by Selecting an Index (Interest Rate Code) from the list of values.

2. Enter the Spread.

   The spread is added to the rate from the underlying interest rate curve to determine the market rate.

3. Select an Associated Term: Remaining Term, Reprice Frequency, or Original Term.

4. Specify the Prepayment Model parameters.

   - Select the Start Origination Date using the date picker. Alternatively, you can enter the Start Origination Date in the space provided.

   - Enter the Coefficient (if needed) by which the Prepayment Rate should be multiplied.

     This multiple is applied to the instruments for which the origination date lies in the range defined in the Start Origination Date-End Origination Date fields.

   - Select a predefined prepayment model from the Prepayment model Rule list of values. Click the View Details icon to preview the selected Prepayment Model.

     The system uses the prepayment model assumptions to calculate the prepayment amounts for each period. You need to associate a prepayment model for every Start Origination-End Origination Date range.

   - Click Add Another Row to add additional rows and click the corresponding Delete to delete a row.

     You can add as many rows in this model as you require. However you need to enter relevant parameters for each new row.

5. Define Seasonality assumptions as required to model date specific adjustments to the annual prepayment rate. Inputs act as multiplier, e.g. an input of 2 will double the prepayment rate in the indicated month.

Related Topics

Prepayment Model Method, page 12-26

Prepayment Model Rules, page 23-9

Defining Prepayment Methodologies, page 23-3

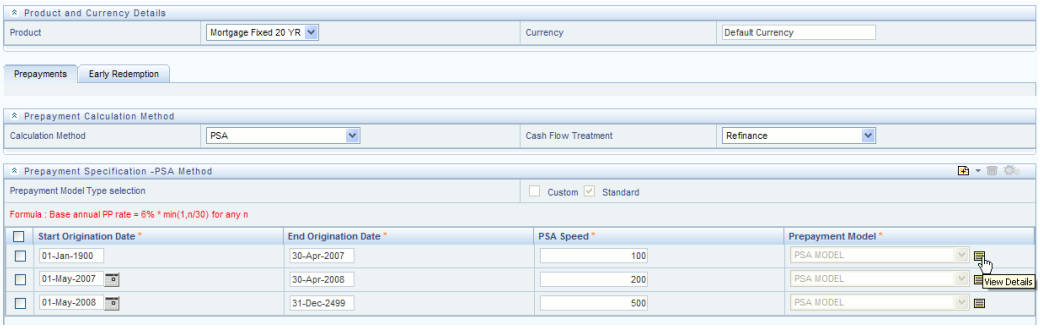
Standard Navigation Paths, page A-1

Defining the PSA Prepayment Method

Use this procedure to define prepayment assumptions using the PSA Prepayment method.

Prerequisites

Performing basic steps for creating or updating a Prepayment rule, page 23-2



Procedure:

1. Select the Start Origination Date using the date picker. Alternatively, you can enter the Start Origination Date in the space provided.

   Note: The first cell in the Start Origination Date column and all of the cells in the End Origination Date column are read only. This ensures that all possible origination dates have supporting reference values when Prepayment assumption lookups occur. Each row in the End Origination Date column is filled in by the system when you click Add Row or save the rule.

   The first Start Origination Date (in row 1) has a default value of January 1, 1900. When you enter a Start Origination Date in the next row, the system inserts a date

that is a day prior to the previous End Origination Date field.

2. Enter the PSA speed that you want to apply to the instruments having origination dates in a particular Start Origination-End Origination Date range. The PSA method is based on a standard PSA curve. You can view the seeded model by selecting the View Details icon.

   Note: The default value is 100 PSA and inputs can range from 0 to 1667.

3. Click Add Row to add additional rows and click the corresponding Delete icon to delete a row. You can add as many rows in this table as you require. However you need to enter relevant parameters for each new row.

4. Define Seasonality assumptions as required to model date specific adjustments to the annual prepayment rate. Inputs act as a multiplier, e.g. an input of 2 will double the prepayment rate in the indicated month.

Related Topics

Constant Prepayment Method, page 12-25

Defining Prepayment Methodologies, page 23-3

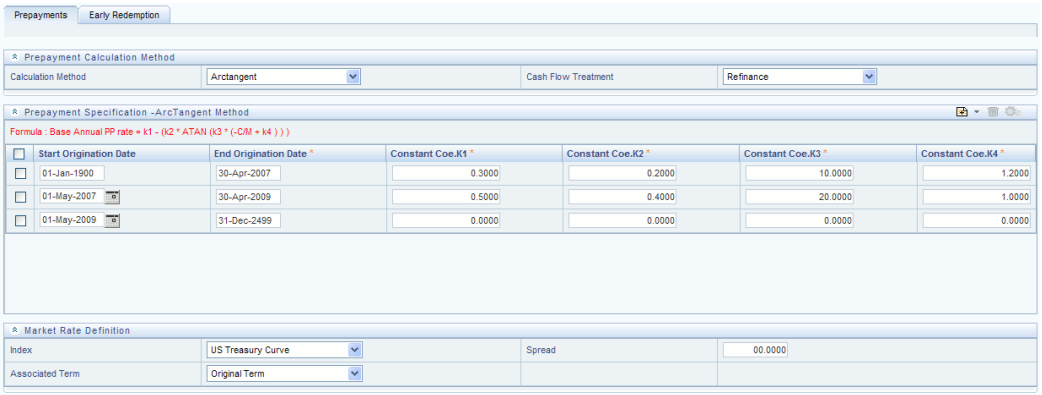
Standard Navigation Paths, page A-1

Defining the Arctangent Calculation Method

Use this procedure to define prepayment assumptions using the Arctangent Calculation method.

Prerequisites

Performing basic steps for creating or updating a Prepayment rule, page 23-2



Procedure:

1. Define the source for the Market Rate by Selecting an Index (Interest Rate Code) from the list of values.

2. Enter the Spread.

   The spread is added to the rate from the underlying interest rate curve to determine the market rate.

3. Select an Associated Term: Original Term, Reprice Frequency, or Remaining Term.

4. Specify the Arctangent Argument table parameters.

5. Select the Start Origination Date using the date picker. Alternatively, you can enter the Start Origination Date in the space provided.

6. Enter the values for the Arctangent parameters (columns K1 through K4) for each Start Origination Date in the table. The valid range for each parameter is -99.9999 to 99.9999.

7. Click Add Another Row to add additional rows and click the corresponding Delete to delete a row.

   You can add as many rows in this table as you require. However you need to enter relevant parameters for each new row.

8. Define the Seasonality assumptions as required to model date specific adjustments to the annual prepayment rate. Inputs act as multiplier, e.g. an input of 2 will double the prepayment rate in the indicated month.

Related Topics

Arctangent Calculation Method, page 12-29

Defining Prepayment Methodologies, page 23-3

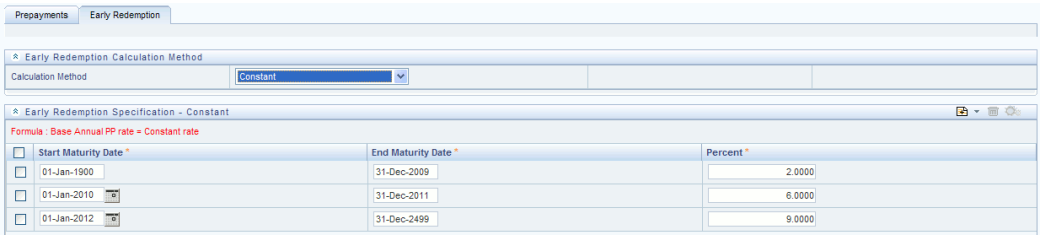
Standard Navigation Paths, page A-1

Defining Early Redemption Assumptions

If you are working with deposit products, it is possible to define Early Redemption assumptions within the Prepayment Rule. While defining assumptions, the Prepayment rule will consider whether or not the product is an asset or liability (based on the account type attribute defined in dimension member management). If the product is an asset, then the Prepayments tab will be active in the prepayment assumption detail page. If the product is a liability, then the Early Redemption tab will be active.

Prerequisites

- Performing basic steps for creating or updating a Prepayment rule, page 23-2
- To define Early Redemption assumptions, the account type for the selected product must be a Liability



Procedure:

The procedure for defining Early Redemptions is the same as noted above for prepayments, with two exceptions:

- The list of Calculation Methods is limited to Constant and Prepayment Models
- The range definitions are based on Maturity Date ranges of the instruments rather than Origination Date ranges

Related Topics

Constant Prepayment Method, page 12-25

Defining Prepayment Methodologies, page 23-3

Standard Navigation Path, page A-1

Associating Conditional Assumptions with Prepayment Rules

Oracle Asset Liability Management enhances the setup and maintenance of methodologies by providing conditional logic (optional) to assign prepayment methods to combinations of products and currencies.

You can define prepayment methodologies using IF-THEN-ELSE logic based on the underlying characteristics of your financial instruments, such as dates, rates, balances, and code values.

In addition, Conditional Assumptions can be attached to any level of the Product hierarchy, allowing assumptions to be inherited from parent nodes by child nodes. Oracle ALM provides a set of user interfaces specially designed to easily build Conditional Assumptions. The logic included in a Conditional Assumption drives the specific Prepayment method that the system would assign to a product-currency combination at run time.

For example, you can use the maturity date column on the commercial loans table to drive the assignment of Prepayment Methods for all the records in that table. You can create one Conditional Assumption to convey the entire Prepayment Assumption logic and attach it to the top-level node of the Product Dimension hierarchy representing the commercial loan portfolio. All nodes below the top-level node will inherit the same Prepayment assumption.

The Conditional Assumption logic builder allows users to specify explicit conditions and apply method and rule selections to each block of conditional logic directly. The following table displays a representative Conditional Assumption:

Product Attribute	Operator	Value	Operator	Value	Prepay Method
Repricing Frequency	>	0	<=	6	CPR
Repricing Frequency	>	6	<=	24	Prepay Model

If an instrument record does not meet any of the conditions, then the rule logic reverts back to the standard assumption that is directly assigned to the Product / Currency combination. If there is no direct assignment, then the ALM engine will work up through the parent / child hierarchy to locate a node level assumption.

Conditional Assumptions can be applied only on detailed accounts (data stored in the Instrument Tables) and reference only the Cash Flow and Dimension columns that are part of the Instrument Tables. Conditional Assumptions are ignored when processing forecast balances.

Related Topics

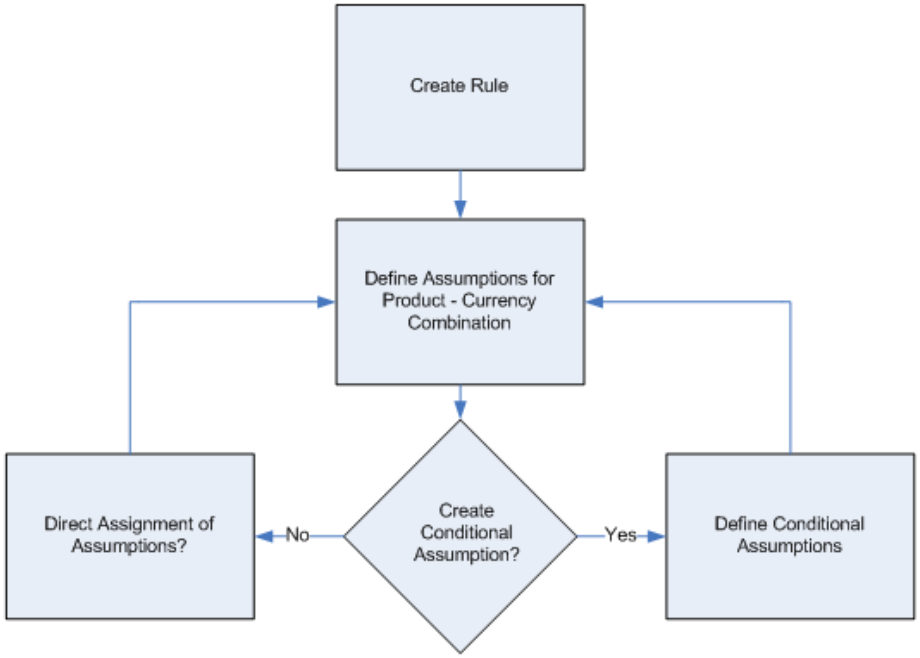
Defining Prepayments, page 12-25

Creating Prepayment Rules, page 23-2

Availability of Conditional Assumptions

Conditional Assumptions cannot exist independently; they are an extension of Prepayment Rules.

To define a Conditional Assumption, you need to complete a series of steps beforehand. The following diagram displays, at a high level, how the Conditional Assumptions functionality fits with the overall rule definition process of a Prepayment rule.



Assigning Conditional Assumptions is a sub-process within the Create or Edit Flow of Prepayment rules. Once you create a Rule, you have two options for defining your Prepayment assumptions for a product-currency combination.

- Direct assignment of a prepayment assumption to a product-currency combination.

  This is the conventional method. See: Creating Prepayment Rules, page 23-2and Defining Prepayment Methodologies, page 23-3

- Assignment of the assumption through a Conditional Assumption.

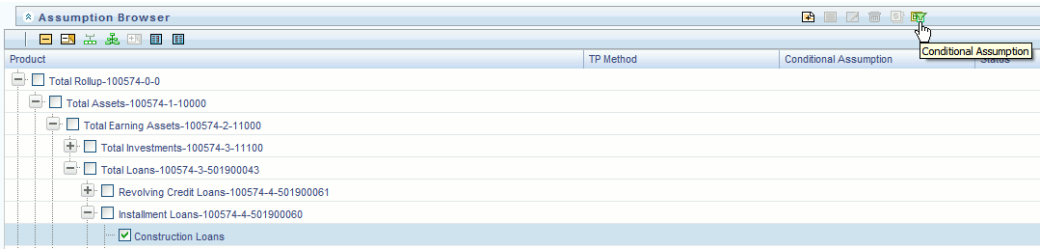
  In this scenario, you would define Conditional logic that will determine the Prepayment Methodology for product-currency combinations. Note, the direct assignment discussed above, represents the "ELSE" condition of the conditional assumption, so it is likely that you will define assumptions for both the condition and also for the Product-Currency directly.

Structure of Conditional Assumptions

A Conditional Assumption comprises explicit logical conditions defined to focus on specific attributes of the instrument data records. Any Instrument Table attribute that comprises the "Portfolio" set of common attributes can be selected for inclusion in Conditional Assumption logic.

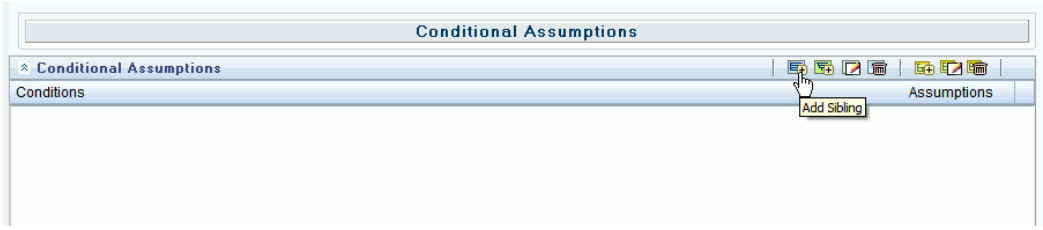
Accessing the Conditional Assumption definition screen

To define or edit a Conditional Assumption, make a Parent/Child selection from the Product Hierarchy within a supported business rule type and select the Conditional Assumption definition icon.



Defining the Conditions

Begin by selecting the "Add Sibling" option.



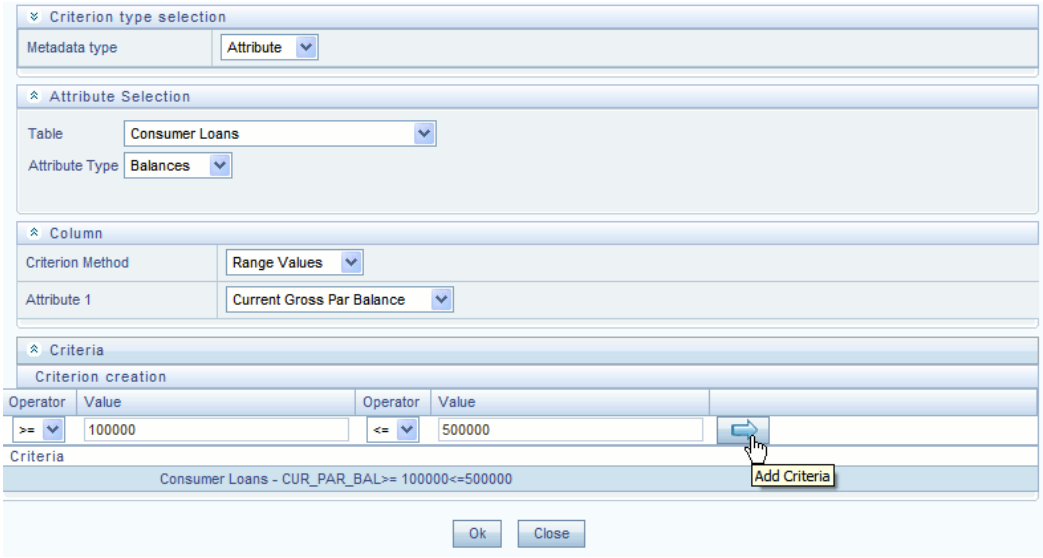
Select the Condition attributes.

Metadata type provides two options

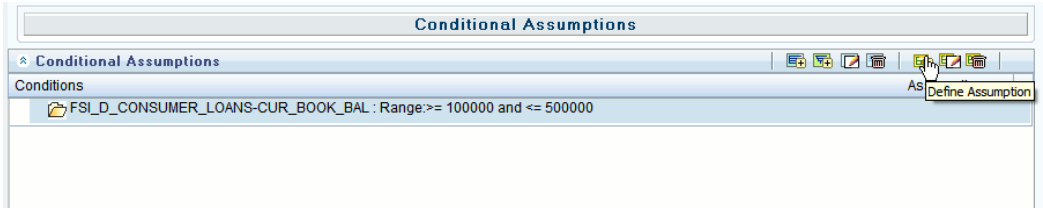
- Attribute
- Hierarchy

Attribute type provides access to logical groups of attributes including

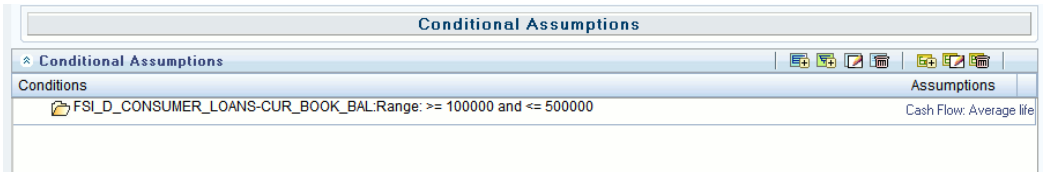
- Balances
- Dates
- Rates
- Numeric Values
- Dimensions



Add an Assumption to the Condition

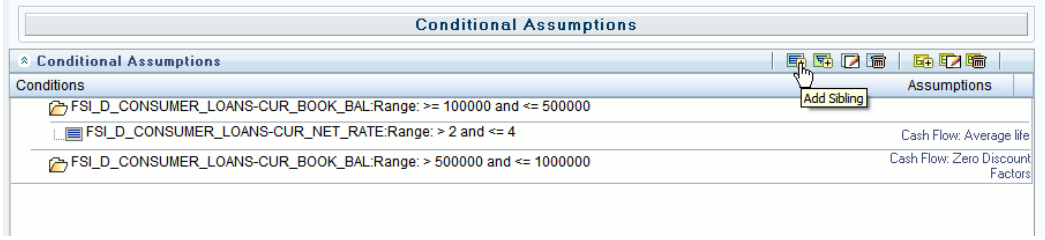


After defining the Assumption, the Condition screen indicates the selected method



Continue adding Conditions. You can continue to add Sibling level conditions ("OR" conditions) or children ("AND" conditions) below the initial condition definition.

Assumptions are required for each sibling or for each combination of sibling and child.



When the Engine is processing Instrument records, If any of the conditions are met ("IF" condition), then the applicable Assumption is applied to the Instrument ("THEN" condition). If the Conditions are not met ("ELSE" condition), then the Engine will refer to the base Assumption defined for the Product / Currency combination.

24

Prepayment Models

This module describes the procedure to build prepayment models using Prepayment Model Rules.

This chapter covers the following topics:

- Overview of Prepayment Models
- Creating Prepayment Models
- Editing Prepayment Models
- Editing Prepayment Rates in a Prepayment Model
- Prepayment Rate Data Loader

Overview of Prepayment Models

The Prepayment Model rule allows you to build custom prepayment models. These prepayment models can be referenced by a Prepayment Rule to model prepayment behavior of instruments based on a range of instrument level attributes. See: Prepayment Model Method, page 12-26 and Prepayment Rules, page 23-1

The procedure for working with and managing Prepayment Models is similar to that of other Oracle Asset Liability Management business rules. It includes the following steps:

- Searching for Prepayment Models. See: Searching for Rules, page 13-4
- Creating Prepayment Models, page 24-2
- Viewing and Editing Prepayment Models. See:
  - Viewing and Editing Rules, page 13-6
  - Editing Prepayment Models, page 24-7
- Copying Prepayment Models. See: Copying Rules, page 13-6

- Deleting Prepayment Models. See: Deleting Rules, page 13-7
- Loading Prepayment Models through a staging table. See: Using seeded data loaders page , page 24-9

Related Topics

Standard Navigation Paths, page A-1

Creating Prepayment Models

Creating a Prepayment Model comprises the following sub procedures:

- Creating Prepayment Models, page 24-2
- Defining the structure of the prepayment model, page 24-4
- Assigning Node Values, page 24-5

Procedure to create a Prepayment Model:

This table describes key terms used for this procedure.

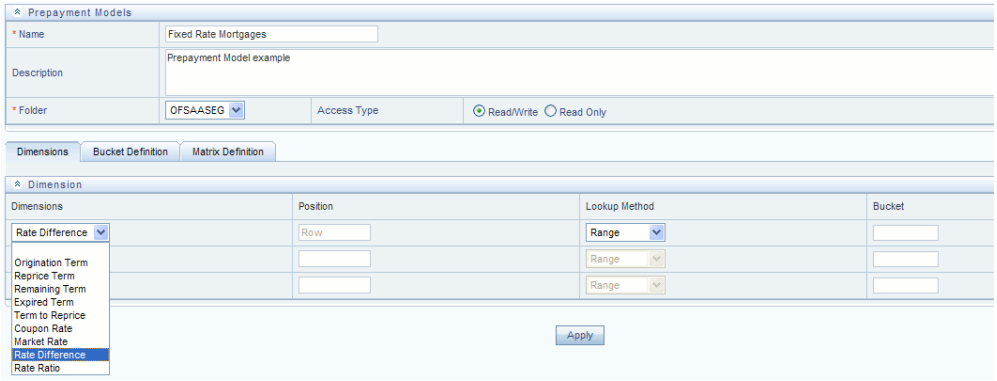
Selected Terminology

Term	Description
Dimension	Influences the prepayment behavior of an instrument. You can build a prepayment model using up to three prepayment dimensions. Each dimension maps to an attribute of the underlying transaction (e.g. age/term or rate, etc.) so the cash flow engine can apply a different prepayment rate based on the specific characteristics of the record.

Term	Description
Lookup method	Used to calculate prepayment rates for the prepayment dimension values that do not fall exactly on the defined prepayment dimension nodes. Oracle Asset Liability Management offers the following lookup methods: • **Interpolation:** Under this method, the prepayment rates are determined by calculating an exact value on an axis. This method assumes that prepayment speeds change on a straight-line basis between the two nodes and calculates accordingly. • **Range:** Under this method, the prepayment rates are determined by calculating a range of values on an axis. This method assumes that the prepayment speed will remain the same for the entire range. The following example explains the differences between these two lookup methods. The following lists show the age and corresponding prepayment rates of instruments. **Age** • 12 • 24 • 36 • 60 **Prepayment Rates** • 5 • 10 • 15 • 20 Under the Interpolation method, the

Term	Description
	prepayment speeds increase gradually. In this example, the Interpolated prepayment rate of an instrument aged 30 months is 12.5%. This is exactly halfway between the 10% and 15% rate. However, under the Range method, the Prepayment speeds increase in steps. Using the Range method, the prepayment rate is 10%, as this rate percentage would apply to the range from 24 months to 35.9999 months.
Nodes	Exact points for each dimension where attribute information has been defined.

1. Navigate to the Prepayment Model summary page.
2. Complete standard steps for this procedure. See: Creating Rules, page 13-5



Procedure to Define the Structure of the Prepayment Model

The Prepayment Model consists of the Prepayment Dimensions and the Bucket Values for these Dimensions which you select on this page. To define the prepayment model structure, you can select a maximum of three prepayment dimensions. Once the dimensions and the number of buckets (tiers) are defined, you need to assign values to the buckets.

> **Note:** You can use the analogy of a three dimensional table to understand how to deal with the prepayment dimensions. The first dimension you select would resemble the row (X-axis). The second dimension would act as the column (Y-axis). The final third dimension will be the page (Z-axis).

3. Select the first Dimension.

4. Select a lookup method for that Dimension.

5. Enter the number of Buckets for the Dimension.

   This number may vary from dimension to dimension.

6. If required, repeat the previous three steps for up to two additional Dimensions.

   Important: There are certain restrictions while defining Dimensions:

   - You must select the Dimension type for a row and define the values for that dimension.

   - You cannot define the second (row) dimension until you have defined the first (row) dimension. Similarly, the third dimension cannot be defined until you have defined the first two dimensions.

7. Click Apply.

   The Define Dimensions page is refreshed. You can now assign the bucket values for each dimension. At this point, you can also modify the structure of the table, if required.

   Modifying the Table Structure

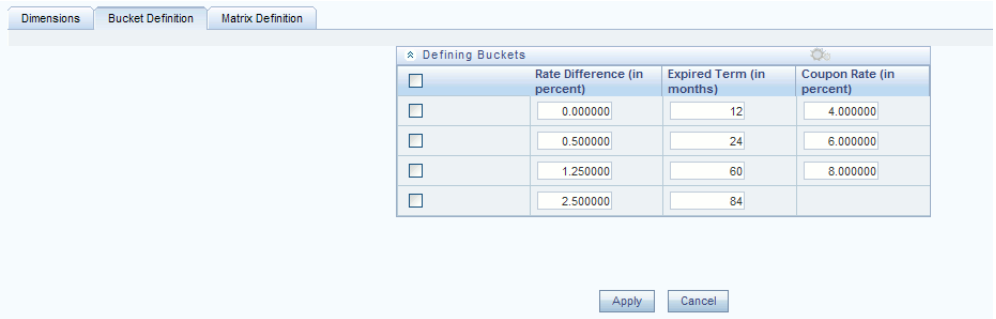
   - To add more buckets to a particular Dimension, update the number of buckets for the Dimension and click Apply.

   - To delete buckets from a particular Dimension, reduce the number of buckets to the desired value and click Apply.

     Note: To change the lookup method of a particular Dimension, select the required method from the corresponding list of methods from the Dimensions tab.

Procedure to Assign Bucket Values

8. Assign values for each of the buckets.

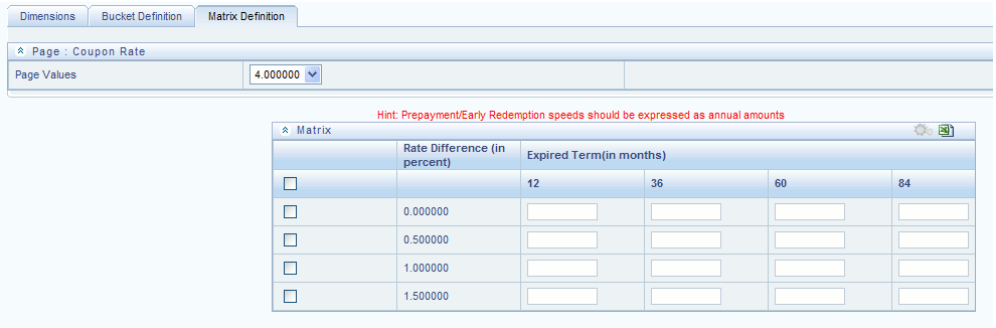


9. Click Apply.

   The Prepayment Model, Prepayment Dimensions, and Buckets are saved.

10. Enter the Prepayment Rates in the Prepayment Model.

    Bucket values for the row and column dimensions are displayed as a table, while the bucket values for the page dimensions (if selected) are shown in the drop down list.



11. Repeat the process for all bucket values of the page driver. To change the bucket value along the page driver, select the required value from the drop-down list.

    Note: Bucket values will be displayed in the drop-down list only if you selected three drivers.

12. Click Apply. The Prepayment Rates are saved and the Prepayment Model Rule summary page is displayed.

Related Topics

Prepayment Model Method, page 12-26

Standard Navigation Paths, page A-1

Overview of Prepayment Model Rules, page 24-1

Editing Prepayment Models

As part of editing Prepayment models, you can modify Prepayment rates and the structure of the Prepayment Model. You can also modify the lookup methods (Range or Interpolation), the number of Buckets, and the actual values of the Buckets. However, if you update the dimensions your previously entered prepayment rate data may be lost.

Prerequisites

- ❒ Predefined Prepayment Models.

Procedure:

1. Search for the Prepayment Model, which you want to edit. See: Searching for Rules, page 13-4.
2. Select the check box next to the Prepayment Model and select the Edit icon.

   The Prepayment Model will open in Edit mode.

Procedure to Update Rates

1. Modify the Prepayment Rates in the table as required. See Editing Prepayment Rates in a Prepayment Model,

Procedure to Update Dimensions Values

1. Click Update Dimensions Values.

   The Update Dimensions page is displayed.
2. Update the structure as required.
   - To add more Nodes to a particular Dimension, update the number of Nodes for the Dimension and click Go.
   - To delete Nodes from a particular Dimension, click the delete icon corresponding to the Node.

     Note: Nodes cannot be deleted by reducing their numbers. Also, all Nodes cannot be deleted and at least one Node must exist in each Dimension.

   - To change the method of a particular Dimension, select the required method from the corresponding list.

- To change the value of a Node, update the value in the corresponding field.

3. Click Apply.

   The Prepayment Model summary page is displayed.

Related Topics

Prepayment Model Method, page 12-26

Standard Navigation Paths, page A-1

Overview of Prepayment Model Rules, page 24-1

Editing Prepayment Rates in a Prepayment Model

Once the basic structure of the prepayment model has been created, prepayment rates can be added to, or modified for, each of the bucket values along the chosen dimensions. Use this procedure to add or edit annual prepayment rates in the prepayment model.

Procedure:

1. Search for the Prepayment Model, for which you want to define prepayment rates. See: Searching for Rules, page 13-4

2. Select the check box next to the Prepayment Model and select the Edit icon.

   The Prepayment rate input page is displayed.

3. Enter the Prepayment Rates in the Prepayment Model for the required dimensions.

   Node values for the row and column dimension are displayed as a table on the Prepayment rate input, while the node values for page dimension (if selected) are shown in the drop down list.

4. Repeat the process for all node values of the page dimension. To change the node value along the page dimension, select the required node value from the drop-down list.

   Note: Node values will be displayed in the drop-down list only if you selected three dimensions. If prepayment rates are left blank for any of the dimensions, prepayment rates are assumed to be zero.

5. Click Apply.

   The table with updated prepayment rates is saved.

6. Click Save.

   All updates to the Prepayment Model are saved and the Prepayment Model summary page is displayed.

Related Topics

Prepayment Model Method, page 12-26

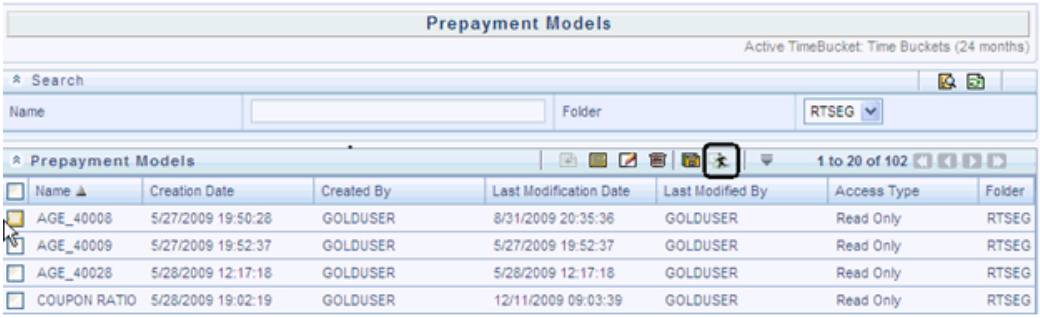
Standard Navigation Paths, page A-1

Overview of Prepayment Model Rules, page 24-1

Prepayment Rate Data Loader

The Prepayment Rate Loader procedure populates prepayment model rates in OFSAA metadata tables from staging tables. This loader program can be used to update the prepayment model rates on a periodic basis. For more information on setting up the automated process, see *Oracle Financial Services Analytical Applications Data Model Utilities User Guide*.

To execute the Data loader process, click the Data Loader icon on the Prepayment Models rule bar. The process will load all of the data included in the staging tables as defined in the Data Model Utilities User Guide.



25

Discount Methods

This module describes the procedure for working with and managing Discount Method rules.

This chapter covers the following topics:

- Overview of Discount Method Rules
- Creating Discount Method Rules
- Defining Discount Method Rules

Overview of Discount Method Rules

Discount Method rules allow users to define the method for discounting projected cash flows for market value and duration calculation purposes. For each combination of product and currency, you can choose one of the following discount methods:

- Spot Input
- Spot Interest Rate Code
- Forecast (Original Term)
- Forecast (Remaining Term)

The methodologies contained in the Discount Method rules are referenced by the Static Deterministic and Dynamic Deterministic ALM Processes. See Defining Discounting Methods, page 12-33

The procedure for working with and managing Discount Method rules is similar to that of other Asset Liability Management business rules. It includes the following steps:

- Searching for Discount Method rules. See: Searching for Rules, page 13-4
- Creating Discount Method Rules, page 25-2

- Viewing and Editing Discount Method rules. See: Viewing and Editing Rules, page 13-6
- Copying Discount Method rules. See: Copying Rules, page 13-6
- Deleting Discount Method rules. See: Deleting Rules, page 13-7

As part of creating and editing Discount Method rules, you assign Discounting methodologies to applicable products. See: Defining Discount Methods, page 25-3

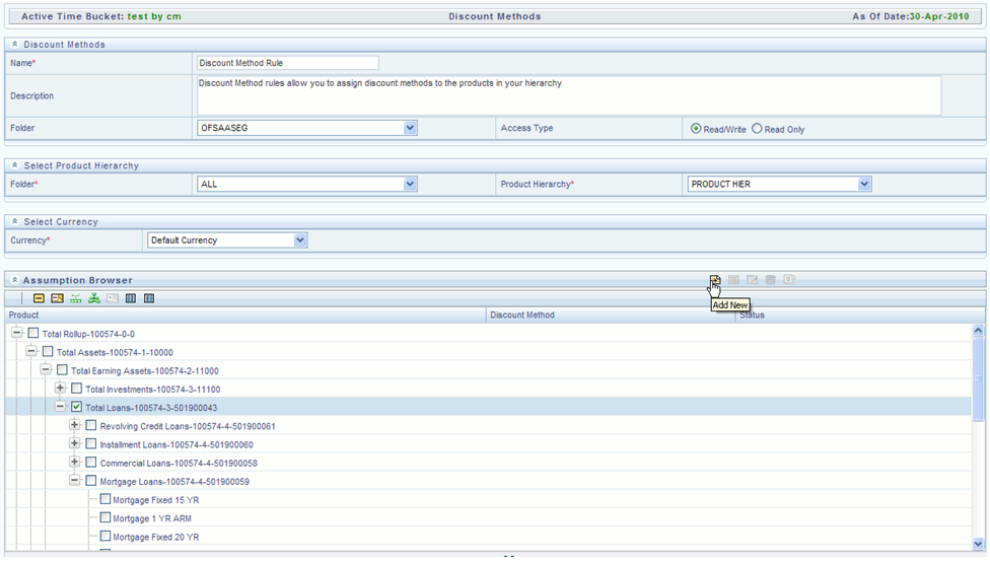
> **Note:** Oracle Asset Liability Management provides you with the option to copy, in total or selectively, the product assumptions contained within ALM business rules from one currency to another currency or a set of currencies or from one product to another product or a set of products. See: Copying Assumptions across Currencies and Products, page 21-17

Creating Discount Method Rules

You create a Discount Methods rule to assign Discounting Methods to your products.

Procedure:

1. Navigate to the Discount Methods rule summary page.
2. Complete standard steps for this procedure. See: Creating Rules, page 13-5



Important: In addition to the standard steps for creating rules, the procedure for creating a Discount Methods rule involves one extra step. After Standard Step 6, you need to select a product hierarchy. You can define methodologies at any level of the hierarchical product dimension. The hierarchical relationship between the nodes allows inheritance of methodologies from parent nodes to child nodes.

Related Topics

Overview of Discount Method Rules, page 25-1

Standard Navigation Paths, page A-1

Defining Discount Method Rules

The definition of a Discount Methods rule is part of the Create or Edit Discount Methods rule process. When you click Save in the Create Discount Methods rule process, the rule is saved and the Discount Methods rule summary page is displayed. However, Discount Method assumptions have not yet been defined for any of your products at this point. Typically, you would start defining your Discount Method assumptions for product-currency combinations before clicking Save.

Defining Discount Methods Using Node Level Assumptions

Node Level Assumptions allow you to define assumptions at any level of the Product dimension Hierarchy. The Product dimension supports a hierarchical representation of

your chart of accounts, so you can take advantage of the parent-child relationships defined for the various nodes of your product hierarchies while defining rules. Children of parent nodes on a hierarchy automatically inherit the assumptions defined for the parent nodes. However, assumptions directly defined for a child take precedence over those at the parent level.

Prerequisites

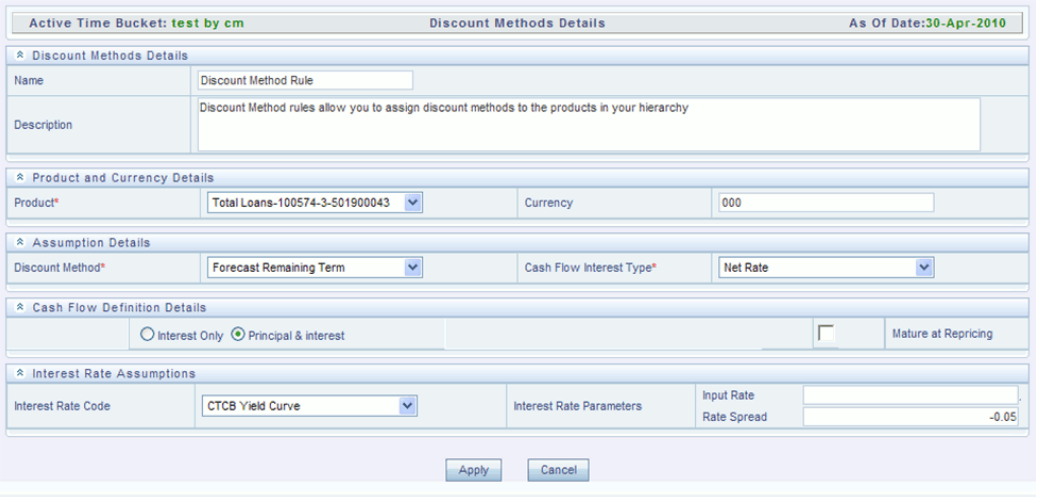
- Performing basic steps for creating or editing a Discount Methods rule, page 25-2

Procedure:

From the Assumption Browser screen, select the product(s) and the currency for which you want to define a discount method(s) and select the "Add New" button to launch the Discount Method Details screen.

Hint: Using the default currency to setup assumptions can save data input time. At run time, the calculation engine uses assumptions explicitly defined for a product currency combination. If assumptions are not defined for a currency, the engine uses the assumptions defined for the product and the default currency. If the assumptions are the same across some or all currencies for a specific product, you can input assumptions for the default currency. Be careful using this option on screens where an Interest Rate Code is a required input. In most cases, you will want to use a currency specific discount curve for discounting instruments within each specific base currency. The Default Currency option, if used will apply a selected Interest Rate Code across all currencies.

The Discount Method Details screen



Discount Method

Select a method from the Discount Method list:

- Spot Input
- Spot Interest Rate Code
- Forecast (Original Term)
- Forecast (Remaining Term)

The following table describes the methods and rate choices:

Method	Single Rate	Yield Curve
Spot Input	Discounts all cash flows by the Input Rate	Not applicable

Method	Single Rate	Yield Curve
Spot Interest Rate Code	Not applicable	Discounts each cash flow period by the equivalent term rate on the base yield curve chosen (the yield curve as of the start date selected in your ALM Application Preferences). The term is defined by the remaining term of the cash flow. Refer Note, page 25-6
Forecast (Original Term)	Not applicable	Discounts each cash flow period by the forecasted value of the point on the yield curve corresponding to each transaction record's original term. Refer Note, page 25-6
Forecast (Remaining Term)	Not applicable	Discounts each cash flow period by the forecasted value of the point on the yield curve corresponding to the remaining term until each cash flow. Refer Note, page 25-6

Note: In the case of Spot Interest Rate Code, Forecast (Original Term) and Forecast (Remaining Term) methods, if the term point is not available, the engine will use linear interpolation to determine the interest rate to discount cashflows.

Cash Flow Definition Details

The Cash Flow Definition Details section is used in unique instances to specify the portion of the cash flow that is used to calculate a market value. Select from the following:

- Interest Only - ignores all principal runoff for market value purposes. Use this option for off-balance sheet items where principal is equal to notional principal, and is therefore not a true cash flow.

- Mature at Repricing - calculates a market value for a given transaction up to the repricing date. For market value purposes only, the transaction is assumed to mature on the repricing date.

Cash Flow Interest Type

The Cash Flow Interest Type determines which interest component is included in the cash flow definition. The Cash Flow Interest Type can be one of three values:

- Net Rate
- Gross Rate
- Transfer Rate

For typical processing, you will use the Net Rate for the interest component of the cash flow. Special processing objectives, such as valuation of the funding center, may require you to use the other cash flow interest types.

Interest Rate Parameters

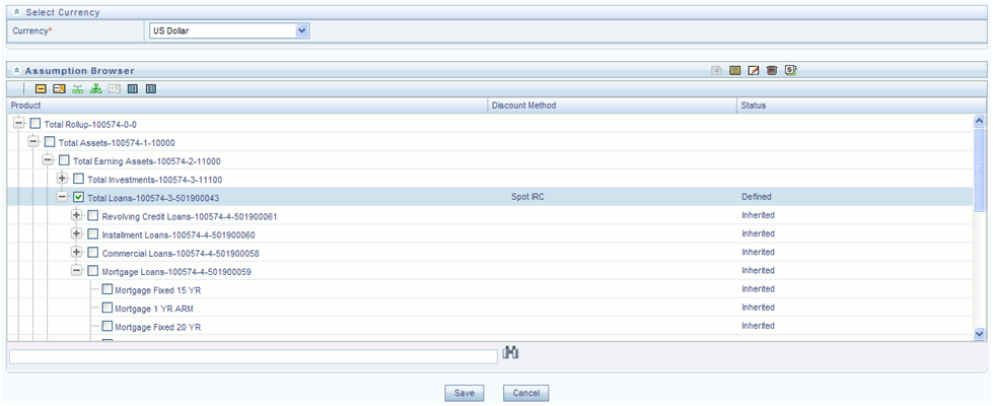
One of the following interest rate parameters is available depending on which discount method you select:

- Input Rate - available when you select Spot Input. Type the rate you want to use for market value calculations.
- Rate Spread - available when you select Spot Interest Rate Code, Forecast (Original Term) and Forecast (Remaining Term). Type the percentage difference (+ or -) between the selected rate index and the value you want to use for the discount rate(s) within market value calculations.

Defining a Discount Methods Rule Using Spot IRC: An Example

Define a Discount Methods rule for Total Loans using the spot IRC method.

1. From the Assumption Browser, select Currency (US Dollar) and Total Loans.



2. Select "Add New" to enter the Assumption Details page.

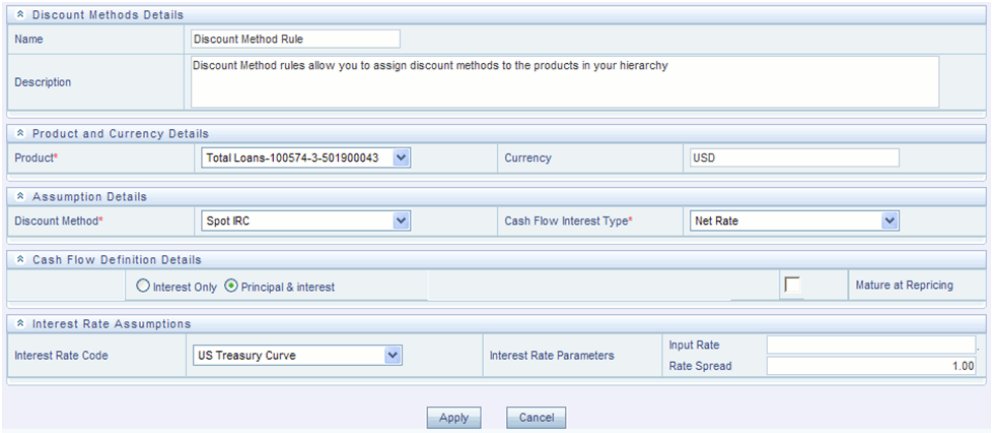
3. From the Discount Method list, select Spot IRC.

4. From Interest Rate Code list, select an appropriate Interest Rate Code.

   The list of Interest Rate Codes depends on the selected currency. If the selected currency is the default currency, all Interest Rate Codes appear. For other currency selections, the list of interest rate codes includes only interest rate codes whose reference currency is the same as the selected currency.

5. Input a Rate Spread, type 1.0000.

   A spread of 1% returns a discount rate of 1.00% above the reference interest rate. Type a negative number for a spread below the reference interest rate.



6. From Cash Flow Interest Type, select Net Rate.

7. Under Cash Flow Definition Details, use the default – Principal & Interest selection.

8. Select **Apply** to commit the assumption and return to the Assumption Browser

page.

> **Note:** You can select more than one product at a time from the Assumption Browser page. After applying assumptions and returning to the Assumption Browser, notice in the above screenshot, that all of the children listed below the parent member have "inherited" the Spot IRC assumption.

9. When Discount Method assumptions are defined for all required product / currency combinations, select **SAVE** from the Assumption Browser page.

Discount Rate Method Examples

The following examples assume **the interest rate has a format of zero coupon yield with annual compounding.**

The instrument used in each example is an annual-pay, 2-year instrument originated on the as_of_date. See the *Oracle Financial Services Cash Flow Engine Reference Guide* for details on discount factor derivation used in cash flow calculations.

Spot Input

In the Spot Input method, the discount factor does not vary with Forecast Rate - interest rate scenarios. The discount factor calculations assume the input interest rate to reflect a format of zero coupon yield, annual compounding, and actual/actual accrual basis.

Example
Spot Input Rate = 6.00%

The formula for the market value of the account, for any rate scenario, is:

Market Value = Cash Flow$_1$/ (1 + 0.06) + Cash Flow $_2$ / ((1 + 0.06)^2)

Cash Flow$_1$ is the cash flow at the end of year 1. Cash Flow$_2$ is the cash flow at the end of year 2.

Spot Interest Rate Code

In the Spot Interest Rate Code method, the discount factor depends on the term of the cash flow, but does not vary with interest rate scenario.

Example
Interest Rate Code = Treasury Yield Curve

The formula for the market value of the account, for any rate scenario, is:

Market Value = Cash Flow$_1$/ (1 + 1 Year Treasury) + Cash Flow$_2$/ ((1 + 2 Year Treasury)^2)

Cash Flow$_1$ is the cash flow at the end of year 1. Cash Flow$_2$ is the cash flow at the end of year 2. The values for 1 Year Treasury and 2 Year Treasury reflect the values from the

historical interest rate data, beginning with the as_of_date.

Forecast Remaining Term

The Forecast Remaining Term method uses forecasted interest rate data to determine the discount factor.

Example

Interest Rate Code = Treasury Yield Curve

The formula for the market value of this account is:

Market Value = Cash $Flow_1$/ (1+ 1Year Treasury Rate at the 1 year point in the forecast) + Cash $Flow_2$/ ((1+ 2 Year Treasury Rate at the 2 year point in the forecast)^2)

Cash $Flow_1$ is the cash flow at the end of year 1. Cash $Flow_2$ is the cash flow at the end of year 2. The values for 1 Year Treasury and 2 Year Treasury reflect the scenario specific values from the forecast rates - interest rate data. Cash $Flow_1$ is discounted at the 1 year Treasury rate, from the 1 year point of the forecast and Cash $Flow_2$ is discounted at the 2 year Treasury rate, from the 2 year point of the forecast.

Forecast Original Term

The Forecast Original Term method uses the forecasted interest rate data to determine the discount factor.

Example

Interest Rate Code = Treasury Yield Curve

The formula for the market value of the account is:

Market Value = Cash $Flow_1$/ (1+ 2 Year Treasury Rate at the 1 year point in the forecast) + Cash $Flow_2$/ ((1+ 2 Year Treasury Rate at the 2 year point in the forecast)^2)

Cash $Flow_1$ is the cash flow at the end of year 1. Cash $Flow_2$ is the cash flow at the end of year 2. Note that Cash $Flow_1$ is discounted at the 2 year Treasury rate. The 2 Year rate is used with this method, because the Forecast Original Term method always uses the term equivalent to the original term of the instrument.

26

Rate Dependency Patterns

This module describes the procedure for working with and managing Rate Dependency Patterns.

This chapter covers the following topics:

- Overview of Rate Dependency Patterns
- Searching for Rate Dependency Patterns
- Creating Rate Dependency Patterns

Overview of Rate Dependency Patterns

Rate Dependency Patterns allow you to establish relationships between the level of interest rates, economic indicators or rate spreads and ALM forecast assumption rules. After defining Rate Dependency Patterns, you can attach these patterns to ALM forecast business rules. ALM assumption rules with Rate Dependency Patterns, work together with your Forecast Rate scenarios to determine assumptions applicable to each specific scenario within your simulation. The following rule types support Rate Dependent assumptions:

- Forecast Balances
- Forecast Maturity Mix
- Forecast Pricing Margins
- Transaction Strategies
- Formula Results

When Rate Dependency Patterns are attached to an ALM business rule, you will be able to input multiple versions of each specific assumption type within a single assumption rule. The ALM engine dynamically retrieves the assumptions which are applicable to the scenario being processed.

The procedure for working with and managing Rate Dependency Patterns is similar to that of other Asset Liability Management business rules. It includes the following steps:

- Searching for Rate Dependency Patterns. See: Searching for Rules, page 13-4
- Creating Rate Dependency Patterns, page 26-3
- Viewing and Editing Rate Dependency Patterns. See: Viewing and Editing Rules, page 13-6
- Copying Rate Dependency Patterns. See: Copying Rules, page 13-6
- Deleting Rate Dependency Patterns. See: Deleting Rules, page 13-7

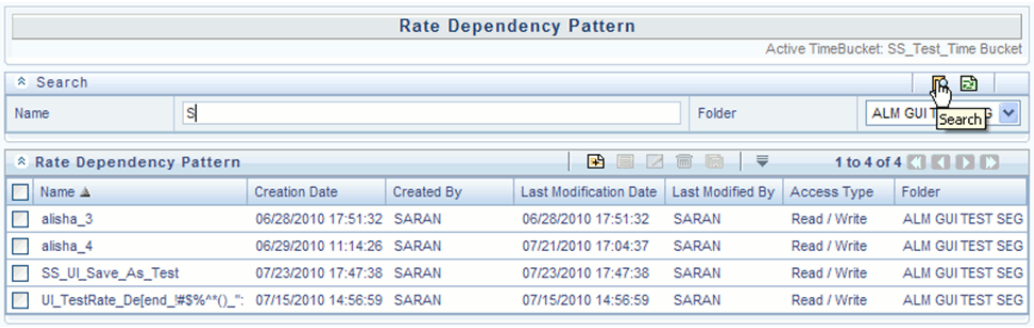
Searching for Rate Dependency Patterns

Search for a rate dependency pattern to perform any of the following tasks:

- View
- Edit
- Copy
- Delete

Prerequisites

Predefined rate dependency patterns



Procedure:

1. Navigate to the Rate Dependency Pattern summary page. This page is the gateway to all rate dependency patterns and related functionality. You can navigate to other pages relating to rate dependency patterns from this page.

2. Enter the Search criteria.

3. Enter the code or name of the Pattern.

4. Click the Search icon.

Only patterns that match the search criteria are displayed.

> **Note:** You can control the number of rows to display on screen by selecting the "Pagination Options" icon from the action bar

Related Topics

Overview of Rate Dependency Patterns, page 26-1

Standard Navigation Paths, page A-1

Creating Rate Dependency Patterns

You create Rate Dependency Patterns to attach to forecast business rules.

Procedure:

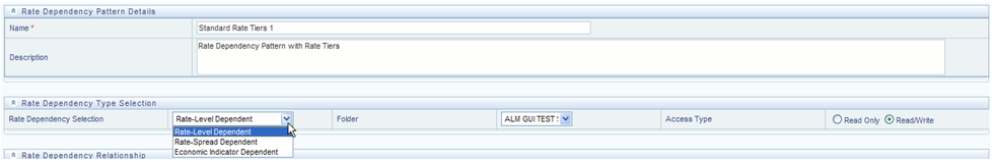
1. Navigate to the Rate Dependency Pattern rule summary page.

2. Click Add New - Rate Dependency Pattern.

3. The Rate Dependency Pattern details page is displayed.

4. Enter a Name and a brief description for the pattern.

5. Select the Rate Dependency Pattern Type: Rate-Level Dependent, Rate-Spread Dependent or Economic Indicator Dependent.



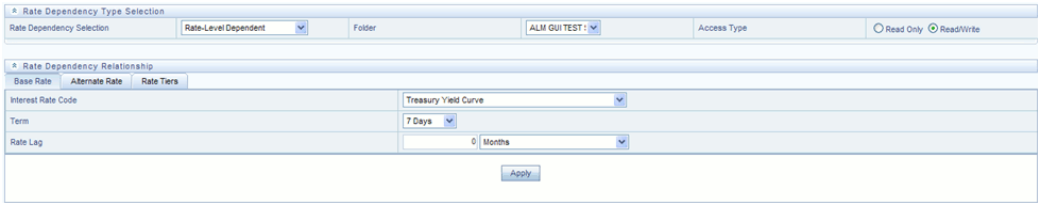
6. The selection of the Rate Dependency Pattern type made in the previous step determines the information you must provide to successfully define that pattern type. See:

   - Defining Rate-Level Dependent Rate Dependency Patterns, page 26-4

- Defining Rate-Spread Dependent Rate Dependency Patterns, page 26-5
- Defining Economic Indicator Dependent Rate Dependency Patterns, page 26-6

Defining Rate-Level Dependent Rate Dependency Patterns:

The Rate-Level dependent relationship allows you to define assumptions for different values of a single indicator interest rate. The indicator interest rate, referred to as the Base Interest Rate, is defined by an Interest Rate Code, a term selection, and a rate lag.



Procedure

1. Provide the following inputs.

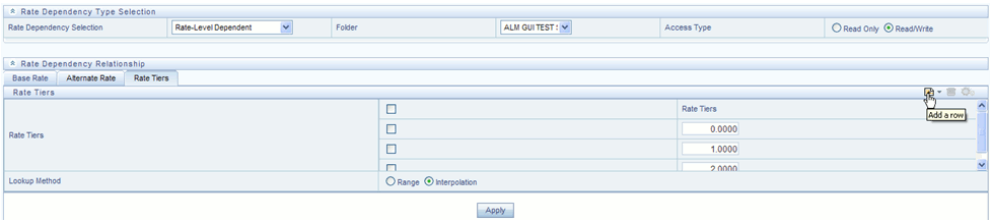
   Interest Rate Code: The Interest Rate Code identifies the reference yield curve or rate index whose forecasted value determines the assumptions to reference. You can select the Interest Rate Code from all available interest rate codes, as defined within Rate Management.

   Term Selection: If the selected Interest Rate Code is a yield curve, you must also select a term. Your term choices depend on the definition of the Interest Rate Code within Rate Management. Note that the selection automatically defaults to the shortest available term.

   Rate Lag: If you want the base interest rate calculation to perform a look back function, you can input a rate lag. The new business assumption lookup uses the forecasted interest rates as of a date within the current modeling bucket less the rate lag. If the timing of new business is End of Bucket, the lookup function uses the last day of the bucket less the rate lag. For all other cases, the mid-point of the bucket less the rate lag is used.

2. Select **Apply** to navigate to the Rate Tiers tab. Once you have selected a rate-level relationship and defined your base interest rate, you must define rate tiers. Rate tiers provide the lookup values for which different assumptions can be input.

3. Select the Add Rows button to add the number of Rate Tiers you would like to include in your pattern.



4. Input the appropriate Rate Level for each Rate Tier.

5. Select the Lookup Method. The lookup method determines which new business assumption is selected from the input values when the forecasted interest rate falls between two rate tiers. There are two methods to choose from:

   Interpolate: If you select Interpolate, the assumption is an interpolated value, using straight line interpolation, calculated from the assumptions associated with the two nearest interest rate tiers. The interpolation uses a simple straight line interpolation formula.

   Range: If you select Range, Oracle ALM selects the new business assumption as the closest assumption associated with the rate tier which is less than or equal to the forecasted interest rate.

6. Select **Save** to complete the definition.

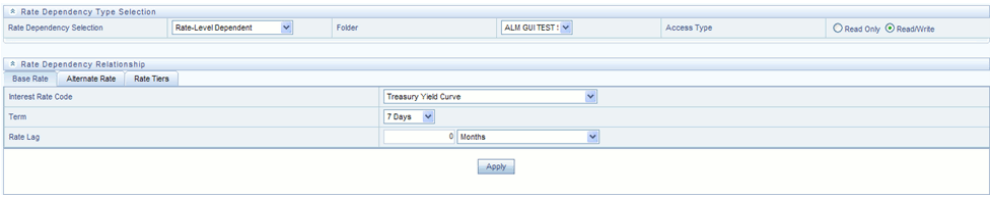
Defining Rate-Spread Dependent Rate Dependency Patterns:

With the Rate-Spread dependent relationship, you can input assumptions for different spreads between two indicator interest rates. You define the first indicator interest rate, the Base Interest Rate, as described previously. The second indicator interest rate, the Alternate Interest Rate, also requires selection of an Interest Rate Code, a term selection, and a rate lag.

The rate spread equals: Alternate Interest Rate - Base Interest Rate

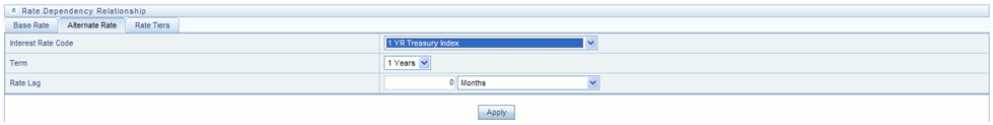
Procedure

1. Define the **Base Interest Rate** details.



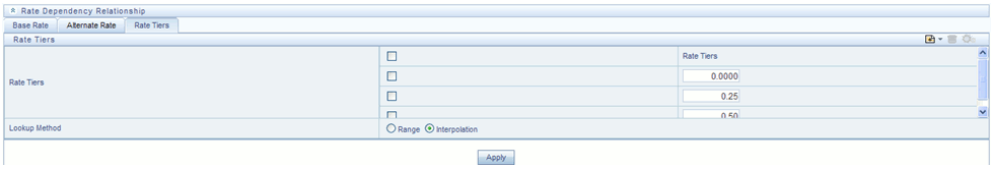
2. Select Apply.

3. Define the **Alternate Interest Rate** details.



4. Select Apply.

5. Define the Rate Tiers for the Spreads.



6. Select the Lookup Method. The lookup method determines which new business assumption is selected from the input values when the forecasted interest rate falls between two rate tiers. There are two methods to choose from:

   Interpolate: If you select Interpolate, the assumption is an interpolated value, using straight line interpolation, calculated from the assumptions associated with the two nearest interest rate tiers. The interpolation uses a simple straight line interpolation formula.

   Range: If you select Range, Oracle ALM selects the new business assumption as the closest assumption associated with the rate tier which is less than or equal to the forecasted interest rate.

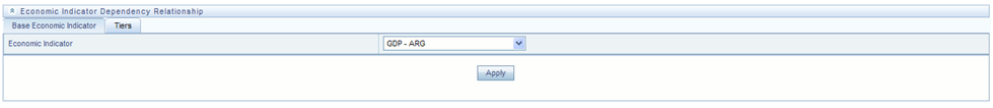
7. Select **Save** to complete the definition.

Defining Economic Indicator Dependent Rate Dependency Patterns:

Procedure

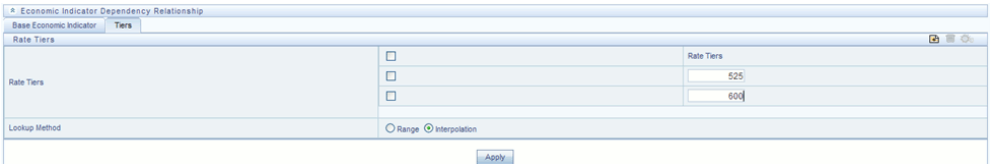
With the Economic Indicator dependent relationship, you can input assumptions for different levels of a selected Economic Indicator. The only required selection for this method is the type of Economic Indicator. You can select the Economic Indicator from all available EI's for the selected currency, as defined within Rate Management.

1. Select the Economic Indicator.



2. Select Apply.

3. Define the Rate Tiers for the Economic Indicators.



4. Select the Lookup Method. The lookup method determines which new business assumption is selected from the input values when the forecasted interest rate falls between two rate tiers. There are two methods to choose from:

   Interpolate: If you select Interpolate, the assumption is an interpolated value, using straight line interpolation, calculated from the assumptions associated with the two nearest interest rate tiers. The interpolation uses a simple straight line interpolation formula.

   Range: If you select Range, Oracle ALM selects the new business assumption as the closest assumption associated with the rate tier which is less than or equal to the forecasted interest rate.

5. Select **Save** to complete the definition.

27

Forecast Balance Rules

This module discusses modeling of new business activity through the Forecast Balance rules. Included are assumption setup and processing.

Within a Forecast Balance rule, you specify the amount of new activity generated per modeling bucket on each product within each active currency. To create a new business assumption, you select from eight available forecasting methods. You can further tailor the new business assumptions to meet your expectations of future originations, including the timing of new business and the effect of interest rates on new business amounts.

This chapter covers the following topics:

- Forecasting Methods
- Rate-Volume Modeling
- Creating a Forecast Balance Rule
- Examples of Forecast Balance Assumptions

Forecasting Methods

The new business methods within the Forecast Balance rule determine how new business assumptions are applied per product leaf within each active currency. They consist of:

- No New Business
- Target End Balance
- Target Average Balance
- Target Growth Percent
- New Add Balance

- Rollover
- Rollover with New Add
- Rollover with Growth %

For the Target Growth, Target End, and New Add methods, you select one of two timing options to indicate when new business for a new account should be originated. The two options are:

- **Distributed Option:** Solves for the origination date of the new business account to reach an expected average balance, assuming even distribution of new business throughout the modeling bucket. For each modeling bucket, this calculation results in an average balance amount that is midway between the beginning balance and the ending balance.
- **Bucket End Method:** Generates new originations at the end of the modeling bucket. Adding new business at the end of the modeling bucket is effective in terms of processing time, but may result in irregular average balances and interest accruals over the bucket.

For the Target Average method, the system automatically determines the timing of new originations to ensure that the user-input target is achieved. For Rollover business, the system assumes that the rollover occurs at the time of runoff of existing accounts.

> **Note:** For distributed originations of Target Growth and Target End balances, Transaction Strategies and future origination in the current position may impact the distributed originations calculation. Because the origination date on Transaction Strategy and current position accounts cannot be modified, the timing algorithm may not be able to find an origination date for the remaining new business which achieves the expected average balance.

The application of each new business method, including how different timing options are applied, is described below:

No New Business

No New Business (forecasting zero changes in balances) is the default method for the Forecast Balance rule. This method allows runoff without replacement of the paid-down balances.

Target End Balance

Use the Target End Balance method to define the total expected balance by the end of each modeling bucket. The new origination amount and the timing of originations within each modeling bucket are determined during processing, as described below:

New Origination Amount

The new origination amount per bucket is calculated as:

Target Ending Balance - Beginning Balance - Total Runoff + Transaction Strategy Originations + Current Position Originations

New Business Timing

For the Target End method, you can choose either the At Bucket End timing option or the Distributed timing option.

At Bucket End: The new origination amount is added on the final date in the bucket. Interest starts accruing on the next day, the first date of the next bucket.

Distributed: The new origination amount is added on the calculated date(s) which allow the average balance to equal the beginning balance plus the ending balance divided by two, accounting for timing of runoff and other originations occurring during the modeling bucket.

Target Average Balance

Use the Target Average Balance method to define the expected average balance per modeling bucket. The new origination amount and the timing of originations within each modeling bucket are determined during processing, as described below:

New Origination Amount

The new origination amount per bucket is calculated as:

2*(Target Average Balance - Bucket Beginning Balance) + Total Runoff - Transaction Strategies Originations - Current Position Originations

New Business Timing

The new origination amount is added on the calculated date(s) which allow the average balance to equal the user-input target average. This calculation accounts for timing of runoff and other originations occurring during the modeling bucket.

Target Growth Percent

Use the Target Growth Percent method to define the expected percentage change in the balance over each modeling bucket, expressed as a percent of the bucket's initial balance. A target growth assumption of zero creates a flat balance sheet, only originating enough new business to offset runoff on existing accounts. The new origination amount and the timing of origination are determined during processing, as described below:

New Origination Amount

The new origination amount per bucket is calculated as:

(Beginning Balance * Target Growth Percent + Total runoff – Transaction Strategy Originations - Current Position Originations) for bucket end option, and,

(Beginning Balance * Target Growth Percent – Transaction Strategy Originations - Current Position Originations) for distributed option

New Business Timing

For the Target Growth method, you can choose either the At Bucket End timing option or the Distributed Originations timing option.

At Bucket End: The new origination amount is added on the final date in the bucket. Interest starts accruing on the next day, the first date of the next bucket.

Distributed: The new origination amount is added on the calculated date(s) which allow the average balance to equal the beginning balance plus the ending balance divided by two. This calculation accounts for timing of runoff and other originations occurring during the modeling bucket.

New Add Balance

The New Add Balance method defines the absolute amount of new business that is added within a bucket. The new origination amount and the timing of origination are determined during processing, as described below:

New Origination Amount

The new origination amount is equal to the user-input new add balance.

New Business Timing

For the New Add method, you can choose either the At Bucket End timing option or the Distributed Originations timing option.

At Bucket End: The new origination amount is added on the final date in the bucket. Interest starts accruing on the next day, the first date of the next bucket.

Distributed: The new origination amount is added at the mid-point of the modeling bucket. If the modeling bucket contains an uneven number of days, the origination is apportioned evenly over the two days in the middle of the bucket.

Rollover

Use the Rollover method to base the amount of new business on the rollover (reinvestment of principal on a given or like products) of existing business. You can roll any combination of prepayments, maturing balances, and principal runoff from a

product into itself or into another product. For multiple currency processing, rollover processing occurs within each individual currency. Rollover cannot occur between two currencies. The new origination amount into a particular target leaf member and the timing of that origination are described below.

New Origination Amount

For a single target leaf member within a single currency, the new origination amount depends on the rollover sources, which are product leaves of the same currency whose runoff drives the amount of new business generated into the target leaf member. For each rollover source, you must also define the components of principal runoff you would like to roll over. Your choices are:

Total: Total runoff includes runoff from all three categories of run-off: scheduled principal payments, prepayments, and maturing balances.

Prepay: Prepay includes runoff from prepayments, early repayment of principal balances.

Maturity: Maturity incorporates payment of principal on the maturity date, above that incorporated in the scheduled principal payment. Balloon payments and final principal repayment of non-amortizing instruments are included in this category.

Payment: Payment runoff includes scheduled principal payment on an amortizing instrument.

For each combination of source leaf and runoff type, you can input a different rollover percent. The new origination amount within a modeling bucket equals the runoff amounts multiplied by the percentage rollover for all source leaves.

Timing of Rollover

All runoff from sources are added as new business into the target leaf with the proper currency at the average time of runoff.

The average time of runoff is calculated by taking an average of the runoff date weighted by the amount of runoff for all instruments which make principal payments during the modeling bucket.

> **Note:** Rollover of runoff components, prepayment, payment, or maturity requires that those components exist in the output data set. In a Dynamic Deterministic Process rule, you must select those financial elements from the Calculation Elements block. Otherwise, no new business is generated from those runoff components.

Rollover with New Add

Use the Rollover with New Add method to apply both rollover assumptions and new add assumptions to a single product within a single currency. It allows new business to

be driven by reinvestment of existing accounts plus an expectation of new business amounts. The New Add method and the rollover method are applied independently, with the New Add applied first. See the details under Rollover , page 27-4and New Add, page 27-4, described previously, for a definition of how each method works.

Rollover with Growth Percent

Use the Rollover with Growth Percent method to apply both rollover assumptions and an overall Growth Percent assumption to a single product within a single currency. It allows new business to be driven by reinvestment of existing accounts plus an expectation around growth percentage. The Growth Percent method and the rollover method are applied independently, with the rollover assumption applied first. See the details under Rollover, page 27-4 and Growth Percent, page 27-3, described previously, for a definition of how each method works.

Account Types and New Business

The availability of a new business method depends on the account type of the product leaf member. The account type of a product leaf comes from its associated Common COA attribute. Setup requirements for each of the account types are described below:

Interest Bearing Accounts: All forecasting methods are available. The following account types are classified as interest bearing:

- Earning asset
- Interest bearing liability
- Off balance sheet receivable
- Off balance sheet payable

Income Statement Accounts: The only method available is New Add. For these accounts, input the desired income statement value for each bucket. The following account types are classified as income statement:

- Non-interest income
- Non-interest expense
- Interest income
- Interest expense

Balance Sheet Accounts: The only method available is New Add. For balance sheet accounts, the input amount is interpreted as a balance. The following account types are classified as balance sheet:

- Other asset

- Other liability
- Equity

Rate-Volume Modeling

Customer demand for new products often depends on interest rates (either the absolute level of interest rates or the spread between two rate indices) or other variables such as macro-economic drivers. You can model this behavior by selecting a rate-volume assumption. Once you have selected the rate-volume assumption, you must incorporate additional parameters through selection of a Rate Dependency Pattern, which control how interest rates or economic variables affect new business levels. See Rate Dependency Patterns, page 26-1 for more information on building Rate Dependency Patterns.

Rate-Volume Assumptions

There are four rate-volume options to choose from:

No Relationship

If you want new business amounts to stay constant regardless to the interest rate environments, select this option.

Rate-Level Dependent

The Rate-Level dependent relationship allows you to change new business behavior for different values of a single indicator interest rate. The indicator interest rate, referred to as the Base Interest Rate, is defined by an Interest Rate Code, a term selection, and a rate lag.

Interest Rate Code: The Interest Rate Code identifies the reference yield curve or rate index whose forecasted value determines the new business amount. You can select the Interest Rate Code from all available interest rate codes for the selected currency, as defined within Rate Management. The list of Interest Rate Codes includes only codes with a reference currency equivalent to the currency selected in the Floating Tree Bar.

Term Selection: If the selected Interest Rate Code is a yield curve, you must also select a term. Your term choices depend on the definition of the Interest Rate Code within Rate Management. Note that the selection automatically defaults to the shortest available term.

Rate Lag: If you want the base interest rate calculation to perform a look back function, you can input a rate lag. The new business assumption lookup uses the forecasted interest rates as of a date within the current modeling bucket less the rate lag.

If the timing of new business is End of Bucket, the lookup function uses the last day of the modeling bucket less the rate lag. For all other cases, the mid-point of the bucket

less the rate lag is used.

Rate-Spread Dependent

With the Rate-Spread dependent relationship, you can input new business assumptions for different spreads between two indicator interest rates, or a spread between two term points on the same yield curve. You define the first indicator interest rate, the Base Interest Rate, as described previously. The second indicator interest rate, the Alternate Interest Rate, also requires definition of an Interest Rate Code, a term selection, and a rate lag.

The rate spread equals the Alternate Interest Rate minus the Base Interest Rate.

Economic Indicator Dependent

With the Economic Indicator Dependent relationship, you can input new business assumptions related to defined economic indices (as defined in Rate Management, page 10-1), where the change in the index will drive a different outcome of new business. For example, you can forecast a higher GDP and tie the new business assumptions to that particular forecast.

Rate Tiers

The Rate Tiers tab will become available to edit when one of the following three rate volume relationships have been selected (Rate Level, Rate Spread, and Economic Indicator). Once you have selected a rate-volume relationship and defined your base and alternate interest rates, you must define rate tiers. Rate tiers provide the lookup values for which different new business assumptions can be input. See Creating Rate Dependency Patterns , page 26-3 for details on the configuration.

Lookup Method

The lookup method determines which new business assumption is selected from the input values when the forecasted interest rate falls between two rate tiers.

There are two methods to choose from:

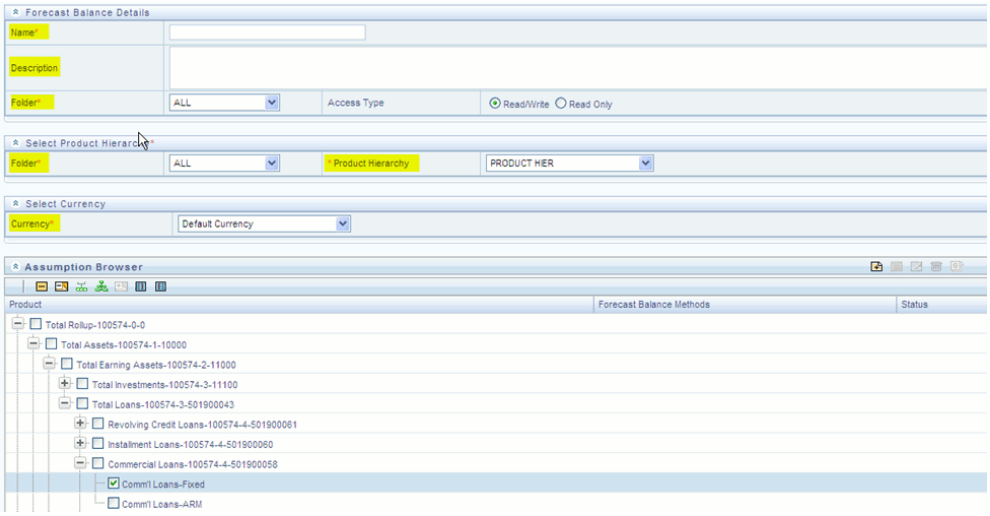
Interpolate: If you select Interpolate, the new business assumption is an interpolated value, using straight line interpolation, calculated from the assumptions associated with the two nearest interest rate tiers. The interpolation uses a simple straight line interpolation formula.

Range: If you select Range, Oracle ALM selects the new business assumption as the closest assumption associated with the rate tier which is less than or equal to the forecasted interest rate.

Creating a Forecast Balance Rule

To create a new Forecast Balance rule, complete the following steps:

1. Click the Add New button on the Forecast Balances tool bar to add a new rule. A new screen will appear as follows:



2. Type a descriptive name for the rule.

3. Type a description (optional).

4. Select a folder.

5. Select Product Hierarchy folder.

6. Select Product Hierarchy

7. Select Currency

8. Drill down to desired leaf level node(s) in the Assumption Browser

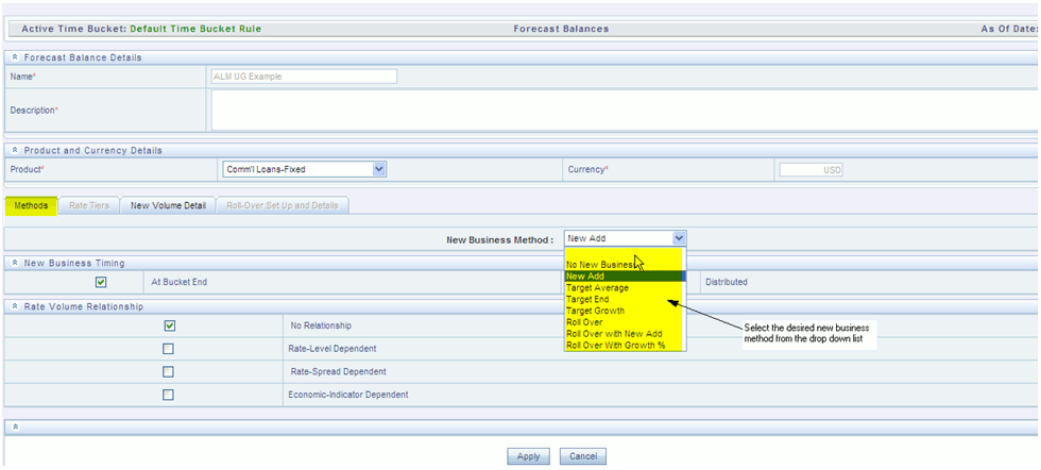
9. Click Save

   When saved, go back to edit the Forecast Balance rule just created. Check the box next to the description and click the edit icon.

   The Forecast Balance rule dialog opens on the Method tab. The other tabs (Rate Tiers, New Volume detail, Roll-over Set up and Detail) are dependent upon method chosen and the rate volume relationship. You must begin the assumption setup on the Method Tab and work your way through the remaining tabs, as needed. To input new assumptions for a particular product leaf and currency, follow the steps detailed under each Tab heading, described next:

Method Tab:

The Method Page is used to define the Forecast Balance method per product leaf and currency. On this page you define the New Business method, the timing option, and the type of rate-volume relationship. An example of the Method page appears as shown in the following screenshot:



Follow the steps listed below to complete this information.

1. Select a product leaf from the drop down list under the Product and Currency Details Header (in this case, Commercial Loans fixed).

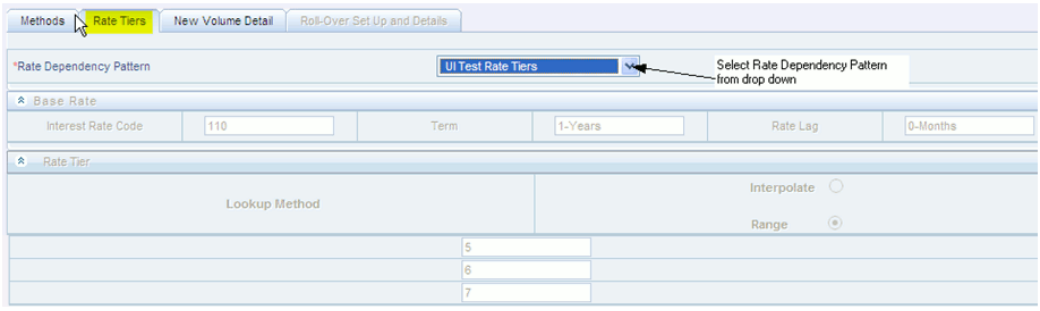
2. Select your preferred New Business Method. If you select Target End, Target Growth, New Add, or any combined rollover option, note that the Timing selection is enabled.

3. Select your preferred Timing option (with Target End, Target Growth, New Add, Rollover with Growth % and Rollover with New Add only).

4. Select the type of Rate-Volume Relationship you want to model. If the relationship is Rate Spread, Rate Level, or Economic Indicator, the Rate Tiers tab is enabled. In this case, see the following steps listed for Rate Tiers tab.

Rate Tiers Tab:

On the Rate Tiers tab the Rate Dependency Pattern drop down list appears. Select the desired name you defined in the Rate Dependency Patterns (See Rate Dependency Patterns, page 26-1 for setup instructions) user interface. If you have selected No Relationship on the Method Page, this page is not accessible. An example of the Rate Tiers tab appears as shown in the following screenshot:



You can see the defaulted values for the Base Rate and the Rate Tier Bars appear as input in, when the pattern was defined.

New Volume Detail Tab:

The New Volume Detail Page is used to input new volume assumptions for the methods:

- New Add
- Target End
- Target Average
- Target Growth
- New Add component of the Rollover with New Add method
- Growth % component of the Rollover with Growth % method

On this page you select the range of modeling buckets and input balance or percentage assumptions for each modeling bucket within this bucket range. An example of the New Volume Detail page appears as shown in the following screenshot:

1. Select the New Volume Detail tab.

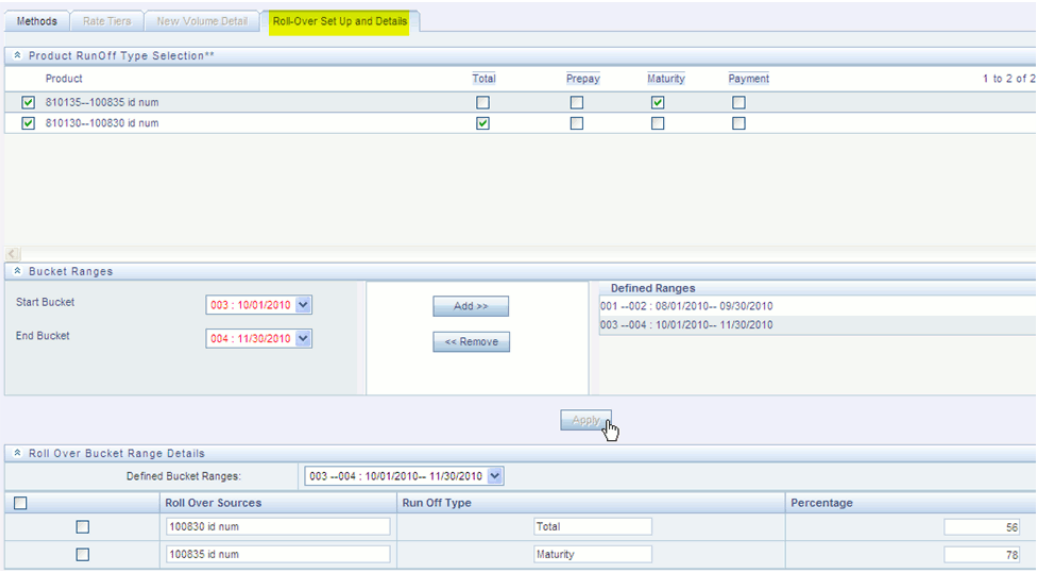
2. Select the modeling bucket start and end range. The default Bucket Range includes all modeling buckets. To forecast new business in a subset of the modeling horizon, reduce the bucket range by increasing the bucket start date or decreasing the bucket

end date. As you change the bucket start and/or the bucket end, the view adjusts accordingly to display only buckets within the selected range.

3. Go to the cell corresponding to the first modeling bucket. If rate-volume relationships are used, this cell also corresponds to the first rate tier. Input the targeted value. For New Add, Target End, and Target average, input an amount. For Target Growth, input a percent. The percent should represent the percentage growth within the modeling bucket. It should not represent an annualized amount.

Rollover Setup and Details Tab:

In the Rollover Setup and Details tab, first input the setup details necessary for definition of rollover percentages (source product leaves and bucket ranges), second, input rollover percentages. The rollover percentages represent the percent of the runoff amount from the source (leaf and runoff type for the selected currency) which generates new business into the target leaf for the selected currency. An example of the Rollover Setup and Details tab appears as shown in the following screenshot:



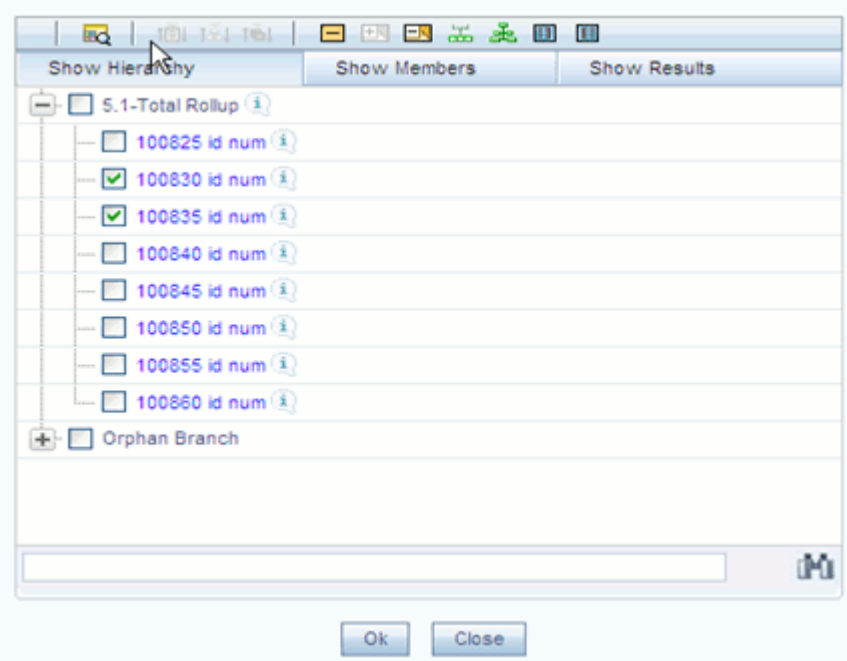
1. Click the Rollover Setup and Details tab to display the page.

2. Click the Add New button to select the Product Runoff Type Selection.

3. The Hierarchy page will appear. Select the product leaf members for the rollover and click Ok.

> **Note:** If using the search icon on this screen, when results appear, you need to highlight the specific leaf member and click the focus icon. The check box will appear next to the leaf members. Check the

box for inclusion.



4. The selected products will appear below the Product Runoff Type selection bar.

5. Choose the desired runoff type (total, prepay, maturity, or payment).

6. Define the input bucket ranges. You only need to define multiple bucket ranges if you want to vary rollover assumptions by modeling buckets. The bucket ranges defined here only apply to rollover occurring from the source leaf to the target leaf. You must have at least one bucket range defined. Typically, you define a bucket range from the first modeling bucket to the last modeling bucket, covering the entire modeling horizon. To define a bucket range, complete the following steps:

    1. Select a start bucket date for the first date range.

    2. Select an end bucket date for the first date range.

    3. Select Add to add a bucket range which begins on the first date of the start bucket and ends on the last date of the end bucket.

    4. Select a new start date for the next date range. You can select from any buckets that are not encompassed by a defined bucket range. Modeling buckets which are a part of an existing bucket range do not appear in this list.

    5. Select an end date for the next date range. You cannot create overlapping

modeling buckets. To prevent this, the list of available bucket end dates only includes modeling buckets which follow consecutively from the selected start bucket.

6. Continue adding bucket ranges until all desired ranges have been defined.

7. Once all desired products and bucket ranges have been selected and defined, click Apply.

7. The Rollover Bucket Range Details form will appear at the bottom. To define the details for the above prescribed bucket ranges, do the following:

   1. Select a bucket from the drop down list of defined bucket ranges.

      Note: The defaulted values for runoff type are populated.

   2. Enter the percentage rollover for the given products.

   3. Click Apply at the bottom of the screen when complete.

Editing the Defined Forecast Balance:

You can modify or edit an existing forecast balance by opening it, making the changes and then saving it as either a:

- Different Method with a new name, or
- The same forecast balance name

Naming Convention:

Generally, it is best to use a naming convention that creates different groups of forecast balances. This keeps track of which methods were created, in the context of specific modeling buckets.

The Active Time Bucket Rules :

Assumptions that you define when creating a forecast balance are based on a specific modeling horizon, which is defined in the Time Buckets section (See Creating Time bucket Rules, page 19-3).

Example

- If you define a forecast balance based on a Time Bucket with a monthly modeling horizon, your results are calculated in monthly time periods.
- If you redefine that same forecast balance, using a different time bucket with a weekly modeling horizon, your results are calculated in weekly time periods.

If assumptions in your Forecast Balance are based on a modeling horizon that is different from the horizon defined in the active time bucket, inaccurate data will result. You should verify that date-sensitive rules are consistent with the active Time Bucket.

Defining Forecast Balances Using Node Level Assumptions:

Node Level Assumptions allow you to define assumptions at any level of the Product dimension Hierarchy. The Product dimension supports a hierarchical representation of your chart of accounts, so you can take advantage of the parent-child relationships defined for the various nodes of your product hierarchies while defining rules. Children of parent nodes on a hierarchy automatically inherit the assumptions defined for the parent nodes. However, assumptions directly defined for a child take precedence over those at the parent level.

Note: The only method supported for inheritance is Target Growth.

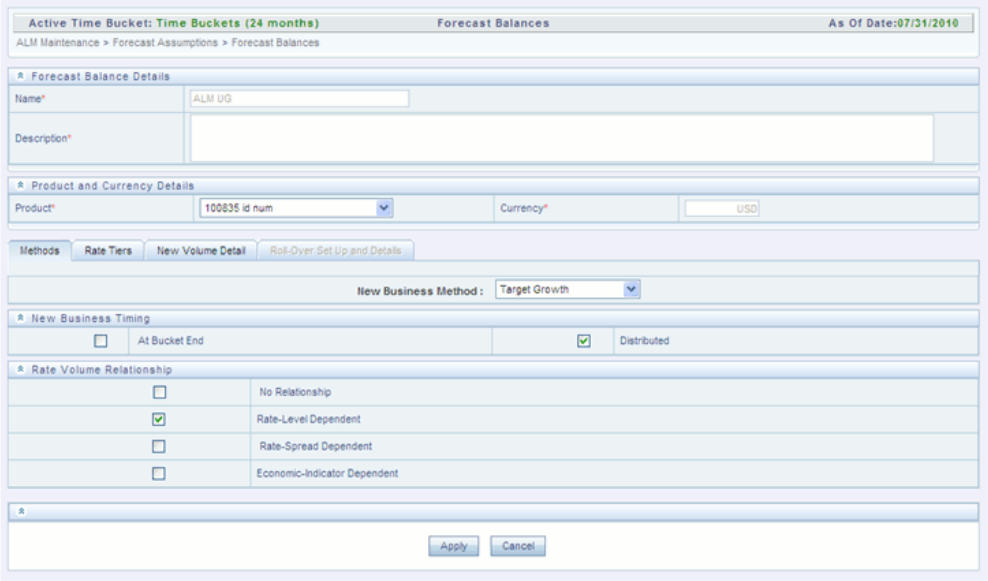
Examples of Forecast Balance Assumptions

Below are two examples describing how to input assumptions into the Forecast Balance for a product using the target growth method and a product using the rollover capabilities.

Target Growth Example:

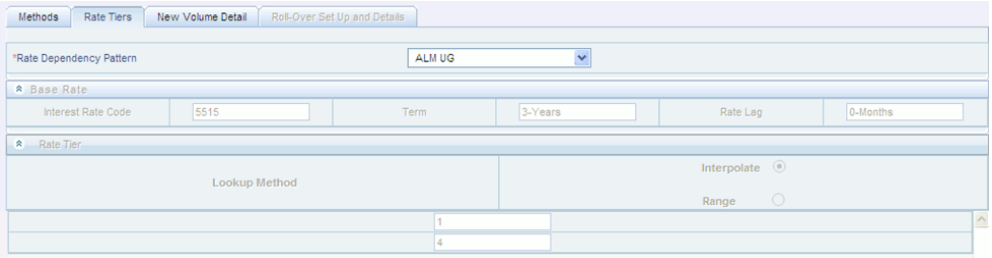
The following example describes how to model the effect of interest rate changes on growth in a loan product. We will input values that cause the growth rate of loans to decrease as interest rates increase.

1. Create a new Forecast Balance rule.
2. Select US dollars in the Currency Selection.
3. Select the desired product leaf from the product list.
4. Click the Add New button to add new forecast balance rules.
5. Select Target Growth as the New Business method.
6. Select Distributed as the Timing option.
7. Select Rate-level dependent as the Rate-Volume relationship. The completed Method information should appear as shown in the following example:

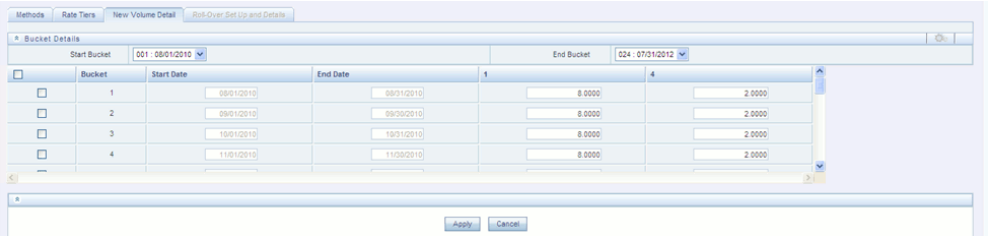


8. Click the Rate Tiers Tab.

9. Select a Rate Dependency Pattern from the drop down list (See Rate Dependency Patterns, page 26-1 for setup instructions). You will see the information for the Base Rate and Rate Tier info as defined by the rule.



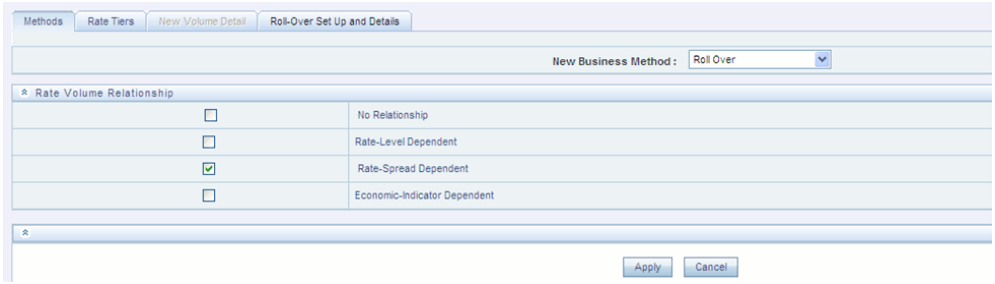
10. Click the New Volume Detail Tab. The two lookup methods for 1% and 4% will appear in the columns, next to each bucket. Enter 8% growth for a 1% 3 year rate environment, and 2% growth for a 4% 3 year rate environment.



Rate Sensitive Rollover Example:

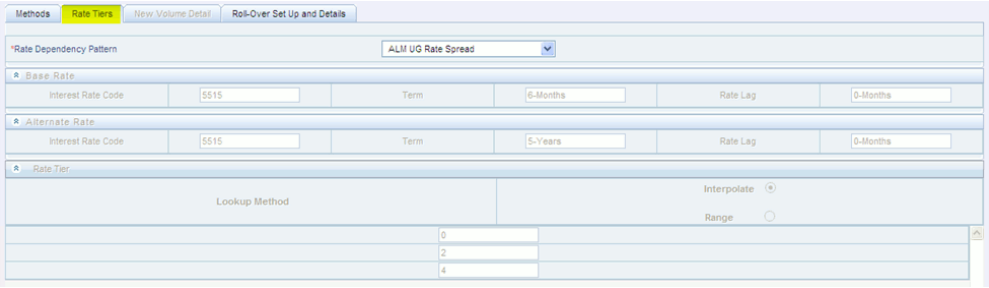
This example shows how to input rollover behavior for a product where as the yield curve steepens, holders of shorter term products increasingly choose to roll into another longer term product (for example, CD investors).

1. Create a new Forecast Balance rule.
2. Select US dollars in the Currency Selection.
3. Select the desired product leaf from the product list.
4. Click the Add New button to add new forecast balance rules.
5. Select the New Business method Rollover.
6. Define the Rate-Volume relationship as Rate-Spread Dependent.



7. Click the Rate Tiers Tab.
8. Select the desired rate dependency pattern (see Rate Dependency Pattern setup, page 26-3).

> **Note:** The Base Rate, Alternate Rate, and Rate Tier are populated with the definitions as defined in the Rate Dependency Pattern rule.



9. Click the Rollover Setup and details tab.

10. Click the Add New button to add desired products in Product Runoff Type Selection.

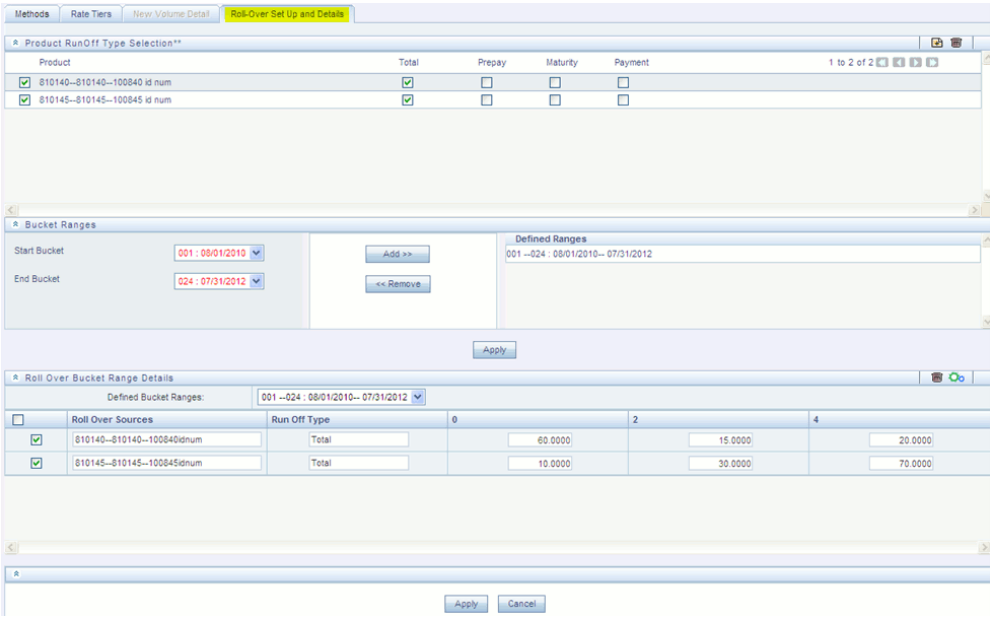
11. Choose Total, Prepay, Maturity, or Prepayment runoff.

12. Define the bucket range. (In this case the entire bucket range). Click "Add" to create the range.

13. Click Apply.

14. The rollover Bucket Details Bar will appear at the bottom of the page.

15. Input the desired rollover for each rate spread scenario. In this case it is the steepening spread between 6 mo and 5 yr Libor curve points.



16. Click Apply.

Processing New Business in a Dynamic ALM Process:

To process the assumptions you have input, the Forecast Balance rule must be selected in a Dynamic Deterministic or Dynamic Stochastic ALM Processing Rule. The output process selections defined within the Process rule > Output Preferences block, determine which forecast balance assumptions per currency are used. If processing output is product-only, forecast balance assumptions for the reporting currency are processed. New business assumptions for all other currencies are ignored. If the output is product and currency, forecast balance assumptions for each product and currency combination are processed. See ALM Process, page 35-1 for more information on processing.

28

Forecast – Maturity Mix

This module describes the procedure for working with and managing Maturity Mix rules.

This chapter covers the following topics:

- Overview of Maturity Mix Rules
- Creating Maturity Mix Rules
- Defining Maturity Mix Rules

Overview of Maturity Mix Rules

Maturity Mix rules allow you to define the term distribution of new business added during each forecast period. Maturity Mix assumptions are set at the product and currency levels. For new volumes generated during a simulation run, you will define the maturity and amortization terms applied to the balances originated in each period, as well as specify a maturity distribution for the volumes originated. For example, mortgage originations may be divided into 25% - 5 Year Term / 30 Year Amortization, 25% - 7 Year Term / 30 Year Amortization, and 50% - 30 Year Term / 30 Year Amortization. You attach the set of maturity assumptions to apply to all new volumes within a Dynamic ALM Process by selecting the appropriate Maturity Mix rule.

New business assumptions are defined based on the combined inputs from the following 4 forecast related business rules:

- Product Characteristics, see Product Characteristics, page 21-1
- Forecast Balances, see Forecast Balances, page 27-1
- Pricing Margins, see Forecast Pricing Margins, page 29-1
- Maturity Mix, see Forecast Maturity Mix, page 28-2

The procedure for working with and managing Maturity Mix rules is similar to that of other Oracle Asset Liability Management business rules. It includes the following steps:

- Searching for Maturity Mix rules. See: Searching for Rules, page 13-4
- Creating Maturity Mix Rules, page 28-2
- Viewing and Editing Maturity Mix rules. See: Viewing and Editing Rules, page 13-6
- Copying Maturity Mix rules. See: Copying Rules, page 13-6
- Deleting Maturity Mix rules. See: Deleting Rules, page 13-7

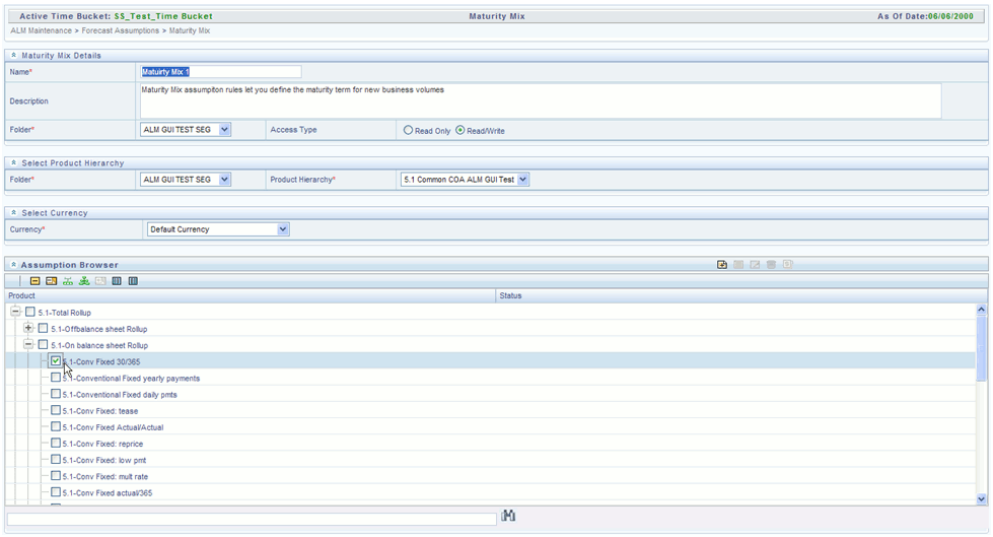
As part of creating and editing Maturity Mix rules, you define Maturity Mix assumptions for applicable products. See: Defining Maturity Mix rules, page 28-3.

Creating Maturity Mix Rules

You create Maturity Mix rules to define the maturity and amortization term for new business volumes. Maturity Mix rules use the modeling period defined in the active Time Bucket rule to establish the date range over which these assumptions can be defined.

Procedure:

1. Navigate to the Maturity Mix rule summary page.
2. Complete standard steps for this procedure. See: Creating Rules, page 13-5



Important: In addition to the standard steps for creating rules, the procedure for creating a Maturity Mix rule involves one extra step. After Standard Step 6, you need to select a product hierarchy. You

can define methodologies at any level of the hierarchical product dimension. The hierarchical relationship between nodes allows inheritance of methodologies from parent nodes to child nodes.

Note: Oracle Asset Liability Management provides you with the option to copy, in total or selectively, the product assumptions contained within ALM business rules from one currency to another currency or a set of currencies or from one product to another product or a set of products. See: Copying Assumptions across Currencies and Products, page 21-17

Related Topics

Overview of Maturity Mix Rules, page 28-1

Standard Navigation Paths, page A-1

Defining Maturity Mix Rules

The definition of a Maturity Mix rule is part of the Create or Edit Maturity Mix rule process. When you click Save in the Create Maturity Mix rule process, the rule is saved and the Maturity Mix rule summary page is displayed. However, Maturity Mix assumptions have not yet been defined for any of your products at this point. Typically, you would start defining your Maturity Mix assumptions for product-currency combinations before clicking Save.

Defining Maturity Mix Using Node Level Assumptions

Node Level Assumptions allow you to define assumptions at any level of the Product dimension Hierarchy. The Product dimension supports a hierarchical representation of your chart of accounts, so you can take advantage of the parent-child relationships defined for the various nodes of your product hierarchies while defining rules. Children of parent nodes on a hierarchy automatically inherit the assumptions defined for the parent nodes. However, assumptions directly defined for a child take precedence over those at the parent level.

Prerequisites

Performing basic steps for creating or editing a Maturity Mix rule, page 28-2

Procedure:

Defining Maturity Mix assumptions involves three primary steps:

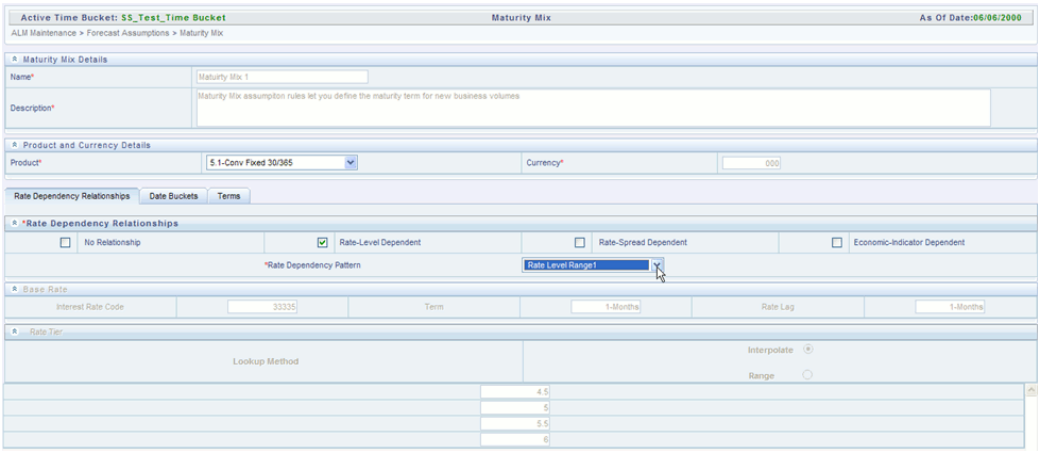
1. Choosing your rate dependency option

2. Defining Maturity Mix assumption bucket ranges

3. Inputting Maturity Mix assumption details

Hint: Using the default currency to setup assumptions can save data input time. At run time, the calculation engine uses assumptions explicitly defined for a product currency combination. If assumptions are not defined for a currency, the engine uses the assumptions defined for the product and the default currency. If the assumptions are the same across some or all currencies for a specific product, you can input assumptions for the default currency. Be careful using this option on screens where an Interest Rate Code is a required input.

Rate Dependency selection screen



Rate Dependency Relationships

There are four rate dependency options to choose from:

- No Relationship
- Rate Level Dependent
- Rate Spread Dependent
- Economic Indicator Dependent

See: Rate Dependency Patterns, page 26-1

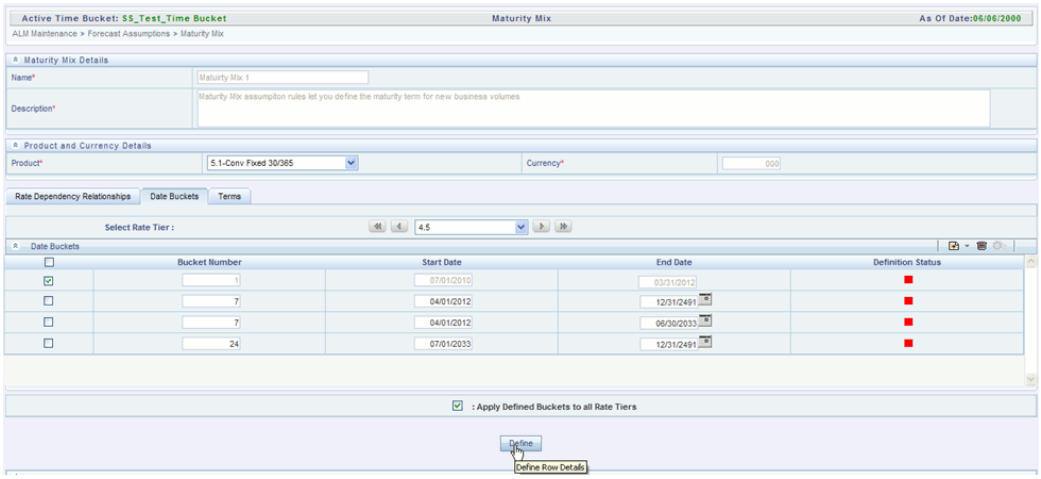
Rate Dependency Patterns

If any one of the Rate Dependency options, other than No Relationship, is selected, the Rate Dependency Pattern drop list becomes active. The list of available patterns is limited to those which apply to the selected Rate Dependency Relationship type.

Maturity Mix Date Bucket selection screen

Click the Add Row button to select the number of maturity mix date ranges that are required during the forecast period. The Bucket Number column is used to calculate the start and end dates. The Bucket Number column determines which income simulation bucket is used to calculate these dates.

The Maturity Mix rule uses the modeling period defined in the "active" Time Bucket rule. You should always verify that your modeling horizon and related assumptions are consistent with the As of Date and active Time Bucket rule before processing.



Rate Tiers

Rate Tiers reflect the Rate Dependency Pattern details from the selected Rate Dependency Pattern. You define Maturity Mix assumptions for each rate tier. The application will automatically determine which set of assumptions to apply for a given scenario based on the relationship between the Rate Tier and the related Forecast Rate assumption value.

Bucket Number

The bucket number input allows you to select a range of buckets over which the maturity mix assumptions will apply. Start Date and End Date values are updated automatically based on the Bucket Number input for each row.

Start Date and End Date

When the Maturity Mix detail page opens, the Start Date (min value) and End Date (max value) columns are automatically populated and are read-only values. The date ranges represent the Income Simulation Date buckets as defined in the "active" Time Bucket rule. See Time Bucket Rules, page 19-1for more information. Any new business originated within these dates is modeled using the Maturity Term(s) defined in the

Maturity Mix rule.

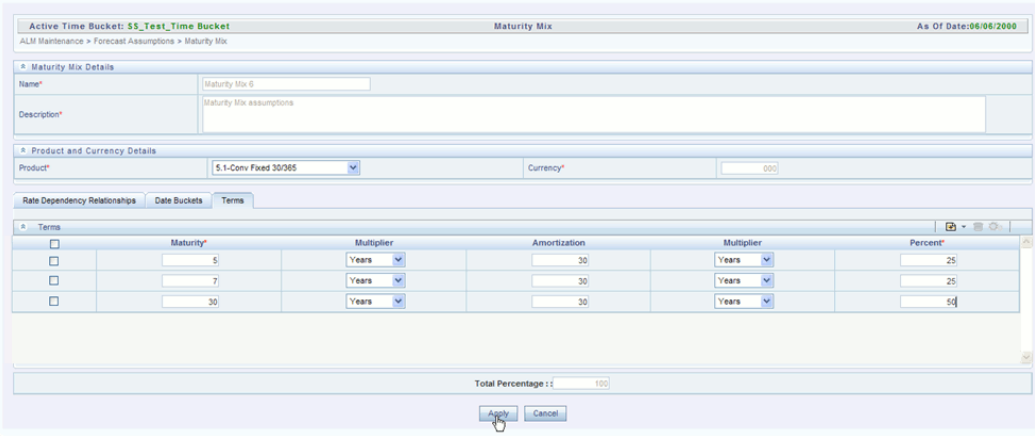
> **Note:** The Start Date value in the first row is always set equal to the first modeling date, i.e. the as of date plus 1 day, and the End Date value in the last row always equals the last day of the modeling horizon as defined in the "active" Time Bucket rule.

Apply Defined Buckets to all Rate Tiers

This option allows you to copy the bucket setup from one page to all other Rate Tiers when using Rate Dependent assumptions.

Maturity Mix Details screen

The Maturity Mix details screen allows you to define the maturity mix details. You can assign one or more maturity terms within the details page, but the sum of the percentage weights must equal 100%.



Maturity: Maturity (= term)

Multiplier: Maturity multiplier (= days, months, years)

Amortization: The amortization term will default to the maturity term. The amortization term should always be greater than or equal to the maturity term.

Multiplier: Amortization multiplier (= days, months, years)

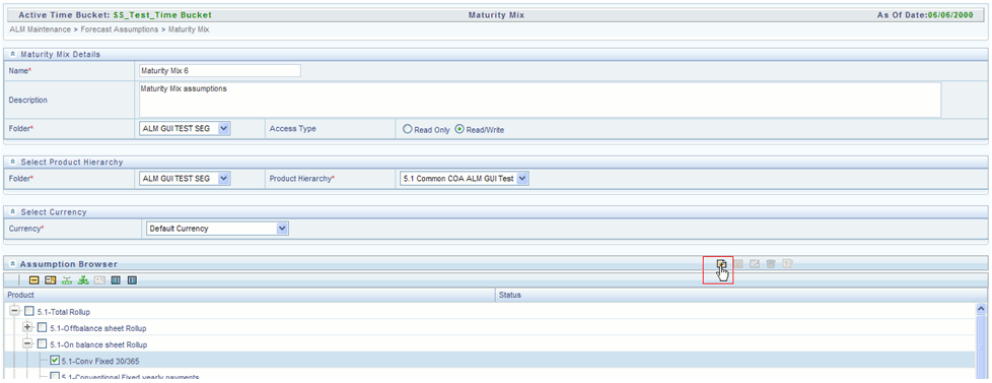
Percent: The percentage of new business at the specified term and maturity for the associated date bucket.

For each Date Bucket defined, the maturity terms must be specified.

Defining a Maturity Mix Rule: An Example

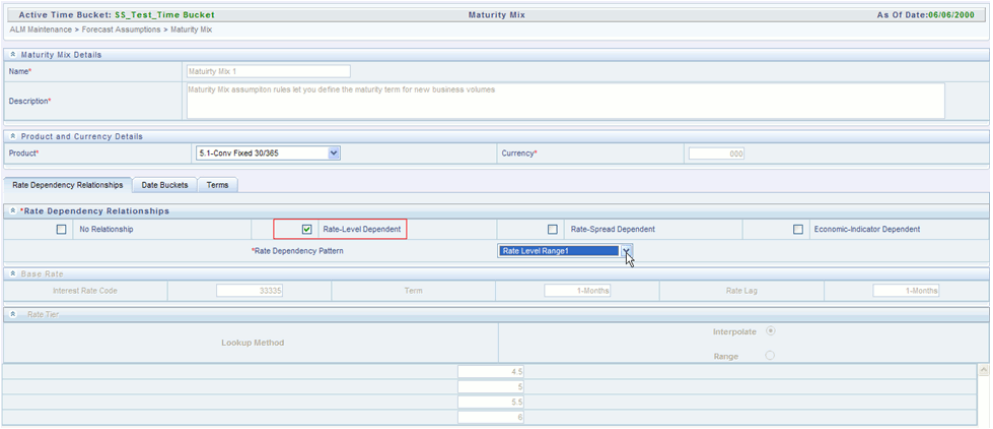
Define a Maturity Mix rule using a Rate Dependency Pattern.

1. From the Assumption Browser, select Currency (Default Currency) and a product from the hierarchy browser.



2. Select the "Add New" icon to enter the Assumption Details page.

3. Select the Rate Level Dependent – Rate Dependency option.



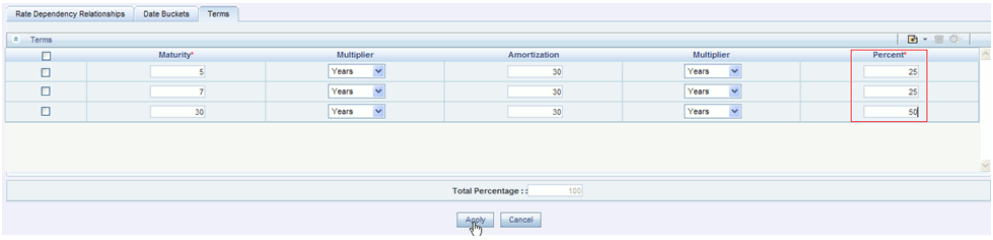
4. Select the Rate Level – Rate Dependency Pattern from the drop list.

5. Select Apply to navigate to the Date Buckets Tab.

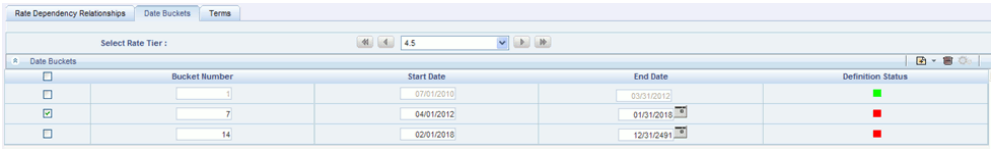
6. Add bucket ranges to the page as needed. Optionally, select the "Apply Defined Buckets to All Rate Tiers" checkbox to copy the bucket structure across all rate tier pages.

7. Select the check box for the first bucket range and select "Define" to navigate to the Terms tab.

8. Add one or more rows based on the number of maturity terms needed for the selected product.



9. Input Maturity Terms, Amortization Terms and Percentage Weights for each row and select Apply to save your inputs for the selected bucket range. Notice the status column on the Date Buckets tab turns from Red to Green, indicating that you have successfully defined assumptions for the bucket range.



10. Continue to define Maturity Mix assumptions for each Bucket Range.

11. Select **Apply** to commit your assumptions for each Rate Tier. Repeat the process for each rate tier. After you have defined assumptions for all Rate Tiers, you will return automatically to the Assumption Browser page.

    Note: You can select more than one product at a time from the Assumption Browser page.

12. When Maturity Mix assumptions are defined for all required product / currency combinations, select **SAVE** from the Assumption Browser page.

29

Forecast - Pricing Margins

This module describes the procedure for working with and managing Pricing Margin rules.

This chapter covers the following topics:

- Overview of Pricing Margin Rules
- Creating Pricing Margin Rules
- Defining Pricing Margin Rules

Overview of Pricing Margin Rules

Pricing Margin rules allow users to define pricing margins (or spreads) for your products. Pricing margins are defined period by period based on your active Time Bucket definition, for each product and, potentially, each currency. Pricing margins work together with an underlying base interest rate curve to determine note rate pricing for new business volumes defined through Forecast Balance rules. New business assumptions are defined based on the combined inputs from the following 4 forecast related business rules:

- Product Characteristics, see Product Characteristics, page 21-1
- Forecast Balances, see Forecast Balances, page 27-1
- Pricing Margins, see Forecast Pricing Margins, page 29-1
- Maturity Mix, see Forecast Maturity Mix, page 28-2

When you require more complex definitions of pricing margins to model unique account pricing details, user-defined repricing patterns can be used. For more information, see User-Defined Repricing Patterns, page 18-1

The procedure for working with and managing Pricing Margin rules is similar to that of other Oracle Asset Liability Management business rules. It includes the following steps:

- Searching for Pricing Margin rules. See: Searching for Rules, page 13-4
- Creating Pricing Margin Rules, page 29-2
- Viewing and Editing Pricing Margin rules. See: Viewing and Editing Rules, page 13-6
- Copying Pricing Margin rules. See: Copying Rules, page 13-6
- Deleting Pricing Margin rules. See: Deleting Rules, page 13-7

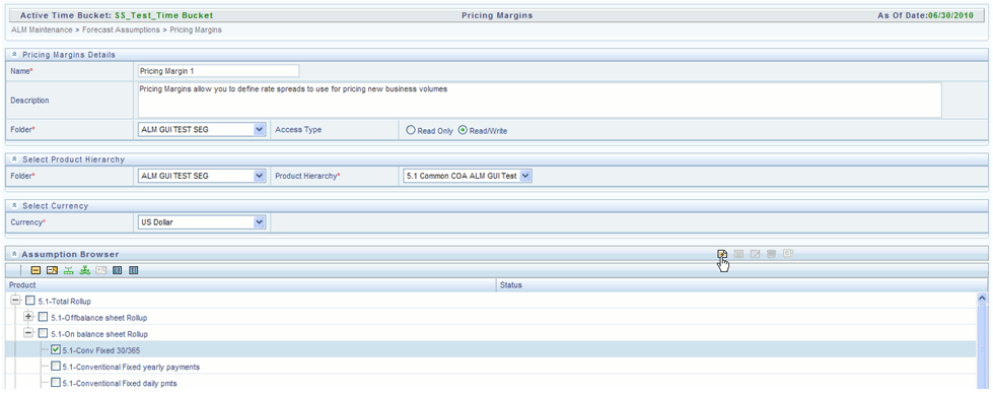
As part of creating and editing Pricing Margin rules, you assign Pricing Margins to applicable products. See: Defining Pricing Margins, page 29-3

Creating Pricing Margin Rules

You create Pricing Margin rules to assign pricing margins (or spreads) to be used in pricing new volumes defined through Forecast Balances business rules.

Procedure:

1. Navigate to the Pricing Margins rule summary page.
2. Complete standard steps for this procedure. See: Creating Rules, page 13-5



Important: In addition to the standard steps for creating rules, the procedure for creating a Pricing Margins rule involves one extra step. After Standard Step 6, you need to select a product hierarchy. You can define methodologies at any level of the hierarchical product dimension. The hierarchical relationship between nodes allows inheritance of methodologies from parent nodes to child nodes.

Note: Oracle Asset Liability Management provides you with the option to copy, in

total or selectively, the product assumptions contained within ALM business rules from one currency to another currency or a set of currencies or from one product to another product or a set of products. See: Copying Assumptions across Currencies and Products, page 21-17

Related Topics

Overview of Pricing Margin Rules, page 29-1

Standard Navigation Paths, page A-1

Defining Pricing Margin Rules

The definition of a Pricing Margins rule is part of the Create or Edit Pricing Margins rule process. When you click Save in the Create Pricing Margins rule process, the rule is saved and the Pricing Margins rule summary page is displayed. However, Pricing Margin assumptions have not yet been defined for any of your products at this point. Typically, you would start defining your Pricing Margin assumptions for product-currency combinations before clicking Save.

Defining Pricing Margins Using Node Level Assumptions

Node Level Assumptions allow you to define assumptions at any level of the Product dimension Hierarchy. The Product dimension supports a hierarchical representation of your chart of accounts, so you can take advantage of the parent-child relationships defined for the various nodes of your product hierarchies while defining rules. Children of parent nodes on a hierarchy automatically inherit the assumptions defined for the parent nodes. However, assumptions directly defined for a child take precedence over those at the parent level.

Prerequisites

Performing basic steps for creating or editing a Pricing Margins rule, page 29-2

Procedure:

Defining Pricing Margins has two primary steps:

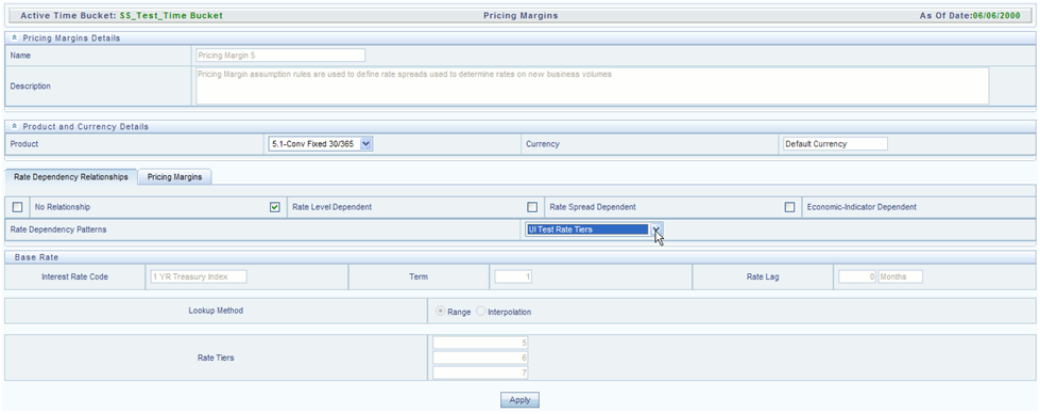
1. Choosing your rate dependency option

2. Inputting Pricing Margin details for the selected products

Hint: Using the default currency to setup assumptions can save data input time. At run time, the calculation engine uses assumptions explicitly defined for a product currency combination. If assumptions are not defined for a currency, the engine uses the assumptions defined for the product and the default currency. If the assumptions are

the same across some or all currencies for a specific product, you can input assumptions for the default currency. Be careful using this option on screens where an Interest Rate Code is a required input.

Rate Dependency selection screen



Rate Dependency Relationships

There are four rate dependency options to choose from:

- No Relationship
- Rate Level Dependent
- Rate Spread Dependent
- Economic Indicator Dependent

See: Rate Dependency Patterns, page 26-1

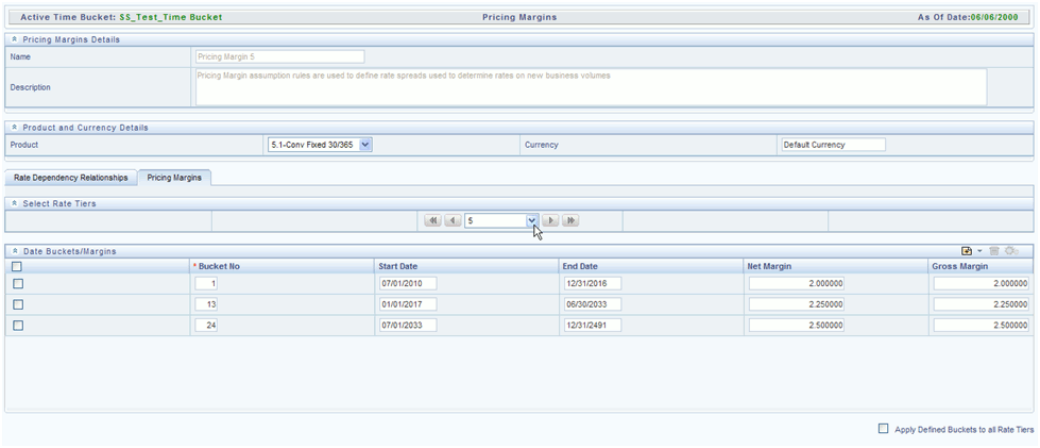
Rate Dependency Patterns

If one of the Rate Dependency options, other than No Relationship, is selected, the Rate Dependency Pattern drop list becomes active. The list of available patterns is limited to those which apply to the selected Rate Dependency Relationship type.

The Pricing Margin Details screen

In an income simulation scenario, you may want to price new business for an account at a margin above or below a market interest rate code. For example, you can model a premium paid on CDs in relation to a market yield curve by adding a pricing margin to the interest rate code assigned to the product in the Product Characteristics rule. If you want a rate that is 25 bps above the market yield curve, you will type "0.25" as the pricing margin for the appropriate modeling period.

The Pricing Margin rule uses the modeling period defined in the "active" Time Bucket rule. You should always verify that your modeling horizon and related assumptions are consistent with the As of Date and active Time Bucket rule before processing.



Rate Tiers

Rate Tiers reflect the Rate Dependency Pattern details from the selected Rate Dependency Pattern. You define Pricing Margin assumptions for each rate tier. The application will automatically determine which set of assumptions to apply for a given scenario based on the relationship between the Rate Tier and the related Forecast Rate assumption value.

Bucket Number

The bucket number input allows you to select a range of buckets over which the pricing margin assumption will apply. Start Date and End Date values are updated automatically based on the Bucket Number input for each row.

Start Date and End Date

When the Pricing Margins detail page opens, the Start Date (min value) and End Date (max value) columns are automatically populated and are read-only values. The date ranges represent the Income Simulation Date buckets as defined in the "active" Time Bucket rule. See Time Bucket Rules, page 19-1 for more information. Any new business originated within these dates is modeled using the pricing margins defined in the Pricing Margin rule. New business added for each date bucket will have the same net and gross margin for its life. The margins for a particular instrument will not change as the instrument ages.

Gross Margin

The Gross Margin you define is added to the Interest Rate Code specified in the Product Characteristics rule to define the gross rate on new business.

Net Margin

The Net Rate is affected by setting the Net Margin Flag in the Product Characteristics rule. If Net Margin Flag is set to Floating Net Rate, then Net Rate is equal to the Interest Rate Code plus the Net Margin specified here. If the Net Margin Flag is set to Fixed Net Rate, then Net Rate is equal to Net Margin.

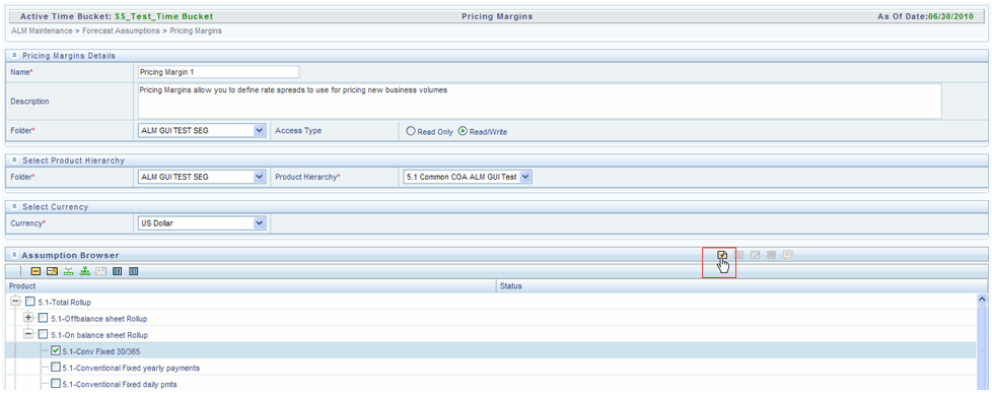
Apply Defined Buckets to all Rate Tiers

This option allows you to copy the bucket setup from one page to all other Rate Tiers when using Rate Dependent assumptions.

Defining a Pricing Margin Rule: An Example

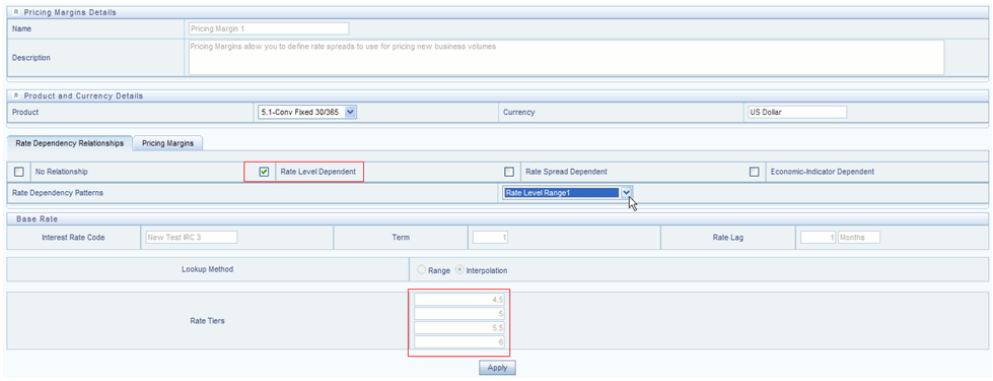
Define a Pricing Margin Rule using a Rate Dependency Pattern.

1. From the Assumption Browser, select Currency (US Dollar) and a product from the hierarchy browser.



2. Select the "Add New" icon to enter the Assumption Details page.

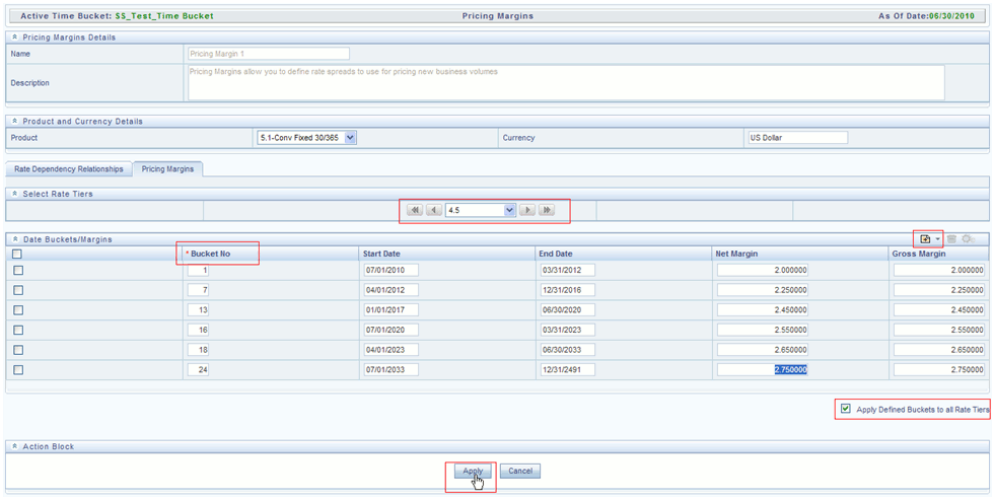
3. Select the Rate Level Dependent – Rate Dependency option.



4. Select the Rate Level – Rate Dependency Pattern from the drop list.

5. Select Apply to navigate to the Pricing Margin Tab where you can define assumptions for each rate tier.

6. Add bucket ranges to the page as needed. Optionally, select the "Apply Defined Buckets to All Rate Tiers" checkbox to copy the bucket structure across all rate tier pages.



7. Input Rate Spreads for each bucket range that you define.

   Note: You may want to utilize the Data Input Helper to copy an assumption from a row where you have already defined a value or apply a fixed amount down the page. The following optional steps describe how to use this feature.

   1. Select the checkboxes next to the rows that you want to work with or use the "Select ALL" option by selecting the checkbox

on the header row.

2. Select the Data Input Helper icon.

3. From the Data Input Helper – popup screen, select **Method** – " Keep Current Values" or some other appropriate method.

4. Select the Frequency and/or Multiplier from the left side of the shuttle box.

5. Select **APPLY** to copy assumptions to the selected rows.

8. Select **Apply** to commit your assumptions for each Rate Tier. Repeat the process for each rate tier. After you have defined assumptions for all Rate Tiers, you will return automatically to the Assumption Browser page.

   Note: You can select more than one product at a time from the Assumption Browser page.

9. When Pricing Margin assumptions are defined for all required product / currency combinations, select **SAVE** from the Assumption Browser page.

30

Transfer Pricing Rules

This module describes the procedure for working with and managing Transfer Pricing rules.

This chapter covers the following topics:

- Overview of Transfer Pricing Rules
- Creating Transfer Pricing Rules
- Defining Transfer Pricing Methodologies
- Defining the Redemption Curve Methodology

Overview of Transfer Pricing Rules

Transfer Pricing rules allow you to specify methodologies for transfer pricing your product portfolio. Within ALM, these Transfer Pricing rule assumptions apply to future balances only. If you are trying to Transfer Price instrument balances, Oracle Funds Transfer Pricing is required.

A Transfer Pricing rule may contain a transfer pricing methodology defined for a particular product, or a set of methodologies defined for all products (Dimension Members) in a particular product hierarchy. In addition, it contains certain parameters used in defining option cost methodologies. See: Defining Transfer Pricing Rules

The Transfer Pricing rule is a key component of the Transfer Pricing Process. The Transfer Pricing Process, uses the transfer pricing methodologies contained in the Transfer Pricing rules to generate transfer rates. Consequently, before processing information for a new period, you need to review and validate the assumptions contained in your Transfer Pricing rules.

> **Note:** If Transfer Pricing Assumptions are managed at the Parent / Node level, new product dimension members will automatically inherit TP Method assignments.

If new members are added to the applicable product dimension, you need to update your Transfer Pricing rules by defining appropriate methodologies for the new products.

The procedure for working with and managing the Transfer Pricing rule is similar to that of other Oracle Asset Liability Management assumption rules. It includes the following steps:

- Searching for Transfer Pricing rules. See: Searching for Rules, page 13-4.
- Creating Transfer Pricing Rules, page 30-2.
- Viewing and Editing Transfer Pricing rules. See: Viewing and Editing Rules, page 13-6.
- Copying Transfer Pricing rules. See: Copying Rules, page 13-6.
- Deleting Transfer Pricing rules. See: Deleting Rules, page 13-7.

As part of creating and editing Transfer Pricing rules, you can also define transfer pricing methodologies. See:

- Defining Transfer Pricing Methodologies, page 30-3
- Defining the Redemption Curve Methodology, page 30-8

Oracle Asset Liability Management provides you with the option to copy, in total or selectively, the product assumptions contained within the Transfer Pricing, Prepayment and Adjustments rules from one currency to another currency or a set of currencies or from one product to another product or a set of products. See: **Copying Assumptions Across Currencies and Products**, page 21-17.

Related Topics

Standard Navigation Paths, page A-1

Creating Transfer Pricing Rules

You create a Transfer Pricing rule to map transfer pricing methodologies for your products.

Procedure

1. Navigate to the Transfer Pricing rule summary page.
2. Complete standard steps for this procedure. See: Creating Rules, page 13-5.

Important: In addition to the standard steps for creating rules, the procedure for creating a Transfer Pricing rule involves one extra step. After Standard Step 5, you need to select a product hierarchy. You can define methodologies at any level of the hierarchical product dimension. The hierarchical relationship between the nodes allows inheritance of methodologies from parent nodes to child nodes.

Related Topics

Overview of Transfer Pricing Rules, page 30-1

Standard Navigation Paths, page A-1

Defining Transfer Pricing Methodologies

The assignment of transfer pricing methodologies is part of the Create or Edit Transfer Pricing rules process where assumptions about transfer pricing methodologies are made for product-currency combinations. When you click **Save** in the Create Transfer Pricing rules process, the rule is saved and the Transfer Pricing rule Summary page is displayed. However, the transfer pricing methodology has not yet been defined for any of your products at this point. Typically, you would start defining your methodologies for product-currency combinations before clicking **Save**.

The Transfer Pricing rule supports definition of assumptions for combinations of two dimensions: Product and Currency.

You can define transfer pricing methodologies for your entire product portfolio one currency at a time. Suppose your portfolio is comprised of products denominated in two currencies (US Dollar and Japanese Yen) and that you want to specify different transfer pricing assumptions and /or different Transfer Pricing yield curves, for each product group. Using the currency selection droplist, you can first define assumptions for the products denominated in US Dollars and then proceed with defining assumptions for the Yen-based products.

Once you have created a Transfer Pricing rule, you can assign transfer pricing methodologies to product-currency combinations in either of the following two ways:

1. By creating a conditional assumption using conditional logic. See:
   - Associating Conditional Assumptions with Prepayment Rules, page 23-15
   - Defining Prepayments Using Node Level Assumptions, page 23-4
2. Directly on the Transfer Pricing methodology page, as described here.

Prerequisites

Performing basic steps for creating or updating a Transfer Pricing rule, page 30-2

Procedure:

This table describes key terms used for this procedure.

Selected Terminology

Term	Description
Yield Curve Term	Defines the point on the yield curve that the system references to calculate transfer rates.
Historical Range	Specifies the period over which the average is to be taken for the Moving Averages method.
Lag Term	Specifies a yield curve from a date earlier than the Assignment Date for the Spread from Interest Rate Code method.
Rate Spread	The fixed positive or negative spread from an Interest Rate Code or Note Rate, used to generate transfer rates in the Spread from Interest Rate and Spread from Note Rate methods.
Model with Gross Rates	This option allows you to specify whether modeling should be done using the net or gross interest rate on the instrument. This option is only applicable when the Net Margin Code is also set to one, for example, Fixed. Gross rates are typically selected while modeling the effect of serviced portfolios where the underlying assets have been sold but the organization continues to earn servicing revenue based on the original portfolio.
Assignment Date	This is the effective date of the yield curve.

Term	Description
Percentage/Term Points	The term points that the system uses to compute the Redemption Curve method results. A percentage determines the weight assigned to each term point when generating results.

1. Navigate to the Assumption Browser page.
2. Select a Product Hierarchy
3. Select a Currency

   Note: The list of currencies available for selection is managed within Rate Management, and reflects the list of "Active" currencies.

4. Expand the hierarchy and select one or more members (leaf values and/or node values) from the product hierarchy.
5. Click the Add icon to begin mapping Transfer Pricing methods to the list of selected product dimension members. The system displays a list of all the products (for which you can define assumptions) or currencies (that are active in the system).
6. In the TP Method selector page, Account Table data source is selected by default and disabled.
7. Select the Transfer Pricing method for the selected product member.

   Important: The Transfer Pricing methodologies available depend on the selected data source. See: Transfer Pricing Combinations

   Depending on the transfer pricing method selected, certain required and optional parameter fields are displayed. You can update these fields as required. See: Required Parameters for a Transfer Pricing Methodology. See also: Defining the Redemption Curve methodology

8. Click **Apply**.

   At this point you can:

   - Continue defining additional methodologies for other product-currency

combinations contained in your selection set, by repeating the above procedure.

- Complete the process by clicking **Cancel** or by answering to NO to the confirmation alert after applying assumptions for each Product / Currency combination in your select set.

9. From the Assumption Browser page, click **Save**.

   The new assumptions are saved and the Transfer Pricing rule selector page is displayed.

   Note: Oracle Asset Liability Management provides you with the option to copy, in total or selectively, the product assumptions contained within the Adjustments, Transfer Pricing, and Prepayment rules from one currency to another currency or a set of currencies or from one product to another product or a set of products. See:**Copying Assumptions Across Currencies and Products**, page 21-17.

Guidelines

Availability of Transfer Pricing Methodologies

The availability of transfer pricing methodologies depends on the data source that you select: Account Table or Ledger Table. In ALM, by default, only Account Table data source is selected and is disabled. The following table describes the Transfer Pricing Methodologies available for the Account Table Data Source and displays whether that methodology requires the selection of a Transfer Pricing Interest Rate Code.

Note: The Interest Rate Code LOV is filtered by the selected Currency.

Transfer Pricing Combinations

Transfer Pricing Methodology	Data Source: Account Table	Interest Rate Code
Cash Flow : Average Life	Yes	Yes
Cash Flow : Duration	Yes	Yes
Cash Flow : Weighted Term	Yes	Yes
Cash Flow : Zero Discount Factors	Yes	Yes

Transfer Pricing Methodology	Data Source: Account Table	Interest Rate Code
Moving Averages	Yes	Yes
Straight Term	Yes	Yes
Spread from Interest Rate Code	Yes	Yes
Spread from Note Rate	Yes	
Redemption Curve	Yes	Yes

Note: . Child nodes for which no assumptions have been specified automatically inherit the methodology of their closest parent node. So if neither a child node nor its immediate parent has a method assigned, the application searches up the nodes in the hierarchy until it finds a parent node with a method assigned, and uses that method for the child node. However, if no parent node has a method assigned then the application triggers a processing error stating that no assumptions are assigned for the particular product/currency combination.

Required Parameters

You cannot define a transfer pricing methodology successfully, unless you specify the required parameters. The following table displays the parameters associated with each transfer pricing method and specifies whether they are required or optional. The optional parameter fields display default values. However, you may decide to change the values for the optional parameters.

Required Parameters for a Transfer Pricing Methodology

Transfer Price Method	Yield Curve Term	Historical Range	Lag Term	Rate Spread	Assignment Date	Term Points
Cash Flow : Average Life						
Cash Flow : Weighted Term						

Transfer Price Method	Yield Curve Term	Historical Range	Lag Term	Rate Spread	Assignment Date	Term Points
Cash Flow : Duration						
Cash Flow : Zero Discount Factors						
Moving Averages	Required	Required				
Straight Term						
Spread from IRC	Required		Required	Required	Required	
Spread from Note Rate				Required		
Redemption Curve					Required	Required

Related Topics

Defining Transfer Pricing Rules

Overview of Transfer Pricing Rules, page 30-1

Standard Navigation Paths, page A-1

Defining the Redemption Curve Methodology, page 30-8

Copying Assumptions Across Currencies and Products, page 21-17

Defining the Redemption Curve Methodology

As part of the process for defining the Redemption Curve methodology, you must select as many Term Points from your selected Transfer Pricing Yield curve as are needed and allocate the percentage weighting for each of those points.

Prerequisites

Performing basic steps for creating or updating a Transfer Pricing rule, page 30-2

Procedure to Add Term Points:

The steps involved in adding Term Points are listed as follows:

1. Click Add New Term Points.

   The Add New Term Points page is displayed.

2. Select the Transfer Pricing Yield Curve Points as required.

3. Click **OK**.

   The Term Point Selection section is displayed.

4. Update the percentage value for each Term Point.

   Note: The sum of all the percentages for all Term Points must add up to 100. To remove a Yield Curve Point from the Percentages/Term Points table, select the term point(s) and click the Delete icon.

Related Topics

Defining Transfer Pricing Methodologies, page 30-3

Standard Navigation Paths, page A-1

31

Adjustment Rules

Overview of Adjustment Rules

Adjustment rules allow you to specify methodologies to calculate Transfer Pricing add-on rates for the relevant forecast balances in your portfolio. The methodologies contained in the Adjustments rule are referenced by the Static and Dynamic Deterministic ALM Processes.

> **Note:** Adjustment Rule assumptions are used to assign TP Add-on rates to future balances only within ALM. To assign adjustment rates to your instrument table data, Oracle Funds Transfer Pricing is required.

The procedure for working with and managing Adjustment rules is similar to that of other Oracle Asset Liability Management business rules. It includes the following steps:

- Searching for Adjustment rules. See: Searching for Rules, page 13-4.
- Creating Adjustment Rules, page 31-2.
- Viewing and Editing Adjustment rules. See: Viewing and Editing Rules, page 13-6.
- Copying Adjustment rules. See: Copying Rules, page 13-6.
- Deleting Adjustment rules. See: Deleting Rules, page 13-7.

As part of creating and editing Adjustment rules, you define adjustment methodologies for applicable products. See:

- Defining Adjustment Methods, page 31-3
- Availability of Adjustment Methods, page 31-5
- Adjustment Method Parameters, page 31-6

- Procedure to Define the Formula Based Rate Adjustment Method, page 31-9

Oracle Asset Liability Management provides you with the option to copy, in total or selectively, the product assumptions contained within the Adjustments, Transfer Pricing, and Prepayment rules from one currency to another currency or a set of currencies or from one product to another product or a set of products. See:**Copying Assumptions Across Currencies and Products**, page 21-17.

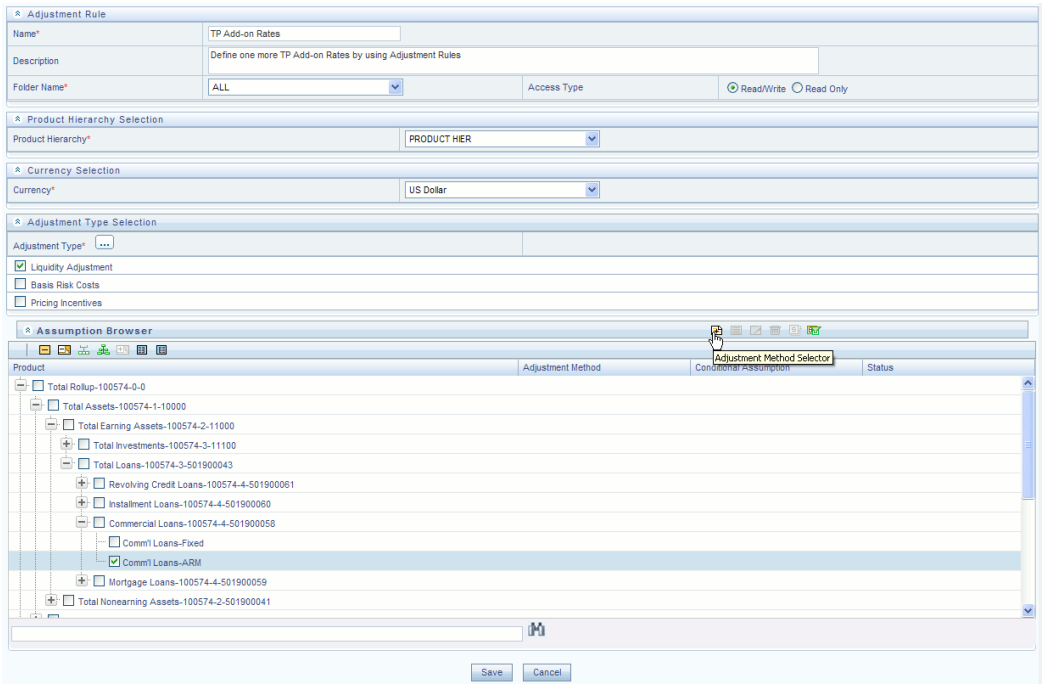
Creating Adjustment Rules

You create an Adjustments rule to define adjustment methodologies for your products.

Procedure

1. Navigate to the Adjustments rule summary page.

2. Complete standard steps for this procedure. See: Creating Rules, page 13-5.



Important: In addition to the standard steps for creating rules, the procedure for creating an Adjustments rule involves one extra step. After Standard Step 5, you need to select a product hierarchy. You can define methodologies at any level of the hierarchical product dimension. The hierarchical relationship between the nodes allows inheritance of methodologies from parent nodes to child nodes.

Related Topics

Overview of Adjustment Rules, page 31-1

Standard Navigation Paths, page A-1

Defining Adjustment Methods

The definition of adjustment methods is part of the Create or Edit Adjustments rule process. When you click **Save** in the Create Adjustments rule process, the rule is saved and the Adjustments rule summary page is displayed. However, adjustment assumptions have not yet been defined for any of your products at this point. Typically, you would start defining your adjustment assumptions for product-currency combinations before clicking **Save**.

Prerequisites

Performing basic steps for creating or editing an Adjustments rule, page 31-2

Procedure:

This table describes key terms used for this procedure.

Selected Terminology

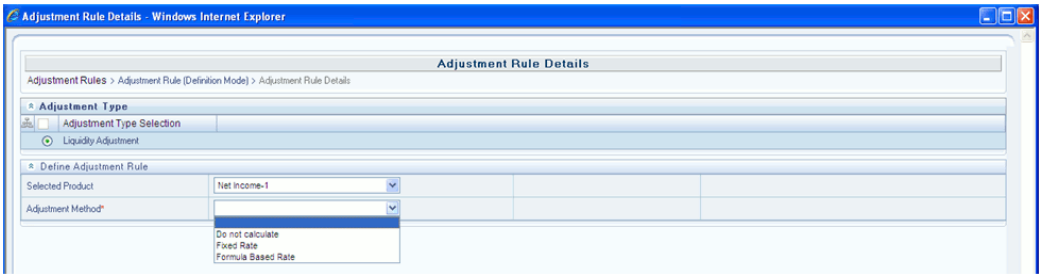
Term	Definition
Reference Term	The associated term used for the add-on rate assignment. You can select one of the following types of reference terms: Original Term (the contractual term to the maturity of the account), Repricing Frequency (the frequency at which the account reprices), Remaining Term (the number of months until the account matures), Duration, Average Life.

Term	Definition
Lookup Method	Method used to derive an add-on rate for different reference term values. Specify Range as the lookup method if you want the application to apply the rates defined in the Adjustments rule to a range of reference term values, using the terms defined in the rule to specify the lower end of the range. Note that for values less than the lowest term point, the application uses the value associated with the lowest point. Specify Interpolation as the lookup method if you want the application to interpolate add-on rate values for applicable reference terms falling between node points specified in the Adjustments rule, using straight line interpolation between the term points.
Term	In conjunction with the Multiplier, this field allows you to specify the value for the Reference Term, for a given lookup tier.
Multiplier	The unit of time applied to the Term. The choices are: Days, Months, Years.
Rate	The add-on rate to be applied to instruments where Reference Term is the product of the Term and Multiplier defined for the row. The rate should be in percentage form, for example, 1.25 percent should be input as 1.25.
Assignment Date	Allows you to choose the date for which the yield curve values are to be sourced. Choices available are the As of Date, Last Repricing Date, TP Effective Date, or Origination Date. Origination Date is selected by default.
Interest Rate Code	Used for the rate lookup for the Formula Based Rate.
Formula	The mathematical formula used in the Formula Based Rate adjustment method to determine the Add-on rate: (Term Point Rate * Coefficient) + Rate Spread

Term	Definition
Term Point	In conjunction with the Multiplier (day, month, or year), it is used in the Formula Based Rate method when looking up the rate for the designated Interest Rate Code.
Coefficient	Coefficient by which the Term Point rate should be multiplied.
Rate Spread	The spread added to the interest rate read from the selected Interest Rate Code. Rate Spread is used in the Formula Based Rate adjustment method. For the Formula Based Rate method, the spread is added to the result of the Term Point Rate * Coefficient. Enter the Rate Spread in percentage form, for example, 1.25 percent should be input as 1.25.

Availability of Adjustment Methods

The list of adjustment methods depends on the adjustment type that you select: add-on rates (including Liquidity Adjustments, Basis Risk costs, Pricing Incentives, and Other adjustments). The following table describes the adjustment methods available for each of the adjustment types.



Availability of Adjustment Methods

Adjustment Method	Adjustment Type: Add-On Rates (Liquidity Adjustments, Basis Risk Costs, Pricing Incentives, and Other Adjustments)
Do Not Calculate	Yes

Adjustment Method	Adjustment Type: Add-On Rates (Liquidity Adjustments, Basis Risk Costs, Pricing Incentives, and Other Adjustments)
Fixed Rate	Yes
Formula Based Rate	Yes

Note: If you select "Do not calculate" as the calculation method, no adjustment assumptions will be assigned to the particular product-currency combination. This is a particularly useful option when using node level assumptions because it allows you to exclude a particular child from inheriting a parent assumption.

Adjustment Method Parameters

To define an adjustment calculation method, you must specify one or more parameters, depending on the method. The parameter fields may display a default value, which you can override.

The following tables display the parameters associated with the adjustment methods for different adjustment types.

Parameters Applicable to the Adjustment Methods for the Add-On Rate Adjustment Types

Adjustment Method	Reference Term	Lookup Method	Term	Multiplier	Rate	Assignment Date	Interest Rate Code	Formula
Do Not Calculate								
Fixed Rate	Yes	Yes	Yes	Yes	Yes			
Formula Based Rate	Yes	Yes	Yes	Yes		Yes	Yes	Yes

Note: The Add-On Rate adjustment types include Liquidity Adjustments, Basis Risk Costs, Pricing Incentives, and Other Adjustments.

Prerequisites

Performing basic steps for creating or editing an Adjustments rule, page 31-2

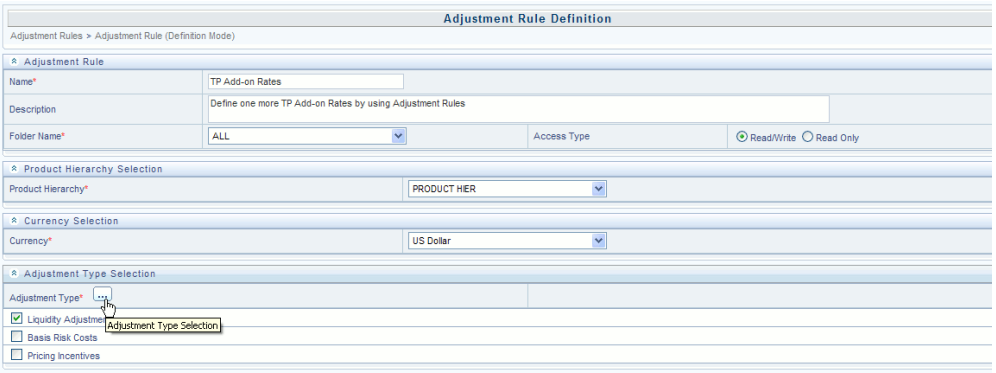
Procedure

Once you have created an Adjustments rule, you can assign adjustment methodologies to product-currency combinations in either of the following two ways:

1. By creating a conditional assumption using conditional logic. See:
   - Associating Conditional Assumptions with Prepayment Rules, page 23-15
   - Defining Prepayments Using Node Level Assumptions, page 23-4
2. Directly on the Adjustment methodology page, as described here.

Use the following procedure to define an adjustment method:

1. Navigate to the Adjustments assumption browser page.



2. Select an appropriate adjustment type: Liquidity Adjustment, Basis Risk Cost, Pricing Incentive, or, Other Adjustment by opening the Adjustment Type selector window. You can enable one or more adjustment types within a single Adjustment Rule and apply more than one Adjustment to a single product.

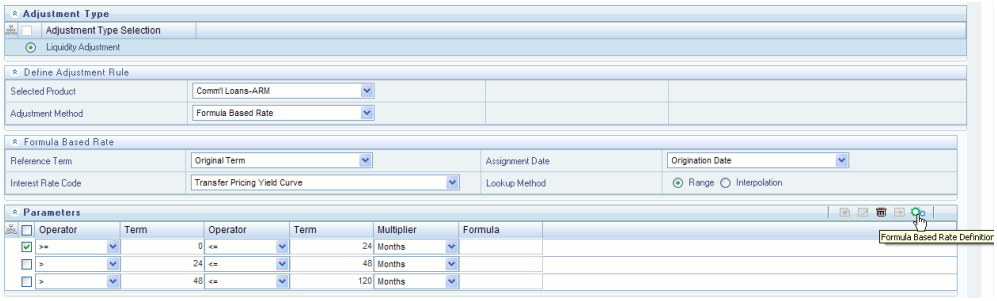
   Note: The product hierarchy refreshes when you change your Adjustment Type selection, but note that all selections made within the rule are saved. For example, when Liquidity Adjustment is selected, the hierarchy displays the status of Liquidity Adjustment mappings within the hierarchy. If you change your Adjustment Type selection to Basis Risk Cost, the hierarchy will refresh and you will see the status of all Basis Risk Cost mappings, and so on.

3. Select a Product Hierarchy.

4. Specify a currency.

5. Based on the selected hierarchy, the application displays a list of all the products (for which you can define assumptions).

6. Select the check box of one or more products for which you want to define adjustment details.



7. Select an adjustment method and enter the appropriate parameters.

   Important: The adjustment methods available depend on the selected adjustment type. See: Availability of Adjustment Methods, page 31-5. Depending on the adjustment type and method adjustment combinations selected, certain required and optional parameter fields are displayed. You can update these fields as required. See:

   - Selected Terminology
   - Adjustment Method Parameters, page 31-6.
   - Procedure to Define the Formula Based Rate Adjustment Method, page 31-9

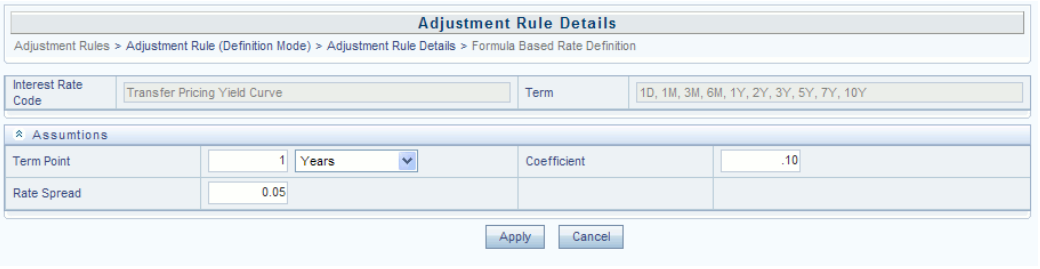
8. Click **Apply**. If only one product was selected, the assumption browser page is displayed. If more than one product was selected on the assumption browser page, then each subsequent product in the select list will appear in the Selected Product drop list and each item should be defined appropriately. After completing the assumption details for each selected product, the assumption browser page will be displayed. At this point you can:

   - Continue defining assumptions for additional product-currency combinations for the selected Adjustment Type, by repeating the above procedure.

- Select a new Adjustment Type and continue defining assumption details for the required set of products
- Complete the process by clicking **Save**. The new assumptions are saved and the Adjustments rule summary page is displayed.

Note: Oracle Asset Liability Management provides you with the option to copy, in total or selectively, the product assumptions contained within the Adjustments, Transfer Pricing, and Prepayment rules from one currency to another currency or a set of currencies or from one product to another product or a set of products. See:**Copying Assumptions Across Currencies and Products**, page 21-17.

Procedure to Define the Formula Based Rate Adjustment Method



Defining the Formula Based Rate adjustment method involves the following additional steps:

1. Select Update to define the mathematical formula. The Define Formula for Reference Term page is displayed.
2. Specify the Term Point, Coefficient, and Rate Spread parameters on the Define Formula for Reference Term page.

Related Topics

Overview of Adjustment Rules, page 31-1

Copying Assumptions Across Currencies and Products, page 21-17

Standard Navigation Paths, page A-1

32

Transaction Strategies

With the Transaction Strategy rules you can test the impact of various hedging strategies that are integrated with basic scenario modeling assumptions. This functionality supports you in testing alternative strategies and their incremental impact on results. The testing is facilitated by the separation of transaction strategies from basic scenario assumptions allowing you to easily view results with and without the incremental transaction(s). You can also use this rule to add specific instrument records to a processing run without changing the actual instrument data.

A transaction is either positive or negative and can be defined for any product leaf member. A Transaction Strategy rule is made up of any number of individual transactions.

This chapter covers the following topics:

- Creating a Transaction Strategy Rule

Creating a Transaction Strategy Rule

To create a new Transaction Strategy Rule, complete the following steps:

1. Navigate to the Transaction Strategies summary page and click the "Add" button.
2. In the Transaction Strategy Details section:
    1. Type a descriptive name.
    2. Type a description. This is an optional field.
    3. Select a security folder and the Access Type.
3. In the Product Characteristics section:
    1. Select the Product Characteristics folder and assumption rule from the drop down list (For additional information on setting up and defining Product

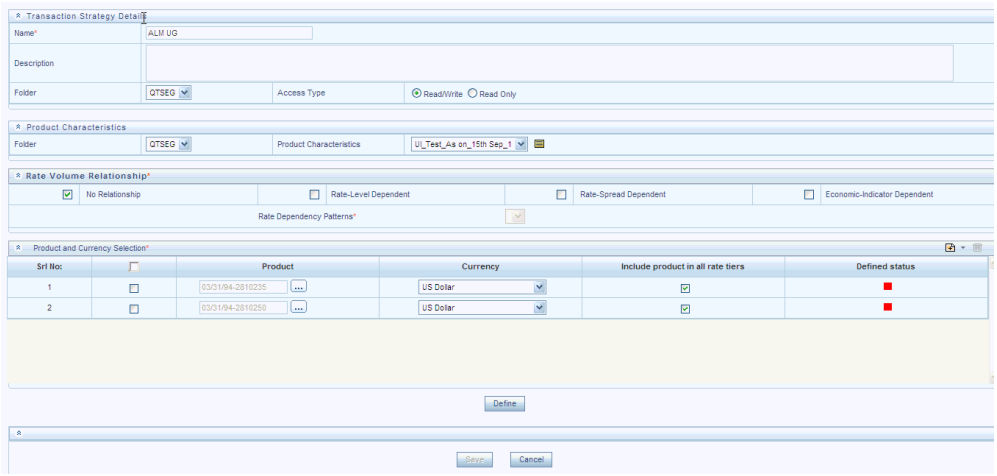
Characteristic rules, see Product Characteristics, page 21-3)

Note: The Product Characteristics rule that you choose determines the hierarchy and available list of products for selection within the Transaction Strategy rule. The dependent Product Characteristics rule also provides default characteristics for any selected product. Once defined, the red status box will turn green. Refer to "Setting up a Transaction Strategy" below for the list of required values and setup options.

4. Choose from one of the four rate volume relationships (For more information and definitions, see Rate Dependency Patterns, page 29-4)

   Note: If any relationship is chosen, Choose from the drop down list the desired Rate Dependency Pattern.

5. Click Save (or continue on to define Transaction Strategy details, see "Setting up a Transaction Strategy", page 32-2 below).



Setting up a Transaction Strategy

To add a new transaction or instrument record to the rule, click the "Add" button. A new row will appear in the Product and Currency Selection section. To delete a transaction or instrument record, check the box next to the product you want to delete; then click the Delete button.

Once you add a new Transaction row by clicking the Add button, position the cursor in the product column. Click the selector icon to bring up the hierarchy browser and select a product leaf member. The currency code defaults to the currency defined in Application Preferences.

After adding the product and selecting appropriate Product Dimension Member from the Hierarchy, the next step is to define the attributes for the Transaction.

Based on the Product Members – Account Type attribute, you will be directed to either an "On-Balance Sheet" Attribute screen or an "Off-Balance Sheet" Attribute screen.

The On-Balance Sheet Attribute screen has four tabs that require updating when defining the strategy rule for on balance sheet transactions (non-derivative). Note the last two bullets are optional based upon the product type definition in the first and second bullet. See "Defining an On Balance Sheet Transaction", page 32-11 for more information.

- Define Core Product Attributes
- Define Payment Attributes
- Define Adjustable Rate Attributes
- Define Negative Amortization Attributes

A separate definition screen will appear if you are defining an off balance sheet transaction, which includes two tabs: See "Defining an Off Balance Sheet Transaction", page 32-13 for more information.

- Define Core Product Attributes
- Define Leg Level Attributes: The Leg Attributes are separated into two sub-tabs:
    1. Receiving Leg/IR CAP
    2. Paying Leg/IR Floor

All fields with the red * are mandatory fields and must be populated. Gray boxes cannot be edited.

The values are populated with the default settings from the corresponding leaf member in the selected Product Characteristics rule. You can modify any of the settings.

You can add as many transactions for any leaf member as you wish.

For more details on using the cash flow columns, see "Transaction Strategy Fields", page 32-3

Transaction Strategy Fields

The following fields are used in the Transaction Strategy Rule for On and Off Balance Sheet Products.

Field	Description
ACCRUAL BASIS	The basis on which the interest accrual on an account is calculated. The choices are as follows: • 30/360 • Actual/360 • Actual/Actual • 30/365 • 30/Actual • Actual/365
ADJUSTABLE TYPE	Determines the repricing characteristics of the new business record. The choices consist of all standard OFSAA codes and all additional user-defined repricing patterns created through the Repricing Pattern interface. The standard OFSAA codes are as follows: • Fixed Rate • Floating Rate • Other Adjustable
AMORTIZATION METHOD FOR PREM, DISC, COSTS AND FEES	Choose from Level yield or Straight Line

Field	Description
AMORTIZATION TYPE	Method of amortizing principal and interest. The choices consist of all standard OFSAA codes and all additional user-defined codes created through the Payment Pattern and Behavior Pattern interfaces, as given below: • Conventional Fixed • Conventional Adjustable • Balloon Payment • Adjustable Negative Amortization • Non-Amortizing • Rule of 78's • Level Principal • Payment Pattern • Behavior Pattern • Lease
AMORTIZATION TERM	Term upon which amortization is based in units (days, months, years).
BALANCE	Represents either the originating balance for transaction strategy records originating in the future, or the current balance for transaction strategy records representing already originated accounts. If the origination date is in the past, the current balances are from the as-of date.
BEHAVIOR PATTERN	User defined pattern (See *Behavior Pattern*), necessary when "Behavior Pattern" is chosen from the Amortization Type options.

Field	Description
BINARY RATE	Off B/S field only. Rate that defines a range for a cap or floor transaction. For example, if you have a cap that has a range of 5% to 7%, enter 7% as the binary rate.
COMPOUNDING BASIS	Determines the number of compounding periods per payment period. The choices are the following: • Daily • Monthly • Quarterly • Semi-Annual • Yearly • Continuous • Simple • At Maturity
CURRENCY	Currency of the instrument.
DEFERRED BALANCE	Current Unamortized Deferred Balance associated with Instrument (i.e. Premium, Discount, Fees, etc.)
EQUALIZATION FREQUENCY	Frequency at which current payment necessary to fully amortize the instrument is re-computed in units (days, months, or years).
EQUALIZATION LIMIT	Maximum negative amortization allowed, as a percent of original balance. E.g., if principal balance should never exceed 125% of original balance, this column would equal 125.0

Field	Description
EXCHANGE OF PRINCIPAL	Off B/S field only. Used for Asset Swap types. Yes or No option determined if Principal is exchanged.
GROSS MARGIN	Contractual spread over interest rate code used in calculation of gross rate.
GROSS RATE	Gross rate on the instrument (i.e. paid by the customer).
INTEREST RATE CODE	Defines the pricing index to which interest rate is contractually tied. The interest rate codes that appear as a selection option depend on the choice of currency. The interest rate code list is restricted to codes which have the selected currency as the reference currency.
INTEREST TYPE	Determines whether interest is calculated in arrears or advance or if the rate is set in arrears. There are three interest types: • Interest in Arrears • Interest in Advance • Set in Arrears For conventional amortization products, interest in arrears is the only valid choice.
LEASE RESIDUAL VALUE	The residual value of a lease in percentage of original balance.
MINIMUM BALANCE AMORTIZING SWAP	Off B/S field only. The balance at which an amortizing swap can amortize down to.
MINIMUM RATE CHANGE	The minimum required change in rate on a repricing date.
NET MARGIN	The contractual margin over the interest rate code used in computing net rate. Gross margin minus any fees.

Field	Description
NET MARGIN FLAG	The setting of the net margin flag affects the calculation of net rate. The two settings are: • Floating Net Rate - the net rate reprices in conjunction with the gross rate, at a value net of fees. • Fixed Net Rate - the net rate equals a fixed fee equal to the net margin.
NET RATE	Nominal interest rate on instrument owed to, or paid by, the financial institution.
NOTIONAL PRINCIPAL	Off B/S field only. The Principal balance of a swap or option.
ORIGINAL TERM	Contractual term at origination date in units (days, months, or years).
ORIGINATION DATE	The date of the origination for the transaction account. This day may be in the future or the past.
PAYMENT CHANGE FREQUENCY	The frequency at which the payment amount is recalculated for adjustable negative amortization instruments in units (days, months or years).
PAYMENT DECREASE LIFE	Maximum payment decrease allowed during life of a negative amortization instrument.
PAYMENT DECREASE PERIOD	Maximum payment decrease allowed during a payment change cycle of a negative amortization instrument.
PAYMENT FREQUENCY	Frequency of payment (P & I, Interest or Principal) in units (days, months or years). For bullet instruments, use zero.

Field	Description
PAYMENT INCREASE LIFE	Maximum payment increase allowed during the life of a negative amortization instrument.
PAYMENT INCREASE PERIOD	Maximum payment increase allowed during a payment change cycle on a negative amortization instrument.
PAYMENT PATTERN	User defined pattern (See *Payment Pattern*), necessary when "Payment Pattern" is chosen from the Amortization Type options
PREMIUM DEFERRED BALANCE	Off B/S field only. The deferred premium balance of the derivative.
PREMIUM PERCENTAGE	Off B/S field only. Premium (in percent) to execute derivative transaction.
PURCHASE SALE INDICATOR	Off B/S field only. Defines whether the derivative transaction is a short or long (sell or buy).
RATE CAP LIFE	Maximum rate allowed during life of the instrument.
RATE CHANGE ROUNDING FACTOR	Percent to which the rate change on an adjustable instrument is rounded.
RATE CHANGE ROUNDING TYPE	Method used for rounding of interest rate codes. The choices are as follows: no rounding, truncate, round up, round down, round nearest.
RATE DECREASE LIFE	Maximum amount rate can decrease during the life of an adjustable rate instrument. Will be used to calculate the rate floor based on the forecasted rate scenario. If both rate decrease life and rate floor are defined, the process uses the more restrictive rate.

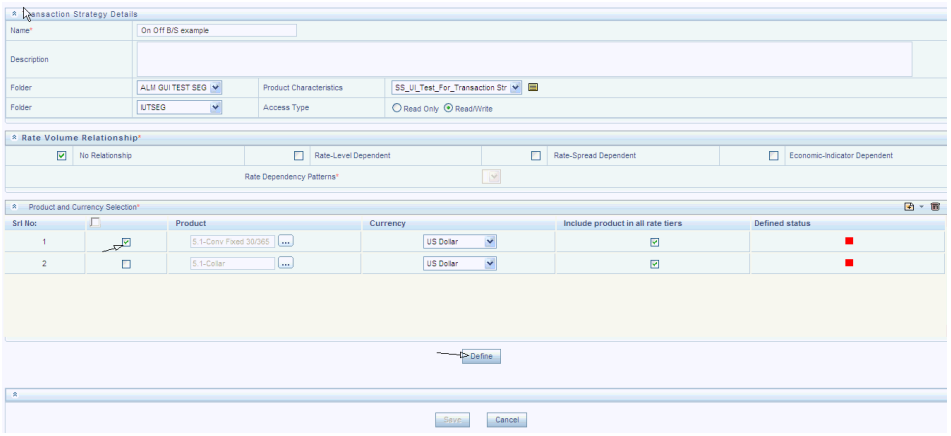
Field	Description
RATE DECREASE PERIOD	Maximum amount rate can decrease during the repricing period of an adjustable rate instrument.
RATE FLOOR LIFE	Minimum rate for life of the instrument.
RATE INCREASE LIFE	Maximum interest rate increase allowed during the life of an adjustable rate instrument. Will be used to calculate rate cap based on forecasted rates scenario. If both rate increase life and rate cap are defined, the process uses the more restrictive rate.
RATE INCREASE PERIOD	Maximum interest rate increase allowed during the cycle on an adjustable rate instrument.
RATE PRICING OPTION	There are two Rate Pricing options: Direct Input and Assign During Processing. **Direct Input** - This option allows you to input rates for new business in the Transaction Strategy. **Assign During Processing:** This option uses the Origination Date and Interest Rate Code (IRC) specified in the Transaction Strategy and pulls the corresponding rate from the Forecast Rates Assumption; that is, it is priced dynamically during the simulation.
RATE SET LAG	Period by which the payment recalculation lags the date of the interest rate used for calculation in units (days, months, or years).
RECEIVE CURRENCY	Off B/S field only. The currency on the receive leg of a cross currency swap.
RECEIVE PRINCIPAL	Off B/S field only. The principal balance of the receive swap leg.
REPRICING FREQUENCY AND MULTIPLIER	Contractual frequency of rate adjustment in units (days, months, or years).

Field	Description
REPRICING PATTERN	User defined pattern (See *Repricing Pattern*), necessary when "Repricing Pattern" is chosen from the Adjustable Type options.
ROLLING CONVENTION	Not utilized in 5.2. Relates to Holiday Calendar Support, and will be functional in future release.
TEASE DISCOUNT	The tease discount is used in conjunction with the original rate to calculate the tease rate.
TEASE PERIOD	The tease period frequency is used to determine the length of tease period in units (days, months, or years).
TRANSFER RATE	The associated transfer rate for the account.

Defining an On Balance Sheet Transaction

Once an on balance sheet product has been chosen in the product and currency selection bar, you need to define the characteristics of the transaction. Follow the steps below to define the attributes of the transaction.

1. Check the box next to the product and click the define button.

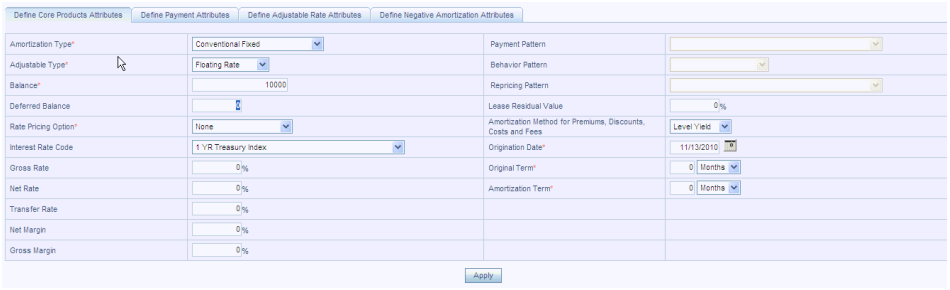


2. Define Core Products Attributes tab
    1. The default information from the product definition will appear in the core

attributes tab, and the relationship triggers (see above) will define what input fields are necessary.

2. Input any additional or overriding information necessary (i.e. the balance of the transaction) and click "apply" to save the tab.

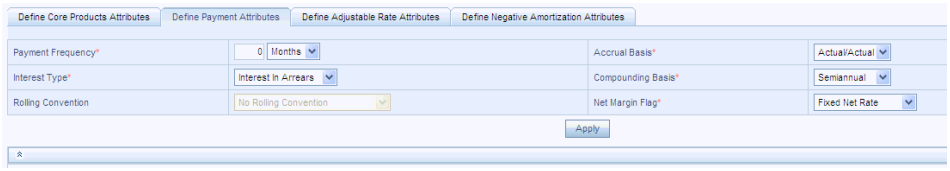
   Note: Refer Product Characteristics, page 21-3 for more information on product setup.



3. Define Payment Attributes tab

   1. The default information from the product definition will appear in the payment attributes tab, and the relationship triggers (see above) will define what input fields are necessary.

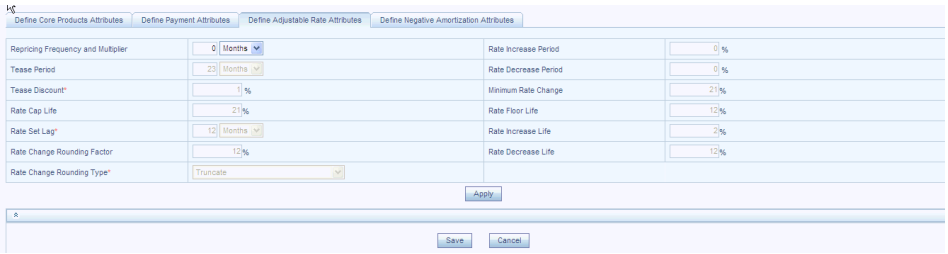
   2. Input any additional or overriding information necessary and click "apply" to save the tab.



4. Define Adjustable Rate Attributes tab

   1. This tab is utilized only when there is an adjustable or floating rate product characteristic that needs additional definition. The default values predefined by the product will appear, and the irrelevant fields will be grayed out based on the product type.

   2. Input additional or overriding information necessary and click "apply" to save the tab.



5. Define Negative Amortization Attributes tab

    1. This tab is utilized only when there is a product with negative amortization characteristics that needs additional definition. The default values predefined by the product will appear, and the irrelevant fields will be grayed out based on the product type. If the amortization type is not Adjustable Neg Am, all fields will be grayed out.

    2. Input additional or overriding information necessary and click "apply" to save the tab.

6. When all the necessary tabs are saved, click the "Save" button, and if the definition is successful the defined status will turn green.

7. The process will then ask if you want to define another product currency combination, click "yes" to continue, or "no" to take you back to the transaction strategies summary screen.

Defining an Off Balance Sheet Transaction

Once an off balance sheet product has been chosen in the product and currency selection block, you need to define the characteristics of the transaction. Follow the steps below to define the attributes of the transaction.

1. Check the box next to the product and click the define button.

2. In the Derivatives section, define the Derivative Type, and the Derivative Sub Type

    1. Derivative Type: Choose "Swap" or "Option" from the dropdown list.

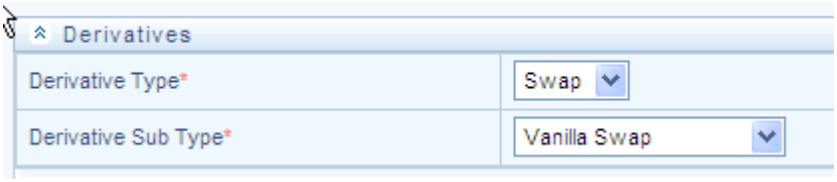
    2. Derivative Sub Type:

- If the derivative type is a swap, choose from one of the seven swap types: Vanilla, Basis, Set in Arrears, Forward, Asset, Amortizing, or Cross Currency.

- If the derivative type is an option, choose one of the three types: Interest Rate Cap, Interest Rate Floor, and Interest Rate Collar.

3. Depending on the combination listed above, you will need to define the two tabs listed in step 3 and 4.

- OR -



3. Define Core Products Attributes tab

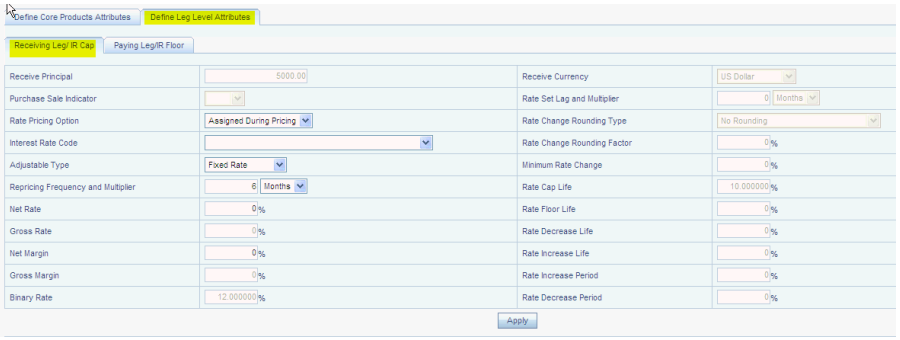
1. Depending on the relationship triggers on the type and sub type products, relevant fields will be editable. For example, enter the notional principal of the transaction, whether it is a short or long, and the origination date and term.

2. Input additional or overriding information necessary and click "apply" to save the tab.

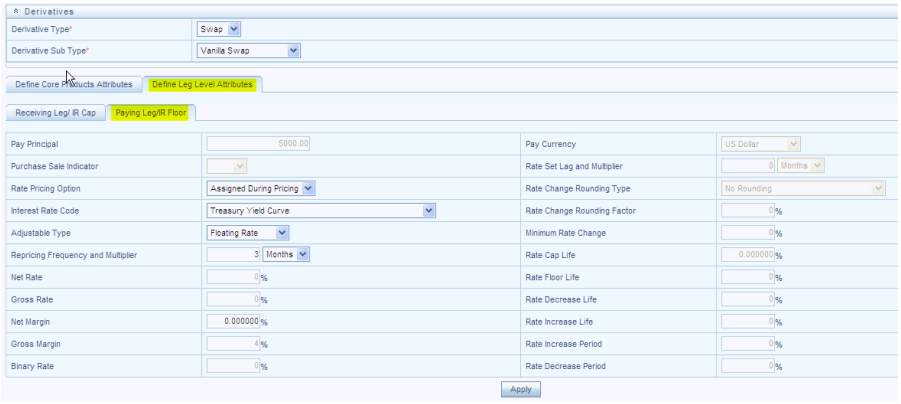
4. Define Leg Attributes tab. This tab requires separating the receiving vs. paying leg of a swap, in addition to a cap or floor definition.

    1. Receiving Leg / IR Cap tab: Use this tab to define the Receiving leg of a swap or the Cap Characteristics.

        Note: The editable fields will be based on the relationship triggers of derivative type and sub type listed above.



    2. Paying Leg / IR Floor: Use this screen to define the pay side of a swap, or the interest rate floor. The editable fields will be based on the relationship triggers of derivative type and sub type listed above. For example, if you are defining an interest rate cap, all of the fields will be grayed out and un-editable.



5. When all the necessary tabs are applied, click the "Save" button, and if the definition is successful the defined status will turn green.

6. The process will then ask if you want to define another product currency combination, click "yes" to continue, or "no" to take you back to the transaction strategies menu screen.

33

Formula Results

Overview

This chapter is reserved for future use as the Formula Results capability is not yet functional in the 5.2 release.

34

Stochastic Rate Indexing

This module describes the steps you need to take to work with and manage Stochastic Rate Indexing Rules.

This chapter covers the following topics:

- Overview of Stochastic Rate Indexing Rules
- Defining Stochastic Rate Indexes

Overview of Stochastic Rate Indexing Rules

The purpose of the Stochastic Rate Index Rule is to establish a relationship between your risk-free interest rate codes (IRCs) and each of the other interest rate codes or indices. With this relationship established, you can forecast rates on any instrument tied to an IRC and as the risk-free rates change, the change in non risk-free interest rates will follow accordingly.

Examples of non risk-free interest rate codes are:

- Prime
- Libor
- Administered rates
- 11th District COFI

The Stochastic Rate Index Rule is used only in stochastic processing. See: Defining Stochastic Rate Indexing Rules, page 12-48

The procedure for working with and managing the Stochastic Rate Index rule is similar to that of other Oracle Asset Liability Management business rules. It includes the following steps:

- Searching for Stochastic Rate Index rules. See: Searching for Rules, page 13-4

- Creating Stochastic Rate Index rules. See: Creating Rules, page 13-5
- Viewing and Editing Stochastic Rate Index rules. See: Viewing and Updating Rules, page 13-6
- Copying Stochastic Rate Index rules. See: Copying Rules, page 13-6
- Deleting Stochastic Rate Index rules. See: Deleting Rules, page 13-7

Related Topics

Standard Navigation Paths, page A-1

Defining Stochastic Rate Indexes

A formula must be defined for each interest rate index tied to an instrument. That formula takes the following form:

$$\text{Index Rate}_{\text{term m}} = K_1 \text{ Risk Free Rate}_1^{x1} + K_2 \text{ Risk Free Rate}_2^{x2} + \ldots K_8 \text{ Risk Free Rate}_8^{x8} + \text{Spread}$$

To create your formula, you can select up to eight terms (elements) from the Risk Free curve, each multiplied by a user-defined coefficient and raised to the power of a user-defined exponent. Additionally, you can add a constant spread to the formula. It is not necessary to define any assumptions for the risk free curve. Any definition for this curve is ignored and does not affect processing.

Each of the elements you define consist of:

- A coefficient: A multiplier to weight each term selection.
- An exponent: An exponent to allow for polynomial curve-fitting.
- A term selection: A selection of rates associated with a term from the risk-free curve.

These elements define a different rate forecast generated for each instrument, with a given IRC. The definition of rate indexes is part of the create Stochastic Rate Index rule process in which rate indexes are defined for currency-valuation curve combinations. When you click Save in the create Stochastic Rate Index rule process, the rule is saved and the Stochastic Rate Index rule summary page is displayed. However, the rate indexes have not yet been defined for any of the currency-valuation curve combinations. Typically, you would start defining the rate indexes for currency-valuation curve combinations before clicking Save.

Prerequisites

- ❒ Deciding on historical rate information and managing by creating Interest Rate Codes, page 12-10
- ❒ Performing basic steps for creating or editing a Stochastic Rate Index rule, page 13-5

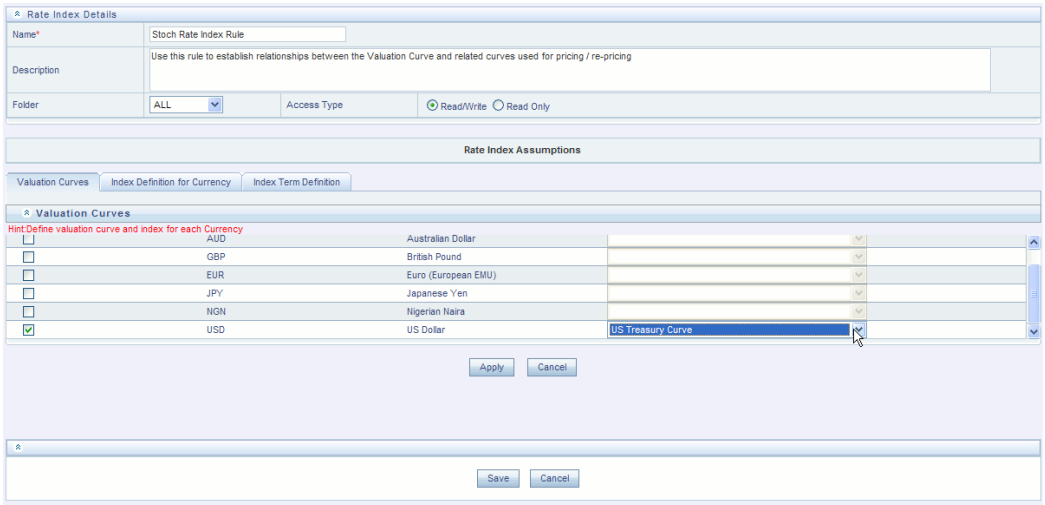
Procedure:

This table describes key terms used for this procedure.

Selected Terminology

Term	Description
Valuation Curve	The Valuation curve is used to calculate the future rates of Indexes (IRCs) defined in a Stochastic Rate Index rule. Oracle Asset Liability Management allows you to assign a Valuation curve for each currency during the create process of the Stochastic Rate Index rule. Typically, the Valuation curve and the indexed rate curves derived from it have the same Referenced Currency. For example, you will use the US Treasury Yield Curve as the Valuation curve to calculate the forward rates of any US dollar-based Interest Rate Code.
Coefficient	A multiplier to weight each term selection.
Exponent	An exponent to allow for polynomial curve-fitting.

Term	Description
Index Term	An Interest Rate Code is made up of one or many term points that denote a particular interest rate yield curve structure. Oracle Asset Liability Management generates future rates for term points in the Interest Rate Code based on an arithmetic formula that has the following components: • A combination of term point rates from the valuation curve (with a maximum selection of eight terms or elements), which need not be the standard term points as defined in IRC definition of the valuation curve • A coefficient and an exponent for each of the valuation curve term points • A single spread per index term point A formula must be defined for each index tied to an instrument. That formula takes the following form: $\text{Index Rate}_t = \sum_{n=8}^{1} [\text{Coefficient}_n \times (\text{RFR}_T)^{\text{Exponent}_n}] + \text{Spread}_n$ Where: • t is the term point of the index • T is the term point of the valuation curve • n is the number of term points of the valuation curve referenced • RFR is the rate of the specific term point on the valuation curve To create your formula, you can select up to eight term points (elements) from the risk free curve, each multiplied by a user-defined coefficient and raised to the power of a user-defined exponent. Additionally, you can add a constant spread for each of the term points used in the formula.



1. Navigate to the Stochastic Rate Index Valuation Curve assignment page.

2. Select the currency you want to work with.

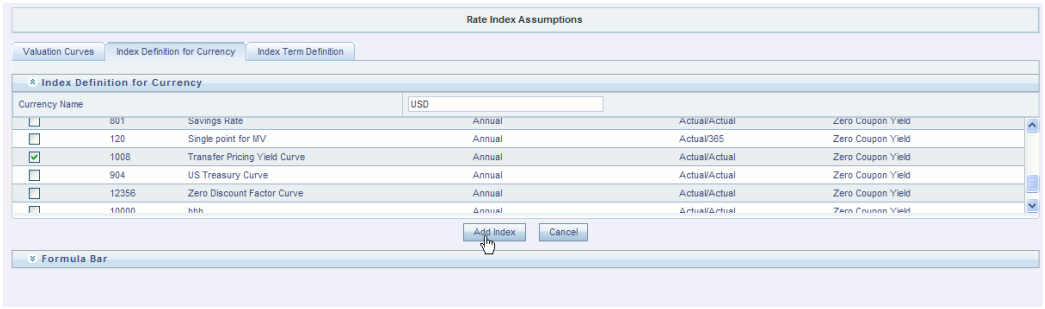
3. Select a Valuation Curve for the currency you selected in the previous step.

   Important: Only a single Valuation Curve can be associated with a particular currency. For example, if the Valuation Curve for US Dollars is US Treasury Curve, all US Dollar indexes will be associated with the US Treasury curve.

   Ideally, you need to select a risk free interest rate structure. Not all the Interest Rate Codes in the application will have the characteristics of a risk free rate curve, but the application will not prevent you from selecting any curve as the Valuation Curve.

4. Select Apply. The Index Definition for Currency page is displayed

Procedure to Add the Index



5. Select the Index you want to define.

6. Click Add Index.

   The Add Index Term Definition page is displayed. The general attributes of both the valuation curve and the selected IRC, are displayed. This information can be used as a reference when you define the terms.

Procedure to Add Index Term Definitions

Each Index Term Point can be calculated from up to eight elements of the valuation curve. The valuation curve elements specified can be any term point on the yield curve; it is not restricted to the points displayed for the valuation curve.

7. Select the Index Term you want to define.

   Not all IRCs have Term Points defined. To successfully define an Index, you must define at least one of its terms. Optionally, you could define one, many or all of the Index Terms. The selection of Index Term is limited to the standard Term Points as defined in the IRC definition.

8. Enter a Spread for the Index Terms, if required.

   A Spread is a constant percentage added to the rate produced as a result of the Monte Carlo calculations, multiplication with the defined coefficient and raising to the power of the mentioned exponent.

9. Enter the Valuation Curve Term Point and select the multiplier.

10. Enter a coefficient for the element.

11. Enter an exponent for the element.

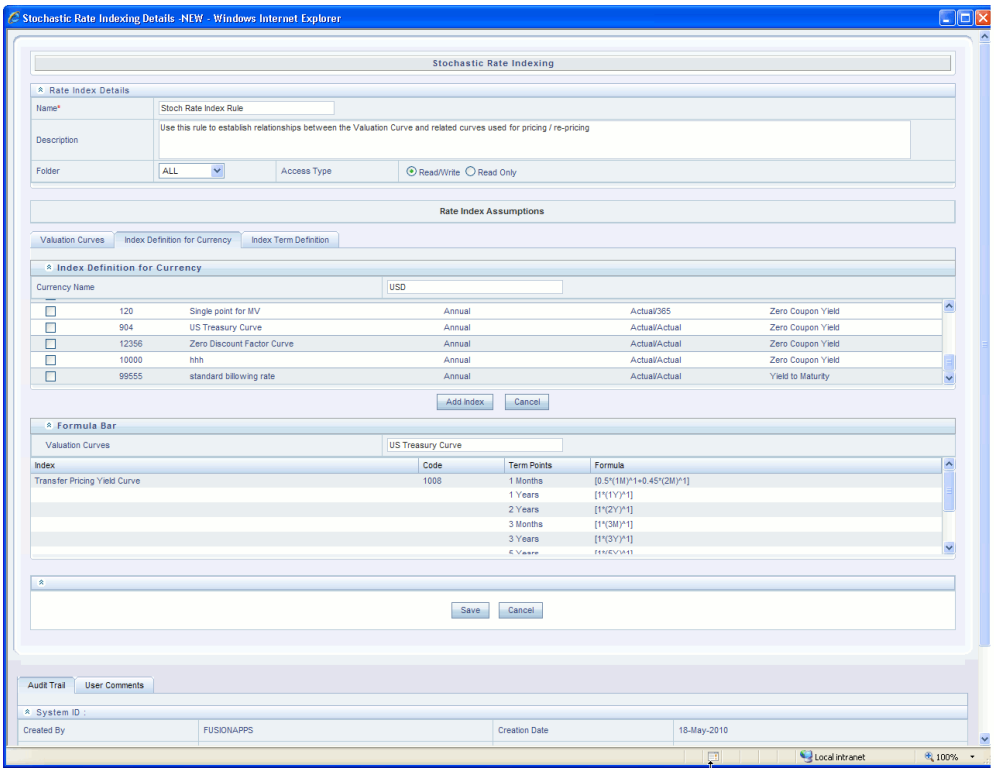
12. Repeat the last four steps for a maximum of seven more elements for each term.

13. Click Apply (from the bottom of the page) when indexing has been completed for all required term points.

    The Stochastic Rate Index Valuation Curve page is displayed. You can navigate to the Index Definition tab and continue defining rate index relationships for the

existing currency selection or you can switch currencies, define the valuation curve for the new currency and proceed with Rate Index definitions.

> **Note:** Note, during rule creation, on the Index Definition for Currency tab, all undefined IRC's are displayed in the top half of the screen and all defined IRC's are displayed on the bottom half of the screen. Upon saving the rule and re-entering in Edit mode, you see the status reflected for all defined (green) and undefined (red) IRC's in the top half of the screen. If you want to Edit any of the Rate Index relationships, while in rule EDIT mode, select the appropriate IRC and again select Add Index and proceed with any changes.



14. Click Save to save the changes.

    The Stochastic Rate Index rule summary page is displayed.

Related Topics

Overview of Stochastic Rate Index Rules, page 34-1

Standard Navigation Paths, page A-1

35

ALM Processing

When all the required assumptions are defined, ALM Processing performs calculation processes and generates a result set. There are four types of ALM processing rules, each to be described in detail later in this module.

- Static Deterministic
- Static Stochastic
- Dynamic Deterministic
- Dynamic Stochastic

Depending on what type of process you choose, the corresponding Process Rule guides you through the required inputs on the process flow screen.

This chapter covers the following topics:

- Overview of ALM Processes
- Creating an ALM Process Rule
- Executing an ALM Process

Overview of ALM Processes

ALM Processes allow you to perform the following tasks:

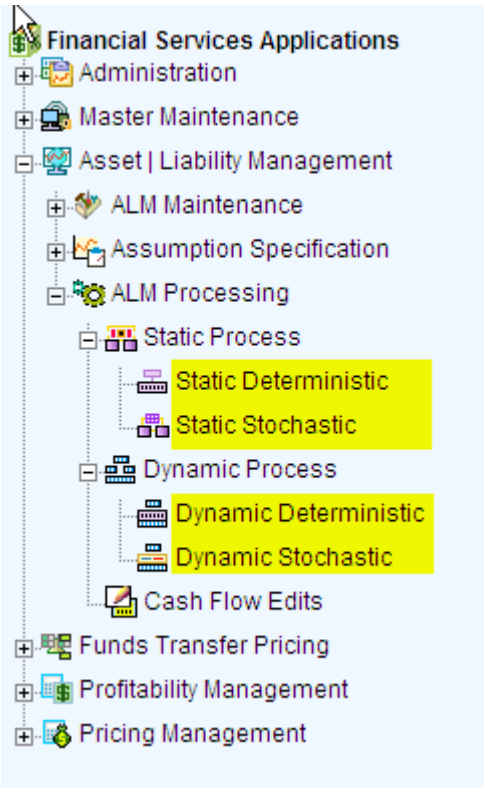
- Determine the data that you want to process (Product Hierarchy block).
- Submit to the ALM processing engine the financial element results you want to calculate: (Calculation Elements).
- Specify to the ALM processing engine the product characteristics, prepayments, discount methods and forecast assumptions to be used in the process (Rule Selection blocks).

- Specify the Forecast Rate Scenarios (for Deterministic processes) or Rate Index (for Stochastic processes) you want to include.
- Specify a process with only runoff (Static), or with new business included (Dynamic).
- Define the output dimension and what additional attributes you want updated at the instrument level (Output Preferences block).
- Enable the output of detailed cash flows or forecast interest rates for audit purposes (Audit Options block).
- Define the processing parameters for a reprocess on an existing run or an entire new process (Processing Parameters block).
- Formulate and execute the ALM processing request and generate results (ALM Process Summary Page).

Creating an ALM Process Rule

To define an ALM Process Rule, complete the following steps:

1. Determine the required process type: Static or Dynamic, Deterministic or Stochastic and choose the desired process from the menu bar.



2. From the Summary Page, click the "Add New" icon.

3. The process will take you through a series of required steps to define the flow depending upon what type of process you selected. For each of the blue highlighted boxes in the process flow area, you are required to make a selection.

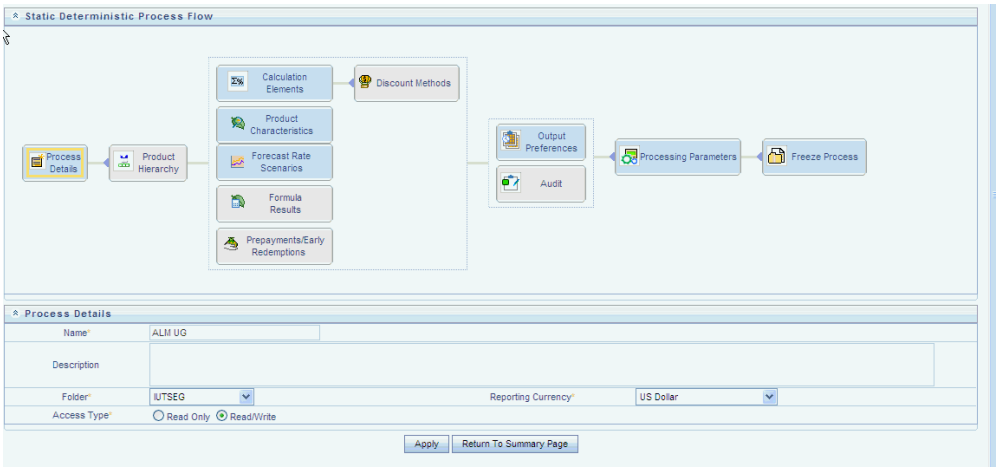
   Note: The gray boxes are optional but will have an effect on the result set if defined

Creating a Static Deterministic ALM Process Rule:

Deterministic processing generates output based on a set of user-defined forecast rate scenarios. The static process indicates that new business assumptions are not included in this flow.

1. Fill in the necessary details in the Process Details block:
   1. Name
   2. Folder and Reporting Currency from respective drop down menus
   3. Click "Apply". The process will take you to the Product Hierarchy selection

options.



2. In the product Hierarchy Block,

    1. Select a Product Hierarchy and select nodes from the hierarchy corresponding to data you want to include in the process, OR

    2. Alternatively, select the Source Selection button, and select the instrument tables corresponding to the data you want to include in the process.

    3. Select a Filter (optional), to further constrain the data to be included in the process. Filters work as a secondary constraint, applied after the data set is determined based on Product Hierarchy member selection or Source Selection.

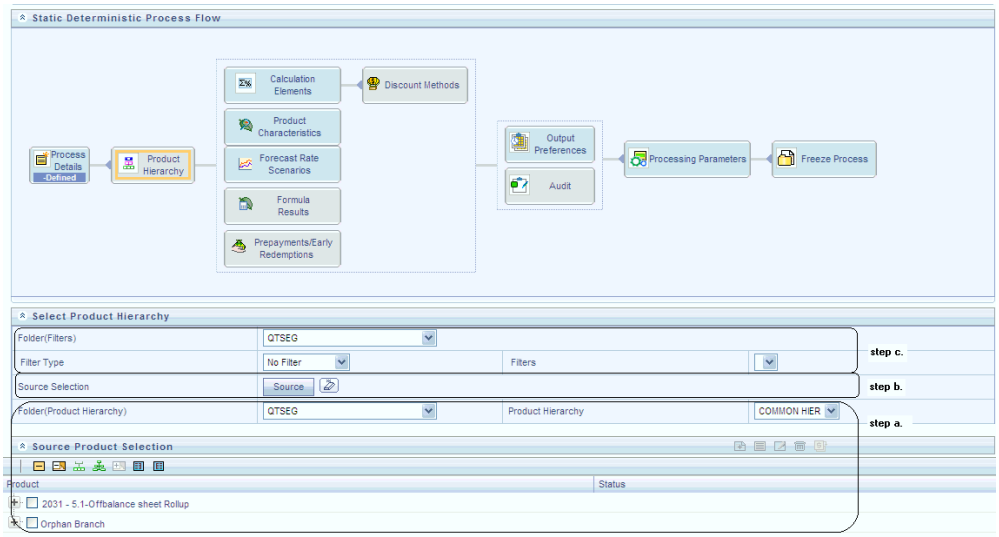
        Important: Before using the product hierarchy approach for selecting data to include in your process, there is a procedure that must be run ("PRODUCT TO INSTRUMENT MAPPING"). This procedure can be executed from the Batch Scheduler – Run - interface.

        The purpose of the Product to Instrument mapping procedure is to scan all instrument tables (FSI_D_xxx) and populate the mapping table **("FSI_M_PROD_INST_TABLE_MAP")** with a listing of the product dimension members that exist within each instrument table. When you select Products (parents or children) within an ALM or FTP process definition, the process refers to this mapping table to identify the instrument tables to include in the process.

        It is recommended that you establish an internal process whereby this procedure is executed after every data load to ensure that mappings are up to date.

Related Topics: For more information on Product to Instrument mapping procedure, see *Oracle Financial Services Analytical Applications Data Model Utilities User Guide.*

4. Select apply.



3. Rule Selection Blocks – The boxes in blue with the yellow highlight are required for the definition of the process.

    1. Choose the calculation elements to include in the process run: Market Value and YTM, Repricing Gap, Liquidity Gap, Average Life, Transfer Pricing – if defined then select the Folder and Transfer Pricing Rule, TP Adjustments – if defined then select the Folder and TP Adjustment Rule, Effective Interest Rate, Repricing Balances and Rates, Runoff components, Prepayment Runoff – if defined, Tease, Cap, Floor and Negative Amortization Details, Standard Financial Elements.

    2. Click "Apply".

    3. If Market Value is chosen from step 1 above, the Discount Methods box will become highlighted blue and need to be defined (see Discount Methods, page 25-3, for rule set up). If no market value chosen, continue to step 5 below.

    4. Select from the discount methods box the desired method (see Discount Methods, page 25-3, for set up) and click "Apply".

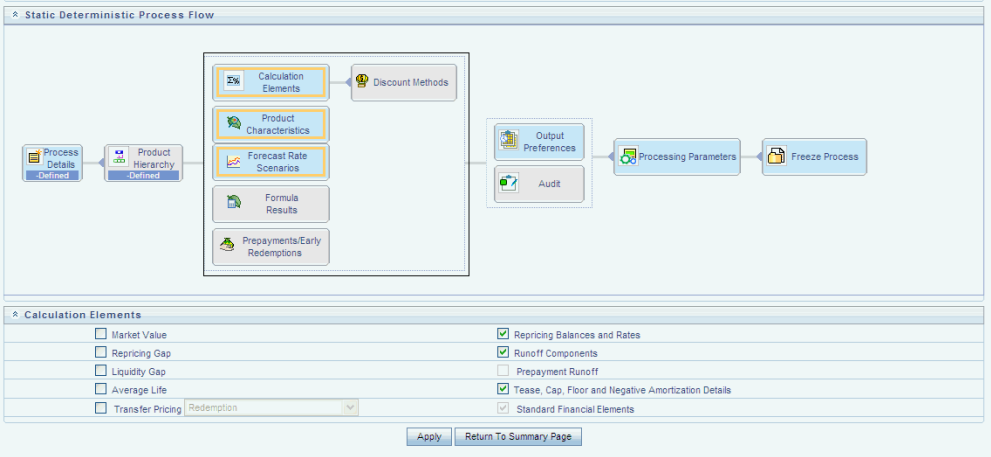
    5. From the Product Characteristics bar, select the desired definition and click "Apply" (see Product Characteristics, page 21-3, for rule definition).

    6. Select the Forecast Rates rule you want applied to the process, and click "Apply

". (see Forecast Rate Scenarios, page 22-1, to set up rate scenarios). The flow will now take you to output preferences. Or, if you want to add a prepayment rule to the process, continue to step 7 below.

7. Click the Prepayments/Early Redemptions box and choose the defined prepayment rule (see Prepayment Rules, page 23-1). This is an optional step.

   Note: The Formula Results UI will allow definitions; however, the engine is not functional in version 5.2.



4. Output Preferences options

   1. Select the output dimension from the drop down list (Options include: Product, Product/Currency, Organization/Product, Organization/Product/Currency).

   2. Depending on the dimension chosen, you can Consolidate to Reporting Currency by checking the box if the dimension Product /Currency or Organization/Product/Currency was chosen.

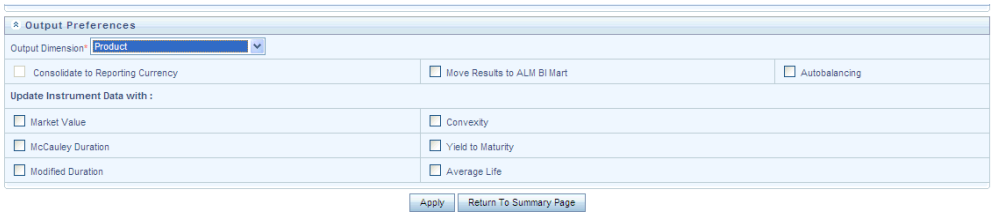
   3. If you have the ALMBI reporting product, you can select to export the results to the ALM BI Mart by clicking the box.

   4. If Product was chosen from the Dimension in step 1 above, you can select the Autobalancing feature by clicking on the box.

   5. You also have the option to update the Instrument Data Tables with financial measures by checking the box of the desired calculated item (Market Value, Macaulay Duration, Modified Duration, Convexity, Yield to Maturity, Average Life).

   6. Click "Apply" after the page is defined. The process will take you to the

Processing Parameters section. Or you can click the audit box for the following options: If no audit options are required, skip to #6, Processing Parameters.



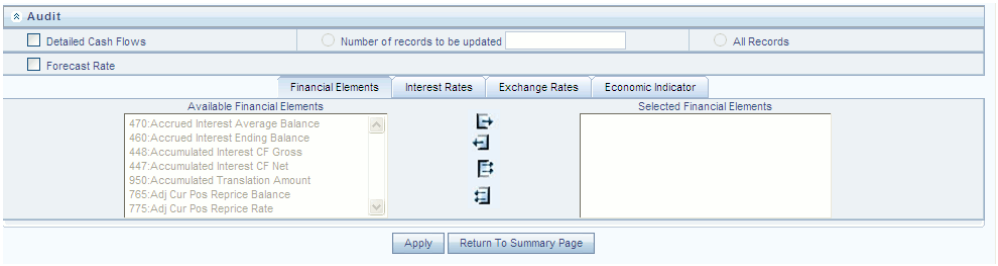
5. Audit Preferences (optional)

    1. Detailed Cash Flow: Check the box to record the cash flows and repricing events occurring for the desired number of records processed. For each record, daily results are written to the FSI_O_PROCESS_CASH_FLOWS table. The data in this table uses the RESULT_SYS_ID, which identifies the Process used. Select from the options below:

        - Input the desired number of Records in the dialog box
        - Select all records to be output.
        - In the financial elements tab below, you have the option to select the FE's you want to output in the detail cash flows table. Highlight the items in the available section and move selection over to the selected section.
        - Click apply, or go to step 2 for Forecast rates output.

    2. Forecast Rates: Select Forecast Rates to write forecast exchange, interest rates or economic indicator results to the following tables: FSI_EXCHANGE_RATES_AUDIT, FSI_INTEREST_RATES_AUDIT, and/or FSI_ECONOMIC_INDICATORS_AUDIT. For more information on the table structures, see the *Oracle Financial Services Analytical Applications Data Model Data Dictionary*.

        - Highlight items from the available code section for the desired forecast type (Interest Rate, Exchange Rate, or Economic Indicator) and move selection (or all) to the selected items box.
        - Click "Apply" and the screen will take you to Processing Parameters.



6. Processing Parameters:

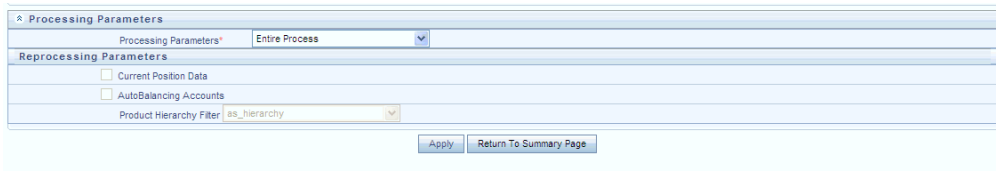
    1. The processing parameters allow you to run an entire process or re-process a portion of an existing run. From the drop down list, select Entire Process or Selective Reprocess.

    2. If Selective Reprocess is selected, you can click the box "Current Position Data" to reprocess that particular data set. With selective reprocessing you can run a subset of the process to replace invalid products and to add new products. With Selective Reprocess, the Reprocessing components are enabled to selected components for reprocessing. When the Process Rule is executed, the data in the result tables are not immediately deleted. The data for the selected subset is replaced, but the rest of the results remain intact.

    3. Select Auto balancing accounts: If you selected Auto Balancing in the Output Preferences (section 4.4.) the Auto Balancing Accounts option is available for re-processing. Click the box to apply.

    4. Select the desired product Hierarchy Filter from the drop down list to indicate which products should be re-processed.

    5. Click "Apply" and the screen will take you to Freeze Process section.



7. Freeze Process

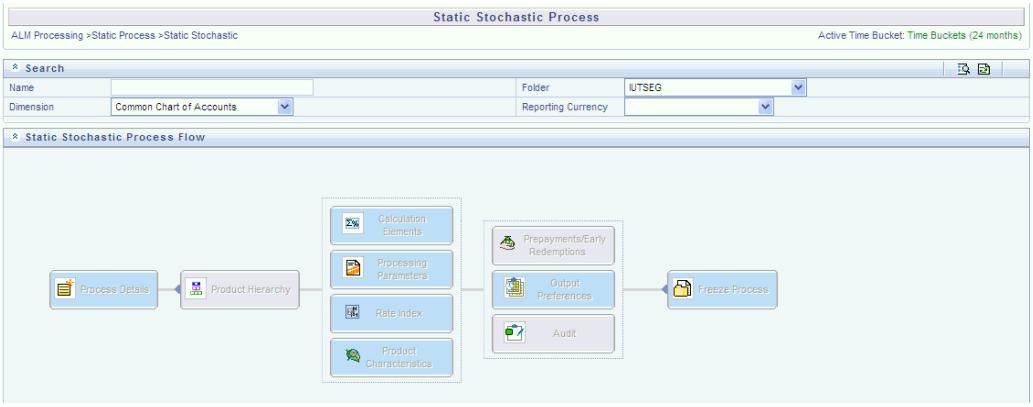
    1. Select Freeze to complete the process.

    2. Select Reset to erase all selections made previously within the process definition flow.

    3. Select Confirm.

Creating a Static Stochastic Process Rule :

Stochastic Processing differs from Deterministic Processing in that it generates Market Value and Value at Risk through Monte Carlo simulations. Rate scenarios are generated based on Random 1 month rates and a Term Structure model, which describe how the interest rate curve changes over time. Before instrument records are processed, balance and payment fields are first translated to the reporting currency, and then reported in the reporting currency.



1. Follow steps 1 and 2 from the Static Deterministic process defined above.

2. Calculation Elements

    1. Select the calculation elements. There are two choices: VaR and Market Value

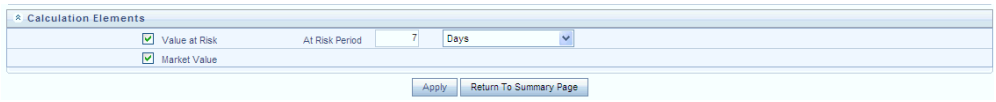
        - **Value at Risk:** Value at Risk measures the probability of changes in value of the current position data, occurring over specified time horizons, displayed in the interface as the At Risk period. The At-Risk period defines the time period over which changes in market value are calculated.

          When the user selects the Value at Risk calculation option and subsequently runs the process, the software will in addition to calculating the current market value, calculate the change in market value for each rate path and rank these changes in market value for each product leaf and for the entire balance sheet. These results are stored in two tables: **FSI_O_STOCH_VAR** and **FSI_O_STOCH_TOT_VAR**.

          > **Note:** When Value at Risk is selected, market value is also written to the FSI_O_STOCH_MKT_VAL table.

          Market Value: Market Value is calculated per rate scenario for each Product Leaf member. The result Market Value is the total Market Value over the number of rate paths per Product Leaf. The results are stored in FSI_O_STOCH_MKT_VAL.

2. Click "Apply" and the screen will take you to Processing Parameters.



3. Processing Parameters: Here you set the parameters for the stochastic process by selecting the term structure model, smoothing method, number of rate paths, Random number generation method, and seed value. Each is described below

    1. Term Structure Method: four models to choose from: For more information on term structure models, see the *Oracle Financial Services Analytical Applications Cash Flow Engine Reference Guide.*

        - Merton—real interest rate model
        - Ho and Lee—no arbitrage model
        - Vasicek—real interest rate model
        - Extended Vasicek— no arbitrage model

    2. Smoothing method: Smoothing is the drawing of a smooth, continuous line through observable market data points. Because there are an infinite number of these lines passing through a given set of points, additional criteria must be added to the smoothing process to achieve the desired term structure. The following methods are available:

        - **Linear Interpolation** – Linear interpolation uses linear yield curve smoothing. Linear yield curves are continuous but not smooth; at each knot point there is a kink in the yield curve. You may not want to use a linear yield curve with a model that assumes the existence of a continuous forward rate curve, due to the nonlinear and discontinuous knot points of a linear yield curve.

        - **Cubic Spline of Yields** – A cubic spline is a series of third degree polynomials that have the form:

            $y = a + bx + cx^2 + dx^3$

            These polynomials are used to connect the dots formed by observable data. The polynomials are constrained so they fit together smoothly at each knot point (the observable data point.) This means that the slope and the rate of change in the slope with respect to time to maturity have to be equal for each polynomial at the knot point where they join. If this is not true, there is a kink in the yield curve and they are continuous but not differentiable.

            Two more constraints make the cubic spline curve unique. The first restricts

the zero-maturity yield to equal the 1-day interest rate. The second restricts the yield curve at the longest maturity to be either straight (y''=0) or flat (y'=0).

- **Quartic Spline:** Quartic interpolation requires a minimum of 4 knot points. The quartic interpolation equation can be represented as

  $Y = a + b X^1 + CX^2 + d X^3 + e X^4$

  The end knot points satisfy equations for one curve and all intermediate points satisfy two curves. Hence in a scenario with minimum number of knot points, there will be 6 equations. For n number of knot points, the number of equations is 2n-2. If n is the number of points to be interpolated, the order of the matrix to be formed is 5*(n-1) x 5*(n-1). The matrix is formed according to the following logic:

  The second derivative at the end points and the first derivative of the last point is Zero.

  At the points other than the end points the value of the first derivatives, second derivatives and the third derivatives of the function are equal.

3. Number of paths – Specifies the number of Monte Carlo simulations to execute. The valid range is from 1 to 2000. The default is 200.

4. Random Number Generation Method: To run Monte Carlo simulations, you must specify the random number generator algorithm for the rate path generation.

   - **Low Discrepancy Sequences**: Also known as quasi-random sequences, are designed to prevent clustering of generated numbers; this results in achieving better accuracy than pseudo-random sequences when applied to numerical problems; integration in high dimensions, and so on.

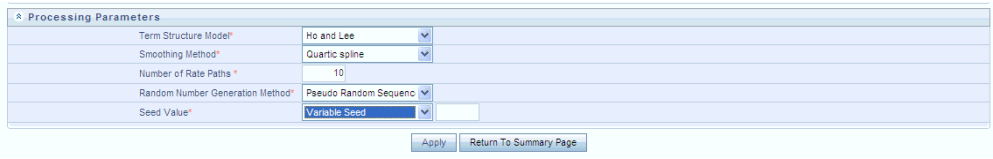
   - **Pseudo Random Sequences**: The traditional random numbers generated by most compilers. They are designed to do well on some statistical tests: low autocorrelation, high period before the sequence repeats itself.

5. Seed Value: Fixed or Variable. If fixed, maximum value of 999. Fixed seed selection results in the same set of random numbers being generated with each run. If you keep the fixed seed a constant value, you will be able to re-produce results from one run to another. The variable seed option allows the system to determine the seed value randomly with each run. This option will result in a different set of random numbers for each run and hence different results from each run.

   Note: Seed value selections apply to the Pseudo Random

Sequences option only.

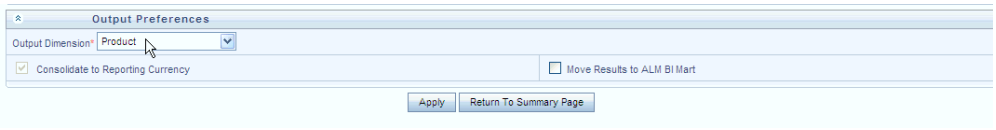
6. Once defined, click "Apply" and you will be taken to the Rate Index screen.



4. Rate Index: Select the rate index as it was defined in the Stochastic Rate Indexing rule, (For additional information on the setup rules for rate indexing, see Stochastic Rate Indexing, page 34-2.)
    1. Click "Apply". The screen will take you to Product Characteristics.

5. Product Characteristics: Select the desired product characteristics rule. (For more information on creating a product characteristic rule, see Product Characteristics, page 21-3.)
    1. Click "Apply" and the screen will take you to Output Preferences.
    2. If you want to include a prepayment or early redemption rule in the process run, Click the Prepayments/Early Redemptions box and choose the defined prepayment rule (see Prepayment Rules, page 23-1). This is an optional step.

6. Output Preferences options
    1. Select the output dimension from the dropdown list.
    2. If you have the ALMBI reporting product, you can select to export the results to the ALM BI Mart by clicking the box.
    3. Click "Apply". The screen will take you to the Freeze Process Or you can click the audit box for the following options: If no audit rule is selected, skip to #8, Freeze Process



7. Audit Preferences (optional)
    1. Detailed Cash Flow: Check the box to record the cash flows and repricing

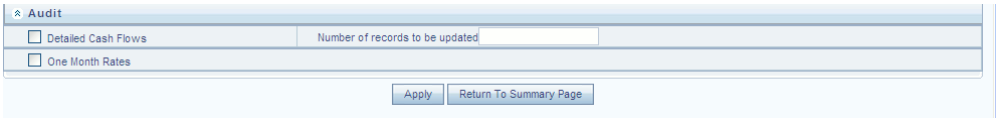
events occurring for the desired number of records processed. For each record, daily results are written to the FSI_O_PROCESS_CASH_FLOWS table. The data in this table uses the RESULT_SYS_ID, which identifies the Process used. Select from the option below:

- Input the desired number of Records in the dialog box

2. One Month Rates defines rates to be written during the Monte Carlo simulation for auditing purposes.

   - Select this option to view the rate paths generated during the stochastic processing run. When selected, 360 monthly rates are output to the FSI_INTEREST_RATES_AUDIT table, for each rate path.

     Note: This process can be extremely time consuming and database space intensive when processing large numbers of rate paths.



8. Freeze Process

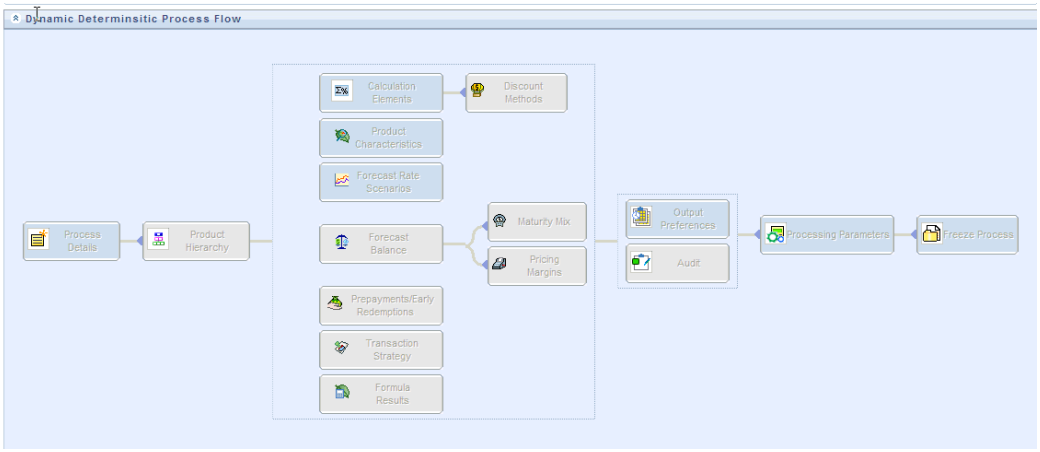
   1. Select Freeze to complete the process.

   2. Select Reset to erase all selections made previously within the process definition flow.

   3. Select Confirm.

Creating a Dynamic Deterministic Process Rule :

Dynamic Deterministic processing generates output based on a set of user-defined forecast rate scenarios and includes new business assumption rules in the process flow.



1. Follow steps 1 and 2 from the Static Deterministic process defined above.

2. Rule Selection Blocks

    1. Choose the calculation elements to include in the process run: Market Value and YTM, Repricing Gap, Liquidity Gap, Average Life, Transfer Pricing – if defined then select the Folder and Transfer Pricing Rule, TP Adjustments – if defined then select the Folder and TP Adjustment Rule, Effective Interest Rate, Repricing Balances and Rates, Runoff components, Prepayment Runoff – if defined, Tease, Cap, Floor and Negative Amortization Details, Standard Financial Elements.

        - **Market Value** can be calculated for the as-of-date and other dates in the future. These forward dates are defined in the Time Bucket Rule, and are shared with repricing and liquidity gap calculations. For more information on setting up dynamic start dates, see "Time Buckets Rules", page 19-3.

        - **Gaps:** Select Liquidity or Repricing Gap to generate dynamic gap results. To use this option, you must first define the related GAP buckets in your active Time Bucket rule. Gap profiles contain bucket-based runoff and reprice information. The information represents the balance sheet as of the dynamic gap date. A special set of financial elements is produced for both repricing gap and liquidity gap results.

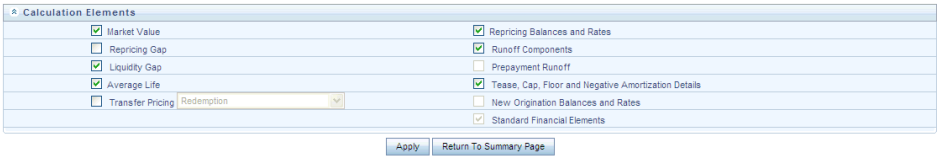
        - **Transfer Pricing:** During processing, the model tracks transfer rates and transfer pricing charges/credits on individual transactions. This information is aggregated, per leaf member, as financial elements and written to the results tables. Examples of transfer pricing financial elements include:

            - Beginning transfer rate

            - Ending transfer rate

- Average transfer rates
- Transfer pricing charge/credit

2. Click "Apply".



3. If Market Value is chosen from step 1 above, the Discount Methods box will become highlighted blue and need to be defined (see Discount Methods, page 25-3, for rule set up). If no market value chosen, continue to step 5 below.

4. Select from the discount methods box the desired method (see Discount Methods, page 25-3, for set up) and click "Apply". The screen will take you to Product characteristics rules box.

5. From the Product Characteristics bar, select the desired definition and click "Apply" (see Product Characteristics, page 21-3, for rule definition). The screen will take you to the Forecast Rates rules box.

6. Select the Forecast Rates rule you want applied to the process, and click "Apply ". (see Forecast Rate Scenarios, page 22-1, to set up rate scenarios). The flow will now take you to output preferences. Or, if you want to add a Forecast Balance, Prepayment, or Transaction strategy rule to the process, continue to step 7 below.

7. Forecast Balances: Click the Forecast Balance box and select from the defined forecast balance rules (For more information on setting up rules see Forecast Balance, page 27-9). Click "Apply".
   - The Maturity Mix and Pricing Margin rules will then become necessary to complete the forecast assumption selection process.
     - Maturity Mix: Select the desired Maturity Mix rule and click "apply". For more information on how to set up the Maturity Mix, see Forecast Maturity Mix, page 28-3.
     - Pricing Margins: Select the desired Pricing Margin rule from the defined list and click "Apply". The screen will take you to output preferences, or continue to step 8 below to include prepayment, or transaction rules.

8. Click the Prepayments/Early Redemptions box and choose the defined prepayment rule and click "Apply" (see Prepayment Rules, page 23-1). This is an optional step.

9. Click the Transaction strategy box and select the defined transaction strategies for inclusion in the process. Click "Apply" (see Transaction Strategies, page 32-1 for information on defining rules).

   Note: The Formula Results UI will allow definitions; however, the engine is not functional in version 5.2.

3. Output Preferences options

   1. Select the output dimension from the drop down list (Options include: Product, Product/Currency, Organization/Product, Organization/Product/Currency).

      Note: The Organization Unit options are not available when Forecast assumptions are selected.

   2. Depending on the dimension chosen, you can Consolidate to Reporting Currency by checking the box if the dimension Product /Currency or Organization/Product/Currency was chosen.

   3. If you have the ALMBI reporting product, you can select to export the results to the ALM BI Mart by clicking the box.

   4. If Product was chosen from the Dimension in step 1 above, you can select the Autobalancing feature by clicking on the box.

      - Use autobalancing to maintain a balanced balance sheet, and generate retained earnings, dividends and taxes. Product leaf members used during the autobalancing process must be defined within your Application Preferences, including:
        - Assets
        - Liabilities
        - Retained Earnings
        - Dividends
        - Federal Tax
        - State Tax

- Accumulated Translation Balance

- If you do not completely define the required autobalancing leaves in Application Preferences, an error message is generated during processing. For more information, see , "Application Preferences", page 14-1. You also have the option to Update the Instrument Data Table with financial elements by checking the box of the desired elements. (Market Value, Macaulay Duration, Modified Duration, Convexity, Yield to Maturity, Average Life)

5. Click "Apply" after the page is defined. The process will take you to the Processing Parameters section. Or you can click the audit box for the following options: If no audit rule is selected, skip to #4, Processing Parameters.

6. Refer to step #5 in Creating a Static Deterministic Process Rule, for defining the audit process.

4. Processing Parameters:

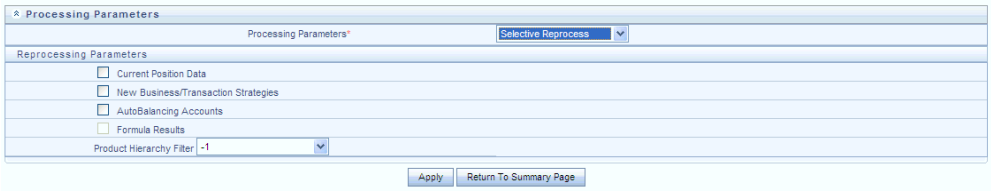
    1. The processing parameters allow you to run an entire process or re-process a portion of an existing run. From the drop down list, select Entire Process or Selective Reprocess.

    2. If Selective Reprocess is selected, you can click the box "Current Position Data" to reprocess that particular data set. With Selective Reprocess, the Reprocessing components are enabled to selected components for reprocessing. When the Process Rule is executed, the data in the result tables are not immediately deleted. The data for the selected subset is replaced, but the rest of the results remain intact.

    3. New Business/Transaction Strategies: Select to reprocess the new business and/or transaction strategies defined in the process flow.

    4. Auto balancing accounts: If you selected Auto Balancing in the Output Preferences (section 3.4.) the Auto Balancing Accounts option is available for re-processing. Click the box to apply.

    5. Click "Apply" and the screen will take you to Freeze Process section.



5. Freeze Process

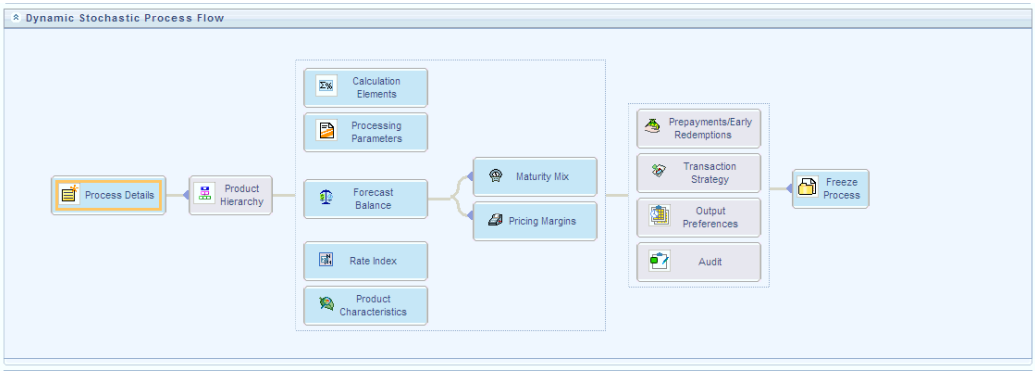
    1. Select Freeze to complete the process.

    2. Select Reset to erase all selections made previously within the process definition flow.

    3. Select Confirm.

Creating a Dynamic Stochastic Process Rule :

Stochastic Processing differs from Deterministic Processing in that it generates Earnings, Market Value and Value at Risk by Monte Carlo simulations. Rates scenarios are generated based on a Term Structure model, which describes how the interest rate curve changes over time. Before instrument records are processed, balance and payment fields are first translated to the reporting currency, and then reported in the reporting currency.



1. Follow steps 1 and 2 from the Static Deterministic process defined above.

2. Calculation Elements

    1. Select the calculation elements. There are three choices: EaR, VaR and Market Value

        - **Earnings at Risk:** Earnings at Risk uses the Monte Carlo rate generator to generate a series of rate paths which is applied to instrument records to produce earning forecasts. This option writes out two standard result sets:

average leaf earnings and average total portfolio earnings. Average leaf earnings is written out to EAR_LEAF_AVG_xxx whereas average total portfolio earnings is written out to EAR_TOTAL_AVG_xxx with xxx denoting the system id number of the process.

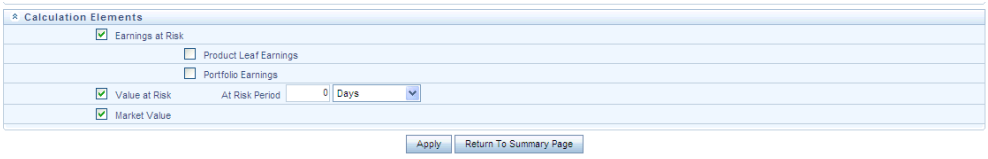
- **Value at Risk:** Value at Risk measures the probability of changes in value of the current position data, occurring over specified time horizons, displayed in the interface as the At Risk period. The At-Risk period defines the time period over which changes in market value are calculated.

  When the user selects the Value at Risk calculation option in a process ID and subsequently runs that ID, the software will in addition to calculating the current market value, calculate the change in market value for each rate path and rank these changes in market value for each product leaf and for the entire balance sheet. These results are stored in two tables: **FSI_O_STOCH_VAR** and **FSI_O_STOCH_TOT_VAR**.

  > **Note:** When Value at Risk is selected, market value is also written to the FSI_O_STOCH_MKT_VAL table.

- **Market Value:** Market Value is calculated per rate scenario for each Product Leaf member. The result Market Value is the total Market Value over the number of rate paths per Product Leaf. The results are stored in FSI_O_STOCH_MKT_VAL.

2. Click "Apply" and the screen will take you to Processing Parameters.



3. Processing Parameters: Here you set the parameters for the stochastic process by selecting the term structure model, smoothing method, number of rate paths, Random number generation method, and seed value. Each is described below

   1. Term Structure Method: four models to choose from: For more information on term structure models, see the *Oracle Financial Services Analytical Applications Cash Flow Engine Reference Guide.*

      - Merton—real interest rate model
      - Ho and Lee—no arbitrage model

- Vasicek—real interest rate model
- Extended Vasicek— no arbitrage model

2. Smoothing method: Smoothing is the drawing of a smooth, continuous line through observable market data points. Because there are an infinite number of these lines passing through a given set of points, additional criteria must be added to the smoothing process to achieve the desired term structure. The following methods are available:

   - **Linear Interpolation** – Linear interpolation uses linear yield curve smoothing. Linear yield curves are continuous but not smooth; at each knot point there is a kink in the yield curve. You may not want to use a linear yield curve with a model that assumes the existence of a continuous forward rate curve, due to the nonlinear and discontinuous knot points of a linear yield curve.

   - **Cubic Spline of Yields** – A cubic spline is a series of third degree polynomials that have the form:

     $y = a + bx + cx^2 + dx^3$

     These polynomials are used to connect the dots formed by observable data. The polynomials are constrained so they fit together smoothly at each knot point (the observable data point.) This means that the slope and the rate of change in the slope with respect to time to maturity have to be equal for each polynomial at the knot point where they join. If this is not true, there is a kink in the yield curve and they are continuous but not differentiable.

     Two more constraints make the cubic spline curve unique. The first restricts the zero-maturity yield to equal the 1-day interest rate. The second restricts the yield curve at the longest maturity to be either straight (y"=0) or flat (y'=0).

   - **Quartic Spline:** Quartic interpolation requires a minimum of 4 knot points. The quartic interpolation equation can be represented as

     $Y = a + b\,X^1 + CX^2 + d\,X^3 + e\,X^4$

     The end knot points satisfy equations for one curve and all intermediate points satisfy two curves. Hence in a scenario with minimum number of knot points, there will be 6 equations. For n number of knot points, the number of equations is 2n-2. If n is the number of points to be interpolated, the order of the matrix to be formed is 5*(n-1) x 5*(n-1). The matrix is formed according to the following logic:

     The second derivative at the end points and the first derivative of the last point is Zero.

At the points other than the end points the value of the first derivatives, second derivatives and the third derivatives of the function are equal.

3. Number of paths – Specifies the number of Monte Carlo simulations to execute. The valid range is from 1 to 2000. The default is 200.

4. Random Number Generation Method: To run Monte Carlo simulations, you must specify the random number generator algorithm for the rate path generation.

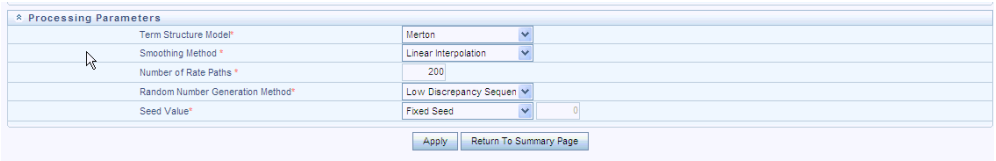
   - **Low Discrepancy Sequences**: Also known as quasi-random sequences, are designed to prevent clustering of generated numbers; this results in achieving better accuracy than pseudo-random sequences when applied to numerical problems; integration in high dimensions, and so on.

   - **Pseudo Random Sequences**: The traditional random numbers generated by most compilers. They are designed to do well on some statistical tests: low autocorrelation, high period before the sequence repeats itself.

5. Seed Value: Fixed or Variable. If fixed, maximum value of 999. Fixed seed selection results in the same set of random numbers being generated with each run. If you keep the fixed seed a constant value, you will be able to re-produce results from one run to another. The variable seed option allows the system to determine the seed value randomly with each run. This option will result in a different set of random numbers for each run and hence different results from each run.

   Note: Seed value selections apply to the Pseudo Random Sequences option only.

6. Once defined, click "Apply" and you will be taken to the Forecast Balance screen.



4. Forecast Balances: Click the Forecast Balance box and select from the defined forecast balance rules (For more information on setting up rules see Forecast Balance, page 27-9). Click "Apply".

   1. Maturity Mix: Select the desired Maturity Mix rule and click "apply". For more information on how to set up the Maturity Mix, see Forecast Maturity Mix, page

28-3.

2. Pricing Margins: Select the desired Pricing Margin rule from the defined list and click "Apply". The screen will take you to Rate Index (For more information on setup details, see Forecast Pricing Margins, page 29-3).

5. Rate Index: Select the rate index as it was defined in the Stochastic Rate Indexing rule, (For additional information on the setup rules for rate indexing, see Stochastic Rate Indexing, page 34-2.)
   1. Click "Apply". The screen will take you to Product Characteristics.

6. Product Characteristics: Select the desired product characteristics rule. (For more information on creating a product characteristic rule, see Product Characteristics, page 21-3.)
   1. Click "Apply" and the screen will take you to Freeze Process.
   2. If you want to include a prepayment/early redemption, transaction strategy, output preference, or audit rule in the process, click the desired rule and define accordingly. The four are noted briefly below.
      - Prepayments/Early Redemptions: click the box and choose the defined prepayment rule, Click "Apply" (see Prepayment Rules, page 23-1).
      - Transaction Strategy: Click the box and select the defined transaction strategies for inclusion in the process. Click "Apply" (see Transaction Strategies , page 32-1for information on defining rules).
      - Output Preferences options Refer to step #6 in Static Stochastic Process Rule.
      - Audit: Refer to Step #7 in Static Stochastic Process Rule.

7. Freeze Process
   1. Select Freeze to complete the process.
   2. Select Reset to erase all selections made previously within the process definition flow.
   3. Select Confirm.

Executing an ALM Process

To run a Process ID, complete the following steps:

1. Choose Process/Run from the list under the process bar.
2. Click the run icon to execute the process.
3. A popup window will appear including the execution ID. Click OK.
4. When the Status "View Log" appears, the run is complete.

   Hint: Click the refresh grid button to see the change in status.
5. Click the "View Log" status to ensure run was complete.
6. To view the error log, click the "Task id" number in the view log page.

A

Standard Navigation Paths

This appendix gives you information to navigate through the pages referred to in this guide.

This appendix covers the following topics:

- Standard Navigation Paths

Standard Navigation Paths

Typical Oracle Financial Services Asset Liability Management navigation paths are shown in this table. Access all of these pages through the ALM Administrator or ALM Analyst responsibility.

Page	Navigation Path
Application Preferences Home	ALM Maintenance > Application Preferences
Time Buckets Home	ALM Maintenance > Time Buckets
Time Buckets – Income Simulation Buckets	ALM Maintenance > Time Buckets > Income Simulation Buckets
Time Buckets – Repricing Gap Buckets	ALM Maintenance > Time Buckets > Repricing Gap Buckets
Time Buckets – Liquidity Gap Buckets	ALM Maintenance > Time Buckets > Liquidity Gap Buckets
Product Profiles Home	ALM Maintenance > Product Profiles

Page	Navigation Path
Behavior Pattern Home	ALM Maintenance > Patterns > Behavior Patterns
Payment Pattern Home	ALM Maintenance > Patterns > Payment Patterns
Repricing Pattern Home	ALM Maintenance > Patterns > Repricing Patterns
Interest Rate Code Home	Master Maintenance > Rate Management > Interest Rates
Currency Rates Home	Master Maintenance > Currency Rates
Currencies Home	Master Maintenance > Currency
Economic Indicators Home	Master Maintenance > Economic Indicators
Product Characteristics Home	Assumption Specification > Product Characteristics
Product Characteristics Details	Assumption Specification > Product Characteristics > Add New
Discount Methods Home	Assumption Specification > Discount Methods
Discount Methods Details	Assumption Specification > Discount Methods > Add New
Prepayment Rule Home	Assumption Specification > Prepayments
Prepayment Methodology	Assumption Specification > Prepayments > Add New > Prepayment Method Selector > Add
Prepayment Models Home	Assumption Specification > Prepayment Models
Prepayment Models Details	Assumption Specification > Prepayment Models > New

Page	Navigation Path
Forecast Rates Home	Assumption Specification > Forecast Rates
Forecast Rates Details	Assumption Specification > Forecast Rates > New
Rate Dependency Patterns Home	Assumption Specification > Forecast Assumptions > Rate Dependency Patterns
Rate Dependency Patterns Details	Assumption Specification > Forecast Assumptions > Rate Dependency Patterns > New
Forecast Balances Home	Assumption Specification > Forecast Assumptions > Forecast Balances
Forecast Balances Details	Assumption Specification > Forecast Assumptions > Forecast Balances > Add New > Assumption Browser > Add
Maturity Mix Home	Assumption Specification > Forecast Assumptions > Maturity Mix
Maturity Mix Details	Assumption Specification > Forecast Assumptions > Maturity Mix > Add New > Assumption Browser > Add
Pricing Margins Home	Assumption Specification > Forecast Assumptions > Pricing Margins
Pricing Margins Details	Assumption Specification > Forecast Assumptions > Pricing Margins > Add New > Assumption Browser > Add
Transaction Strategies Home	Assumption Specification > Transaction Strategies
Transaction Strategies Details	Assumption Specification > Transaction Strategies > Add New > Add
Formula Results Home	Assumption Specification > Formula Results

Page	Navigation Path
Formula Results Details	Assumption Specification > Formula Results > Add New > New
Stochastic Rate Indexing Home	Assumption Specification > Stochastic Rate Indexing
Stochastic Rate Indexing Details	Assumption Specification > Stochastic Rate Indexing > Add New
Static Deterministic Process Home	ALM Processing > Static Process > Static Deterministic
Static Stochastic Process Home	ALM Processing > Static Process > Static Stochastic
Dynamic Deterministic Process Home	ALM Processing > Dynamic Process > Dynamic Deterministic
Dynamic Stochastic Process Home	ALM Processing > Dynamic Process > Dynamic Stochastic
Cash Flow Edits Process Home	ALM Processing > Cash Flow Edits

B

Oracle ALM Error Messages

Oracle ALM Error Messages

Error Message	Error Condition	Error Code	Effect of Error on Processing
<Assumption rule type> in Oracle ALM Process Rule <Assumption rule name> not found in database	Assumption Rule cannot be found in the database.	105	If rule is critical for processing, processing is stopped.
No Match for IRC	Interest Rate Code cannot be found in the active Historical Rates database.	110	When the instrument reprices, it will receive a zero rate.
No Data for IRC	Interest Rate Code exists in the active Historical Rates database, but there are no corresponding rate values.	115	When the instrument reprices, it will receive a zero rate.

Error Message	Error Condition	Error Code	Effect of Error on Processing
Dimension Types mismatch: COL vs. Application Preference for dimension: <dimension number>	Definition for dimension chosen as product dimension in Application Preferences has changed or no longer exists in the database. Also can relate to Organizational Unit dimension if two-dimension output processing is defined.	120	Processing is stopped.
No of Buckets mismatch Time Bucket in <Assumption Rule>	Assumption Rule was created when the active Time Bucket Rule held more/less buckets than it has currently; therefore, the Assumption Rule contains more/less bucket information than necessary.	325	If Assumption Rule holds more buckets than what currently exists, only the buckets within the current modeling term will be used. If Assumption Rule holds less buckets than what currently exists, the assumption for the last bucket will be carried forward for the remainder of the modeling term.
Distributed Option in Forecast Balance Assumptions not applicable for buckets with a term of 1 Day. Defaulted to Bucket End.	New Business timing is "Distributed" and bucket end date is same as bucket start date.	326	New Business timing is defaulted to Bucket end.

Error Message	Error Condition	Error Code	Effect of Error on Processing
Inconsist. Run: MattStrat FcstBal PrMrgn must be def together	New business assumption rules (Pricing Margin, Maturity Strategy, Forecast Balance) are incomplete, some but not all have been defined.	330	Processing is stopped.
Inconsist. Run: Missing stochastic process assump.	Missing stochastic process assumptions.	330	Processing is stopped.
Inconsist. Run: Stochastic Rate Index Rule is not defined	The Stochastic Rate Rule is not defined in the Process Rule.	330	Processing is stopped.
Inconsist. Run: No Options Selected for Sel. Reproc.	No Options Selected for Selective Reprocessing in the Process Rule.	330	Processing is stopped.
Inconsist. Run: No Instrument Tables selected	There are no Instrument Tables selected in the Process Rule.	330	Processing is stopped.
Inconsist. Run: Inconsistent Sel. Reproc. buckets	Number of modeling buckets in results is not consistent with the number of modeling buckets in the active Time Bucket Rule during a selective reprocessing run.	330	Processing is stopped.
Inconsist. Run: Duplicate AutoBal leaves	Duplicate Auto Balance leaves defined in Application Preferences.	330	Processing is stopped.

Error Message	Error Condition	Error Code	Effect of Error on Processing
Inconsist. Run: Not all AutoBal leaves defined	Not all Auto Balancing leaves are defined.	330	Processing is stopped.
Can't hit target for Leaf member:<leaf number> bucket: <bucket number>	It is impossible to calculate a new add balance that will satisfy the conditions required for new business balances.	335	No new business will be added for this bucket.
No Product Char. for leaf member: <leaf number>	Payment and repricing data have not been set up in the current Product Characteristics Rule for leaf member being processed.	340	Default characteristics will be used: • amortization type = 700 • payment frequency = original term • percent taxable = 100% • accrual basis = 30/360 • repricing frequency = 0
Invalid record: Invalid Amortization Code leaf member: <leaf number>	Amortization code is not equal to 100, 200, 400, 500, 600, 700, 710, 820, 830, 840, 850	345	Oracle ALM will assume an amortization code of 700
Invalid record: Maturity Date in the past leaf member: <leaf number>	Maturity Date is less than the as of date	345	Record is not processed.

Error Message	Error Condition	Error Code	Effect of Error on Processing
Invalid record: Remaining number of payments <= 0 leaf member: <leaf number>	Remaining number of payments is less than or equal to zero.	345	Record is not processed.
Invalid record: Pmt Freq = 0 leaf member: <leaf number>	Payment frequency is equal to zero on an amortizing instrument.	345	Record is not processed.
Invalid record: AmrtTerm < OrgTerm on amortizing instrument leaf member: <leaf number>	Amortization term is less than original term for amortizing instrument.	345	Re-amortization of payment will be affected.
Invalid record: Next payment date in the past leaf member: <leaf number>	Next payment date is less than the as of date.	345	If next payment date is much less than the as of date, it may cause the system to run out of memory.
Invalid record: Invalid net margin code leaf member: <leaf number>	Net margin code <> 0 or 1	345	Oracle ALM will default the net margin code to 0: Floating Net Rate
Invalid record: Current payment = 0 on amortizing instrument leaf member: <leaf number>	Current payment equal to zero and amortization code is other than simple / non amortizing.	345	For amortization codes of 100, 500, and 600, interest will be capitalized as principal. For amortization code of 820, no principal payments will be made.

Error Message	Error Condition	Error Code	Effect of Error on Processing
Invalid record: Valid rate cap < current rate leaf member: <leaf number>	Rate Cap is not equal to zero and it is less than the current rate.	345	Rate cap will be imposed on first repricing date.
Invalid record: Valid rate floor > current rate leaf member: <leaf number>	Rate Floor is not equal to zero and it is greater than the current rate.	345	Rate floor will be imposed on first repricing date.
Invalid record: Next repricing date in the past on repricing instrument leaf member: <leaf number>	Repricing frequency is not equal to zero and next repricing date is less than the as of date.	345	If the next repricing date is very far in the past, it may cause the system to run out of memory.
Invalid record: Invalid int rate code on repr instr leaf member: <leaf number>	Reprice frequency is greater than zero and Interest Rate Code is not found in the active Historical Rates database.	345	Instrument will not reprice.
Invalid record: Original term = 0 leaf member: <leaf number>	Original term is equal to zero.	345	This will produce erratic results if instrument is Rule of 78's; amortization term is also zero; or payment frequency is also zero on a non amortizing instrument.
Invalid record: Current net rate <= 0 on amortizing instrument leaf member: <leaf number>	Amortization code is 100, 500, 600, 820 and current net rate <= 0.	345	Negative income will be generated for positive balances.

Error Message	Error Condition	Error Code	Effect of Error on Processing
Invalid record: Inconsistency of reprice freq and amortization leaf member: <leaf number>	Amortization code is 500 or 600 and reprice frequency is zero or amortization code is 100 and reprice frequency is non zero.	345	Reprice frequency will overwrite characteristics defined by amortization type code.
Invalid record: No of Events>16000	Number of events is greater that 16,000.	345	
Invalid record: OrgTerm and PmtFreq = 0	Both original term and payment frequency are equal to zero.	345	Record is ignored.
Invalid record: Invalid Account Type	Invalid Account Type	345	Logs an error, continues execution.
Invalid record: Deferred calculations do not converge	Deferred calculations do not converge.	345	Logs an error and recognizes all deferred income at maturity.
Invalid record: YTM Calculations do not converge. leaf: <leaf number>	YTM calculation do not converge.	345	Logs an error and the YTM for the record is assumed to be zero.
Invalid record: EIR Calculations do not converge. leaf: <leaf number>	EIR calculation do not converge.	345	Logs an error and the EIR for the record is assumed to be zero.

Error Message	Error Condition	Error Code	Effect of Error on Processing
Invalid record: Behavior Type definition is inconsistent between the Behavior Pattern and BEHAVIOR_TYPE_CD. Defaulted to the Behavior Type specified in the Behavior Pattern. leaf: <leaf number>	Behavior type code in the instrument record is not consistent with the behavior type specified in the behavior pattern definition.	345	Logs an error and the Behavior Type specified in the Behavior Pattern is used.
Invalid record: BEHAVIOR_SUB_TYPE_CD is invalid. Unable to process. leaf: <leaf number>	NPA or D and R behavior pattern is used but the behavior subtype code in the instrument record is invalid.	345	Logs an error and the Record is not processed.
Invalid record: Behavior pattern definition does not exist. Unable to process. leaf: <leaf number>	Behavior pattern definition doesn't exist.	345	Logs an error and the Record is not processed.
Invalid record: Accrued Interest <> 0 and (Last_payment_date < As_of_date) for Behavior pattern record. Accrued interest may be overstated. leaf: <leaf number>	Instrument record is using non-maturity behavior pattern and last payment date is less than as of date and Accrued interest is not 0.	345	Logs an error and the calculated accrued interest may be overstated.

Error Message	Error Condition	Error Code	Effect of Error on Processing
Invalid record: Invalid Effective Interest Rate on instrument record; Market value, Yield to Maturity, Duration, Modified Duration, Convexity values have been calculated using 0 Effective Interest Rate. leaf: <leaf number>	Effective Interest Rate in the instrument record is less than 0 or greater than 99 and the discount method is EIR and in the calculation block Market value is selected and EIR is not selected.	345	Logs an error and the Market value, Yield to Maturity, Duration, Modified Duration, Convexity values will be calculated using 0 Effective Interest Rate.
Invalid record: Invalid Average Life. leaf: <leaf number>	Calculated Average life value for the record is 0.	345	Logs an error
Bucket Number Mismatch	Assumption Rule was created when the active Time Bucket Rule held more/less buckets than it has currently; therefore, the Assumption Rule contains more/less bucket information than necessary.	350	If Assumption Rule holds more buckets than what currently exists, only the buckets within the current modeling term will be used. If Assumption Rule holds less buckets than what currently exists, the assumption for the last bucket will be carried forward for the remainder of the modeling term.
No Target for Roll/Auto leaf member: <leaf number> bucket: <bucket number>	Forecast Balance methods of Target Average or Target End cannot be used for a Leaf member value used as a roll-into leaf or as an autobalancing leaf member.	360	Targeting methods cannot be used for leaves specified as roll-into or autobalancing. The targeted balances will be ignored.

Error Message	Error Condition	Error Code	Effect of Error on Processing
Res_det: Security violation	Current user does not have rights to create an Oracle ALM results table.	365	Processing is stopped.
Res_det: Truncate fail	Results table for current processing rule could not be cleared of old data.	365	Processing is stopped.
Res_det: Creation fail	Results table for new processing Rule could not be created.	365	Processing is stopped.
Res_det the structure of the result_detail table was invalid for selective reprocessing	The structure of the current Result Detail table does not match the IDT Result Detail Table Template.	365	Processing is stopped.
Account Type not defined for leaf member (leaf number)	In Dimension Member Set-Up, an account type attribute has not been specified for the current leaf member.	370	Account type will default to Earning Assets.
No. of scen in results > expected leaf member: <leaf number>	Number of scenarios in results set is greater than number of scenarios expected from querying the current Forecast Rates Assumption Rule while processing Autobalancing.	380	Autobalancing will only be processed for the scenarios included in the current Forecast Rates Assumption Rule.
Invalid interest type - defaulted to interest in arrears	Interest type code is not equal to 0 or 1.	385	Instrument is defaulted to "interest in arrears".

Error Message	Error Condition	Error Code	Effect of Error on Processing
Invalid Pmt pattern: pmt pattern code. <Payment Pattern Code>for new business - abs val	Payment Pattern assigned to new business has a constant payment amount.	390	Error is logged.
No Amrt Type in Product characteristics for leaf member:<leaf number>	No amortization type code has been assigned in Product Characteristics for the current leaf member.	395	An error message is logged and instrument is defaulted to simple interest.
No Amrt Type in Trans. Str. for leaf member:<leaf number>	No amortization type code has been assigned in Transaction Strategy for the current leaf member.	396	An error message is logged and instrument is defaulted to simple interest.
Formula Results Error: Mismatch in buckets number	The number of modeling buckets in result set does not match the number of modeling buckets defined in Formula Results.	397	Error is logged.
Invalid Currency Gain/Loss Basis. Defaulted to "Temporal"		406	
Pay-Equivalent Compounding Convention. Defaulted to "Do Not Adjust"		407	
Negative FullIndexGrs Rate for leaf member: <leaf number>	A negative fully indexed gross rate was calculated on a repricing event.	505	The negative rate will be assigned to the instrument.

Error Message	Error Condition	Error Code	Effect of Error on Processing
Negative FullIndexNet Rate for leaf member: <leaf number>	A negative fully indexed net rate was calculated on a repricing event.	505	The negative rate will be assigned to the instrument.
Negative CurGrsRate Rate for leaf member: <leaf number>	A negative current gross rate was calculated on a repricing event.	505	The negative rate will be assigned to the instrument.
Negative CurNetRate Rate for leaf member: <leaf number>	A negative current net rate was calculated on a repricing event.	505	The negative rate will be assigned to the instrument.
Negative CurTrRate Rate for leaf member: <leaf number>	A negative current transfer rate was calculated on a repricing event.	505	The negative rate will be assigned to the instrument.
Spread rate not found in Pricing Margins Rule	There is no pricing margin defined for the current leaf member.	515	Zero will be defaulted as the pricing margin.
Rate Not Found	Forecasted rates do not exist for interest rate code on current instrument.	520	When the instrument reprices, it will receive a zero rate.
1st point used	Reprice date occurs before forecasting period; forecasted rates do not exist.	525	This may occur if the data holds a reprice date which is less than the As of Date. Instrument will reprice to the rate as of the As of Date.

Error Message	Error Condition	Error Code	Effect of Error on Processing
Last point used	Reprice date occurs beyond forecasting period; forecasted rates do not exist.	530	This may occur when calculating market values beyond the modeling term or calculating the last reprice/payment event for accruals in the last bucket. Instrument will reprice to the rate as of the last forecasted date.
Code found only	Interest rate code exists in Forecast Rates Assumption Rule, but no rates have been forecast.	535	When the instrument reprices, it will receive a zero rate.
Prepayment tier not selected, zero prepayment rate used.	Market Rate and Quote Basis have been defined in the Prepayment Rule, but no tiers or prepayment percents have been created.	540	No prepayments will occur on this Leaf member.
Last payment date is before origination date.	The last payment date from instrument record is prior to the origination date on the instrument record.	545	Logs error and continues. For Transaction Strategy, last reprice date is set to origination date.
No reprice frequency for adjustable record.	Instrument is coded as adjustable, but the reprice frequency is equal to zero.	550	Instrument will be treated as fixed rate.
No schedule found for record.	No match can be found in the payment schedule table for the current record.	555	Logs error and defaults to simple interest record if payment frequency does not = 0.

Error Message	Error Condition	Error Code	Effect of Error on Processing
Pattern data can not be found for AMRT_TYPE:<payment pattern code>	No payment pattern information has been defined for the documented amortization type code.	560	Log error and default to simple interest.
No pattern information found for record.	Documented amortization type code exists in database, but no supporting details are available.	565	Currently is used to notify users about invalid adjustable type code. Record defaults to fixed.
Maturity date from record does not match schedule data.	The maturity date on instrument record does not exist in the payment schedule table for the current record.	570	Logs error. Uses maturity date for schedule.
Conv amrt with interest in advance, defaulted to arrears.	Conventionally amortizing instrument is classified as interest in advance. This combination is not supported.	575	The instrument will be defaulted to interest in arrears.
Invalid Amrt. Type detected. Defaulted to Simple Int.	An unknown Amortization Type Code was used.	585	Instrument will be defaulted to simple interest.
No Repricing Pattern found for record.	An unknown Adjustable Type Code was used.	600	Instrument will be defaulted to Other Adjustable.
Invalid Event_Det_Seq (Adj_Type_CD:<Adjustable type code>); Evnt_dtl_seq should start from 0.	For an Event Sequence, Event Detail Sequence has started from a non-zero value.	635	Repricing pattern is ignored and will produce erratic results if this repricing pattern is used.

Error Message	Error Condition	Error Code	Effect of Error on Processing
1st point used.	Reprice date occurs before forecasting period; forecasted rates do not exist.	725	This may occur if the data holds a reprice date which is less than the As of Date. Instrument will reprice to the rate as of the As of Date.
Last point used.	Reprice date occurs beyond forecasting period; forecasted rates do not exist.	730	This may occur when calculating market values beyond the modeling term or calculating the last reprice/payment event for accruals in the last bucket. Instrument will reprice to the rate as of the last forecasted date.
Negative Transfer Rate.		740	
Invalid duration generated for this row.		795	
Divide by zero		810	

C

Process Tuning

This module provides information on configuring the Oracle Financial Services Analytical Application (OFSAA) server-centric software for multiprocessing through the Process Tuning UI.

> **Caution:** The Process Tuning UI is available for definition ONLY for a User who has a role mapping that of 'Administrator' or 'Auditor'. The 'Auditor' role mapped user has 'READ-ONLY' access to Process Tuning UI.

This appendix covers the following topics:

- Multiprocessing Model
- Multiprocessing Options
- Specifying Multiprocessing Parameters
- Tuning Multiprocessing

Multiprocessing Model

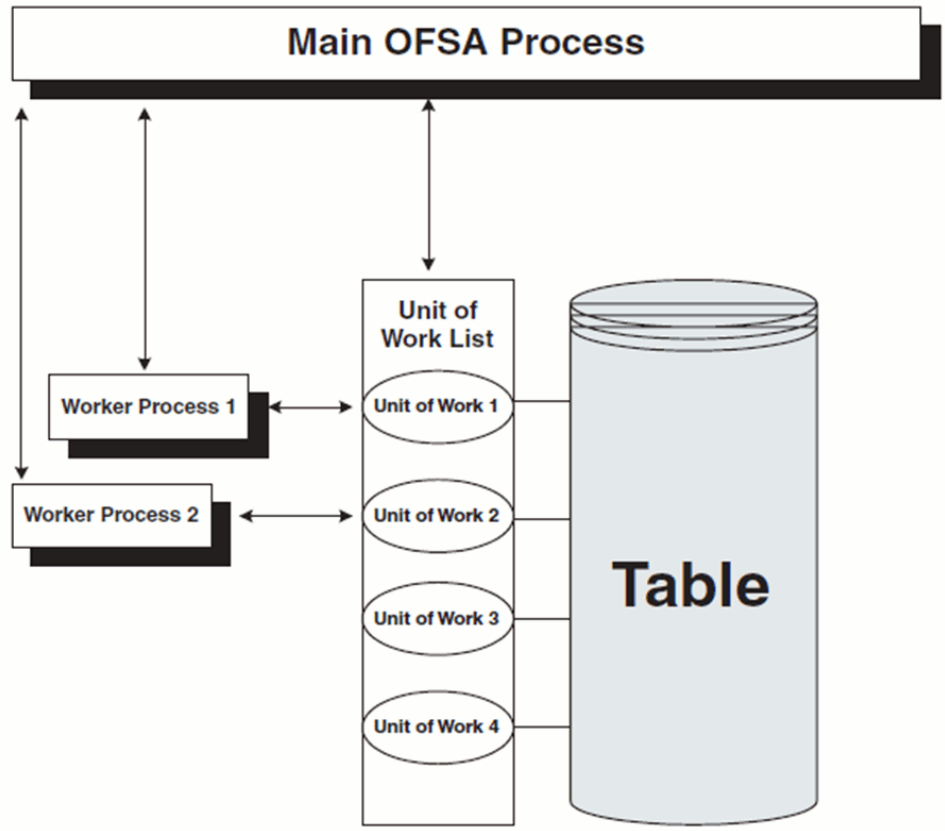
By default, multiprocessing is disabled for all applications. Multiprocessing is enabled by setting application specific parameters located under the Administration > Process Tuning area of the application. The following applications and features have multiprocessing settings:

- Asset Liability Management – Deterministic and Stochastic Processing
- Funds Transfer Pricing – Standard and Stochastic Processing

OFSAA multiprocessing is based on the concept of a *unit-of-work*. A unit-of-work is a set of rows from the database. A single OFSAA process becomes multiple processes by dividing the single process according to distinct sets of rows. Units of work are distributed to worker processes until all processes have been completed. To achieve multiple parallel processes, the following options must be configured:

- Creating a list or lists of units of work
- Defining the number of worker processes to service the units-of-work lists
- Defining how the worker processes service the unit-of-work lists

The specifics of each option are discussed. The following diagram illustrates the basic multiprocessing principles:



1. The main process makes a list of all units of work that must be processed.
2. The main process spawns worker processes. Each worker process is assigned a unit of work by the main process.
3. When all units of work have been completed, the worker process exits and the main process finishes any clean-up aspects of processing.
4. During processing the following is true:
   - Each worker process must form its own database connection.

- A unit of work is processed only by a single worker process.
- Different units of work are processed at the same time by different worker processes.

Note: If data is not distributed well across physical devices, I/O contention may offset the advantage of parallelism within OFSAA for I/O bound processing. It is recommended that users choose dimensions or combinations of dimensions that produce a relatively equal distribution of data records.

Multiprocessing Options

The Multiprocessing Options are the settings and parameters that control how individual ALM or FTP Processes are processed by the Cash Flow engine. The seeded data model includes default settings for all of the multiprocessing options, but you can also customize the settings for your own use. This section describes the different Multiprocessing options as well as how to customize each. These options are:

- Units of Work
- Unit-of-Work Servicing
- Worker Processes

Units of Work

The OFSAA processing engines determine units of work for any job based upon the Process Data Slicing Code (PROCESS_DATA_SLICES_CD) assignment. The Data Slicing Code comprises one or more columns by which data in the (processed) table is segmented. The individual segments are the defined Units of Work.

The Process Tuning user interface enables you to specify different unit-of-work definitions for your processes. You could specify one unit-of-work definition for one set of processes and then specify a different unit-of-work definition for another set of processes.

The OFSAA Processing Engines determine the units of work for a job by executing the following statement (with filtering criteria applied) on every table the process is run against:

```
select distinct<data slice columns>from<table>where<filter condition>;
```

where <data slice columns>is the comma-separated list of columns used for data slicing, <table>is the name of the instrument table being processed, and <filter condition>is the additional filter (if any) for the process. Any column or columns in a table can be used for data slicing.

Default Unit-of-Work Definitions

OFSAA provides three default unit-of-work definitions:

PROCESS_DATA_SLICES_CD	PROCESS_DATA_SLICES_SEQ	COLUMN_NAME
1	1	ORG_UNIT_ID
1	2	COMMON_COA_ID
2	1	ORG_UNIT_ID
3	1	COMMON_COA_ID

Any single Process Data Slice Code can comprise multiple columns. As an example of this, the PROCESS_DATA_SLICES_CD = 1 comprises both ORG_UNIT_ID and COMMON_COA_ID. The PROCESS_DATA_SLICES_SEQ identifies the precedence for the columns within the Process Data Slices CD.

Creating Customized Unit-of-Work Definitions

To create a customized unit-of-work definition, you must create a new PROCESS_DATA_SLICES_CD value and specify appropriate parameters for it.

FSI_PROCESS_DATA_SLICES and FSI_PROCESS_DATA_SLICES_DTL tables control the data slice columns and the resulting order of units of work. Data slicing methods are created by inserting a new code value into FSI_PROCESS_DATA_SLICES.PROCESS_DATA_SLICES_CD. Similarly, the columns used for data slicing are created by inserting new rows into FSI_PROCESS_DATA_SLICES_DTL.

The descriptions for the columns in FSI_PROCESS_DATA_SLICES and FSI_PROCESS_DATA_SLICES_DTL are provided for your reference.

TABLE_NAME	COLUMN_NAME	DISPLAY_NAME	DESCRIPTION
FSI_PROCESS_DATA_SLICES	PROCESS_DATA_SLICES_CD	Process Data Slices Code	Process Data Slices Code
FSI_PROCESS_DATA_SLICES_DTL	PROCESS_DATA_SLICES_CD	Process Data Slices Code	Process Data Slices Code

TABLE_NAME	COLUMN_NAME	DISPLAY_NAME	DESCRIPTION
FSI_PROCESS_DATA_SLICES_DTL	PROCESS_DATA_SLICES_SEQ	Process Data Slices Sequence	Precedence of slicing the data
FSI_PROCESS_DATA_SLICES_DTL	COLUMN_NAME	Column Name	Column name used for slicing

To create a customized unit-of-work definition, the prerequisite is to insert the required data into the FSI_PROCESS_DATA_SLICES and FSI_PROCESS_DATA_SLICES_DTL tables.

The following example illustrates a customized unit-of-work definition:

FSI_PROCESS_DATA_SLICES

PROCESS_DATA_SLICES_CD
4

FSI_PROCESS_DATA_SLICES_DTL

PROCESS_DATA_SLICES_CD	PROCESS_DATA_SLICES_SEQ	COLUMN_NAME
4	1	ORG_UNIT_ID
4	2	TP_COA_ID

Unit-of-Work Servicing

Unit-of-work servicing identifies how the OFSAA processing engines interact with Oracle Database Table Partitioning.

What is Partitioning

Partitioning addresses the key problem of supporting very large tables and indexes by enabling you to decompose them into smaller and more manageable pieces called partitions. Once partitions are defined, SQL statements can access and manipulate the partitions rather than entire tables or indexes. Partitions are especially useful in data warehouse applications, which commonly store and analyze large amounts of historical

data.

What Is Unit-of-Work Servicing?

Unit-of-work servicing specifies how individual units of work are processed for a table that is partitioned.

For a partitioned table, an application Rule Type/ Rule Step can create multiple units-of-work lists by executing the following statement (with filtering criteria applied) on every table partition the process is run against:

select distinct<data slice columns>from<table_partition_n>

where <data slice columns>is the comma-separated list of columns used for data slicing. Any column or columns in a table can be used for data slicing. <table_partition_n> are the unique table partitions of a table where n is assumed to be greater than 1.

The different Servicing methodologies are stored in the FSI_PROCESS_PARTITION_CD and FSI_PROCESS_PARTITION_MLS tables. You cannot add any customized Servicing methodologies. The Servicing methodologies provided in OFSAA are as follows:

PROCESS_PARTITION_CD	PROCESS_PARTITION
0	Do not use partitions (single servicing)
1	Use shared partitions (Cooperative Servicing)
2	Use non-shared partitions (Dedicated Servicing)

These methodologies are defined as follows:

- Single Servicing
- Cooperative Servicing
- Dedicated Servicing

Single Servicing

Single Servicing indicates that the OFSAA processing engine fulfils unit-of-work requests regardless of any table partitioning. As each individual process completes, it requests the next unit-of-work segment, whether or not that segment belongs in the same Table partition.

Use Single Servicing when you do not have Oracle Table Partitioning in your database.

Cooperative Servicing

Cooperative Servicing indicates that the OFSAA processing engine fulfils unit-of-work requests so that each process works against a specific partition unless it is idle. Idle processes then work against the next available unit-of-work segment, whether or not that segment belongs in the same Table partition.

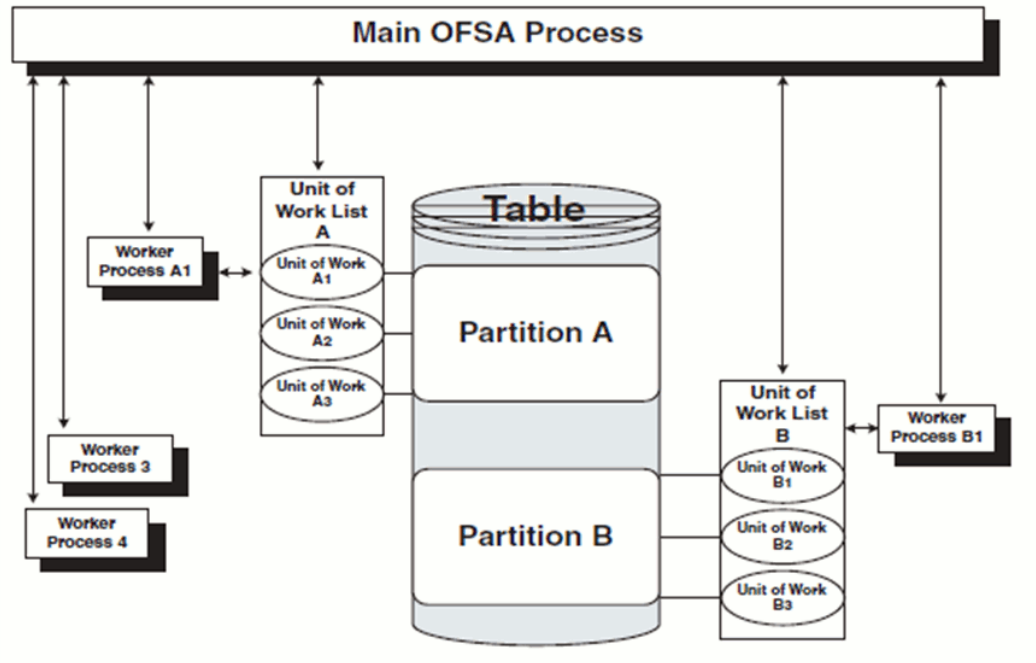
Dedicated Servicing

Dedicated Servicing indicates that the OFSAA processing engine fulfils unit-of-work requests so that each process works against a specific partition.

Examples of How Worker Processes Service Units of Work

FSI_PROCESS_ID_STEP_RUN_OPT.PROCESS_PARTITION_CD defines how Worker Processes service the units-of-work list or lists. As explained in the define units-of-work list or lists step, an FSI_PROCESS_ID_STEP_RUN_OPT.PROCESS_PARTITION_CD equal to 0 results in a single units-of-work list. With a single units-of-work list, all available worker processes service the list until all units of work are complete. When FSI _PROCESS_ID_STEP_RUN_OPT.PROCESS_PARTITION_CD equals 1 or 2 and the table to be processed is partitioned, multiple units of work lists are created. The following scenarios explain how the worker processes service multiple units-of-work lists:

Scenario 1: Number of Worker Processes > Number of Units-of-Work Lists



- The main process makes two lists of all units of work that need to be processed, unit-of-work list A and unit-of-work list B, respectively. (The setup is that the Table has two partitions.)

- The main process spawns four worker processes. A dedicated worker process is assigned to service each units-of-work list, Worker Process A1 and Worker Process B1 respectively. (The setup is (FSI_PROCESS_ID_STEP_RUN_OPT.NUM_OF_PROCESSES = 4)

  - If FSI_PROCESS_ID_STEP_RUN_OPT.PROCESS_PARTITION_CD equals 1, Worker Process 3 and Worker Process 4 assist Worker Process A1. When a unit-of-work list is complete, the available worker processes assist dedicated worker process on their unit-of-work List.

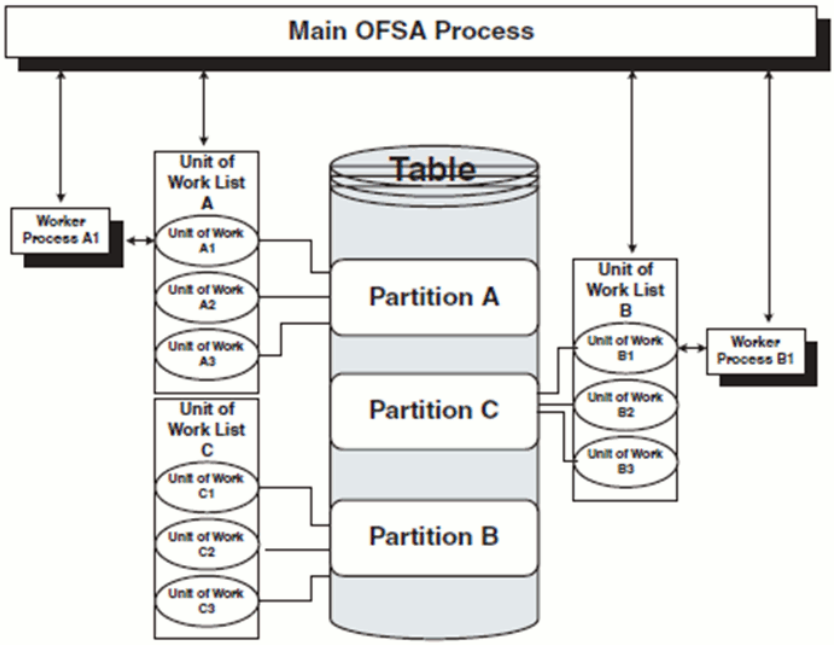
  - If FSI_PROCESS_ID_STEP_RUN_OPT.PROCESS_PARTITION_CD equals 2, Worker Process 3 and Worker Process 4 do not assist the dedicated worker processes.

- When all units of work have been completed, the worker process exits and the main process finishes any clean-up aspects of processing.

- During processing the following is true:

- Each worker process must form its own database connection.
- A unit of work is processed only by a single worker process.
- Different units of work are processed at the same time by different worker processes.

Scenario 2: Number of Worker Processes < Number of Units of Work Lists



- The main process makes three lists of all units of work that need to be processed: unit-of-work list A, unit-of-work list B, and unit-of-work list C, respectively. (The setup is that the Table has three partitions.)
- The main process spawns two worker processes. A dedicated worker process is assigned to service a units-of-work list, Worker Process A1 and Worker Process B1 respectively. (The setup is (FSI_PROCESS_ID_STEP_RUN_OPT.NUM_OF_PROCESSES = 2).
  - If FSI_PROCESS_ID_STEP_RUN_OPT.PROCESS_PARTITION_CD equals 1, Worker Process A1 and Worker Process B1 work until all units of work are complete from all three unit-of-work lists.
  - If FSI_PROCESS_ID_STEP_RUN_OPT.PROCESS_PARTITION_CD equals 2, the first worker process to complete their unit-of-work List services unit-of-work list C. When the other worker process completes their list, the

worker process exits.

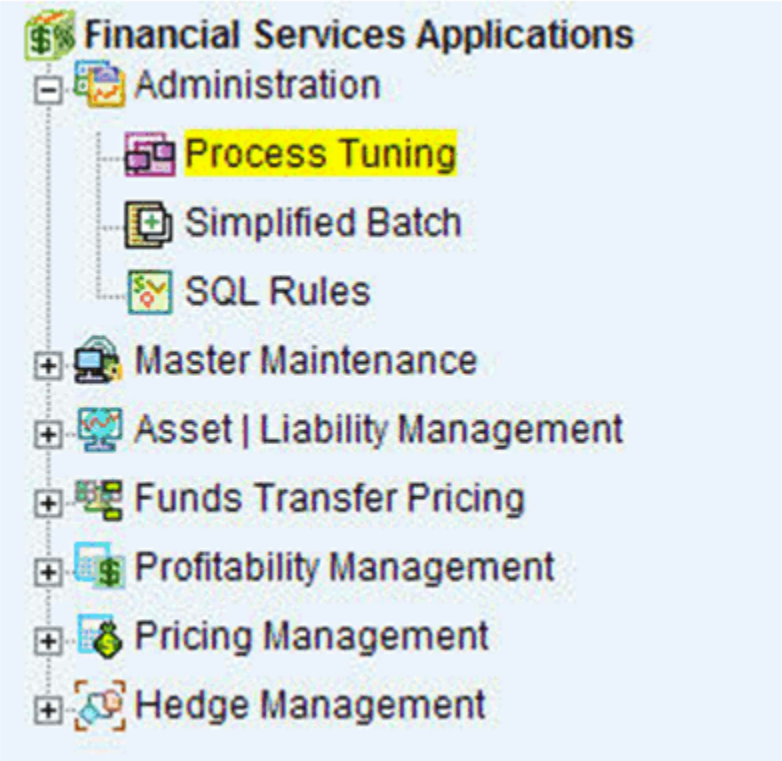
- When all units of work have been completed, the worker process exits and the main process finishes any clean-up aspects of processing.
- During processing the following is true:
  - Each worker process must form its own database connection.
  - A unit of work is processed only by a single worker process.
  - Different units of work are processed at the same time by different worker processes.

Worker Processes

Worker Processes refer to the number of individual processes working simultaneously to complete the job. The Main OFSAA Process launches the individual worker processes. OFSAA enables you to specify the number of worker processes for your jobs.

Specifying Multiprocessing Parameters

Users can access the multi-processing / tuning UI under the **Administration** folder on the LHS menu:



The application installation process seeds default multiprocessing parameters. By default, multiprocessing is turned off for all processes. To turn on multiprocessing, Application Administrators can define Process tuning assumptions at the application level or for individual processes.

This section discusses the following topics:

- Multiprocessing Assignment Levels, page C-11
- Defining Multiprocessing, page C-14
- Engine Overrides, page C-20

Multiprocessing Assignment Levels

Multiprocessing parameters can be specified at different levels. A Multiprocessing Assignment Level is the category of ALM or FTP execution that is processed with a designated set of multiprocessing parameters.

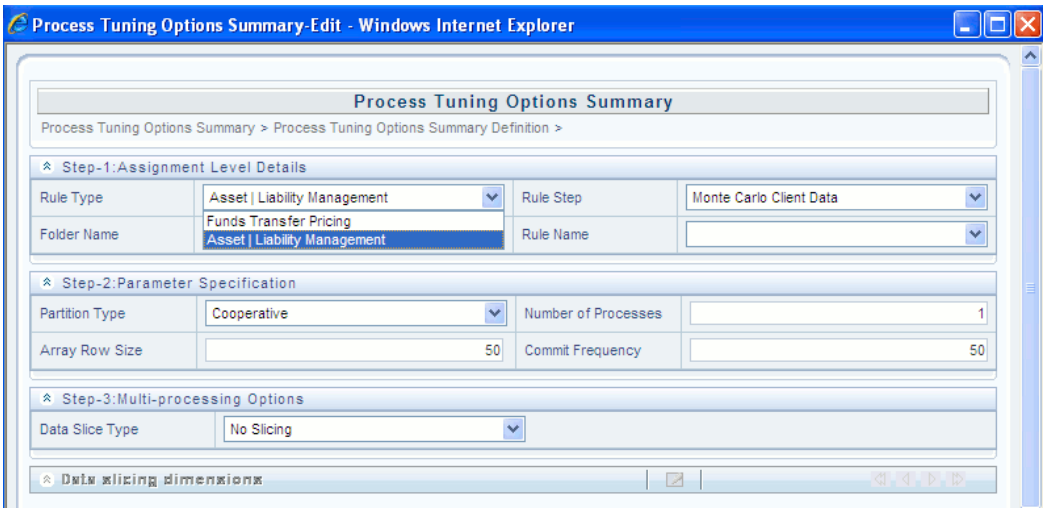
OFSAA provides multiprocessing assignments at the following levels:

- Rule Type, page C-12
- Rule Step, page C-12

- Rule Name, page C-13

Rule Type

When specifying multiprocessing parameters at the Rule Type level, all Rule Names for that Rule Type are processed with the designated parameters.



The valid Rule Type values present in the 'Rule Type' dropdown are:

FSI_PROCESS_ENGINE_CD

PROCESS_ENGINE_CD	RULE TYPE	DESCRIPTION
2	Asset I Liability Management	Asset I Liability Management Process
3	Funds Transfer Pricing	Funds Transfer Pricing Process

The OFSAA multiprocessing UI allows you to designate a set of multiprocessing parameters used for a specific Rule step within a given Rule Type.

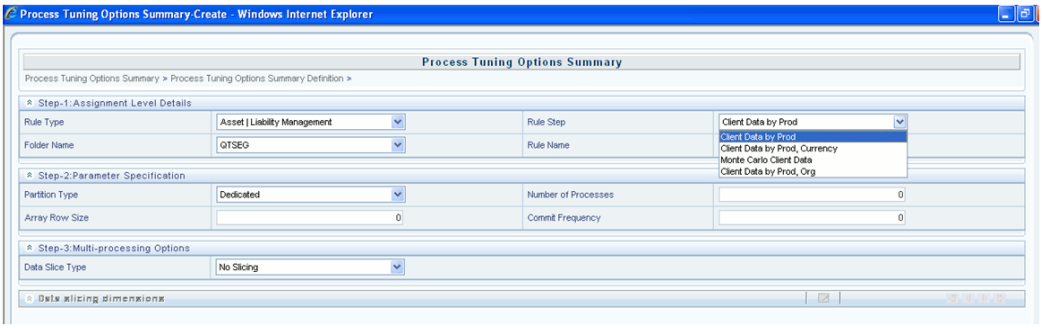
Rule Step

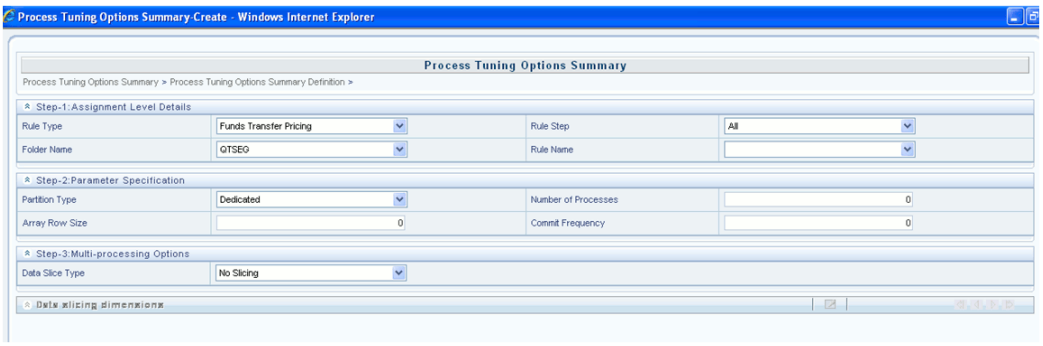
The Rule Step identifies a particular phase of an OFSAA process. Rule Steps are reserved names specific to each Rule Type.

Each Rule Step Name applies to a specific Rule Type.

The mapping of the list of valid Rule Steps and the Rule Type for which they apply is as follows:

PROCESS_ENGINE_CD	RULE STEP NAME
0	ALL
2	Client Data by Prod
2	Client Data by Prod, Org
2	Client Data by Prod, Currency
2	Monte Carlo client data
3	ALL





Rule Name

Users can optionally specify multiprocessing parameters at the Rule Name level to override any parameters assigned at the Rule Type level. This enables you to individualize your multiprocessing options to handle situations unique to specific Processes. In most cases, defining multi-process assumptions at the Application / Rule Step level is sufficient.

The list of valid Rule Names is populated from the FSI_M_OBJECT_DEFINITION_B

and FSI_M_OBJECT_DEFINITION_TL tables.

Only Rule Names of the following Process types are available for multi-processing:

- Asset | Liability Management Process
- Funds Transfer Pricing Process

Defining Multiprocessing

The process of defining Multiprocessing involves associating multiprocessing parameters to OFSAA Rule Types and/or Rule Names. Included in this section are the following topics:

- Parameter Tables, page C-14
- How to Specify Parameters, page C-17

Parameter Tables

While defining multiprocessing, the user interface inserts data into the following objects:

- FSI_PROCESS_ID_RUN_OPTIONS
- FSI_PROCESS_ID_STEP_RUN_OPT
- FSI_PROCESS_ID_RUN_OPTIONS_V (Read Only View)

TABLE_NAME	DISPLAY_NAME	DESCRIPTION
FSI_PROCESS_ID_RUN_OPTIONS	Process ID Run Options	This table specifies the Rule Name (ALM Process / FTP Process) for a single Process Type.
FSI_PROCESS_ID_STEP_RUN_OPT	Process ID Step Run Options	This table stores the Process Tuning Definition and contains the Rule Name (ALM Process / FTP Process) and process tuning option selections.

TABLE_NAME	DISPLAY_NAME	DESCRIPTION
FSI_PROCESS_ID_RUN_OPTIONS_V	Process ID Run Options View	This table provides a read-only view based on FSI_PROCESS_ID_RUN_OPTIONS and FSI_PROCESS_ID_STEP_RUN_OPT tables.

Each table is described as follows:

FSI_PROCESS_ID_RUN_OPTIONS

COLUMN_NAME	DISPLAY_NAME	DESCRIPTION
PROCESS_RUN_OPTION_SYS_ID	System ID Number	Rule Name (ALM Process / FTP Process) System ID Number
PROCESS_ENGINE_CD	Process Engine Code	Process Engine Code that run this Rule Name (ALM Process / FTP Process)

FSI_PROCESS_ID_STEP_RUN_OPT

COLUMN_NAME	DISPLAY_NAME	DESCRIPTION
PROCESS_STEP_RUN_SYS_ID	System ID Number	This stores the Rule Name's (ALM Process / FTP Process) System ID Number.
PROCESS_ENGINE_STEP_CD	Step Name	Rule Step of the Rule Name getting the Process Data Slices Code and Process Partition Code
NUM_OF_PROCESSES	Number of Processes	Number of Processes
COMMIT_FREQ	Commit Frequency	The number of rows after which the process commits changes.

COLUMN_NAME	DISPLAY_NAME	DESCRIPTION
ARRAY_SIZE_ROWS	Array Size Rows	The number of rows updated in a single call to the database.
PROCESS_PARTITION_CD	Process Partition Code	Process Partition code used by this Rule Name (ALM Process / FTP Process) in this step
PROCESS_DATA_SLICES_CD	Process Data Slices Code	Process Data Slices Code used by this Rule Name (ALM Process / FTP Process) in this step
PROCESS_ENGINE_CD	Process Engine Code	Process Engine Code that run this Rule Name (ALM Process / FTP Process)

FSI_PROCESS_ID_RUN_OPTIONS_V

COLUMN_NAME	DISPLAY_NAME	DESCRIPTION
SYS_ID_NUM	System ID Number	Rule Name (ALM Process / FTP Process) System ID Number
STEP_NAME	Step Name	Rule Step of the Rule Name getting the Process Data Slices Code and Process Partition Code
PROCESS_ENGINE_CD	Process Engine Code	Process Engine Code that run this Rule Name (ALM Process / FTP Process)
NUM_OF_PROCESSES	Number of Processes	Number of Processes
PROCESS_DATA_SLICES_CD	Process Data Slices Code	Process Data Slices Code used by this Rule Name (ALM Process / FTP Process) in this step

COLUMN_NAME	DISPLAY_NAME	DESCRIPTION
PROCESS_PARTITION_CD	Process Partition Code	Process Partition code used by this Rule Name (ALM Process / FTP Process) in this step
COMMIT_FREQ	Commit Frequency	The number of rows after which the process commits changes.
ARRAY_SIZE_ROWS	Array Size Rows	The number of rows updated in a single call to the database.

How to Specify Parameters

The setup of multiprocessing is broken down into the following steps:

- Assignment Level Details
- Parameter Specification
- Multi-Processing Options
- Assign Unit-of-Work Servicing Methodology

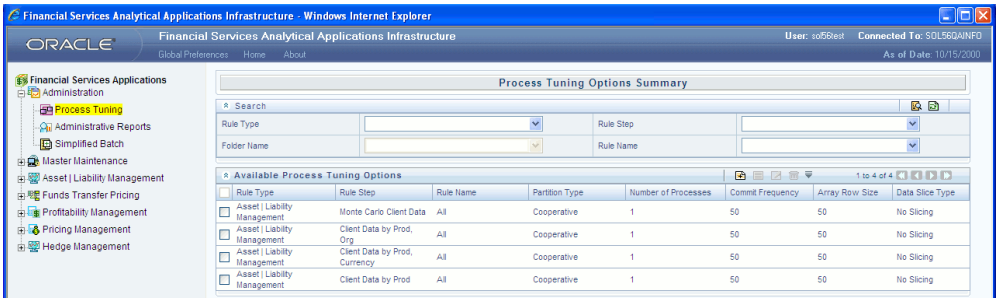
For each step, the relevant multiprocessing parameters are described. Some applications override the multiprocessing configuration in order to handle special processing conditions. The Engine Overrides section explains these special processing conditions.

Assignment Level Details

The 'Rule Type', 'Rule Step' and 'Rule Name' columns identify the Assignment Level for multiprocessing.

Procedure:

1. Log on to Financial Services Applications with the User ID/password that has 'Administrator' Privileges.
2. Navigate to Financial Services Applications > Administration > Process Tuning Options Summary Page. This page is the gateway to Process Tuning Options related functionality.
3. Click Add to create a new Process Tuning assumption. Note, you can create only one process tuning assumption per combination of Rule Type and Rule Name.



4. The Process Tuning Options Summary – Create page is displayed.

5. Step - 1: Assignment Level Details Block is the first block.

6. This block contains 4 fields - Rule Type, Rule Step, Folder Name and Rule Name.

7. Select the required Rule Type.

8. Folder Name is a drop-down to assist rule-name selection, filtered by selected folder.

9. Select the required Rule Step. Rule Step is a drop-down that is filtered based on its mapping to the Rule Type selected.

10. Select the required Rule Name. Rule Name is a drop-down that displays rules of the selected type, within the specified folder.

The system supports four assignment levels. Because an application allows configurations that mix these levels, it is important to understand the order in which the application resolves the multiprocessing parameters when the configuration mixes assignment levels. The order is:

1. Specific Step of a specific Process for an engine

2. All Steps of a specific Process for an engine

3. Specific Step of all Processes for an engine

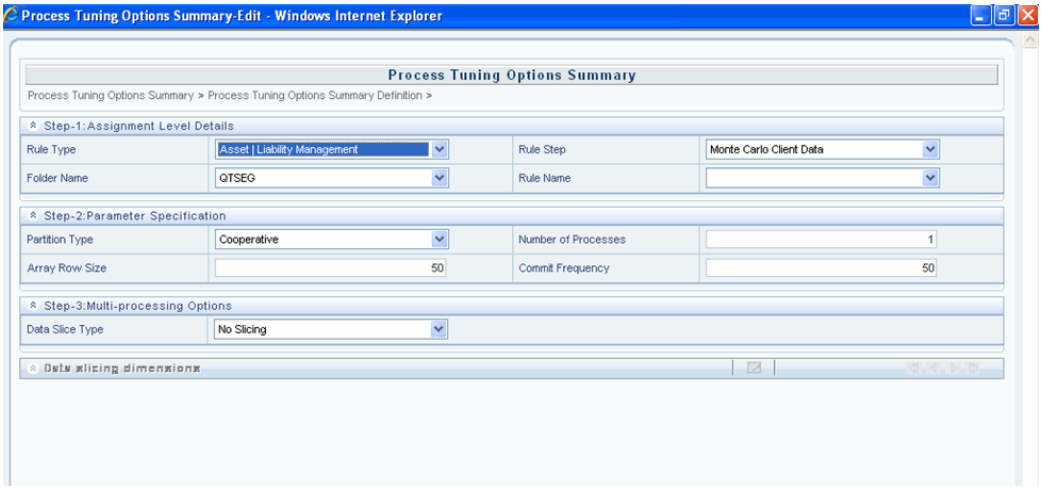
The next step after defining Assignment Level details is to define the Multiprocessing Parameters. Multiprocessing parameters include inputs for the following:

1. Partition Type

2. Array Row Size

3. Number of Processes

4. Commit Frequency



The following describes inputs for each parameter:

Partition Type

Partition Type selection is required when table partitioning is being used within your instrument tables. If no portioning is being done, then the default selection of "No Partitioning" should be selected. If parttiioning is being done, then users should select either Dedicated or Cooperative. For more information on these selections, refer to the section on Multiprocessing Options > Unit of Work servicing.

Number of Processes

The number of processes selection indicates the number of concurrent processes to be launched by the engine. Typically, the number of processes should be less than or equal to the number of CPUs available on the server. Users should experiment with the number of processes setting to find the optimal value.

Assign Array Updates and Commit Frequency

Setting the array update size to be greater than the commit frequency has no effect because the array update size is limited by commit frequency. Oracle recommends setting the commit frequency to zero unless rollback segment limitations require doing a commit more often. Oracle also recommends using the default array update size of 50 unless tests show a benefit to increasing this size.

Step 3 in the multiprocessing setup includes the following selections:

Data slice type

Data Slice Type is a static drop-down with 2 values [Distinct Values, No Slicing]. Users should choose distinct values to enable multiprocessing. After choosing distinct values, users are required to further select their Data Slicing dimensions.

Data slicing dimensions

Choose the edit option to launch a pop-up window to select the slicing dimensions. This popup will contain the list of seeded dimensions.

Engine Overrides

For some conditions, the OFSAA Processing Engines override the multiprocessing definition for an assignment level. The overrides are as follows:

Funds Transfer Pricing

Funds Transfer Pricing configures the data slicing columns automatically using the Product Leaf Column defined in the active Application Preferences as the default slicing column for all runs. Different steps in the same processing run can use different additional slicing columns, however. Bulk and propagation calculation steps, as well as Non-Cash Flow and LEDGER_STAT pricing/migration runs, use the ORG_UNIT_ID column as an additional slicing column. The Cash Flow Transfer Pricing step also uses the ORG_UNIT_ID column if not combined with Option Cost Calculations. For Option Cost Calculation, the engine employs ORIGINATION_DATE as the primary slicing column with the Product Leaf Column as secondary.

Asset Liability Management

Asset Liability Management configures the data slicing columns automatically using the Product Leaf Column defined in the active Application Preferences as the default slicing column for all runs. The Asset Liability Management engine adds more slicing columns based upon the parameters specified in the Asset Liability Management Process, as follows:

- If Product/Organizational Unit functional dimensions are selected, the engine adds ORG_UNIT_ID as an additional slicing column.
- If Product/Currency functional dimensions are selected, the engine adds ISO_CURRENCY_CD as an additional slicing column.
- If Product/Organizational/Currency functional dimensions are selected, the engine adds ORG_UNIT_ID and ISO_CURRENCY_CD as additional slicing columns.

Tuning Multiprocessing

Tuning for optimal multiprocessing settings is an exercise similar to tuning a database. It involves experimentation with different settings under different load conditions.

Database Bound versus Engine Bound Jobs

OFSAA jobs fall into the following two categories:

- Database bound—Those jobs that spend more time within database manipulations.
- Engine bound—Those jobs whose calculations are complex, with the time spent with database Operations being small compared to the amount of time doing calculations.

The following table lists OFSAA jobs by Application and identifies whether the job is usually database bound or Engine bound.

Application	Job Type	Generic Job Type	OFSAA / DB Bound	MP Enabled	Comments
Funds Transfer Pricing	Ledger Migration	Bulk	DB	Yes	
Funds Transfer Pricing	Bulk Transfer Pricing	Bulk	DB	Yes	
Funds Transfer Pricing	Non-Cash Flow Transfer Pricing	Row by Row	DB	Yes	
Funds Transfer Pricing	Cash Flow Transfer Pricing	Row by Row	OFSAA	Yes	
Funds Transfer Pricing	LEDGER_STAT Migration	Row by Row	DB	Yes	
Asset | Liability Management	Detail Processing (Current position, Gap, Market Value)	Row by Row	OFSAA	Yes	All processing except Formula Results and Auto Balancing

Application	Job Type	Generic Job Type	OFSAA / DB Bound	MP Enabled	Comments
Asset | Liability Management	Formula Results	Row by Row	OFSAA	No	Formula Results is not currently functional, and will available in a later release
Asset | Liability Management	Auto Balancing	Row by Row	OFSAA	No	

The scalability of database-bound jobs is largely determined by size of the database server. The scalability of Engine bound jobs is determined by the size of the application server.

Tuning the OFSAA Database from the Application Layer

Despite the many multiprocessing options, tuning the OFSAA database from the application layer is achieved by following a simple process. The process is as follows:

1. Identify the OFSAA job types that are used by your organization.
2. For each job type, time the runs for a series of Number of Processes settings, defined in Step 2: Parameter Details.
3. Based on the results, determine the appropriate setting per application.

LEDGER_STAT Updating

Funds Transfer Pricing, LEDGER_STAT migration and direct Transfer Pricing against the Ledger table both update the LEDGER_STAT using an update/insert methodology where an update is attempted and, if no rows are affected, an insert is performed. This methodology prevents OFSAA from performing LEDGER_STAT updates in parallel. When LEDGER_STAT is updated (either because the LEDGER_STAT buffer has filled or the process has ended), the updating is done by only one process. All other processes must wait for the updating to be completed. As the ratio between rows written to LEDGER_STAT and rows read to LEDGER_STAT increases, the time spent writing LEDGER_STAT dominates the time spent reading, resulting in drastically reduced scalability.

Special Considerations

Because of the nature of parallel processing performed by OFSAA, different processes tend to need to access the same tables at the same time. Unless care is taken in designing the layout of the database tables, this can lead to I/O contention, which in turn, can reduce scalability.

Glossary

Aggregation

To summarize detailed instruments to a table in the database which can be used for faster processing in ALM.

Answers

Answers is the OBIEE (Oracle Business Intelligence Enterprise Edition), ad-hoc reporting tool.

As of Date

Date at which the data is current.

Asset/Liability Management Committee

The Asset/Liability Management Committee (or ALCO) is an organization within a financial institution whose charter is to manage interest rate and liquidity risk.

At-Risk Period

The time horizon for Value-at-Risk, such as the difference between the time in the future when we evaluate a portfolio loss and the As of Date.

Base Rates

Section in Oracle Asset Liability Management that stores the interest rates associated with the data As-of-Date.

Basis Points

1/100th of a percent (abbreviated as "bps")

Cash Flow Instrument Table

An instrument table that contains all of the OFSAA cash flow columns required by the cash flow engine.

Cash Flow Column

Column in an instrument table used by the OFSAA cash flow engine to perform cash flow analysis on a record.

CPR

Constant Prepayment Rate (CPR) is a measure of an annualized prepayment rate.

Credit Risk

The risk that a loan holder will be unable to repay any portion of the loan.

Current Rate Risk Profit

Component of funding center rate risk results attributed to current mismatches of assets and liabilities.

Data Filter Rule

Data Filters are used to define which data should go into a processing run.

Data Input Helper

A pop-up dialogue that facilitates the definition of a series of input values (dates or numbers) by allowing several methods for defining structured patterns in the data.

DDA

Demand Deposit Account. An example of a DDA is a checking account.

De-annualize

To compute the monthly equivalent rate of an annual rate.

Duration

Duration is the rate of market value change with respect to discount rate changes. It is a measure of market value sensitivity: the lower the value, the less sensitive the market value to changes in interest rates.

Embedded Rate Risk Profit

Portion of funding center rate risk result attributed to prior rate bets.

Funding Center

Area in a financial institution that receives the transfer pricing charge and credit for funds.

Funds Transfer Pricing

A method for valuing all sources and uses of funds for a balance sheet.

General Ledger

The main data source that defines an institution's financial reality. The General Ledger reflects all accounting entries.

Grid

A logical grouping of cells often surrounded by scroll bars.

Hierarchy

Hierarchical structure for dimension members in OFS applications (Examples: organizational and product type)

Historical Rates Table

OFSAA repository for all historical actual interest rates.

Instrument

Synonymous with an account record or an individual contract.

See also: Instrument Table, page Glossary-3.

Instrument Table

A type of table contained in the OFSAA database used to store account level information.

Instrument Records

Rows in the OFSAA database that carry transaction account level information (Example: deposit account by deposit account)

Interest Rate Code

User defined code to reference a yield curve or single rate index for historical analysis, transfer pricing, and interest rate forecasting purposes.

Last Repricing Date

Date the rate last changed for an adjustable rate instrument and the origination date for a fixed rate instrument.

Leaf Fields

OFSAA database fields used to define hierarchical segmentations of data. They also draw a relationship between the instrument data and the General Ledger data in

Ledger/Stat. Also known as key dimensions.

Leaf Values

Specific numeric values that make up the Leaf Fields. These are dimension members that can never be used as parent nodes on a hierarchy. The fact data should always be populated with dimension member - leaf values only.

Ledger Stat

Table in the OFSAA database that stores all General Ledger as well as statistical information for current and historical periods.

Liquidity Premiums

A charge levied on a long-term instrument to compensate for illiquidity of the funds.

Log in

To access the programs and database of any OFSAA application by providing a valid user name and password.

Long Run Rate

One of the user-input parameters of the Vasicek (discrete-time) term structure model; represents the equilibrium value of the one-month annually compounded rate.

Market Price of Risk

In financial economics theory the market price of risk is a measure of inter-temporal risk-aversion of the aggregate investor; for example, a high market price of risk during some future period means that investors will be more risk-averse, and that rates for that term should be higher to compensate for this risk; in practical terms, the market price of risk is the "plug" that makes the risk-neutral rates price risk-free bonds correctly.

Market Value

In Monte Carlo, average of the (scenario specific) present values. In deterministic processing, it is the present value of the cash flows of the specific scenario.

Matched Rate Transfer Pricing

Method of Transfer Pricing where all accounts have transfer rates that reflect their specific maturity and repricing characteristics.

Matched Spread

The interest profit margin for any account, measured as the Note Rate minus the Transfer Rate for asset accounts and the Transfer Rate minus the Note Rate for Liability and Equity accounts.

Monthly Rate

Yield on a loan contracted at the beginning of a month for a period of one month assuming a continuous compounding basis; the monthly rate is a function of time and scenario; the Rate Generator also computes rates for a different term than a month.

Next Repricing Term

Repricing frequency for an adjustable rate instrument and the original term to maturity for a fixed rate instrument.

Oracle Asset Liability Management

ALM is an Asset/Liability management simulation tool that generates daily cash flows for each individual transaction record and allows users to model their balance sheet using both deterministic and stochastic methods.

Oracle Business Intelligence Enterprise Edition

OBIEE is Oracle's market leading business intelligence product. OFSAA applications are fully integrated with OBIEE through the OFSAA BI applications, including Oracle Financial Services Asset Liability Management Analytics and Oracle Financial Services Profitability Analytics.

Oracle Financial Services Balance Sheet Planning

Balance Sheet Planning performs distributed budgeting of all balance sheet and income statement accounts.

Oracle Financial Services Funds Transfer Pricing

Funds Transfer Pricing performs Matched Rate Transfer Pricing for an entire balance sheet.

Oracle Financial Services Pricing Management – Transfer Pricing Component

Pricing Management allows users to call the Transfer Pricing engine in real time, providing the line bankers with on-demand information to support deal pricing.

Oracle Financial Services Profitability Management

Profitability Management assists customers in developing multiple levels of profitability (Example: organizational, product, customer, account profitability).

Oracle Financial Services Analytical Applications Infrastructure

OFSAAI is a set of powerful administrative tools that provide management of the OFSAA environment and access to the database by OFS application users. The Infrastructure is a required component for all OFSAA applications with the exception of Balance Sheet Planning.

Oracle Financial Services Advanced Analytical Applications Infrastructure

The advanced infrastructure provides the modeling framework and stress testing framework as additional complimentary components to supplement to core analytic applications.

Operating Cost

Non-interest related cost of running a business.

Option Costs

Costs assigned to measure the value of any customer option on an instrument. (Example: prepayments on mortgage loans). These costs are typically added to the base transfer rate to compute an all-in funding rate.

Portfolio Fields

Fields in the OFSAA database that are common to multiple instrument tables. The OFSAA Administrator determines the portfolio fields.

Prepayment

A reduction in the principal balance of a transaction record prior to the contracted schedule date.

Present Value

In Monte Carlo, sum of cash flows paid by a security along a particular rate scenario, discounted by the stochastic discount factor. In deterministic processing, the sum of the cash flows discounted by the deterministic discount factor.

PSA

A prepayment specification method established by the Public Securities Association, which relates the CPR to the age of that instrument.

Reconciliation

The process of comparing information from one data source to another.

Record

Usually a single account or transaction, or aggregation of accounts, stored in the database (also called a row).

Reporting Currency

An active currency to which balances in other currencies are consolidated, often used for reporting.

Single Rate

An interest rate code with only one point defined (Examples: prime rate and 11th District Cost of Funds Index).

Speed of Mean Reversion

One of the user-input parameters of the Vasicek and Extended Vasicek (discrete time) term structure models; represents the long-run drift factor.

SQL

Structured Query Language. A direct method of accessing the raw OFSAA database.

Stochastic Discount Factor

Present value (along a rate scenario) of one dollar received at some future time; it is a function of future time, OAS, and scenario.

Transfer Pricing Rule

An OFSAA Rule used to specify the method for transfer pricing each balance sheet account.

Volatility

One of the user-input term parameters of all (discrete-time) term structure models; represents a standard deviation of the one-month annually compounded rate.

Yield Curve

Term structure of annually compounded zero-coupon bond yield, as recorded in Rate Management > Historical Rates.

Index

D

E

F

I

M

N

O

P

R

S

T

U

V